

# PLANNING AFRICA 2016

 **SAPI**  
SOUTH AFRICAN PLANNING INSTITUTE



1996-2016. 20 YEARS OF PLANNING

**4-6 JULY 2016**

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## MAKING SENSE OF THE FUTURE

**DISRUPTION AND REINVENTION**

**CONFERENCE PROCEEDINGS**

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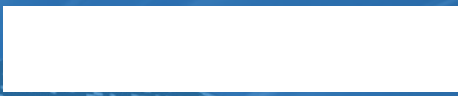
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# 1996-2016 20 YEARS OF PLANNING



MAKING SENSE OF THE FUTURE /  
DISRUPTION AND REINVENTION



Conference Proceedings

# 7<sup>th</sup> Planning Africa Conference 2016

Making Sense of the Future – Disruption and Reinvention

4-6 July, 2016

Sandton Convention Centre, Johannesburg, South Africa

ISBN: 978-0-620-69628-9

Editors:

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# 7<sup>th</sup> Planning Africa Conference 2016

## Making Sense of the Future – Disruption and Reinvention

### Foreword

The 7<sup>th</sup> Planning Africa Conference 2016 focused on ‘Making Sense of the Future – Disruptions and Reinvention’ established strong knowledge exchange and discussions among the planning fraternity, policy and decision makers, practitioners, academia and researchers.

The conference involved eight plenaries, five sub-plenary sessions and four parallel sessions spread over three days and engaged conference participants on several critical issues in areas of but not limited to: Integrated Urban Development Framework (IUDF), radical planning, radical ideology and radical scholarship, city region and reforms in planning, planning tool for spatial planning, South African government planning systems, city regenerations and development of the new city, State of South African Cities, and instruments for disruption and reinvention of metropolitan space and function, planning instruments and technology for spatial transformation, formality and informality, and building a City Region. The four parallel sessions discussed critical issues in six broad areas of: technology and innovation, reinventing planning thought, spatial governance – urban and rural spaces, planning responses – demographic challenges, planning and optimal land utilization, and planning and communities.

The conference received 137 abstracts of which 126 abstracts were accepted for presentation during the conference. Based on the accepted abstracts, the authors were invited to submit their full papers following a double blind peer review process. Out of 57 full papers received only 37 papers were accepted for inclusion in the conference proceedings giving an acceptance rate of around 65%. Both the abstracts and full papers received followed a rigorous double blind peer review process with an active support from the national and international review panel.

The South African Planning Institute (SAPI) and the Editorial Team sincerely thanks the contributors for their time and efforts in putting their abstracts, full papers and presentations for Planning Africa Conference 2016. Special thanks goes to the scientific committee and peer review experts comprising of local and international academic, researchers and industry domain experts for their rigorous, valuable comments, and constructive criticism on abstracts and full papers peer reviewed by them.

Sincere thanks and acknowledgement goes to Planning Africa Conference 2016 partners and endorsers without whose continued support and contribution the conference would not have been successfully organized. The SAPI also acknowledges the contribution of Zunaid Timm and his team from HOZ Business Solutions for the development and maintenance of the online conference management system which enabled online submissions, reviews, moderation and registrations.

### **Editorial Team**

Planning Africa Conference 2016

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# Peer Review Process

The Planning Africa Conference 2016 involved rigorous double blind peer review process for abstracts as well as full papers. The review panel comprised of national and international subject matter experts in the planning and built environment field. Based on the rigorous peer review outcome, the abstracts and full papers were selected based on originality, relevance, purpose and significance to the conference themes and objectives, and contribution to the body of knowledge.

Based on the peer review outcome of abstracts, the authors of the selected abstracts were invited to submit full papers and present during the conference. The rigorous peer review process by scientific review panel provided valuable comments and constructive criticism to the authors on their submitted full papers. The full papers received were subjected to a scoring criteria during their peer review process. The papers receiving less than score 3 out of 5 and having major changes to be addressed were rejected for inclusion in the conference proceedings.

Based on the review outcome of full papers, the authors of selected papers were invited to submit final revised papers addressing the comments and responses received by the scientific review panel for inclusion in the conference proceedings (ISBN: 978-0-620-69628-9).

The conference received 137 abstracts, of which 126 abstracts were accepted for presentation during the conference. Based on the accepted abstracts, the authors were invited to submit their full papers following a double blind peer review process. Out of 57 full papers received only 37 papers were accepted for inclusion in the conference proceedings giving an acceptance rate of around 65%. The opinions expressed in this proceedings are entirely those of the authors, unless otherwise stated. While efforts were made to ensure accuracy in this publications, the Editors, SAPI or the associated partners and endorsers does not accept any legal responsibility or liability in whole or part for any errors or omissions that may have occurred in the proceedings.

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## Peer Review Panel

SAPI would like to highly acknowledge the support received from national and international experts as well as its members in peer reviewing process during the stages of abstracts and full papers selection process. The publication of the proceedings would not have been possible without their continued support and in-depth constructive criticisms. The following is the list of national and international experts who provided their continued peer review support to SAPI for 7<sup>th</sup> Planning Africa Conference 2016:

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# Measuring and Monitoring Urban (and Rural) Development Performance against an Appropriate Set of Sustainable Development Performance Indicators

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## Abstract

South Africa's municipal efforts to promote rapid growth and development are being pursued within the context of building a developmental state. Mechanisms put in place to achieve this mandate are impeding the ability in which these municipalities can effectively and efficiently deliver their mandate. Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) often fall short of triumphing their intentions, mainly because they present a number of projects, programmes and interventions that needs to be implemented overtime. Implementation and monitoring framework meant to guide and facilitate the ongoing execution of the projects including the impacts of these developments is largely neglected. The IDPs and SDFs are apparatus meant to enable municipalities or local government to direct resources successfully ensuring viable growth, fighting service delivery backlogs, high levels of poverty, and ensure, inclusive, productive, and sustainable urban and rural areas. Municipalities are required to integrate a wide range of sectoral projects and programmes in their respective IDPs and SDFs. As a procedure to facilitate development municipalities are required to develop appropriate sustainable development indicators for measuring and monitoring development performance.

Sustainable development performance indicators are considered to be good mechanisms in helping to measure sustainable development progress; they can position municipality's decision-makers take diagnostic measures in time. The primary of objective of this study was to investigate the use of sustainable development performance indicators in rural and urban municipalities. The second objective of the study was to investigate the facilitation of the IDP and SDF identified projects and programmes in terms of monitoring and measuring performance. The study took into account of the composition of municipalities, as defined by the Constitution of the Republic. The study investigated 10 IDPs and SDFs, of municipalities that obtained a clean audit outcome from the 2012-2013 financial year. Sedibeng District Municipality, Ehlanzeni District Municipality, Steve Tshwete Local Municipality, ZF Mgcawu District Municipality, Msinga Local Municipality, Ntambanana Local Municipality, Okhahlamba Local Municipality, City of Cape Town Metropolitan Municipality, West Coast District Municipality and Langeberg Local Municipality. The study provides recommendations on selection criteria for sustainable development performance indicators and the implementation framework that can be tailor-made for municipalities'.

## Keywords

Sustainable development performance indicators, performance management systems, local government performance systems, spatial development framework, integrated development framework, spatial transformation analysis.

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## 1. INTRODUCTION

The 2030 National Development Plan, states that “A developmental state needs to be capable; It requires leadership, sound policies, skilled managers and workers, clear lines of accountability, appropriate monitoring systems, and consistent and fair application of rules” (The Presidency 2011: 54). The National Development Plan supplementary designates that “weak, poorly performing systems make it hard to attribute responsibility with the frequent result that no one is accountable” (The Presidency 2011: 60). While the National Department of Performance Monitoring and Evaluation Assessment Tool Report of Results 2011/2012 highlights the need for improved project management practices that are key for improving local government performance and service delivery (RSA 2011: 10).

However, a significant number of South African municipalities lack the capacity to develop IDPs and SDFs. The majority of South African municipalities develop IDP as matter of compliance with legislative requirements. Majority of municipalities find the process of IDPs complex. Majority of municipalities tend to exclude community participation and rather focus on community information process of which is not the intension of the IDP. The IDP process obligates that IDP committee has to ensure and expedite patron participation in respective phases of the IDP course, beginning at calculating and prioritizing, to contriving the plans, objects.

Performance management of the IDP in the majority of municipalities is largely fixated on individual performance, through the SDBIP and scorecards of which are overseen by the Human Recourses department of the municipality. As a prerequisite by the Municipal Finance Management Act (MFMA), the SDBIP provides effect to the IDP and budget of the municipality. The SDBIP serves as an agreement among the management, council and the community through the articulation of goals and objectives set by the council as measurable results that can be executed by the management within a year. This simply means that there is a lack of efficient mechanisms or frameworks in place to guide and facilitate the implementation of the ongoing projects and programmes. That is fixated on facilitation of IDP projects and programmes.

Municipalities are in need for analytical capacity to anticipate and manage the increasingly challenges. The introduction of this report provided that there are challenges related to implementation and monitoring frameworks to guide and facilitate the ongoing implementation of the projects and programmes put forward by the municipal IDP. There is a need for municipalities to formulate a mechanisms and frameworks to guide and facilitate their projects and programmes in an effort to achieve sustainable development.

Coetzee (2014: 3) indicates that “Most local authorities have sufficient measures in place to measure the performance of the officials in the municipality, through KPA’s and performance management procedures, not enough is done by municipalities to measure and monitor the actual performance of identified projects as well as the impacts and outcomes of such projects.”

### 1.1 Background and rationale

In an attempt to appreciate the integrated development planning systems and implementation monitoring and frameworks, this report provides several, preamble to, and environment of the performance management procedures and the characteristics thereto relevant to the IDP. In the equivalent milieu, the report provides an analysis on performance management systems frameworks used by the international Local Government. The report also provides an analysis on the South African context of frameworks that guide and facilitate the implementation of projects and programmes put forward by the municipality’s IDP and SDFs. As a final point, the report provides a model, a framework that can be used by municipalities to monitor performance and managements of projects as identified by the IDP in their implementation.

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To carry out the object of the study appropriately ten South African municipalities were selected, based on the Auditor General South Africa (AGSA) outcome in the 2012-2013 financial year. The study only focusses on municipalities that obtained a clean audit outcome from the 2012-2013 financial year. The municipal demarcation board indicates that the composition of the local government; in that it consists of eight metropolitan municipalities, 44 districts municipalities and 226 local municipalities tallying up to 278 municipalities. The Constitution (Act, 108 of 1996), chapter 7, section 155, describes the establishment of municipalities in defined categories (RSA 1996).

## **2. LITERATURE REVIEW**

Literature review is a study that offers an outline of learning in a certain field through analysis of trends and deliberations (Mouton 2009:179). According to Mouton, reasons for reviewing the existing scholarship include; ensuring that one does not simply provide a replica of a preceding study; to ascertain what the most current and commanding hypothesizing about the subjects is; and finally to establish out what the utmost extensively recognized experiential findings in the field of study are.

### **2.1 Literature sources**

An extensive literature exploration was undertaken, which includes a variety of reliable and verified reference material. The sources materials include books, paper based journals, electronic journals, conference proceedings and websites of the international and national academic institutions, websites of international and national municipalities. Peer reviewed and accredited journals were sought wherever possible. The bibliographies of journal articles provided rich sources for further investigation. This section of the study reviews some of the legislations that were developed to enhance and direct service delivery and accountability in the in South African Municipalities.

### **2.2 Previous Studies on the subject**

According to Neely (1999: 15), it is indicated that during the periods of 1994 and 1996 3615 articles of performance measurement were published, 1996 books one book appeared per week in the United States. This part of the Literature review provides studies that carry the similar subject matter.

Mol and De Kuif (2004:9), studied performance management of twelve government institution. Investigating on the role of performance indicators in performance management. A distinction between actual responsibilities and intended responsibilities of managers is made in the study. The scholars also indicate that the actual responsibilities are those which are implemented in management control and that the indented responsibilities are expressed in performance measurement.

Letsoalo (2007), measured performance administration in government with more focus on health department workers. The scholar explored attitudes of employees towards performance management systems. The scholar designates that for performance management system to prosper it requires accountable, convenient and supple personnel and leaders with an indulgent of the system and widespread term forfeits for adverse actions.

Jantjes (2008) undertook a study analysing organisational performance management in the City of Cape Town. The scholar put focus on the enactment of the provisions for performance administration structure, as stipulated in the legislations. Much effort is placed on the Balanced Scorecard methodology in that it is highly used in the public sector. The scholar further indicates that organisational performance management cannot be taken out of the context and viewed independently, a more holistic approach need to take,

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Hlongwane (2011), in his research dissertation the scholar investigated the Integrated Development Plan of Kwa Zulu Natal municipality. He assesses the usefulness of IDP as facilitating agent for resource sharing and the impacts of the Performance System. He indicates that the IDP is commendable in its approach of coordinating and integrating development and that it benefits municipalities in providing an operational planning method based on its multi-sectoral planning process.

Motingoe (2011) reviewed performance management system as an implementation tool for integrated development plans reference is made to the Ngwathe local municipality. The scholar indicates the main contests fronting municipalities in South Africa is the need to achieve the development goals and objects contained in the Integrated Development Plans (IDP), the scholar provides that mechanisms are required to determine how municipalities are managing in terms of the services they intend to deliver to their communities and a performance management system is such a critical system

It is important to note the importance of planning approach and the facilitation of projects and programmes. The scholars investigations, and assessments focused on emphasizing the importance of ensuring and putting in place mechanisms necessary for evaluation and facilitation of outcomes and the process towards achieving the desired outcomes.

### **2.3 Public administration performance measurement theory**

According to Poister, (2003:3) “Performance measurement in public administration is not a new idea. Rather, it is an established concept that has taken on greatly renewed importance in the current context of public management” (Poister 2003:4). “Performance management means assessing how well a municipality performs when delivering goods and services to the public” (Wholey 1992:52). Performance measures often include “volume, quantity, efficiency and outcomes of providing goods and services” (Pickrell 2005:5). Calculating assignment and employee productivity remained evidently fragment of the systematic management tactic that influenced government reformers in the early twentieth epoch, and the International City Management Association formed a journal on determining civic actions as early as 1943 (Ridely and Simon, 1943: 56). In the federal government, interest in performance measures ignited when systems analysis processes were brought into the Department of Defense during Kennedy administration, and it spread to other agencies when Johnson administration implemented a planning-programing-budgeting (PPB) system (Dewoolfson 1975; Lyden and Miller 1978:21). Although program budgeting was dropped subsequently administrations, many federal agencies retained a residual interest in its analytical component and the use of performance measures in combination with the budgeting practice (Mowitz 1970; Schick, 1971; Howard, 1973).

### **2.4 Theory of accountability and transparency in local government**

Despite the clear prominence of accountability and transparency in the local government, and the comprehensive literature deliberating and validating the role of information and corruption, there are still few empirical studies of the elements of accountability and transparency. The existing studies have put more focus on the national government. “The context of the local government accountability and transparency are largely neglected, there are very few studies in this research area” (Bertilli 2012:47). While the literature on accountability and transparency is embryonic in local government, it is still in its prime stages. There is a small and scare knowledge and availability of papers that addresses this topic.

Wells (2005: 56) argues that accountability and transparency helps to reduce corruption; they offer improved framework for economic growth and efficiency and development as means of improving local government. Many municipal all over the world have been faced with the challenge of corrupt officials and

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corrupt service providers, improper facilitation systems of accountability and transparency has managed to reduce this gruesome activities. Accountability and transparency enhance the incentives to establish connections for corruption by improving the information about the identities of the key policy makers.

## **2.5 Sustainable development indicators**

Sustainable development indicators are not a new legislation requirement or concept. They were initially presented at Rio de Janeiro at the National Conference on Environment and Development, where “government and non-government organisations were called to develop indicators of sustainable development that can provide a solid basis for decision-making at all levels” (United Nations 2007:5). Sustainable development indicators attempts to quantify sustainable development in its entirety acknowledging the multi-dimensional and cohesive landscape of sustainable development. Globalisation makes it progressively essential to acknowledge the international dimensions of sustainable development. The Brundtland Report (1987:12) states that to “achieve global sustainable development, more work must be done in the field of measuring the international aspects of sustainable development”

## **2.6 International Cities performance management systems**

The part of the research reviews the international context of performance management frameworks that are implemented successfully to facilitate the use, supply and maintenance of services and used to improve quality resource allocation with profound participation of the citizens encompassing strategic planning and promotion of sustainability of performance management and accountability systems, and that encompasses a degree of sustainable development indicators Seven city performance management and measurement system were reviewed as part of the literature review.

Firstly, focus was set on the two American states. The selection of the two states was based on the King County Auditor’s office report 2013, which examined and reviewed performance management best practices in the Unites States of America. The two states include the Maricopa and the Maryland. Canadian municipality performance measurement system reviewed was of the City of Toronto in the state of Ontario based on significant and economic role of the municipality. In China, the City of Fujian was reviewed based on its recent drastic economic growth and the city ability to intensively facilitate development and investment. The Republic of Philippines LGPMS (Local Government Performance Measurement System), was reviewed based on the ability of the system to efficiently assist government to evaluate service delivery and the fact that the system is highly recognized all over the world. Lastly, the City of Vancouver in British Colombia’s benchmarking was reviewed.

### **Maricopa in the State of Arizona (United States of America)**

Maricopa is one of the mostly bestowed cities for its performance management system. The city of Maricopa adopted the Managing for Results Performance Management System. Maricopa is city governed by Republicans. The city is positioned on the south-central part of the United States of America in the state of Arizona. The Maricopa Strategic Plan 2011-2015 (adopted in 2005) systematizes extensive period vision into 10 planned primacies and 29 planned areas. Services provided by the city are beset to undertake premeditated urgencies in one of the 10 precedence areas. The 29 planned goals are carefully chosen by the senior government team founded on valuation of the inhabitant review and discussions by the county’s party-political supremacy.

Maricopa moreover practices the Performance-based programme management which comprises of the three mechanisms that include the performance-based project distribution, and system monitoring and reportage.

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Application of performance-based programme differs across agencies, it connects objects and activities to comprehensive nationwide goals; performance-driven venture ordering tactic to long-range of planning. The City of Arizona's Department of Transportation in the US practices a performance-based programme distribution course in response to governmental mandates.

### **City of Maryland (United States of America)**

Maryland Department of Budget and Management through the Interagency Steering Committee circulates a Managing of Results system and publishes a Comprehensive Plan that bring an extensive dictate aimed at refining and creating Maryland resources and services to be most cost effective. The Department also screens the results in key performance areas recognized in the Comprehensive Plan to measure development and improvement of Maryland is making in dealing with imperative dogma subjects and resourcefully resolving complications that alienate Maryland citizens.

### **City of Toronto Municipality (State of Ontario Canada)**

The City's performance measurement and benchmarking is an exertion ran and systematized through the City's manager's office linking the personnel in all city's sections and major city's utilities. Administrators work cooperatively through immediate municipalities in Ontario, Canada and world cities. Toronto has embraced ingenuities like the OMBI (Ontario Municipal Benchmarking Initiative), OMBI is an ingenuity devoted on investigating municipal performance in 36 diverse service dimensions and requires consistent practices to safeguard the comparability of results. Toronto also practices the Municipal Performance Measurement program (MPMP), a provincially authorized programme that entails all Ontario municipalities to overtly report quantified competence and efficacy measures. "The Municipal performance Measurement program requires Ontario municipalities to measure and report to taxpayers on their service delivery performance" Republic of Canada 2007:7). MPMP presently includes of 54 performance measures in twelve rudimentary municipal areas. The programme covers a vital course of unfolding and cathartic actions that are pertinent to boroughs and the civic. The programme embraces both efficiency and effective methods.

### **China**

In China Performance management has been identified as an integral part of the administrative reforms since early 1980. Walker and Wu (2010: 26) indicates that performance management in China has been used across all direction, this includes the upward form the point of technocrats and bureaucracy in an attempt to give politician information politician then disseminates the information to the administrators to account, performance management in china is also used outward to enable citizens to question politicians and the administrators. The structure of the Chinas government indicates that "performance management is not only focused on service performance but concerned with maintaining a stable harmonious society and promoting economic and sustainable development" (Walker & Wu 2001:37).

In contrast view by the scholars indicates a division in that a group of scholars Chou (2008: 15); Christensen, Dong, Caulfman, (2006: 36) find that china's performance management has adopted international practices that is orientated in an effort to build a citizen oriented government. Chang, & Yu, (2010:55) argue that performance management system in china is intended to enhance and control Chinese governments, with it is characterized with limited if non concern for accountability or citizen satisfaction.

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## **Fujian (Chinese Province)**

Fujian adopted a comprehensive evaluation of the local government and its departments to enable them to achieve their responsibilities and management activities, efficiency, effectiveness and effects, in order to increase administrative competence, improve work ethic, developing a transparent, clean, efficient modern government. This exercise is done and developing efficiency available for attention of public participation from all directions. The Fujian performance practice is characterized with the following features; firstly, the formation of institutions, systems of innovations. Fujian city set up a leading group office efficiency, and leading group office, in relation to the requirements of the office efficiency assessment work. This organized prearrangement is mechanisms intended to enable professional assessment on standardized basis.

The second feature of the Fujian model includes, the main diversity, of a comprehensive evaluation. This is the internal evaluation, which allows for public comments, and stakeholders which for allows for the enhancement in evaluation of the credibility and accuracy; indicators covering economic, social, environmental, cultural, and other aspects of local government itself, highlight long-term development strategy and building and building a harmonious society and sustainable development.

## **Philippines LPGMS (Local government performance measurement system)**

Local Government Performance Measurement System (LGPMS), was first conceptualized in 1982, it was previously known as the local productivity and performance measurement system (LGPMS). The system enables municipalities and cities to determine their state of performance and development using governance and development indicators. The system was introduced to deal with service delivery performance by the Minister of Local Government in the Philippines. The system was designed to generate information benchmark on service delivery capabilities and limitations and for allocation of budgetary. The system gained momentum in the late 1984, however it was discontinued due issues relating to infringements on local government decision making.

On its revival in the new millennium, it was advanced to provide the ability to assess performance and the state of development using a set of indicators which are stated as questions. It was designed to be a self-assessment, since local government officials and bureaucrats themselves must account. A synthetic intellect on the clarification of results is entrenched in the system. A benchmark and surmounting system are used to measure performance and state of development. External and internal Benchmarks are used. External benchmark is exploited to relate and assess local government performance and state of growth based on customary, national average or targets. Internal benchmark is used to assess current annual performance as compared to performance in earlier years.

## **City of Vancouver (British Columbia)**

The City of Vancouver is a benchmarking municipality, to ensure effective government organization. The city strives to continuously improve quality through a continuous assessment. The city also uses the following systems of facilitation of development; the Reporting Service Metrics, including the main three tools of disseminating information on service delivery and accountability which includes the CPR the Community Performance Reporting, the annual performance snapshots and the Employee Performance Appraisals. The Reporting Service Metrics is meant simplify public reporting purposes; it includes reports 292 on the metrics for 13 departments and 73 services. The system enables the city's administrators to use the metrics to show the quantity (volume of effort), quality (efficiency and satisfaction) and outcomes of services. The metrics encompasses detailed, accurate information of services provided.

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### 3. RESEARCH OBJECTIVES

- Assess municipalities in terms of the municipality's sustainable development indicators;
- Assess performance management system in terms of projects implementation;
- Attempt to build a model framework and to address the gaps and the "problem".

#### Research questions

- What are the sustainable indicators is used by municipalities around the world and South Africa?
- What is done by progressive municipalities around and in South Africa to measure and monitor performance and impacts of development projects, and how is accountability and transparency measured?
- What is done to implement the efficient and effective use of sustainable indicators in South African municipalities?
- How can the general community contribute to such a process?

### 4. APPROACH & METHODOLOGY

This chapter labels the investigation design and approach including the population, data collection and testing therefore to ensure reliability of the data. The research combines policy analysis, documentation review, it aims to get the inside the world of program contributor and to understand, describe and explain the challenges facing developmental municipalities in South Africa in terms of the implementation of projects and programmes identified by the city's IDP and SDF's taking into consideration the systems and tools used to measure performance of these projects. Specific reference is made to the 10 developing municipalities Gauteng; Sedibeng District Municipality, Mpumalanga; Ehlanzeni District Municipality and Steve Tshwete Local Municipality, Northern Cape; ZF Mgcawu District Municipality, Kwa Zulu Natal; Msinga Local Municipality, Ntambanana Local Municipality and Okhahlamba Local Municipality, and Finally, from the Western Cape; City of Cape Town Metropolitan Municipality, West Coast District Municipality and Langeberg Local Municipality.

#### Population sample, and Target

A universe is defined as all potential subjects who possess the attributes in which the research is interest whilst a population limits the boundaries of the study unit to those who possess specific characteristics (Strydom & Venter, 2002: 198).

As indicated in the introduction that study seeks to establish that systems in place to implement the IDP identified projects and programmes and methods used to measure their performance, hampers municipal efforts to drive and execute municipal objectives and priorities successfully. The study focuses on the ten developing South African municipalities.

#### *Western Cape Province;*

- City of Cape Town Metropolitan Municipality (Category A)
- Langeberg Local Municipality (Category B)
- West Coast District Municipality (Category C)

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## KwaZulu Natal Province

- Msinga Local Municipality (Category B)
- Ntambanana Local Municipality (Category B)
- Okhahlamba Local Municipality (Category B)

## Mpumalanga Province

- Steve Tshwete Local Municipality (Category B)
- Ehlanzeni District Municipality (Category C)

## Northern Cape Province

- ZF Mgcawu District Municipality (Category C)

## Gauteng Province























- Sedibeng District Municipality (Category C)

These municipalities are evaluated against the best performing international cities. In terms of the systems put in place to measure performance of projects and programmes The criteria for the selection of the sample were the following; The municipality must have obtained a clean audit outcome in 2012-2013 financial year; Accessibility and availability of information; Possibility of possessing a credible IDP and SDF's; and the possibility of possessing a performance management system;

## 5. RESEARCH ANALYSIS & FINDINGS

This Chapter provides an analysis on the selected 10 South African municipality's IDP and SDF sustainable development performance indicators. The selected municipalities are evaluated on how the projects and programmes put forward by the municipal IDP and SDF implemented and facilitated, an investigation was undertaken to identify if municipalities have frameworks to guide and facilitate the ongoing execution of the identified projects and programmes and the level of the involvement and engagement of the community and stakeholders. This chapter provides assessment and evaluation of municipalities Performance management system used in obtaining desired objectives and facilitation of on-going or completed projects, programmes, and policies, designs, implementation and results. The aim is to determine the relevance, efficiency, effectiveness, impact of used by the selected 10 municipalities' performance management systems, the impact of sustainable development indicators, and the facilitation of projects and programmes.

Table 1: Spatial transformation analysis

Spatial transformation											
Municipality	CT	L	W. Coast	ZFM	MSI	ST	EHLA	OKHA	NTAM	SEDI	
<b>Sustainable development Indicators</b>	<b>PROJECT: Infill developments</b> (As identified by the municipalities IDP's)										
Increased social cohesion											
Overcoming social											

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segregated developments										
Inclusive economic growth and investment.	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓
Smart city network	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓
Competitive city	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓
Safe city	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Equal distribution of resources	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
Increased public involvement	✓	✗	✗	✗	✗	✗	✗	✗	✗	✓
Increased Diversification	✓	✓	✓	✗	✗	✗	✗	✗	✗	✓

Source: Author, 2015

### Climate and energy resilience

Climate and energy indicators are indicators of resource efficiency, however they are largely ignored, they are either intentionally ignored or just generally absent from municipalities performance management systems. However, the following municipalities have incorporated this objective are the City of Cape Town, Sedibeng, ZF Mgcawu and Ehlanzeni Municipalities. Msinga Local Municipality did not show any progress with environmental considerations and plans.

Table 2: Climate and energy resilience analysis

<b>(Municipal Objective) Climate and energy resilience</b>										
Municipality	CT	L	W. Coast	ZFM	MSI	ST	EHLA	OKHA	NTAM	SEDI
<b>Sustainable development Indicators</b>	<b>PROJECT: Solar geyser installations</b> (As identified by the municipal IDP)									
Reduced electricity demand	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓
Improved energy use	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓
Increased recycling	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓

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Increased renewal energy										
Reduced blackouts										

Source: Author, 2015

### Sustainable economic growth

This objective deals with the acceleration of growth and expansion of job opportunities to provide decent and productive communities is an integral part of municipal performance indicators. It is essential for municipalities to create conditions which under an economy can grow. Municipalities have the responsibility to see that available opportunities are properly utilized at the local level. South African municipalities, which receive various grants and investment programmes, for this purpose municipalities in their large number have identified economic growth as a sustainable development indicator.

Table 3: Sustainable economic growth analysis

(Municipal Objective) Sustainable economic growth										
Municipality	CT	L	W. Coast	ZFM	MSI	ST	EHLA	OKHA	NTAM	SEDI
<b>Sustainable development Indicators</b>	<b>PROJECT: Investment hub/centre/Node development</b> (As identified by the municipalities IDP)									
GDP per Capita										
Investment share in GDP										
Balanced trade of goods										
Skilled community through skills development										
Affordability										
Cost saving										
Women empowerment										
Improvement of PDA's										

Source: Author, 2015

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### **4.3 Evaluation of the 10 (ten) South African municipalities performance systems.**

The previous section of reporting provided evaluation and analysis of sustainable development indicators used to measure and monitor performance in rural and urban municipalities. On a practical level one needs to understand that for the identified projects and programmes and objectives to be achieved. Subsequently, performance management systems are implemented as an attempt to facilitate the ongoing projects and programmes identified by the respective Integrated Development Plan.

This section of the report provides findings on performance management systems used by the selected 10 (ten) municipalities. This section provides findings on methodical also impartial valuation of on-going or projects, programmes and policies, the designs, application and results. The ambition is to define the bearing and fulfilment of objectives, development competence, efficacy, influence and sustainability. The appraisal provides information that is credible and reliable and a true reflection of South African municipalities' performance management system.

Based on the analysis the studied Municipalities did include key performance indicators in the integrated development plans, as prescribed by section 43 of the Municipal Systems Act, 32 of 2000, and regulation 10 of the Municipal Planning and Performance Management Regulations, 2001. Municipalities did not include annual performance in the integrated development plan, as prescribed by section 26(i) and 41(1)(b) of the Municipal Systems Act, 32 of 2000 and Regulations 12 of the Municipal Planning and Performance Management regulations, 2001. However, the challenge is that the selected performance indicators are generic and not entirely linkable the sustainable development performance indicators. The City of Cape Town and the Sedibeng municipality are leaders in incorporating development performance indicators in their planning.

Projects and programme conceptualization is a challenge for many municipalities, like the Ehlanzeni District Municipality, ZF Mgcawu District Municipality, Steve Tshwete Local Municipality and Okhahlamba Local Municipality. There is a need for municipalities to ensure projects are designed, planned comprehensively and integrated aligned with the sustainable development indicators. All ten (10) municipalities indicate their objectives in their respective IDP's, however they municipalities ignore including indicators in the IDP's, this means objectives cannot be measured, which creates challenges for facilitation of on-going projects and programmes.

#### **Sustainable development performance indicators, and performance management systems.**

The analysis revealed that there is no correlation between the sustainable development indicators and performance management frameworks. Performance management systems are meant to ensure that municipalities achieve their desired objectives, however there in link between sustainable development performance indicators and performance management systems, in that performance management systems, dwell greatly on individual performance as opposed to projects and projects facilitation.

The analysis revealed that the lack of correlation between sustainable development indicators and performance management systems indicates that there is no facilitation to ensure that the identified programmes and projects are implemented in such a way to ensure sustainable development.

## **6. RESEARCH CONTRIBUTION**

The research should contribute towards assisting municipalities in South Africa to formulate, design and adopt a framework relevant for selection of development performance indicators measuring performance

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efficiently and effectively in the implementation of IDP and SDF identified programmes and municipal projects.

## **7. RESEARCH LIMITATIONS**

The selection criterion of municipalities was based on the audit general outcome for 2012-2013 financial year.

## **8. DISCUSSION AND CONCLUDING REMARKS**

The analysis indicated that while municipalities incorporate key sustainable indicators in terms of section 43 of the Municipal Systems Act, 32 of 2000, and regulation 10 of the Municipal Planning and Performance Management Regulations, 2001. Municipalities are still using generic and indicators that are not measurable efficiently and appropriately, which contributes to the challenges of adequate service delivery in the local government. The need for an effective system to facilitate and monitor project and programmes within the context of public services in the municipalities is evident, in order to accelerate socio-economic development. The system that provides valuable information to the municipalities, government, citizens and other stakeholders, on institutional success or failures and draw attention where interventions are required.

Municipalities' efforts to develop and implement effective performance management against sets of sustainable development indicators have been difficult and in some cases it has caused problems in facilitation of projects and programmes identified by municipalities IDP's. Municipalities need to be productive, competitive, inclusive, progressive, accountable and transparent in their planning most significantly in the facilitation of the IDP and SDF projects and programmes. This report provides a solution for municipalities, the Sustainable development Performance framework, attached as Appendix: 3. will contribute towards municipalities to appropriately select a set of sustainable development indicators in their planning.

## **9. REFERENCES**

City of Cape Town Metropolitan Municipality, Integrated Development Plan. 2012/2017.

City of Cape Town Metropolitan Municipality, Spatial Development Framework, 2012.

Coetzee, P.J.v.V. (2014). Study Guide: Mini-Dissertation: Project 1. Pretoria: University of Pretoria.

Dewoolfson, 1975; Lyden and Miller, (1978). Evaluation of Performance management in Local government, United States: California.

Ehlanzeni District Municipality, Integrated Development Plan, 2012/2017

Ehlanzeni District Municipality, Spatial Development Framework,

Hatry, Harry P. 1999. Mini-Symposium on Intergovernmental Comparative Performance data. Public Administration Review (59(2): P. 101-4

Hlongwane, T. (2011). Evaluating the Integrated Development Plan as a performance Management System for a Selected Kwa-Zulu Natal Municipality. M.A. Thesis, Durban: University of Technology.

Jantjes, A. (2008). An Analysis of Organisational Performance Management in the City of Cape Town; from legislation to implementation. M.A. Thesis, Stellenbosch: University of Stellenbosch.

### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9



Kennerley, M. & Neely, A. (2002). "A Framework of the Factors Affecting the Evolution of Performance Measurement Systems," in *International Journal of Operations & Production Management*, 22(11): P. 1222-1245.

Langerberg District Municipality, Integrated Development Plan, 2014/2015

Langerberg District Municipality, Spatial Development Framework, Draft, 15 September 2014

Letsoalo, M., (2007). An evaluation of performance management in the public service. M.A. Thesis, Auckland Park: University of Johannesburg.

Pickrell, S.M. (2005). *Trying Together Performance-Based Program Development and Delivery*. Cambridge Systematic, Inc

Poister, T. (2003) *The Evolution of Performance management Systems in the United States: California*

Mol, N. & De kuif. (2004). *Performance Management in Dutch Central Government International Review of Administration Science*. P.1.

Mowitz, 1970; Schick, 1971; Howard, (1973). *Complexities and Evaluation of performance evaluation and monitoring*. United States: Ohio.

Motingoe, S. (2011). *The Performance Management System as implementation tool for integrated development plans: The case study of Ngwathe Local Municipality*. M.A Thesis, Potchefstroom: University of North West.

Mouton, J. (2009). *Monitoring and Evaluating educational interventions*. Paper presented at the National Conference of the international association. 11-13 February 2009, Cape Yacht Club, Cape Town South Africa. P179.

Msinga Local Municipality, Integrated Development Plan, 2012/2017.

Msinga Local Municipality, Spatial Development Framework, 2005

Ntabanana Local Municipality, Integrated Development Plan, 2012/2017.

Ntabanana Local Municipality, Spatial Development Framework, 2012.

Okhahlamba Local Municipality, Integrated Development Plan 2014/2015, Draft, 03 March 2014.

Okhahlamba Local Municipality, Spatial Development Framework, Draft February 2009.

Republic of South Africa. 1996. *Constitution (Act 108 of 1996)*. Pretoria: Government Printer.

Republic of South Africa. 2000. *Local Government: Municipal Systems Act, 2000 (Act 32 of 2000)*. Pretoria: Government Printer.

Ridely, C.E., & Simon, H.A. (1943). *Measuring municipal activities: A survey of suggested criteria appraising administration*. Chicago: International City Managers Association. P. 56.

Sedibeng District Municipality, 2003 Integrated Development Plan: Analysis Report

Sedibeng District Municipality, Integrated Development Plan. 2012/2017

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Steve Tshwete Local Municipality, Integrated Development Plan, 2012/2017

Steve Tshwete Local Municipality, Spatial Development Framework, 2010.

Strydom, H., & Venter 2002. Research at grass Roots: For the social science and Human services professions. 2nd ed. Pretoria: JL van Schaik Publishers.

Walker, R., & Wu, T. (2010). Performance management in the public sector. Towards sustainable development efficiency. The international journal of public sector management, 12(2). P.26.

Weiss, D. (1981). High-performance: Transforming local government to competitive advantage, U.K. John Wiley & Sons. P.32

Wells, Z.V. (2005). Dynamics of the balanced scorecard and project implementation. A comprehensive Guide. London: Sage Publications. P.56.

West Coast District Municipality, Integrated Development Plan 2012-2016, May 2012.

Wholey, Joseph S., and Harry. Hatry. 1992 . The Case for Performance monitoring. Public Administration Review 52(6) 604-10

ZF Mgcawu District Municipality, Integrated Development Plan Final, 2012/201

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

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# A Lack of Stakeholder Buy-In Derails an Urban Development Zone Tax Incentive: The Case of Mangaung, South Africa

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## Abstract

The South African Revenue Services rolled out the Urban Development Zone (UDZ) tax incentive for property developers in 2009. This incentive, applicable to, the erection or improvement of buildings in the inner city, among others, should be instrumental in introducing low-income families to the inner city. Inner city residents have an advantageous access to economic opportunities (Todes, 2011), their time spent travelling is short and therefore their daily commutes are more affordable. The expectation was that this incentive would promote and stimulate urban renewal projects in the inner city among private sector developers but this did not happen in the Mangaung Metropolitan Municipality. No developers in Mangaung made use of this opportunity that could have resulted in the provision of housing for low-income families within walking distance of urban opportunities (Mojaki, 2014; Olivier, 2014).

The aim of this article is to assess the lack of interest among developers in the UDZ incentive in Mangaung. ‘Simplified planning zones’ (SPZs) was a drastic attempt to turn planning in the United Kingdom towards neo-liberalism. SPZs did away with discretion by introducing a combination of plan and permission unlike other systems where decisions on development control are based on merits and plans do not automatically grant consent (Allmendinger, 2009). Unlike the SPZs, the UDZ is a tax incentive, and not a combination of plan and permission, where decisions on development applications are based on merit. In regard to Mangaung, the questions may be asked why the developers did not buy in and whether this one-size-fits-all national policy was the right one for this municipality (Speak 2014). It is argued in this paper that the absence of collaborative relationships between governments and stakeholders will contribute towards project failures, as stakeholder buy-in is imperative to such projects. Qualitative interviews were conducted with six local government officials and eight of the leading private developers of low-income housing in Mangaung. These respondents were selected purposively.

## Key Words

Policy Implementation, Institutional Capacity, Stakeholder Cooperation

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## 1. INTRODUCTION

The South African influx control and pass laws denied Black citizens permanent relocation to urban areas until these laws were abolished in 1986 (Mojaki, 2015). The first non-racial, democratically elected South African government introduced the 1994 Housing White Paper to address these injustices of the past at a national level (South Africa. Department of Housing, 1994), while also adhering to the Constitution of the Republic of South Africa. The Constitution (Act No 108 of 1996) Section 26(1) states that it is every South African's right to have access to adequate housing (South Africa 1996), yet in the city of Mangaung alone, excluding the remainder of this metropolitan municipality, the housing backlog for low-income families was determined at 58 820 houses in 2011 (Mangaung Metropolitan Municipality, 2013-2014). The housing supply system that is supposed to provide houses to them is failing these people and driving them to homelessness (Speak 2004). These families qualify for the once-off government-subsidised houses for low-income households with a joint monthly income of R3 500 or less, as encompassed in the Housing White Paper (South Africa, Department of Housing 1994). Unfortunately, this policy resulted in a mass delivery of housing on the periphery where land is less expensive, but far from employment opportunities.

Section 2 of the South African Housing Act (Act No. 107 of 1997) stipulates that all three spheres, namely local, provincial and national government should prioritise the housing needs of the poor and must provide the widest choice possible of housing and tenure options (South Africa. Department of Housing, 1997). Mangaung, like most other African cities, is fragmented (Harrison, Todes & Watson, 2008) and fragmented cities burden households, as well as the economy with high transport and infrastructure costs. Although urban densities have increased on a national level since the African National Congress (ANC) government came into power in 1994, very little progress has been made in reversing the apartheid geography of spatial exclusion (South Africa, Department of the Presidency, 2012). In this regard, the Breaking New Ground Plan for the Development of Sustainable Human Settlements emphasises the need for better-located housing, the integration of housing for mixed-income families and mixed-use zonings (South Africa, Department of Housing, 2004). It is mandatory for each municipal council in South Africa to adopt an Integrated Development Plan (IDP) that aligns the resources and capacity of the municipality with the implementation of this strategic plan of the municipality (South Africa, 2000). Municipalities are also obliged to compile Spatial Development Frameworks (SDFs) (South Africa, 2000), a tool to achieve the preferred spatial form of the municipality, as a chapter of the IDP. According to the IDP of Mangaung, the primacy of the inner city would be strengthened through regeneration, shaping the city to enhance integration to the advantage of all residents of the municipality (Mangaung Metropolitan Municipality 2013-2014). Deteriorating inner-city areas are on the increase in South African cities and in several other countries. Internationally, governments apply tax measures to encourage efforts aimed at regenerating these declining urban areas. The purpose of these incentives is to make problem areas attractive to developers, promoting urban renewal. In 2003, the South African Minister of Finance introduced this tax incentive to Mangaung and fifteen other designated inner cities in an attempt to promote investment within areas that were in need of restoration and elevation. The incentive by the South African Receiver of Revenue (SARS) is monitored by both SARS and the National Treasury. The incentive became operative once it had appeared in the 2003 Government Gazette (South African Revenue Service, 2009).

When the UDZ tax incentive is claimed, the taxable income of the taxpayer is reduced. The UDZ allowance is applicable in respect of the erection, extension, improvement or addition to low-cost housing or to the purchase of such a building or part of a building, of at least a floor area of 1 000 m<sup>2</sup>, directly from a developer. This incentive was initially available until 31 March 2009, but was extended to 31 March 2014. Sectional title units also qualify for the UDZ allowance if the unit is located within an urban development zone (South African Revenue Services, 2009). These identified areas are well serviced by different modes of public transport and able to carry dense populations. The UDZ incentive is applicable to commercial and residential buildings as well as housing units for low-income families. The UDZ is an area delineated by

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the municipality, the details of which were published in the *Government Gazette* (South Africa, 2004). By 2006 fifteen of the sixteen selected municipalities, including Mangaung, that had had the opportunity to demarcate UDZ areas, had made use of the opportunity (South African Revenue Services, 2009).

The problem is that private developers did not utilise the incentive provided by the Mangaung Metropolitan Municipality (MMM) to regenerate low-income residential buildings. It was thus the aim of this study to determine why the available tax incentive was not utilised optimally in the process of the residential regeneration of the Central Business District by the MMM and private developers. The rest of the paper will be structured as follows: a short background will introduce the UDZ incentive, in a following section literature on collaborative planning will be unpacked to be followed by local governance and policy implementation, this section will be followed by the objective of the study. In section five the approach and methods will be discussed, followed by the findings, contribution, limitations and a discussion and conclusion section.

## **2. BACKGROUND**

The UDZ incentive is generally promoted by the respective municipalities, which have an obligation under section 13 (6) (e) (III) of the Income Tax Act (1962 – Act No. 58 of 1962, South Africa 1962) to implement significant physical measures to support the regeneration of an UDZ. This includes partnership agreements with the business community for the promotion of urban development (Public sector 1, 2014). Generally, for the UDZ incentive to function optimally, the municipality has to take the necessary steps to ensure that this incentive is fully utilised. Should it be found to be to the contrary, the Minister has the option of withdrawing the notice of that specific municipality's UDZ (Public sector 1, 2014).

## **3. LITERATURE REVIEW**

The theoretical orientation of this paper will focus on collaborative relationships between governments and stakeholders. Theories can be viewed as the forming of a discourse; ideas such as development zones are an example of a discourse and many theories are products of their time (Allmendinger, 2009; Friedmann, 2011). The post-positivistic shift of the past three decades is from over-arching theories on the role of power and discourse in theory development (Allmendinger, 2009). For relativists, the merits of theories are based on the values and interests of the community that holds them and in planning, relativism embodies postmodern planning (Allmendinger, 2009). Friedman (2011) views post-modernism as the role of the government diminishing while the beliefs of the corporate world which accentuate market competition lead the way. Normative theory, putting forward how to achieve a world that ought to be, could include communicative or collaborative planning approaches, among others (Allmendinger, 2009). Friedmann was a precursor of the communicative planning theory. While collaborative governance was spreading through the United Kingdom, different partnerships in community development spread through other parts of the world, including North America (Healy, 2006). Healy advocates that planning and policy-making should be based on interactive social processes (Healy 2006). The UDZ incentive was not compiled in this manner, which may be one of its major shortcomings, especially in the case of Mangaung. Urban planning is, after all, about the city of the future and its impact on people (Hillier & Gunder, 2003), although planning with a focus on the quality of places was not a priority in this process (Healy 2006). In the South African informal settlements, the public spatial environment is often found to be more responsive to human needs because of interactions and negotiations between neighbours, resulting in the establishment of close community ties and informal social support networks (Dewar, 2008).

David Harvey (2003) states that the right to the city is the right to change the city after one's heart's desire and utopian plans are essential for action. However, planning did not succeed in transforming the apartheid cities in South Africa. These towns and cities may be spatially more divided today than before 1994 because

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of market forces and growing economic inequalities. As our society is dictated by the accumulation of capital and the market (Harvey, 2003), the lowest-income families are still found on poorly located land, mostly because land on the periphery is less expensive (Harrison, Todes & Watson, 2008).

Neo-liberalism, a market-orientated approach to development (Marais & Ntema, 2013) where state intervention in the economy is minimal, was unreceptive to planning and land management towards achieving certain economic, social and environmental goals (Healy, 2003). Although neo-liberalism is hostile to many aspects of the state and condemns planning as an imperfect product of modernity, it is agreed that a form of land use control is necessary (Allmendinger, 2009). However, 'Simplified Planning Zones' (SPZs) was a drastic attempt to turn planning in the United Kingdom towards neo-liberalism. Governments use fiscal incentives to direct development to a certain area in a city (UN-Habitat, 2009). SPZs did away with discretion by introducing a combination of plan and permission, unlike other systems where developmental control decisions are based on merit and plans do not accord consent (Allmendinger, 2009). The fiscal incentives often go hand in hand with the relaxation of certain planning restrictions in the specified area. Such zones permitting certain uses do not adhere to the customary planning regulations (UN-Habitat, 2009). Healy (2007) asks how planning systems fit into these interventions and where the planners are in such developments.

According to Watson (2009), neither communities nor the market will solve urban challenges and he proposes a powerful government where the poor can make their voices heard. Internationally, innovative concepts exist to address the main challenges of this century and remove modernist systems of urban planning, systems that are still the main approach in the global South. Although the implementation of new urban processes and acts to bridge the gap between formal and informal urban practices should be applicable to the context of the global South (Watson, 2009), Todes (2011) agrees that it is important that plans are locally appropriate while addressing social context. The implementation of plans should ideally be a process of negotiation and compromise (Healy, 2003). Planning should be an interactive process, hence, the terms Collaborative Planning and Communicative Planning, resulting in the enhanced qualities of places that are socially inclusive and just. Planners should assess the impact of interventions on people and be able to understand the local dynamics and context (Healy, 2003). Multiplicity is an important quality of urban life and should not be ignored in governance strategies. The attention of governance should be focused on the qualities of place of urban areas and deliberate attention should be paid to interventions when shaping place qualities (Healy, 2007).

Patsy Healy also (1998) asks if governments have the capacity to facilitate the required improvements necessary to achieve places of quality. She continues that an essential part of such capacity is the characteristic of the culture of municipal policy. Collaborative methodologies result in cooperation among stakeholders in policy development and delivery (Healy, 1998). Where urban governance in Europe was top down after the Second World War and policies were developed at national level, this Fordism approach has changed and local governments were pressured to become entrepreneurial, in addition to improving the social and environmental qualities of cities; impossible to achieve without private sector partners (Healy, 1998). Therefore, collaborative relationships with stakeholders should be pursued to generate a culture of urban governance maximising the possibility of humans to flourish (Healy, 1998; Van Horen, 2002). Potential stakeholders can be identified and asked how their voices could be heard during the policy process. This would also contribute towards the building of 'constitutional capacity'. The latter combines social capital and mobilisation capacity, together with knowledge of resources (Healy, 1998).

In Sri Lanka, a participatory approach aimed at social empowerment was successfully applied to a war-torn area in the Jaffna Reconstruction Project and Van Horen (2002) argues that longer-term improvement depends on the extent to which institutional capacity is built. A challenge to this project was the dependence on financial support from external sources as an ongoing development process might not be sustainable

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once this funding is exhausted. This was addressed by building relational resources based on an understanding of local relationships and institutions. Relationships between this project and the central government were also positive and participatory on a local as well as central government level (Van Horen, 2002).

One of the most recent pragmatic approaches supports partnerships between the government and the market (Jenkins & Smith, 2001). Grindle (1996) has identified administrative state capacity and technical state capacity; the former is the ability to perform administrative functions of economic development as well as social welfare while the latter is the capacity to set and manage policies. The role of the South African government in the procurement of housing for low-income families is to foster an encouraging climate for private sector investment and administrative restructuring to address inefficient housing support systems (South Africa, 1994). A strong central state dominates housing supply (Jenkins & Smith, 2001), while the local government plays a secondary role.

In the United States of America, the Low-Income Housing Tax Credit is the primary federal subsidy for low-income housing. The subsidy is supported by the federal tax code, but administered through state government agencies (Holmans, Scanlon & Whitehead, 2002). In the United Kingdom, the central government allocates a tax incentive, possibly tradable tax credits, for affordable housing to administering bodies in each region (Holmans, Scanlon & Whitehead, 2002). The achievement of these programs is determined by the extent to which housing suppliers will increase affordable housing production as its cost decreases. Procedures perceived as bureaucratic to developers could ensure that public funds are spent responsibly.

In Zambia, a challenge to the supply of housing for low-income families is the local government's lack of resources. It lacks the capacity to deliver services and does not have the capital to upgrade their infrastructure (Gardner, 2007). Research by Hutchison and Johnson (2011) supports their hypothesis that the political capacity of a state has a positive influence on individual trust, while it may have a negative impact in countries where the political capacity is low. It was found in many countries in Africa that elevated institutional capacity is associated with raised levels of trust in the government (Hutchison & Johnson, 2011).

Governments have to build capacity to increase their ability to assist their citizens and to improve governance (Krishnaveni & Sujatha, 2013). When an organisation has capacity it is efficient, effective in applying its resources, able to implement and manage projects and programs and to generate an enabling environment. Krishnaveni and Sujatha (2013) have introduced six steps to build institutional capacity, undertaken to increase the knowledge and competence with which to address poverty or urban renewal. When resources are scarce it is necessary to build on existing capacity; this can be on a macro- or micro-level. A macro-level of capacity produces good governance and strong civil societies, while a micro-level of capacity focuses on the recruitment, training and retention of skilled government (Straussman, 2007).

In South Africa, critique against the private sector taking part in public water services has resulted in requests for the creation of 'public-public partnerships' (PUPs) to improve public services and abolish private sector involvement (Van Rooyen & Hall, 2007). Van Rooyen and Hall (2007) believe that PUPs will guard the public nature of water amenities more beneficially than Public-private partnerships (PPPs) and will ensure better access to water for low-income families, particularly in southern hemisphere countries.

#### **4. OBJECTIVES**

The aim of this paper is to determine why the private developers of low-income housing in Mangaung did

not apply for the UDZ tax incentive that could result in well-located housing for low-income families.

## **5. APPROACH AND METHODOLOGY**

Data was collected by means of qualitative interviews with fourteen respondents. Purposive sampling determined the different members of each group. One group consisted of six public sector officials; namely, two local government officials, one each from the departments of Planning and Human Settlements; two SARS officials; and two National Home Builders Registration Council (NHBRC) officials. The private sector group consisted of the eight biggest private developing companies involved in low-income housing in Mangaung. These companies have to register their projects with the NHBRC and we approached the top eight in terms of number of successfully completed, registered projects. The majority of interviews were conducted at the interviewees' places of work, with the exception of those conducted telephonically in order to save on travel costs and time (Creswell & Clark, 2007).

## **6. RESEARCH ANALYSIS AND FINDINGS**

The responses from the interviewees were as follows: the UDZ incentive should be marketed by those municipalities with an obligation to implement significant physical measures to support the regeneration of the UDZ. This includes partnership agreements with the business community for the promotion of urban development (Public sector 3, 2014). The interviews with both the private and public sectors revealed that no relationships had been cultivated or initiated from either side. The mere existence of a tax incentive is not enough; it requires governmental support. Although the Mangaung Metropolitan Municipality is well aware of the UDZ incentive, very little has been done to create awareness within the private sector. The few private sector developers that were aware of the incentive have been left without governmental assistance (Public sector 2, 5 and 6, 2014).

In Johannesburg, the local government was actively involved in the stimulation of private sector partnerships and collaboration that was central to the success of the UDZ initiative in Johannesburg (Public sector 6, 2014). The UDZ Guide issued by SARS is made available to all its branches and on the SARS website for general public information. Similar documents are also published by the Treasury and projects are undertaken, such as UDZ related workshops and information sessions, which are aimed at the promotion of the incentive (Public sector 3, 2014). However, all the stakeholders have to work together to ensure that the UDZ incentive is well-known and fully utilized (Public sector 4, 2014). Although SARS allows the tax incentive for the UDZ, 90% of the implementation of the UDZ project is delegated to the municipality. The municipality has to oversee reports, requests and the requirements of the UDZ and reports should be provided annually. SARS has not received any development request for low-income residences falling within the Mangaung UDZ. The Mangaung Metropolitan Municipality is extremely slow with the UDZ, especially in terms of the marketing thereof (Public sector 1 & 6, 2014).

One of the respondents from the private sector (Private sector 8, 2014) explained that he had received a brochure at a city council meeting that entailed information about the UDZ. The brochure read that tax incentives would be available for people who develop in the UDZ. This brochure was, however, the UDZ initiative in its totality when it came down to municipal input, 'no one at the city council meetings had ever taken responsibility for the UDZ initiative' (Private sector 8, 2014). One of the respondents from the public sector (Public sector 5, 2014) stated that he had attended many municipal meetings and had never heard anyone mention the UDZ. Further to that, he said that even within the Mangaung IDP there was very little communication about the UDZ as the IDP focus was on condominium development and not on low-income residences.

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One reason for the slow progression of the UDZ can be attributed to Mangaung Metropolitan Municipality not yet assigning an Implementation Task Force (ITF) dedicated to implementing the UDZ. To date, the UDZ incentive has been left without any supplementary initiatives from Mangaung Metropolitan Municipality to help improve the private sector's utilisation of the incentive (Public sector 2, 5 and 7, 2014). A major problem with the UDZ from a private developer's perspective is that the local knowledge base concerning the UDZ tax incentive is almost non-existent. The private sector interviews have revealed that 34% of the interviewees have never heard of the UDZ tax incentive and none of them has ever been invited by the Mangaung officials or council members to discuss or explain the UDZ incentive (Private sector 8, 2014). A reason why the developers of housing (Private sector 1, 2, 3, 4, 5, 6, 7 and 8, 2014) do not utilise the UDZ incentive is that most of the developers do not own any property within the UDZ. The reason for this phenomenon could relate to the impediment that over 50% of all the property within the UDZ belongs to one family (Engelbrecht, 2004:26). Suitable property for sale within the UDZ which could be utilised as low-income residential buildings is scarce (Private sector 1, 2, 3, 4 and 5, 2014). Therefore, the inner city property market in Mangaung has been monopolised by a majority shareholder who inhibits outside developers from entering the property market by securing most of the property for themselves. This might not have been a problem if the majority stakeholders had utilised the UDZ tax incentive to improve the derelict condition of their buildings. The outcome of this is that large buildings that could have been restored by developers and utilised as low-income residences are now left to become even more dilapidated over time. This phenomenon has been exacerbated by some owners that have adapted to the current slum-like conditions and clientele who do not seem to care much about the state of the buildings they live in as long as they are affordable and close to their places of work.

One of the public sector respondents (Public sector 2, 2014) emphasised that private developers require returns on their investment and that this would not be possible within the Mangaung inner city where neighbouring structures do not adhere to building regulations or acceptable activities. The private developer will thus not earn growth on this investment, as the negative image generated by neighbouring buildings will keep property values down. One of the private sector respondents (Private sector 7, 2014) explained that even if he had known about the UDZ tax incentive, it would not have been enough to sway his decision to develop in the inner city, as it is an undesirable environment for investment. It is further rationalised that there is more profit to be made from non-central developments than with low-income residential housing in the inner city. The responsibility of ensuring the success of the UDZ incentive therefore lies not only with SARS or the Treasury but also with municipalities. A proposed amending of the Act will not necessarily ensure the effectiveness of the UDZ incentive within a municipality if said entity does not promote and utilise the incentive aggressively.

Although a number of private sector entities may know about the incentive it may not seem attractive to them. The Mangaung Metropolitan Municipality must also consider development outside the inner city (Public sector 2, 2014). Cape Town had called on their business institutions to contribute to this kind of initiative. From the beginning, institutions were informed and made part of the process so that by the time implementation materialised, the business sector was in a position to contribute. In other words, the developers were informed about the initiative. This has not been the case in Mangaung (Public sector 2, 2014). The Mangaung Metropolitan Municipality had demarcated the UDZ and the national government had approved the demarcation, but the developers that were supposed to invest in the UDZ had not been sufficiently informed or encouraged. The problem thus lies with the Mangaung Metropolitan Municipality as the entity that was appointed by the national government to deploy the UDZ program (Public sector 2, 2014).

Amending section 13quat (8) of the Income Tax Act 58 of 1962 will not necessarily ensure the effectiveness of the UDZ incentive within a municipality if the entity does not aggressively promote and utilise the incentive (Public Sector 3, 2014). The statement above and the research findings indicate that the problem

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does not lie with the Act itself but rather with the promotion and usability of the Act. Therefore, alternative legislation proposals pertaining to these aspects need to be identified.

SPLUMA was one of the policy programmes identified by the study which has extended theoretical underpinnings pertaining to remedying the divide between the different races of SA caused by the 1913 Native Land Act of the apartheid era (Kruger, 2014; Van Wyk, 2012). South Africa (Government Gazette, 2013) contends that SPLUMA will have a direct effect on the UDZ in terms of how the MMM will have to configure its SDF for improved utilisation in the future. South Africa (Government Gazette, 2013) further supports the idea of comprehensive local plans for expansion in areas where it is required. Hoogendoorn et al. (2008), MID (Muizenberg Improvement District, 2014: online), Heimann and Oranje (2008) agree with this notion by promoting the development of City Improvement Districts, Central City Improvement Districts and Special Rates Areas in areas that necessitate more than what the municipality alone can provide. In addition, inclusionary housing legislation supported by South Africa (Government Gazette, 2013) must be used to insure that property owners within the UDZ that do not want to be part of the above areas keep the condition of their buildings in line with building regulations. The study has used empirical results to illustrate that the Business Amendment Act can be utilised to improve the CBD's image by helping informal traders. The theoretical contention for this implies the need for informal trading support which will ensure a reduction in crime and cleanliness of the CBD (Roever, 2014).

## **7. RESEARCH CONTRIBUTION**

The research provides proof that the absence of collaborative relationships between governments and stakeholders will contribute towards project failures, as stakeholder buy-in is imperative to such projects. Consequently, theoretical cases for UDZ development need to be revisited in order to further understand the UDZ dynamics of the public and private sector and how it can be made more sustainable. The Cities Alliance (2006) suggests the placement of strategic thrusts which coincides with what Heimann and Oranje (2008) said about the private-public partnerships that should be established. However, it is noted from the study that this will only be realised if the public sector begins to include the private sector in terms of information-sharing and inclusive UDZ project planning. The Cities Alliance (2011) recommendation to create awareness about the CDS coincides with what Heimann and Oranje (2008) mentioned about partnerships and Winkler (2011) about public participation. The reason for this is the fact that before partnerships and public participation can be secured awareness creation about the UDZ has to become a major objective in order to lure potential partners and participatory community members. The formation of an ITF to ensure the responsibilities of its members which include drawing up action plans, expected inputs and outputs, milestones as well as timelines, is important to help improve the utilisation of the UDZ tax incentive by the private sector as the Cities Alliance (2006) and Rasoolimanesh et al. (2014) agreed. It is suggested that private-public partnerships are established. However, it is noted from the study that this will only be realised if the public sector includes the private sector in terms of information-sharing and inclusive UDZ project planning. Another recommendation is to create awareness about the inner city and before partnerships and public participation can be secured, awareness creation about the UDZ has to become a major objective in order to lure potential partners and participatory community members. The formation of an ITF to ensure the responsibilities of its members, action plans, expected inputs and outputs, milestones and finally, timelines, are important to improve the utilisation of the UDZ tax incentive by the private sector.

## **8. RESEARCH LIMITATIONS**

Since Mangaung Metropolitan Municipality has not yet assigned an Implementation Task Force (ITF) dedicated to implementing the UDZ there could be no respondent to be interviewed in this regard.

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## 9. DISCUSSION & CONCLUDING REMARKS

The paper investigated why the UDZ tax incentive was not utilised to revitalise residential buildings for low-income families within Mangaung. Firstly, it was found that the Mangaung Metropolitan Municipality did not have the necessary strategic thrusts in place, which resulted in an inability to foresee major impediments that inhibited private developer investments. Secondly, respondents indicated that the Mangaung Metropolitan Municipality did not promote the UDZ, a response also supported by the lack of information on the UDZ within the municipal IDP. The lack of promotion of the UDZ caused a lack of knowledge regarding the incentive among private developers, which resulted in these developers not considering the UDZ as a possible investment opportunity. Thirdly, because of the absence of an Implementation Task Force (ITF), no officials were held accountable for the implementation of the UDZ program. There were no action plans, expected inputs and outputs, milestones or timelines for measurement. This also supports the assumption that the UDZ is not a priority for the Mangaung Metropolitan Municipality.

Findings on why private developers did not utilise the UDZ tax incentive to revitalise residential buildings for low-income families within the well-located inner city of Mangaung were as follows: since most of the private sector respondents were unaware of the UDZ tax incentive, they were also unaware of its possible financial benefits. This led to a lack of interest in development within the UDZ. Most of the private developers indicated that they did not own property in the UDZ and property in the UDZ was not on the market as most of these buildings were owned by one family. The private developers also indicated that they did not want to develop in the UDZ because of low property values due to the negative image of the UDZ area in the inner city. Housing developers in general, not only those who develop for low-income families, indicated that they did not want to develop low-income residential accommodation as it was not as lucrative as middle to high-income accommodation. Finally, responses to a question on what could be done to make the UDZ more appealing resulted in limited responses, from the public sector only, as the private sector did not have sufficient background knowledge on the UDZ incentive to respond. There were also responses pertaining to the narrow way of thinking when it came to low-income housing being limited to the inner city and it was proposed that the UDZ benefits should be applicable to the remainder of Mangaung as well.

The study was conducted in a public and private sector environment through interviewing officials and private developers, and presented an analytical perspective on a significant local development policy program. Numerous restrictions were confronted because of this procedure, which need to be contemplated. The limited number of public and private sector individuals in the Mangaung Metropolitan Municipality who knew about the UDZ caused the study to become increasingly focused and narrow. As a result, organising interviews with the private sector about a topic they knew little about made it difficult to find willing interviewees. Although the Mangaung Metropolitan Municipality can be blamed for not doing everything in their power to give the UDZ every possible chance to succeed, many external factors hampered the success of the UDZ. The implementation of the UDZ seems to be neither sustainable nor practical in terms of its current form.

Potential stakeholders were never identified or asked how their voices could be heard during the UDZ incentive policy process in Mangaung, while secondary research proved that long-term improvements depend on the extent to which institutional capacity is built. In other countries in Africa, elevated institutional capacity is associated with raised levels of trust in the government. A lack of capacity on municipal level seems also to be one of the shortcomings, resulting in the non-implementation of the UDZ in Mangaung. Capacity is a continuing process of being able to implement and manage projects while collaborative planning encourages bridging processes between public and private sectors.

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## 10. REFERENCES

Allmendinger, P. 2009 *Planning theory*. Palgrave MacMillan, Basingstoke.

Cities Alliance. 2006. Guide to city development strategies: improving urban performance. *Cities Alliance, UNEP and ICLEI*. Washington DC: York Graphic Services.

Cities Alliance. 2011. *City development strategy: A conceptual framework*. [online]. Available from: [http://www-ds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/09/06/000356161\\_20130906115720/Rendered/PDF/809630NWP0CDS00Box0379824B00PUBLIC0.pdf](http://www-ds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/09/06/000356161_20130906115720/Rendered/PDF/809630NWP0CDS00Box0379824B00PUBLIC0.pdf)

Creswell, J.W. & Clark, V.L.P. 2007 *Designing and conducting mixed methods research*. Thousand Oaks, California: Sage Publications.

Dewar, D. 2008. A critique of South African housing policy and some postulations about planning and policy-making in African cities. *Stads- en Streekbeplanning/Town and Regional Planning/Meralo ya Ditoropo le Mabatowa*, 52, May, 32-37.

Engelbrecht, C. 2004 *People and places. An overview of urban renewal*. Johannesburg: Cities Network.

Friedmann, J. 2011 *Insurgencies: Essays in planning theory*. London: Routledge.

Gardner, D. 2007 *Access to housing finance in Africa: Exploring the issues. Overview of the housing finance sector in Zambia*. Midrand: FinMark Trust.

Grindle, M.S. 1996 *Challenging the state. Crisis and innovation in Latin America and Africa*. Cambridge: Cambridge University Press.

Harrison, P., Todes, A. & Watson, V. 2008 *Planning and transformation: Learning from the post-apartheid experience*. Abingdon: Routledge.

Harvey, D. 2003 The right to the city. *International Journal of Urban & Regional Research*, 27(4), December, 939-41.

Healy, P. 1998 Building institutional capacity through collaborative approaches to urban planning. *Environment and Planning*, 30, 1531-46.

Healy, P. 2006 *Collaborative planning, shaping places in fragmented societies*. Basingstoke: Palgrave.

Healy, P. 2007 *Urban complexity and spatial strategies; towards a relational planning for our times*. London: Routledge.

Heimann, C., & Oranje, M. 2008. City improvement districts in South Africa: an exploratory overview. *Stads-en Streeksbeplanning= Town and Regional Planning*, (53), 14-24.

Hillier, J. & Gunder, M. 2003 Planning Fantasies. An exploration of a potential Lacanian framework for understanding Development Assessment Planning. *Planning Theory*, 225-48.

Holmans, A., Scanlon, K. & Whitehead, C.M. E. 2002 *Fiscal policy instruments to promote affordable housing. Research Report, VII*. Cambridge, UK: Cambridge Centre for Housing and Planning Research.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Hoogendoorn, G., Visser, G., Lenka, M., Marais, L., Van Rooyen, D., & Venter, A. 2008. Revitalizing the Bloemfontein CBD: Prospects, Obstacles and Lost Opportunities. In *Urban Forum* (Vol. 19, No. 2, pp. 159-174).

Hutchison, M.L. & Johnson, K. 2011 Capacity to trust? Institutional capacity, conflict, and political trust in Africa, 2000-2005. *Journal of Peace Research*, 48, 737-52.

Jenkins, P. & Smith, H. 2001 An Institutional Approach to Analysis of State Capacity in Housing Systems in the Developing World: Case Studies in South Africa and Costa Rica, *Housing Studies*, 16.4, 485-507.

Krishnaveni, R. & Sujatha, R. 2013. Institutional Capacity Building: A Systematic Approach, *SCMS Journal of Indian Management*, October - December, 2013.

Kruger, M. 2014. Planning with purpose: land law. *Without Prejudice*, 40(3), 94-95.

Mangaung Metropolitan Municipality. 2013-2014. *Mangaung Metropolitan Integrated Development Plan 2013-2014 Review*. Bloemfontein: Mangaung Metropolitan Municipality.

Marais, L. & Ntema, J. 2013. The upgrading of informal settlements in South Africa: Two decades onwards. *Habitat International*, 39, 85-95.

Mojaki, O.M. 2015. Strategic planner, human settlements, Mangaung Metropolitan Municipality. Personal communication on Urban Development Zones. Bloemfontein 25 June.

MID (Muizenberg Improvement District) 2014. *FAQs*. [online]. Available from: <http://www.mid.org.za/faqs/>

Private Sector 1. 2014. (Developer) Bloemfontein, 08 December 2014.

Private Sector 2. 2014. (Building Contractor) Bloemfontein, 22 December 2014.

Private Sector 3. 2014. (Construction Company) Bloemfontein, 12 December 2014.

Private Sector 4. 2014. (Building Contractor) Bloemfontein, 30 November 2014.

Private Sector 5. 2014. (Building Contractor) Bloemfontein, 3 December 2014.

Private Sector 6. 2014. (Civil Engineering Construction Company) Bloemfontein, 9 December 2014.

Private Sector 7. 2014. (Building Contractor) Bloemfontein, 30 November 2014.

Public Sector 8. 2014. (Planning Consultant) Bloemfontein, 10 December 2014.

Public Sector 1. 2014. (Municipal Development Planning Officer) Bloemfontein, 27 November 2014.

Public Sector 2. 2014. (Municipal Human Settlements Officer) Bloemfontein, 28 November 2014.

Public Sector 3. 2014. (South African Receiver of Revenue Officer no 1) Bloemfontein, 15 December 2014.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Public Sector 4. 2014. (National Home Builders Registration Council Officer no 1) Bloemfontein, 24 November 2014.

Public Sector 5. 2014. (National Home Builders Registration Council Officer no 2) Bloemfontein, 12 December 2014.

Public Sector 6. 2014. (South African Receiver of Revenue Officer no 2) Bloemfontein, 15 December 2014.

Rasoolimanesh, S. M., Jaafar, M., & Badarulzaman, N. 2014. Examining the contributing factors for the successful implementation of city development strategy in Qazvin City, Iran. *Cities*, 41, 10-19

Roever, S. 2014. *Informal Economy Monitoring Study Sector Report: Street Vendors*. Cambridge, MA, USA: WIEGO.

South Africa. 1962. *Income Tax Act no. 58*. Pretoria: Government Printers.

South Africa. 1996. *The Constitution of the Republic of South Africa Act No 108*. Pretoria: Government Printers.

South Africa. 2000. *Local Government Municipal Systems Act no 32*. Pretoria: Government Printers.

South Africa. Department of Housing. (1994) White Paper: A New Housing Policy and Strategy for South Africa. Pretoria: Government Printer.

South Africa. 2013. *Spatial Planning and Land Use Management Act*. (Proclamation No. 16). Government Gazette, 36730, 5 August 2013. (Regulation gazette No. 559). Cape Town: Government Printer.

South Africa. Department of Housing. 1997. *Housing Act no 107*. Pretoria: Government Printers.

South Africa. Department of Housing. 2004. Breaking New Ground Plan for Development of Sustainable Human Settlements. Approved by Cabinet on 2 September 2004.

South Africa. Department of the Presidency. 2012. *National Development Plan 2030 Our Future-make it work*. Boksburg: National Planning Commission.

South African Government Gazette. 2004. *Urban Renewal Tax Incentive*. Gazette no 27077 Notice no 1432. Pretoria: Government Printers.

South African Revenue Services. 2009. *Guide to the Urban Development Zone Tax Incentive*. Pretoria: Government Printers.

Speak, S.E. 2004. Degrees of Destitution: A Typology of Homelessness in Developing Countries, *Housing Studies*, 19(3), May, 465-82.

Speak, S.E. 2014. Senior Lecturer, Global Urban Research Unit, School of Architecture, Planning and Landscape, Newcastle University. Personal communication on Urban Development Zones. Newcastle upon Tyne, 18 November.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Straussman, J.D. 2007. An essay on the meaning(s) of “capacity building” – With an application to Serbia, *Intl Journal of Public Administration*, 30, 1103-20.
- Todes, A. 2011. Reinventing planning: critical reflections. *Urban Forum* 22, May, 115-33.
- UN-Habitat. 2009. *Planning: Global report on human settlements*. London: Earthscan.
- Van Horen, B. 2002. Planning for institutional capacity building in war-torn areas: the case of Jaffna, Sri Lanka. *Habitat International* 26, 113-28.
- Van Rooyen, C. & Hall, D. 2007. Public is as Private Does: The Confused Case of Rand Water in South Africa. MSP Occasional Paper No.15. [WWW document] URL <http://www.municipalservicesproject.org/>
- Van Wyk, J. 2012. *Planning law (2<sup>nd</sup> ed)*. Cape Town: Juta and Company Ltd.
- Watson, V. 2009. The planned city sweeps the poor away ....: Urban planning in 21<sup>st</sup> century urbanisation. *Progress in Planning*, 72, 151-93.
- Winkler, T. 2011. Retracking Johannesburg : Spaces for Participation and Policy Making. *Journal of Planning Education and Research*, 31(3), 158-270.

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# Planning Child-Friendly Green Spaces for the South African Context

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## Abstract

The remarkable impact that green spaces have on urban and/or rural environments link with objectives of sustainability. The need for green space planning within South Africa is often not prioritized due to the extensive growth in population, referred to as increasing urbanisation, and exponential housing demands. This does not nullify the value and increasing need to plan and provide green spaces for a variety of communities and users. Even more so when considering child-friendly spaces, and creating environments in which people (children) feel intimately connected to, while developing physical, social, and emotional skills. This research investigated the concept of child-friendly green spaces, along with the importance of planning such spaces within local context, the different development stages of children and appropriate facilities and activities that should be included in the planning. Local realities, constraints and challenges were acknowledged in an attempt to create an approach that will fit the local context, based on the findings of the local Ikageng case study, located in the North West Province of South Africa.

## Keywords

Integration, Child-Friendly Spaces, Green Spaces, Rural Areas

## 1. INTRODUCTION

The current urban and rural reality suggests of a lack of open green spaces, specifically child-friendly green spaces. Preference is given to provide housing for a growing population, due to the impacts of urbanization, with the result of development and enhancement of green spaces often being neglected in this regard. Although literature proves the benefits and need for green spaces within urban or rural areas (also in South Africa), the planning and development of these spaces do not realise in many instances, due to a lack of municipal priorities and funding, driven by the urgent need to provide housing. The core problem addressed in this research is the lack of green spaces, and more specifically child-friendly spaces in the local South African environment. The local reality currently suggest of “green” and “public” spaces that are mostly uninviting and unsafe in general, resulting that children feel uncomfortable interacting with their natural environment or being outdoors (Nordstörn, 2010:514; Thomas, 2008:2).

The inclusion and development of these child-friendly green spaces are as a result explored within this study due to the numerous benefits provided for the public and community in terms of social aspects, including enhanced social cohesion, recreational opportunities, health and mental well-being and aesthetic enjoyment (Clouston & Stansfield, 1981:6; Harper, 2009:3). The development and improvement of green spaces also benefits the urban environment (Atiqul & Shah, 2011; UrbSpace, 2010) as it contributes to improving air quality, by removing pollutants from the air (Project EverGreen, 2013) and thus improve

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overall human well-being (Prange, 2014). This paper aims to evaluate child-friendly space as a discipline along with the different development stages of children. Furthermore the local realities and challenges within South Africa in terms of child-friendly green space planning are explored. The study concludes with a local case study portraying the transformation of an open unused space to a child-friendly green space through the incorporation of cost and time effective planning instruments.

## 2. LITERATURE REVIEW

The literature review aims to focus on the theoretical concepts of green space planning, including open spaces versus green spaces along with qualitative green spaces. Child-friendly spaces are also examined along with the different ages and stages of children.

### 2.1 Open space versus green space

Open space is defined and understood as an undeveloped open piece of land (EPA, 2013), land set aside or to be set aside for the use by a community as a recreational area, irrespective of the ownership of such land (Prange, 2014). These open spaces typically occur within the urban fabric, primarily as a result of weak urban layout development (Prange, 2014; University of Cape Town, 2012:11) or decentralization and suburbanization (Barnett, 1995:1; Bromley *et al.*, 2005:2407).

Green spaces on the other hand, are defined as areas having continuous vegetated localities, public or private space, directly or indirectly available for the use by residents (Atiqul & Shah, 2011:601; Levent *et al.*, 2004:9; Thai Utsa *et al.*, 2008:221). When nature is shaped within these environment, artificially created city parks, botanical gardens, street trees that are isolated and even private gardens (Levent *et al.*, 2004:2; UrbSpace, 2010), can all be defined as green spaces existing within the urban fabric. Green spaces furthermore consist of a multi functional role, as these spaces improve the green infrastructure within urban and/or rural area. Green infrastructure is recognized as a region's life support system, providing multiple social, economic and environmental benefits (Natural Economy North West, 2008:i).

At present, green spaces are considered as an important constituent of sustainable development of towns and cities (Levent *et al.*, 2004:2; Prange, 2014; UrbSpace, 2010). The incorporation of green spaces can play an essential role in social, economic, cultural and environmental aspects, holding great benefits such as 1) environmental benefits, pollution control and biodiversity, 2) economic and aesthetic benefits such as energy savings and property value, as well as 3) social and psychological benefits such as human health, recreational and wellbeing (Atiqul & Shah, 2011: 601-602; Mensah, 2014:1; Schmidt & Németh, 2010:2).

### 2.2 Child-friendly spaces

Child-friendly spaces are defined as public spaces, specifically designed within urban and/or rural areas for children in order to enjoy their direct natural environment, while simultaneously having a positive impact on their skill development (Howard, 2006:33; McDonald, 2012:42; Wapperom, 2010:2). This is achieved by developing better outdoor conditions specifically for children. "The concept of child-friendly environments has been inspired by the concept of child-friendly cities" (Nordstörn, 2010:515), which refers to developing better outdoor (play) conditions for children by focusing on children's health and their direct relationship with the natural environment to enhance such.

A child's interaction with the world is directly affected by their natural environment (McAllister, 2008:47), especially at a young age and therefore the focus of urban planning should be to provide, among others, for green spaces designed for children's needs (Coetzee, 2014). Child-friendly spaces refer to developing improved and healthier conditions for children within urban and/or rural environment, in order for children to connect and interact with their natural environment and consequently develop their skills and natural

abilities to their full potential. This is achieved when children spend more time outdoor than indoors within a natural setting and not necessarily man made public spaces for children (Commissioner for Children and Young People, 2011:4).

Children need space, more specifically green spaces within their direct natural environment, should it be urban or rural areas, where they can explore their natural abilities, keep physically active and develop social skills which will all have a positive effect on their health and well-being. Children have become unhappy and such can be the result of green spaces having become fewer and those green spaces that are indeed provided for children lack safety elements. Furthermore bullying, crime and traffic are a real threat and barrier for children, when finding themselves in these green spaces (Nordstörn, 2010:514). In order for children to enjoy structured and unstructured activities, they have a need for space to improve confidence, keep fit and healthy (Commissioner for Children and Young People, 2011:4). Thus the natural environment (Commissioner for Children and Young People, 2011:4), has a direct impact on children, as it is the space they move and live in. By giving children space in their natural environment, their abilities to think and react can be practically observed (Berthelsen, 2012).

For children the aspect of “play” is an important term, as their skill development and natural abilities improve through “play”. Taking into consideration the effect that play have on children’s health, natural well-being and development stages, children around the world do not always understand their right to play (Brooker & Woodhead, 2013:2). Children have a natural instinct and urge to play and therefore sufficient spaces and opportunities should be made possible for them in a natural safe environment within which to play and explore their abilities. The government often neglects the right of children to play by its failure to invest in safe and healthy environments for children (Brooker & Woodhead, 2013:2). As mentioned earlier, through play, skills and capabilities of children are developed. According to Brooker & Woodhead (2013:4) the earlier children begin to play, the better, as they learn about the world they live in and the environment they find themselves in. Even though they play for pleasure, it contributes to their development as well as different stages of their development.

Apart from the well-defined social, environmental and economic benefits that green spaces offer to the public and communities, research suggest that it also contributes to the development (physical, mental and psychological) of our children and youth. There is a growing awareness of the importance and benefits of designing healthy, safe places for children (Moore *et al.*, 1987:3) as naturalized outdoor play spaces are rich learning environments for children of all ages (White & Stoecklin, 2013:6). The developing stages of children differ from one age group to another. Table 1 accordingly illustrates the different ages and stages of children along with the development that takes place at each age (based on mean values). The different activities as well as surfaces that could be provided for children at every different level are also included in Table 1.

Table 1: Child development ages and stages

AGE	STAGE	DEVELOPING DESCRIPTION	ACTIVITIES PROVIDED	PLANNING CONSIDERATIONS
<b>6 to 18 months</b>	<i>Stage of 'doing'</i>	Children between the ages of 6 to 18 months explore the world around them by touching, tasting, looking and listening.	Fine moor activities <i>e.g. slides &amp; swings</i>	Soft spaces, versatile, focussing on visibility elements

<b>18 months to 3 years</b>	<i>Stage of 'thinking'</i>	At this age simple choices should be given to children, with no complex decisions that should be made.	Combination of fine & gross motor activities  <i>e.g. Jungle gym provides for the combination of fine &amp; gross motor activities, climbing, balancing and sliding action</i>	Combination between soft and natural, with soft surfaces dominating. Versatile safe space
<b>3 to 6 years</b>	<i>Stage of 'self-awareness and imagination'</i>	Children between the ages of 3 to 6 years enjoy using their imagination. Children start to interact more with each other and "play" co-operatively with others.	Combination of fine & gross motor activities  <i>e.g. Playing courts, to improve hand eye coordination</i>	Combination between natural and hard, with natural surfaces dominating. Focus on the safety of the space.
<b>6 to 12 years</b>	<i>Stage for limits and structure</i>	Children start to identify the difference between needs and wants. Make their own decisions and they start experiencing consequences.	Gross motor activities with minimal fine motor activities  <i>e.g. Skipping ropes &amp; balancing poles</i>	Combination between natural and hard, with hard surface dominating. Versatile space should be incorporated including colour visibility.

*Source: Own creation based on (Coetzee, 2014; Jigsaw, 2013; Le Roux, 2009-2014)*

As a result the development of child-friendly spaces as part of green public spaces is vital when considering the importance of "play" spaces for children (Coetzee, 2014). With the transformation or development of child-friendly green spaces, time and financial resources does not always determine the success of the transformation, as quick transformations do not require a great deal of time and money but rather innovative design concepts that could be implemented on small or larger scale spaces (Project for Public Spaces, 2015).

### **3. LOCAL REALITIES AND CHALLENGES: SOUTH AFRICA**

The largest stumbling block in the provision, development and maintenance of child-friendly green spaces is the financial aspect of developing and maintaining these spaces (Parker, 2014; Prange, 2014). According to Parker (2014) there is an obvious need for providing these spaces within South African towns and cities, however the financial provision for such are usually unfortunately not prioritized in budgets. Therefore financial limitations prevent the development and maintenance of child-friendly green spaces within urban and rural "unused" spaces (City of Tshwane, 2005:57). Poor planning, weak layout development, decentralization, suburbanization and the lack of capacity and infrastructure build are the key reasons for the existence of spaces becoming unmaintained and unsafe within urban and rural areas resulting in inefficient spatial forms of South African towns and cities (Hedman & Jaszewski, 1984:1; University of Cape Town, 2012:11).

The unfortunate is that little or no attention is given to the public environment (Parker, 2014; Southworth, 2007:4), where open spaces are left unmaintained within urban and rural areas of South Africa. Urban

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spaces, referring to traditional parks, are increasingly being eliminated and not maintained, resulting in these spaces to become unused spaces. These spaces (parks) are regarded as unaffordable to provide and maintain for, where it cannot compete for popular or political support in the face of demands for basic services (Prange, 2014; Southworth, 2007:4). The result is that green spaces, mainly parks, have become degraded places (Southworth, 2007:4), where the public realm is neglected and these spaces ultimately become abandoned, unsafe and unused. What is required in terms of the local urban and rural realities within South Africa is a sensitive understanding of the problems that South African towns and cities are facing (Dewar & Uytendogaardt, 1995:88; Parker, 2014).

The local reality furthermore reveals unproductive yet weak circumstances in terms of development within urban and rural areas in South Africa, concerning child-friendly green spaces. South Africa's post-apartheid cities show significant signs of fragmentation and inequities (Hidding & Teunissen, 2002:299; Southworth, 2007:1). The majority of the current public spaces are uneventful, unmaintained and without clear form of character (Hedman & Jaszewski, 1984:1; Parker, 2014). The reality is that these spaces are neither safe nor inviting, constraining the objectives of liveability (eThekwini, 2013) as well as integration (Schmidt & Németh, 2010:3)

#### **4. LOCAL CASE STUDY: IKAGENG RURAL SUBURB**

The King's Kids Nursery School is a primary school situated in Ikageng, a rural suburb of the town Potchefstroom, North West and houses approximately 90 toddlers who are cared for in the poorest of circumstances. The Equilibria School of Life situated in Potchefstroom included the King's Kids Nursery Primary School as a community project in order to provide to the needs of the school as well as the children attending the primary school. The open spaces around King's Kids Nursery needed to be transformed in order to provide a space for the children to play and interact with their natural environment.

The methodology of space transformation included three core phases, 1) need assessments, 2) planning and design and 3) implementation and transformation of the space itself.

1. Need assessment
2. Preparation and design
3. Implementation phase

The need existed that the current identified space, in its current state required change. The method of a SWOT analysis was applied in order to establish the strengths, weaknesses, opportunities and threats. The strengths within the space refer to the perceived dimensions included and found from the analysis. Weaknesses within the park refer to perceived dimensions the site did not fulfil or was short of. Regarding opportunities these seek to open a dialogue concerning possible improvements or new solutions for maintaining the attractiveness and providing a child-friendly green space for the public. The threats within the space refer to challenges, future and present, which endanger and put the values and liveability of the park at risk.

Table 2: SWOT analysis of King’s Kids Nursery school playground

<p><b>HELPFUL</b></p> <p>↓</p> <p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>- Space is fenced off from surrounding amenities, improving the safety aspect</li> <li>- Good access</li> <li>- High quality location</li> <li>- Minimal traffic</li> </ul>	<p><b>HARMFUL</b></p> <p>↓</p> <p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>- No green element can be identified, grass, trees, plants.</li> <li>- Space is neglected</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- Within walking distance for surrounding public</li> <li>- Linked to the school, serves as a playground</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Current objects within the space</li> <li>- Time</li> <li>- Financial constrain</li> </ul>

Source: Own creation based on (Equilibria School of Life, 2015)

The space was found to be neglected, with an uninviting feeling (Refer to Figure 1).



Figure 1: King’s Kids Nursery School before transformation  
Source: Equilibria School of Life (2015)

During the need assessment phase, various elements were identified to be included in the redesign of the space. As the majority of these children were toddlers, it was important to provide different activities within the spaces which would ultimately impact on their skill development. Gross (activities impacting large muscle movements) as well as fine (activities impacting small muscle movements) motor activities were implemented while the green element of the space was still acknowledged and incorporated.

Time and financial constrains was identified as a threat under the preparation and design phase. As a result 5 objectives were identified to be incorporated within the space and would have minimal effects on the time and financial constrains.

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The Ikageng case study was evaluated as an example of a quick transformation of an open space into a child-friendly space. Table 3 captures the best planning practices identified from this case study, which could guide the transformation of similar spaces in other locations. These planning instruments are based on urban design tools, place-making tools as well as urban planning tools.

Table 3: Planning instruments for transforming open space into child-friendly spaces

Objective	Planning consideration
Provide different surfaces	Plan versatile surfaces, include hard, soft & natural surfaces
Incorporate colour	Paint to include artificial colours. Enhance natural colours by incorporating more green elements
Fine and gross motor activities	Provide different activities for children of all ages, with supporting facilities and infrastructure
Incorporate the green element	Plant and provide more grass and trees, encourage creative play by provide natural elements.
Integrate with existing use	Design the space specifically according to the needs of the children, stressing importance of needs analysis and role of children in participatory planning.

Source: Own creation based on (Carmona et al., 2003; Coetzee, 2014; Jigsaw, 2013; Le Roux, 2009-2014)

In terms of specific design guidelines, the King’s Kids Nursery playground provided some activities, but did not cater for children of all ages in terms of their development stages as set out in Table 1 of this study. The space was already fenced which improves the safety element for all children, distancing the children from the roads and other objects that can be a threat. The size of the space also contributes to the fact that it caters for all the children to enjoy the outdoor space, with sufficient activities.

Although best planning practices was identified in order to reduce the financial aspect, expenses still existed. As no funds were received from local institutions such as the Local Municipality, the Equilibria School of Life raised the necessary funds for the completion of the project based on three methods. The main focus was to establish a method where an income is generated with minimal expenses.

#### Method 1:

**Car boot sales** – The selling of old clothes and shoes at the Potchefstroom Taxi Rank behind the Riverwalk Mall @ R10 an item.

Method 2:

**Collect brown money** - People are willing to give away their brown money and it is often more than one thinks.

Method 3:

**Find sponsors in town** – Ask for particular items such as windows, paints and carpets through using the ‘Letter to sponsors’.

Following the planning and design phase, implementation took place. The transformation and implementation process existed of 2 weeks and through this process, the residents as well as the students from Equilibria School of life, whom was responsible for the transformation of the identified space, have witnessed the change it has brought and the positive influence it has on the children as well as the surrounding environment of Ikageng in terms of providing open green space for children.

Grass was planted, colour was incorporates though painting current walls and surfaces and different activities were incorporated in order to provide for all different age groups (Refer to Figure 2 and 3).



Figure 2: King's Kids Nursery School transformation  
Source: Equilibria School of Life (2015)

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Figure 3: King's Kids Nursery School after transformation  
Source: Equilibria School of Life (2015)

## 5. RESEARCH FINDINGS

As observed in the local case study, quick transformation of spaces is possible and do not necessarily imply time and financial resources but only creative and innovative approaches in order to transform these spaces while integrating the green element for children. By giving a space a certain function or meaning the area is transformed into a space where the children can relate to certain objects and feelings. These spaces become the shared focal point of a community that reflects the character of the area.

The different planning instruments identified and made available within this research study in terms of the planning and design phase acted as basic guidelines in order to succeed in transforming the current open space into a child-friendly green space for the children of the local area attending the school.

Table 4: Planning instruments incorporation based on identified planning instruments

Objective	Planning consideration	Incorporation
Provide different surfaces	Plan versatile surfaces, include hard, soft & natural surfaces	Paths were designed, establishing the different surfaces (hard & soft). Natural surfaces (grass) were in addition enhanced.
Incorporate colour	Paint to include artificial colours. Enhance natural colours by incorporating more green elements	A variety of colour was incorporated by painting the existing structures as well as new elements that were integrated within the play space.
Fine and gross motor activities	Provide different activities for children of all ages, with supporting facilities and infrastructure	As the school caters for children of different ages, the activities included and provided should be able to accommodate all ages. Thus the different activities

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		incorporated impacts on the skill development of the children in terms of their different development stages and ages. These activities include physical movement, eye and hand coordination, climbing, balancing and sliding actions.
Incorporate the green element	Plant and provide more grass and trees, encourage creative play by provide natural elements.	The natural environment were enhanced by integrating additional grass, contributing to the soft surfaces as well as a variety of plants also impacting learning abilities and skill development.
Integrate with existing use	Design the space specifically according to the needs of the children, stressing importance of needs analysis and role of children in participatory planning.	The main focus of this transformation was to provide to the needs of the children in terms of enhancing and improving their existing playground to become more child-friendly, impacting their skill development through the activities and enhancing the green element. The end result of the child-friendly space integrated well with the existing use as additional activities were provided according to the needs of the children and in terms of the existing location and form of the space.

Source: Own creation based on (Coetzee, 2014; Jigsaw, 2013; Le Roux, 2009-2014)

## 6. RESEARCH LIMITATIONS

This study is limited to the transformation of spaces linked to the planning and development of child-friendly green spaces within a rural environment. Although other factors such as health, accessibility, provision of parking, security, facilities, cultural aspects and education also plays a part in the provision and success of child-friendly spaces, this study aims to illustrate how current uninviting spaces could be transformed into child-friendly green spaces on a quick cost effective method.

## 7. CONCLUDING REMARKS

Although literature proofs the benefits and need for green spaces, more specifically child-friendly green spaces, within urban or rural areas (also in South Africa), the planning and development of these spaces do not realise in many instances, due to a lack of municipal priorities and funding, driven by the urgent need to provide housing, but also coupled with a lack of understanding of the benefits and importance of planning for child-friendly green spaces within urban and/or rural developments.

The recommendations and planning instruments put forward in this study can be used for planning similar public spaces in all regions of South Africa. The main priority is to improve the safety element of the space and secondly to strengthen the child-friendly element. The planning instruments are set to provide an

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inviting, green and safe child-friendly space for the community to enjoy, but specifically for the children to improve their physical and skill development as they interact with the provided space.

To conclude, planning in urban and rural areas within South Africa do include the provision and development of green spaces, yet the obvious problem of decreasing public space remains. Consequently South African policies and legislations should be amended in order to support and enhance open green space planning, incorporating child-friendly designs, as part of broad sustainability thinking.

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## 9. REFERENCES

Atiqul, H.A.Q. & Shah, M.D. 2011. Urban green spaces and an integrated approach to sustainable environment. *Journal of Environmental Protection*, (2):601-608. Date of access: 10 Mar. 2016.

Barnett, J. 1995. *The Fractured Metropolis*. New York: HarperCollins.

Berthelsen, T.C. 2012. Seven Ideas from Tokyo for child-friendly spaces. <http://thisbigcity.net/seven-ideas-from-tokyo-for-child-friendly-spaces/>. Date of access: 17 Feb. 2016.

Bromley, R.D.F., Tallon, A.R. & Thomas, C.J. 2005. City centre regeneration through residential development: contributing to sustainability. *Urban studies*, 42(13):2407–2429.

Brooker, L. & Woodhead, M. 2013. Early childhood in focus. The right to play. The Open University: 1-53. <http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.bernardvanleer.org%2FThe-Right-to-Play%3Fpubnr%3D1849%26download%3D1&ei=WwggVI2OEPKd7gbxkIHICw&usg=AFQjCNH-e30gbOSkuwcls9jqc3UbEP-1Rg&bvm=bv.75775273,d.ZWU>. Date of access: 29 Jan. 2016.

City of Tshwane. 2005. Proposed Tshwane open space framework, (1): 1-135. <http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCIQFjAB&url=http%3A%2F%2Fwww.tshwane.gov.za%2FServices%2FOpenSpaceManagement%2FOpen%2520Space%2520Framework%2FOpen%2520Space%2520Framework%2520Vol%25201.pdf&ei=RQwgVMOMEYHW7QbC6oDACw&usg=AFQjCNHLFRnHder5JKScUTEjdh-y-H0N1g&bvm=bv.75775273,d.ZWU>. Date of access: 8 Feb. 2016.

Carmona, M., Heath, T., Oc, T. & Tiesdell, S. 2003. *Public places-Urban spaces*. Massachusetts: Architectural Press.

City of Tshwane. 2005. Proposed Tshwane open space framework, (1): 1-135.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Clouston, B. & Stansfield, K. (1981). *Trees in Towns: Maintenance and management*. London: Architectural Press. 8-133p

Coetzee, D. 2014. Child kinetics: Fine and gross motor activities for children [personal interview]. 24 Jul. 2014. Potchefstroom.

Commissioner for Children and Young People. 2011. *Caring for the future growing up today: Building spaces and places for children and young people*. [http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.cyp.wa.gov.au%2Ffiles%2FBuilding%2520spaces%2520and%2520places%2520for%2520children%2520and%2520young%2520people.pdf&ei=2wwgVKDIA8XR7Qa2-4GIDA&usg=AFQjCNEgUTKo1DHIJT4zmEFLq\\_tbFiDyAw&bvm=bv.75775273,d.ZWU](http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.cyp.wa.gov.au%2Ffiles%2FBuilding%2520spaces%2520and%2520places%2520for%2520children%2520and%2520young%2520people.pdf&ei=2wwgVKDIA8XR7Qa2-4GIDA&usg=AFQjCNEgUTKo1DHIJT4zmEFLq_tbFiDyAw&bvm=bv.75775273,d.ZWU). Date of access: 17 Feb. 2016.

Dewar, D. & Uytendogaardt, S. R. 1995. *Creating vibrant urban places to live: a primer*. Cape Town: Headstart Developments. Date of access: 12 Mar. 2016.

EPA (Environmental Protection Agency). 2013. *What is Open Space/Green Space?* <http://www.epa.gov/region1/eco/uep/openspace.html>. Date of access: 20 Mar. 2016.

eThekwini Municipality. 2013. *Management Seminar: Re-imagining Public Spaces*. <http://www.uclg.org/en/media/news/re-imagining-public-spaces>. Date of access: 12 Jan. 2016.

Equilibria School of Life. 2015. *Kings Kids Nursery School Makeover*. Date of access: 15 Feb. 2016.

Harper, J. (2009). *Planning for Recreation and Parks Facilities: Predesign Process, Principles, and Strategies*. Pennsylvania: Venture. 2-180p

Hedman, R. & Jaszewski, A. 1984. *Fundamentals of Urban Design*. United States of America.

Hidding, M.C. & Teunissen, A.T.J. 2002. *Beyond fragmentation: new concepts for urban-rural development*. Elsevier, *Landscape and Urban Planning* 58:297-308. Date of access: 19 Mar. 2016.

Howard, A. 2006. *What constitutes child friendly communities and how are they build?* Australian Research Alliance for Children & Youth. P1-57. [http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.aracy.org.au%2Fpublications-resources%2Fcommand%2Fdownload\\_file%2Fid%2F165%2Ffilename%2FWhat\\_constitutes\\_child\\_friendly\\_communities\\_and\\_how\\_are\\_they\\_built.pdf&ei=9RIgVKPHJ6md7gbXpYG4Cw&usg=AFQjCNHpM6ZljCovRkGdSQydyIROzeZSQA&bvm=bv.75775273,d.ZWU](http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.aracy.org.au%2Fpublications-resources%2Fcommand%2Fdownload_file%2Fid%2F165%2Ffilename%2FWhat_constitutes_child_friendly_communities_and_how_are_they_built.pdf&ei=9RIgVKPHJ6md7gbXpYG4Cw&usg=AFQjCNHpM6ZljCovRkGdSQydyIROzeZSQA&bvm=bv.75775273,d.ZWU). Date of access: 19 Mar. 2016.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Jigsaw. 2013. Spark the dream thriving children and flourishing families: Child development ages and stages. [http://www.jigsaw.org.nz/Site/Help/Development/ages\\_and\\_stages.aspx#H100861-4](http://www.jigsaw.org.nz/Site/Help/Development/ages_and_stages.aspx#H100861-4). Date of access: 25 Feb. 2016.

Le Roux, T. 2009-2014. OT mom learning activities. <http://www.ot-mom-learning-activities.com/fine-motor-skills-activities-for-older-kids.html>. Date of access: 24 Jan. 2016.

Levent, T.B., Vreeker, R. & Nijkamp, P. 2004. Multidimensional Evaluation of Green Spaces: a comparative study on European cities: 1-18. [dare.uvu.nl/bitstream/1871/8928/1/20040017.pdf](http://dare.uvu.nl/bitstream/1871/8928/1/20040017.pdf). Date of access: 17 Feb. 2016.

Levent, T.B., Vreeker, R. & Nijkamp, P. 2004. Multidimensional Evaluation of Green Spaces: a comparative study on European cities: 1-18. [dare.uvu.nl/bitstream/1871/8928/1/20040017.pdf](http://dare.uvu.nl/bitstream/1871/8928/1/20040017.pdf). Date of access: 17 Feb. 2016.

McAllister, C. 2008. Child friendly cities and land use planning: Implications for children's health. *Environments Journal*, 35(3):45-56. [https://www.google.co.za/?gws\\_rd=ssl#q=McAllister%2C+C.++2008.++Child+friendly+cities+and+land+use+planning%3A+](https://www.google.co.za/?gws_rd=ssl#q=McAllister%2C+C.++2008.++Child+friendly+cities+and+land+use+planning%3A+). Date of access: 2 Feb. 2016.

McDonald, L. 2012. Belfast healthy cities: child friendly spaces. <http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.iphopenconference.com%2Fsites%2Fdefault%2Ffiles%2FLaura%2520McDonald%2520Final%2520iph%2520presentation.pdf&ei=oBYgVJ3gMYqd7gaxs4CgDA&usg=AFQjCNHlp45LYuN2oOMFrRXIAsXJIm5p4A&bvm=bv.75775273,d.ZWU>. Date of access: 3 Nov. 2015.

Mensah, C.A. 2014. Urban Green Spaces in Africa: Nature and Challenges. *International Journal of Ecosystem*, 4(1). [https://www.researchgate.net/profile/Collins\\_Adjei\\_Mensah/publication/259779329\\_Urban\\_Green\\_Spaces\\_in\\_Africa\\_Nature\\_and\\_Challenges/links/02e7e52dd1ca9c4078000000.pdf](https://www.researchgate.net/profile/Collins_Adjei_Mensah/publication/259779329_Urban_Green_Spaces_in_Africa_Nature_and_Challenges/links/02e7e52dd1ca9c4078000000.pdf). Date of access: 11 Mar. 2016.

Moore, R. & Goltsman, S. & Iacofano, D. (1987). *Play for all: Guidelines*. Berkeley: MIG Communications. 6-155p

Natural Economy North West. 2008. The economic benefits of green infrastructure: developing key tests for evaluating the benefits of green infrastructure. Commissioned from ECOTEC by The Mersey Forest on behalf of Natural Economy Northwest. Date of access: 19 Mar. 2016.

Nordstörn, M. 2010. Children's views on child-friendly environments in different geographical, cultural and social neighbourhoods. *Urban Studies*, 47(3):514-528. [http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.hphpcentral.com%2Fwp-content%2Fuploads%2F2010%2F09%2FUrban-Studies-47-2010-Childrens-Views.pdf&ei=rBcgVOH4BqyV7Aby\\_ICwCg&usg=AFQjCNFKmeKfy8\\_rZ2kQsS\\_qLaf-tbHFNg&bvm=bv.75775273,d.ZWU](http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Fwww.hphpcentral.com%2Fwp-content%2Fuploads%2F2010%2F09%2FUrban-Studies-47-2010-Childrens-Views.pdf&ei=rBcgVOH4BqyV7Aby_ICwCg&usg=AFQjCNFKmeKfy8_rZ2kQsS_qLaf-tbHFNg&bvm=bv.75775273,d.ZWU). Date of access: 3 Feb. 2016.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Parker, E. 2014. Proposals for the development of green spaces in urban areas [personal interview]. 10 Mar. 2014. Durban.

Prange, M. 2014. Urban Design tools to improve child-friendly green spaces [personal interview]. 14 Apr. 2014. Durban.

Project Ever Green. 2013. Environmental benefits of green space. [projectevergreen.org/resources/environmental-benefits-of-green-space/](http://projectevergreen.org/resources/environmental-benefits-of-green-space/). Date of access: 19 Feb. 2016.

Project for Public Spaces. 2015. Public places and spaces. <http://www.pps.org/places/>. Date of access: 19 Jan. 2016.

Schmidt, S. & Németh, J. 2010. Space, Place and the City: Emerging Research on Public Space Design and Planning. *Journal of Urban Design*, 15(4). [https://jeremynemeth.files.wordpress.com/2011/11/schmidtnemeth\\_jud.pdf](https://jeremynemeth.files.wordpress.com/2011/11/schmidtnemeth_jud.pdf). Date of Access: 16 Mar. 2016.

Southworth, B. 2007. City Squares in Cape Town's Townships – Public Space as an Instrument of Urban Transformation: The Origins, Objectives and Implementation of the City of Cape Town's Dignified Places Programme. <http://www.treasury.gov.za/divisions/bo/ndp/TTRI/TTRI%20Oct%202007/Day%202%20-%2030%20Oct%202007/7.10%20Reading%20Public%20Spaces%20CoCT.PDF>. Date of Access: 12 May. 2016.

Thai Utsa, B., Puangchit, L., Kjelgren, R. & Arunpraparut, W. 2008. Urban green space, street tree and heritage large tree assessment in Bangkok. Thailand, *Forestry and Urban Greening*, 7(3):219-229. [http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Ftreenetmedia.com%2Fup%2Fpdf%2F2013%2FTreenet13D1S11.pdf&ei=9RggVluVKeaY7gbv1IH4Cw&usg=AFQjCNFLKMZmwqJxa2jeni\\_m6ry4rPUyag](http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CBwQFjAA&url=http%3A%2F%2Ftreenetmedia.com%2Fup%2Fpdf%2F2013%2FTreenet13D1S11.pdf&ei=9RggVluVKeaY7gbv1IH4Cw&usg=AFQjCNFLKMZmwqJxa2jeni_m6ry4rPUyag). Date of access: 17 Feb. 2016.

Thomas, J. 2008. Child in the city. <http://www.ombudsnet.org/resources/infoDetail.asp?ID=18893&flag=report>. Date of access: 3 Feb. 2014.

University of Cape Town, 2012. Conference: Strategies to Overcome Poverty & Inequality. [http://carnegie3.org.za/docs/papers/227\\_Wolpe\\_Energising%20Urban%20South%20Africa%20-%20poverty,%20sustainability%20and%20future%20cities.pdf](http://carnegie3.org.za/docs/papers/227_Wolpe_Energising%20Urban%20South%20Africa%20-%20poverty,%20sustainability%20and%20future%20cities.pdf). Date of access: 23 Jan. 2016.

UrbSpace. 2010. Green spaces in urban areas. Date of access: 2 Dec. 2015.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention, 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Wapperom, R. 2010. Rotterdam, city with a future: How to build a child-friendly city. Paper presented at the Child in the City Conference, Florence, 28 October. <http://www.rotterdam.nl/JOS/kindvriendelijk/Presentation%20Child%20in%20the%20City%20october%202010.pdf>. Date of access: 26 Mar. 2016.

White, R. & Stoecklin, V. 2013. Children's Outdoor Play & Learning Environments: Returning to Nature. Early Childhood News magazine. White Hutchinson Leisure & Learning Group, Kansas City, MO, USA.

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# Images of Central Areas: A Comparative Analyses between South African and European Cities

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## Abstract

Central areas depict distinct images of cities. Increasingly, it is seen that the significance of the designated central areas in many cities across the world has been relegated because of the up market developments in other areas of the cities, particularly in developing countries like South Africa. However, central areas could still become the nerve centres of the cities and contribute to their vitality and to the verve of residents. Thus, there is a need to explore to know what ails the central areas, what attributes are necessary and how to revitalize central areas of cities. Using comparative analyses of the images of central areas of different European and South African cities, and qualitative discussions with visitors, this study explores how the central areas of South African cities can be revitalized as well as how to make them more vibrant and attractive. The study was conducted by using images of central areas of cities like Pretoria, Bloemfontein, and Port Elizabeth in South Africa; and Vienna, Budapest and Cologne in Europe. It is revealed that despite the availability of similar features, the central areas of the South African cities are less vibrant, active and attractive than the European cities. The major reasons are lack of adequate accessibility, lack of safety and fear of crime, and lack of animated areas to enforce multicultural activities. Besides, they do not portray distinct attractive images in the minds of the people. The experience from European cities suggests that land marks, such as heritage and architecture have certain contribution, but accessibility to the central areas by different public transportation modes, prevention of vehicular movement in core areas, full pedestrianization and walkability, cleanliness, safety, sense of belongingness, and availability of animated areas for various activities, such as shopping, dining, meeting, entertainment and relaxing are major contributors to the vitality of the central areas. Thus, enhancement of accessibility by major modes of transportation, fully pedestrianization of the core areas, safety and creation of vibrant areas of multicultural activities in addition to creation of unique images are the prime requirements to make the central areas of the South African cities dynamic and livelier.

## Keywords

Accessibility; Belongingness; Central Areas; Images; Vibrant

## 1. INTRODUCTION

A question often besieges the urban planners and professionals that -what makes a place great. To some scholars greatness of a place or city implies that it holds certain majesty, prominence and a distinct image (Hall, 1998; Savitch, 2010). Achievement of such a status indicates that the city is extraordinary and distinguished in a number of very important ways and attributes (Savitch, 2010). The attributes could range from economic and commercial prowess to cultural assets, to aesthetic environment, touristic attractions, to the transcendent propositions of philosophy and religion (Savitch, 2010). As Hall, (1998) philosophised that although period of greatness may vary, greatness is not a matter of mere luck rather is based on a consistent pattern that accounts for a distinct quality of environment. So, it is argued that certain particular attributes may bring a city into ascendancy and create an image of a great place. However, a central area of

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cities, which essentially form the core of the city, is the major contributors to their image and greatness. A close scrutiny of the great and global cities like Paris, Vienna, and London, in Europe, Tokyo and Seoul in Asia, New York in USA, Johannesburg in Africa, the city centres played a paramount role in creating an image of a great city. It is also apparent that many of the cities across the world have designated central areas depicting distinct images. Despite the availability similar elements and characteristics the central areas of different cities bring in different levels of vivacity and consequently create different types of images.

Particularly, it is evident that majority of the European cities have designated central areas, which perform crucial urban functions that include commercial, social and entertainment activities. Historically, these central areas have provided places that epitomize arts, culture, music, politics, social cohesion, and commercial activities. Of course, these city centres have degenerated over the years to certain extent, and new developments at other places of the cities have successfully created competing centres. Despite the competitions, the old city centres still keep their identity and functions and a large scale urban regeneration and renewal programmes have given them a new lease of life and vitality. In the same tune of European cities, majority of the large and medium cities of South Africa have a city centre. These city centres possess almost similar built form and elements of that of European counterparts (GDDPLG, 1997; DPLG, 1998, 1998; Cities Network, n.d)<sup>1</sup>. They seem to have been once the nerve centres and places of significant actions in the cities. However, it is apparent that these central areas of majority of South African cities, which were once in the fore front of development and success, have been degenerated and relegated to background<sup>2</sup>. Examples of such scenarios have been found in Johannesburg, Port Elizabeth, Pretoria, Durban and Bloemfontein to a name a few. New developments that have sprung up elsewhere in the cities have almost replaced central areas of the cities and have successfully created new centres of activities. A close scrutiny of these central areas suggests that these areas have less significance now, despite having historical, cultural and economic importance. Then the questions rise are that what ails these central areas and how these areas can be revitalized. Although, some urban regeneration and renewal works have been carried out or being considered, explicit studies regarding the challenges that cause the decay of these areas and attributes and elements which could enable revitalization of these areas in the South African cities are found to be limited. Therefore, using comparative analyses of the spatial, socio-cultural and functional images of central areas of different European and South African cities, and qualitative discussions with visitors, local residents, urban planning and design professionals, and experts and other stakeholders this study explores, what ails the central areas of cities of South Africa, what attributes are necessary and how they can be revitalized. The study offers insights to the success factors and challenges that create the images of the cities, and the factors, which need to be augmented to revitalize the city centers of South African cities.

## **2. CENTRAL AREAS: URBAN DESIGN PRINCIPLES AND CHALLENGES**

According to the German geographer Walter Christaller, settlements simply function as 'central places' providing services to surrounding areas (Goodall, 1987). Furthering on the hypothesis Le Corbusier professed that the city centres provide extensive commercial, recreational, educational and administrative services. It may be reasonable to assume that the central places resonate the urban monumentality and enclosed civic spaces. They provide richly varied vistas of a subtle kind, different masses of the buildings, asymmetrically arranged, and create an intense rhythm. According to Le Corbusier (1927:43) the whole composition found to be massive, elastic, living, terribly sharp and keen and domineering. Such places offer potential of accommodating different architectural and urban morphologies within a compact framework, diversity and neighbourhood interaction, and connectivity (Le Corbusier 1958: 210; Steyn 2012). Moreover, Christaller assumed that centres could be of varied sizes, and each centre supply

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<sup>1</sup> Corroborated by urban planning professionals in South Africa

<sup>2</sup> Opinion of urban planning professionals and urban planning experts



particular types of goods and services forming levels of functional hierarchy. For example, the larger the city, the larger the central area, deals with higher order goods and services and people are willingly get ready to travel to such palaces to acquire them. Similarly, they also perform social and recreational functions of different levels. Consequently, different images of these central areas emerge. However, on the contrary scholars like Jencks (2000: 326) criticised this notion of city building observing that the cities and their central area are built on the assumption that city- central area is a total work of art, whereas in reality it occurs through piecemeal growth responding to countless economic forces and decisions.

Development of central places and creation of an image of central areas are governed by certain socio-and economic attributes. Savitch (2010) advocated that 4 Cs (currency, cosmopolitanism, concentration and charisma) are essential to make a city great and create an image, which can apparently be true for the central areas of the cities. Currency has two implications-first, it connotes the value of something and its ability to carry weight in crucial circumstances, and second, it indicates that a place is up to date with the demands of time. Cosmopolitanism implies the place should have the ability to embrace international, multicultural or poly-ethnic features. Connectivity is an indicator of a place's importance to be rooted within the larger attribute of cosmopolitanism and have a kind of international and national outreach and connectedness (Taylor and Lang, 2005). Concentration embraces the dual ideas of demographic density and productive mass (Savitch, 2010). Charisma is an elusive concept as much of it is based on perception and mass attitudes. It can be considered as a magical appeal that generates enthusiasm, admiration or reverence, which is underpinned by the evocation of a feeling toward a person or an entity. So, Charismatic areas can be conveyed by icons and spatial forms (Eisenstadt, 1968). As demonstrated by Lynch (1960) commanding icons, and can create an image and a deep seated appeal. Thus, the challenges of development of images of the central areas in the contemporary era rest on these four Cs.

Moreover, according to, Logan (1976) and Molotch (1976), and Logan and Molotch (2007) urban space particularly central areas are socially and economically valued area. The growth of these places is predominantly governed by maximization of exchange values of the land, and functions that area created over the land in these areas. In other words, the location and functions are driven by the rent paying capacity of land, which implies that the urban function that would return higher economic values would be located on a competitive basis. This approach of development of central areas confirm to the theory of urban growth machine (Harvey, 2006; Heynen, 2006; Logan, 1976; Molotch, 1976; Logan and Molotch, 2007; Smith & Floyd, 2013).

Besides, there is a need for balance- promoting a dynamic balance between settlements and its ecological base in cities, as well as with respect to social and spatial dynamics; promoting freedom for people to choose as how to inhabit or interpret places within certain constraints that exist, and to establish necessary order. Also, this relates to a minimalist approach to design where design provides the minimum necessary constraints necessary in a particular context to achieve positive settlement form, rather than comprehensive control of all areas and all aspects of settlement (Crane, 1964; Dewar, and Uytendboogaardt 1991). Thus, establishment of a central area that can accommodate all the important socio-economic, administrative and recreational functions on a competitive basis and brings adequate economic returns, as well as have the attributes of currency, cosmopolitanism, concentration and charisma is an enormous challenge. Moreover, creation of an image of elegant, grand, aesthetically appealing, safe and socially and culturally acceptable central area of city is a far greater challenge.

### **3. APPROACH OF THE STUDY**

A qualitative research and comparative study was followed in this study. First, the urban design principles were critically reviewed and critical attributes of central areas of cities were identified from critical review of literature and case studies. Six important cities – three from Europe and three from South Africa were

selected based on their importance and urban design images. Vienna in Austria, Budapest in Hungary and Cologne in Germany were selected from Europe because of the grandeur image of their central areas and urban activities they perform. Similarly, three important cities from South Africa such as Bloemfontein, Pretoria and Port Elizabeth were considered as they portray some kind of distinct images. Despite the differences, all the six cities have certain amount of similarities in terms of urban functions, size and mono-centrism. Each city has a well-defined city centre performing variety of urban functions and creates an image of its own. The investigator conducted a qualitative survey through digital photography and discussing with the tourists, visitors and local people by visiting these six cities himself. The discussions were conducted by using non structured interview methods and random sampling process to compile opinions and perceptions of respondents. The surveys were conducted during the period between April 2013 and February 2016. The responses were compiled on a snow balling process. A total of 126 respondents (total sample size N=126) were surveyed with sample sizes in each city varying between 18 and 25. The interviews and discussions were conducted in English. English was used as the interview language after pilot tests in each city surveyed confirming that that majority of the people in the concerned cities could able to communicate in English to certain extent. In this regard, upon arrival in the cities, the investigator himself first made small pilot surveys among the people to confirm whether the language is suitable for interviews or not. However, care was taken not to select respondents based on language. In case there was a challenge of communication between the investigator and respondents because of language barriers, assistance of local people was sought to act as interpreters. Besides, care was also taken to avoid any kind of prejudices and skewed propensity for selecting a particular segment of respondents based on language, race, gender and age. Table 1 presents the profile of the respondents of the survey. The respondents profile include 76.2% of respondents can speak two or more languages including English. However, respondents belonging to different languages such as English, German, Hungarian, Turkish, Slovak, Afrikaans, Sesotho, IsiXhosa, Chinese and any other are well represented from language point of view. About 37.3% of the respondents are whites and 33.3% blacks. Others include 15.1% Asians, 9.5% coloured and 4.8% Indians. Also, 56.3% are Males and 43.7% are females. Similarly, under age group, 19.0% belong to age group 15-24, 30.2% are of 25-36 age group. 23.0% are of 36-50 age group, 17.5% belong to 51-60% age group and 10.35 are of age group above 60. The profile of respondents indicates age, gender race, and language are well represented minimizing any sort of bias in the sample selection. The questions in the survey schedule include the perception of the respondents regarding the quality of various attributes as given in Table 2 and the ideas to improve the situation if it is necessary. The evaluations were made under four major urban design principles such as availability of visual and physical elements, liveability, social and cultural elements and productivity and sustainability, and the their various attributes and elements present in the central areas are given in Table 2. In addition to the survey, discussions were conducted with urban planning and design professionals, academicians, sociologist and people engaged in community development in South African cities to comprehend the various challenges the central areas in South African cities are facing and the required social measured and policy interventions essential to improve the quality and of these central areas.

Table 1: Profile of respondents

Language		Race		Gender			
Home Language	Share in %	Race Group	Share in %	Category	Share in %	Age group	Share in %
English	12.7	White	37.3	Male	56.3	15-24	19.0
German	15.8	Black	33.3	Female	43.7	25-35	30.2
Hungarian	6.4	Coloured	9.5	Total	100.0	36-50	23.0

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Turkish	5.7	Asian	15.1			51-60	17.5
Slovak	5.6	Indian	4.8			>60	10.3
Spanish	2.4						
French	1.6						
Afrikaans	16.67	Total	100.0			Total	100.0
Tswana	7.1						
Sesotho	7.1						
IsiXhosa	4.8						
Chinese	7.9						
Any other	3.2						
Total	100.0%						
Two or more language including English	76.2%						

The responses were analyzed qualitatively through interpretations manually relating to the various attributes. For the purpose of analysis, the responses are checked for errors, discrepancies and completeness. Then they were grouped under responses for different cities and finally accumulated under two categories such as for European and African cities separately. The difference and similarities in the opinions were accounted for and majority of similar responses were considered to delineate the quality of attributes and the difference opinions were scrutinized for their veracity.

#### 4. FINDINGS AND DISCUSSIONS

Image of a central area of city depends on a set of attributes and associated elements. These attributes and elements can be grouped under four urban design principles underpinning the planning and design of the central areas of the cities. Thus, in this study the attributes and elements were grouped under four stands of principles such as availability of visual and physical elements, liveability, social and cultural elements, and productivity and sustainability. Table 2 presents the comparative evaluation of the various attributes under these four urban design stands and the images they portray in the central areas of the considered cities of Europe and South Africa.

##### 4.1 Availability of visual and physical elements

The images of city centres were evaluated based on a set of attributes that include buzz, diversity, nightlife, public spaces, accessibility and pedestrianization, restaurants and dining, shopping, professional and administrative buildings, quality of buildings under availability of visual and physical elements, architecture, historical and heritage elements, new art installations, enhancement and promotion of the old heritage (Table 2). Figure 1 (a-f) depict different attributes of city centres of the three selected European cities. According to literature and responses from the respondents, it was found that all the three European cities are historical cities and so a number of historical, architectural buildings, museums, theatres, castles, and churches of Roman, Baroque, and Renaissance style are available. The heritage and historical buildings

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portray images of grandeur, and are well preserved and promoted. Cathedral Church in Cologne, St Stephen's church, and State opera building, in Vienna city centre are glaring examples (Florida, 2002; Storper and Venables, 2004; Field visual survey, 2016). Besides, a number of buildings of national and international significance such as UN Building in Vienna, and Parliament building in Budapest depict the images of place of prominence. Besides, the qualities of other buildings are found to be of high quality. There aren't signs of decay, rubbish, weeds or derelict buildings and places. Also, the areas hubbub with activities, people and visitors irrespective of the period of the day- particularly in evening times and weekends and holidays. Besides, a number of public places that are very attractive, beautiful aesthetically pleasing – mostly centrally located open spaces are available, where people can gather, sit, eat, chat, engage in carnivals and enjoy music or melodies without any feeling of restrictions (Figures 1 b and c). As asserted by some visitors these areas portray images of multi-ethnicity, and multiculturalism (Field survey, 2016; Landry and Bianchini, 1995; Vonolo, 2008). The cities also have adequate shopping and dining facilities offering high quality shopping and variety of dining opportunities. Shopping centres exhibiting national and international brands, and souvenirs, as well as restaurants and street food stalls offering variety of foods from different cuisines almost create a festal atmosphere, particularly during the peak hours of day such as in the evenings (Figure 1b). The city centres have also vibrant night life particularly in Vienna and Budapest. People are observed to enjoy the night life with active enthusiasm (Field survey, 2016; Chatterton and Hollands 2002). More importantly the central areas are very well accessible by all modes of public transportation such as subways, trams and buses. Pedestrian and walking have been given priorities. The core areas are observed to fully pedestrianized, which presents an image of safe, compact and comfortable environment (Figures 1b-f).

In the selected cities of South Africa (Figure 2) although certain historical and architectural buildings are present, they do not show splendour and grandness. The official and administrative buildings of provincial and national importance in some cases look rather efficient. The general buildings seem to send a feeling of mixed quality; while some buildings looks very good and well maintained, the others found to be degenerating. Central public places such as Hoffman square in Bloemfontein and Church Square and Union Building Square in Pretoria are available; however, they remain active for a limited period of the day (Figures 2 a and b). They are found be deserted and devoid of activity particularly after the early evenings. Although, a plethora of shopping facilities are available, dining facilities and night life are rather limited. Besides, the major challenge is accessibility; these areas are mostly by vehicles with limited public transportation facilities. Pedestrians and walking have not been prioritized (Figures 2 f and h).

#### 4.2 Liveability

The attributes under liveability used to evaluate the city centres include comfort, safety, vibrancy, and walkability. As seen in the Table 2 and Figure 1, according to visitors the city centres in selected European cities offer mostly a well coming and comfortable environment. People feel comfortable to walk through, sit, stand, play, talk, read, or just relax and contemplate. The places are found to be devoid of unnecessary and unpleasant noise, traffic or pollution. They put forth a feeling of safe and secure atmosphere even at night whether in groups or alone. Roads and footpaths are found to be safe for adults and children to walk or ride their bicycles. The presence of various socio-cultural and commercial activities, gathering of people and interaction among them brings vibrancy to these places. Because of the pedestianization of the core areas and availability of exclusive pavements for pedestrians in other areas as well as bicycle lanes make it easy to get around on foot, by bike, on wheelchairs.

However, in contrast, according to respondents the city centres of the selected South African cities are quite non-inviting. The facilities for people with various physical capabilities, the old and the young are also limited. Most importantly, a fear of criminal activities always persists. Individual feels scared to go alone

particularly while walking in secluded areas. Besides, roads are found to be not safe for walking or ride bicycles as well as not for children and adults<sup>3</sup> (Figures 2 c, d, and e).

#### 4.3 Social and cultural elements

The attributes of socio-cultural elements include cosmopolitanism and openness, social cohesion, art and music, and life style (Table 2). As asserted by a number of respondents, the concerned European city centres are accessible to everyone- different groups of people and tourists from different cultures and ethnicity from all over world. The areas seem to be open, receptive and tolerant<sup>4</sup>. Feeling of segregation and exclusion is not generally experienced. Art, music, theatre and opera form an integral part of these places. Opera houses, art galleries, theatre buildings exhibit some of the cultural landmarks in these area. Melody, music and art in formal atmosphere or on the streets create an atmosphere of harmony. Also, a blend of modern life style and traditions are observed.

In South African cities, equally people from different cultures and ethnicity are usually found, as well as some kind of openness is experienced. However, not much social and community feeling is experienced and a shadow of segregation seems to persist<sup>5</sup>. Socio-cultural activities such as art and music are found to be limited, although in some cases theatres do exist, although such activities are limited to specific occasions only. One of the major highlights of these areas is that although modern life styles are accepted, flavours of traditional African life styles are experienced<sup>6</sup> (Figures 2 b and e).

#### 4.4 Productivity and sustainability

The attributes used for evaluation of productivity and sustainability are enhancing, connectedness, diversity, and endurance (Table 2). The European cities exhibit a sense of respect to the needs and aspirations of the community that lives and works there and create opportunities for people to prosper and local businesses to thrive<sup>7</sup> (Figure 1 f). They also found to enhance the built environment visually, physically and functionally. These central areas also seem to celebrate unique characteristics—heritage, culture and community—that create a sense of place and identity (Figures 1 b, and c). These areas are found to be well connected to surrounding areas, job locations, schools, shops, facilities and services. A range of transport options, including public transport, walking and bicycling are available (Figures 1 a, c, and d). They are also observed to be connected with the past—the heritage of a place—and with the community and its culture. It feels that they are connected with the natural environment too. It is found that each central area has its own character and qualities; they offer a rich range of experiences—how you move around and interact with others, what buildings and spaces look and feel like, and what things can be done. In spite of this diversity, it offers an overall harmony. Besides, considerations for current and future activities adaptation for future have been made. According to local people care has been taken to design to save resources like water, energy and materials, and minimises its impact on the environment<sup>8</sup>.

In contrast, South African city centres do not seem to depict the image of respecting the needs and aspirations of the people and community that lives and work there significantly<sup>9</sup>. Although the built environment is physically, visually and functionally appreciable, does not portray any unique characteristics or create a sense of place or identity (Figures 2 c, d, g and h). They are well connected to surrounding areas,

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<sup>3</sup> Opinions of respondents

<sup>4</sup> Opinions of visitors and tourists

<sup>5</sup> Opinions of local residents

<sup>6</sup> Opinions of visitors

<sup>7</sup> Opinions of local people

<sup>8</sup> Responses of local people

<sup>9</sup> Responses of local residents

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job locations, schools, shops, facilities and services, but only by vehicular mode and public transportation is limited (Figures 2 c, d, and f). They do not also exhibit an impression of being connected with the past—the heritage of a place—and with the community and its culture<sup>10</sup>. Although it seems that these areas are somewhat connected with the natural environment. In terms of diversity and endurance, the cities display similar images of European counterparts but to a lesser extent.

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<sup>10</sup> Opinions of visitors

Table 2: Comparative analysis of urban design attributes in place in Central areas of cities

Attributes	Elements	European context (Vienna, Cologne, Budapest)	South African cities (Examples, Pretoria, Bloemfontein and Port Elizabeth)
<b>Availability of visual and physical elements</b>			
Architecture	Architecture, historical and heritage elements, new art installations, enhancement and promotion of the old heritage	<ul style="list-style-type: none"> <li>• All the three cities are historical cities.</li> <li>• A number of Historical, architectural buildings, museums, theatres, castles, and churches of Roman, Baroque, Renaissance style are available.</li> <li>• The cities observed to promote and conserve the old heritages. For example Cathedral Church in Cologne, St Stephen’s church, Vienna State opera building, Vienna,</li> </ul> <p>(Florida, 2002; Storper and Venables, 2004; Field visual survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>• Some architectural elements and historical buildings are available.</li> <li>• However, many buildings do not show images of grandeur and distinct style.</li> </ul> <p>(Visitor opinions, Field visual survey, 2013-2016)</p>
Buzz	Crowded places, bars, and clubs	<ul style="list-style-type: none"> <li>• The areas have hustle bustle with a lot of people during the day and evenings.</li> <li>• During weekends and holidays it becomes more active.</li> <li>• Quality bars and clubs catering to all strata of people are found.</li> </ul> <p>(Vonolo, 2008; Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>• The areas have bars and clubs of different types.</li> <li>• Pretoria is particularly having hustle and bustle but Bloemfontein and Port Elizabeth are relatively quiet.</li> <li>• Activities are mostly confined to day time and early evenings (Field visual survey, 2013-2016).</li> </ul>

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Diversity	People from different parts in the world, particularly linked to tourism and specific events	<ul style="list-style-type: none"> <li>Variety and difference in activities are available</li> <li>People from different parts of world of multi-ethnicity, multiculturalism, and tourists are found</li> </ul> <p>(Field survey, 2013-2016; Landry, 2006; Landry and Bianchini, 1995; Vonolo, 2008)</p>	<ul style="list-style-type: none"> <li>A limited diversity, multiculturalism and ethnicity have been found, although people from different African countries and races are generally found.</li> <li>Not many tourists are seems to visit the city centres</li> </ul> <p>(Visitor opinions, Field visual survey, 2013-2016)</p>
Nightlife	Night clubs, and crowded places	<ul style="list-style-type: none"> <li>A vibrant night life particularly in Vienna and Budapest are observed. The night life in Vienna particularly during holidays and weekends is significant.</li> <li>The city centres of all the three cities have several night clubs and the areas are usually crowded.</li> </ul> <p>(Chatterton and Hollands 2002; Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>A few night clubs in each city are available.</li> <li>Some night life is seen in Pretoria; however Bloemfontein and Port Elizabeth do not have much active night life.</li> </ul> <p>(Field survey, 2013-2016)</p>
Public spaces	Images of public spaces, for example parks, congregation places, Atrium, etc.	<ul style="list-style-type: none"> <li>The public places are very attractive, beautiful aesthetically pleasing.</li> <li>Every city has very active number congregation places such as parks, carnival areas, open areas near the churches and public buildings.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>There are public places available like Hoffman square in Bloemfontein and Union Building area in Pretoria.</li> <li>They are attractive and appreciably designed.</li> <li>However most times they are found to be very quiet, devoid of visitors or people and all the activities are confined to specific time only.</li> </ul>

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			(Field survey, 2013-2016).
Accessibility and pedestrianization	Accessible by different modes of travel and promotes pedestrianization in the core areas	<ul style="list-style-type: none"> <li>The city centres of all the cities are very well, accessible by public transportation such as subway trains, trams and buses.</li> <li>However most of the vehicular activities are limited to the edges of the city centres.</li> <li>The internal areas of the city centres are mostly pedestrianized.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>The city centres in all the three cities are accessible by vehicles.</li> <li>Presence of public transportation is marginally felt.</li> <li>Not many facilities for promoting pedestrianization are available.</li> <li>Thus, accessibility and pedestrianization are major challenges.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>
Restaurants and Dining	Availability of both formal and informal, diverse, affordable and quality restaurants and dining facilities	<ul style="list-style-type: none"> <li>A number of restaurants and dining places in formal, informal and open are available offering variety cuisine and food that includes local, Asian, Oriental, Indian, and Chinese, continental and so on.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>A limited number of formal restaurants mostly inside the buildings are available. Similarly limited cuisines are also available, although the scenario in Pretoria is a little better than the other two cities.</li> <li>Also, a few open informal stalls offering local cuisine are observed</li> </ul> <p>(Field survey, 2013-2016)</p>
Shopping	Centralised shopping centre and shopping opportunities every strata of society	<ul style="list-style-type: none"> <li>A variety of shopping facilities offering variety of shopping opportunities for both local and international brands are available.</li> </ul>	<ul style="list-style-type: none"> <li>Similar shopping facilities to that of European counter parts offering variety of shopping opportunities for both local and</li> </ul>

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		(Field survey, 2013-2016)	international brands are available. <ul style="list-style-type: none"> <li>• Large malls and national level retail outlets are also found.</li> </ul> (Field survey, 2013-2016)
Professional and administrative buildings	Availability of national, international important administrative and professional offices and buildings	<ul style="list-style-type: none"> <li>• Important administrative buildings of national and international stature such as UN office building in Vienna, and Parliament house in Budapest.</li> </ul> (Visitor opinion and Field survey, 2013-2016)	<ul style="list-style-type: none"> <li>• Buildings of national important such as Union building, and presidency in Pretoria, Supreme Appellate court building, State library and museum in Bloemfontein are available.</li> </ul> (Field survey, 2013-2016)
Quality of buildings	Beautiful, quality and well maintained buildings	<ul style="list-style-type: none"> <li>• Majority of buildings are of high quality and well maintained.</li> <li>• Many buildings are of grand scale and look majestic.</li> <li>• Normal buildings are also of good quality, either renovated or well maintained.</li> </ul> (Visitor opinion and Field survey, 2013-2016)	<ul style="list-style-type: none"> <li>• Buildings of mixed quality are observed. Some of building portray majestic look and well designed.</li> <li>• However, many buildings look dilapidated and not so well maintained in all the three cities.</li> </ul> (Visitor opinion and Field survey, 2013-2016)
<b>Liveability</b>			
Comfortable	Comfortable and welcoming	<ul style="list-style-type: none"> <li>• The city centres are mostly well coming and comfortable.</li> <li>• It feels comfortable to walk through, sit, stand, play, talk, read, or just relax and contemplate. Not</li> </ul>	<ul style="list-style-type: none"> <li>• The areas in and around the city centres portrays an image of non-inviting.</li> <li>• There are not many places to sit, read, play or relax are found. Facilities for people</li> </ul>

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		<p>much unpleasant noise, traffic or pollution is experienced.</p> <ul style="list-style-type: none"> <li>• One can feel to be a part of the part of the community.</li> <li>• The places also offer facilities for people with various physical capabilities, the old and the young.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<p>with various physical capabilities, the old and the young are also limited.</p> <p>(Visitor opinion and Field survey, 2013-2016)</p>
Safe	Feels safe, Free from criminal activities	<ul style="list-style-type: none"> <li>• The areas make a feeling of safe and secure atmosphere even at night whether in groups or alone.</li> <li>• There aren't signs of decay, rubbish, weeds or derelict buildings and places.</li> <li>• Roads and paths are found to be safe for adults and children to walk or ride their bikes.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>• A fear of criminal activities always persists.</li> <li>• Individuals are mostly scared to go alone particularly while walking.</li> <li>• Roads are usually not safe for walking or ride bicycles as well as not for children and adults.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>
Vibrant	Vibrant with people around	<ul style="list-style-type: none"> <li>• There are other people around always.</li> <li>• Places to meet, interact, play, explore, recreate and unwind are available.</li> <li>• People usually enjoy themselves and each other's company.</li> <li>• They offer opportunities to visit, experience, or live in.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>• People are found during the day time only.</li> <li>• These areas offer limited places to meet and interact particularly in the malls and churches.</li> <li>• They do not offer any opportunities to explore experience or unwind.</li> <li>• They portray an image of less vibrant atmosphere.</li> </ul>

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			(Visitor opinion and Field survey, 2013-2016)
Walkable	Enjoyable, easy to walk and bicycle around	<ul style="list-style-type: none"> <li>• The central core areas are mostly pedestrianized.</li> <li>• They prioritise people walking or riding before vehicles. It is easy to get around on foot, bike, wheelchair, pushing a pram or wheeling luggage.</li> <li>• Buildings and streets feel like they're the right size and type for that place.</li> </ul> (Visitor opinion and Field survey, 2013-2016)	<ul style="list-style-type: none"> <li>• The core areas are not pedestrianized.</li> <li>• Vehicles get priority than walking.</li> <li>• It is not easy and safe to walk, bicycle, or move in a wheel chair.</li> </ul> (Visitor opinion and Field survey, 2013-2016)
<b>Social and cultural elements</b>			
Cosmopolitanism and open	Accessible and acceptable to different groups of people, and tourists , open to mixed culture	<ul style="list-style-type: none"> <li>• The city centres are accessible to everyone.</li> <li>• Different multicultural and multi-ethnicity groups people from all over world and tourists are found.</li> </ul> (Visitor opinion and Field survey, 2013-2016).	<ul style="list-style-type: none"> <li>• People from different cultures and ethnicity are usually found; some kind of openness is experienced.</li> </ul> (Visitor opinion and Field survey, 2013-2016).
Social cohesion	Receptive, tolerant and community feeling, devoid of feeling of segregation	<ul style="list-style-type: none"> <li>• The areas seem to be receptive and tolerant.</li> <li>• No feeling of segregation is experienced.</li> <li>• However, they do not provide any sort of community feeling.</li> </ul> (Visitor opinion and Field survey, 2013-2016)	<ul style="list-style-type: none"> <li>• Not much social and community feeling is experienced in any of these cities.</li> <li>• Despite the openness feeling of some sort of openness, a shadow of segregation seems to still persist.</li> </ul>

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			(Visitor opinion and Field survey, 2013-2016)
Art and music	Places of art and music both formal and informal	<ul style="list-style-type: none"> <li>• Art, music, theatre and opera are integral part of these places.</li> <li>• Opera houses, art galleries, theatre buildings form cultural landmarks in these city centres.</li> <li>• Often people individually or in groups found to play music on the streets creating a harmonious atmosphere</li> </ul> (Field survey, 2013-2016).	<ul style="list-style-type: none"> <li>• Theatres are found to be available in the city centres; however, such activities are limited to specific occasions and period of the years.</li> </ul> (Field survey, 2013-2016)
Life style	Ways of life, traditional, acceptance of modern life style	<ul style="list-style-type: none"> <li>• A blend of modern and traditional life styles equally exists.</li> </ul> (Visitor opinion and Field survey, 2013- 2016)	<ul style="list-style-type: none"> <li>• Although modern life styles are accepted, flavours of traditional African life styles are observed</li> </ul> (Visitor opinion and Field survey, 2013-2016)
<b>Productivity and sustainability</b>			
Enhancing	Enhances the local economy, environment and community	<ul style="list-style-type: none"> <li>• These areas observed to respect the needs and aspirations of the community that lives and works there, create opportunities for people to prosper and local businesses to thrive.</li> <li>• They also found to enhance the built environment visually, physically and functionally.</li> </ul>	<ul style="list-style-type: none"> <li>• The city centres do not seems to depict the image of respecting the needs and aspirations of the people and community that lives ad work there significantly.</li> <li>• Although the built environment is physically, visually and functionally appreciable, does not ,portray any unique</li> </ul>

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		<ul style="list-style-type: none"> <li>• These central areas also seem to celebrate unique characteristics—heritage, culture and community—that create a sense of place and identity.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016).</p>	<p>characteristics or create a sense of place or identity.</p> <p>(Visitor opinion and Field survey, 2013-2016)</p>
Connected	Connects physically and socially	<ul style="list-style-type: none"> <li>• These areas are well connected to surrounding areas, job locations, schools; shops, facilities and services, and a range of transport options, including public transport, walking and bicycling are available.</li> <li>• They are connected with the past—the heritage of a place—and with the community and its culture.</li> <li>• It feels that they are connected with the natural environment.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>• The central areas of South African cities are well connected to surrounding areas, job locations, schools, shops, facilities and services, by vehicular mode only.</li> <li>• Public transportation is limited.</li> <li>• They do not provide any impression of being connected with the past—the heritage of a place—and with the community and its culture.</li> <li>• Although it seems that these areas are somewhat connected with the natural environment.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016).</p>
Diverse	Diversity of options and experiences	<ul style="list-style-type: none"> <li>• It is found that each central area has its own character and qualities, offer a rich range of experiences—how you move around and interact with others, what buildings and spaces look and feel like, and what things can be done.</li> </ul>	<ul style="list-style-type: none"> <li>• No such unique character and qualities are observed.</li> <li>• However, the areas offer a range of facilities, services and activities.</li> <li>• Some kind of harmony is lacking,</li> </ul>

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		<ul style="list-style-type: none"> <li>• A range of facilities, services and activities are available.</li> <li>• In spite of this diversity, it offers an overall harmony.</li> </ul> <p>(Visitor opinion and Field survey, 2013-2016)</p>	(Visitor opinion and Field survey, 2013-2016)
Enduring	Enduring, resilient and aesthetically pleasing	<ul style="list-style-type: none"> <li>• The areas are visually and aesthetically pleasing as well as practical.</li> <li>• Considerations for current and future activities adaptation for future have been made.</li> <li>• They have been designed to save resources like water, energy and materials, and minimises its impact on the environment.</li> </ul> <p>(Discussions with local people, Field survey, 2013-2016)</p>	<ul style="list-style-type: none"> <li>• These areas seems to have similar characteristics like that of European cities; however to a lesser degree.</li> </ul> <p>(Discussions with local people, Field survey, 2013-2016)</p>

Source of attributes: Storper and Venables, 2004; Temelova, 2007; Vonolo, 2008; Gehl, 2016, accessed in 16 March, 2016, [www.coagreformcouncil.gov.au/agenda/cities.cfm](http://www.coagreformcouncil.gov.au/agenda/cities.cfm);

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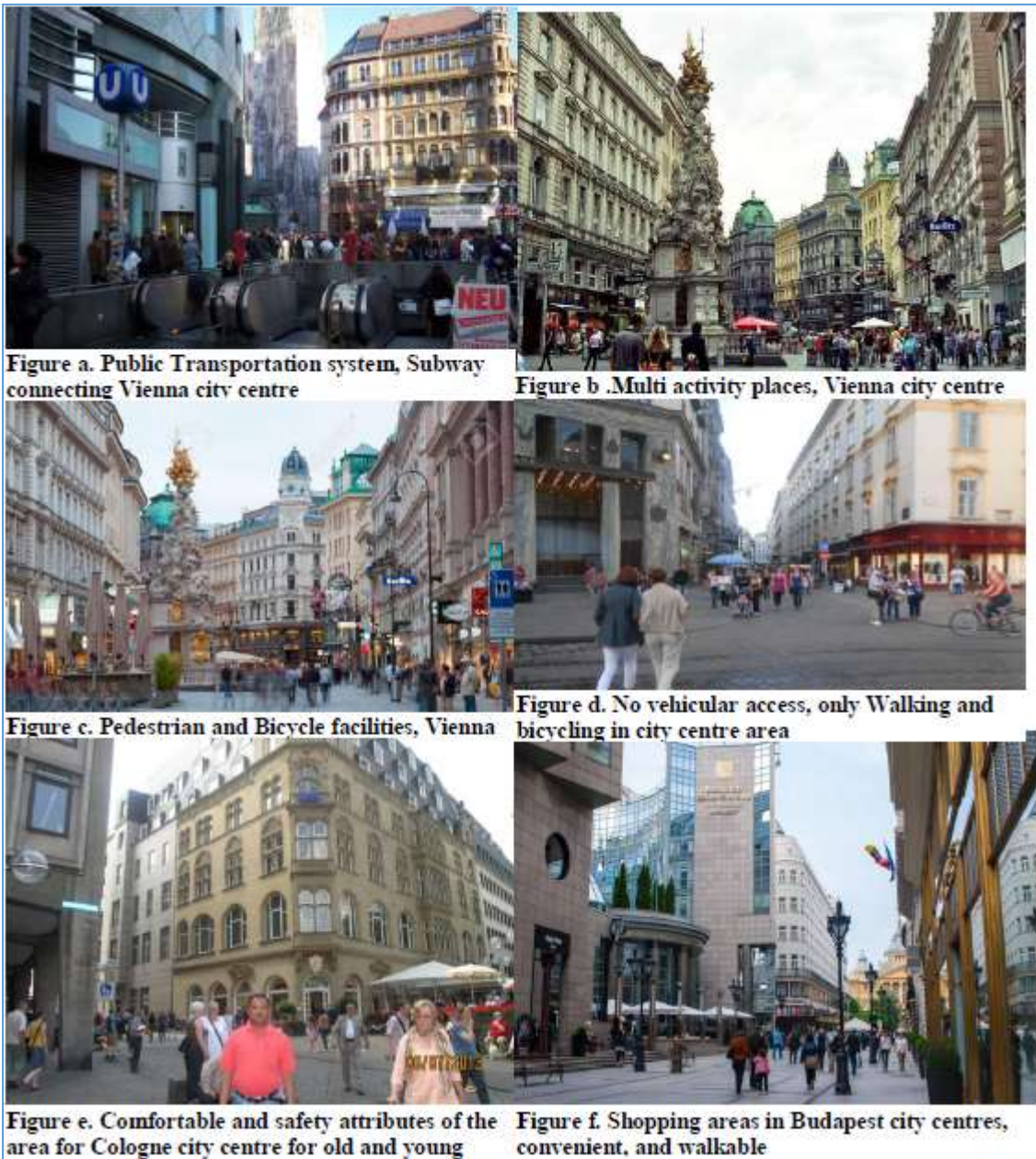


Figure 1. Photographs showing different attributes of Central areas of Selected European cities

(Source: Photographs by the author and Google images, March, 2016)

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Figure 2. Photographs showing different attributes of Central areas of Selected

South African cities

(Source: Photographs by the author and Google images, March, 2016)

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## 5.0 DISCUSSIONS AND CONCLUSIONS

Central areas form the heart of cities. They create specific images based on which the cities are identified, besides performing plethora of functions. However, it is seen that city centres of South African cities despite having almost similar built form and elements of that of European counterparts; they have been relegated and found to have lesser socio-economic and cultural significance. Once regarded as being the nerve centres and places of significant actions in the cities, they are in the process of degeneration<sup>11</sup>. Major socio-economic activities are being shifted to newly developed areas leaving the city centres in dire straits. However, looking at their historical importance, urban functions and significance to the people of the city, they need to be revitalized or reinvented. Thus, an investigation was warranted and consequently a comparative analysis considering three well-established and beautiful European cities and three important cities in South Africa was conducted. Pretoria, Port Elizabeth and Bloemfontein city from South Africa in aggregate were compared with the different attributes of central areas of three European cities such as Vienna, Budapest and Cologne. A qualitative survey research method and discussions with local people, visitors and tourists were conducted for this purpose.

A critical examination of various attributes revealed that the central areas of the European cities portray an image of quite vibrant and exciting places offering opportunities for economic and socio-cultural activities. In contrast, the city centres of South African cities despite having similar built forms lack the same vibrancy and in the process of apparent degeneration. Activities are being shifted, a sense of fear of crime and segregation persist<sup>12</sup>. They are only accessible by vehicular modes only and do not provide a comfortable atmosphere to majority of people- particularly to old, young and those who want to walk and ride bicycles<sup>13</sup>. They do not create an image of social cohesion and community feeling<sup>14</sup>. An argument may emerge that these central areas have been built appropriate to the life style and cultures of the people of the cities, however they do not create any such explicit identity similar to their European counterparts. The challenges observed are lack of safety, fear of crime, sense of segregation, creation of symbolic elements and accessibility. The experience from European cities suggests that land marks, such as heritage and architecture have certain contribution, but accessibility to the central areas by different public transportation modes, prevention of vehicular movement in core areas, full pedestrianization and walkability, cleanliness, safety, and availability of animated areas for various activities, such as shopping, dining, meeting, entertainment and relaxing are major contributors to the vitality of the central areas. Moreover, according to some respondents particularly young people, enforcement of safety, making free from criminal activities, enhancement of accessibility by major modes of transportation- particularly public transportation, enabling walkability and fully pedestrianization of the core areas, engendering multicultural activities suitable to all sections of society, and creation symbolic elements identifying history, culture and heritage of cities would perhaps aid in creation of unique images and make the central areas of the South African cities dynamic and livelier<sup>15</sup>. In this context, an exploration of available policy frameworks for renewal of city centres in South Africa suggests that currently there is no national policy framework to contextualize or support the renewal of urban centres in South Africa. However, principles supporting urban renewal were included in both the Urban Development Framework and the Development Facilitation Act (city network, n.d). Besides, draft policy frameworks have been developed in different aspects like Policy for Non-Motorised Transportation, (2008), National Urban Development Framework (draft), (2009), and policy frameworks initiated by the Department of Provincial and Local Government with an aim at revitalising and renewal of the urban centres in South Africa. Notwithstanding of the policy frameworks, certain proactive measures by the Municipalities and community development and social organizations such as creation of pedestrian facilities as in Bloemfontein, encouraging cycling in Johannesburg and Cape Town, strengthening of Public transportation in Cape Town, Johannesburg and

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<sup>11</sup> Opinions of Urban planning and design professionals

<sup>12</sup> According to the local city residents

<sup>13</sup> Opinions of Urban planning and design professionals and academicians

<sup>14</sup> Opinions of sociologist and community development professionals

<sup>15</sup> Opinions of the respondents of the survey from South African cities

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Port Elizabeth are steps in the right direction; however there lies potential concerns for adequacy, efficiency and reliability. Besides, such measures need a cultural and life style change that premises upon the social acceptance, receptiveness and positive attitude towards the change, which are perhaps the vital elements need to be addressed simultaneously with any physical and spatial transformation measures<sup>16</sup>.

The limitations of the study pertain to the choice of the limited number of cities and similarities among them. A diversified set of modern cities may provide more critical insights. However, at the current state the study offers a critical examination of the various attributes under different urban design strands and their status in both European and South African context, based on which strategies for central area revitalizations measures can be taken.

## 6. REFERENCES

Chatterton, P and Hollands, R. 2002. Theorising urban playscapes: producing, regulating and consuming youthful nightlife city spaces, *Urban Studies*, 39(1), 95–116.

Citiesnetwork (n.d). People and places, an overview of urban renewal, South African Cities Network.

Crane, D .A.1964. The Public Art of City Building, *The Annals of the American Academy of Political and social Science*, Vol. 352.

Dewar, D. and Uytendogaardt R, .S. 1991. South African Cities: A Manifesto for Change, Urban Problems, *Research Unit, University of Cape Town*, Cape Town.

DPLG. 1998. Department of Provincial and Local Government.

Eisenstadt, S. N. 1968. Max Weber: Selected Papers on Charisma and Institution Building, Chicago, Illinois: The University of Chicago Press.

Florida, R 2002. *The Rise of the Creative Class. And How It's Transforming Work, Leisure, Community, and Everyday Life*, New York: Basic Books.

GDDPLG. 1997. Gauteng Department of Development Planning and Local Government

Gehl, J. and Gemzoe. L. 2000. *New city spaces*, The Danish Architectural Press.

Gehl, J. 2016. *Creating places for people, An Urban Design Protocol for Australian Cities*, [www.coagreformcouncil.gov.au/agenda/cities.cfm](http://www.coagreformcouncil.gov.au/agenda/cities.cfm); accessed in 16 March, 2016.

Goodall, B. 1987. *The Penguin Dictionary of Human Geography*, London: Penguin.

Hall, P. 1998. *Cities in Civilization*, New York: Random House

Harvey, D. 2006. *The limits to capital*. London: Verso.

Heynen, N. 2006. Green urban political ecologies: Toward a better understanding of inner-city environmental change, *Environment and Planning A*, 38(3), 499–516. <http://dx.doi.org/10.1068/a37365>.

Jencks, C. 2000. *Le Corbusier and the Continual Revolution in Architecture*, New York: Monacelli.

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<sup>16</sup> Opinions of urban planning professionals, people engaged in community development and social development experts.

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7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention

4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Landry, C and Bianchini, F. 1995. *The Creative City*, London: Demos.
- Landry, C. 2006. *The Art of City Making*, London: Earthscan.
- Lynch, K. 1960. *The Image of the City*, Cambridge, Massachusetts: The MIT Press.
- Le Corbusier. 1927. *Towards a New Architecture*, London: John Rodker.
- Le Corbusier. 1958. *Modulor 2*, Cambridge, Massachusetts: MIT Press.
- Logan, J. R. 1976. Industrialization and the stratification of cities and suburban regions, *The American Journal of Sociology*, 82(2), 333–348.
- Logan, J. R., & Molotch, H. L. 2007. *Urban fortunes: The political economy of place*, Berkeley, CA: University of California Press
- Molotch, H. 1976. The city as a growth machine: Toward a political economy of place, *American Journal of Sociology*, 82(2), 309–332
- Molotch, H. L. 1999. Growth machine links: up, down, and across. In *The Urban Growth Machine: Critical Perspectives, Two Decades Later*, A Jonas and D Wilson (eds.), pp. 247–265. State University of New York Press, Albany.
- Savitch H.V. 2010. What makes a great city great? An American perspective, *Cities*, 27 42–49.
- Smith Jordan W., Floyd Myron F. 2013. The urban growth machine, central place theory and access to open space, *City, Culture and Society*, xxx xxx–xxx.
- Steyn Gerald. 2012. Le Corbusier’s town-planning ideas and the ideas of history, *SAJAH*, 27(1), 83-106, ISSN 0258-3542.
- Storper, M. and Venables, A J. 2004. Buzz: face-to-face contact and the urban economy, *Journal of Economic Geography*, 4(4), 351–370.
- Taylor, P. and Lang, R. 2005. *US Cities in the World City Network*. *Brookings Metropolitan Policy Program*, Washington, DC.
- Temelova, J. 2007. Flagship developments and the physical upgrading of the post-socialist inner city: the Golden Angel project in Prague, *Geografiska Annaler B*, 89(2), 169–181.
- Vanolo Alberto .2008. The image of the creative city: Some reflections on urban branding in Turin, *Cities*, 25, 370–382, doi:10.1016/j.cities.2008.08.001.

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# The Impact of the Southern African Development Community Protocol on Market Access along the Maputo Development Corridor

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## Abstract

An objective of Regional Planning is to encourage economic dispersal and to counteract isolation of marginalised areas. The premise of the study is that development corridors can unlock market access, particularly when strategies are harmonised with neighbouring countries and development nodes. The main objective of this research was to determine if the Southern African Development Community (SADC) Protocol Agreement is beneficial to market access along the Maputo Development Corridor (MDC). This research compared market access scenarios of commercial businesses in close proximity to the MDC along the N4 road between Middelburg and Witbank in relation to commercial businesses that are out of the influence sphere of the MDC. The main finding of the empirical survey is that the MDC acted as a catalyst in market access which is achieved when the exploration of natural resources, infrastructure- and industrial development is supported by private-public-partnerships while disconnects in infrastructure development hamper the economic growth potential of the SADC. Ninety quantitative questionnaires were completed and nine qualitative interviews were conducted with government- and SADC officials as well as businessmen.

## Keywords

Road Transport Corridor, Market Access, Regional Planning

## 1. INTRODUCTION

The Southern African Development Community (SADC) Protocol Agreement on Transport, Communications and Meteorology was signed in 1996 by the Heads of State of the different SADC Member States. The SADC Region is made up of South Africa, Lesotho, Namibia, Swaziland, Botswana, Angola, the Democratic Republic of Congo, Malawi, Mauritius, Mozambique, Seychelles, Tanzania, Zambia, and Zimbabwe (Southern African Development Community, 1996). The SADC Protocol Agreement was signed to foster harmonisation of standards, reflecting best practice and emulating this to neighbouring states, for improvement in trade between the SADC regions. The signatories of the Protocol noted that transport, communications and meteorology functions have a global character and are a prerequisite for the promotion of economic growth and development as well as the improvement of the quality of life of the citizens of SADC. With the Protocol Agreement, member states aim to establish transport, communications and meteorology systems that provide efficient, cost effective and fully integrated infrastructure and operations with the ultimate goal being to promote economic and social development while being environmentally and economically sustainable (Southern African Development Community, 1996). Regional planning is considered a future-oriented, problem-solving process and if regions are not planned in a strategic, co-ordinated and integrated manner, this could have detrimental consequences for the region and the entire country.

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The purpose of the study is to compare market access scenarios of commercial businesses in close proximity to the MDC along the N4 road in relation to commercial businesses that are away from the development corridor sphere. The reason for this is to determine whether markets closest to the MDC enjoy the benefits of access to the rest of the world. The MDC stretches from Johannesburg and Pretoria in the Gauteng Province of South Africa, the westerly, primary development centre of the corridor and the easterly, primary development centre; namely, the port city of Maputo in Mozambique on the east coast of Africa along the N4 road.

The structure of this paper is as follows: an explanation of the methods, followed by a discussion on theories and policy pertaining to regional planning, development corridors and axes; thereafter, a reflection on the empirical findings with regards to the impact of the MDC on socio-economic growth in the adjacent region, derived firstly from quantitative questionnaires that were served along the MDC between South Africa, Mozambique and Swaziland and secondly, from nine quantitative interviews with government officials and representatives of private companies along the MDC with the aim of determining whether disconnects in infrastructure development hamper progress in the economic growth potential of SADC regions outside the development corridor sphere. Finally, conclusions are drawn for road transport corridors as a catalyst for socio-economic advancement at a regional scale.

## 2. METHODS

The study applied qualitative and quantitative research methodologies. The sampling method applied for the quantitative methods was purposeful sampling. Once the sample was determined, quantitative questionnaires were served to businesses, government administrators and professional practices in Maputo as well as four medium sized towns located along the MDC; namely, Middelburg, Emalahleni, Nelspruit and Komatipoort. In Mozambique fourteen respondents and in South Africa seventy six, completed the questionnaires. The research was undertaken to determine socio-economic development, and infrastructure development such as water, electricity and roads along the MDC. This was followed by qualitative interviews conducted with nine officials of the following companies and/or institutions:

- South African Department of Transport
- South African Department of Trade and Industry
- SADC Secretariat
- Steve Tshwete Municipality
- Emalahleni Local Municipality
- Nkangala District Municipality
- Optimum Coal Mine
- A building contractor in the area
- A steel manufacturer

## 3. THEORETICAL AND POLICY DISCUSSION

The regional, strategic principles of Balanced Growth and Unbalanced Growth, as distinguished by Hirschman in 1958, guide governmental decision-making for geographical space (Drewes and Bos, 1995). Proponents of the Balanced Growth theory imply that greater emphasis must be placed on rural development, while Unbalanced Growth is based on public investment being initially concentrated in areas that are growing spontaneously, focusing later on regional poles found in the periphery (Bos, 1987). Bingham and Mier (1993) point out that there are two schools of thought on regional development; the development-from-above approach, where regional development essentially emanates from the core, growth centres and then trickles down to the periphery and hinterlands, and; the development-from-the-community approach which maintains that regions should regulate and govern their own institutions to generate the standard of living preferred in the region. For the scope of this paper on the MDC corridor, development-from-below-applies.

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Regional development also implies change in the productivity of the area in terms of employment, growth and value added to manufactured goods (Bingham and Mier (1993). While Malthus (1798) posits a contradiction between population increase and agricultural growth, according to Hermele (2012), he may have been too late with his assumption, since a subsequent shift from land-based resources such as fuel wood and timber to fossil fuels addressed this limit to agricultural growth, but only until the red lights of global warming started to flicker. Hermele (2012) continues that the demand for land-based resources leads to global conflict over land, resulting in land grabbing that violates the rights of current land users. In this respect, he states that agrofuels, which are ecologically destructive, may lead to dramatic local land use changes (Hermele, 2012).

Friedmann (1966) defined a development axis as a type of upwardly-transitional or developing area connecting two or more development centres, in which the intensity of axial development tends to be directly proportional to the product of the development centre's economies and inversely proportional to the distance separating them. According to Geyer (1988), development axes play a significant role as they act as a tool through which higher levels of productivity can be attained in the more advanced sector of the economy in South Africa. Geyer (1988) explains that development axes arise from the interaction that occurs between development centres and therefore the development axis and these centres form a logical unit. He deciphers the term development axis and explains each word separately, firstly stating that in this context, development refers to the economic sectoral growth as well as economic structural expansion. He then defines axis as both central and axial oriented forces of development that take place as a result of development centre interactivity. Geyer (1986) also gives a definition by Friedmann according to which a development axis is a growing transitional region.

Geyer (1986) comments that despite these varying definitions of the development axis, all can be suitably applied, in that it has spatial properties, dynamic properties, functional or instrumental properties as well as properties of contents. A development axis undergoes various structural development phases, such as an initial mono-centred period during which it can be regarded as a potential development axis. The development axis is further classified according to stages of growth: the infant stage, whereby there are fully developed centres on both ends but none in between, the mature stage where the axis now has one secondary centre in between and the old age (dominant stage) that is usually characterised by the development of an agglomeration of economies as a result of over concentration on the axis (Geyer, 1988). South Africa's first development axis approach was the National Plan for Physical Development of 1975 (South Africa, 1975). Unfortunately this plan failed due to a variety of problems that included unrealistic predictions regarding the development of some metropolitan areas (Geyer, 2009).

Chapmann, Pratt, Larkham and Dickins (2003) emphasise the access aspect of corridors and their way to different spaces or activities. It is important to take cognisance of the economic dynamics in development planning since enterprises will only locate where it is cost-effective and worthwhile (MCLI 2012). The Maputo Development Corridor is currently at a typical developmental phase, however, the present developmental stage of the MDC simultaneously reflects decline in centres not benefitting from the corridor, assuming that the threshold "travel time" to other "end" and "secondary" development centres is draining its economic viability. This observation is made by way of visual inspection of previously economically active towns, now in decline.

### **3.1 South African Legislation and Policies**

The main aims of the National Development Plan (South Africa. National Planning Commission, 2012) are to develop the competencies of all South Africans to create opportunities based on partnerships between the unemployed, communities and businesses, and toward a more efficient government. Points of departure of the National Development Plan are to include all South Africans and to address growth, investment and employment (South Africa. National Planning Commission, 2012). The NDP (Republic

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of South Africa, 2012) indicated that in order to accelerate change, deepen democracy and build a more inclusive society, South Africa must translate political emancipation into economic wellbeing for all.

The critical actions of the NDP (South Africa. National Planning Commission, 2012) that are of particular relevance to the MDC are the following:

⊕ Increasing employment from 13 million in 2010 to 24 million in 2030 by broadening access to employment, strengthening the social wage, improving public transport, raising rural incomes as well as by boosting private sector investment in labour intensive areas. In addition, there is a need for critical action toward making South Africa more competitive and export driven.

⊕ Establishing a competitive base of infrastructure, human resources and regulatory frameworks by professionalising the public service, strengthening accountability, improving coordination and prosecuting corruption. Additionally, focusing on public sector infrastructure investment by raising investment levels to roughly 10% of GDP which must be financed through tariffs, public-private partnerships, taxes, and loans with a specific focus on transport, energy and water.

⊕ Reversing the apartheid spatial legacy and creating more efficient settlements by densifying cities, improving public transport, locating jobs where people live, upgrading informal settlements and fixing housing market gaps.

The importance of the NDP (South Africa. National Planning Commission, 2012) for the MDC is that it has been adopted as the plan for government investment and delivery. As such, large projects such as the MDC, which will require huge public infrastructure investment must be aligned to and be cognisant of the contents of the NDP as this is the only way it will be able to unlock potential future public infrastructure investment in the project.

The Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013) came into effect from the 1<sup>st</sup> of July 2015 and there is a strong view that the Act will have a comprehensive and positive impact on development. It envisions a consistent, effective and extensive system of spatial planning; along with this a provision for sustainable development principles, norms and standards, the redressing of past imbalances while simultaneously ensuring fairness in the implementation of spatial development planning and land use management systems (South Africa 2013). SPLUMA sets out a series of development principles that apply to all organs of state and authorities responsible for implementing legislation applied to regulating the use and development of land. Among others, these include:

- (a) The principle of spatial sustainability which refers to the promotion of land development that is within the fiscal, institutional, administrative and ecological means of South Africa.
- (b) The principle of good administration which refers to the need for an integrated approach to land use and land development.
- (c) The principle of spatial justice (South Africa, 2013).

## **4. RESULTS**

Firstly, the results of the quantitative questionnaires will be presented, followed by the qualitative interviews.

### **4.1 Quantitative questionnaires**

Seventy six South African and fourteen Mozambiquan respondents completed the questionnaires. The few respondents in Mozambique could be attributed to most people approached not being fluent enough in English to complete the questionnaire. The minority of South African respondents, namely 10.5%,

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indicated more than 20 years' experience in their current discipline, while the majority (40.8%) indicated experience of below five years. Of the Mozambiquan respondents, 42.9% had more than 20 years' experience in their current discipline, while only 7.1% had fewer than five years' experience.

Although the majority of the South African respondents were administrators, there were also qualified town planners, estate agents and a pharmacist, among them. Respondents in Mozambique were largely managers, while the greatest number of South African respondents (28.9%) worked in business/consultancy with 42.9% of the respondents in Mozambique operating in this same sphere. Tourism featured second highest among the economic activities of the South African respondents (9.2%) while in Mozambique, 7.1% of the respondents were involved in tourism. Other economic activities listed as respondents' main fields of work were agriculture, government, finance, developer, construction, courier, shuttle service, fast foods, retail and trading. This large spectrum of economic activities covered by the respondents may result in relatively large percentages where the respondents indicate that they are neutral on certain issues as some of the questions may not specifically apply to their field of business. "Missing" in the following tables refers to the number of respondents that did not complete the question. Table 1 below shows the respondents' perceptions of the impact of the MDC on economic growth in general.

Table 1: Economic growth in general can be attributed to the MDC

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	5	6.6	0	0
Disagree	13	17.1	1	7.1
Neutral	27	35.5	9	64.3
Agree	17	22.4	3	21.4
Strongly agree	12	15.8	1	7.1
Missing	2	2.6	0	0
Total	76	100	14	100

Although a large number of the respondents in Mozambique were indecisive, only 18% of the South African respondents and 7% of the Mozambiquans agreed that economic growth in general could be attributed to the MDC. Table 2 below shows that on neither side of the border did government incentives improve business. Among the South African respondents 54%, and in Mozambique 36%, indicated that business did not improve as a result of direct government intervention.

Table 2: Improvement in business due to incentives by government

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	20	26.3	2	14.3

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Disagree	21	27.6	3	21.4
Neutral	20	26.3	3	21.4
Agree	11	14.5	4	28.6
Strongly agree	2	2.6	0	0
Missing	2	2.6	2	14.3
Total	76	100	14	100

Table 3 below shows that the number of respondents for whom the revitalisation of the Maputo harbour contributed towards improved business in Mozambique was the same as for respondents for whom there were no perceived benefits, along with an indecisive minority. The revitalisation of the harbour did little to improve certain South African businesses along the corridor. Although 25% of the South African respondents said that the revitalisation contributed towards the improvement of business, 29% were neutral. On the Mozambique side 43% reported an improvement in business.

Table 3: Revitalisation of the Maputo harbour contributed towards increased business

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	20	26.3	3	21.4
Disagree	13	17.1	3	21.4
Neutral	22	28.9	2	14.3
Agree	13	17.1	5	35.7
Strongly agree	6	7.9	1	7.1
Missing	2	2.6	0	0
Total	76	100	14	100

Table 4 below shows that a majority of 64% of the respondents in Mozambique are optimistic that the future upgrading of the MDC will stimulate new development. Among the South African respondents 56% share this optimism while 22% stayed neutral. No respondent in Mozambique strongly disagreed with this view.

Table 4: The future upgrading of the MDC will stimulate new development

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	5	6.6	0	0
Disagree	10	13.2	2	14.3
Neutral	17	22.4	3	21.4
Agree	28	36.8	5	35.7

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Strongly agree	15	19.7	4	28.6
Missing	1	1.3	0	0
Total	76	100	14	100

Table 5 below shows that the majority of the respondents in Mozambique, namely 57%, were neutral when asked whether the MDC contributes towards wealth creation. A possible reason may be that their businesses are in Maputo, the easterly primary centre (nodal point) of the corridor and not along the corridor like the South African towns that were included in the survey. Of the South African respondents, 47% agreed that the MDC contributes towards wealth creation while 33% were neutral. The high percentage of neutral respondents may be attributed to the fact that this question may not specifically apply to their field of business, as mentioned earlier. Only 26% among the South African respondents and 7% among the respondents in Mozambique are of the opinion that the MDC does not contribute towards wealth.

Table 5: The MDC contributes towards wealth creation

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	8	10.5	1	7.1
Disagree	12	15.8	0	0
Neutral	25	32.9	8	57.1
Agree	24	31.6	2	14.3
Strongly agree	7	9.2	2	14.3
Missing	0	0	1	7.1
Total	76	100	14	100

Less than 36% of the South African respondents indicated that the MDC impacts on the creation of employment in the region and 36% of the respondents in Mozambique felt the same (see Table 6). Relatively large percentages of 34% among the South African respondents and 50% among the respondents in Mozambique stayed neutral in this regard.

Table 6: The MDC contributes toward job creation in the region

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	6	7.9	0	0
Disagree	17	22.4	2	14.3
Neutral	26	34.2	7	50
Agree	18	23.7	3	21.4
Strongly agree	9	11.8	2	14.3

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Missing	0	0	0	0
Total	76	100	14	100

Table 7 below shows that 29% of the South African respondents indicated that the MDC brought infrastructure development in the manufacturing sector and 36% in Mozambique agreed with the statement. Among the respondents, 36% in South Africa and 29% in Mozambique indicated that they were neutral in this regard.

Table 7: The MDC brought development of water-, electricity- and road infrastructure to the production sector

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	8	10.5	0	0
Disagree	15	19.7	3	21.4
Neutral	27	35.5	4	28.6
Agree	18	23.7	3	21.4
Strongly agree	4	5.3	2	14.3
Missing	4	5.3	2	14.3
Total	76	100	14	100

According to a majority of 66% among the South African respondents and 64% among the respondents in Mozambique, compulsory tolling does impact on the business environment in South Africa (see Table 8).

Table 8: Compulsory tolling has a negative effect on the business environment

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	10	13.2	2	14.3
Disagree	6	7.9	0	0
Neutral	8	10.5	3	21.4
Agree	22	28.9	6	42.9
Strongly agree	28	36.8	3	21.4
Missing	2	2.6	0	0
Total	76	100	14	100

As shown in table 9 below, in South Africa 45% of the respondents along the corridor and 43% of the respondents in Mozambique, indicated that the MCLI is a large contributor in the development of the MDC.

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Table 9: The MCLI contributes largely towards development of the MDC

Evaluation	South Africa		Mozambique	
	Frequency	Percentage	Frequency	Percentage
Strongly disagree	8	10.5	0	0
Disagree	6	7.9	2	14.3
Neutral	25	32.9	4	28.6
Agree	16	21.1	5	35.7
Strongly agree	18	23.7	1	7.1
Missing	3	3.9	2	14.3
Total	76	100	14	100

Jointly 45% of all 90 respondents along the corridor agreed that the further development of corridors higher into Africa would benefit infrastructure development in this region while 33% remained neutral.

## 4.2 Qualitative Interviews

Purposive sampling was applied to analytically depict the market access trends in and around the two prominent towns of Witbank and Middelburg along the MDC. Interpretative research methods were also applied to relate to reasons, explanations and motives behind factual information gathered or obtained through the interviews. This research was aimed at reaching a conclusion as to whether the Signing of SADC Protocol Agreement on Transport, Communication and Meteorology would be beneficial to member states, as well as the possible impact thereof.

### 4.2.1 South African Department of Transport officials

The interview was conducted with a high ranking official at the National Department of Transport. He indicated that the objective of the SADC Protocol in this sub-sector is the facilitation of an unimpeded flow of goods and passengers between and across their respective territories by promoting the development of a strong, competitive commercial road transport industry and providing effective transport services to consumers.

He also indicated that the focus of the SADC policy on infrastructure is to realise a harmonised, regional road infrastructure by pursuing the following goals:

- (a) Monitoring the adequacy and quality of the regional road infrastructure and the need to mobilise resources;
- (b) Introducing commercial management practices to foster institutional, economic and technical efficiency in their national roads sectors;
- (c) Supporting, nurturing and co-ordinating their national roads activities for the benefit of the region as a whole;
- (d) Developing complementary strategies to reduce the cost of constructing and maintaining their respective road networks, including consideration of the potential for reducing road financing needs by contracting out all road construction and maintenance activities; and
- (e) Acknowledging the need of the region for a vibrant, capable, varied and geographically extensive contracting and consulting industry and endeavouring to define and develop the optimal environment for development of the regional contracting industry.

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#### *4.2.2 Department of Trade and Industry*

The interview was held with a high ranking official at the Department of Trade and Industry who highlighted that a commitment had been made to the World Health Trade Organisation (WTO) on road transport. Specific reference was made to passenger and freight transport where South Africa made a commitment to WTO to open up certain borders with market access. He explained that the primary objective of their department is to reduce obstacles such as taxes and tariffs and encourage trade between towns, regions and countries. He stated that, in the opinion of the Department, market access is stimulated through engagements and bilateral agreements with other countries and investments in transportation corridors, as such initiatives create an enabling environment for trade interactions. He reasoned that market access is achieved when dominant stocks of a region are traded via import and export duties to neighbouring regions.

#### *4.2.3 SADC Secretariat officials*

The respondent stated that access is controlled by issue of permits conferring specific rights. He indicated that in order to manage the quantity regulation there are, throughout the region, an array of authorities, procedures, documentation, conditions, duties, responsibilities and penalties. The cost of this is borne by all countries, which reduces the efficiency and increases the costs of road transport without adding significant value. He pointed out that much has been achieved, as reflected by the standing bilateral agreements between signatories of the protocol to trade with one another and to enhance investments in infrastructure development, specifically corridor development. Such alliances are pivotal in trade and industry.

#### *4.2.4 Emalahleni Local Municipality*

The interview was conducted with a Town Planner at Emalahleni Local Municipality who described the role of their Spatial Development Framework (SDF) as follows: to guide and track direction of development, concentrate on the current status of development, assist in attracting investments, align with NDP imperatives and to outline areas of development. He added that the municipal area is considered an energy hub of South Africa as it houses major power stations as well as operating as a coal mining town; a result of the plentiful resources of coal in the area. It also provides steel manufacturing opportunities. The key drivers to the vibrancy of the Emalahleni Local Municipality, in his opinion, are the N4 and the N12 transport corridors.

When asked about the impact of the MDC on Emalahleni Local Municipality market access, the respondent stated that the MDC is a transport linkage between Emalahleni locality and Maputo port, which connects the locality with the rest of the world in terms of import and export market opportunities. Emalahleni exports its mined coal via the MDC and that as a result of extensive coal mining, Emalahleni Local Municipality is an energy hub, meaning that the municipality attracts research and the development of industry and the MDC facilitates the development. He highlighted the need of industrial support for mining and that the MDC is a connection between the rest of the world and industrial investments in the city. His final point was that the town is renowned for steel manufacturing and industry and that the MDC increases the marketability of the steel industry in various ways.

When asked to elaborate further on market access initiatives, the respondent asserted that Emalahleni's energy generation capabilities, steel manufacturing resourcefulness and coal mining expertise lends itself to the area being a techno hub. The locality hosts some reputable names in the steel manufacturing industry such as Highveld Steel and Vero-Metals as well as the large coal-fired Kusile Power Station. The area is also popular for hosting some major coal mining houses such as Anglo Coal, BHP Billiton, Exxaro and Optimum coal mine. The vast concentration of mining and industry makes for almost infinite market access opportunities.

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#### *4.2.5 Steve Tshwete Local Municipality*

The interview was conducted with a Town Planner from Steve Tshwete Local Municipality who commented on the area's SDF as fulfilling the following: addressing their growth and development projected patterns, identifying obstructions that require interventions and recognising growth points such as industrial areas. The respondent said that the MDC has resulted in Private-Public Partnerships (PPP) and concession. She added that the MDC has created a host of import and export opportunities for the area and further added that Steve Tshwete is the fastest growing municipality in the country, mainly due to MDC trends. Lastly, she indicated that the MDC has put pressure on the municipality to deliver municipal services at a higher pace.

#### *4.2.6 Nkangala District Municipality official*

A Manager of Local Economic Development from Nkangala District Municipality was interviewed and explained that Local Economic Development (LED) is in essence market access development as it identifies bottlenecks in market accessibility and investigates ways of removing deterrents to trade and industry. When asked about the impact of the MDC on their LED, the respondent stated that the existence of the MDC is a great stimulating agent as it fosters trading of goods and services and allows small business to interact within the industry.

#### *4.2.7 Optimum Coal Mine officials*

The interview was held with an Engineering Manager of Optimum Coal Mine. The respondent indicated that coal power generation accounts for 90% of electricity generation in the country and that coal production is vitally important to an uninterrupted power supply. She indicated that the three major consumers of coal are ESKOM, exports and steel producers. ESKOM uses coal in its power stations, while other countries such as China and India import coal from South Africa and Indonesia for their consumption. Also, steel producers in the country use coal to manufacture steel. The respondent explained that once a mining house has obtained the necessary permits and authorisations from industry regulators that include the Department of Minerals and Energy, the Department of Water Affairs and the Department of Environmental Affairs, among others, along with an agreement with ESKOM, it becomes possible to mine and trade coal to the rest of the world. When asked about the link between the MDC and coal mining, the respondent explained that the MDC is the backbone of coal mining exportation as it is the transportation corridor that allows coal products to be delivered to intended consumers. The transportation network flows chronologically via road haulage, rail haulage and eventually port haulage.

#### *4.2.8 Building contractor in the area*

The interview was held with a construction contractor in Witbank whose major clientele include coal mining houses, paper producers such as SAPI, private developers and steel producers. When asked about the sustainability of his business the respondent disclosed that he had inherited the business from his father around 1992 and that the reputation he has built up is such that the main clients refer to him whenever there is a need for development. When asked about difficulty of market access as a small to medium business entity, he indicated that his company did not struggle to enter the market and that since the establishment of the venture, business had consistently flourished, with sizeable contracts being awarded to them. He further indicated that he has always been contracted within the Mpumalanga area and has never had the need to look for work outside his province.

When asked whether the MDC had contributed towards his business success, the respondent suggested that the MDC has had a direct influence on this as it allows coal export. He indicated that his construction company works at facilitating the complex expansions and infrastructure development that mining requires.

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#### 4.2.9 Steel manufacturer

The interview was held with a local steel manufacturer who, when asked about steel manufacturers' involvement in the industry, described their role as pivotal in building a variety of steel structures such as railways, warehouses, industrial and factory structures and laboratories. When asked about sustainability of the business, he indicated that the price of steel is subject to frequent fluctuation as it is based on the stock market and currency. The sustainability is heavily reliant on market trends which can at times be advantageous and favourable to their markets while other times can be difficult. The respondent indicated that these manufacturers have an opportunity to export and trade within the country, allowing them to be at the cutting-edge of the industry. When asked about the impact of the MDC on the steel industry, he explained that the MDC facilitates the high demand for their commodity as the transportation corridor allows swift passage to the product, to be traded worldwide.

### 5. CONCLUSION

As described, purposeful sampling was applied and quantitative questionnaires served to businesses, government administrators and professional practices along the MDC in four medium sized towns and Maputo. The large spectrum of economic activities covered by the respondents may be the reason why a sizeable percentage of respondents indicated that they were neutral on certain issues since some of the questions may not have been specifically applicable to their field of business. Among the most important findings were the following: the majority, namely; 64% of the respondents in Mozambique and 56% in South Africa, are optimistic that the future upgrading of the MDC will stimulate new development. According to 66% of the South African respondents and 64% among the respondents in Mozambique compulsory tolling does (negatively) impact on the business environment. This should be kept in mind with detailed planning for future development. Further, jointly 50% of all 90 respondents along the corridor agreed that the further development of corridors higher into Africa will benefit this region. This is a good indication of the expected "trickle down" effect of development corridors higher into the continent. An important finding that national departments of Trade and Industry in the governments of South Africa and Mozambique should take note of is that on both sides of the border respondents indicate that business did not improve due to government incentives. Among the South African respondents 54% and among the respondents in Mozambique, 36% reflect that the government incentives were insufficient and did not contribute towards improved business. The promise of the newly proposed SEZs of the South African government to provide greater assistance above the establishment of infrastructure may be beneficial to this road transport corridor.

The results and interpretation of the quantitative data are possibly distorted due to the substantial "neutral responses" obtained. This underscores the difficulty in gathering meaningful qualitative data. Tables 1 to 7 and 9 all reflect "agree and strongly agree" results. Table 8, relating to the negative impact of tolling, reflect results well above 50%, identifying it as having a negative effect. However if the neutral responses are ignored, a different interpretation, regarded as the most reflective of real outcomes ("neutral" is interpreted as respondents removing themselves from the equation, not able to provide a viable assessment), indicates the following: economic growth, business improvement, upgrading of MDC, wealth creation, jobs creation, infrastructure development and MCLI, are all well into positive agreement territory. The perceived lack of impact resulting from government incentives is highly negative, as is the perceived negative impact of tolling for the MDC road (N4).

The findings of the qualitative interviews consistently indicate that Middelburg and Witbank are dominant in coal mining, power generation and steel manufacturing. The research and findings also clearly indicate that the existence of the MDC makes trade and industry prosper as it combines functions of import and export via the transportation trunk network. The research and findings also serve to prove that the relationship fostered by the SADC Protocol agreement between SADC countries has led to increased trade between countries.

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The two primary development centres or outer nodes on the road transport corridor are Maputo in Mozambique and Johannesburg/Pretoria in Gauteng. The rationale behind this corridor development, in terms of regional planning, is to take advantage of the existing facilities and services within these two locales in such a manner as to draw on a multiplier effect to be radiated to other less developed areas in the region along the corridor. These two locales are considered to be the hubs of the wider economy in the region and the identified smaller towns as well as the rural area should be developed to offer appealing and alluring locales for a wide range of economic activities. Johannesburg and Pretoria are cities with well-established infrastructure, economic as well as tertiary services and are the main drivers of Gauteng's regional economy. The benefits of this phenomenon should be projected towards other areas within the study region.

The N4 route is the main link between the two primary development centres. Because this route accommodates the majority of interactions and movement between the two identified primary nodes, more investment and business opportunities should be created along this route. It is proposed that this route be further developed to function to its full potential to ensure that the untapped development opportunities in close proximity to this route are being maximised to the benefit of the region as a whole. New developments along this route should be encouraged and sustainably managed, to ensure integration with surrounding opportunities and world class multimodal transportation. The existing railway line between the primary development centres should play a role in this regard.

It is proposed that the secondary development centres in between, namely; Middelburg, Belfast, Nelspruit and Komatipoort be developed in order to achieve their potential. Spatial planning aspects such as the physical, social and economic infrastructure in these centres should be upgraded to ensure that opportunities for local businesses, tourism facilities and annual events such as the Komatipoort Prawn Festival and the InniBos arts festival in Nelspruit benefit more from the corridor development. Special incentives may be initiated to lure potential investors to these towns to rejuvenate their development potential. Tourism development along the corridor plays a crucial role in accelerating economic growth. It is therefore imperative that this be nurtured at a grassroots level, with further tourism facilities developed to supplement the already thriving and popular tourist destinations as a strategy to attract more tourists (both domestic and international) to the region.

## 6. REFERENCES

- Bingham, R.D. & Mier, R. (Eds), 1993., *Theories of Local economic development: perspective from across the disciplines*. London: SAGE Publications.
- Bos, D.J., 1987. Die ruimtelik-ekonomiese implikasies van nywerheidsontwikkeling en desentralisasie as 'n deel van geïntegreerde streekontwikkelingsbeleid vir Suider-Afrika. M.A.-verhandeling, Potchefstroomse Universiteit vir Christelike Hoër Onderwys: Potchefstroom.
- Chapmann, D. Pratt, D. Larkham, P. and Dickins, I., 2003. Concepts and definitions of corridors: evidence from England's Midlands. *Journal of Transport Geography*. 11, pp. 179-191.
- Drewes, J.E & Bos, D.J., 1995. The Regional Industrial Development Programme an Evaluation. *South African Journal of Economics*, 63(2), 137-148.
- Friedmann, J. 1966. *Regional development policy: a case study of Venezuela*. London: The MIT Press
- Geyer, H. S., 2009. Notes on spatial-structural change in urban South Africa – the 1990s, *Journal of Urban and Regional Analysis*, (1) 1, pp27-39
- Geyer, H.S., 1988. The terminology, definition and classification of development axis. *SA Geographer*, 16 (1/2), pp. 113-129.

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Geyer, H.S., 1986. The development axis in Physical Planning. Unpublished PhD thesis. Potchefstroom: Potchefstroom University, Department of Urban and Regional Planning.

Hermele, K., 2012. Land Matters. Agrofuels, unequal exchange and appropriation of ecological space. Division Human Ecology, Department of Social and Economic Geography. Lund: Lund University.

Malthus, T.R., 1798. An essay on the principle of population. Oxford: Oxford University Press.

MCLI (Maputo Corridor Logistics Initiative), 2012. *MCLI Profile/ About MCLI*. [online]. Available from: <[www.mcli.co.za](http://www.mcli.co.za)> [Accessed: 19 June 2015].

South Africa, 1975. *National Physical Development Plan (NPDP)*. Government Printer: Pretoria.

South Africa. National Planning Commission, 2012. *National Development Plan: Vision for 2030*. [online]. Available from [www.npconline.co.za](http://www.npconline.co.za). [Accessed on 3 October 2015].

South Africa. 2013. *Spatial Planning and Land Use Management Act, Act No. 16 of 2013*. Pretoria: Government Printer.

Southern African Development Community, 1996, SADC Protocol on Transport, Communications and Meteorology, 1996.

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# Recovering Lost Socio-cultural Spaces to Reestablish Sustainable Green Places and Reinvent Ado-Ekiti, Nigeria as a Great City of Tomorrow

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## Abstract

The importance of public spaces in human settlements cannot be over emphasized. Such open spaces include squares at village, town or city levels. Others include private parks, public parks, plazas, green spaces, greenways, highways, right-of-ways, private roads, incidental open spaces, setbacks and easements. These green infrastructures help define the character of a place, promote sense of community belonging, enhance movement and circulation, and as well guarantee livability and comfort in the urban setting. However, in developing countries, negative effects of rural-urban migration, which triggered uncontrolled expansion, are manifested in form of encroachment on these breathing spaces as typified in Nigerian cities. In Ado-Ekiti, the spate of unlawful spatial encroachment along major transportation corridors, incursions into public and incidental open spaces, and amorphous expansion onto outlying regions have reached alarming levels. In effect, the cityscape is devoid of adequate open spaces and greenery. This situation, coupled with excessive use of hard landscaping materials that generate heat radiation, result into poor environmental quality and reduce urban comfort. This paper investigates and establishes the illegality of rampant public space encroachment in the city. It also advocates the retrieval of lost open spaces from erring developers as leeway to reestablishing lush green places in the city landscape. In reviewing relevant topical issues through literature sources, the paper establishes research gaps. Essentially, reliable empirical research in the case study area elicited information, facts and figures from the delineated districts in the zoned city through the use of observation, focal discussions and questionnaire.

Findings establish high-level contravention of existing development regulation laws, due to sheer ignorance and brazen impunity. This culminates to the building up of socio-culturally and environmentally significant spaces mostly for commercial use in the city. It is revealed that people claim any available open space, driven by high poverty level, and the instinct to sustain their socio-economic needs without much dependency on the state, which seems to care less about the informal sector. The paper recommends that encroached urban spaces should be reclaimed and reestablished as lush green places, with integrated commercial spaces to accommodate itinerant traders. These corrective and change-oriented measures are guaranteed to actualize the tenets of placemaking in transforming existing and newly established public open spaces into interconnecting network of gardens, parks and greenways. The emerging verdure will revive the city environment, protect the dwellers, reverse dwindling quality of living, and promote inclusiveness. In so doing, Ado-Ekiti will be reinvented as a great city of the future.

## Keywords

Public Spaces; Lost spaces; Reclamation; Greening; Placemaking; Inclusiveness

## 1. INTRODUCTION

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Public spaces are areas for communal access, civic recreation, and general community use. In urban landscape planning and landscape architecture, public spaces are synonymous to public open spaces, which indicate that it may be owned by government, or by non-government organizations, or by private individuals or organizations, but within the public domain and public ownership. Accordingly, Safer Spaces (2016) perceives public spaces as creations owned by the public, accessible and maintained for all citizens, thereby serving as public good that foster social cohesion. Such spaces in the public realm include squares, plazas, parks, market places, green spaces, private roads, right-of-ways, greenways, incidental open spaces, and spaces covered with vegetation. Whatever form they take, public spaces provide attractive, comfortable and functional meeting places for the socio-economic interaction of the people. They also define the sense of place the community, and offer protection for the environment. These attributes underscore the importance of public spaces in human settlements.

However, in developing countries, notably in urban centres, steady streams of rural-urban migration bring about negative impacts like uncontrolled expansion, which leads to encroachment on these vital urban spaces. Ado-Ekiti, a typical state capital in the southwestern geopolitical zone of Nigeria, is beleaguered by this syndrome. The wave of unlawful occupation of informal sector activities along major roads, encroachment on public and incidental open spaces, and sprawling into the suburbs are issues of great concern. As a result, the city has lost a considerably large portion of its open spaces and greenery to concrete development and hard surface treatment. The resultant heat radiation and poor environmental quality reduce urban comfort and liveability. The precarious situation calls for investigation to establish the irregularity inherent in the prevailing public space encroachment in the city. This is to justify the need to reclaim these lost open spaces from illegal occupants, and reestablish them as ample green places for public use, befitting the landscape of Ekiti State capital.

## **2. LITERATURE REVIEW**

In general terms, a public space or open space is regarded as a social space that is available and accessible to the entire citizenry, irrespective of age, race, gender, class or creed. The Future of Places (2014:5) views public space a general term used in referring to areas that are considered to be part of the 'public realm' or 'the commons'- including, but not limited to streets, squares, parks, open spaces/places and public facilities. While arguing that the adoption of 'a public-space centered urban strategy' is a leeway to achieving the "equitable city", Garau (2014:2) posits that public space is where all citizens, regardless of their income and personal circumstances, can feel equal and cared for. Given the level of welfare and equality offered the citizenry, it is therefore important that open spaces should be provided at desirable quantities, especially in cities of developing countries as exemplified by Ado-Ekiti in this study.

Coincidentally, in its presentation of at the Expert Group Meeting on the Indicator framework for the post-2015 sustainable development agenda, the UN Human Settlements Programme critically views public open space as the total portion of the 'built-up areas of cities devoted to streets and boulevards-including walkways, sidewalks, bicycle lanes-and areas devoted to public parks, squares, recreational green areas, public playgrounds and open areas of public facilities'. So important are the attributes of these public open spaces to the human settlement that its availability, in average quantity, becomes the indicator to monitor Goal 11 of the Sustainable Development Agenda, which is directed towards making cities and human settlements inclusive, safe, resilient and sustainable'. This is particularly hinged on Target 11.7, which makes it sacrosanct that, by 2030, state parties should 'provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities' By adopting the existence of ample open spaces as vital indicator, the UN Habitat recognizes the mutual interrelationship of private and public spaces in enhancing the functionality and identity of cities. Ideally, these spaces should be consciously planned ahead of urbanization to forestall amorphous expansion, which creates 'disorderly settlement patterns with dangerously low shares of public space' (UN Habitat, 2015:1-2). However, in reality, not only that the quantitative and qualitative availability of public spaces vary considerably from one city to another,

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these indices also differ in various parts of most cities, thereby necessitating the need for more equitable distribution of good public spaces at the local level (Garau 2014;2).

As a matter of fact, where they are provided, these socio-economically indispensable spaces are prone to encroachment. This trend is manifested in the remarkable reduction of public space in some cities in developed countries, while in developing economies, cities are faced with acute shortage of public spaces, resulting from their poor planning background, and complications arising from rapid urbanization. More so that in the last century, growing urbanisation induced migration by the million from the rural surroundings to the city (Onibokun and Agbola, 1994, cited in Aledare 2008) as a result of the advantages it has over other types of settlements, which act as magnet, drawing people from various places into it (Adeniji, 2004, cited in Ogundipe unpub.). This poses enormous challenges, particularly for cities in developing countries, where open spaces are targets of encroachment, mostly by commercial and residential uses.

The increasing amorphous urban development appears to have led to the encroachment on open spaces and setbacks from buildings to roadways, water bodies and power lines. Encroachment becomes rampant out of people's ignorance of byelaws, high poverty level, and the instinct to survive in the city, which culminates to brazen impunity. Given that most Nigerian cities are not well structured, while the government has not deemed it fit to develop the informal sector, people seem to willfully defy the law and claim any space within their reach, to satisfy the quest to develop their socio-economic potentialities and parameters without much dependence on the state. The self-dependence to provide for themselves conflicts with the efforts of government to manage land development, and portends concomitant effects on safety standards, recreational opportunities, and environmental quality. It is this devastating trend of open space encroachment that this paper aims to reverse; by reclaiming lost spaces, transform them into green places, and thereby reinvent Ado-Ekiti as the capital city of tomorrow.

Public spaces in Nigeria urban centres are vulnerable and prone to depletion. The Ekiti State capital is not exempted from the invasions of squares, open spaces, and setbacks by informal development, which tend to arise from the seemingly ineffective regulatory laws. This trend has resulted to lost spaces, which calls for reclamation from developers to revamp the city environment. To reclaim means to recover, recapture, repossess, retrieve, regain, get back, take back, recoup, redeem, rescue, or salvage something that has been usurped, lost, misplaced, damaged, wasted or rendered useless. Such include treasures, land, properties, old mine sites, rivers, and other water resources. Reclamation is therefore the process of reclaiming something from lost, or damaged, or encroached, or from a less useful condition. It was originally used by the US Bureau of Reclamation for water reclamation in form of damming streams but has now gained acceptance in river, wastewater, mine, and land reclamation. According to the American Society of Mining and Reclamation (2012), in some parts of the United States, the term 'reclamation' refers to the practice of returning disturbed lands to an improved state. In Alberta, Canada, the provincial government defines reclamation as the process of reconverting disturbed land to its former or other productive uses (Powter 2002), while in Oceania, it is often referred to as land rehabilitation.

However, the scope of reclamation in this study is to retrieve from developers, setbacks and public open spaces inadvertently or erroneously developed as a result of weak legislation, public ignorance and audacious attitude of the people to development. The recovered spaces are then transformed to green spaces, while selected uses and activities are incorporated to promote sustainable urban landscape in Ado-Ekiti. Reclamation of encroached open spaces, setbacks, right-of-ways and flood plains promises to offer succor for sustainable urban green landscape development, not only in the sub-regions of Africa, but in cities all over the world.

The natural vegetative aspect of the environment is referred to as the green landscape. These naturally occurring soft landscaping elements include trees, shrubs, hedges, flowers, grasses, ground covers, climbers, prostrates, woodland, forests, vegetation, recreational or organised open spaces, gardens, parks, water bodies, swamps, watersheds and catchment areas. Green landscaping is the utilization or preservation of these soft landscaping elements on the earthscape as epitomized in the Orangery at the Palace of Versailles in Paris shown in Figure 1.

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Figure 1: Orangerie at the Palace of Versailles, outside Paris  
(Source: <http://en.wikipedia.org/wiki/File:Orangerie.jpg> Retrieved 2011-07-08)

Urban greening constitute formidable measure of mitigating most urban environmental problems occasioned by impending expansion (Long & Nair, 1999), which tends to be amorphous in the least developed countries. For greater effects, the quantity in terms of spatial coverage of the green space is as important as its quality or spatial context (Wahab & Falola, 2014). The quality of the environment is greatly enhanced and protected when it consists of adequate green furniture in form of parks, squares, corridors, incidental open spaces, and outdoor spaces around buildings. Green furniture plays vital roles in flood storage due to high capacity in rainwater infiltration and carbon sequestration as long as they are maintained as green spaces.

A green city is synonymous to the clean city, which is the city that has clean and efficient energy derived from renewable sources like solar and wind, to compliment the use of clean and accessible modes of public transport such as biking, hiking and walking. Such city also operates on effective waste management, transport and building infrastructure. Furthermore, a green city is richly endowed with beautiful natural landscape, green spaces, clean, garbage- and litter-free streets, clean and unpolluted air, clean potable water, effective solid waste and sewage management. According to Olokesusi (2009), green cities have generous landscaped open spaces, parks, nature trails and reserves. Apart from ecological services performed by vegetation, it is also important because nature contributes to the attainment of a happy and fulfilled life. Morris (2014) categorizes cities in which their formal open spaces are interconnected with nature as 'biophilic cities'. Such include Birmingham, U.K., San Francisco, U.S. A., and Oslo, Norway.

Project for Public Spaces (PPS, 2014), argues placemaking as a peaceful movement that likens public spaces as the heart of any human community. It is seen as a transformative approach that inspires the populace on creating, improving and making the best use of public places. Placemaking thereby combines many-sided approaches involving taking initiatives, utilizing the assets, inspiration, and potentials of the local community to plan, design and manage public spaces. It offers the right philosophy and due process for creating good public spaces that are beneficial to people's welfare. Described as an 'innovative participatory engagement tool' (SAPI, 2014), Ojo-Fajuru and Adebayo (2014) adopted it as the linchpin of their study aimed at synthesizing green landscaping, street furnishing, and citizen participation techniques to transform existing, and newly established public spaces into pleasurable urban places in Ado-Ekiti. In similar manner, the concept of placemaking remains vital to transform recovered public spaces into green and great places in the cityscape.

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Inclusiveness indicates equality in a cohort, group, or population. Boiling down to including a wide range of people, things, ideas, and entities, inclusiveness becomes the hallmark of an inclusive city as a place that exhibits high level of citizenship satisfaction, backed by complete attainment of the needs and aspirations of residents. As opined by Women in Informal Employment: Globalising and Organising, and the Inclusive Cities Project, (WIEGO/ICP, 2014, p.5),

[a]n inclusive city is the one that values all people and their needs equally...in which all residents-including the most marginalized poor worker-have a representative voice in governance, planning, and budgeting processes, and have access to sustainable livelihoods, legal housing and affordable basic services such as water/sanitation, and electricity supply...where informal workers can take their rightful place at the decision table, voice their demands and be heard... share a belief that to reduce urban poverty, we must reverse the current exclusionary trend taking place in so many modernizing cities and instead foster (as the project's name insists) inclusive cities.

Similarly, the essence of inclusive city is captured by Collaborative for Inclusive Urbanism (CIU, 2014), as a place where all citizens are regarded as important persons, free of marginalization. This climate lends support to ground-breaking community improvement activities, and thereby fosters effective development. Inclusive city is thereby deemed 'more affluent and socially just'. Its affluence is built on the ability to create wealth by exploring and tapping the gains inherent in available human and material resources. In terms of social justice, the inclusive city considers as paramount, the interests of the otherwise marginalized, and provides common ground for socio-economic actualization. By providing common ground for the perceived marginalized to operate mutually with apparently privileged activities, the inclusive city overcomes socio-economic exclusion, promotes meaningful growth, and ensures sustainable development. The concept of inclusion is central to this study in the sense that, to be a future great city, Ado Ekiti needs to jettison the exclusivity seemingly perpetrated by the loss of public spaces in the city.

### 3. OBJECTIVES /RESEARCH QUESTIONS

This paper aims at examining public open space characteristics, the extent of their encroachment, the reclamation of encroached spaces, and their reestablishment as green places to transform Ado-Ekiti, Nigeria to the city of tomorrow.

This broad goal is attained through the following objectives:

- to examine public open spaces and their percentage composition the land use structure of the city.
- to determine the extent of encroachment on public open spaces in the study area.
- adopt greening, placemaking and inclusive programme to reestablish and transform reclaimed spaces into green places in Ado-Ekiti.

These objectives will also provide answers to critical research questions such as:

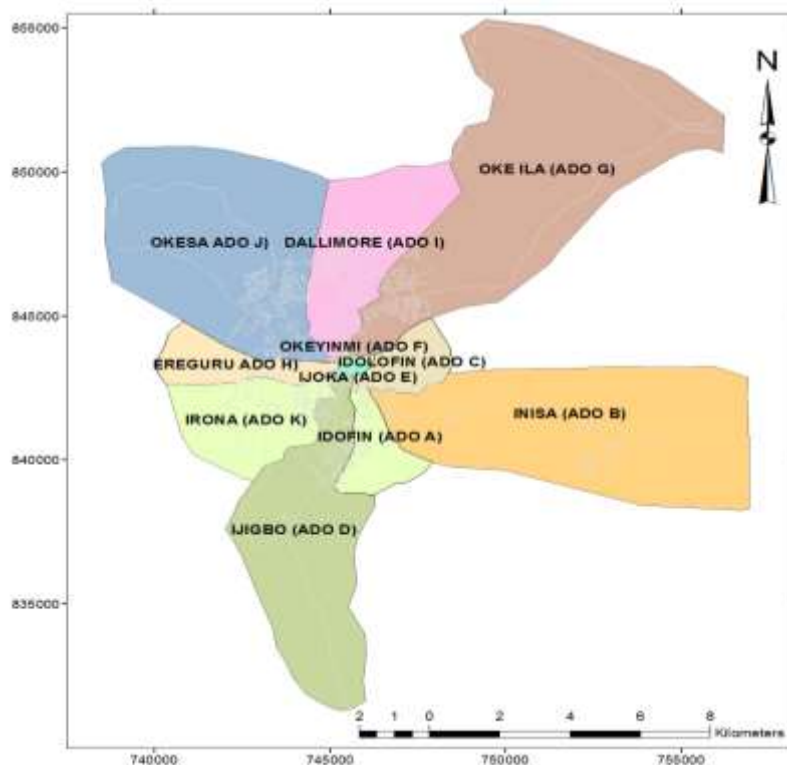
- what is the land use structure, and the portion allotted to public open spaces in the study area?
- what is the existing situation of public open spaces within the spatial structure of the city?
- is there any recognisable trend in the encroachment of setbacks and open spaces in the urban web?
- what is responsible for the magnitude of encroachment on setbacks and open spaces in Ado-Ekiti?
- to what extent can greening and placemaking incentives be adopted to reestablish and transform existing and reclaimed spaces into green areas in the capital city?
- how can the people's socio-economic desires be incorporated in the greening programme to promote inclusiveness in Ado-Ekiti?

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#### 4. APPROACH & METHODOLOGY

The research methodology began with data specification to guide information gathering from both primary and secondary sources. Data from published materials such as journals, books, and the internet complement primary data collected directly from the field. The multi-stage sampling technique, involving sequential sample selection, was adopted as most suitable for this research. Hence, the city was stratified into districts based on the Independent National Electoral Commission's the delineation into political wards used for the General Elections of 2007 in Nigeria (INEC, 2007). Accordingly, the entire geographical area of Ado-Ekiti as a unit in Ekiti Central I Federal Constituency, comprising of Ado-Ekiti and Irepodun/Ifelodun LGEAs, was partitioned along the LGEA boundaries. In Ado-Ekiti LGEA, there are two federal constituencies, namely: Ado I (consisting of Ado 'A' Idofin, Ado 'B' Inisa, Ado 'C' Idolofin, Ado 'D' Ijigbo, Ado 'E' Ijoka, Ado 'F' Okeyinmi, and Ado 'G' Okeila ), and Ado II (comprising of Ado 'H' Ereguru, Ado 'I' Dallimore, Ado 'J' Okesa, Ado 'K' Irona, Ado 'L' Igbehin, and Ado 'M' Farm Settlement). These thirteen wards were structured along existing residential districts in the city as depicted in Figure 2 below.

Thereafter, some districts, along the lines of three distinctly recognisable morphological categories, were systematic selected. In the unplanned core or old traditional areas, Ado 'A', Ado 'B', and Ado 'E' were selected in Ado I, while Ado 'H' and Ado 'L' were picked in Ado II. Within new development areas in the last 10-20 years, Ado 'D', and Ado 'F' were selected in Ado I, as well as Ado 'I' and Ado 'K' in Ado II. In planned residential areas, such as housing estates and G.R.A. respectively, Ado 'G' in Ado I, along with Ado 'J' in Ado II were selected. These add up to a total of 11 wards/districts selected as the sample frame. Furthermore, sample selection progressed, whereby streets were selected based on three hierarchies of roadway within each of the selected districts, being major roads, minor roads, and access roads. House count was conducted on street basis, and twenty-five percent, which gives a fair representation of the houses in each of the districts, were selected at the rate of one (1) in every four (4) houses, having randomly chosen the first house on each street. In effect, 3,756 houses selected from a total of 15,066 houses boil down to 24.93%, which approximates to 25% of the houses enumerated. Hinging on the assumption that the socio-economic indicators of households in the selected districts are similar (Olanrewaju, 1990), one person, preferably the household head, was randomly picked in each of the selected houses. In the final analysis, a total number of 3,756 respondents were finally selected for the study.



Having used research instruments such as questionnaire, key-informant interviews, observations, and physical linear measurements, survey of socio-economic and environmental attributes of selected districts was conducted. The survey generated baseline data to determine the spatial structure of the study area, the availability, utilization, and the extent of encroachment on public open spaces in the capital city.

Figure 2: Delineation of wards along existing residential districts in the Ado-Ekiti.

Source: Department of Survey and Geoinformatics, Federal Polytechnic, Ado-Ekiti

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## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

Out of 3,756 questionnaires administered, 3,708 were collected. After comprehensive sorting, only 3,324 questionnaires were accepted for SPSS collation and analysis, translating to a response rate of 88.50%.

### 5.1 The percentage composition of public open spaces in the spatial structure of the city

Field survey presents spatial structure dominated by residential land use within each of the identified morphological zones of the city. The core and new development areas exhibit identical traits of apparent planlessness in the morphology of the closely knit urban web, which is characteristic of traditional Yoruba cities. The stark reality of formless development, which predates the colonial planning era, is more evident in the densely populated inner city residential areas. There is a slight departure from this trend of uncontrolled development in some parts of the fringes and periurban areas consisting of colonial G.R.As., and planned residential estates built in the post-independence era to the present. These areas show some limited degrees of planning, but were gradually filled with spontaneous development that sprawls into the surrounding regions as seen in the satellite imagery and aerial view of the capital city in Figures 3 and 4 below. This correlates with the observation of Ojo-Fajuru and Adebayo (2014) in a recent study that both Ado-Ekiti and Akure, the contiguous capital city of Ondo State, experienced rapid growth and development. This led to the depletion of vegetal cover and open spaces in replacement for building and agricultural purposes, leading to amorphous expansion into the outlying forests.

Moreover, the research exposes the quantitative deficiency of recreational public open spaces in the city. It is quite revealing that this type of land use is virtually non-existent within the COAs, and only available in meager quantity, representing 1.92% in the NDAs, which amounts to an infinitesimal 0.9% in the overall land use. The PREs also have very little recreational public open spaces constituting 7.60% of land uses in the zone, relatively the 'highest', representing 1.08% in the spatial structure of the city. In terms of overall land use, recreational open spaces constitute a paltry 1.98% in the spatial structure of the city as shown in the Table 1.

Morphological Zone	Total No. of Respondents	No. of Responses	% within Zone	% Overall
Core/old areas (COAs)	1290	-	-	-
New development areas (NDAs)	1560	30	1.92	<b>0.90</b>
Planned residential estates (PREs)	474	36	7.60	<b>1.08</b>
<b>Total</b>	<b>3324</b>	<b>66</b>		<b>1.98</b>

Table 1: Recreational public open space is scanty in the spatial structure of Ado-Ekiti.  
Source: Field survey, July 2015.

Findings further reveal that recent development, occasioned by rapid urbanization and commercialization, derived from arbitrary change from residential use, or informal takeover of available spaces, with little regard or no provision for open spaces.

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Figure 3: Satellite imagery of Ado-Ekiti revealing scanty green spaces in the built-up residential districts and amorphous expansion in all directions into the suburbs.

Source: Google Maps, 2015.



Figure 4: Aerial view of Ado-Ekiti showing development sprawling into the surrounding regions  
Source: Field survey, July 2015.

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The study establishes that built-up areas and outlying city regions are characterized by absolute vegetal removal, encroachment on setbacks and open spaces, and gross inadequacy or total lack of green spaces. In effect, land uses in the city setting are mostly bare and choked up, with few or no greenery. Invariably, the existing spatial structure in Ado-Ekiti exhibits amorphous development and inadequacy of public open spaces and green infrastructure, which reduce liveability and attraction as a great place.

Furthermore, research analysis reveals gross inadequacy of building setbacks to roadways, hydrological features, and power transmission lines from which public open spaces are derived. In the emerging empirical synopsis of the typology of setbacks and air spaces, it is unambiguously revealed that houses with less than 4.5m minimum front setbacks, and not up to 3m left side, right side, and rear standard air spaces, were about two-third of the entire sampled buildings. At zonal levels, findings establish that such houses constitute more than two-third of core areas, nearly half in new development areas, and about one-quarter in planned estates. Buildings having the required minimum front setbacks of 4.50m or more, with left side, right side, and rear air spaces measuring 3m and above, range between one-third and a quarter of the study area. Nonetheless, the research proves that such houses are available in their greatest number in planned estates, averagely occurring in the new development areas, and sparsely punctuating the core areas.



Source: Field survey, July 2015.

Figure 5: Houses built at zero meter on the edge of drainage channel, some (as seen in the foreground) with eroded foundation disintegrating at Inisa Street, in the core old morphological zone of Ado-Ekiti.

The study also shows that over fifty percent of the houses in the study area are arbitrarily located less than 4.5 meters from drainage channels and water bodies. Moreover, 47.22% of buildings are located between 4.5 to 29.9 meters setbacks, while the remaining relatively few houses, constituting mere 2.13%, were found to have up to, or in excess of 30 meters setbacks to hydrological features. These situations indicate absolute non-compliance with statutory guidelines, consequent upon which many houses were precariously perched along the edges of line drains, streams and rivers. The research finds this rampant in the unplanned core and new development areas. Apart from the danger inherent in the erosion of house foundations, as seen along Inisa Street in Figure 5 above, this also constitutes sources of water pollution, environmental degradation, and flooding. Worse still is the usurping of valuable open spaces that were supposed to be conserved, landscaped, and maintained as public green spaces along these channels of fluvial movement, thereby depriving the city of orderliness, aesthetics, urban comfort and recreational opportunities.

The study equally reveals that between 44.29% and 51.67% sampled buildings fall short of the statutory requirement of setbacks to power transmission lines. This result establishes that houses were erected very close to the power lines, while some buildings and informal activities thrive uncontrollably under

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power lines, which dangle hazardously overhead, thereby portending danger to lives and properties. Whereas, the setbacks, if strictly observed and maintained as green areas, are sources of public open spaces derivation in the urban matrix. Rather, the prevailing tendency of the people to contravene applicable regulations on setbacks to power transmission lines, and even encroach on available spaces under them, subtracts valuable public open spaces and greenery from the cityscape.

The implication is that a larger percentage of houses, most especially in the core and new development areas of the study area, were neither separated by sufficient air spaces from adjoining buildings, nor have adequate setbacks from roads, water bodies, and power lines abutting them. This is negatively indicated on irregular spacing and choky massing of buildings, with concomitant reduction or outright lack of ventilation, lighting, and play area. The entire environment in the residential districts is formlessness, imbalanced, aesthetically deficient, and adversely impacted as there is drastic reduction or absolute lack of public open space for greenery and recreation. Invariably, the potentiality of the fledging capital city emerging as a great place is in outright jeopardy by the unwholesome public open space deprivation.

## **5.2 Availability of organized public open spaces within the morphological zones of the city**

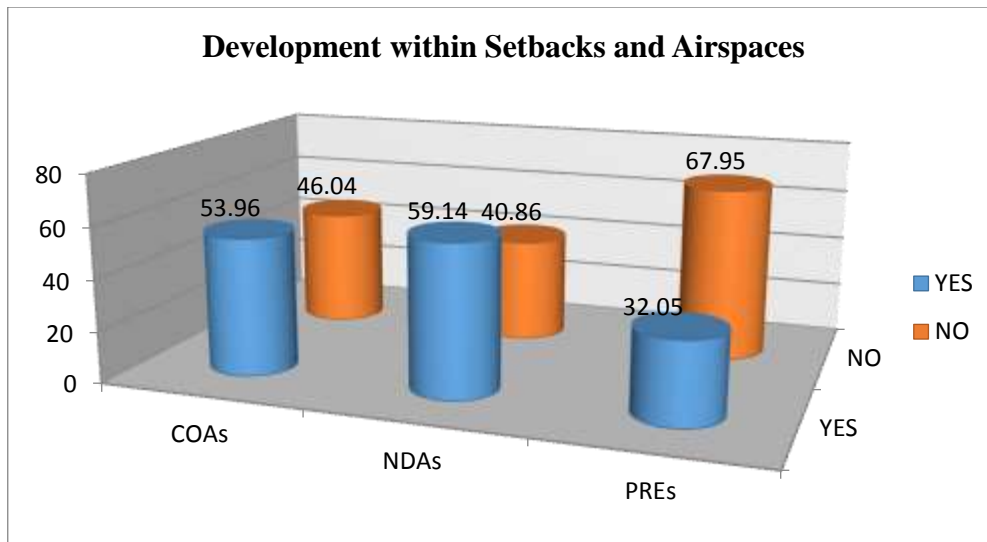
Earlier study carried out on planning for recreational open spaces established that Ado-Ekiti has facilities for both active and passive recreation, but notably for indoor than outdoor recreation, while the development of neighborhood recreational open space was virtually non-existent (Ojo-Fajuru, unpub.). Current research findings, coming twelve years after, show a slight improvement whereby 12.65% of respondents affirm the availability of organized public open spaces for recreation in their neighborhoods. This response rate is that much due to the relatively larger frequency of such response (15.80%) emanating from the PREs, contrasting slightly to the COAs (11.53%) and the NDAs (12.59%). The study further reveals 26.08% respondents claiming that they were not sure if there were any organized open spaces in their neighborhoods. These outnumber affirmative responses.

More significantly, findings expose the gross deficiency of organized public open spaces in the study area as buttressed by overall majority 61.27% respondents confirming the total lack of such public spaces. This is detailed as 65.00% in the COAs, 63.27% in the NDAs, and 45.24% in the PREs. The addition of responses from those who were not sure of the availability of organized public open spaces in their neighborhoods build up to a record high 87.35% of non-availability of such public facilities in the capital city. This sparingly available or astronomical dearth of organized public open spaces is most accentuated at combined frequency rates of 88.47% and 67.41% in the COAs and NDAs respectively, while the PREs recorded 84.20%. The implication is that public open spaces that should be conserved as green spaces, provide recreational opportunities, serve as verdant sinks for carbon sequestration and air purification, and draining channels for surface run offs, are quantitatively and qualitatively deficient in Ado-Ekiti. The scenic beauty, which these naturally green spaces would have bequeathed on the cityscape, is conspicuously lacking, with palpable implications on lost recreational and tourist attraction, employment creation, and income generation in the city.

## **5.3 The extent of encroachment on public open spaces in the city**

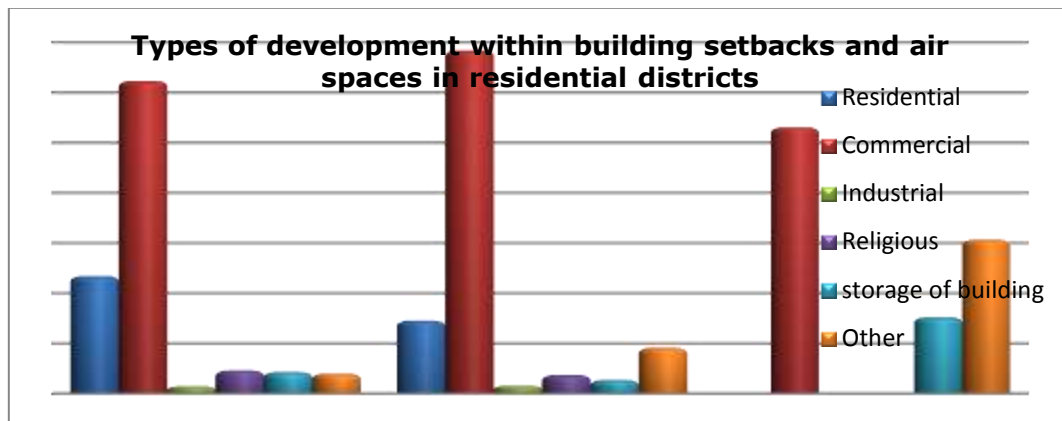
The utilization of relatively few setbacks available in the city was examined. Findings reveal majority of respondents (53.14%) confirming that setbacks from their buildings to the road, drains, water bodies or power lines, and air spaces around the buildings have been used for one form of development or the other. Figure 6 shows that 59.13% of the developed building setbacks and air spaces occur in the NDAs, the highest in the study, while the COAs and the PREs record 53.96% and 32.05% of such development respectively. As an offshoot of the majority affirmative response confirming development on building setbacks and air spaces, the nature of uses that sprang up on these spaces was investigated.

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Source: Field survey, July 2015.

Figure 6: Development within setbacks and air spaces is mostly common in the NDAs than the COAs, and the least in the PREs of Ado-Ekiti.



Source: Field survey, July 2015.

Figure 7: Commercial activities surpass other uses within setbacks and air spaces within residential districts in the three morphological zones of Ado-Ekiti.



Source: Field survey, July 2015.

Figure 8: Extremity of commercial activities spilling from setbacks to annex the roadway at Imayo Street as it is often the case in all the three morphological zones of the state capital.

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Findings expose commercial use taking over setbacks and air spaces around 64.87% of buildings affected by the spate of public open space usurpation. This trend cuts across all the residential districts examined in the three morphological zones, but more pronounced in the NDAs (68.36%), closely trailed by the COAs (62.28%), and well above average in the PREs (53.03%). Figure 7 above provides visual appreciation of the dominance of commercial activities within setbacks in the entire cityscape, which oftentimes get to the extreme when the usage is extended to sidewalks and roadways as exemplified at Imayo Street in the core area as seen in Figure 8 above.

The research probes deeper into the use to which ‘undeveloped’ setbacks were put, and it was revealed that some uses feature in these spaces out of which commercial activities are most prominent. Curiously, majority 53.20% respondents claimed that their setbacks were not developed. Contrarily, findings show trading activities booming on these spaces, notably in the NDAs with 415 houses (60.85%), outnumbering 314 buildings (56.27%) in the COAs, and 52 houses (22.8%) in the PREs. The research also uncovers light industries located on supposedly undeveloped setbacks of 98 houses, 46.94% of which were found the COAs, 50.00% occurring in the NDAs, and 3.06% in the PREs. Other uses thriving on such spaces include storage of building materials and sundry items such as sand, gravel, blocks, steel rods, planks, water in plastic or metal tanks, wood, as well as parking of vehicles, farming, and horticultural gardens. It is inferred that public spaces, which respondents claimed not to have developed, were largely put to one use or the other.

### 5.3.1 Obtainment of development permits for the usage of undeveloped building setbacks and airspaces usage in the morphological zones of Ado-Ekiti.

Having established some uses featuring prominently on municipal spaces, further examination was conducted to determine their legality. Taking the form of inquiry into whether there was development permit authorizing the use of the setbacks and open spaces, findings reveal 81.43% negative response overwhelmed 22.24% affirmation in the city as contained in Table 2.

Permit obtainment for setback development	Yes	%	No	%	Total	%
COAs	118	20.47	451	79.26	569	38.76
NDAs	147	21.65	532	78.35	679	46.25
PREs	49	22.27	171	77.73	220	14.99
<b>TOTAL</b>	<b>314</b>	<b>22.24</b>	<b>1154</b>	<b>81.43</b>	<b>1468</b>	<b>100.00</b>

Source: Field survey, July 2015.

Table 2: Obtainment of development permits for development identified within building setbacks

This syndrome of noes cut across the three morphological zones ranging from 77.73% in the PREs, to 78.35% in the NDAs, and 79.26% in the COAs. Only 22.24% respondents confirmed that they obtained development permits for the usage of their building setbacks, boiling down to 20.74% in the COAs, 21.65% in the NDAs, and 22.27% in the PREs.

The research establishes the widespread attitude of people embarking on physical development on setbacks without obtaining necessary permit as required by law. This pattern of illegal development reduced public open spaces that were even inadequate in the urban web. The implication of public open space reduction and scarcity of greens is devastating on aesthetics and environmental quality in the entire city, with attendant effects on health, urban comfort and recreational opportunities for residents and visitors alike.

### 5.3.2 Factors mostly responsible for encroachment on public open spaces in Ado-Ekiti.

Undoubtedly, encroachment is relatively high in the study area to the extent that 92.24% of open space usage is illegal, hence detrimental to the attainment of a livable and inclusive city. Findings reveal major causal factors for incessant encroachment on public open spaces as ignorance (34.65%), and the laxity

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of government organs on development matters (31.77%) in the city. Other factors include the desire by developers to better their financial lots (15.19%), increasing human activities requiring space (13.16%), and the nefarious activities of land speculators poaching the city (4.48%).

## 6.0 RESEARCH CONTRIBUTION

The research makes original contribution to knowledge by generating data on the spatial structure dominated by residential land use, and establishing the absolute planlessness of the closely knit core and new development areas in the urban morphology. The study reveals the bane of the city as amorphous expansion into the outlying regions in response to rapid urbanisation and commercialization. Also documented is the substitution of vegetal cover and open spaces for developmental purposes, which culminates to bare and choky neighbourhood environment in Ado-Ekiti. The study generates data on grossly inadequate building setbacks to roadways, hydrological features, and power transmission lines in the city. The revelation of vital information on absolute disregard for statutory guidelines, consequent upon which valuable public open spaces and greenery are incessantly subtracted from the cityscape, is novel. The research also provides valuable data on buildings lacking sufficient air spaces from adjourning buildings, thereby portending inadequate provision for play areas and green landscaping, which reduce liveability and scenic beauty in the capital city. Significantly, data series emanating from the research exposes the gross quantitative and qualitative deficiencies of organized public open spaces in the city. This sheds light on absolute shortage of green spaces, danger of ecological imbalance and biodiversity loss, jeopardy of recreational opportunities and tourist attraction, and threat to the ability of Ado-Ekiti becoming a great place.

The research equally brings up fresh information that substantiates the innate propensity for encroachment on open spaces in the city. The study provides insight into the tendency for audacious development, negating necessary permits, as required by law, and substantiates absolutely high illegality of encroachment on public open spaces. Fundamental factors responsible for ceaseless encroachment on public open spaces, originating from the study, range from people's ignorance, government negligence on development control matter, instinctive desire of the people for monetary gains, the ever increasing spatial requirement for human activities, and the despicable attitudes of land speculators. Findings also made known the destructive effects of public open space usurpation on aesthetics, environmental quality, recreational opportunities, health, urban comfort, and inclusion in the fledging capital city.

## 7. RESEARCH LIMITATIONS

The major limitation to this study is the non-availability of data bank, and updated maps, showing the spatial structure and existing states of public open spaces in Ado-Ekiti. This necessitates the manual updating and digitization of old maps, supported with aerial photographs taken from elevated positions, such as mountain tops and communication masts. Obtaining permits to ascend the latter proved hectic and costly, but was passionately pursued. Satellite imageries accessed by remote sensing, and obtained through the internet, showing the trend and extent of development of the built up areas of the city and the suburbs, were also indispensable.

Moreover, some respondents were envisaged to show apathy in the course of conducting the field survey and data collection. Expectedly, those operating on encroached spaces and illegal structures could be hostile and skeptical about the study, which they could believe must have been sponsored by government, and could thereby jeopardize their continued use of the spaces. It took the intervention of the neighbourhood heads and leaders of local resident associations to convince residents on the academic nature of the exercise prior the survey. Another moral strategy of accepting the study was co-opting of some field supervisors and enumerators, known to the people in selected districts, for the field survey. Furthermore, written permission from the Ministry of Lands was handy to back up the data collection exercise. Most importantly, the conduct of the survey took cognizance of basic research ethics that ensure and protect the rights of respondents to willful volunteering and confidentiality of information.

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## 8. FURTHER RESEARCH

The study was met with some challenges and limitations, which led to the identification of the following issues for further research:

- The relevance of GIS and remote sensing tools for mapping, monitoring, trend analysis and documentation of urban spatial structure and development in Nigerian cities
- The need for the establishment of data bank for effective urban, regional and national planning
- Invasion of public spaces: causal factors, effects of encroachment, strategies of reclamation and challenges of reestablishing lost spaces.
- Ethno-cultural and economic attributes of the users of encroached public spaces in Ado-Ekiti, Nigeria.
- Socio-economic and environmental effects of reestablishing encroached public spaces in densely populated traditional areas of Nigerian cities.
- Challenges and prospects of incorporating trading activities into retrofitted urban spaces in Ado-Ekiti.
- Evaluation of public perception and acceptability of placemaking programmes in the creation of functional and sustainable public spaces in Ado-Ekiti as a typical Nigerian urban center.

## 9. DISCUSSION & CONCLUDING REMARKS

The thrust of this research is the reclamation of lost public spaces, and their utilization for greening to make great places that promote livability, inclusiveness and sustainable landscape in Ado-Ekiti. Obviously, developers contravene regulations with impunity to meet ever growing spatial needs for overcoming survival challenges, thereby resulting to waves of illegal structures clogging available spaces in the urban matrix. Apparently ineffective is development control apparatus to curtail encroachment and amorphous expansion. Established cases of encroachment render the city environment formless, unattractive and unfriendly. The need arises to turn the situation around by recovering usurped spaces and reestablish city greening. This is guaranteed to propagate biodiversity, and resuscitate livability, efficiency and inclusiveness.

In view of the foregoing, recommendations and policy directives are made to achieve the goal of adopting green landscaping, placemaking and inclusive programmes as tools to transform recovered open spaces to parks, gardens and promenades, and thereby guarantee the reinvention of Ado-Ekiti as a great city of tomorrow.

### 9.1 Charting and documentation of encroached public spaces

As recently proposed elsewhere (Ojo-Fajuru & Adebayo, 2014), government should take urgent steps to map and document all encroached public open spaces and vacant lots within the capital city. Remote sensing and satellite imagery should be employed for precision to track the extent of encroachment and illegal development. This compilation should be factored into the city's master plan as guide to aid reclamation, reestablishment and monitoring of green spaces.

### 9.2 Adoption of the Ado-Ekiti Urban Landscape and Greening Subject Plan to legalize and reestablish bare surfaces, and public open spaces into greenery.

The Ado-Ekiti Urban Landscape and Greening Subject Plan, made pursuant to, and as component of the Master Plan of Ado-Ekiti, should be open to public critique before adoption and conscientious implementation. Appropriate legislation should be made within the framework of the Plan to support the policy of breaking up hard surfaces in replacement with planting to reconcile concrete with greenery, and thereby reintroduce nature into hitherto bare areas of the city. All open spaces naturally or incidentally occurring, including setbacks to roadways, utilities and water bodies, spaces reclaimed

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from illegal development, valleys and slopes, should be acquired and re-vegetated into massive urban forest and green areas. These green spaces should be appropriately furnished to create great places for the recreational pursuits of the people. Selected socio-economic activities such as organised markets and periodic trading points should be incorporated and controlled in some designated places to accommodate itinerant traders, and promote inclusiveness, service and economy in the city.

### **9.3 Establishment of the Ado Urban Greening, Parks, Open Spaces Development Board**

As earlier proposed, (Ojo-Fajuru & Adebayo, 2014), it is hereby reiterated that the state government should set up a vibrant Ado Urban Greening, Parks, Open Spaces Development Board at the city level. This Board, replicating feats of Durban Metropolitan Open Space System (D'MOSS), should vigorously pursue policies and programmes stipulated in the Greening Subject Plan by assuming the responsibility of creating urban forests and green belts, interconnected parks, gardens, promenades and other open green areas. These should be planted with carefully selected trees, shrubs, hedges, grasses, ornamental plants and flowers, linking up hitherto fragmented city spaces to crossbreed and grow biodiversity. The Board should also undertake regular general inventory and improvement in the physical and structural outlook to enhance the functionality of recreational open spaces in the city. Damaged equipment should be repaired where applicable, or replaced where necessary, while new complimentary facilities should be provided as soon as necessary to provide quality service in recreational open spaces. The environment of these facilities should be kept clean, litter-free and healthy. Private-owned resources should be closely monitored to conform to set standards and policy directives. Uncomplimentary or illegal uses should be banned within recreational open spaces generally. The presence of regular staff, working under the aegis of the Board, operators of incorporated socio-economic ventures, as well as usage of signs and graphics should safeguard the recreational open spaces against misuse, abuse, vandalism and encroachment. Offenders must be apprehended and prosecuted as deterrents to others.

### **9.4 Encouragement and protection of placemaking initiatives**

Also in line with an earlier policy statement (Ojo-Fajuru & Adebayo 2014), individuals, groups and corporate bodies should be encouraged and protected to form and operate outfits as non-profit but service oriented community based organisations. Their operation should be fashioned after non-government organisations, the likes of Project for Public Spaces (PPS), Placemaking Chicago, Birmingham Open Spaces Forum, Friends of Heaton Moor Park, and the Green Movement in Paris, among others. These organisations should operate within the policies of the Board, and form common front for voluntary placemakers and people from all walks of life, to clean and forgotten territories, abandoned or reclaimed open spaces, and filthy vacant lots. This general clean up of dirt and filth in the city environment should involve the Governor and top government officials in proactive manner as demonstrated by John Magufuli, the Tanzanian President, who helped clean dirty streets with bare hands in place of costly annual independence day celebration, so as to stop the spread of cholera in his country. The revamped spaces should be planted with such exotic elements like grasses, flowers, hedges, and trees to beautify the environment and bring back lost wildlife species, such as birds, to the urban area, thereby reinventing Ado-Ekiti as an eco-city of the future, and a great city of tomorrow.

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## 11. REFERENCES

Aledare KD 2008 Issues in Urban Planning and Management. Lagos, Tony Terry Prints.

American Society of Mining and Reclamation 2012, *Reclamation, 2012*, Champaign: ASMR, available at: <http://www.asmr.us/> [accessed: 01 April 2012].

Collaborative for Inclusive Urbanism (CIU) 2014, *A world of an inclusive city*, Eugene: CIU, available: <http://www.inclusiveurbanism.org/> [Accessed 20 May 2014].

Independent National Electoral Commission (INEC) 2007 *Atlas of Electoral Constituencies*. Federal Government Press, Lagos

Long, A. J. & Nair, P. K. R. 1999 Trees outside forests: agro-community, and urban forestry', *New Forests*, 17, 145-174.

Morris, S 2014, 'Birmingham joins San Francisco and Oslo in Global Green Cities Club' *The Guardian*, March 4, 2014.

Ojo-Fajuru, J. O. & Adebayo, A. A 2014 Greening and Furnishing Setbacks, Open Spaces and Parks towards Making Great Places to Promote Livability and Inclusiveness in Regional Capital Cities: the Case of Ado-Ekiti and Akure, Nigeria. A Paper presented at the Planning Africa Conference 2014, International Conference on *Making Great Places*, organised by South Africa Planning Institute (SAPI) held at the International Conference Center, Durban, South Africa between 19<sup>th</sup> and 22<sup>nd</sup> October, 2014.

Olanrewaju, DO 1990 Spatial Distribution of Urban Deprivation in Akure, Ondo State, Nigeria. Ph.D Thesis, University of Sheffield.

Olokesusi, F. 2009 The Gasping Cities: Human Factors in Urban Environmental Management, in *Physical Planning and Quality of Life in Nigeria – Essays in Honour of Professor Timothy Olayiwola Egunjobi*, edited by T. Agbola, & F. Olatubara. University of Ibadan, Ibadan, 380-400.

Powter, C. 2002 *Glossary of Reclamation and Remediation Terms used in Alberta Government of Alberta*. available at: <http://environment.gov.ab.ca/info/library/6843.pdf> [accessed: 01 April 2012].

Project for Public Space, 2014. *Placemaking*. [Online]. Available: [www.pps.org/reference/what\\_is\\_placemaking?](http://www.pps.org/reference/what_is_placemaking?)[Accessed 01 March 2014].

Safer Spaces 2016. *Public spaces: More than 'just space' 2016*, South Africa: SS, available at: <http://www.saferpaces.org.za/resources> [accessed: 11 March 2016]

SAPI, 2014 General information on abstract submission for the 6<sup>th</sup> Planning Africa *Conference on Making Great Place* to be held in Durban, eThekweni on 19-22 October, 2014. Available: [www.sapi.org.za](http://www.sapi.org.za). [Accessed 01 March 2014].

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The Future of Places, 2014. *Streets as public spaces and drivers of urban prosperity, 2014*, Buenos Aires: The Future of Places, available at: [http://futureofplaces.com/wp-content/uploads/2015/04/FoP\\_2015\\_rapport-IIwebb.pdf](http://futureofplaces.com/wp-content/uploads/2015/04/FoP_2015_rapport-IIwebb.pdf) [accessed: 11 March 2016].

UN Habitat, 2015. *Adequate Open Public Space in Cities: A Human Settlements Indicator for Monitoring the Post-2015 Sustainable Development Agenda, 2015*, Nairobi: UN Habitat, available at: <http://unstats.un.org/.../post-2015...indicator.../Background%20note%20by%2...> [accessed: 11 March 2016].

Wahab, B & Falola 2014 'Building clean cities in Nigeria: an overview' in Wahab, B., Atebije, N., & Yunusa, I.(eds.) *Building Clean Cities in Nigeria*, Nigerian Institute of Town Planners (NITP) & Town Planners Registration Council of Nigeria (TOPREC), Abuja.

Women in Informal Employment: Globalising and Organising (WIEGO)/ Inclusive Cities Project (ICP), 2014. *Inclusive Cities*. available: [www.inclusivecities.org/](http://www.inclusivecities.org/) [www.wiego.org](http://www.wiego.org) . [Accessed 20 May 2014].

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# Land Use and Land Cover Change in the Western Cape Province: Quantification of Changes & Understanding of Driving Factors

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## Abstract

The Western Cape Province is currently faced with population growth, declining household sizes, increasing household numbers, high levels of migration, urbanization and escalating development pressures. These factors have consequently triggered changes in land use and land cover (LULC) and incited issues such as urban sprawl, marginalization of the poor, limited public access to resources, land degradation and climate change. This paper seeks to understand the most significant drivers of LULC change in the Western Cape Province. Focus is given to the major LULC changes which have occurred in the Province in past 24 years by integrating a desktop study of LULC changes using the 1990 and 2013-2014 South African National LULC datasets; document analysis; and expert opinion in the form of semi-structured interviews with municipal town planners. An adapted Driver-Pressure-State-Impact-Response (DPSIR) Framework is used to analyse and understand LULC changes in the study area. LULC changes are driven by political, economic, technological, demographic, biophysical and cultural factors that must be considered in strategies and policies in future planning to avoid detrimental impacts on the environment whilst maintaining socio-economic benefits.

## Keywords

Land Use, Land Cover, Land Use Change, Drivers, DPSIR

## 1. INTRODUCTION

The State of the Environment Outlook Report for the Western Cape Province reveals that the Province is experiencing significant population growth, decreased household sizes, increasing household numbers, high levels of migration, urbanization, infrastructure development, mining pressures and agriculture expansion and intensification (Maree and Van Weele, 2013). These trends have consequently triggered changes in land use and land cover (LULC) and incited issues such as urban sprawl, marginalization of the poor, limited public access to resources, land degradation and climate change. Furthermore, the issues surrounding LULC in the Province emanate from past inequities in access to land coupled with unsustainable land use practices (Maree and Van Weele, 2013). This poses a challenge to the government which strives for a sustainable nation that safeguards democracy by providing basic access to services, managing limited resources and advancing effective and efficient integrated planning whilst maintaining ecosystem functions (DEAT, 2008). Understanding drivers of LULC change and articulating how various factors influence LULC is important in meeting this challenge.

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## **2. LITERATURE REVIEW**

To establish the theoretical basis for this research, this section will review literature on land, land use, land cover and drivers of land use change.

### **2.1 Land, Land Use and Land Cover**

The Food and Agriculture Organization (FAO) Land and Water Bulletin 2, describes land as “a delineable area of the earth's terrestrial surface, encompassing all attributes of the biosphere immediately above or below this surface, including those of the near-surface climate, the soil and terrain forms, the surface hydrology (including shallow lakes, rivers, marshes, and swamps), the near-surface sedimentary layers and associated groundwater reserve, the plant and animal populations, the human settlement pattern and physical results of past and present human activity (terracing, water storage or drainage structures, roads, buildings, etc.)” (Sims and Sombroek 1997).

The terms land use and land cover though often used interchangeably, have different meanings. Land use is the purpose for which land is used whereas land cover refers to the physical characteristics of the surface of the land. The FAO describes land use as “the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it” (Di Gregorio and Jansen, 1998). According to Turner et al. (1994), “land cover is the biophysical state of the earth's surface and immediate subsurface.” Changes in land use patterns driven by various causes result in land cover changes that affect biodiversity, water, radiation budgets and other processes that collectively affect the climate and biosphere (Riebsame et al., 1994). Land use and land cover change detection and analysis is made possible by the availability of remote sensing technologies that provide land use and land cover data, together with GIS analytical technologies that can be used to understand LULC patterns (Dadhich and Hanaoka, 2011).

### **2.2 International Review of Drivers of Land Use Change**

Land use change involves a conversion from one land use to another or intensification of the present or current land use (Turner et al., 1994). Changes in land use are determined by how individual landowners, communities and governments control land use and make decisions on how to use land. Such decisions are influenced by the interactions between socioeconomic factors such as population and biophysical factors which vary at different scales (Lambin and Geist, 2007). Briassoulis (2000) confirms this and further clarifies that biophysical drivers do not have a direct impact on land use change but impacts land cover change which in turn influences land managers decisions.

Land use change can therefore be modelled as a function of socio-economic and biophysical factors. These factors are often referred to as ‘driving factors’. The driving factors of land use change are categorized as either proximate or underlying, where the former are direct modifications by individuals at a local scale such as individual farms and the latter are indirect changes which occur at a regional scale (Lambin and Geist, 2007). Proximate driving factors are caused by human activities such as infrastructure and agriculture expansion whereas underlying factors are caused by complex interactions between social, political, demographic and biophysical variables (Lambin et al., 2001). Lambin et al. (2001) further maintains that proximate causes can be categorized into three broad categories of agricultural expansion, wood extraction and infrastructure expansion. Briassoulis (2000) describes underlying driving forces as socio-economic drivers which comprise of demographic, economic, institutional factors, technological and cultural or socio-political.

As ascertained above, international researchers have identified broad categories of drivers of LULC change. However, these drivers vary dependant on the context of the area under study and the scale of analysis. South African academic references on drivers of LULC change are very limited and therefore

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unable to fully explain LULC changes particularly in the Western Cape Province. Identifying LULC changes and their driving forces is crucial in understanding challenges, monitoring developments and mitigating the impacts of land use changes. Based on this premise, this study aims to investigate LULC changes and factors that drive these changes specifically in the Western Cape, thus contributing to the understanding of land use changes.

### 3. RESEARCH OBJECTIVES

The following were the objectives of the study:

- To quantify the changes in LULC in the Western Cape Province.
- To determine the driving factors of LULC change in the study area.
- To determine the economic, social and environmental impacts of LULC changes.

### 4. APPROACH & METHODOLOGY

#### 4.1 Study Area

The study area for this research is the Western Cape Province (Figure 1), the fourth largest province in South Africa covering 10.6% (129 462 square kilometres) of the country's total land surface (Maree and Van Weele, 2013). The Province consists of five district municipalities (Cape Winelands, West Coast, Central Karoo, Eden and Overberg) and one metropolitan municipality (City of Cape Town).

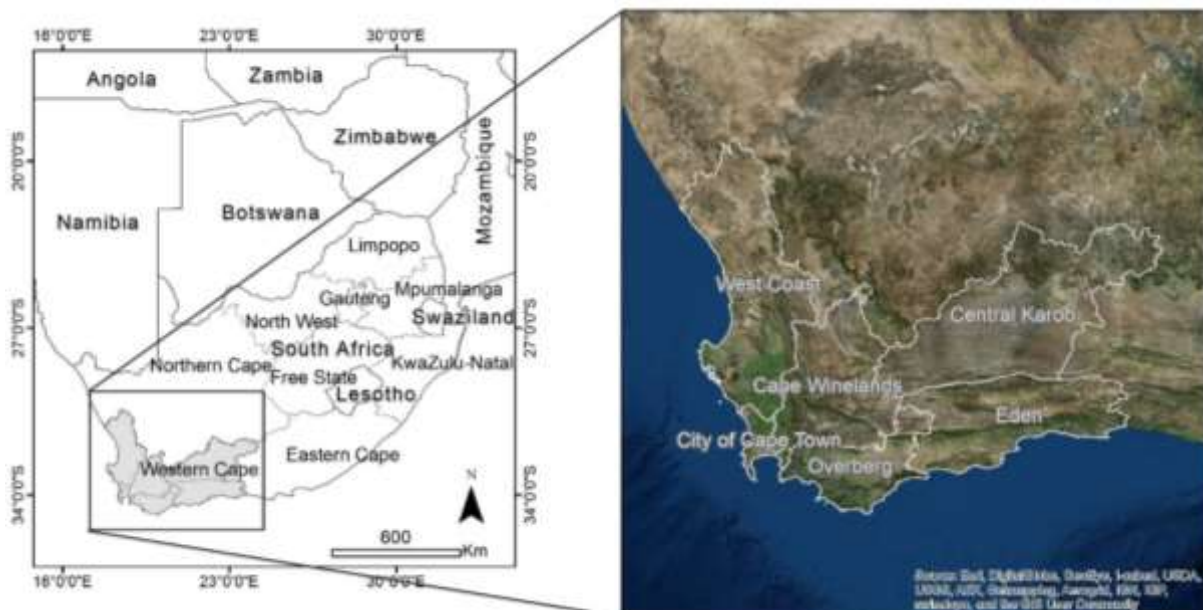


Figure 1: Geographical location of the Western Cape Province

#### 4.2 Methods

This study was conducted using a mixed methods research methodology which integrated a quantitative and qualitative approach. Detection and analysis of drivers of LULC changes was conducted by a desktop study of LULC maps using Geographical Information Systems (GIS), interviewing municipality town planners, document analysis and adapting of the DPSIR framework. The desktop study of LULC maps was used to analyse LULC changes and this addressed the objective to quantifying changes in LULC in the Western Cape Province. Interviews with town planners accompanied with

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reviews of documents were the methods used to determine driving factors and their impacts. An adapted DPSIR framework was used to report and organize findings of the interviews into themes presented as components of the framework.

#### 4.2.1 Remote Sensing derived LULC data

Analysis of LULC change in the Western Cape Province was based on LULC datasets of 1990 and 2013/14 obtained from the Department of Environmental Affairs (DEA). These datasets cover the whole country at a 30m spatial resolution and are known as the 1990 South African National Land Cover Dataset (35 Classes) and the 2013/2014 South African National Land Cover Dataset (72 Classes). These datasets were created by GEOTERRAIMAGE (GTI) and incorporate both land-cover and land-use data which are referred to as "Land-Cover" (GEOTERRAIMAGE, 2014). The 1990 dataset was derived from multi-seasonal Landsat 5 imagery which was acquired between 1989 and 1991 whereas the 2013/14 dataset was generated from Landsat 8 imagery acquired between 2013 and 2014. Land-use classes such as settlements, plantations, mines and cultivated land were acquired from other sources (GEOTERRAIMAGE, 2014).

#### LULC Data Processing

LULC change detection, quantification and analysis were performed in Land Change Modeler (LCM) 2 for ArcGIS. LCM requires input of LULC maps with matching classes, legend and characteristics. These LULC maps must be byte or integer images with identical values and legends, where the legends begin with 1 and sequential. Furthermore, the maps must have identical rows and columns with X and Y extents. ArcMap 10.3.1 was therefore used to process the LULC datasets prior to analysis in LCM. The South African Land Cover Classification System for remote sensing applications was the adopted scheme in reclassifying the datasets.

LCM requires two LULC maps between two time periods in order to perform change assessments. After processing data in ArcMap, an assessment of LULC change was conducted using the processed 1990 and 2014 LULC datasets as input parameters. Three types of graphs between the two input LULC datasets were generated. The first graph gave an indication of gains and losses for each LULC class. The second graph showed net changes by category or class. This was calculated by adding gains and subtracting losses from the earlier LULC dataset (1990). The third graph examined the contributions to changes experienced by a single LULC due to other various LULC classes hence showing contributors to net change. All the maps were created using ArcMap 10.3.1 software by (ESRI, © 1999-2015 ) and graphs were produced using Land Change Modeler 2.0 for ArcGIS (Clark University, © 2005-2013 ).

#### 4.2.2 LULC Change Qualitative Analysis

The research population for this study are municipal town planners in the Western Cape Province. Participants were selected per district municipality. In cases where a district representative was absent, a town planner with knowledge on past land use dynamics in the municipality was selected.

#### Data collection and processing

Annum (2015) refers to research instruments as tools used in collection of data, such as interviews, questionnaires, observations and document readings. Semi-structured interviews were conducted in order to gain knowledge of LULC issues in the study area and to collect primary data from interaction with planners. This method was selected as it allowed the researchers to explore issues relevant to the concerned municipality. The interviews were both face-to-face and telephonic and data was collected by transcribing and digital audio recording. Participants were informed of the nature of the research and a consent form was emailed and explained to them prior to the interviews. An interview guide (refer to Appendix 1) consisting of key themes was constructed.

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Data collected from interviews was validated, corroborated and supplemented by relevant LULC change documentation. The Western Cape Provincial Spatial Development Framework (SDF), individual municipalities SDF's, Growth Potential Study of Towns, State of the Environment Reports and various legislation and policy documents related to land use e.g. Spatial Planning and Land Use Management Act (SPLUMA), were obtained from the internet and thoroughly examined in order to retrieve relevant LULC information.

#### 4.2.3 Driver-Pressure-State-Impact-Response (DPSIR) Framework

The DPSIR is an analytical framework which can be used to organize, report and illustrate the effects of human activities on the environment. This framework was developed by the European Environmental Agency in the 1990s and has since been applied in environmental research projects to support planning decisions (Kristensen, 2004). The DPSIR framework was adapted in assessing LULC changes in the study area in order to present various aspects and issues which emerged from interviews and document readings.

### 5. RESEARCH ANALYSIS & FINDINGS

#### 5.1 Desktop Quantitative Analysis of LULC Changes

This section presents the results of desktop quantitative analysis of reclassified maps of 1990 and 2014. These maps indicate LULC changes in the Western Cape Province (Figure 2). Individual district municipalities maps were also created based on clip extents of the municipality vector mask datasets. Table 1 shows the net area change in hectares and percentage changes for individual LULC classes between 1990 and 2014 in the Western Cape Province. The quantified results indicate that the Western Cape Province has experienced considerable changes in LULC.

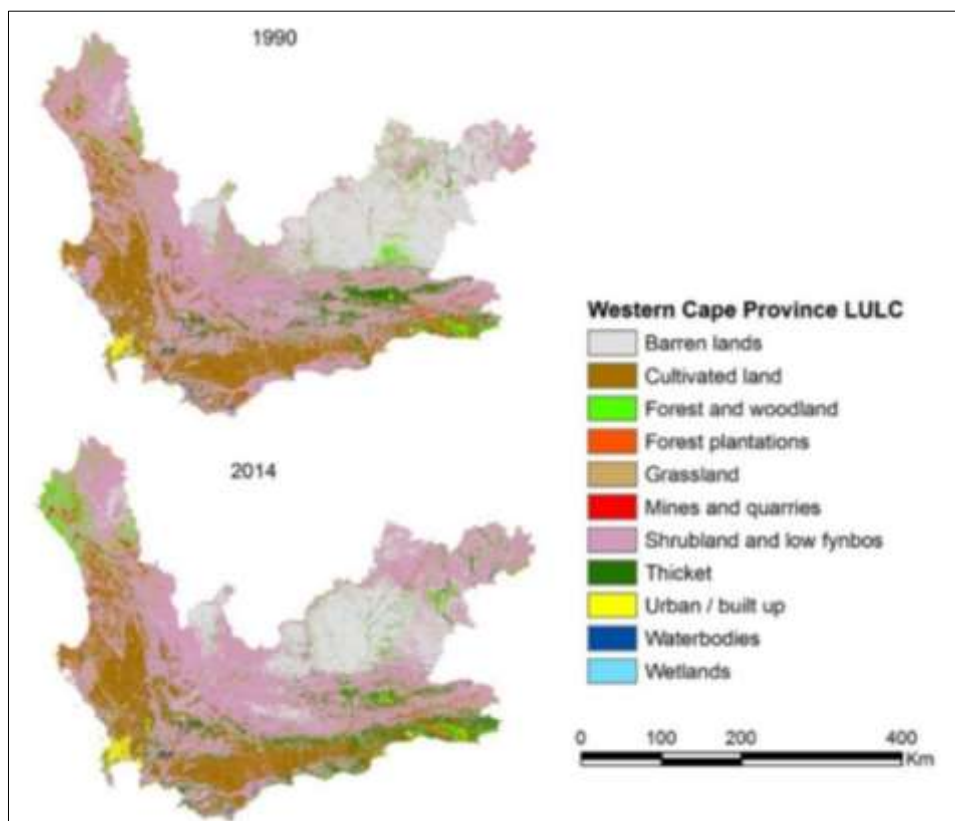


Figure 2: Western Cape Province LULC maps for years 1990 and 2014

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Based on the LULC datasets used; there has been a considerable provincial decrease in forest plantations, grasslands, wetlands, and barren lands over the past 24 years. Contrary to these decreases, there have been increases in urban/built up, mines and quarries, water bodies, woodlands, thicket and shrubland.

Table 1: Western Cape LULC area, net change and percentage change between 1990 and 2014

Class Name	1990 Area (ha)	2014 Area (ha)	Net Change (ha)	% Change
Forest and woodlands	462 583.44	593 923.68	131 340.24	28.39
Thicket	590 777.55	794 971.53	204 193.98	34.56
Shrubland and low fynbos	6 143 518.44	6 610 854.06	467 335.62	7.61
Grassland	706 820.4	519 442.47	-187 377.93	-26.51
Forest plantations	120 180.51	81 228.42	-38 952.09	-32.41
Waterbodies	55 190.52	55 987.02	796.5	1.44
Wetlands	143 738.46	108 163.71	-35 574.75	-24.75
Barren lands	2 776 498.47	2 198 310.12	-578 188.35	-20.82
Cultivated land	1 949 069.34	1 969 208.91	20 139.57	1.03
Urban / built up	103 646.97	116 667.45	13 020.48	12.56
Mines and quarries	6 184.53	9 451.26	3 266.73	52.82

Analysis of the above statistics in LULC change is also presented in graphical form in Figure 3 where gains are green and losses in purple for each LULC category.

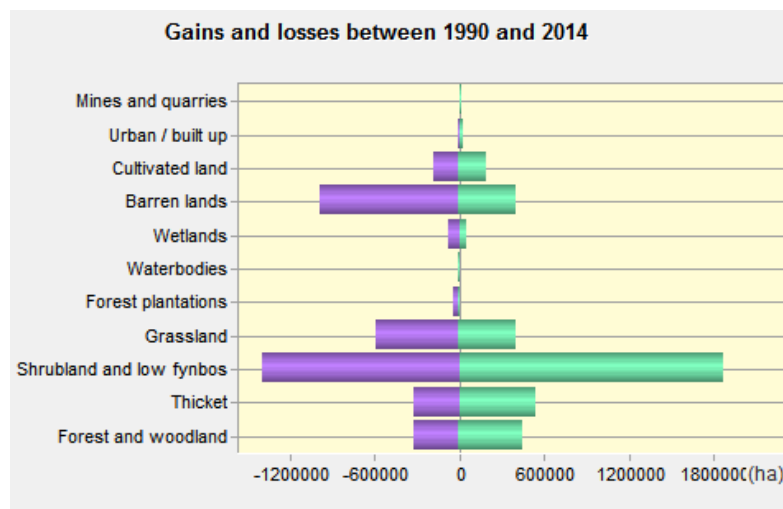


Figure 3: Western Cape Province gains and losses between 1990 and 2014

The highest percent gain is in mines and quarries although the Western Cape Province is generally not popular in mining, with mining activities mostly concentrated in the West Coast district municipality. Mining activities are predominantly characterised by sand mining resulting from construction pressures. The mining sector however has a low contribution to the Province's GDP and sand mines result in loss of surface productivity and undesirable visual impacts. Other net gains between the two time periods were in forest and woodland and thicket LULC classes. The net increase in thicket could be a result of mapping errors or inaccuracies due to spectrally similar woody vegetation classes such as indigenous forest, woodland and shrubland.

The highest net percent loss is in plantations LULC class, giving an indication that there has been a decrease in plantations over the past 24 years. The decrease in plantations in the Western Cape Province was mostly due to the Government's forestry exit policy and fires in the region. In 2001, the Cabinet

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decided to decommission about 44 793 hectares (ha) of forestry plantations in the Western and Southern Cape to convert the land to agriculture, human settlements and conservation within a 20 year period from 2001. The rationale behind this was that the plantations were not economically viable at that time; accompanied with concerns of plantations invasion of protected areas and catchments. Government however partially reversed 22 402ha back to plantation forestry following studies and recommendations by the Department of Water Affairs and Forestry in 2008 (Wilgen, 2015). There has been no significant increase in plantations since no initiatives were implemented following the reversal by Cabinet in 2008 (De Beer et al., 2014). An indication of the actual losses of forest plantations to other LULC classes between 1990 and 2014 is illustrated in Figure 4.

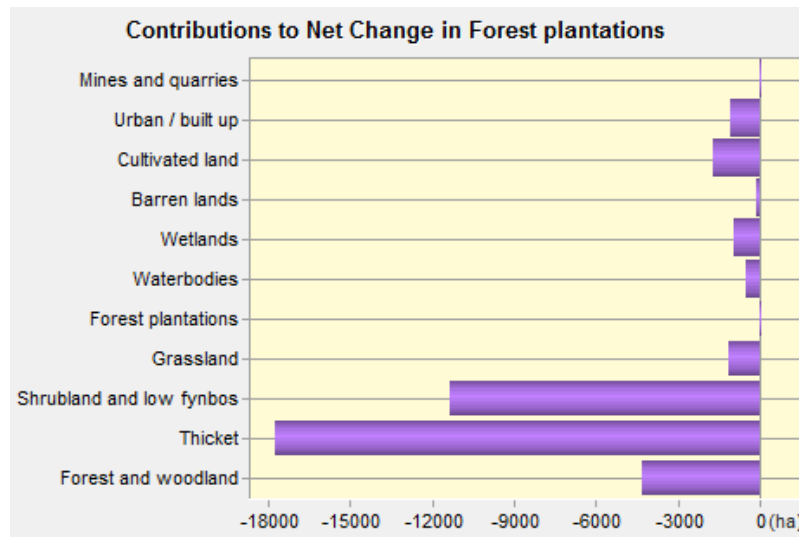


Figure 4: Contributions to net change in forest plantations by other LULC classes

The LULC change results also indicate that there has been a provincial increase in urban / built up areas with about 12% and a 1% increase in cultivation. An assessment of the individual district municipalities in the Western Cape Province however provides a clearer picture of the actual LULC changes and shows that the increase in urban areas in the past 24 years is concentrated in the Cape Metropolitan area and the adjacent Cape Winelands district municipality. Despite the 1% provincial increase in cultivation, the Cape Metro has experienced 3 728 hectares loss (-8.49%) in cultivation to other LULC classes.

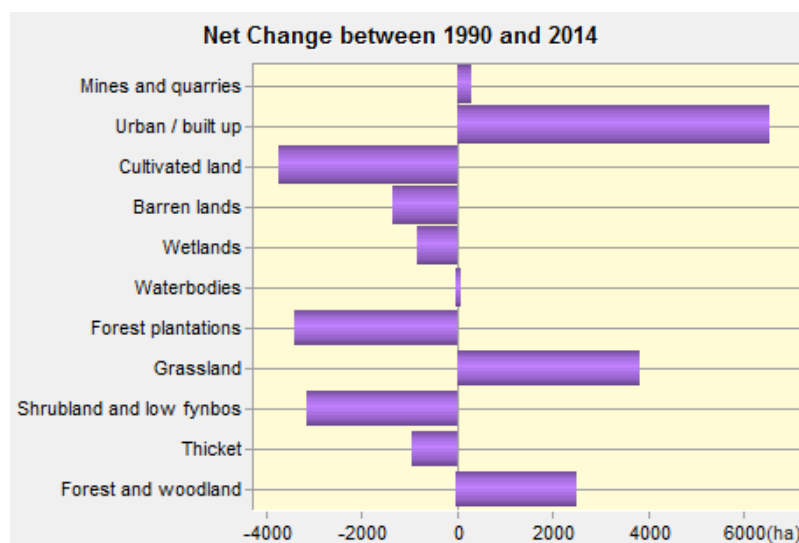


Figure 5: Cape Town Metro net change between 1990 and 2014

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Further analysis of net changes in LULC in the Cape Metro indicate that the most increase occurred in the urban LULC class which experienced gains at the expense of cultivated land (216 ha), shrubland and low fynbos (5 315 ha) and plantations (463 ha). This increase is largely due to urbanization and migration amongst other factors which will be discussed in the driving factors section.

## 5.2 Qualitative Results & the DPSIR Framework

The following sections provide a summary of LULC change qualitative results based on components of the DPSIR framework (**Error! Reference source not found.**). Drivers are social, economic, emographic changes in societies, including consumption, lifestyle and production patterns. These forces lead to human activities and processes which exert pressure on land resources resulting in various states of the environment. The change in state of the environment has consequences which are indicated in the framework as impacts that elicit responses. Responses are actions by individuals, societies and the government to prevent and adapt to negative impacts (Gabrielsen and Bosch, 2003). The arrows between components of the DPSIR framework represent causal chains which show sequential processes that link causes of problems with their effects (Smeets and Weterings, 1999)

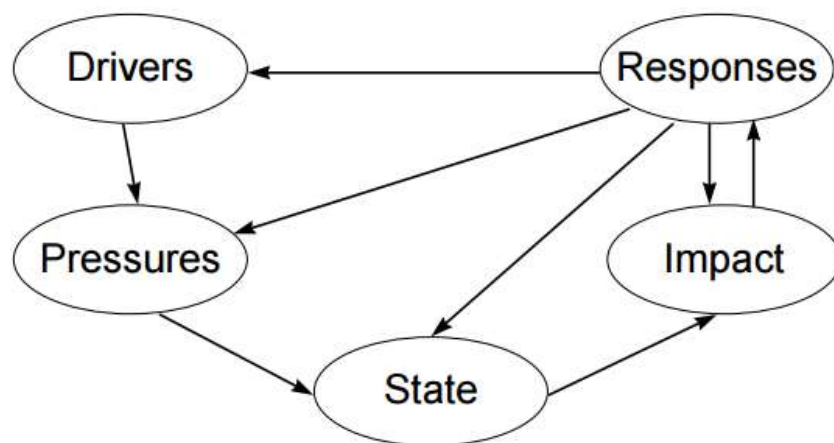


Figure 6: The DPSIR Framework Smeets and Weterings (1999)

The qualitative results of this study will be presented based on components of the DPSIR framework and will conclude with an adapted DPSIR LULC change framework for the Western Cape Province.

### 5.2.1 Driving Factors of LULC Change

- Political Factors

Various legislation and policies play a significant role in stirring LULC change in South Africa. The political apartheid history of South Africa is partially responsible for the current spatial patterns in the country. The Group Areas Act 41 of 1950 divided South Africans into different racial groups where a greater percentage of the land was for the white minority, whilst the majority blacks were confined to smaller homelands. The use of land in previous homelands has had significant impacts on LULC and livelihood options (Hoffman, 2014) and post-apartheid South Africa faces challenges which emanated from inequalities. Apartheid not only racially separated people, but also led to inequalities in housing, geographic location, environmental landscape and distribution of facilities (Spinks, 2001).

Post-apartheid policies and legislation were introduced with the aim of transforming apartheid spatial patterns into regions of “equity, integration and sustainability” (Rubin, 2008). However, Van Donk (2008) contends that past spatial patterns have been replicated by government’s incentives such as the Reconstruction and Development Program (RDP), which has seen settlement construction on the urban

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periphery with limited access to resources. He further asserts that this is due to the unavailability of affordable well located land and the need to address housing backlogs.

The South African Constitution of 1996 provides for the establishment of the three spheres of government as National, Provincial and Local (South Africa, 1996). These spheres are accorded legislative authority as described in Sections 43, 44, 104 and 156 of the Constitution. Section 40(1) states that they “are distinctive, interdependent and interrelated” (South Africa, 1996) and responsible for land use and spatial planning. Functional areas which are directly related to planning are listed in Schedules 4 and 5 of the Constitution of South Africa as provincial planning, municipal planning, regional planning and development and rural and urban development (Van Wyk, 2010). The Constitution however does not provide meanings of these functional areas, leading to inappropriate developments and conflicts between the three spheres. However, SPLUMA No 16 enacted in 2013 addresses this issue and clearly states the categories of spatial planning as municipal, provincial and national planning. Popular post-apartheid legislations that control land use in South Africa are listed in Appendix 2.

- **Economic Factors**

Economic factors are in the form of taxes, investments, access to capital, markets, cost of production and transportation, technology and subsidies (Barbier, 1997). Land managers are stimulated by these factors and motivated by profitability and feasibility of a particular land use. The Western Cape government intends to prioritize resources on high potential sectors of agriculture, tourism and industry as these promote job creation and inclusive growth (WCG, 2015).

Economic factors, combined with policies and institutional factors play a significant role in LULC change in the Western Cape Province. For example, giving farmers access to capital and markets and agricultural technology can encourage agriculture expansion and conversion of land. Interviews with town planners revealed the prevalence of pluriactivity, indicating strong links between sectors of agriculture and tourism.

- **Technological Factors**

The number of commercial farms in agriculture has declined from approximately 120 000 in 1950 to about 29 000 currently and there has been a corresponding increase in average farm size (DAFF, 2015). This has consequently led to less reliance on manual labour (leading to job losses) and an increase in capital assets such as mechanization. Farm worker issues have been reported in agricultural rural districts in the Cape Winelands as a result of job losses due to mechanization.

- **Demographic Factors**

It is not just the number of people that leads to pressure on land use, but aspects of population composition and distribution such as household size, migration and urbanization (Harrison and Pearce, 2000). The Western Cape Province experiences inflows of people from other regions through international, internal and temporary circular migration. Stats SA (2014) estimates internal or inter-provincial migration at 344 830 people into the Western Cape Province between 2011 and 2016. Internal migration into the province mostly originates from the neighbouring Eastern and Northern Cape Provinces and is due to perceptions of better employment opportunities, access to better health, education and other facilities. More than 80% of the population and economic activity in the province is concentrated in the City of Cape Town and the neighbouring Cape Winelands, characterized by rapid urbanization which leads to informal settlements expansion with high crime, poverty and basic services shortages (Maree and Van Weele, 2013).

Besides migration, declining household sizes also contribute to growth and land use issues. According to a study by UNISA, the average household size in South Africa declined from 4.48 in 1996 to approximately 3.69 in 2005 (Van Aardt, 2007). The number of households is increased by migrating

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youth and single mothers who contribute to the increase in shacks, which leads to increased pressure on infrastructure and services (Van Zyl et al., 2008).

- **Biophysical Factors**

Biophysical factors “define the natural capacity or predisposing environmental conditions for land use change, with the set of abiotic and biotic factors – climate, soils, lithology, topography, relief, hydrology and vegetation” (Lambin and Geist, 2007). The interactions between biophysical variables and human activities influence land use change e.g. relief, which determines the extent that machinery can be used and the rates of erosion. Steep slopes are difficult to operate modern farm machinery and also subject to erosion thus limiting exploitation. Changes in land uses such as agriculture are influenced by biophysical factors e.g. climate (rainfall, wind, temperature) and soil conditions.

The effects of climate changes are evident in the Western Cape Province where extreme weather conditions in form of droughts, heat waves and floods are prevalent. These conditions have consequently led to decreases in crop production and loss of jobs in the agricultural sector. The impact of climate change on the agriculture sector also adversely affects other sectors that rely on agriculture for key inputs. Furthermore, very hot and dry conditions in the Province trigger fires which are partially responsible for loss of plantations.

- **Cultural Factors**

Cultural factors encompass beliefs, attitudes and perceptions of land managers which have an impact on land use decisions (Lambin and Geist, 2007). The awareness of land managers on consequences of land use decisions depends on their personal histories and information available to them, and these are often linked to political and economic factors (Lambin and Geist, 2007). Interviews with municipal town planners revealed that land use decisions in the Western Cape Province are in the hands of the mayor, council, politicians, institutions, developers together with limited influence of the general public. Lack of awareness of impacts of land use change can adversely affect both the environment and economy.

- **Summary of Driving Factors**

Driving factors of LULC for the Western Cape Province were broadly categorised as proximate and underlying factors. Based on interview responses and document analysis, proximate factors that involve direct land use modifications at a local scale are infrastructure, agriculture and forestry changes. Underlying factors operate at municipality and provincial levels and were identified as political, demographic, economic, technological and cultural factors. Figure 7 summarises the driving factors of LULC change in the Western Cape Province.

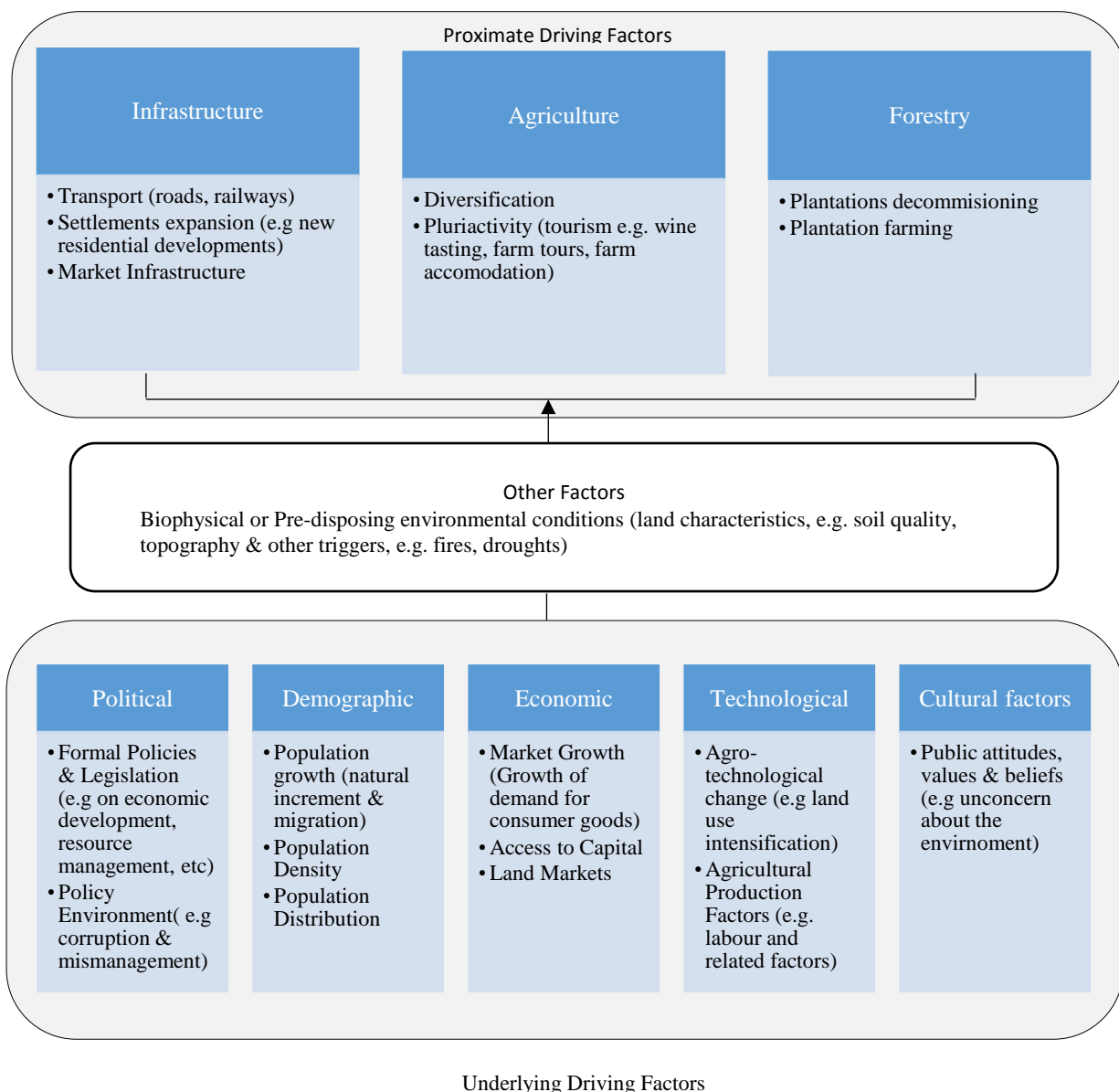


Figure 7: Driving Factors of LULC change in the Western Cape Province [adapted from Geist and Lambin (2002)]

### 5.2.2 Pressures

The factors discussed above lead to human activities which exert pressure on land resources. The most prominent pressures emerge from sectors with high economic development opportunities, which occur in the Cape Metropolitan, Eden and West Coast district municipalities. These sectors have been identified in the Provincial Environmental Review and Outlook as agriculture, tourism and industry sectors, which interact with other associated sectors and promote LULC change. Pressure from agriculture is in the form of land, water availability and chemicals. The agricultural sector attracts both inter-provincial and circular temporary migrants, thus exerting pressure on transport.

Development pressures in the province are also influenced by institution research projects and partnerships with the government. Examples are Agri-hubs by the Department of Rural Development and Land Reform (DRDLR); port developments by Transnet and the Department of Economic Development and Tourism (DEDT); and plantation decommissioning by South African Forestry Companies Limited (SAFCOL). Institutions conduct studies and make recommendations which push government to approve changes, especially if the impacts align with government objectives.

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### 5.2.3 State

Land use change drivers coupled with pressures on resources affect the state of land. The change in state of land has clearly been demonstrated with the results presented from the desktop analysis which shows the changes that have taken place in LULC between 1990 and 2014. LULC maps also show that most infrastructure developments are concentrated along the coastline, in the City of Cape Town and in core agricultural towns. Based on the interview respondents, most land use changes and associated impacts occur in agricultural, tourism and industry related areas.

Agriculture takes up the majority of land in the Western Cape Province (2.5million ha) and past trends indicate a decrease in croplands in the Central Karoo District with a contrasting increase in vineyards in the Western region (Maree and Van Weele, 2013). The decrease in agriculture is due to land capability and water availability where the latter is a common restraining factor in the Province. The increase in tourism has put a demand on residential, transport and other infrastructure, particularly in coastal areas where developments are taking place in the form of holiday homes, residential accommodation and tourism associated activities. Transnet and DEDT research on industrial opportunities has resulted in port developments and the initiation of the Saldanha bay Industrial Development Zone (IDZ).

### 5.2.4 Impacts

The change in state of land use has both positive and negative consequences. Agriculture promotes food security, job creation, economic stability, inputs to other industries amongst other advantages. However poor farming practices, overgrazing and land clearance can lead to erosion and land degradation. The conversion of plantations to other land uses has led to job losses and dried trees from clear-felling have fuelled fires leading to biodiversity loss. The perception of the Western Cape as a better province in terms of employment and access to basic services has led to in-migration leading to pressure on transport, accommodation and other essential facilities. This consequently leads to congestion, increased crime, informal settlements, backyard housing, urban sprawl, infrastructure developments and other issues which negatively impact the environment.

Pressure from the tourism industry has led to developments close to the coast and road upgrading to improve connectivity. The N1, N2 and N7 highways together with other roads will need upgrading to facilitate connectivity between tourism and other economic hubs. The Western Cape Province consists of three major ports i.e. Saldanha Bay, Cape Town and Mossel bay. The Saldanha Bay IDZ is expected to provide employment and various economic opportunities to different industries in future and Transnet has proposed iron-ore infrastructure expansion which will be an economic benefit and is also aligned with government infrastructure development goals (WESGRO, 2015). However the upgrading and expansion of iron ore terminal requires sediments dredging which leads to marine disturbance, pollution and coastal erosion (Clark et al., 2015).

### 5.2.5 Response

Responses are actions which societies or governments undertake as a result of detrimental impacts which can take place at stages between driving factors and impacts in the DPSIR framework. Such responses in the study area have been in the form of policies and monitoring projects. An example is the monitoring of the state and changes of ecosystem functioning of the Saldanha Bay and Langebaan Lagoon by the establishment of the Saldanha Bay Water Quality and Forum Trust (SBWQFT) (Clark et al., 2015). The SBWQFT produces annual reports on activities which affect the bay such as industrial development, dredging, and coastal erosion in order to identify and mitigate negative impacts to the environment (Clark et al., 2015).

### 5.2.6 Adapted DPSIR framework

LULC aspects and issues which emerged from interviews and document readings were presented in an adapted DPSIR framework consisting of themes of Driving Factors, Pressures, State, Impacts and

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Responses (Figure 8). This framework was developed to structure and subsequently summarise qualitative findings of this research.

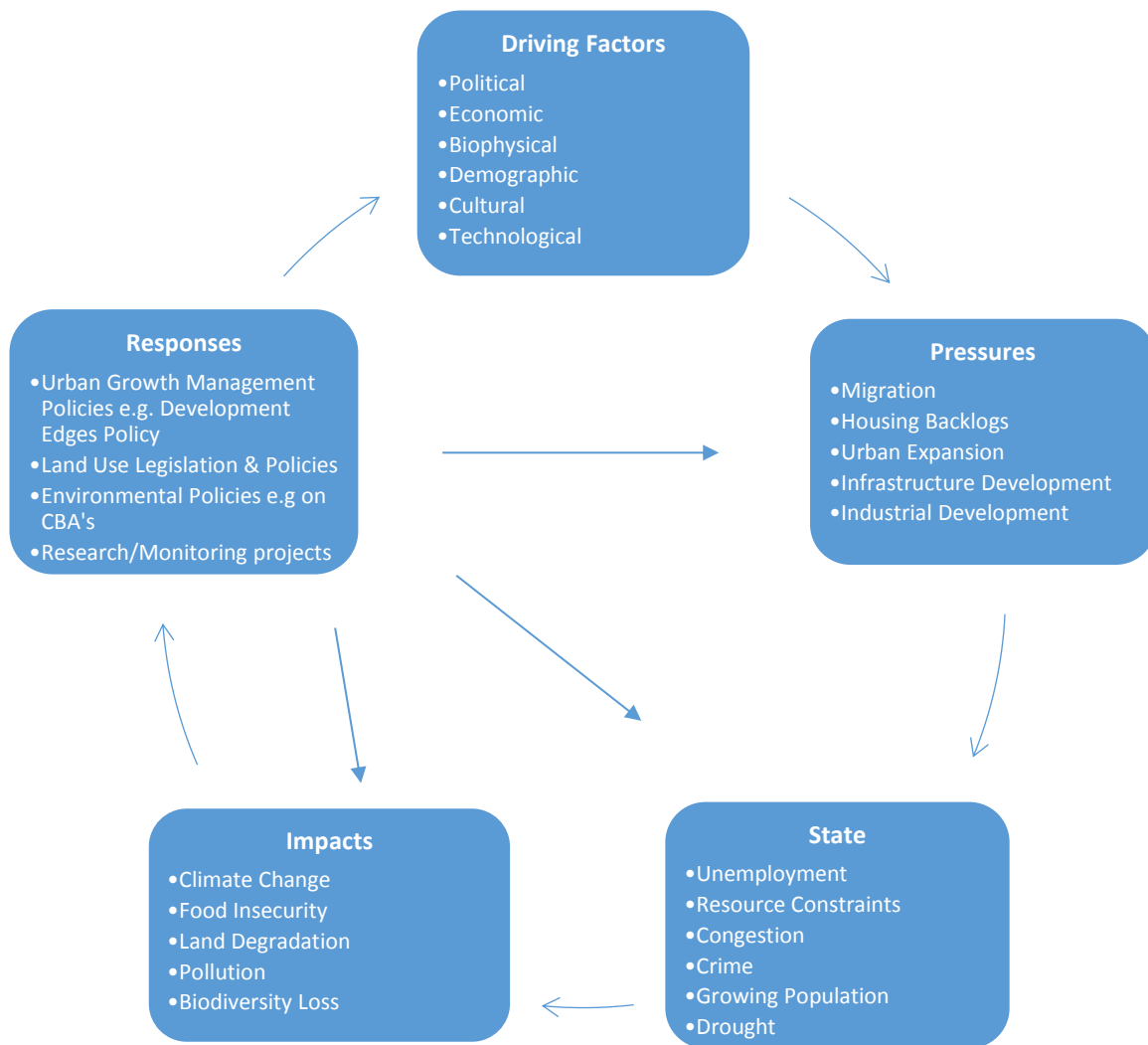


Figure 8: DPSIR Framework for LULC change in the Western Cape Province

## 6. RESEARCH CONTRIBUTION

The identified driving factors of LULC change can be used to define transition rules in LULC change models. Such models have the ability to demonstrate and evaluate the impacts of driving factors by simulating possible scenarios. This paper therefore provides important knowledge which can be used in designing effective LULC change models that can analyse future scenarios and support planning. Planners can also use this knowledge in developing regional land-use strategies that recognize both short and long term impacts of LULC changes.

## 7. RESEARCH LIMITATIONS

One of the objectives of this study was to quantify changes in LULC by using pre-existing 1990 and 2013/14 National LULC datasets. The reliability of the LULC change statistical results is contingent on the accuracy of image processing, classification of input datasets and seasonal or climatic conditions from which the original source imagery was acquired.

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## **8. FURTHER RESEARCH**

The results of this study provide an opportunity to explore the impacts of land use decisions by implementing land use change models. Models are used to simulate land use changes and hence assist policy makers in making well informed decisions.

## **9. DISCUSSION AND CONCLUSION**

This study aimed to quantify LULC changes and to understand drivers of changes in the Western Cape Province. This was achieved by using GIS software to analyse LULC maps derived from remote sensing imagery, interviewing town planners to obtain deeper insights on LULC change dynamics and adapting of the DPSIR framework. The LULC quantitative analysis results indicate that there were significant LULC changes between 1990 and 2014 characterised by declines in forest plantations, grasslands, wetlands, and barren lands. In contrast, urban/built up, mines and quarries, water bodies, woodlands, thicket and shrubland classes exhibited increases. Mines and quarries had the highest increase (52.82%) mostly due to the demand of sand from the construction industry. The highest loss was in plantations (-32.41%), owing to the government's exit policy which saw the decommissioning of plantations. The LULC change results also show that there has been a provincial increase in urban / built up areas with about 12% and 1.03% increase in cultivation. However, analyses of individual district municipalities LULC changes reveal that the increase in urban areas was concentrated in Cape Metropolitan area and the adjacent Cape Winelands at the expense of cultivated land, shrubland and low fynbos and plantations. Increase in urban areas is due to rising infrastructure demands generated by population growth and the tourism industry.

Qualitative results of this study indicate that LULC changes in the Western Cape Province are a result of diverse interrelated factors that operate at different scales. At a provincial scale, changes emerge from political factors through legislation and policies aimed at poverty alleviation, promoting access to basic services, reducing inequalities and promoting economic growth. Patterns of LULC changes are consistent with nodes of economic growth which occur in the Cape Metropolitan, Eden and West Coast district municipalities. The agriculture, tourism and industry sectors in these municipalities attract foreign investments leading to net in-migration from other provinces. Migration coupled with natural increase results in population growth which increases the amount and intensity of pressure exerted on resources and consequently changes the state of land. Driving factors of LULC change were grouped into proximate and underlying causes as proposed by Geist and Lambin (2002). Based on interviews and document analysis, proximate causes were identified as infrastructure, agriculture and forestry changes and underlying causes as political, demographic, economic, technological and cultural factors. To understand these drivers, the DPSIR framework was adapted to show how driving factors lead to human activities which exert pressure on resources resulting in various states of the environment which have significant impacts and require responses. Strategies and policies based on responses to major drivers of LULC and their impacts are therefore recommended to avoid undesirable impacts of changes in LULC.

## **10. ACKNOWLEDGEMENTS**

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## 11. REFERENCES

- Annum, D. G. 2015. *Research Instrument for data collection* [Online]. Available: <http://campus.educadium.com/newmediart/file.php/1/giilmadstore/UgradResearch/ThesisWrit4all/files/notes/resInstr.pdf> [Accessed 2 February 2016].
- Barbier, E. B. 1997. The economic determinants of land degradation in developing countries. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 352, 891-899.
- Briassoulis, H. 2000. Analysis of land use change: theoretical and modeling approaches.
- Clark, B. M., Massie, V., Laird, M., Biccard, A., Hutchings, K., Harmer, R., Brown, E., Dun, a. O. O., Makunga, M. & Turpie, J. 2015. The State of Saldanha Bay and Langebaan Lagoon 2015. Anchor Environmental Consultants.
- Clark University © 2005-2013 Land Change Modeler for ArcGIS. 2.0 ed.: Clark University.
- Dadhich, P. N. & Hanaoka, S. 2011. Spatio-temporal urban growth modeling of Jaipur, India. *Journal of Urban Technology*, 18, 45-65.
- DAFF 2015. 2015/16 to 2019/20 Strategic Plan. In: DEPARTMENT OF AGRICULTURE FORESTRY AND FISHERIES (ed.). Pretoria.
- De Beer, M. C., Cori, H., Längin, D. W. & Theron, F. 2014. The socioeconomic impact of the phasing out of plantations in the Western and Southern Cape regions of South Africa. *Southern Forests: a Journal of Forest Science*, 76, 57-64.
- DEAT 2008. A National Framework for Sustainable Development in South Africa
- Di Gregorio, A. & Jansen, L. J. 1998. Land Cover Classification System (LCCS): classification concepts and user manual. *FAO, Rome*.
- ESRI © 1999-2015 ArcMap 10.3.1. ESRI Redlands, CA.
- Gabrielsen, P. & Bosch, P. 2003. Environmental indicators: typology and use in reporting. *EEA, Copenhagen*.
- Geist, H. J. & Lambin, E. F. 2002. Proximate Causes and Underlying Driving Forces of Tropical Deforestation *BioScience*, 52, 143-150.
- GEOTERRAIMAGE 2014. 2013-2014 South African National Land-Cover Dataset. Data User Report and Metadata.
- Harrison, P. & Pearce, F. 2000. *AAAS atlas of population & environment*, Univ of California Press.
- Hoffman, M. T. 2014. Changing Patterns of Rural Land Use and Land Cover in South Africa and their Implications for Land Reform. *Journal of Southern African Studies*, 40, 707-725.
- Kristensen, P. The DPSIR framework. Workshop on a comprehensive/detailed assessment of the vulnerability of water resources to environmental change in Africa using river basin approach, 2004. 27-29.
- Lambin, E. F. & Geist, H. J. 2007. *Causes of land-use and land-cover change* [Online]. Available: <http://www.eoearth.org/view/article/51cbed2f7896bb431f6905af> [Accessed 20 January 2015].
- Lambin, E. F., Turner, B. L., Geist, H. J., Agbola, S. B., Angelsen, A., Bruce, J. W., Coomes, O. T., Dirzo, R., Fischer, G. & Folke, C. 2001. The causes of land-use and land-cover change: moving beyond the myths. *Global environmental change*, 11, 261-269.
- Maree, G. & Van Weele, G. 2013. State of Environment Outlook Report for the Western Cape Province.
- Riebsame, W. E., Meyer, W. B. & Turner II, B. L. 1994. Modeling land use and cover as part of global environmental change. *Climatic change*, 28, 45-64.
- Rubin, M. 2008. LAND MANAGEMENT AND DEMOCRATIC GOVERNANCE IN THE CITY OF JOHANNESBURG. Urban Landmark.

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- Sims, D. & Sombroek, W. G. 1997. Negotiating a sustainable future for our land-Structural and institutional guidelines for land resource management in the 21st Century.
- Smeets, E. & Weterings, R. 1999. *Environmental indicators: Typology and overview*, European Environment Agency Copenhagen.
- South Africa 1996. Constitution of the Republic of South Africa Act No. 108 of 1996.
- Spinks, C. 2001. *A New Apartheid?: Urban Spatiality, (fear Of) Crime, and Segregation in Cape Town, South Africa*, London School of Economics and Political Science, Development Studies Inst.
- Stats SA 2014. Mid-year population estimates. Statistics South Africa.
- Turner, B., Meyer, W. B. & Skole, D. L. 1994. Global land-use/land-cover change: towards an integrated study. *Ambio (Sweden)*.
- Van Aardt, C. 2007. Population and Household Projections for South Africa by Province and Population Group, 2001-2021. Bureau of Market Research, University of South Africa.
- Van Donk, M. 2008. *Consolidating developmental local government: Lessons from the South African experience*, Juta and Company Ltd.
- Van Wyk, J. 2010. Parallel planning mechanisms as a "recipe for disaster". *PER: Potchefstroomse Elektroniese Regsblad*, 13, 214-234.
- Van Zyl, J., Cross, C. & Donovan, M. 2008. Overview of the extent and nature of the unbundling of South African households and the implications thereof. *Paper Commissioned by The Presidency, South Africa*.
- WCG 2015. Provincial Economic Review and Outlook 2015. *In: TREASURY, W. C. G. P.* (ed.). Cape Town.
- WESGRO 2015. 2015/2016 INVEST IN WESTERN CAPE A PERSPECTIVE ON INVESTMENT OPPORTUNITIES IN THE WESTERN CAPE.
- Wilgen, B. W. v. 2015. Plantation forestry and invasive pines in the Cape Floristic Region: Towards conflict resolution. *South African Journal of Science*, 111, 1-2.

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## Appendix 1

### Interview Guide Questions

What are the most significant land use changes that have occurred in this municipality in the last 20years?

Where did these changes occur and why in those particular locations?

When did the changes occur and why then?

Who is responsible for these changes?

What are the main reasons for these changes in land use?

Have government policies played a role in land use change?

What are the potential economic, social and environmental impacts of land use changes?

What measures are being implemented or considered by your municipality to address these potential impacts?

Does your municipality use any population or economic growth projection tools; if so, is it in its own capacity/ consultants are hired to do it?

What do you think this municipality will look like in 10years?

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## Appendix 2

### Post-apartheid legislation that control land use in South Africa

Constitution of South Africa No 108 of 1996

Municipal Systems Act No 32 of 2000

Development Facilitation Act No 67 of 1995 (DFA)

Spatial Planning and Land Use Management Act no 16 of 2013 (SPLUMA)

Housing Act No 107 of 1997

National Environment Management Act No 107 of 1998 (NEMA) and associated acts i.e.

- NEM: Protected Areas Act, 2003
- NEM: Biodiversity Act,2004
- NEW: Air Quality Act, 2004
- NEM: Integrated Coastal Management Act,2008
- NEM: Waste Act, 2008

National Heritage Resources Act No 25 of 1999

Social Housing Act of No 16 of 2008

National Land Transport Act 5 of 2009

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# Are We Achieving Spatial Transformation In South Africa? Can Sub-City Spatial Indicators Make a Contribution?

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## Abstract

With the advent of a democratic order in South Africa in 1994 a number of policy frameworks have seen the light. All of these have indicated the need to spatially transform cities and settlements – to break from the pre-1994 apartheid city. Over time these frameworks change, new ones are developed which often state the same objectives. A major focus has also been placed on tracking their impact through spatial outcomes as set out in the Spatial Planning and Land Use Management Act (SPLUMA), Act 16 of 2013 (Republic of South Africa, 2013) and also internationally through the recently introduced UN Sustainable Development Goals (SDGs) (United Nations Sustainable Development, 2016). A key question that remains is whether cities are succeeding in reinventing and restructuring the past. Vital in exploring progress regarding spatial transformation is investigating how the landscape within cities has changed spatially.

To assess the progress made by South African cities in the last 20 years, the CSIR has embarked on developing a number of standardised repeatable sub-city level spatial indicators and/or indices to illustrate specific components of spatial change or transformation. This paper provides an overview of some of the innovations in spatially and temporally aligned sub-city indicator development within a data-scarce context. It also reflects on lessons learned, in the process providing some examples of spatial transformation analyses for a number of cities using the indicators developed. These Indicators have been developed partly in collaboration with the South African Cities Network (SACN) to support the 2016 State of Cities Report's (SACN, 2016) theme on spatial transformation.

## Keywords

Apartheid city, spatial transformation, spatial justice, spatial indicators, sub-city, indicators

## 1. INTRODUCTION

Given South Africa's Apartheid past and the impact of planned segregation on South African cities (illustrated diagrammatically in Figure 1), the need to address socio-economic inequalities, racially divided cities and the transformation of cities to provide equal opportunities and sustainable means of living for all citizens has been on the political and planning agenda since 1994 (See Oranje, 2000; Oranje, 2011; Turok, 2015; National Planning Commission, 2012 and UNDP, 2014). Apartheid city design, especially the fact that many township areas are placed on the periphery of cities, results in inefficiencies and unequal access to economic and service opportunities (Du Plessis, 2013:70).

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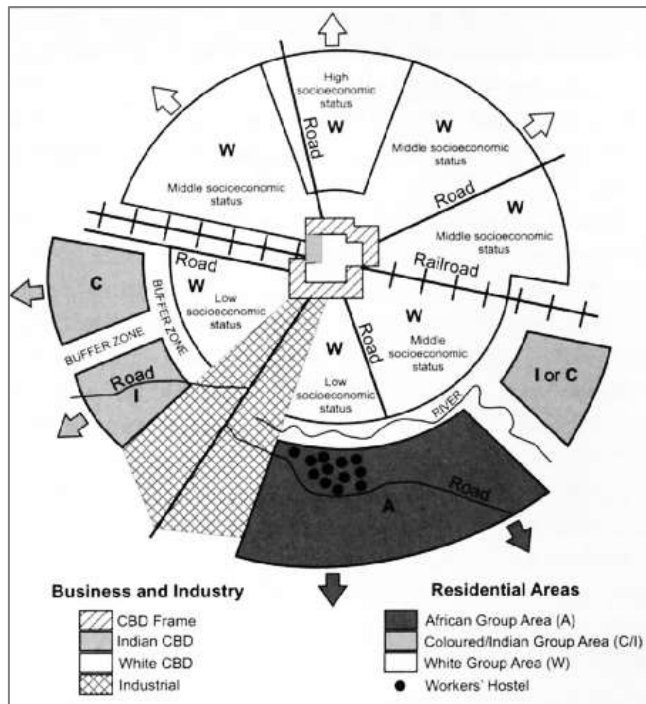


Figure 1: The Apartheid city diagrammatically illustrated (Cole & De Blij, 2007)

Presently, South Africa like many other African countries is experiencing rapid urbanisation. The United Nations estimates that in 2030, 71 per cent of South Africa's population will be living in urban areas, reaching nearly 80 per cent by 2050 (COGTA, 2014:12). This places more emphasis on the need for cities to be liveable, inclusive, sustainable and resilient places. Cities have to track this growth in order to adequately respond to and guide (infrastructure) investment decisions. In the past, cities would develop this data for their own use, however, this makes comparison between cities difficult, if not impossible. Developing consistent comparable data allows cities to learn from the experience of other cities and efficiently use their resources to build sustainable cities.

Given the realities of urbanisation and development pressures experienced by South African cities, there is the continued need to improve efficiency, entice growth and investment, whilst spatially transforming cities. Since the creation of the new democratic order, the extent to which cities have been successful in their spatial transformation has been a priority for local and national government. Even though a number of urban growth and development policies and strategies have been formulated since 1994, all stating the need to address transformation, the view is that South African cities "remain[s] amongst the most inefficient urban environments in the world" (Du Plessis & Landman, 2002:55).

A major emphasis has *inter alia*, been placed on creating socially-just cities and towns through the implementation of spatial justice as part of the highly cited set of spatial outcomes as set out in SPLUMA (Republic of South Africa, 2013). Within this context two key questions are being asked: Firstly, how can spatial planning, land use management and government investment support cities in making progress in restructuring the apartheid space economy, creating a more equitable and sustainable future? Secondly, as raised by Turok (2015), how can place-specific progress and challenges related to the highly complex goals of integration, transformation and densification be explored? Exploring and tracking place-specific progress and spatial transformation is, however, a major challenge, not only in South Africa but in many other fast growing cities in the world and especially in

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the Global South (Amindarbari & Sevtsuk, 2013:4). Challenges to adequately measure (detect) changes and explore implications thereof include not only identifying and developing relevant spatial-specific indicators, but also issues related to data availability, exploration, temporal and place-based comparisons, resources and the capacity to track change (Bickford, 2014).

It is in relation to this **second set of challenges that this paper aims to make a contribution**. Spatially-specific indicators are critical, not only i) in investigating how the landscape has changed and how much progress has been made with spatial transformation in South African cities during the last 20 years, but also, ii) to contribute towards driving and monitoring just and sustainable spatial outcomes in cities moving forward. As set out by Harrison and Todes (2015:160), the South African experience of spatial change and efforts at tracking and ‘directing’ spatial transformation is something that is not incomparable to that of other countries, such as China, Russia and Canada. The challenge to create relevant and trackable spatial-specific and localised indicators is not only a South African challenge, but has also been prevalent (especially in developing country context) within the discourses about the recently introduced set of Sustainable Development Goals (Osborn, Cutter, & Ullah, 2015).

This paper showcases the results and methodologies used in developing a number of explorative, standardised and replicable sub-city level spatial indicators which were developed to track spatial change and progress with transformation at sub-city scale over the last 20 years in South African cities. The paper is structured firstly, in the Background section (Section 2), to examine: (i) the need to track and evaluate spatial change and spatial transformation in cities in developing countries, with specific reference to South Africa; and, (ii) the challenges and key principles associated with the development of appropriate spatial-specific indicators (development, data, etc.) to track spatial change. The second part of the paper provides an overview of the endeavour to develop appropriate, simple and practical spatial indicators to track spatial change and contribute towards the discourse of spatial transformation in 9 cities in South Africa. Specific emphasis is placed on the sub-city indicators selected and developed to identify major spatial patterns and changes with regards to concentrations of population and formal economic activity. The methodology adopted, as well as innovations and challenges within the process and results, is highlighted. In the last part of the paper the authors reflect on some of the most prominent contributions and lessons emanating from this endeavour. The paper aims to contribute to the ongoing drive towards more just and sustainable spatial outcomes and tracking of spatial change and transformation in South African cities. It also strives to highlight aspects that might also be of relevance to other developing countries.

## **2. BACKGROUND**

### **2.1 Tracking spatial transformation as an international priority**

The term ‘spatial transformation’ is often used to refer to far-reaching urban change or urban restructuring. It is also a descriptive term to encapsulate the idea that cities have changed greatly over time due to urbanization (See Turok, 2014; Gülersoy & Gurler, 2011; Harrison & Todes, 2015). Urban spatial structures reflect socio-economic and institutional conditions and embedded histories, with transformation (as defined above) occurring through the adaptation of spatial form to new conditions and developments. At the same time urban spaces across the world are transforming in the midst of political, social and economic change and are also required to adapt to become more just, sustainable, efficient and viable spaces as set out by Edward Soja in his 2009 presentation on “The city and spatial justice”, the notion of spatial justice brings with it the “intentional and focussed emphasis on the spatial or geographical aspects of justice and in-justice” (Soja, 2009). In order to improve and track spatial

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transformation initiatives, a renewed focus on evidence-based spatial policies and the development of indicators and monitoring systems is needed (Daly and González, 2013:84).

As part of a drive to promote spatial justice and a more cohesive and balanced territory the concept of ‘territorial cohesion’ has been identified as a core objective within the Europe 2020 Strategy together with economic and social cohesion. Territorial cohesion can be understood as a broad process of reducing socio-economic spatial imbalances, promoting environmental sustainability, improving governance processes and establishing a more balanced and polycentric urban system (Medeiros c.f. Daly and Gonzalez, 2013:78). As part of the EU cohesion policy country-specific targets, priorities and policy objectives were identified to monitor the effectiveness of policy interventions.

## **2.2 Spatial Transformation within the South African planning context**

Within the South African context, Oranje (2014) indicates that spatial transformation relates mostly to those efforts aimed at *addressing the physical manifestations of Apartheid planning*. Since 1994 there have been several policy instruments, Acts and Programmes that aimed to set a planning direction (implied spatial transformation) including the Reconstruction and Development Programme (RDP), Development Facilitation Act, Act 67 of 1995 (Republic of South Africa, 1995) and associated Land Development Objectives, followed by the Local Government: Municipal Systems Act, Act 32 of 2000 (Republic of South Africa, 2000) providing for integrated municipal-led integrated planning and spatial development (Oranje, 2007 and Oranje, 2014). Recently this effort has found expression in the National Development Plan (National Planning Commission, 2012) with specific focus on ‘transforming human settlements’ and in spatial principles and spatial outcomes as set out the Spatial Planning and Land Use Management Act (Republic of South Africa, 2013).

Within the National Development Plan (NDP), spatial transformation includes the focus on spatial justice, sustainability, and resilience, as well as spatial equality and efficiency, i.e. productive places with efficient circulation of people, goods and other resources.

According to Turok (2014) spatial transformation includes several dimensions, namely:

- Social integration and racial mixing – referring to a greater inclusion of different racial groups thus overcoming the segregated nature of SA cities (still apparent), thus also the tern racial-inclusion.
- City structure – referring to the overall structure of the city/metropolitan area as well as to the texture of the urban fabric. Both of these have a bearing on the cities’ functional efficiency, economic productivity, the life-chances of its inhabitants, and its impact on the environment.
- Local texture – referring to a range of finer scale qualitative built environment features that affect the lived experience of households and businesses. This also relates to the design of the city and if it is functional, supportive and appealing (to households and those that can invest in its business opportunities).

Spatial transformation requires a ‘programmatically, plan-oriented, project-directed effort to change the unequal access to and occupation/ownership of socio-politically differentiated space in South Africa – a multi-dimensional, open-ended, fluid process of change, organically linked to the past, present and future’ (Williams, 2000:180). It requires not only a development agenda that moves beyond project implementation and service delivery (Oranje, 2011) but also pragmatic support to analyse, track and improve progress in support of this long-term agenda to fundamentally reconfiguring inequality in

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society and space.

## 2.3 Challenges in developing indicators to track spatial change in South Africa

In 2014, a ‘Spatial Transformation of Cities’ Conference was held in Johannesburg. It explored a number of key themes to understand what transforming urban space means in practical terms (SACN, 2014). It served to interrogate the work undertaken by various cities, to gain knowledge and insight at the city scale, and deepen the understanding and learning concerning challenges and strategies for spatial transformation. The event reaffirmed that in order to gauge if actions to transform are manifesting actual change, evidence needs to be tracked. Thus there is a need to identify/develop a suite of suitable indicators to track transformation. Kusek and Rist (2004:65) define indicators as “the quantitative or qualitative variables that provide a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of an organization against the stated outcome”. Before creating any indicator it is important to know what objective needs to be achieved. Indicators are only appropriate “when they are measured against an objective” (Kusek & Rist, 2004:57). It is the outcomes that will in the end produce the sought benefits.

### 2.3.1 Standardised and other indicators?

When developing indicators it is also important to be aware of the latest approaches and whether any related international standards have been developed. In this current round of indicator development (CSIR-SACN project) international standards were not considered, largely due to the need to develop local indicators that reflect the local issues better (at sub-city scale). It is, however, important, for future reference, to be aware of the international drive to develop standardised indicators. Standardised indicators are “quantitative, qualitative or descriptive sets of measurements or metrics that can provide a globally standardised set of definitions and methodologies” (International Standards Organisation, 2014:2). It therefore allows cities to develop comparable indicators that can measure its performance on a number of themes over time, as well as to compare performance with other cities. These results can then assist in evaluating whether policies are achieving their desired outcomes. The World Council for City Data developed a new standard; namely *ISO 3712017: Sustainable development of communities, indicators for city services and quality of life*. This launches a set of standardized indicators that “provide a uniform approach to what is measured in the context of city indicators, and how that measurement is to be undertaken” (Korth, 2015:1). It sets out a common approach for collecting, assessing, and evaluating city data. Developing from the ISO 37120 standard, is the Global City Indicators Facility which is now the world standard for city metrics. It must be noted, however, that these items reflect the city-scale, as the intention is to compare city performance.

### 2.3.2 Reporting challenges and current initiatives in South Africa

According to the South African Statistical Quality Assessment Framework (SASQAF) of the National Statistical System (NSS), statistics become official when they are certified after going through the standard assessment procedure. To be certified, the data collected must meet user needs of a broad audience and form part of a longitudinal and sustainable process. Consequently, the data collected by many national agencies such as Statistics SA and the National Treasury can be considered to be official

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<sup>17</sup> This standard developed under the agenda of a technical committee for Sustainable development in communities (ISO/TC268)

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statistics. This includes their censuses and household surveys. Sources of data that are not collected by ‘official’ government agencies should follow a process of accreditation by going through the standard assessment procedure of SASQAF. Datasets that are not official statistics should not be used to report on any indicators (AfricaScope, 2013:26).

Metropolitan cities are legally obliged to report on outcome indicators as required by national departments and regulators. In addition, they also use these for purposes of internal analysis. They use registers and other sources to extract information and some cities also capture their own data. In addition, they are also requested to provide information to agencies such as Department of Performance Monitoring and Evaluation in the Presidency (DPME) and the South African Local Government Association (SALGA). During 2013, the South African Cities Network (SACN) commissioned the Urban Indicators Project to review the extent of indicators, data custodians, the methods used to collect and provide data (AfricaScope, 2013:9). An Indicators Reference group was established to provide inputs and share advice and guidance, to improve the inputs required from a range of indicators. Indicators would, for example, also be applied in various forms of requested performance reporting. A range of indicators was also used by the SACN for the latest State of Cities Report. When one considers the range of departments and institutions dealing with city statistics it is likely that some items could be duplicated or calculated by different parties.

Several studies have been undertaken since 2013 to review urban indicators. This included the 2013 Urban Indicators Project (AfricaScope, 2013) and the 2015 Open Data Almanac for Cities (KPMG, 2015) both commissioned by the SACN. The National Treasury Department’s City Support Programme (National Treasury, 2015) has also developed a range of urban indicators to track city performance – all used the SACN thematic quadrants (Productive cities, Inclusive cities, Sustainable cities, and Well-governed cities). In addition, the other critical framework to mention is the Integrated Urban Development Framework developed by the Department of Cooperative Governance (2014), where strategic goals find implementation through policy levers, which would also measure spatial transformation, to greater or lesser extent. One of the main burdens for the South African metropolitan areas is reporting, as they are often required to submit a number of completed questionnaires to StatsSA, SALGA, DWA and National Treasury (AfricaScope, 2013:22).

## **2.4 Developing spatial specific indicators – Challenges and Principles**

### **2.4.1 Challenges when developing indicators**

There are a number of challenges associated with the development of indicators. Some of the most noticeable challenges include the unavailability or incompleteness of data, difficulties collecting source data, methodological changes in the capturing of source data, incomplete time series data and inconsistent statistical methods used in the indicator-development phase. The spatial unit used when capturing data poses additional constraints, such as, (1) size variation, creating a statistical bias also known as the modifiable areal unit problem and (2) significant boundary changes between data collection periods (e.g census years).

The scalability of data (e.g South African voting districts which do not align to units such as sub-place or main place or even small area layers) also adds additional constraints in indicator development. It is also the objective to have indicators that are more spatially-specific or of a sufficiently fine resolution to allow the observation of localised changes in the data. This overcomes some of the generalisation

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that occurs when using administrative units such as local municipal boundaries.

#### 2.4.2 Challenges of scale

It is important to note that although some of the information collected by various metros, departments and institutions might be collected at local sub-city level, the information presented in the various indicators is regularly aggregated and aimed at a broader scale and intended for a comparison of cities. The reporting units being used for city-level indicators are administrative units (mostly local municipal unit) which do not reflect the true spatial grain of features such as population distribution, land-use patterns, etc. (Hagenlocher, Kienberger, Lang, & Blaschke, 2014). Metropolitan areas, such as Gauteng, stretch across local municipal boundaries, yet are mostly reported within a particular local municipality (the seat of Metropolitan area). The measurement of items is influenced by the scale that is used, when aggregating information, a measure of generalisation occurs (Fotheringham, 2005). This is particularly relevant when considering an item that is scale-dependant where the geographic extent is sensitive to the spatial arrangement (Blaschke, 2005:200). This begs the question – what is its usefulness in measuring spatial transformation? To enable sufficient pattern detection of spatial features it is necessary that the scale be sufficiently fine (for purposes of detecting spatial transformation for example). When the size of measurement unit changes the spatial variance or heterogeneity also decreases (McGarigal, 2013:2.18). Appropriate finer-grained information is more useful to grasp the spatially explicit realities which in turn can contribute to policy-relevant information. A constraint can, however, be in the computational complexity required if a completely new or unaligned<sup>18</sup> fine spatial unit is used.

#### 2.4.3 Principles for indicators:

In order to have indicators that provide value, they have to be clear, direct and unambiguous as possible. Indicators to be created or selected should be relevant to a desired outcome (Kusek & Rist, 2004:70) and comply with a set of criteria namely:

- Appropriateness/ Relevance – relevant to the desired outcome or the topic featured (National Treasury, 2015:26).
- Specific – To be clear on the focus and ‘what’ it attempts to measure.
- Verifiable - relating to the process of indicator creation, ensuring that the source of information is trustworthy. It should, if relevant or necessary, be independently verified.
- Statistical soundness – when an item is created using a statistical process to ensure it is defensible.
- Repeatable – Single/ once-off indicators provide limited value, as tracking change requires time series data. For this purpose, an indicator should, once created, be repeatable.
- Cost effective – Due to the costs involved and the likely expenses, indicators should be carefully selected/ created to provide as much value as possible. Exorbitant costs should be avoided and proxy indicators sought especially in the case of developing (poorer) countries.
- Comparable –The standardisation of indicators to allow for comparison (National Treasury, 2015:27).

Spatial indicators should, apart from the abovementioned principles, also confirm to SDI ‘good practice’, it is especially relevant that such items conform to the South Africa data framework for

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<sup>18</sup> Referring to alignment to existing units of data representation such as Sub-places, Small Areas, etc.

geographic data and metadata. This is important to facilitate data sharing and distribution. Naturally proper referencing of such items is also a prerequisite.

### **3. DEVELOPING SPATIAL INDICATORS TO TRACK CHANGE IN SOUTH AFRICAN CITIES<sup>19</sup>**

#### **3.1 Introducing the research project**

To assess the progress made by South African cities in the last 20 years in relation to development outcomes as well as to identify strategic problems and opportunities facing cities, the South African Cities Network (SACN) has produced the latest (2016) State of the Cities Report. As part of this project, a number of spatial indicators and or datasets have being explored by CSIR to identify key elements of change or transformation in South Africa's nine biggest cities (Maritz, 2015). The research also forms part of ongoing programmatic research conducted by the CSIR Spatial Planning and Systems team and various collaborators within the ambit of the StepSA initiative. This includes the development of socio-economic indicators at the "meso-zone" scale – a geo-spatial analyses platform and set of indicators to support regional development and analyses (see <http://gap.csir.co.za/gap/about-gap-1> and <http://StepSA.org>). Also research focussed on identifying demographic change in South African cities and towns and population movement between them, undertaken as an input to the development of the Integrated Urban Development Framework (IUDF). Other items analysed (not featured in this paper) include tracking racial change (which is closely linked to South Africa's apartheid city past), as well as spatial transformation related to vulnerable communities within the city, using a measure called 'access to good services' (CSIR BE, 2015).

One of the key contributions of the research project was thus to develop indicators to explore spatial change and levels of growth and spatial transformation. Particular indicators relating to bridging the data gap and exploring sub-city level changes were the focus. The intention was to identify spatial patterns and concentrations of people and activities, growth areas and attendant changes in urban structure, resource allocation and effectiveness of public services provision (e.g. public transport). It should be acknowledged that spatial change can be depicted on numerous levels and that no one indicator can provide a clear indication of spatial transformation, experiences of people within cities, etc. Indicators can, however, add value in providing some indication of embedded spatial patterns and the areas undergoing the biggest changes within cities (in terms of population density, concentration of economic activity), and also in addressing questions related to the spatial relationships between such changes.

#### **3.2 Research approach and methodology**

As mentioned previously the purpose of the research was thus to develop spatial specific sub-city level indicators to provide an indication of spatial change, not merely reflecting increases in number of people at sub-place or ward level (See example figure 2) or built-up area change (see [http://stepsa.org/pdf/newsletter/stepSA\\_April16.pdf](http://stepsa.org/pdf/newsletter/stepSA_April16.pdf)).

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<sup>19</sup> In addition to what is featured in this paper, the research project included the development of a range of added spatial indicators not featured here. These can be viewed on StepSa.org and some may feature in other papers presented at Planning Africa 2016.

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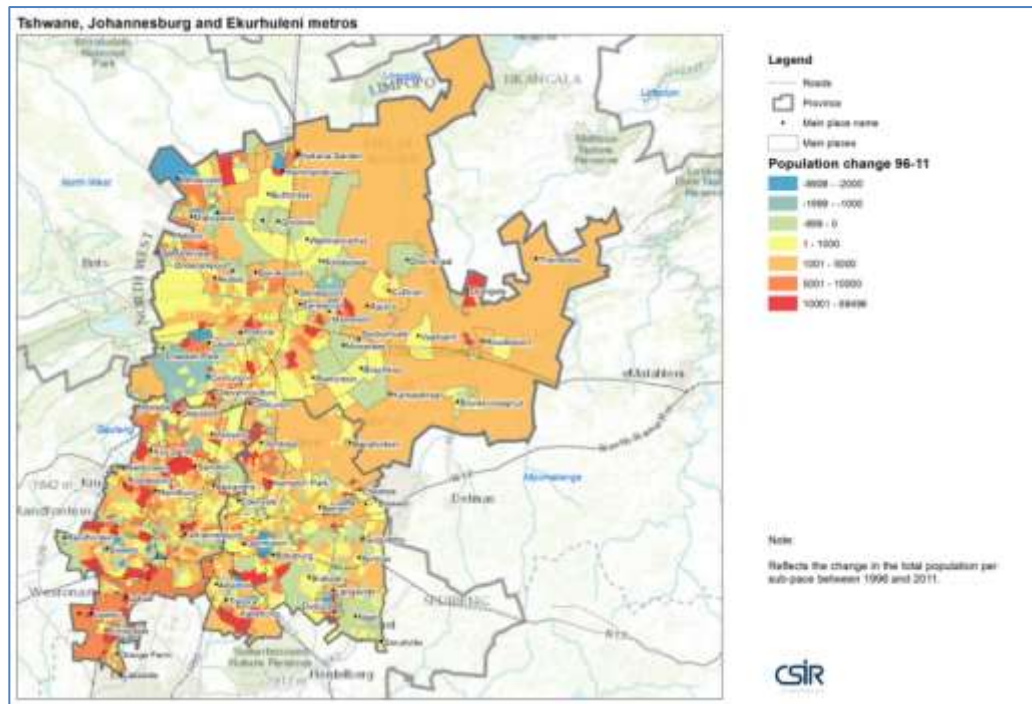


Figure 2: Change in total population per sub-place 1996-2011 (Maritz, 2015).

The intent was to spatio-temporally track aligned data to identify:

- spatial specific patterns of population concentration and growth;
- spatially embedded formal economic concentration, agglomeration and growth patterns ; and
- enable comparative analyses of fine-grained spatial patterns and changes in spatial patterns within cities – comparing place specific spatial change, as well as comparing spatial change and growth patterns between cities.

The development and exploration of sub-city indicators required several steps which included; basic research into each item, data extraction (or update if already available), preparation, and calculation of the indicator, as well as considering and reflecting on the standards with respect to developing indicators (as set out in Section 2). However, it also required the development of a separate new uniform tessellation to correct for the spatial bias introduced by the sub-place boundaries.

To improve the spatial resolution of information at sub-city level, a single fine grained uniform tessellation (using 1 sqkm hexagons) was created for each city. Total population and economic information was assigned to this hexagon tessellation using a dasymetric mapping process, which is defined generally as the use of an ancillary data set to disaggregate coarse resolution data to a finer resolution (Eicher & Brewer, 2001). This was done for both population and total economic production.

### 3.3 Results

Using this uniform spatial unit enables users to see a less distorted picture of the information. Because the information does not result in zone size distortions and is sufficiently fine grained. It can also be displayed in different ways, primarily aimed at the identification and comparison of:

- Spatial patterns of concentration and growth of a particular trend i.e. population density within

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a city, and also across boundaries – highly useful in discussions regarding nodes, corridors, identification of growth areas in and on border areas, etc. (See Figure 3 and 4);

- An indicator across time between cities, i.e. increase and change in population density across different cities to explore possible patterns, i.e. increased densities and development on the outskirts of cities (See Figure 5 and 6);
- Spatial concentrations and changes/embeddedness of patterns of population and economic growth within a city across time (See Figure 7).

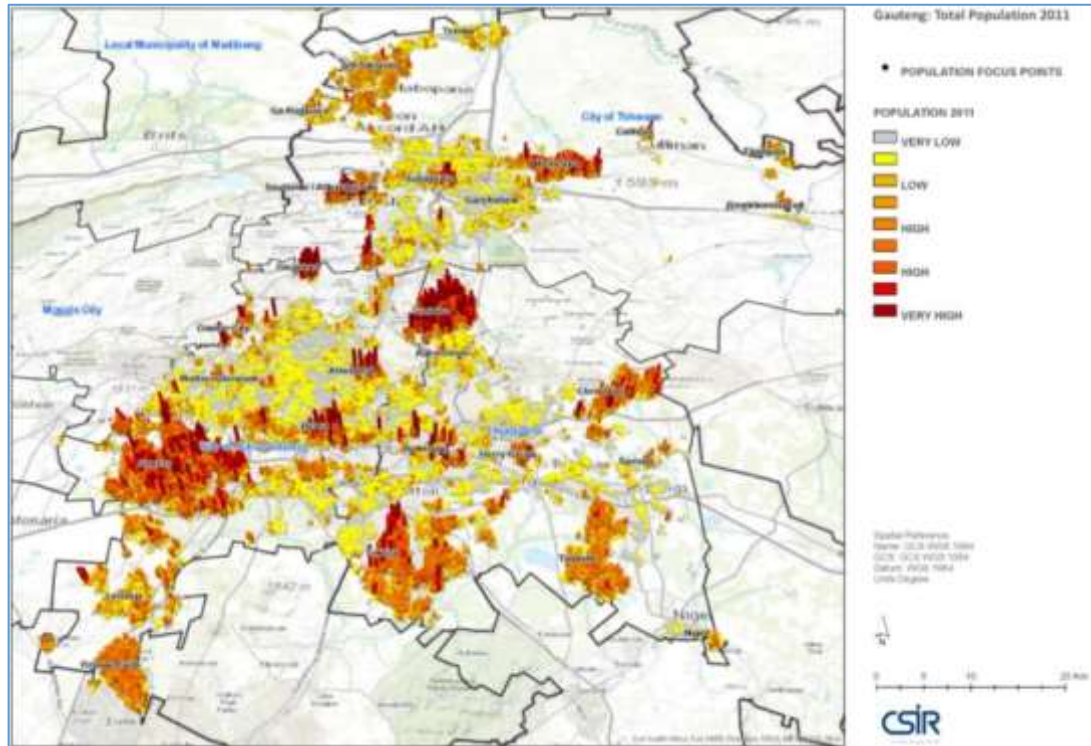


Figure 3: Spatial patterns of population concentration (Maritz, 2015)

Using a uniform fine-grained analysis surface as depicted in Figure 3 enables a comparable depiction across space. Using GIS software a 3D-bar landscape map is created with the extruded values representing the value of the attribute (population or total economic production). Looking at the 3D tessellation of population further assists in ‘reading’ the values. The advantage is that the areas of largest growth or highest value can be easily observed more clearly. Dense versus less-densely populated areas are clearly visible. Taking the same spatial surface but comparing only the change in population (figure 4) helps to visualize whether the growth that materialised was aligned with development objectives such as ‘not developing township type settlements on the periphery of cities’, etc.

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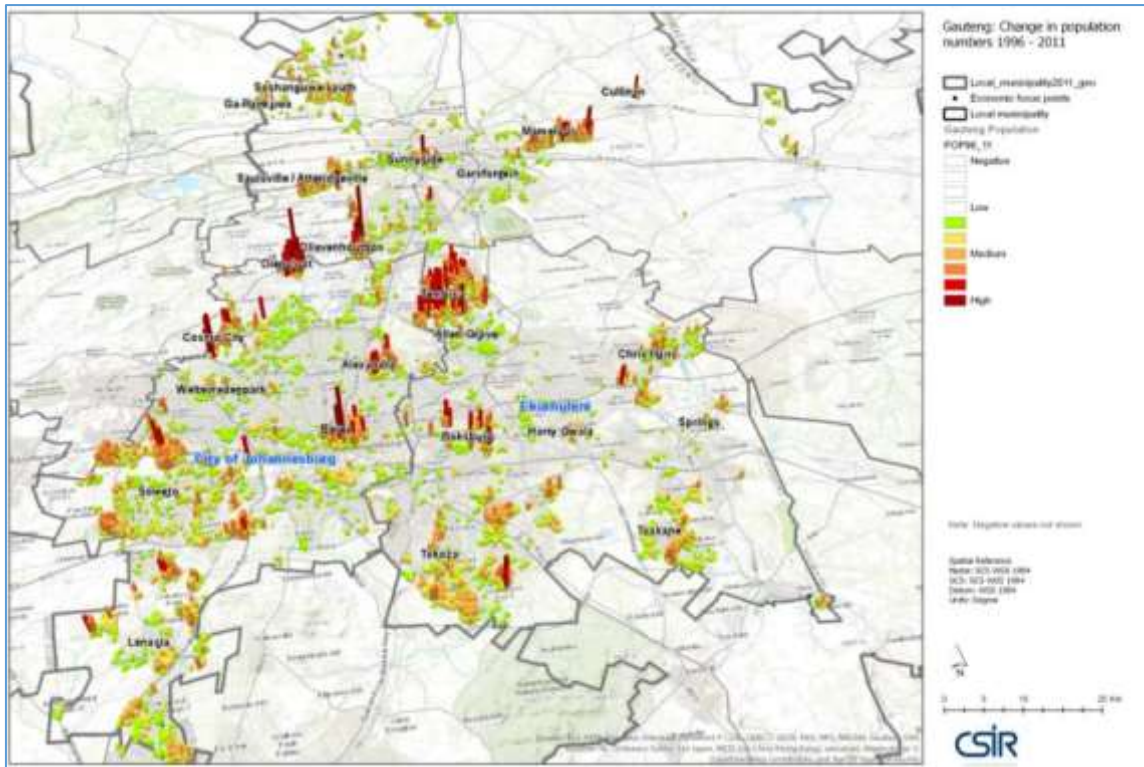


Figure 4: Spatial patterns of population growth (Maritz, 2015).

Figures 5 and 6 repeat the same analysis for different cities, allowing for visual comparison between different cities because the tessellated units used were the same size. The scale of change (population growth) as well as its spatial extent is depicted more clearly and in a comparable fashion.

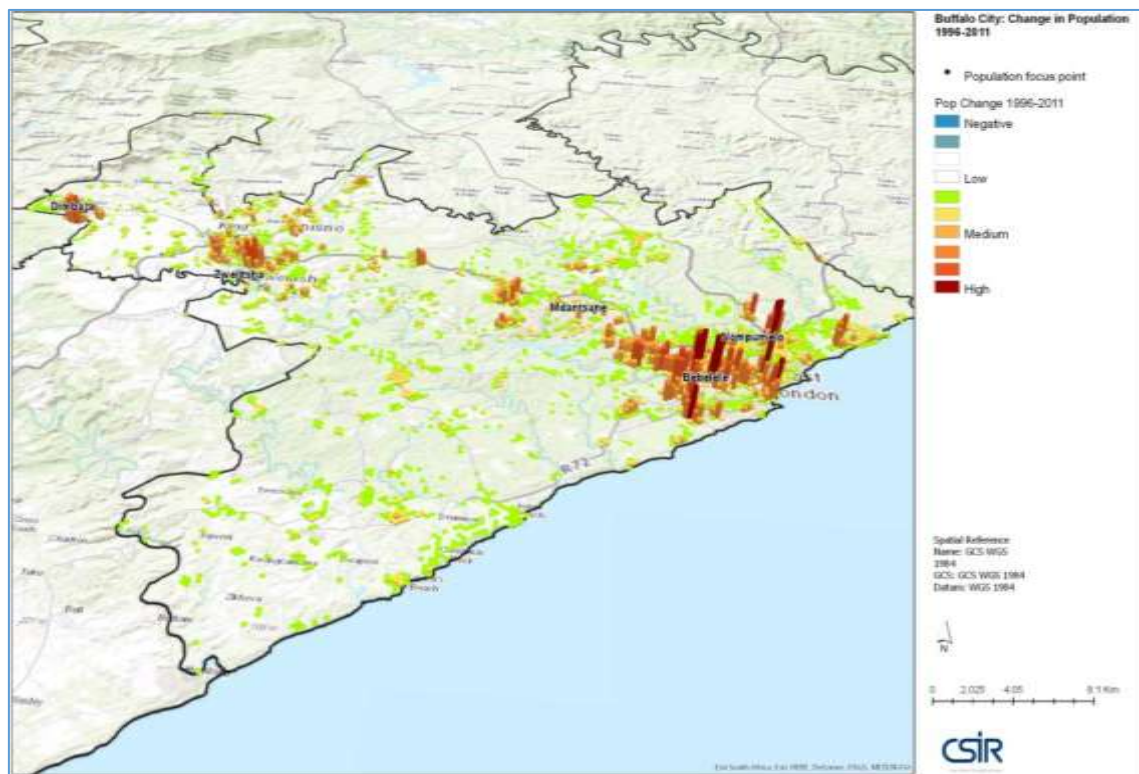


Figure 5: Population growth 1996-2011 - East London (Maritz, 2015).

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Using this approach, different items can be depicted for the same area – Figure 7 depicts the change in population as well as in economic production. Although the actual numbers cannot be compared one-to-one, the change when reflected along a relative scale can be useful when comparing change in population versus economic production.

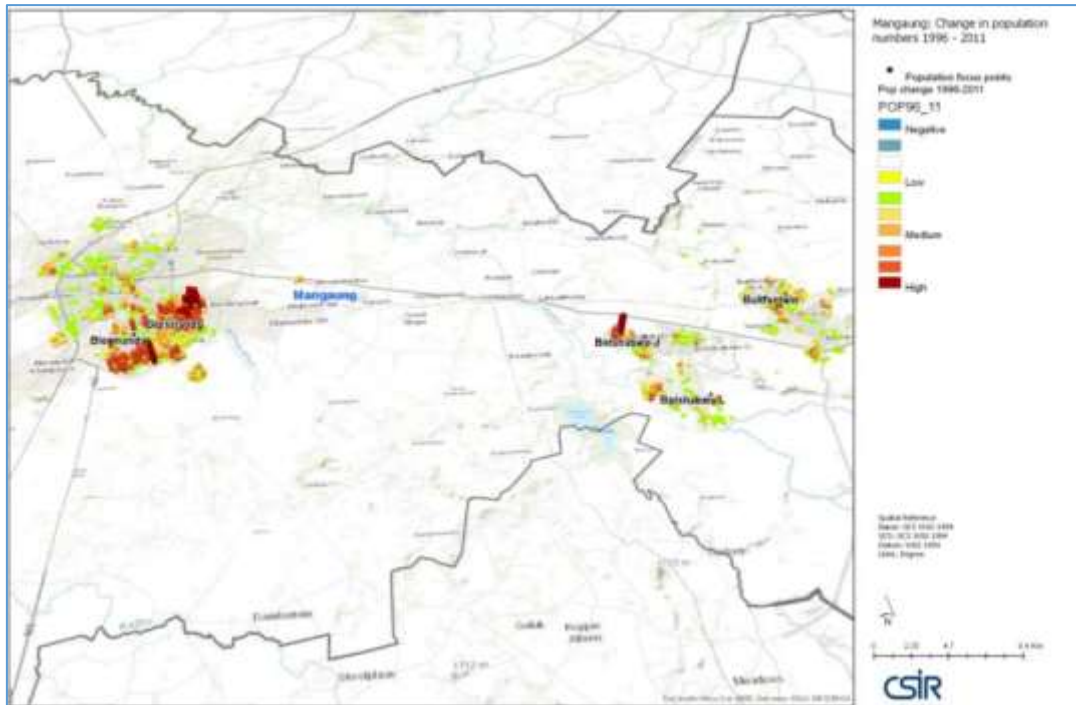


Figure 6: Population growth 1996-2011 - Mangaung (Maritz, 2015).

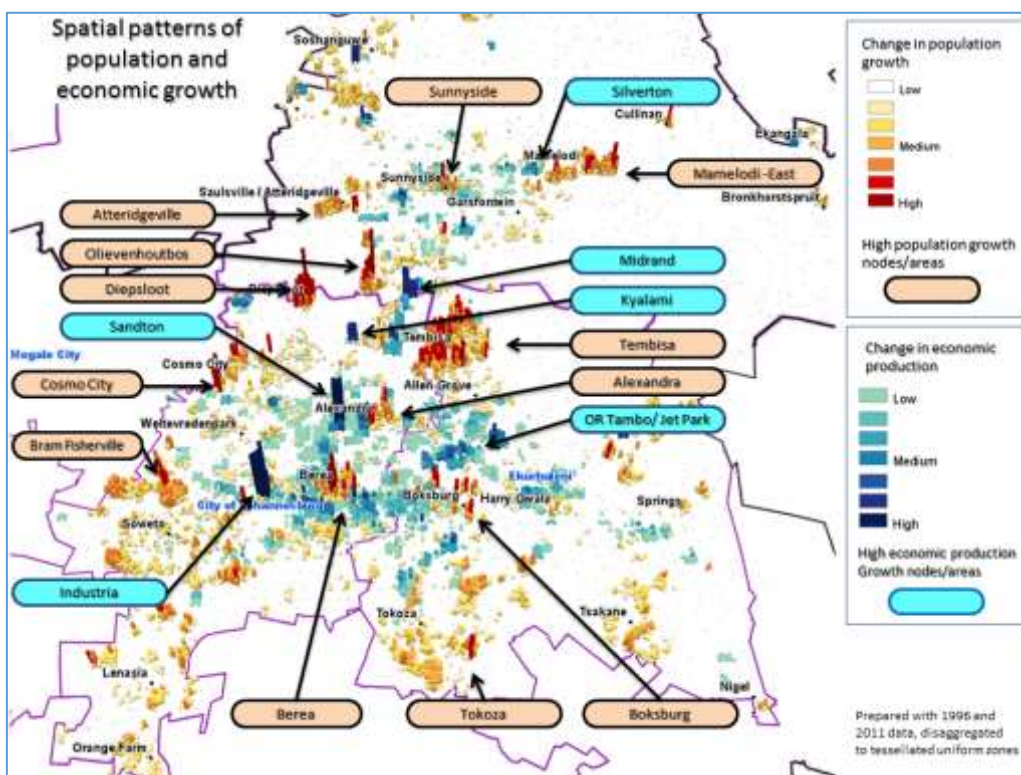


Figure 7: Comparing spatial patterns of population and economic growth (Maritz, 2015).

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Considering the locational and strategic planning context it then becomes easier to judge the result of policies such as densification, corridor development or economic development growth points. Comparing planned with actual development can assist in informing planners and city managers whether their efforts in transforming cities, in line with their spatial plans, are succeeding or not. The contribution of the spatial concentration and growth indicator is, however, not merely in the identification of patterns as illustrated above, but even more so in enabling advanced spatial analyses related to comparison of patterns across distance bands and over time. An example of comparison of areas across different distance bands is done by developing line transects. See Figure 8 that uses uniform distance intervals, drawn from this newly developed socio-economic sub-city indicator dataset, where the values are truer when considering distribution and distance than datasets that vary in size. A statistically unbiased representation is created because the units along the transect are regular.

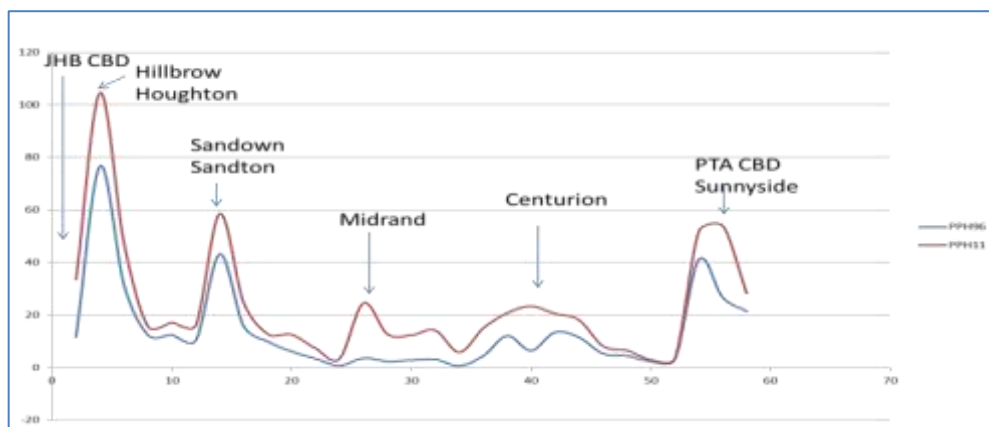


Figure 8: Linear transect from the JHB CBD to the PTA CBD reflecting the change in population comparing 1996 to 2011 (Napier, Le Roux, & Van Heerden, 2016).

In the same vein, comparison of areas across different time scales can be done by developing ‘heat contour’ maps (see Figure 9) that also use uniform intervals, where this newly developed socio-economic sub-city indicator dataset enables comparison across time scales whilst data gathering and sub-place area boundaries have shifted.

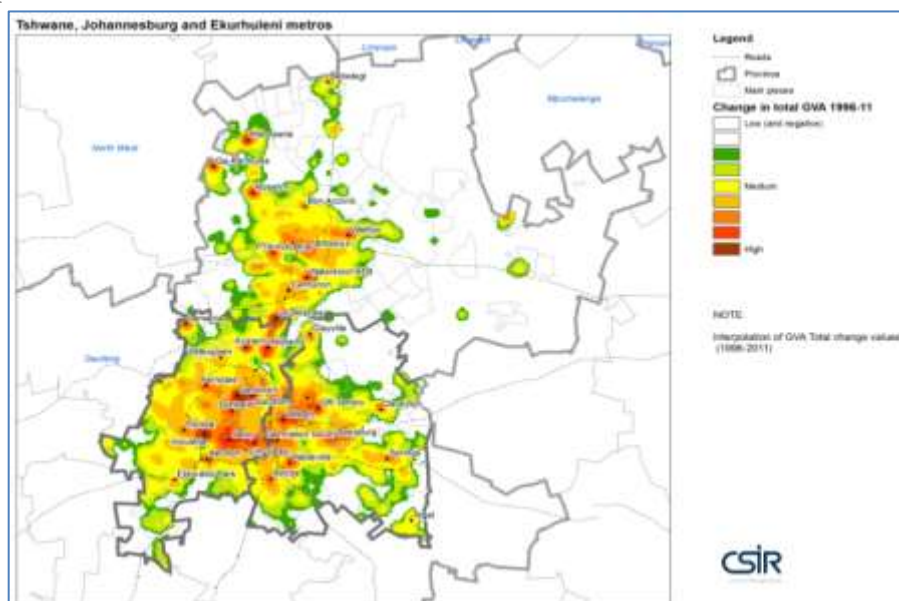


Figure 9: Economic nodes in the Gauteng city region, following the JHB CBD to the PTA CBD transect, reflecting embedded patterns of economic concentration between the time periods 1996 to 2011 (Maritz, 2015).

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### **3.4 Value and contribution of the sub-city spatial change indicator, and possibilities going forward**

Although there are numerous indicators aimed at measuring city performance, most utilise only city-level information. This does not reflect the spatial realities underlying change, development or even decay. We need to also apply more information at a sub-city scale. Such information allows planners and researchers to investigate whether their policies/strategies are having the intended effect. Also critical is that when change is reflected, this also requires that spatial units remain constant (or alternatively it would require an adjustment process where spatial extent has changed). As indicated it is unlikely that a single indicator can measure spatial transformation.

A current reality is that several sub-city indicators exist but they are also based on different spatial units. This presents a problem when needing to combine them or to test for the correlation between indicators. The type of indicators used will differ. For example, the population and economic change can be seen as indicators of intensity, while items such as racial change will be an indicator of diversity. By adding other information such as age-groups, household income, etc. more differentiated views can be created to depict the relative concentration of vulnerable groups, housing need, service requirements, etc.

## **4. REFLECTIONS AND CONCLUSION**

Continued urbanisation and societal inequalities present a challenge in ensuring that spatial change and investment in South African cities are orientated towards achieving the outcomes of spatial transformation. To contribute towards achieving spatial transformation objectives, and tracking progress in this regard, the need for the development, extension and use of spatially and temporally aligned sub-city level indicators is evident.

It is crucial to support the wide range of ongoing indicator initiatives in South Africa and internationally, and to strive for the use of trustworthy official data. However, there is also a need to explore the benefits and improvement of spatially refined and aligned sub-city indicators that can provide spatially-specific views on place-specific progress and challenges in the endeavour towards spatial transformation.

The innovative approach and findings of the endeavour to develop spatio-temporally aligned sub-city level indicators does not only provide a solid baseline to track change in cities in South Africa, but also provides a basis to explore and improve the development and value of such spatial-specific indicators within the context of developing countries and fast growing cities. In reflecting on the research and development process, the team and authors identified a number of key considerations regarding the development, value and use of such indicators. These can be summarised as:

- The value of place-specific views on population increase and decline in specific parts of cities, and especially in city regions (moving beyond the metropolitan/city borders). An indicator built on a finer spatial granularity is more useful to grasp the spatial realities. It can provide a view of population change in the broader area, and not as an aggregate value.
- In order to create fine-grained socio-economic data it is critical to maintain proxy data sets that are used to assign values to such fine-grained spatial units with confidence, in order to create a representative picture.
- It enables spatial analyses and presentation of change in different ways to make comparative analyses possible. It allows for additional analysis - such as creating transects across city space. Keeping the unit type a constant size also makes for better comparison between cities. Should

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such tessellations be extended beyond the city boundary it will also indicate cross-border change.

- Although currently available only for nine of South Africa's largest cities, this can similarly be repeated for other cities or even regions. Currently the mesozone data layer provides (similar) information albeit to assist with coarser scale regional-level analysis. Moving beyond Local Municipal indicators provides for better inter- and intra-city views.
- Indicators are often the result of contained data combination or processing, as such it does not represent all realities. For example, depicting economic activity does not include the informal economy.
- There is merit in collaboration when it comes to developing sub-city level spatial indicators. Indicator development should involve the users/ beneficiaries to ensure appropriateness and relevance. Data reference- and working-groups are important to avoid duplication whilst ensuring that items are vetted and aligned to standards.
- Through the stepSA initiative opportunities are sought to enhance the use and sense-making of indicators to measure spatial change and changes in concentration of population and economic activity.

*Can sub-city spatial indicators make a contribution (to measure spatial transformation)?* This paper presented an approach which uses a fine-grained uniform spatial unit to present change and trend data. Given the importance of measuring change and reporting on spatial planning outcomes, the value of finer-grained information becomes obvious. Considering the examples used it is clear that this is useful in judging the extent of spatial transformation in our cities. Much work still needs to be done to test its application with city authorities and to expand information variables. In addition, the monitoring and evaluation space is filled with indicators often only presented at city-scale. Collaboration between institutions/departments can reduce the burden placed on municipalities and might even result in the provision of a range of comparable sub-city indicators being developed. Having a shared framework against which to measure spatial transformation will also be beneficial in answering this question.

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## 5. BIBLIOGRAPHY

AfricaScope. 2013. *Urban Indicators project 2013 scoping and planning exercise*. Johannesburg: South African Cities Network.

Amindarbari, R. & Sevtsuk, A. 2013. *Measuring Growth and Change in Metropolitan Form (working paper)*. Cambridge: City Form Lab.

Balestrat, M. 2009. Spatial indicators for the analysis of peri -urban dynamics in the Languedoc Mediterranean area. *Territorial cohesion of Europe and Integrative Planning* (pp. 17-35). Lodz, Poland: European Regional Science Association.

Bickford, G. 2014. *Transit Oriented Development: An appropriate tool to drive improved mobility and accessibility in South African cities? Spatial Transformation of Cities*. Johannesburg: South African Cities Network.

Blaschke, T. 2005. The role of the spatial dimension within the framework of sustainable landscapes and natural capital. *Landscape and Urban Planning*, 198-226.

Bourdic, L., Salat, S., & Nowacki, C. 2012. Assessing cities: a new system of cross-scale spatial indicators. *Building Research and Information*, 592-605.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention

4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- COGTA. 2014. *Integrated Urban Development Framework*. Pretoria: Department of Cooperative Governance and Traditional Affairs.
- Cole, R. & De Blig, H.J. 2007. *Survey of Sub-Saharan Africa: A Regional Geography*. New York: Oxford University Press.
- CSIR BE. 2015. *Indicator - access to good basic service (Prepared in support of SACN - state of the cities report 2015)*. Pretoria: CSIR.
- Daly, G. and González, A. 2013. Key Indicators for Territorial Cohesions and Spatial Planning The Reform of EU Cohesion Policy and the New Role of Spatial Indicators. *Borderlands: The Journal of Spatial Planning in Ireland*, 3: 73-89.
- Du Plessis, C. & Landman, K. 2002. *Sustainability analysis of human settlements in South Africa*. Pretoria: CSIR Building and Construction Technology.
- Du Plessis, D. 2013. A critical reflection on urban spatial planning practices and outcomes in post-apartheid South Africa. *Urban Forum*, 25: 69-88.
- Eicher, C. I. & Brewer, C. A. 2001. Dasymeric mapping and areal interpolation: implementation and evaluation. *Cartography and Geographic Information Science*, 28(2): 125-138.
- Fotheringham, S. 2005. Scale-dependant spatial analysis. In M. Goodchild, & S. Gopal (Eds), *Accuracy of spatial databases*. London: Taylor and Francis.
- Global Cities Institute. 2015. Global City Indicators available at: <http://www.cityindicators.org/> [accessed: 5 January 2016].
- Gülersoy, N.Z. & Gürler, E. 2011. Conceptual challenges on urban transformation. *ITU Journal of the Faculty of Architecture*, 8(1): 10-24.
- Hagenlocher, M., Kienberger, S., Lang, S. & Blaschke, T. 2014. Implications of Spatial Scales and Reporting Units for the Spatial Modelling of Vulnerability to Vector-borne Diseases. In R. Vogler, A. Car, J. Strobl, & G. Griesebner (Eds), *GI Forum 2014 - Geospatial Innovation for Society* (pp. 197-206). Wien: OAW Verlag.
- Harrison, P. & Todes, A. 2014. *Spatial considerations in the development of urban policy in South Africa: a research paper as input into the preparation of the integrated urban development framework (IUDF)*. Pretoria: Department of Cooperative Governance and Traditional Affairs.
- Harrison, P. & Todes, A. 2015. Spatial Transformation in a "loosening state": South Africa in a comparative perspective. *Geoforum*, 61: 148-162.
- Hindon, D. 1996. The apartheid city: construction, decline and reconstruction. In E. Le Bris (Ed), *Villes du sud : sur la route d'Istanbul* (pp. 75-106). Paris: ORSTOM.
- HSRC. 2014. *Multiple deprivation in the Eastern Cape*. HSRC, available at: <http://www.hsrc.ac.za/en/review/hsrc-review-january-2015/multiple-deprivation-eastern-cape> [accessed: 7 January 2016].
- Iceland, J., Weinberg, D. H. & Steinmetz, E. 2002. *Racial and Ethnic residential Segregation in the United states: 1980-2000*. Bureau, U.S. Census, Department of Commerce. Washington DC: US Government Printing Office.
- International Standards Organisation. 2014. Sustainable development in communities: City Indicators for service delivery and quality of life. *ISO 37120 briefing note*. International Standards Organisation.
- Korth, N. 2015. *How ISO standardised city indicators could change the way we design*. Deeproot, available at: <http://www.deeproot.com/blog/blog-entries/how-iso-standardized-city-indicators-could-change-the-way-we-design> [accessed: 30 October 2015].

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- KPMG. 2015. *Open Data Almanac for Cities - Status Quo Report*. Pretoria: South African Cities Network.
- Kusek, J. Z. & Rist, R. C. 2004. *Ten steps to a results based monitoring and evaluation system*. Washington DC: The World Bank.
- Lehohla, P. 2005. *Debate over race and censuses not peculiar to SA*. Pretoria: Statistics South Africa.
- Marcuse, P. 2009. *Spatial justice: derivative but causal of social injustice*. Justice spatiale/ spatial justice, available at <http://www.jssj.org/wp-content/uploads/2012/12/JSSJ1-4en2.pdf> [accessed: 7 January 2016].
- Maritz, J. 2015. *Selected indicators for SACN SOCR2015 (SET 2)*. Pretoria: CSIR.
- Maritz, J. 2015. *State of the Cities Report*. StepSA: [http://stepsa.org/sacn\\_socr.html](http://stepsa.org/sacn_socr.html) [accessed 16 December 2015]
- McGarigal, K. 2013. *Concepts of Scale*. UMass Landscape Ecology Lab: [http://www.umass.edu/landeco/teaching/landscape\\_ecology/schedule/landeco\\_schedule.html](http://www.umass.edu/landeco/teaching/landscape_ecology/schedule/landeco_schedule.html) [accessed: 29 February 2016].
- Medeiros, E. 2014. Territorial Cohesion Trends in Inner Scandinavia: The Role of Cross-Border Cooperation (INTERREG-A 1995-2010), *Norsk Geografisk Tidsskrift* 68(5).
- Napier, M., Le Roux, A. & Van Heerden, J.L. 2016. *Seeing spatial inequality: Analysing density and value gradients in South African cities to test commonly held assumptions and inform future action (working paper)*. Pretoria: CSIR.
- National Planning Commission. 2012. *National Development Plan 2030 Our Future – Make it Work*. Pretoria: The Presidency.
- National Treasury. 2015. *National Treasury: City Support Programme - Emerging framework for integrated reporting on Built Environment functions for cities*. Pretoria: Palmer Development Group.
- Noble, M., Zembe, W. & Wright, G. 2011. *Indices of multiple deprivation for South Africa, 2011*. Cape Town: Southern African Social Policy Research Institute.
- Odimegwu, C. & Kekovole, J. 2016. Sources of socio-economic and demographic data in South Africa. In C. Odimegwu, & J. Kekovole (Eds), *Social Demography of South Africa. Advances and Emerging Issues* (pp. 7-12). New York: Routledge.
- Odoki, J. B., et al. 2001. An integrated model for quantifying accessibility-benefits in developing countries. *Transportation Research Part A*: 601-623.
- Oranje, M. 2014. Spatial Transformation and Urban Restructuring: Lessons for the 20-year old post-apartheid South African city? *Spatial transformation of cities*. Pretoria: South African Cities Network.
- Oranje, M. 2011. Nestling national 'transformation' imperatives in local 'servicing' space: Critical reflections on an intergovernmental planning and implementation project. *Town and Regional Planning*, 58: 6-16.
- Oranje, M and van Huyssteen, E. 2007. A brief history of intergovernmental development planning in post-apartheid South Africa. *Town and Regional Planning*, 51: 1-15.
- Oranje, M. 2000. *A Policy Paper on Integrated Development Planning*. Pretoria: Department of Provincial and Local Government.
- Osborn, D., Cutter, A. & Ullah, F. 2015. *Universal Sustainable Development Goals: Understanding the Transformational Challenge for Developed Countries*. London: Stakeholder Forum.
- Republic of South Africa, 2013. *Spatial Planning and Land Use Management Act, Act 16 of 2013*. Cape Town: The Presidency.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Republic of South Africa. 2000. *Local Government: Municipal Systems Act, Act 32 of 2000*. Cape Town: The Presidency.
- Republic of South Africa. 1995. *Development Facilitation Act, Act 67 of 1995*. Pretoria: Office of the President.
- Soja, E., 2009. The city and spatial justice. *Justice Spatiale, Spatial Justice*, 1: 31-39.
- South African Cities Network. 2016. *Sustainable Cities. State of the Cities*. [online] Johannesburg: SACN. Available at: <http://sacitiesnetwork.co.za/wp-content/uploads/2015/12/SACN-Sustainable-Cities-Report-WEB.pdf> [Accessed 18 Jun. 2016].
- South African Cities Network. 2014. *Spatial transformation of cities: Conference report*. Johannesburg: South African Cities Network.
- South African Cities Network. 2011. *South African Cities Network Strategic Plan for the fiscal years 2011-2016*. Johannesburg: South African Cities Network.
- Sustainable measures. 1998. *Sustainable community indicators*. Sustainable measures, available at <http://sustainablemeasures.com/Training/Indicators/Indicatr.html> [accessed: 23 February 2016].
- Taeuber, A. & Taeuber, K. 1988. Measures of racial exposure: some problems. *Working paper No 88-9*. Madison: Center for Demography and Ecology, University of Wisconsin.
- Turok, I. 2014. Settlement Planning and Urban Transformation. *Spatial Transformation of Cities conference*. Pretoria: South African Cities Network.
- Turok, I. 2015. *SPLUMA as a tool for spatial transformation*. Johannesburg: South African Cities Network.
- UNDP. 2014. *The impacts of social and economic inequality on economic development in South Africa. Prepared by TIPS for UNDP*. New York: United Nations Development Programme.
- United Nations Sustainable Development. 2016. *Sustainable development goals - United Nations*. [online] Available at: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> [Accessed 18 Jun. 2016].
- Weber, J. L. & Hall, M. 2001. *Towards spatial and territorial indicators using land cover data*. Copenhagen: European Topic Centre on Land Cover, European Environment Agency.
- Williams, J. J. 2000. Urban transformation. *Cities*, 17(3): 167-183.
- Yang, Y. 2010. *Sustainable Urban Transformation driving forces, indicators and processes*. Zurich: Swiss Federal Institute of Technology (ETH).

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# The Graduate Identity of Professional Planning in South Africa

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## Abstract

Following international debate on the validity of planning as a profession the draft SACPLAN competency guideline (published in 2014) was investigated to determine whether the proposed competency themes describe the graduate identity of a professional planner in South Africa. An online survey sampled three stakeholder groups in planning education; SACPLAN Council, SAPI Council and Planning Academics to collect expert opinions on four main areas of investigation. The first investigation was regarding the entrenchment of the 20 core and functional competency themes in the three stakeholder groups. The second investigation determined the consensus between the three groups regarding the competency profiles of different planning fields (Provincial Government Planner, Local Government Planner, Rural Development Planner and Private Practice Planner) based on the 20 core and functional competency themes. The third investigation determined the five most important competency themes in the draft regulations according to the expert opinions of the stakeholder groups. Lastly the experts had to state if they believed the 20 core and functional competency themes describe the graduate identity of the South African planner.

A low entrenchment of the core and functional competency themes in the three stakeholder groups were observed, consensus amongst the stakeholder groups were only reached on 50% of the competency themes. The study uncovered different expectations in competency profiles for the different planning fields but no consensus was reached among the stakeholder groups in terms of definitive competency profiles for the different planning fields. Six themes emerged as important to the different stakeholder groups but consensus among the stakeholder groups were only found in one theme (Sustainable cities). Most respondents agreed that the core and functional competencies describe the graduate identity of the South African planner. The low consensus among the stakeholder groups on nearly all the investigations in the study follows the international trend of disagreement between planning academia and planning practice regarding the knowledge and skills base for professional planners. The report provides recommendations towards defining a graduate identity for the South African Planner to enhance the professional status of planning in South Africa.

## Keywords

Professional Planning Education, Planning Field Profiles, Graduate Identity of South African Planners

## 1. INTRODUCTION

The generalist and dynamic field of professional planning impacts on the legitimacy of the planning profession, ensuing in a predicament for planning education. The challenge professional planning education faces is the development of graduates that have immediately usable competencies for a broad range of employment focus areas, and who satisfy the identity of a professional planner. Literature debates various concerns regarding the contribution of theory in planning practice, the skills set of

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planning, and the legitimacy of planning as a profession. The focus of the debates are on revitalising planning education to meet the requirements regarding competencies in planning practice, and to acknowledge that planning education has a role to play in legitimising the planning profession.

The position of the article is that in South Africa the professional planning regulator (SACPLAN) develops criteria for the regulation of planners in South Africa, these criteria influence both practice and curricula. The closer the consensus among educators, practitioners and the regulator are on the criteria the better the profession would be defined. The research explored the graduate identity of a professional planner in the South African context on the hand of consensus among the academics, practitioners and the regulator on the knowledge, skills and attitude criteria set by SACPLAN.

## **2. LITERATURE REVIEW**

Exploring the planning education debate, three themes are relevant to the study in contemporary literature. The first is skills development, in particular the demand from employers for graduates with immediately usable competencies (Faling and Todes, 2004); second is the theoretical base that informs planning education and practice (Friedmann, 2008), and last is professionalism in planning practice (Myers and Banerjee, 2005).

Literature describing planning theory indicates a concern regarding the theoretical base that informs the professional planning field. The debate on the role of theory in the planning profession informs both education and practice (Friedmann, 2008). Friedmann (2008) as well as Poxon (2001) describes practitioners' view of planning theory as negative and informs of a divide between academic and practitioner perspectives on the role and value of planning theory in training and practice. Yet planning theory is crucial in defining planning as a profession (Faludi, 1988: 2-7).

Ozawa and Seltzer (1999) present evidence that planning practice value generic skills more than planning theory and technical skills which supports the view on a divide between academics and practice and at the same time questions the legitimacy of planning as a profession. Poxon (2001) argues that planning education must define planning as a profession through development of specific skills supported by theory. Alexander (2001) argues that planning have various knowledge areas that relates to different but well defined planning theories and therefore describe planning as a profession. Edwards and Bates (2011) as well as Frank (2006) describe large variations in opinions on what planners do and on what planners need to know.

Skills development is a high priority topic in higher education where the goal is to produce graduates that are able to 'hit the ground running', or to make the transition from education to place of employment more fluent (Fallows and Steven, 2000: 4-5). Holmes (2000: 206) questions the concept of transferable skills and argues that the skills agenda seeks to clarify behaviour, actions and acts that relate to performance in an employment practice arena. Holmes (2000: 208) believes this debate is better informed by a distinctive identity of a graduate in relation to work performance and calls this 'graduate identity'.

In the global setting the identity of professional planning is not well established. Poxon (2001: 573) believes that the identity of planning is ill-defined and calls for the focus of planning education to be on the three aspirations of higher education outcomes, namely knowledge, skills and attitudes. Myers and Banerjee (2005: 128) state that the identity of professional planning is in a crisis, they argue that three role players are involved in establishing the professional identity of planners, namely the profession, the practice and the academics. Thus the professional identity of a planner is determined by the profession through regulation and in practice by knowledge, skills and attitudes that are developed through education.

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Myers and Banerjee (2005) argue that the uncertain identity of professional planning stems from the diversity of competencies required in the planning arena, the overlap between planning and other professions and lack of reservation of work. The planning profession in South Africa faces similar problems as in the international setting, Todes and Mngadi (2007) identify the same three issues that Myers and Banerjee (2005) describe as challenges facing planning in South Africa. In 2000 academics from planning schools in South Africa formulated the Bloemfontein Competencies in an effort to describe the planning profession's knowledge base and outcomes in relation to planning curricula (Faling and Todes, 2004). The South African Council for Planners (SACPLAN) as regulatory board has a mandate to develop competencies and standards for planning in South Africa as part of business relating to accreditation of curricula and registration of planners (SACPLAN, 2014a). The draft SACPLAN competency guideline (Schoeman and Robinson, 2014) identifies 20 core and functional themes for planning in South Africa. The guideline allows a rating of knowledge, skills and attitude on three levels. The focus on knowledge, skills and attitude in the draft SACPLAN competency guideline may be the precursor to a graduate identity for planners in South Africa.

### **3. OBJECTIVES**

The link between knowledge, skills and attitudes and the identity of professional planning that Myers and Banerjee (2005) describe is deconstructed in Holmes's (2000) argument and coined as graduate identity. Following the argument of Myers and Banerjee (2005) the graduate identity of the South African planner is influenced by three stakeholder areas namely; SACPLAN as professional regulator, the practice that is represented by the South African Planning Institution (SAPI) and planning education that is represented by academics in the different planning schools in South Africa. To describe the graduate identity of the professional planner in South Africa, consensus is required among the planning profession, planning practice and planning academics regarding the theoretical knowledge base that informs planning curricula, the required skills base needed in practice and the behaviour or attitude of professional planners.

The draft SACPLAN competency guideline by Schoeman and Robinson (2014) was used to inform the investigation as it forms the base for planning regulation in South Africa by describing competencies for planners. To investigate the graduate identity of the South African professional planner the following questions were applied to the South African planning context:

- Are the core and functional competencies that are published in the draft SACPLAN competency guideline entrenched in the three stakeholder areas in the South African planning profession?
- Are there different expectations regarding the core and functional competencies for different professional planning fields?
- Does the draft competency guideline set by SACPLAN define a clear professional identity for a professional planning graduate in South Africa?

### **4. APPROACH & METHODOLOGY**

An expert panel survey was used to investigate the three questions. The target population was the SACPLAN Council members, the SAPI Council members and academics from planning schools in South Africa. The survey included the twenty core and functional competencies published in the draft SACPLAN competency guideline. Respondents rated their personal level of knowledge, skills and attitudes regarding each listed competency. Respondents further rated the level of knowledge, skills and attitudes regarding the 20 competencies that different fields of planners need according to their opinion. The different fields of planning in the study are Provincial Government Planning, Local Government Planning, Rural Development Planning and Private Practice Planning. The rating of the level of knowledge, skills and attitudes follows the standard set in the draft competency guideline from SACPLAN. A level of 1 denotes awareness and a basic understanding of the theme with the ability

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explore the theme better when demanded by the work environment. A level of 2 indicates sound understanding of the theme and the ability to apply the theme in the work environment. A level of 3 indicates mastery of the theme (Schoeman and Robinson, 2014: 10).

Data from the survey were summarised in frequency tables. Consensus among the stakeholders is reported for themes and levels when the frequency in all three individual stakeholder groups is higher than 67%. As part of the quantitative survey, respondents indicated the five most important themes from the 20 core and functional competencies and answered the question whether the 20 core and functional competencies describe a graduate identity for the South African planner.

## 5. RESULTS

### 5.1 Draft SACPLAN Competency Themes and Components

*Table 1: Draft SACPLAN Competencies and Components*, presents the core and functional competency themes from the draft SACPLAN competency guideline with a description of the competency components and indicates the competency area (core or functional) as taken from Schoeman and Robinson (2014). There are thirteen core competency themes and seven functional competency themes.

Table 1: Draft SACPLAN Competencies and Components

Theme	Draft SACPLAN Competency Themes and Components Competency Components	Competency Area
Settlement history and theory	History of settlements Planning history Urban and rural development theory and processes Informality	Core Competency
Planning theory and public policy	Planning theory Public policy Land use theory Urban theory Spatial theory	Core Competency
Sustainable cities	Principles, methods, and practices for developing sustainable cities Concepts of sustainability , relevance and application in urban planning Local Agenda 21 Sustainability indicators and assessment	Core Competency
Place making	Theories of urban structure Theories and city design approaches Theories of spatial change Principles of layout planning Principles of land use management	Core Competency
Regional development	Regional development theory Regional policy Regional planning practice	Core Competency
Institutional and legal frameworks	Governance and community participation Planning law Comparative planning systems Professional practice	Core Competency
Environmental planning and management	Natural systems Environmental planning Climate change Sustainability	Core Competency
Land use and infrastructure planning	Land use analysis and planning Infrastructure planning	Core Competency
Transport planning	Theories, processes and methods of transportation planning Interaction between transport and land use Sustainable transport	Core Competency
Land economics	Economic development Land economics Access to land Property development process	Core Competency
Integrated development planning	Integrated development planning processes(international and South African contexts) South African IDP	Core Competency
Geography, sociology and anthropology	Geographical aspects of planning Sociological aspects of planning Anthropological aspects of planning	Core Competency
Research methods and dissertation	Research methods	Core Competency

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	Dissertation/ research report	
Survey and analysis	Surveys Analysis and synthesis Mapping and GIS	Functional Competency
Strategic assessment	Land use and tenure analysis Socio economic and demographic analysis Physical and environmental analysis Infrastructure and public services analysis Spatial analysis Institutional and stakeholder analysis	Functional Competency
Local area analysis and planning	Local area analysis Local area planning	Functional Competency
Layout planning	Site analysis Layout planning and site planning Township development	Functional Competency
Plan making	Integrated development planning Strategic planning (including scenario planning) Spatial planning	Functional Competency
Plan administration, implementation and land use management	Land use management Planning scheme Development controls Planning applications	Functional Competency
Planning education	Teaching planning in tertiary institutions Publication Mentoring	Functional Competency

Source: Schoeman and Robinson, 2014

## 5.2 Expert Panel Composition

*Table 2: Expert Panel Composition*, indicates the composition of the expert panel. The composition of respondents was six SACPLAN Council members, six SAPI Council members and eight Academics. Ten respondents indicated their field of focus as academic, two from the SACPLAN population and eight from the Academic population. The opinions of the two SACPLAN members with an academic focus were used to inform both the SACPLAN population’s opinions and the Academic population’s opinions. No representative from the provincial government participated. The local government field was represented by three respondents, two from the SACPLAN population and one from the SAPI population. Only one respondent from the SAPI population represented the rural development field. The private practice field was represented by five respondents: one from the SACPLAN population and four from the SAPI population. One SACPLAN respondent did not select a field of focus and was grouped as *Other*.

Table 2: Expert Panel Composition

Stakeholder Distribution in Planning Fields							
Population	Total	Academic	Provincial Government	Local Government	Rural Development	Private Practice	Other
SACPLAN	6	2	0	2	0	1	1
SAPI	6	0	0	1	1	4	0
Academic	8	8	0	0	0	0	0
<b>Total</b>	<b>20</b>	<b>10</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>1</b>

## 5.3 Draft SACPLAN Competencies and the Graduate Identity a Professional Planner

*Table 3: Draft SACPLAN Competencies and the Graduate Identity a Professional Planner*, presents the opinions of the expert panel on whether the draft SACPLAN competencies (the 20 core and functional

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themes) adequately describes the identity of a professional planner graduate in South Africa. All SACPLAN respondents agreed that the 20 core and functional competencies described the identity of a professional planner graduate. In the SAPI population, one respondent was uncertain. In the Academic population, one respondent was uncertain and one respondent disagreed. Data are presented as percentages based on response frequencies.

Table 3: Draft SACPLAN Competencies and the Graduate Identity a Professional Planner

Competencies in Draft Regulations Describe the Identity of a Professional Planner in South Africa								
SACPLAN n=6			SAPI n=6			Academic n=10		
Agree	Disagree	Uncertain	Agree	Disagree	Uncertain	Agree	Disagree	Uncertain
100%	0%	0%	83%	0%	17%	80%	10%	10%

#### 5.4 Expert Panel Competency Profile

Table 4: Expert Panel Knowledge, Skills and Attitude Profile, summarises the competency profile of the expert panel in terms of the knowledge, skills and attitude categories in relation to the draft SACPLAN competency guideline. There is a 50% consensus among the three stakeholder populations in terms of the knowledge category (10 themes), with consensus in 8 themes on Level 3 and consensus in 2 themes on Level 2. There is 40% consensus in the skills profile (8 themes) with 35% consensus (7 themes) on Level 3 and 5% consensus (1 theme) on Level 2. The consensus in the attitude profile is 55% (11 themes) on Level 3. The consensus among the three stakeholder populations indicates that the expert panel rated their competencies mostly on Level 3 (mastery of theme) and in a smaller degree on Level 2 (understanding and work application).

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Table 4: Expert Panel Knowledge, Skills and Attitude Profile

<b>Expert Panel Knowledge, Skills &amp; Attitude Profile</b>									
<b>Theme</b>	<b>Knowledge</b>			<b>Skills</b>			<b>Attitude</b>		
	<b>L 1</b>	<b>L 2</b>	<b>L 3</b>	<b>L1</b>	<b>L 2</b>	<b>L 3</b>	<b>L 1</b>	<b>L 2</b>	<b>L 3</b>
<b>Settlement history and theory</b>									
<b>Planning theory and public policy</b>			Yes			Yes			Yes
<b>Sustainable cities</b>			Yes			Yes			Yes
<b>Place making</b>			Yes						Yes
<b>Regional development</b>						Yes			
<b>Institutional and legal frame works</b>									
<b>Environmental planning and management</b>									Yes
<b>Land use and infrastructure planning</b>			Yes						Yes
<b>Transport planning</b>		Yes							
<b>Land economics</b>									
<b>Integrated development planning</b>						Yes			Yes
<b>Geography, sociology and anthropology</b>		Yes			Yes				Yes
<b>Research methods and dissertation</b>									
<b>Survey and analysis</b>									
<b>Strategic assessment</b>									Yes
<b>Local area analysis and planning</b>			Yes			Yes			Yes
<b>Layout planning</b>			Yes			Yes			Yes
<b>Plan making</b>			Yes						
<b>Plan administration, implementation and land use management</b>			Yes			Yes			Yes
<b>Planning education</b>									
<b>Summary: Expert Panel Knowledge, Skills &amp; Attitude Profile</b>									
	<b>Knowledge</b>			<b>Skills</b>			<b>Attitude</b>		
	<b>L 1</b>	<b>L 2</b>	<b>L 3</b>	<b>L 1</b>	<b>L 2</b>	<b>L 3</b>	<b>L 1</b>	<b>L 2</b>	<b>L 3</b>
<b>Consensus in Number of Themes</b>	0	2	8	0	1	7	0	0	11
<b>Consensus as % of Themes</b>	0%	10%	40%	0%	5%	35%	0%	0%	55%

The table indicates six themes where no consensus was reached among the three stakeholder populations for either one of the competency categories of knowledge, skills or attitude. On another five themes consensus among the three stakeholder areas was only noted in one of the three categories of knowledge, skills or attitude.

## 5.5 Planning Fields Competency Profiles

Table 5: Planning Fields Competency Profiles, presents the competency profiles in terms of the knowledge, skills and attitude categories for the four planning fields of Provincial Government Planner,

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Local Government Planner, Rural Development Planner and Private Practice Planner based on the opinions of respondents in the expert panel. Themes and categories where consensus was noted are all on Level 2 (understanding and work application) or Level 3 (mastery of theme). The data does indicate three themes where consensus are noted in more categories across all fields; these are **Transport Planning, Geography, sociology and anthropology** and **Plan Administration, implementation and land use management**. Only the theme **Geography, sociology and anthropology** notes consensus on the knowledge and skills categories for all four planning fields. In the theme **Survey and analysis** no consensus is reached between the three stakeholder populations. In another three themes consensus is only noted in one planning field. These themes are; **Planning theory and public administration** where consensus is only noted in the Rural Development Planner field, **Layout planning** and **Planning education** where consensus are only noted in the Private Practice Planning field.

## 5.6 Most Important Themes

Respondents were ask to list the five most important themes. *Table 6: Most Important Themes*, presents six themes that respondents indicated as most important and the themes are ranked from one (highest level of consensus) to four (lowest level of consensus). The table notes that only the in the highest ranked theme (**Sustainable cities**) consensus was reached among all three stakeholder groups on theme importance.

Table 5: Planning Fields Competency Profiles (see following page)

Table 6: Most Important Themes

Most Important Themes		
Theme	Rank	Consensus Groups
Sustainable cities	1	SACPLAN, SAPI & Academic
Place making	2	SACPLAN & SAPI
Regional development	3	SAPI & Academic
Institutional and legal frameworks	4	Academic
Environmental planning and management	4	SACPLAN
Land use and infrastructure planning	4	SAPI

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Planning Fields Competency Profiles												
Theme	Provincial Government Planner			Local Government Planner			Rural Development Planner			Private Practice Planner		
	Knowledge	Skills	Attitude	Knowledge	Skills	Attitude	Knowledge	Skills	Attitude	Knowledge	Skills	Attitude
Settlement history and theory	L2	L2		L2	L2		L2					
Planning theory and public policy								L3				
Sustainable cities			L3			L3	L3		L3			L3
Place making				L3			L2	L2	L3	L3	L3	L3
Regional development		L3	L3						L3	L3	L3	L3
Institutional and legal frameworks		L3									L3	L3
Environmental planning and management				L2	L2		L2					L3
Land use and infrastructure planning				L3		L3	L3	L2		L3		L3
Transport planning	L2	L2	L2	L2	L2	L2			L2	L2	L2	L2
Land economics	L2	L2		L2				L2				
Integrated development planning					L3	L3						L3
Geography, sociology and anthropology	L2	L2		L2	L2	L2	L2	L2	L2	L2	L2	L2
Research methods and dissertation	L2			L2	L2		L2	L2				
Survey and analysis												
Strategic assessment			L3			L3			L3			L3
Local area analysis and planning		L2		L3		L3						L3
Layout planning										L3	L3	
Plan making				L3		L3				L3		L3
Plan administration, implementation and land use management			L3	L3	L3	L3	L3	L3	L3	L3	L3	L3
Planning education										L2		
Summary: Consensus in Planning Fields Competency Profiles												
Consensus in Number of Themes	Provincial Government Planner			Local Government Planner			Rural Development Planner			Private Practice Planner		
	Knowledge	Skills	Attitude	Knowledge	Skills	Attitude	Knowledge	Skills	Attitude	Knowledge	Skills	Attitude
Consensus in Number of Themes	5	7	5	11	7	9	8	7	7	9	7	13
Consensus as % of Themes	25%	35%	25%	55%	35%	45%	40%	35%	35%	45%	35%	65%

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## **6. RESEARCH CONTRIBUTION**

The study falls in the field of Urban and Regional Planning in South Africa. The aim of the study was to inform the debate on revitalising planning education through determining the graduate identity of professional planners in South Africa. The main debates that informed the study were planning theory, theory in planning practice and planning education. The study did not include land use theory and planning law, as these fell outside the main debates. Four stakeholder groups will benefit from the study. These are the professional field of planning, the field of planning practice, academics in planning education and professional planning students. The focus of the study was on the draft SACPLAN competencies and measured the opinions of three stakeholder areas, namely SACPLAN Council, SAPI Council and planning academics.

## **7. RESEARCH LIMITATIONS**

The competencies that describe the graduate identity for professional planners are regulated by SACPLAN. The validity of the competencies that describe the graduate identity for professional planners was measured through determining the level of entrenchment in three stakeholder groups, and stakeholder opinions regarding the necessity for the competencies in planning fields. All stakeholder groups are influenced by the regulatory competencies; therefore individual opinions cannot be value free. The epistemology of the study must account for value-laden opinions through a pragmatic knowledge claim that acknowledge the influences of real-life experiences on the data. The study did not include current students in professional planning curricula, nor recently graduated professional planners; this was limiting the diversity of opinions to the expert panel only. The study did not include other competencies set by previous attempts to define the skills base of professional planners.

## **8. FURTHER RESEARCH**

This study only focused on the opinions of the three stakeholder groups identified from literature namely SACPLAN Council that represents the regulatory body or profession, SAPI Council that represents practice and academics that represent education. The opinions of planning graduates could add a valuable dimension to the debate of a graduate identity for professional planners in South Africa. Further themes that should be explored are core and specialized planning curricula to enhance competitiveness between planning schools and the responsiveness of regulation and planning curricula to the planning needs in Africa.

## **9. DISCUSSION & CONCLUDING REMARKS**

The investigation relates to the graduate identity of a professional planner in South Africa. Three stakeholder groups contribute to planning education in South Africa, namely the SACPLAN Council that represents the regulatory board for planners in South Africa, the SAPI Council that represents the professional practice field, and academics that represent planning training programmes. The investigation reports data as expert panel opinions from the three distinct stakeholder populations and investigates the consensus among the stakeholder groups in relation to the graduate identity of professional planning in South Africa. The expert panel completed a survey based on the 20 core and functional themes in the draft SACPLAN competency guideline (Schoeman and Robinson, 2014).

The data collected in the survey are presented in terms of consensus reached among the stakeholder populations regarding the entrenchment of the core and functional themes from the draft SACPLAN competency guideline in the expert panel populations and the competency profile of the four planning fields of Provincial Government Planning, Local Government Planning, Rural Development Planning and Private Practice Planning in relation to the themes. Consensus between stakeholder groups is noted

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in themes where there was a 67% or higher consensus among respondents in individual stakeholder populations.

### **9.1 Draft SACPLAN Competency Themes and Components**

*Table 1: Draft SACPLAN Competencies and Components*, presents the draft SACPLAN competency themes with a description of the competency components and indicates the competency area (core or functional) as taken from Schoeman and Robinson (2014). The study only included the thirteen core competency themes and seven functional competency themes from the draft guideline, the generic competencies listed in the guideline are deemed outcomes of higher education in general and were not evaluated in the survey

### **9.2 Expert Panel Sample**

The expert panel included respondents from three stakeholder groups. The stakeholder groups are SACPLAN Council (the regulatory body of professional planning in South Africa), SAPI Council (the representative of professional planning practice in South Africa) and Planning Academics (recruited through the Committee of Heads of Planning Schools (CHOPS)). The three stakeholder groups represent the key drivers in professional planning education in South Africa. This follows the rationale presented by Myers and Banerjee (2005) but it further agrees with the aim of SACPLAN.

The SACPLAN population (six respondents) had the largest distribution between planning fields. This is to be expected as SACPLAN Council members are selected into office to represent all planning fields in South Africa. The SAPI population (six respondents) represented the private practice field strongly with four out of six respondents indicating a private practice focus. All eight respondents from the Academic population reported an academic field of focus. Two SACPLAN respondents indicated an academic field of focus and their opinions informed both the SACPLAN population responses and the Academic population responses.

### **9.3 Draft SACPLAN Competencies and the Graduate Identity of a Professional Planner**

Most respondents agreed that the 20 core and functional themes as presented in the draft SACPLAN competency guidelines adequately describe the identity of professional planner graduates in South Africa. However, the low consensus among stakeholder groups regarding the competency profiles of the different planning fields in *Table 5: Planning Fields Competency Profiles* contradicts this statement. The fact that there was only one theme that all stakeholder groups regarded as important to planners in South Africa in *Table 6: Most Important Themes* further advises that the topic of graduate identity for professional planners in South Africa cannot be resolved through a single question.

### **9.4 Expert Panel Competency Profile**

The expert panel profile represents the entrenchment of the draft SACPLAN competencies in the three stakeholder populations that drive planning education in South Africa. The expert panel competency profile is in agreement with the SACPLAN guideline on registration of professional planners (SACPLAN, 2014b: 18) that requires professional planners to have core and functional competencies on Level 2 (35%) and Level 3 (35%). But the moderate to low consensus among the three stakeholder areas in terms of competency themes and categories (10 themes in knowledge category, 7 themes in the skills category and 11 themes in the attitude category) does not comply with the guideline of SACPLAN for registration of professional planners (SACPLAN, 2014b: 20), which requires accredited degree programmes to address at least 65% of core and functional competencies. The six themes where no consensus among the three stakeholder populations was observed and the five themes where consensus was noted in only one competency category further indicate a low entrenchment of the draft SACPLAN competencies in the three stakeholder populations.

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## 9.5 Planning Fields Competency Profiles

There was low consensus among stakeholder areas regarding the competency profiles for the four different planning fields. In the summary area of *Table 5: Planning Fields Competency Profiles*, it is noted that the stakeholder groups are more in agreement on the competency profiles of Local Government Planner and Private Practice Planner, followed by agreement on the competency profile of the Rural Development Planner. The stakeholders are least in agreement on the competency profile of the Provincial Government Planner. It is noted that although there is consensus among the stakeholder groups on the competency profiles of the different planning fields the consensus on the inclusion of relevant themes are low.

This indicates that the 20 core and functional themes in the draft SACPLAN competency guidelines suit the description of local government planners and private practice planners better than the other planning fields according to the expert panel opinions. This answers the second research question; there are different expectations regarding competency profiles for different planning fields according to expert opinion. The low consensus among stakeholders, however, did not allow a definite conclusion regarding unique competency profile for the different planning fields or to identify common themes between the planning fields.

The low consensus among the expert panel members in relation to the competency profiles of the different planning fields suggests that the planning fields have specialised focus areas that translate to different themes that are relevant for the different planning fields. The higher consensus reported in the local government planning field and the private practice planning field may reflect the broad scope of the two planning fields. Another explanation for the low consensus on the different planning fields may be a reflection of differences in past provincial planning legislations that possibly impacted on expert panel opinion.

## 9.6 Most Important Themes

*Table 6: Most Important Themes*, presents six themes that were of importance to the expert panel. The highest ranking theme was **Sustainable cities**. This is the only theme that all stakeholder populations agreed on in terms of importance. The fact that there was only consensus among the stakeholder groups on one theme that is of importance to planning graduates presents evidence that the identity of the planning profession in South Africa is in the same crises that is reported for the international planning profession.

Analysing the data collected in the investigation, the first observation is the low level of consensus among stakeholder populations on nearly every subject of investigation. Only the question relating to the value of the draft SACPLAN competency themes in relation to the graduate identity of professional planners in South Africa shows a high level of consensus among the three stakeholder populations, nearly all respondents agreed that the competency themes describes the graduate identity of the South African planner. There is a moderately low entrenchment of the draft SACPLAN competency themes in the three stakeholder group (SACPLAN Council, SAPI Council and planning academics, there is low consensus among stakeholder populations on the competency profiles for the different planning fields (Provincial Government Planner, Local Government Planner, Rural Development Planner and Private Practice Planner) and lastly there is only one theme that has importance to all three stakeholder groups (**Sustainable cities**).

A valid conclusion based on the low level of consensus observed, would be to reject the study as a failure when it comes to informing the debate on planning education. However, the low consensus among stakeholder areas is on par with planning literature that describes large variations in opinions on what planners do and on what planners need to know (Edwards and Bates, 2011; Frank, 2006; Poxon, 2001).

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The study only noted the differences in opinion among the respondents, the reason for the low level of consensus was not investigated. Possible reasons for the lack of consensus may be the following:

- Differences in previous provincial planning legislation that shaped individual respondent's opinions.
- The fact that the draft SACPLAN competency guidelines are still relatively new to the planning community.
- The real competency expectations in the professional planning occupation may be smaller than the 20 core and functional themes in the draft SACPLAN competency guidelines.

Although findings from the survey are inconclusive on the matter of a graduate identity, it is recommended that the 20 core and functional themes should serve as basis for the development of a graduate identity for professional planners in South Africa based on the following:

- The nature of the draft SACPLAN competency guidelines that describe specific outcomes for knowledge, skills and attitude categories for each of the 20 core and functional themes is in agreement with literature that demands more than just transferrable skills in graduates.
- The draft SACPLAN competencies address the debate on professionalism in planning by setting regulatory standards for both graduate education and vocational training in practice.
- The draft SACPLAN competencies address the debate on the role of theory in planning by addressing knowledge (theory), skills (practice) and attitude (values).
- The draft SACPLAN competencies address the debate on planning education by informing planning education of the requirements of planning practice and contemporary planning issues.
- The findings of the study support literature that claims that the planning profession has an ill-defined professional identity. The draft SACPLAN competencies can mitigate the ill-defined professional identity by informing the graduate identity of planning in South Africa.

The time perhaps is ripe to refresh the debate on regulatory guidelines and planning curricula with the purpose of increasing consensus among stakeholders in terms of the competency profile of the South African professional planner graduate. Increased consensus among the three stakeholder groups will help to legitimise the planning profession and to define the identity of the professional planner as proposed by Myers and Banerjee (2005: 128).

## 10. ACKNOWLEDGEMENTS

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## 11. REFERENCES

Alexander, E.R. (2001). What do planners need to know? *Journal of Planning Education and Research*, 20(3), 376-380.

Edwards, M.M. & Bates, L.K. (2011). Planning's core curriculum: Knowledge, practice, and implementation. *Journal of Planning Education and Research*, 31, 172-183.

Faling, W. & Todes, A. (2004). Employer perceptions of planning education in South Africa. *Town and Regional Planning*, 47, 32-43.

Fallows, S.J. & Steven, C. (2000). *Integrating key skills in higher education: Employability, transferable skills, and learning for life. s.l.:* Psychology Press.

Frank, A.I. (2006). Three decades of thought on planning education. *Journal of Planning Literature*, 21(1), 15-67.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention

4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Friedmann, J. (2008). The Uses of Planning Theory: A Bibliographic Essay. *Journal of Planning Education and Research*, 28(2), 247-257.

Faludi, A. (1988). *A Reader in Planning Theory*. New York: Pergamon Press. (Originally published in 1973).

Holmes, L. (2000). Questioning the skills agenda: *Integrating key skills in higher education: Employability, transferable skills and learning for life*. USA, Stylus Publishing Inc. (201- 214).

Myers, D. & Banerjee, T. (2005). Toward Greater Heights for Planning: Reconciling the Differences between Profession, Practice, and Academic Field. *Journal of the American Planning Association*, 71(2), 121-129.

Ozawa, C.P. & Seltzer, E.P. (1999). Taking our bearings: Mapping a relationship among planning practice, theory, and education. *Journal of Planning Education and Research*, 18(3), 257-266.

Poxon, J. (2001). Shaping the planning profession of the future: The role of planning education. *Environment and Planning B*, 28(4), 563-580.

SACPLAN (South African Council for Planners). (2014a). *Consolidated Report on Competencies and Standards*. SACPLAN, available at: <http://www.sacplan.org.za/documents/Consolidated%20Report%20on%20Competencies%20and%20Standards.pdf> [accessed: 14 June 2016]

SACPLAN (South African Council for Planners). (2014b). *Guidelines for the Registration of Planners*. SACPLAN, available at: <http://www.sacplan.org.za/documents/Registration%20Guidelines.pdf> [accessed: 3 August 2015]

Schoeman, C.B. & Robinson, P. (2014). *Competencies Guidelines Report, Final Draft January 2014*. South African Council for Planners. SACPLAN, available at: <http://sacplan.org.za/documents/Competencies%20Guidelines%20Final%20Draft.pdf> [accessed: 14 May 2014]

Todes, A & Mngadi, N. (2007). *City Planners*. Report for the Human Science Research Council Study on Scarce Skills for the Department of Labour.

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# **Spatial Change as Drivers of Risk and Vulnerability in South African Cities: Spatial Trends in the Three Metropolitan Cities of Gauteng**

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## **Abstract**

Since 1994 the South African urban landscape has been changing as a result of fundamental social, economic and political transformations. Metropolitan cities, especially, face unique challenges because of the dynamism of urban populations. South African metros are characterised by significant inequalities across population groups and across space and the spatial isolation of vulnerable groups have been continuing rather than easing. Making use of a set of recently developed indicators for change, developed by the CSIR in collaboration with SACN, spatial change as drivers of risk and vulnerabilities for three metropolitan cities are explored. These three cities are the City of Tshwane, the City of Johannesburg and the Metropolitan Municipality of Ekurhuleni.

Evidence from the analysis has shown that whilst illustrating major strides in service delivery within former disadvantaged townships, spatial patterns, as expected; confirm the embedded vulnerabilities associated with socio-economic and institutional exclusion, long travel distances and limited access to urban opportunities in former so-called ‘black’ townships on the urban periphery. However, in addition to the spatial legacies associated with apartheid cities, the analyses also points out new patterns of exclusion and spatial injustice, contributing to the already complex challenge of addressing spatial specific inequalities and transformation.

## **Keywords**

Spatial Change Trends, Risk, Vulnerability, Urbanisation, Informality, Gauteng

## **1. INTRODUCTION**

South African metropolitan cities are experiencing rapid change and are characterised by the urbanisation of poverty as well as the youth. Most migration takes place between the largest cities and metros. These trends manifest themselves most noticeably in Gauteng. This not only confirms perceptions about metros as increasingly being the spaces where the future of South Africa’s youth will be determined, but also once again rings the alarm bells for urgent, focused and innovative government support to address urban risks and service delivery implications (Pieterse et al., 2014). In 2011 close to 50 per cent of the South African population were living in city regions and cities (CSIR n.d) and it is estimated that by 2030, 71 per cent of the population will be living in urban areas, reaching nearly 80 per cent by 2050 (CoGTA, 2014, p. 12). The future of South Africa population is dependent on the future of its urban spaces.

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An analysis of a number of recently developed indicators of spatial change, developed in an attempt to explore spatial transformation across South Africa's nine biggest cities, once again highlighted the challenges faced by cities in South Africa. The explorative analyses conducted by the CSIR in collaboration with the SACN as part of the State of Cities Report, and on which the analysis in the paper is based on, attempted to explore place based performance and spatial patterns associated. Within the ambit of the drive towards spatial specific transformation and spatial justice, the increasingly complex patterns of spatial inequality and vulnerabilities evident in our cities, a number of questions are prompted related to (Oranje et al., 2010; Turok, 2013; Harrison & Todes, 2015);

- the driving forces of change and implications thereof at sub-city level,
- the focus and effectiveness of spatially explicit policies, interventions and investment geared to support transformation,
- the urgent need for granular baseline profiles and spatially specific tracking of change in cities and spatial outcomes, and
- discourses around spatial transformation in the South African context, which has largely been associated with changing the apartheid legacies of the past.

Cities are faced with increased vulnerabilities which include constrained resources such as energy, water, food and land; service delivery; and the risk of natural and man-made disasters. This paper will explore spatial change as drivers of risk and vulnerability. The paper starts with a description of some of the spatial processes that drives risk and vulnerability in general in South African cities. In order to illustrate the complex spatial patterns of vulnerability and exclusion, the results of the explorative analysis conducted to explore place based performance in nine South African cities are reviewed, by making use of a limited set of spatial specific indicators as applied to the three metropolitan municipalities within Gauteng. The paper then continues to present the results from the analyses and deductions are made around the implications of old and new spatial patterns of risk and vulnerability as well as possible implications for urban policy, investment and city governance.

This paper should be read together with *Are we achieving spatial transformation in South Africa? Can sub-city spatial indicators make a contribution?* By Maritz et al., also presented at the 2016 Planning Africa Conference 3-6 July 2016 in Johannesburg, South Africa, which discusses the methodology behind the development of spatial indicators, some of which are analysed and discussed in this paper.

## **2. SPATIAL CHANGE AS DRIVERS OF RISK AND VULNERABILITY IN SOUTH AFRICAN CITIES**

South African settlements have experienced vast changes within a short time. The dramatic spatial changes caused by urbanisation and informality in particular are key drivers of vulnerability and extensive risks in urban areas. Other processes that drive risk and vulnerability include natural population growth, smaller household formation, growing inequality, increasingly youthful urban populations, and growth and decline in the economy and employment opportunities (African Development Bank Group, 2012; Freire, et al., 2014; Todes, et al., 2008; UN Economic Commission for Africa, 2014). Three of these processes and the challenges of urban management in light of this are discussed below.

### **2.1 Urbanisation**

Urbanisation in South Africa has been persistent since the 1990s with an extraordinary increase in the absolute number of urban dwellers. The main drivers of urbanisation in South Africa are rural-urban migration, natural increase, land reform, circular and seasonal labour migration, changing and decaying rural landscapes, spatial expansion of urban settlements, international migration, negative events such

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as conflicts, and a perception of plentiful economic opportunities, housing and services in the cities (Mans, et al., 2014; Todes, Kok, Wentzel, Van Zyl, & Cross, 2008; Van Niekerk & Le Roux, forthcoming; UN-Habitat, 2016).

Urban areas have the potential to transform a nation, for they offer significant opportunities for employment, production, trade, innovation, and improved quality of life. In many cases, the contribution of cities in South Africa to the GDP is much greater than their share of the national population. However, urbanisation in many South African cities signals a tremendous challenge to their resource base, for it occurs with little change in the economic structure and insufficient investment in human capital (Freire, Lall, & Leipziger, 2014; Todes, Kok, Wentzel, Van Zyl, & Cross, 2008; UN-Habitat, 2016). This is called “urbanisation without development” (UN Economic Commission for Africa, 2014). High concentrations of unemployed people, poverty, informality and inequality are thus characteristic of South African cities. Rapid urbanisation puts immense pressures on a government’s ability to provide public services. Major cities in developing countries across the world such as Rio de Janeiro, Lagos and Mumbai are seeing the mushrooming of informal settlements and slums which illustrates widespread inequality and the struggle to accommodate a growing population (Buhaug & Urdal, 2013).

## **2.2 Informality**

Informal settlements can be described as “temporary residential structures, erected with limited or no formal infrastructure, densely populated, no secure tenure for occupants, no property demarcations, often being associated with overcrowding/limited or no privacy, low standard of living, and being situated in high risk areas with an increased risk for disease and disasters” (Geyer, et al., 2005, p. 292). The distinction between informal and formal settlements is becoming fuzzier, as many low-income households are constructing makeshift housing in their backyards as a reply to the housing need (Pharoah, 2009).

Despite the government housing programme, which is one of the largest in the world, the number of informal settlements in South Africa has grown enormously (Turok, 2013). The estimated percentage of urban residents living in informal living conditions in South Africa is 23% (UN-Habitat, 2013). It is thus currently one of the most prominent phenomena in South African cities, and potentially one of the most pressing future challenges, yet government’s policy has often been ambivalent or hostile towards informal settlements.

Factors that contribute to the growth of informality in cities are the sheer number of people that needs to be housed and provided with services, a lack of formal employment, but also mainstream urban policy that fails to address issues of informality or appreciate the cumulative consequences of poverty (UN Economic Commission for Africa, 2014; Van Niekerk & Le Roux, forthcoming). Informal settlements are characterised by over crowdedness, an absence of building and zoning regulations that might reduce their risk to hazards, poverty, marginality, a lack of all-weather roads and affordable and effective public transport, and limited, if any, municipal services, (Pharoah, 2009; Rajab, 2015). People living in informal settlements often live in life-threatening conditions and face extensive risks on a daily basis that make them vulnerable to various hazards. These include fires, flash floods, high levels of crime due to pressure on scarce resources, xenophobic attacks, communicable diseases, severe weather events, and pollution (Turok, 2013; Pharoah, 2009; Dodman, et al., 2013). Service delivery protests are also becoming an almost daily phenomenon.

## **2.3 Growing spatial inequality**

South African cities are some of the most unequal cities in the world demonstrated by the spatial segregation in the housing market. The way settlements develop generates exclusion and segregation

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by reflecting and reinforcing a pattern of wealth accumulation that only benefits a few (UN Economic Commission for Africa, 2014). People's choice of residence is limited by their ability to afford the location, services and amenities. The quality of these factors are compromised by a households' income level. The inequalities are also evident in terms of employment and skills. The most highly skilled people live in metropolitan areas, but they are also home to the largest concentrations of unskilled, unemployed people (Turok, 2013; Van Huyssteen, et al., 2010).

The imbalances and distorted settlement patterns pose huge challenges for social integration and urban management. Uneven densities obstruct the working of the housing and labour markets. It also causes inefficiencies in the delivery of basic services and transport infrastructure, as well as the unfair provision of public amenities such as clinics and schools. In some places the local community and social facilities are overburdened by the demand on them (Turok, 2013).

## **2.4 Challenges of urban management**

Twenty years of post-apartheid urbanisation in South Africa has shifted the distribution of the economy and households. Cities are increasingly both poor and African. Thus, "for racial redress to take place, urbanisation should be accepted and endorsed and not prevented" (Parnell, et al., 2013). There is consensus that government is reluctant to engage the debate about urbanisation, and therefore efforts at spatial transformation are anti-urban and thus fall short. The denial of the urbanisation of poverty, and the resistance by traditionalists to address the relationship between Africans and urbanisation (cities are still seen as rich white places, therefore poor black rural areas are spatially targeted for investment), cause "the internal ideological battle over the role of race and class in deciding how, where and to whom to allocate resources" (Parnell, et al., 2013). A focus on urban areas would do most to address poverty and vulnerability in the country, yet government insist on a balanced development policy between urban and rural that prioritises and benefits rural people as a way to end racial inequality (Parnell & Crankshaw, 2013; Oranje, 2010; Turok, 2013). Like apartheid, the legacy of this approach may have negative implications for generations of urban dwellers to come.

It also seems that city leadership capable of pursuing long-term transformation is in short supply in South African cities (Turok, 2013). Political interference and patronage, and a constant interruption and disruption of city plans, change in leadership, generic visions, lack of spatial alignment between and within government departments, and so forth, result in government investment having little transformative effect (Pieterse, et al., 2015). A weak government exacerbates the vulnerabilities of settlements because of poor planning, lack of regulatory structures and mandates, poor servicing and infrastructure, corruption, lack of disaster risk reduction measures, uncontrolled settlement formation in high-risk areas, poor data, lack of intergovernmental coordination and competing development priorities and timelines (Niang, et al., 2014).

Furthermore, planning policy and practices of government contribute to the vicious circle of poverty in which people find themselves and the accumulation of risks. This is due to a lack of understanding of the nature of vulnerability that increases their exposure to risk, intensify urban hazards and create new ones, and reduce the local coping capacities (Wamsler, 2007, p. 77).

## **3. THE CASE STUDY ANALYSES**

Several studies have been undertaken since 2013 to review the urban indicator situation. This included the 2013 Urban Indicators Project (AfricaScope, 2013) and the 2015 Open Data Almanac for Cities (KPMG, 2015) both commissioned by the SACN. The National Treasury Department's City Support Programme (National Treasury, 2015) has also developed a range of urban indicators to track city performance – all used the SACN thematic quadrants (Productive cities, Inclusive cities, Sustainable cities, and Well-governed cities). In comparison, the other critical framework to mention is the

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Integrated Urban Development Framework developed by the Department of Cooperative Governance (2014) where strategic goals finds implementation through policy levers, which also would measure spatial transformation, to a greater or lesser extent.

There has been valuable work done on spatial, social and economic change in Gauteng, especially by the Gauteng City Region Observatory, the stepSA initiative and the South African Cities Network. The Gauteng province, the three cities as well as the major universities within the region has done extensive research within the Gauteng city region space. The research that forms the basis of the paper, forms part of ongoing programmatic research conducted by the Spatial Planning and Systems group of the CSIR within the ambit of the StepSA initiative.

To track spatial change and place based performance across the nine biggest cities in SA in relation to the principles of spatially just, sustainable, productive and well governed cities, a number of spatial indicators and/or datasets have being explored by CSIR in collaboration with the SACN (Maritz, 2015). The paper is based on results of this explorative analysis, making use of findings from a selection of spatial specific indicators as applied within the City of Johannesburg, the City of Tshwane and the Metropolitan Municipality of Ekurhuleni.

In this paper exploratory analyses items were selected to highlight some of the spatial patterns associated with high levels of risk and vulnerability of the population in the three metropolitan cities of Gauteng. These were selected based on three processes that drive risk and vulnerability, namely informality, spatial inequality and urbanisation, in light of how these processes relate to urban management challenges. The analyses done include:

- A comparative analyses of the extent of social vulnerability in the three cities – even though not a fine grained spatially comparative analyses;
- Identification of areas under pressure due to existing concentrations of people, as well as new areas of population growth
  - Analyses identifying areas of high concentration of population
  - Analyses of areas that experienced the most significant urban growth, by considering change in the urban footprint (indicating new built up areas), as well as growth in informal areas and areas of population increase and densification across the city;
- Identification of areas marked by a significant increase in the number of people and households living under minimum living level, increase in numbers of people living in poverty and identification of areas where unemployment has significantly increased;
- New areas of vulnerability associated with high mobility, smaller households and increased concentration of youth in cities
  - Change in household size and population movement trends,
  - Analyses highlighting the high level of mobility of the urban population, especially the youth, as well as identification of areas with significant increase in the number of young adults in the city region; and
- A comparative analyses of access to services and opportunities, highlighting areas with biggest increase and decrease in service access, and an analyses juxta posing change in population growth in relation to change in formal economic production. This analysis does not reflect informal economic activity.

More information on the development and results of some of the explorative place based spatial transformation indicators for the nine biggest cities in South Africa can be viewed on the stepSA collaborative initiative's City Viewer ([www.stepSA.org/explorer](http://www.stepSA.org/explorer)).

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## 4. SPATIAL TRENDS IN GAUTENG

### 4.1 Introduction

The three metropolitan cities in Gauteng, Tshwane, Johannesburg and Ekurhuleni, all share boundaries with each other, and is the core of the Gauteng city region. The settlement pattern is particularly fragmented and disparate, and most townships and new government housing projects are located on the periphery of the metros, some distance away from social opportunities and areas of employment and economic growth. This causes extensive travelling and severe congestion on key transport corridors, imposing high costs on poor households (Turok, 2013; Van Huyssteen, et al., 2010). The Gauteng metropolitan population is continuing to increase despite the relative poverty in the region. Great concerns exist around the ability of metros to mitigate risks while providing sufficient opportunities to its ever increasing population.

### 4.2 Spatial patterns of social vulnerability

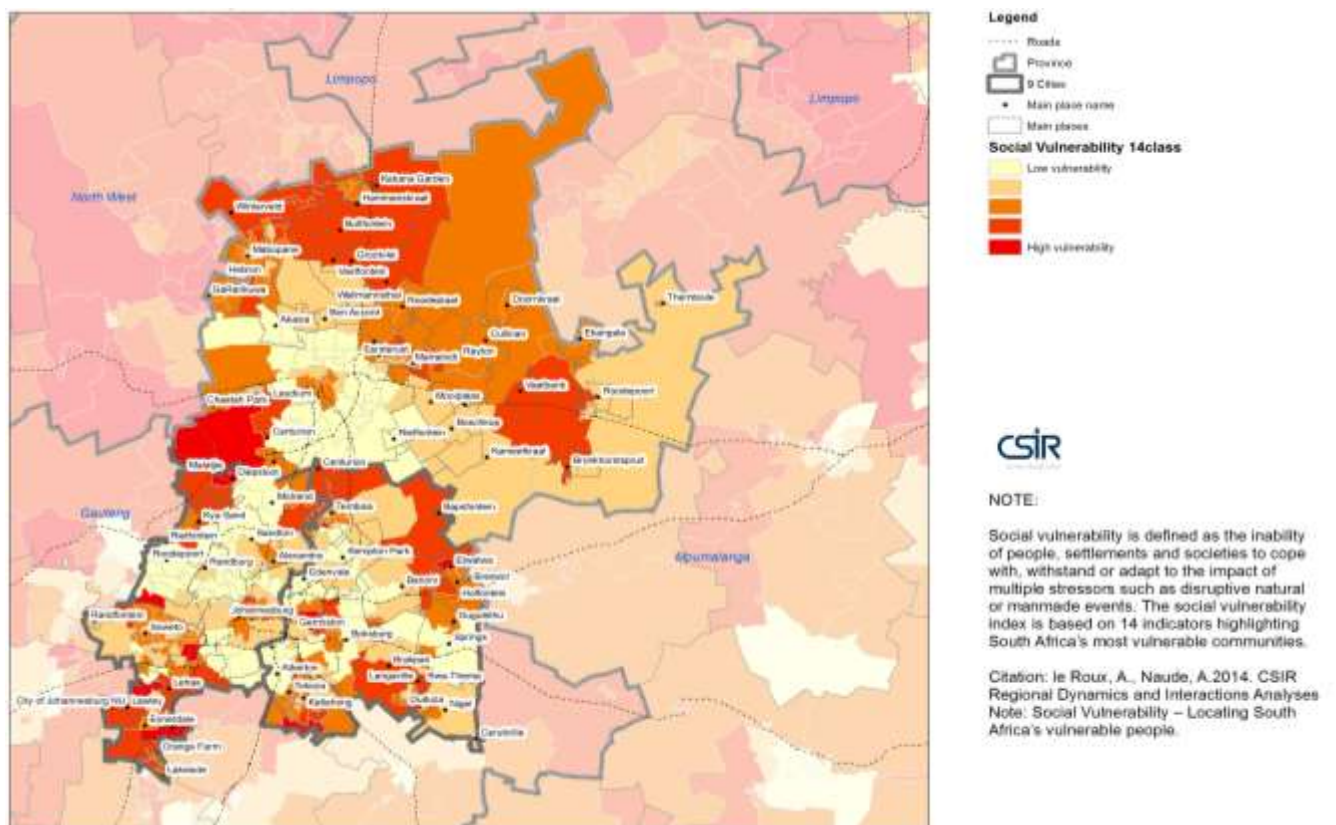


Figure 1: Social vulnerability in Tshwane, Johannesburg and Ekurhuleni

Figure 1 show where the most vulnerable people can be found in the three cities, with red indicating high vulnerability. The social vulnerability indicator is based on 14 indicators highlighting the most vulnerable communities. These variables are:

- household size average,
- age dependency ratio,
- percentage unemployed,
- percentage people below property line,
- percentage rural population,

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- percentage shacks,
- percentage education,
- percentage disabled people,
- percentage female head of households,
- percentage population without electricity,
- percentage households without telephone lines,
- percentage people without a car,
- percentage people without public water and
- percentage immigrants.

It can be seen from this map that the most vulnerable are typically located on the outskirts of the cities. These include areas such as Thokoza, Orange Farm, Diepsloot, Winterveld and Daveyton. Higher social vulnerability in these places mean that people are not able to cope with, withstand or adapt to the impact of multiple stressors such as disruptive natural or manmade events (Le Roux and Naude, 2014).

Trends suggest that spatial patterns of high levels of vulnerability on the outskirts of cities are still evident, however with increasing pockets of concentration within the polycentric city region.

#### 4.3 Areas characterised by significant population densities and increased population concentration

There has been evidence of increased densities across the three cities, which may have a detrimental impact in some locations. For example, in areas such as Alexandra, the mushrooming of backyard housing increased densities beyond the design capacity of the services infrastructure (Shapurjee et al., 2014). Some embedded spatial patterns include concentration around economically sustainable nodes, and development concentration in key nodes and along key corridors. There has also been increasing concentration within urban centres and central areas of the city region. In the case of Tembisa, which is centrally located between the three cities, there have been significant concentrations which could be attributed to its proximity to economic nodes.

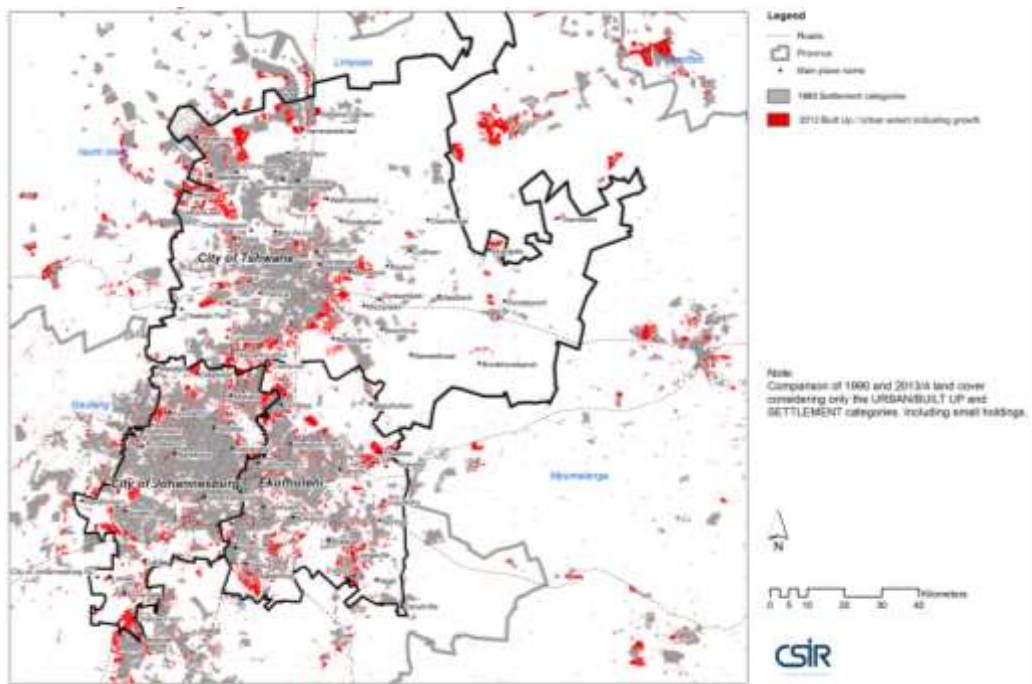


Figure 2: Change in built-up settlement footprint between 1990 and 2013 for Tshwane, Johannesburg and Ekurhuleni

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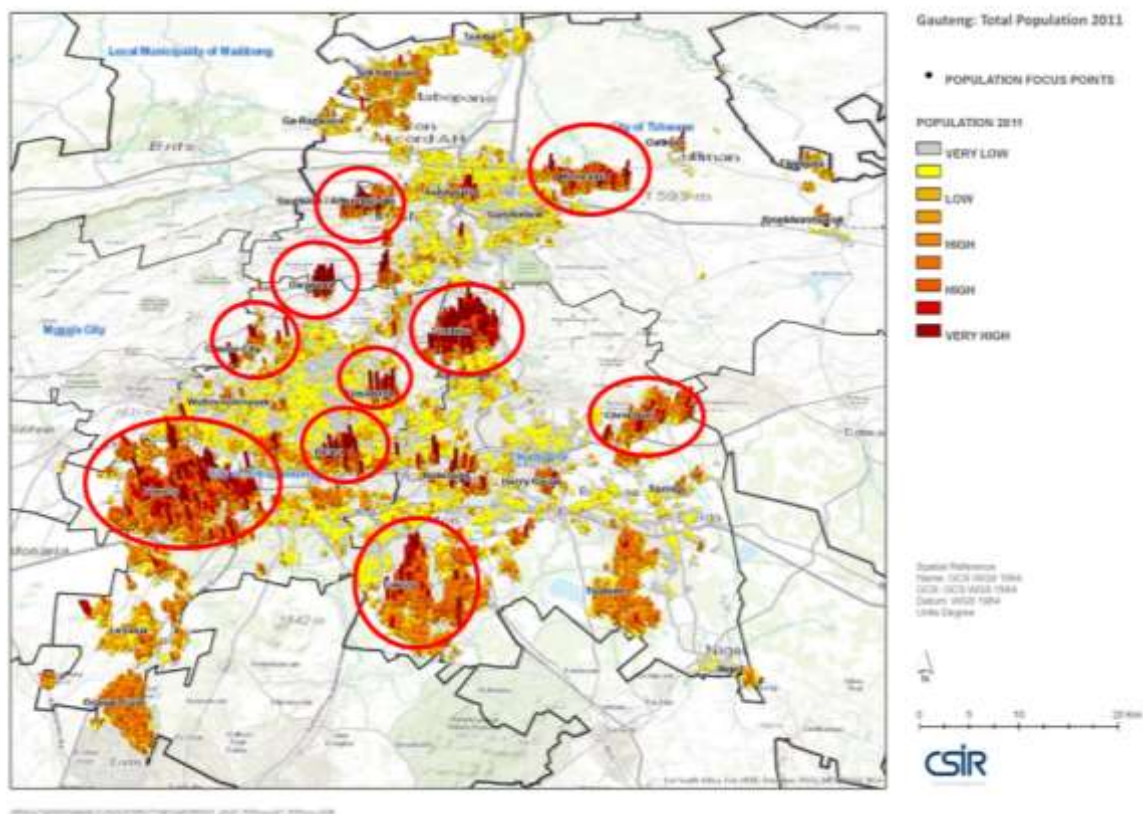


Figure 3: Current population concentrations in Tshwane, Johannesburg and Ekurhuleni

When comparing change in the urban footprint (Figure 2) and current population concentrations (Figure 3) it is clear that apart from the expansion of the urban footprint, there have been significant increases in densities. The places with the highest population numbers and densities include Tembisa, Soweto, Thokoza, Diepsloot, Atteridgeville and Mamelodi. These areas are also often historically segregated township areas on the outskirts of the city. But because of growth, expansion and investment in these areas, accessibility to economic and other opportunities within the region have increased. There is also a strong correlation between where densities have increased and where the most informal structures exist (See Figure 4).

People living in informal settlements are especially vulnerable since these areas are often at high risk of fire and flooding, densely populated, close to pollution sources, poorly serviced and hot beds for social tension and crime (Risi et al., 2013; Van Niekerk, 2013).

This analysis shows that there is pressure on urban edges and increased land under development. There is also evidence of continued high density development on the city outskirts where land is generally more readily available as well as affordable.

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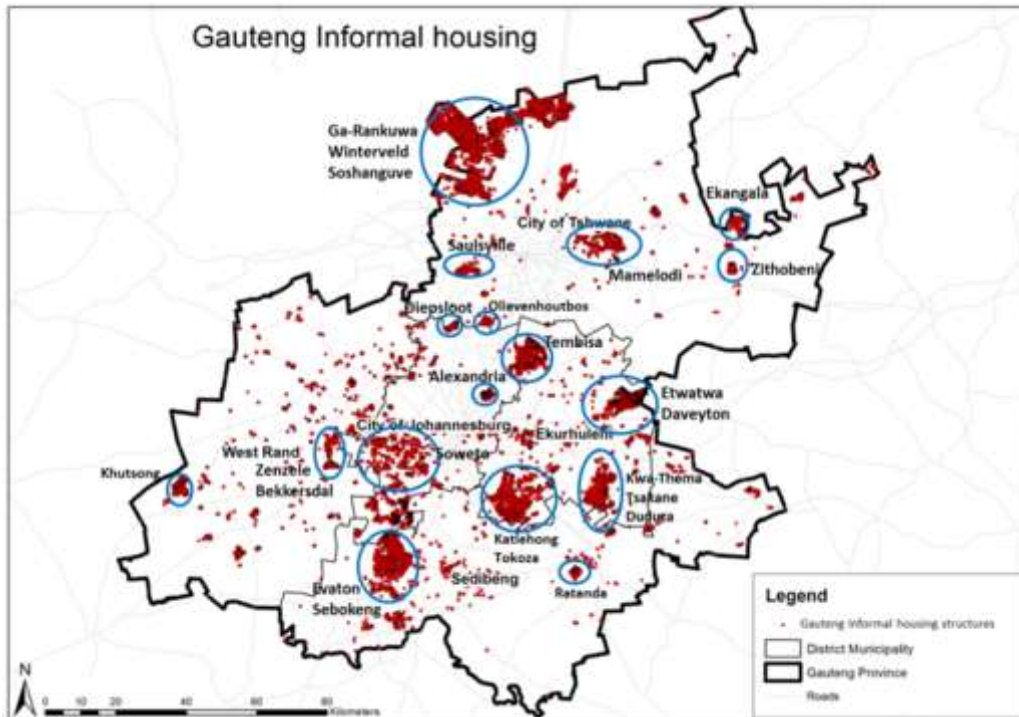


Figure 4: The number of informal structures in Gauteng (2015) (Using GTI 2015 data, Sebake et al 2015)

#### 4.4 Areas characterised by an increased number of people living under the minimum living level and areas where unemployment has significantly increased

Even though the Gauteng metros have a smaller proportion of households living in poverty than what is found nationally, evidence has shown that this proportion is increasing drastically (Pieterse et al., 2014). The number of households living in poverty in the Gauteng city region has tripled within the 15 years since 1996 (Pieterse et al., 2014), and figure 5 provides insight as to where this increase in poverty has taken place. In figure 5 the green and shades indicate a negative change in poverty while the orange and red shades indicate a positive change, namely an increase in the number of poor. The areas where the lowest income group increased correlate with the areas that have large as well as dense populations such as Tokoza, Mamelodi and Diepsloot. There is also evidence that income levels have increased in formerly marginalised areas such as Winterveld, Mabopane, Soweto and Etwatwa.

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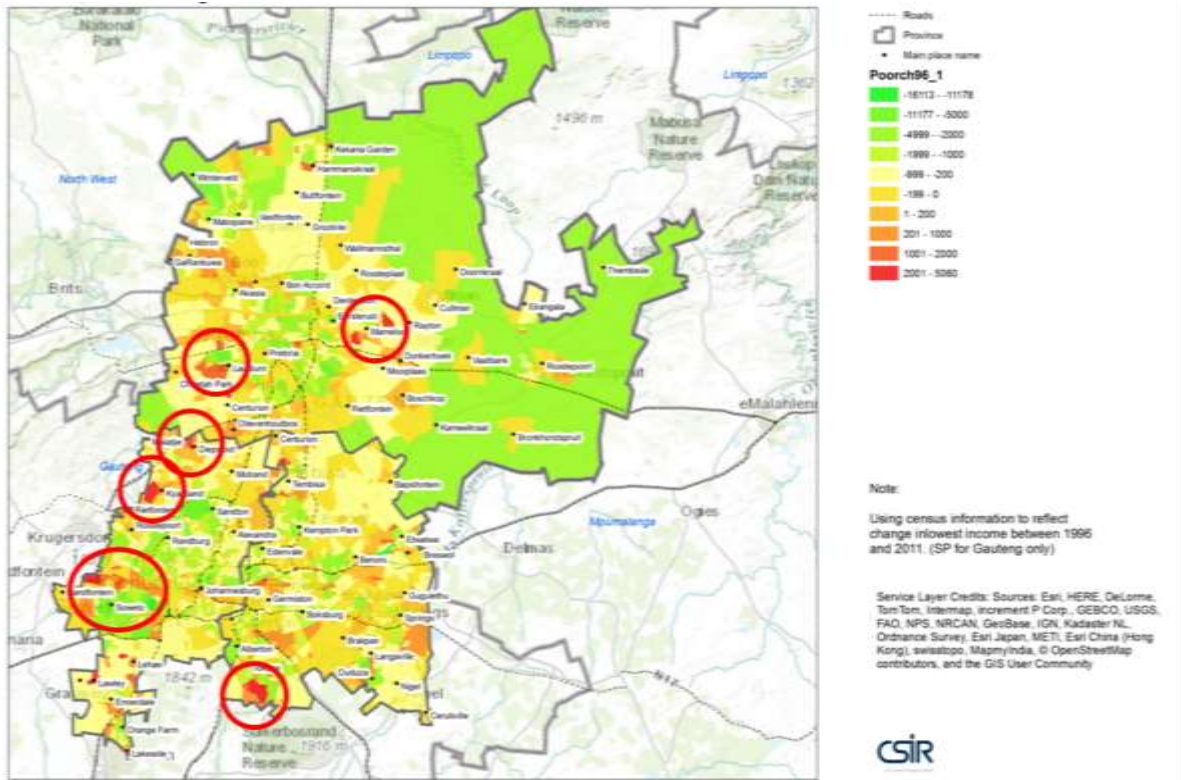


Figure 5: Change in numbers of lowest income group in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

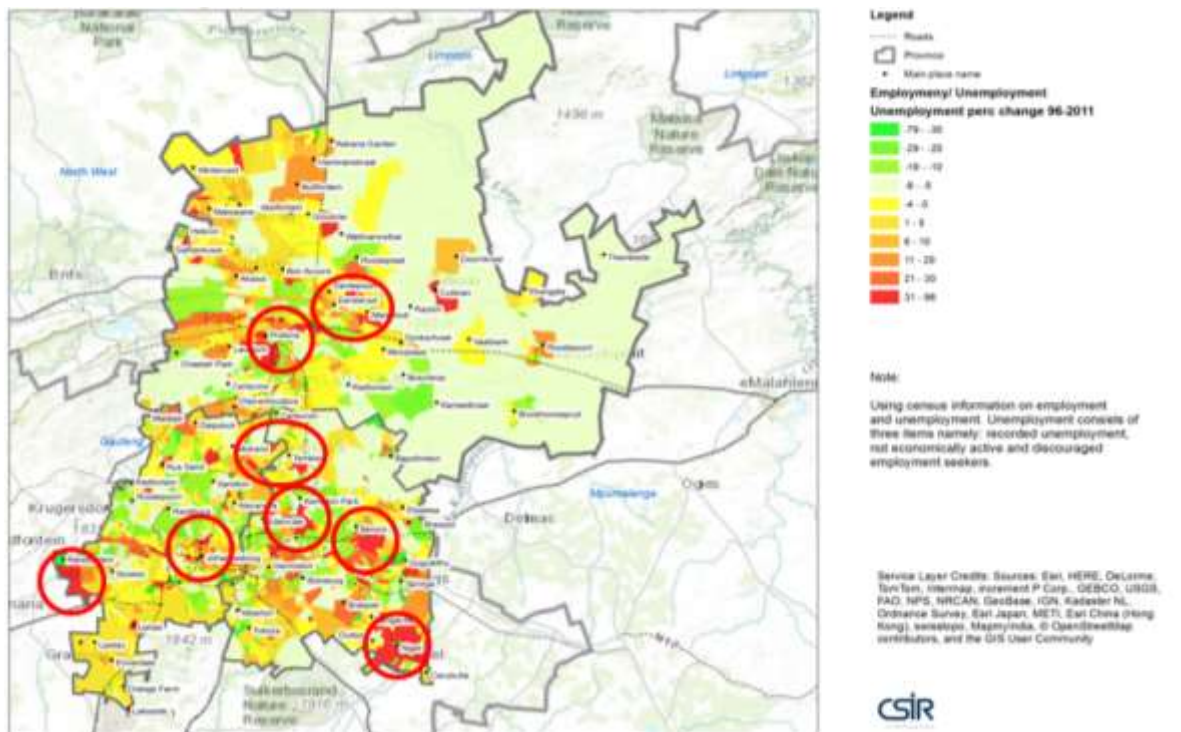


Figure 6: Change in percentage of unemployed in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

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Figure 6 indicates where unemployment changed. The red and orange areas indicate an increase in unemployment while the green and yellow shades indicate a decrease. It is clear that unemployment is widespread and corresponds with the areas with the highest densities.

#### 4.5 Trends highlighting decrease in household size and high levels of mobility of the urban population, and areas characterised by significant increase in number of young adults

One of the most noticeable trends has been the change in households. Cities have to deal with more households and smaller households. These three cities have smaller households than the national average. The national average household size was 5 in 1996 and 4 in 2011 (Pieterse et al., 2014). The growth in number of households is greater than national population growth indicating that household formation can largely be attributed to in-migration. The increase in the number of households put increased pressures on housing and service delivery. Migrating households often find temporary accommodation, or lodge temporarily with other families, or end up in informal accommodation from which they struggle to find a way out (Todes et al., 2010).

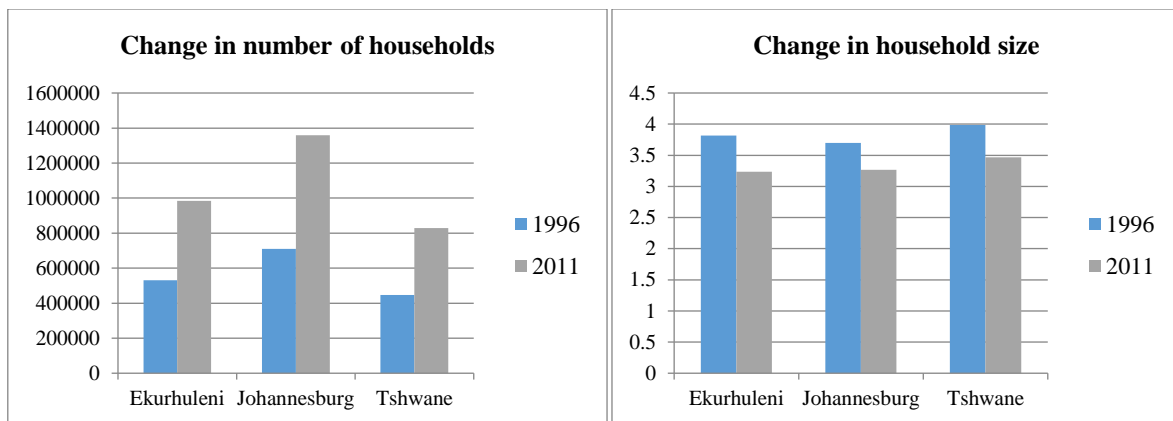


Figure 7: Change in number of households and size of households in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011



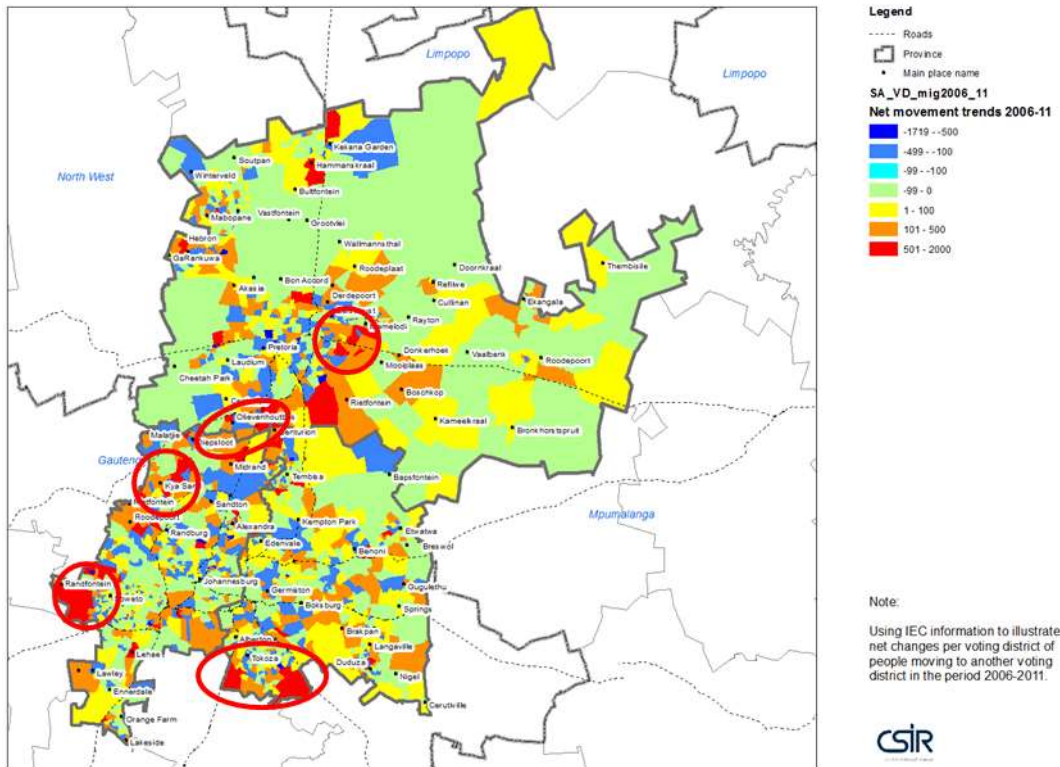


Figure 8: Population movement trends Tshwane, Johannesburg and Ekurhuleni between 2006 and 2011

Figure 8 shows net-migration trends for the three cities where red, orange and yellow indicate a net gain and green and blue indicate a net loss. Overall, there is a significant amount of movement taking place and the areas that have been identified earlier in this paper as places with increased densities poverty and unemployment, are, as expected, the placed that are seeing a net gain of population through migration. Previous studies have found that significant migration occurs between metropolitan cities as they have large in- as well as out-flows of population, but always have net gain (Pieterse et al., 2014).

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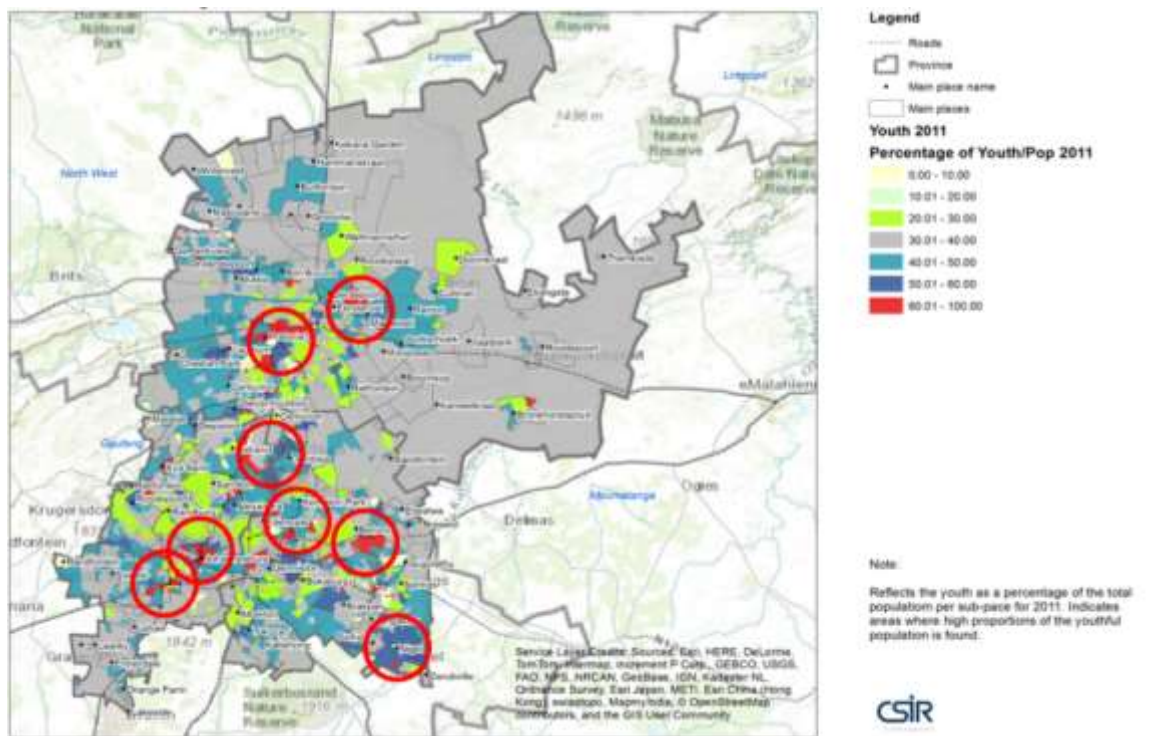


Figure 9: Percentage of population in the youth category (16 – 35 years) in Tshwane, Johannesburg and Ekurhuleni

Figure 9 shows the proportion of youths living in the cities where red and dark blue indicate a proportion of more than 50 per cent. When looking at where there is widespread unemployment (Figure 6) within the three cities and the places where the youth make up the bulk of the population, it is clear that these places correspond. This raises serious concerns around the unemployment of youth. Studies have shown that youth unemployment can be linked to various dimensions of social risks such as crime, violence, substance abuse and health risks (Kieselbach, 2003; Swardt et al., 2005).

We are seeing that the urban centres have large proportions of youth and unemployed populations living there as well as a decline in access to good services. Considering this, it could be assumed that the majority of in-migration is by the youth. People are increasingly migrating to places where they can access social grants, housing, health services and education. Access to services and infrastructure is a motivating factor for some migrants (Cross, 2006). The perceived access that urban centres offer has been attracting the poor, youth and the unemployed.

#### 4.6 Trends highlighting increased and decrease levels of access to a basket of basic services and formal economic opportunities

There is both positive and negative change that can be observed in terms of change in access to good basic services. This includes access to electricity for lighting, refuse removal by local authority, flush or chemical toilet facilities and piped water in dwelling or on site.

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Figure 10 illustrates this change across the three cities per mesozone<sup>20</sup>. The red and orange shades indicate a decrease in the percentage of the population with access to good services and the green shades indicate an increase in access to good services.

It can be seen that the population living on the peripheries generally saw improved access to services. These include areas such as Winterveld, Orange Farm and Etwatwa. The urban centres such as Germiston, Randburg, Johannesburg central, Tshwane central, Springs and Laudium saw a decline. The areas where there was a negative change are the areas that are the most populous. It can be inferred that these areas are growing in population faster than what services and infrastructure can be upgraded.

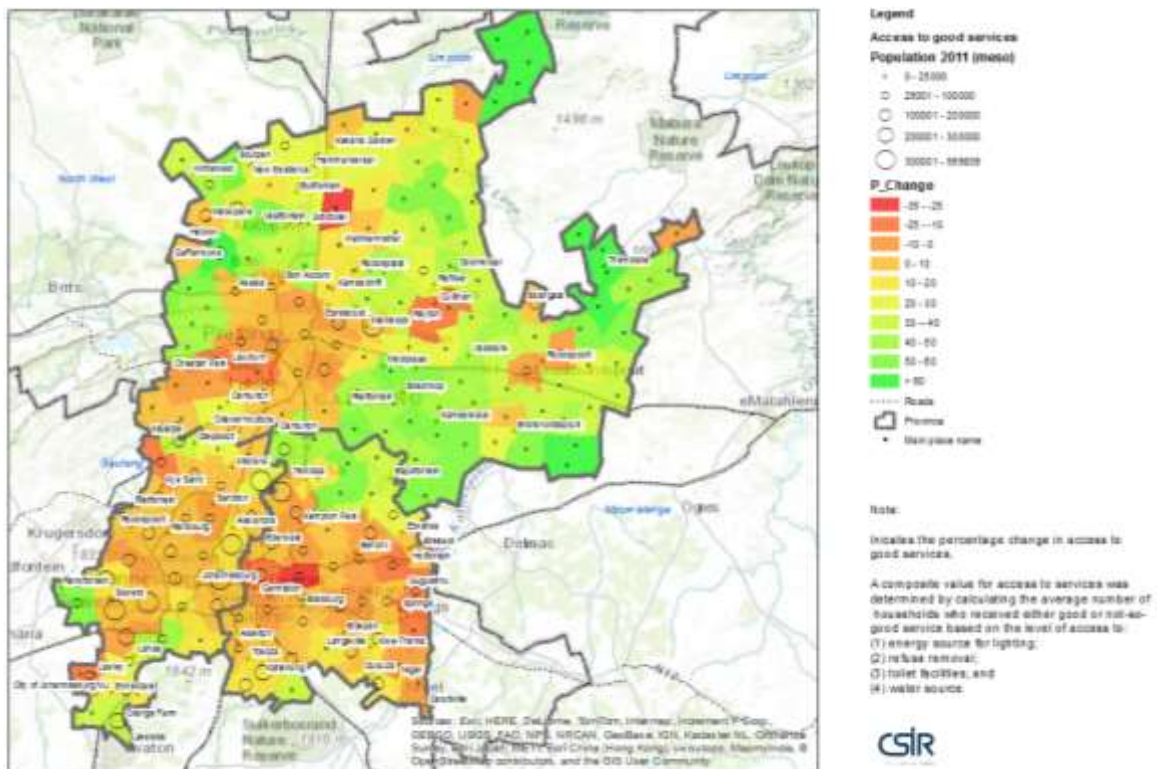


Figure 10: Percentage change in access to good services in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

<sup>20</sup>Based on the CSIR mesoframe methodology, a meso-scale geoframe was developed and is the primary component of the Geospatial Analysis Platform (GAP) (<http://www.gap.csir.co.za>). The meso-scale geoframe for South Africa demarcates South Africa into a 'grid' of about 25 000 mesozones of around 50km<sup>2</sup> each. They coincide with important administrative and physiographic boundaries.

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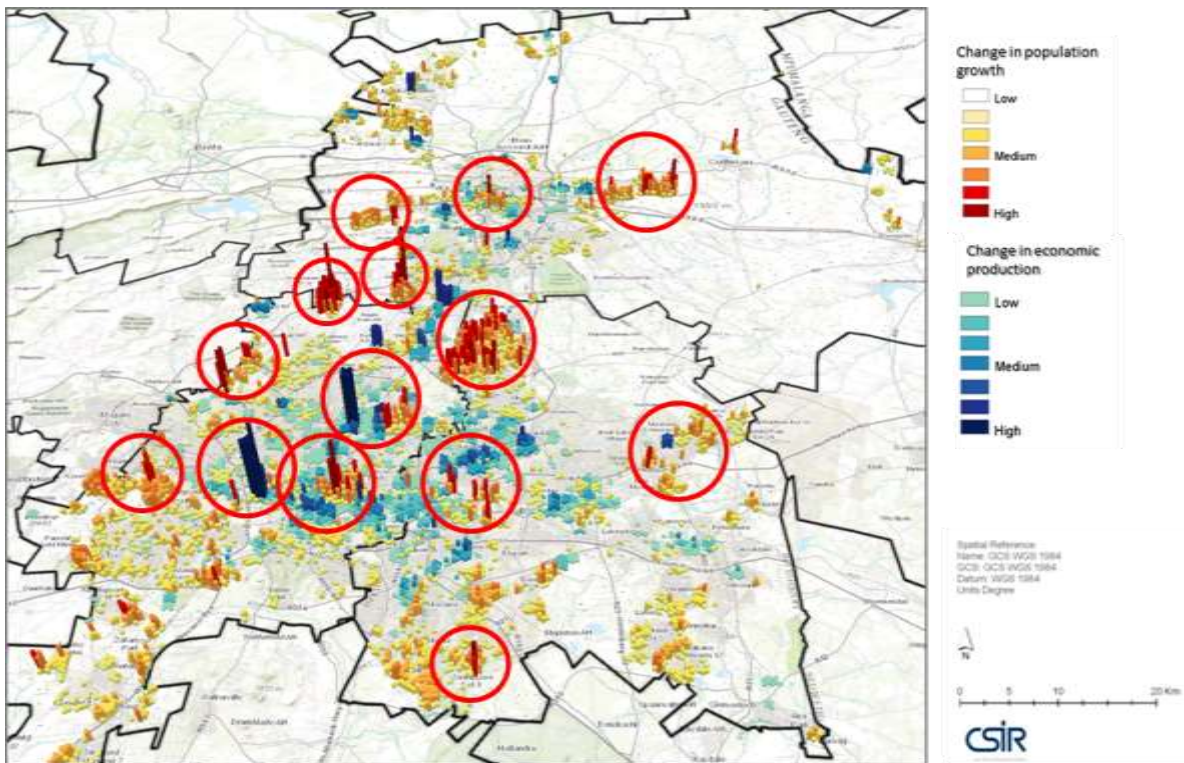


Figure 11: Combined economic production and population change between 1996 and 2011 for Tshwane, Johannesburg and Ekurhuleni

When comparing figure 10 and figure 11 one can see that the areas that are seeing the highest level of population change also generally saw a decline in access to good services over the same time period.

Evidence shows that there are continued as well as shifting patterns of population growth. Urban nodes which are located closer to a wide range of economic opportunities within the region are characterised by increasing population numbers. These areas include Tembisa, Alexandria, Diepsloot and Midrand. Traditionally isolated areas are also seeing densification and higher than average growth which is largely due to city growth which has significantly increased access for these areas, these would include areas such as Soweto, Mamelodi and Daveyton.

#### 4.7 SUMMARY

The current spatial forms of the three cities have been, and continue to be influenced by large-scale government investment in housing. This is especially noticeable in the case of Cosmo City in Johannesburg and Olievenhoutbosch in Tshwane. Location of low income housing is determined by land availability and affordability rather than by the cost to households and longer term cost of service delivery to cities. Private residential developments to the east of Tshwane and in Midrand have had a similar effect in that large populations settle in newly established residential areas, most often found on the peripheries. Some of these higher income developments create isolated 'estates' on the city outskirts. Development that continues to occur on the peripheries can negatively impact on people's ability to access job and other service opportunities, embedding existing and creating even more unsustainable patterns of concentration and growth, and creating new areas of isolation.

The urban poor and youth are moving into areas where access to jobs, economic opportunities and government services are most likely and the least costly. These areas are often the urban centres that foster perceptions of economic opportunity. There are also increased poverty pockets across the cities in former marginalised areas, middle income areas and in the urban centres.

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The analyses seems to confirm the high levels of vulnerability of former apartheid townships on the periphery, it also highlights how major urban development and housing “beneficiation” can lead to the creation of new pockets of peripheral and isolated population concentrations. It however, also highlights the fact that inner cities and more accessible areas such as Tembisa within the Gauteng city region face increasing pressure of concentration and are increasingly characterised by rising levels of youth (young adults) and unemployment.

## 5. CONCLUDING REMARKS

It has been illustrated that the three Gauteng metropolitan cities have changed quite significantly in the last 20 years and that this change has affected the risk and vulnerability profile of households. Growth within these cities does not necessarily mean that revenue and income will increase, it is more likely that the cities will experience increased pressure

Urbanisation is a challenging and complex process, but should be harnessed as an unavoidable but powerful process that represents an invaluable opportunity for development in South Africa. “Urbanization is not a sub-plot, but rather the main policy narrative for Africa” (Freire, et al., 2014). Policy makers should prioritise and manage urbanisation challenges by enabling concurrent, diversified economic development, planning settlements systematically, mobilising local and foreign investors, monitoring long-term risk and vulnerability factors, investing in infrastructure and basic services, increasing productivity, developing institutions, improving liveability, and by carrying every resident along with their plans (UN Economic Commission for Africa, 2014; Niang, et al., 2014; Freire, Lall, & Leipziger, 2014; African Development Bank Group, 2012; Van Niekerk & Le Roux, forthcoming). To help cities plan ahead for inclusive growth, the urban management and planning functions need to be strengthened (Freire, et al., 2014). Existing informality should be accepted as a response to the housing backlog, and a universal approach of eradication and relocation should be resisted. Rather, informal settlements should become full-fledged, self-sustaining and dignified components integrated into the city (Rajab, 2015).

South African cities, as illustrated by the three examples in this paper, have seen an increase in population growth in places in where housing is more affordable and in close proximity to economic opportunity. Traditionally marginalised areas generally have experienced improved access, services and increasing income levels. On the other hand, urban centres have seen an increase in the proportion of young adults, unemployment and a decline in access to services. Overall the cities have seen high levels of mobility and in-migration as well as a decline in average household size. The drivers behind the observed spatial change which subsequently impact on the risk and vulnerability of the population are urbanisation, informality, spatial inequality and urban management challenges.

## 6. REFERENCES

African Development Bank Group. 2012, December 13. *Urbanization in Africa*. Retrieved April 1, 2016, from African Development Bank Group: <http://www.afdb.org/en/blogs/afdb-championing-inclusive-growth-across-africa/post/urbanization-in-africa-10143/>

AfricaScope. 2013. *Urban Indicators project 2013 scoping and planning exercise*. Johannesburg: South African Cities Network.

Buhaugh, H. & Urdal, H. 2013. An urbanization bomb? Population growth and social disorder in cities. *Global Environmental Change*, 23, 1-10.

CoGTA (Department of Cooperative Governance and Traditional Affairs), 2014. Integrated Urban Development Framework: Draft for discussion.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention

4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Cross, C., 2006. *Migrant motivations and capacities in relation to key migration streams*, in: Kok, P., Gelderblom, D., Van Zyl, J. (Eds.), *Migration in South and South Africa: Dynamics and Determinants*. HSRC Press, Cape Town.

CSIR, N.d. *CSIR Policy Brief 2: Reaching Development outcomes through a dedicated focus on cities, towns and settlements*.

[http://stepsa.org/pdf/implications/urban\\_and\\_town\\_growth\\_in\\_sa/CSIR%20Policy%20Brief%20%20Reaching%20development%20outcomes%20through%20a%20dedicated%20focus.pdf](http://stepsa.org/pdf/implications/urban_and_town_growth_in_sa/CSIR%20Policy%20Brief%20%20Reaching%20development%20outcomes%20through%20a%20dedicated%20focus.pdf)

Dodman, D., Brown, D., Francis, K., Hardoy, J., Johanson, C., & Satterthwaite, D. 2013. *Understanding the nature and scale of urban risk in low- and middle-income countries and its implications for humanitarian preparedness, planning and response*. London: International Institute for Environment and Development (IIED).

Freire, M., Lall, S., & Leipziger, D. 2014. *Africa's Urbanization: Challenges and Opportunities*. Washington: The Growth Dialogue.

Geyer, N., Mmuwe-Hlahane, S., Shongwe-Magongo, R., & Uys, E. 2005. Contributing to the ICNP®: validating the term 'informal settlement'. *International Nursing Review*, 52, 286-293.

Harrison, P. & Todes, A. 2015. Spatial transformations in a "loosening state": South Africa in a comparative perspective. *Geoforum*, 61 (2015), 148-162.

Kieselbach, T., 2003. Long-Term Unemployment Among Young People: The Risk of Social Exclusion. *Am J Community Psychology* 32, 69–76. doi:10.1023/A:1025694823396

KPMG. 2015. *Open Data Almanac for Cities - Status Quo Report*. Pretoria: SACN.

Le Roux, A., Naude, A., 2014. Social Vulnerability - Locating South Africa's vulnerable people.

Mans, G., Maritz, J., van Niekerk, W., van Huyssteen, E., Beukes, A., Green, C., et al. 2014. *Background Research Paper: Module 1: Demographic Change. Input for the Integrated Urban Development Framework*. Pretoria: Unpublished CSIR report.

Maritz, J. 2015, April 22. *State of the Cities Report*. Retrieved Dec 16, 2015, from StepSA: [http://stepsa.org/sacn\\_socr.html](http://stepsa.org/sacn_socr.html)

National Treasury. 2015. *National Treasury: City Support Programme - Emerging framework for integrated reporting on Built Environment functions for cities*. Pretoria: PDG.

Oranje, M. 2010. Post-apartheid national spatial development planning in South Africa - A brief history. *European Spatial Research and Policy*, 17(2), 55-70.

Parnell, S., & Crankshaw, O. 2013. The politics of 'race' and the transformation of the post-apartheid space economy. *Journal of the Housing and the Built Environment*, 28(4), 589-603.

Pharoah, R. 2009. Fire risk in informal settlements in Cape Town, South Africa. In M. Pelling, & B. Wisner, *Disaster Risk Reduction: Cases from Urban Africa*. London: Earthscan.

Pieterse, A., Van Huyssteen, E., Mans, G., Maritz, J., Van Niekerk, W., 2014. *The bright lights of city regions - Assumptions, realities and implications of changing population dynamics: Zooming in on the Gauteng city region*, in: Patel, Y., Minyuku, N., Van der Bank, C., Mohan, K., Ogra, A. (Eds.), *Conference Proceedings: Planning Africa 2014 - Making Great Places*. Presented at the Planning Africa Conference, Durban, South Africa.

Pieterse, A., van Huyssteen, E., van Niekerk, W., le Roux, A., Ndaba, D., & Mahlalela, S. 2015. *Spatial Strategies Alignment Review: Phase 1. Report for SACN and CoGTA*. Pretoria: Unpublished CSIR report.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention

4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Rajab, A. (2015). *Policy Brief: The need to area-based planning and design guidelines for informal settlement upgrading*. Pretoria: Unpublished CSIR report.

Risi, R.D., Jalayer, F., Paola, F.D., Iervolino, I., Giugni, M., Topa, M.E., Mbuya, E., Kyessi, A., Manfredi, G., Gasparini, P., 2013. Flood risk assessment for informal settlements. *Nat Hazards* 69, 1003–1032. doi:10.1007/s11069-013-0749-0

Sebake, N., Rajab, A., Ndaba, D. & Napier, M. 2015. *Final Report on Informal Settlements in Gauteng: Report for Gauteng Provincial Government: Human Settlements*. Pretoria: Unpublished CSIR report

Seedat, M., Van Niekerk, A., Jewkes, R., Suffla, S., Ratele, K., 2009. Violence and injuries in South Africa: prioritising an agenda for prevention. *The Lancet* 374, 1011–1022. doi:10.1016/S0140-6736(09)60948-X

Shapurjee, Y., Le Roux, A., Coetzee, M., 2014. Backyard housing in Gauteng: An analysis of spatial dynamics. *Town and Regional Planning* 64, 19–30.

Swardt, C. de, Puoane, T., Chopra, M., Toit, A. du, 2005. Urban poverty in Cape Town. *Environment and Urbanization* 17, 101–111. doi:10.1177/095624780501700208

Todes, A., Kok, P., Wentzel, M., Van Zyl, J., & Cross, C. (2008). Contemporary South African Urbanisation Dynamics. *Paper for UNU-WIDER Conference: Beyond the Tipping Point. African Development in an Urban World*. Cape Town: UNU-WIDER.

Todes, A., Kok, P., Wentzel, M., Van Zyl, J., Cross, C., 2010. Contemporary South African urbanisation dynamics. *Urban Forum* 21, 331–348. doi:10.007/s12132-010-9094-5

Turok, I. (2013). Transforming South Africa's divided cities: Can devolution help? *International Planning Studies*.

UN Economic Commission for Africa. 2014. *Sustainable Urbanization in Africa*. United Nations Economic and Social Council (ECOSOC).

UN Habitat (United Nations Human Settlements Programme). 2012. *State of the World's Cities 2012/2013: Prosperity of Cities*. Nairobi: United Nations Human Settlements Programme (UN-Habitat).

UN-Habitat (United Nations Human Settlements Programme). 2014. *The state of African Cities 2014. Re-imagining sustainable urban transitions*.

United Nations Department of Economic and Social Affairs, Population Division (UN ESA). 2014. *World urbanization prospects: The 2014 revision, highlights (ST/ESA/SER.A/352)*. <http://esa.un.org/unpd/wup/highlights/wup2014-highlights.pdf>

Van Huyssteen, E., Meiklejohn, C., Coetzee, M., Goss, H., & Oranje, M. 2010. An overview of South Africa's metropolitan areas - dualistic, dynamic and under threat ... *European Spatial Research and Policy*, 17(2), 23-40.

Van Niekerk, W., & Le Roux, A. (forthcoming). Climate risk and vulnerability of human settlements in southern Africa. In C. Davis (Ed.), *Climate Risk and Vulnerability: A Handbook for Southern Africa* (2 ed.). Stellenbosch: CSIR, USAID and Department of Science and Technology.

Van Niekerk, W., 2013. Translating disaster resilience into spatial planning practice in South Africa: Challenges and champions. *Jàmbá* 5, 1.

Wamsler, C. 2007. *Managing Urban Disaster Risk: Analysis and Adaptation Frameworks for Integrated Settlement Development Programming for the Poor. PhD thesis in Housing Development and Management*. Lund: Architecture and Building Environment, Lund University.

#### **Conference Proceedings:**

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# The Adoption of Appropriate Technology in Public Housing and Informal Settlement Upgrades in South Africa

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## Abstract

There exists a large number of housing delivery programmes being rolled out to impoverished communities across South Africa. These national programmes provide subsidised, serviced housing units with the aim of improving the quality of life for those who would otherwise have no or limited access to adequate shelter. However, despite efforts to decrease this backlog, poverty, poor living conditions and environmental degradation persists and informal settlements remain home to one in seven South African households. In response to the challenge of informal settlements, emerging technologies and the social processes followed to implement them have made possible affordable access to basic services including in the areas of energy supply and waste management. Dozens of companies, for instance, have developed high quality, solar-powered solutions specifically targeting the needs of the energy poor. New distribution models developed by these companies bring home-lighting and cooking systems to off-grid areas around the world. The impact of these new technologies is apparent in examples found in Kenya and South Africa, where innovative opportunities are being created for and coproduced with low income communities through the deployment of Information and Communication Technology (ICT). The benefits of these technical systems go far beyond simply lighting up a home; the aftereffects have led to low-income consumers investing in other technological products, developing businesses, and accessing improved services and micro-finance. Remarkably, studies have shown a substantial increase in household income and exam pass rates due to stable electricity generation and continuous lighting. Such delivery processes, have in the past been driven by the private sector, developmental researchers and/or the affected communities. They offer an approach to transform settlements redefining previous conceptions of planning and who is responsible for initiating change.

The aim of this paper is to investigate the adoption of appropriate and innovative technologies into public housing and informal settlement upgrades. It will explore the current status of technology adoption in the provision of housing and the upgrading process of informal settlements, what roles can be played by various stakeholders in enabling technology adoption, and what a collaborative approach to service delivery means both for the future of South African informal settlements and for the planning profession. The paper reviews technology adoption in South African human settlement delivery programmes through a literature review and interviews with key state planning and implementing agents. The potential to adopt appropriate technology in the delivery of human settlements is then presented by practical examples, of which inform a set of recommendations proposed towards a collaborative approach to settlement transformation through the delivery of more innovative basic services.

The paper presents a collaborative approach in improving settlement services through processes that would ordinarily be seen as the primary responsibility of the state. It illustrates that the transformation of informal settlements can be realised through the collaborative intervention of government,

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businesses, civil society and communities in the production, distribution and use of technologies that provide opportunities for user self-sustenance. This contributes to the exploration of an alternate approach to traditional state service delivery and reinvents previous conceptions of urban planning in informal settlements as a service to be provided for by state officials. By exploring the potential for innovative technologies as a driver of change within state processes that offer the promise of transformation we can conclude that the structure and practice of planning in South African informal settlements does not lie solely in the hands of the state but can be redefined rather as most effective through the co-generation of knowledge and capabilities.

### **Keywords**

Technology, informal settlements, government, policy, service delivery

## **1. INTRODUCTION**

There exists a large number of housing delivery programmes being rolled out to impoverished communities across South Africa. These national programmes provide subsidised, serviced housing units with the aim of improving the quality of life for those who would otherwise have no or limited access to adequate shelter. However, despite efforts to decrease levels of homelessness, poverty, poor living conditions and environmental degradation persists and informal settlements remain home to one in seven South African households (HDA, 2013).

The issue of informal settlements is a worldwide one, with most developing countries unable to adequately tackle the cause and impact of them. In South Africa, the majority of these settlements do not have adequate access to basic municipal services such as sanitation, electricity, water supply, stormwater management and waste removal (HDA, 2013). A lack of access to such services results in several challenges for informal settlement dwellers. For instance a lack of water and sanitation means increased exposure for residents to polluted greywater threatening their health. In addition, non-compliance with municipal planning and building safety regulations (in terms of the layout and building materials used) results in an increased vulnerability to natural and man-made disasters such as floods and fires (Goven, 2010).

In response to some of these challenges and the demand for basic services by communities living in these settlements private companies and research organisations have investigated and introduced a number of innovative technologies allowing access to services otherwise provided for by the state. Dozens of companies, for instance, have developed high quality, solar-powered solutions specifically targeting the needs of the energy poor. New distribution models developed by these companies bring home-lighting and cooking systems to off-grid settlements around the world (Blowfield and Johnson, 2013). The impact of these new technologies are apparent in examples found in Kenya and South Africa, where opportunities are being created for and coproduced with low income communities through the deployment of Information and Communication Technology (ICT) (Johnson, 2013). Such technological products and businesses have the potential to collaborate with and assist governments in providing basic public needs. Human settlement policymakers and implementers should therefore explore all avenues in involving appropriate technology in the provision of shelter and associated settlement services.

The aim of this paper is to investigate the adoption of appropriate and innovative technologies into South African housing delivery and informal settlement upgrading processes. It will explore the current status of technology adoption in the provision of housing and informal settlement upgrading, the potential of adopting appropriate technology in housing delivery and informal settlement upgrading,

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and what a collaborative approach to service delivery means both for the future of South African informal settlements and for the planning profession.

## 2. LITERATURE REVIEW

### 2.1 The Current Status of Technology Adoption in the Delivery of Housing and Informal Settlement Upgrading in SA

The South African state, like governments all over the world, is required to provide services to the public such as health care, education, housing and welfare. The effectiveness of service delivery is under constant scrutiny as the needs of frustrated communities are often not met. The delivery of basic services in informal settlements particularly has received continuous criticism by affected residents and communities, observers, academics, development practitioners and analysts (Misselhorn, 2008; Huchzermeyer 2009; Maina, 2013; Tissington 2011; Swilling et al 2013). This is because the reality experienced by the average informal dweller involves a 9 year waiting period in sub-standard living conditions from the commencement of an in-situ upgrading project to its completion (DoE, 2011; cited in Swilling et al 2013). In addition, in terms of the delivery of formal houses, it was projected that, in the Western Cape for example, those at the bottom of the housing database will wait up to 32 years before receiving a house (Swilling et al 2013).

There are ever-evolving, technological approaches to service delivery which have been proven effective in South Africa and internationally. In many sectors, for instance, the state has been motivated to explore new and innovative tools such as e-government systems. E-government or electronic government is the utilisation of information and communications technologies (ICTs) in government systems to improve service delivery. For instance in the supply of water; electronic systems can quickly and efficiently locate leaks in the supply network based on noise levels in order to minimise water loss (Dlodlo, 2012; Ogunleye, 2012). However, despite these advancements informal settlements continue to form and exist (HDA, 2013). The National housing delivery programme, including the specific objectives of the Upgrading of Informal Settlements Programme (UISP) – a National grant instrument used to meet national targets concerning informal settlement upgrade (DoHS, 2009) - show a lack of multilateral partnerships incorporating the adoption of innovative and appropriate technologies in the delivery of subsidised human settlements. This issue coincides with the growing concerns of climate change and the imperative for future housing to be increasingly energy efficient while minimising effects on the natural environment (KZN DHS, 2013).

The paper defines *technology* in the realm of service delivery as “the systematic application of (scientific) knowledge to resources to (efficiently) produce goods or services (Stilwell in Bush; 2005:4-5). A commonly used definition of *innovation*, also used by the South African department of Science and Technology (DST) is “something newly introduced, such as a new method or device” (DST, 2011:1). Technological innovations and advancements in the field of public housing have proven to significantly contribute in responding to both the basic service backlog and climate change. Such technological innovations involving the provision of basic services include:

- Waste to energy systems (e.g. biogas digesters convert human waste into energy)
- Renewable energy generation (e.g. solar powered home-lighting units)
- Water Harvesting and recycling Systems (e.g. re-use of greywater in food gardens)
- Information and Telecommunication for Development (ICT4D)
- Innovative building technologies (IBT)

There has been noticeable progress in each of these areas of technology both within South Africa and across the world. The usefulness and value of these technologies deployed in settlements has been

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proven to reduce construction and life-cycle costs, save energy, provide inclusive economic opportunities, reduce environmental degradation and improve standards of living. However, national human settlement policy does not clearly state the role of appropriate technology in the delivery of housing units and the upgrading of informal settlements. The national Housing Code (DHS, 2009) for instance does not once mention the word “technology” or “innovation”. Similarly the Integrated Urban Development Framework (IUDF) (COGTA, 2016) and the National Development Plan (NDP) (NPC, 2012) - two relevant and over-arching National policy documents - provide no link between technology and the provision of basic services in public housing projects or informal settlements. On the other end of the stick the Ten-Year Plan for Science and Technology published by DST in 2011 does not once mention “informal settlements” or the word “settlement” (DST, 2011). Various government institutions at various spheres have made efforts to respond to this gap; for example the provincial department of human settlements in Kwa-Zulu Natal have developed “Policy Guidelines on the Use of Innovative Technologies”. Similarly, the National Home Builders Registration Council (NHBRC) has introduced green building standards and innovative building techniques into their regulatory system. Although this too does not consider requirements at a settlement scale and does not consider dwelling units situated in informal settlements.

## **2.2 The Potential of Technology Adoption in the Delivery of Housing and the Upgrading of Informal Settlements in the Context of South Africa**

Blowfield and Johnson (2013), in their work “Turnaround Challenge: Business and the City of the Future”, propose an argument for the use of technological innovations as a means of equitable distribution in unequal societies. It envisions the collaboration of government, business, civil society and communities, in the production and distribution of innovative, environmentally conscious technologies that provide basic services and opportunities for poor residents to sustain themselves, while those that develop, manufacture and distribute these technologies provide jobs at a national scale. The model aims to benefit all income groups thereby achieving the equitable distribution of a city’s capital and resources. This approach illustrates the potential for the state to move away from being the sole provider of basic services in complex informal settlements, by creating a platform for and incentivising the much-needed contribution of Non-governmental Organisations (NGOs), the private sector, civil society and research institutions in tackling this issue together. In addition, Blowfield and Johnson (2013) advocate for states like South Africa to evolve from one with a public emphasis on welfare to an emphasis on enabling entrepreneurship.

The importance and rationale for the South African government to progress from an emphasis on welfare to a culture of entrepreneurship involves the debate between the persistence of poverty (including aspects of citizen dependency) and pro-poor economic growth. Beyond social welfare in the form of income and support grants, South Africa’s subsidy system for the poor also includes free basic housing, free basic electricity (FBE) and free basic water supply. In recent years, the number of welfare grant recipients has increased exponentially, from an estimated 4-million in 1994 to 16.9-million by 30 September 2015. In response to this growth a rising chorus of voices has warned that the numbers involved are not sustainable (Ferreira, 2015). Among them is President Jacob Zuma who said in 2011 that government “cannot sustain a situation where social grants are growing all the time and think it can be a permanent feature” (cited in Ferreira, 2015). Treasury’s long-term fiscal study shows that “the current level of social spending will be sustainable as long as the economy grows by 3% a year” (Bisseker, 2015). Michael Sachs, national treasury’s head of budgeting stated that if growth continues to come in below 3% (which has been the case in the past few years) the continuation of current social spending policies will place SA’s public finances at risk making us vulnerable to shocks (cited Bisseker, 2015).

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Although studies consistently show that grants (particularly the child grant) are well targeted at very poor households, and that they have been central to poverty alleviation over the post-apartheid years they have had little effect on overall inequality in the country (Liebrand et al, 2012; Ferreira, 2015). Increases in wealth and an improvement in the standard of living have only occurred for select groups of people; groups that were historically advantaged during apartheid and those that have managed to gain an entry point into the economy through post-apartheid economic policies (Bhorat and Khanbur, 2006). On the other end of the income spectrum, however, a large population still remains in informal settlements confronted by extreme poverty and unhealthy living conditions. The report on the “Economics of South African Townships: Special Focus on Diepsloot” by the World Bank finds that about half of South Africa’s urban population lives in townships and informal settlements, accounting for 38% of working-age citizens, but home to nearly 60% of South Africa’s unemployed (Mahajan, 2014).

Since 2003, free basic electricity (FBE) has been provided by the government to energy poor households in previously disadvantaged and currently impoverished South African settlements. Currently, this free service is 50kWh per household per month, and is intended to supply enough electricity for basic lighting, basic media access, basic water heating using a kettle and basic ironing (DoE, 2015). However, according to the latest figures published in the 2011 census, it was concluded that about a third of South African households qualify for, but still do not have access to, state funded electricity. However, when using the energy expenditure approach, results show that more than two-fifths (43%) of all South African households can be classified as energy poor in 2012 (DoE, 2013). As a consequence these households spend more than 10% of their net income on energy. Furthermore, although an estimated four million households have been connected to electricity since 1994, many of these connections are characterised by under supply of less than 100kWh per month (Africa, 2012). Using the subjective approach, results show that a quarter of all households (26%) with access to state funded electricity indicated that the amount of energy available was generally inadequate for their needs (DoE, 2013). Service related protests in informal settlements, where a large majority of these households are located, are therefore commonplace and often relate to electricity (DoE, 2013).

Energy poor consumers, including those without access to state-funded electricity, have no other option but to spend a significant amount of their income (up to 10% as previously mentioned) on costly and inefficient alternatives such as fuels (paraffin and kerosene), firewood and illegal electricity connections (Winiecki et al, 2014). These are often associated with negative impacts on health and well-being in terms of smoke inhalation, environmental pollution and exposed electricity cables. In addition, fuel-based lighting is a significant cause of structural fires in the developing world. Informal settlements in South Africa are especially vulnerable to the rapid spread of fires due to their organic layout and form, inability to meet minimum safety standards and use of flammable building materials (Goven, 2010).

As previously mentioned, a number of informal residents choose to buy and sell electricity through illegal connections. According to Chris Yelland (cited in Vermeulen, 2015), a South African electricity expert, about 32% of all electricity delivered by City Power Johannesburg is lost to theft and non-payment. Yelland went on to state that if these non-technical losses could be eliminated, peak demand would be reduced enough to completely eliminate the need for load shedding (Vermeulen, 2015). Similarly, in 2014 Eskom revealed that, as much as 7% of the country’s electricity is stolen via illegal connections, something the state power utility could not and cannot afford (Etzinger, 2014). The issue therefore has wider repercussions as suppliers and those that acquire electricity legally are negatively affected. Although many poor, informal communities receive electricity through illegal connections, this does not come for free. The majority of these residents pay a high price for illegal electricity as they are often forced to pay a premium in a black market-environment. An article appearing in the Cape Times suggested that residents who buy illegal electricity connections are *willing* to pay for the illegal electricity (Phaliso, 2015). Because of this, connecting electricity illegally is a prosperous business in

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some townships and informal settlements. One resident in Phillipi, Cape Town charges R300.00 to R500.00 per month for electricity per customer, by illegally connecting municipal street light poles to informal dwelling units (Phaliso, 2015).

In addition to the dynamics in informal settlements, tackling climate change and the looming energy crises will increasingly be key drivers of South African policy and public attitudes. Innovative technology offers replacements for conventional, expensive, high-carbon energy sources with alternative, affordable, low carbon ones such as the solar-powered home lighting units that will be explored as part of the paper. Such technologies demonstrate the value of localisation in urban and rural areas with regard to basic service; advances in technology such as smart micro-grids move away from the pollution, wastage of resources and structural issues associated with conventional, centralised power grids. The promotion and empowerment of energy-independent communities allow residents to be involved in the co-production and retail of services like clean power and recycling waste (Blowfield and Johnson, 2013). And finally, an increase in economic activities including knowledge exchange and monetary transactions in local areas has positive spin offs for businesses and creates further economic opportunities.

### **3. OBJECTIVES /RESEARCH QUESTIONS**

The overarching question of this research paper is, whether there is potential to adopt innovative and appropriate technology into the South African housing delivery and informal settlement upgrading process. The paper seeks to answer this by reviewing the relationship between technology and informal settlement upgrading through a literature review and interviews with key state planning and implementing agents. In addition, the paper aims to explore what the potential positive outcomes are of adopting such technology in the service delivery process by assessing two projects involving the relatively successful delivery of basic services through technology in informal settlements. The paper then recommends a possible way forward for state service delivery through the creation of an institutional framework that enables the adoption of appropriate and innovative technology.

In summary the objectives of this paper are to:

- Describe and assess the adoption of appropriate technology in current state service delivery programmes in South African informal settlements.
- Explore the potential of technology adoption in the delivery of housing and informal settlement upgrades in the context of South Africa.
- Explore the potential benefits of solar powered, home-lighting units as a new approach to service delivery in South African informal settlements.
- Discuss what the adoption of appropriate technology in state service delivery programmes means for government institutions and future planning.

### **4. APPROACH & METHODOLOGY**

A literature review and additional desktop research methods such as a policy review and online searches were carried out to achieve the first two objectives of the paper, as mentioned in the previous section. Two examples that demonstrate the provision of basic services in informal settlements through the deployment of innovative technologies were researched using a case study approach. All case study research starts from the same compelling feature: “the desire to derive a(n) (up-)close or otherwise in-depth understanding of a single or small number of “cases,” set in their real-world contexts” (e.g., Bromley, 1986, p. 1). These case studies were chosen as they successfully demonstrated a range of positive impacts to communities. The two case studies are:

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1. M-KOPA, Nationwide, Kenya
2. The iShack Project, Enkanini Informal Settlement, Stellenbosch, South Africa

Data was collected for each case, analysed and then synthesised into the contents of this paper. The case data was collected through a literature review, desktop collection, project documentation analysis (internal strategy documents and published project reports) and qualitative interviews with organizations or actors involved in the development and implementation of the two projects. The origin, functionality, customer payment model and impact of each project is explored and presented. The paper then analyses these cases further by assessing what they could potentially mean for state housing delivery, informal settlement upgrading and future planning in South Africa.

## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

### 5.1 Examples of Service Delivery Initiatives in Informal Settlements Supported by Appropriate Technology; M-KOPA Solar and The iShack Project

The Kenyan business model of M-KOPA Solar and the research-driven model of the iShack Project in South Africa are two examples of projects that provide basic services in informal settlements through the deployment of appropriate technology. These initiatives provide access to affordable solar-powered home-lighting systems to impoverished households without sufficient access to the electricity grid. The following section of the paper discusses the origins and functionality of the solar-powered systems, and the potential of adopting such technology as a new approach to service delivery in South African Informal Settlements.

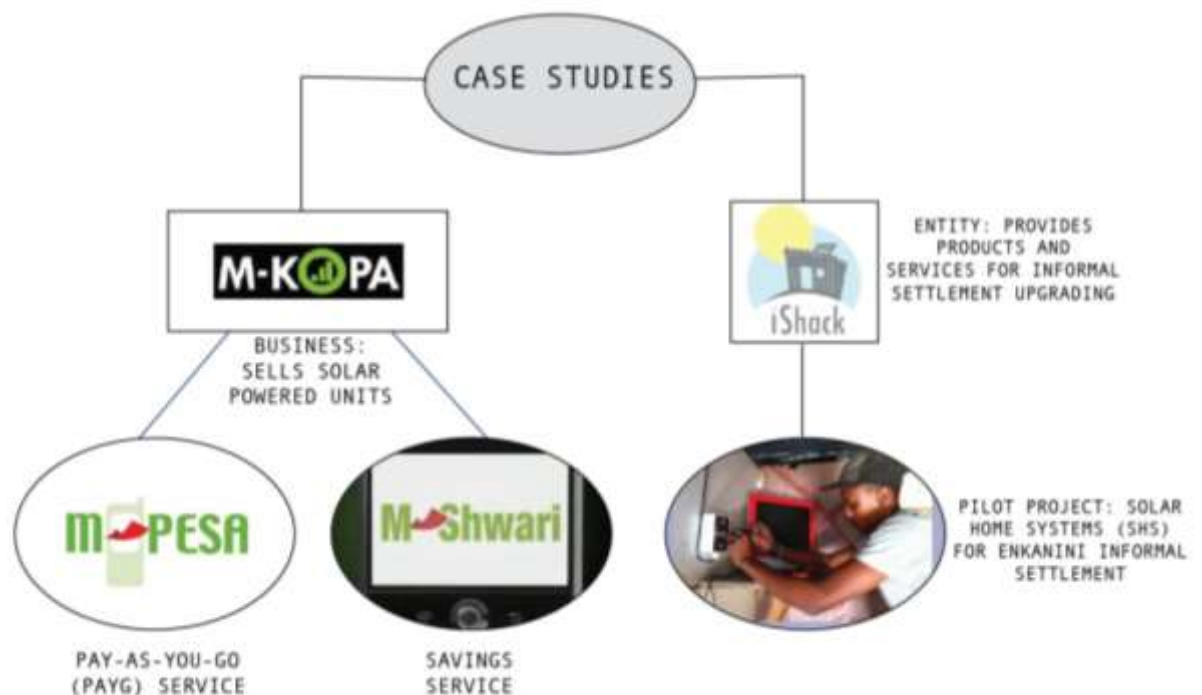


Figure 1: The above diagram illustrates the different products and services that make up the two case studies explored (Source: Author).

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### 5.1.1 The Origins and Functionality of the Solar Systems

In response to a widespread energy challenge, dozens of companies have developed high quality, solar-powered solutions targeting the needs of the energy poor. New distribution models developed by these companies are bringing these products to off-grid areas around the world. One of these companies is the Kenyan based business of M-KOPA Solar and it aims to respond to the energy market by providing access to electricity through an emphasis on digital finance. M-KOPA's website proudly advertises that their organization has become the world's leading 'pay-as-you-go' energy provider to off grid homes. With an effective business model and Safaricom (one of the biggest mobile network operators in Africa) as a partner, M-KOPA have so far provided over 200 000 households with solar home systems in East Africa as of May 2015 (Ward, 2015).

M-KOPA's solar units are small in size and sold out of a single product container typically the size of a shoebox, at all Safaricom retail outlets across east Africa. The M-KOPA system offers the ability to simultaneously light between 2 to 6 rooms in a home or business. Each battery-powered 8W system has three lights, a phone-charging facility and a chargeable radio. A picture example of this solar home-lighting system is included in the following figure (fig. 2).

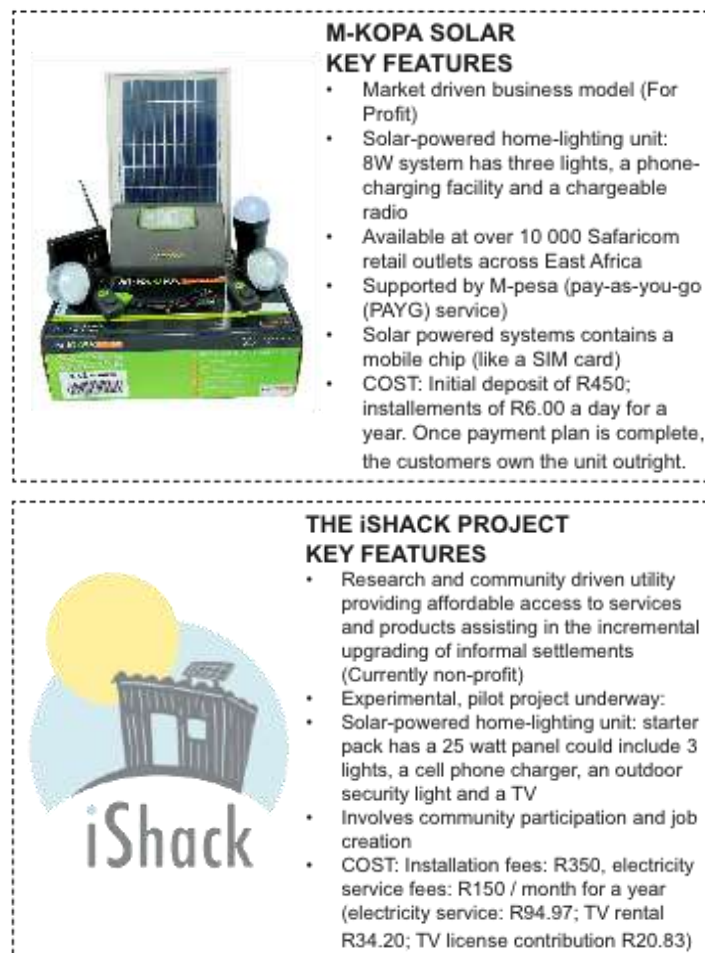


Figure 2: Key features of the M-KOPA and the iShack Project intention, services and products (Source: Author)

The iShack Project on the other hand is a non-profit, research-driven initiative described as having a bottom-up approach in providing affordable solar power for informal dwelling units. It began as a **Conference Proceedings:**

research activity, as part of a post-graduate course held at the Sustainability Institute (SI) in Stellenbosch, South Africa. The project was initiated when a lecturer - Mark Swilling, academic head of SI – asked his students what could be done in the interim while residents in informal settlements wait for houses and services to be provided for them (Swilling, 2015b). In an attempt to answer this, his students developed and proposed an affordable and sustainable way of providing solar-powered home-lighting units to shack dwellers in a settlement called Enkanini. The settlement had an estimated 2400 households located within walking distance from the centre of Stellenbosch. Before the iShack Project was initiated here, the area had no access to electricity and other basic services, as well as no effective leadership structure in order to engage with the municipality to address these infrastructure challenges (Swilling et al, 2013).

The iShack Project appointed a technology supplier by the name of Specialized Solar Systems, who worked with SI to evolve a modular system that can be incrementally, upgraded depending on affordability. The starter pack came with a 25 watt solar panel including three lights, a cell phone charger and an outdoor security light but could be upgraded, at a low cost, to a starter pack, TV and/or radio that runs on 12 volts (Swilling, 2014). Figure 2 on the previous page offers a summary of the key features of the system.

The iShack Project initially consisted of a formal working group involving Stellenbosch Municipality, Stellenbosch University, the Sustainability Institute, Shack Dwellers International (SDI) and elected community leaders who had collaborated to take the project forward in terms of community participation and capacity building. The purchase of solar units and other operational costs of the project were made possible through government support funding, international donor foundations and university research grants (Swilling, 2014).

The idea behind the project, however, was not only to provide a product or an energy service, it was an attempt to develop a sustainable social enterprise model for delivering affordable, incremental services to residents of informal settlements (Wild, 2015, 1). The iShack Project intended to build a community-run business that would assist in overcoming certain structural challenges while generating an income thus improving the circulation of money within the locality.

Elected community members worked with post-graduate students, associated with the Sustainability Institute, and accumulated skills and knowledge through training modules paid for by the project. The delivery process of the project involved the local knowledge of residents to assess community needs. In addition, the project trained and continues to support a small team of local residents employed as “iShack Field Agents” to install and maintain solar powered units, as well as to manage user queries. The project therefore became a process that was not driven by any formal community leadership formation or political party but by residents themselves. These types of institutional arrangements were made possible through the iShack’s localised off-grid system in comparison to a centralised power station.

#### 5.1.2 The Potential of Delivering Solar Powered, Home-Lighting Units as a New Approach to Service delivery in South African Informal Settlements

Those in most need of technologies such as a solar-powered home lighting unit, generally cannot afford to buy modern energy products on a cash basis; distribution companies are often unable to finance customers directly and formal finance providers have shown limited appetite to design products that meet the financing needs of the energy poor (Winiecki et al, 2014). M-KOPA Solar and the iShack Project address issues of affordability and access through an emphasis on pre-paid instalments and digital finance (Wills, 2012). These payment mechanisms form the foundation of how energy in the form of solar-powered systems becomes accessible and affordable to poor communities who already use a large portion of their limited financial resources on non-renewable energy. The business models

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of M-KOPA and the iShack Project, involving the provision of electricity to poor residents in informal settlements, introduce an opportunity for government institutions to move away from traditional welfare approaches towards capacitating communities through the creation of community-run businesses. This alternative approach has the potential to benefit both impoverished communities and state departments (Blowfield and Johnson, 2013).

In order to explore the potential and financial sustainability of such an approach, it is important to understand how income is generated by the iShack Project and M-KOPA models. The iShack solar units are sold to users with an agreement for monthly instalments to be paid for a year. After completing the payment package, customers own their system outright. The M-KOPA solar system has an innovative pay-as-you-go service called M-PESA embedded into it (like a cell phone contract monitored with a SIM card). M-PESA is a mobile banking application that allows customers to deposit money (by loading pre-paid credit like cell phone airtime), transfer money and withdraw funds (at a large number of local shops near where they live and work). This system is operational on all types of phones. M-KOPA has partnered with M-PESA and managed to combine pay-as-you-go (PAYG) pricing and innovative end-user financing to the solar-powered home-lighting units. Customers pay an initial deposit of \$35 (about R490.00) for their solar-powered system, followed by 365 daily payments of \$0.43 (R6.00).

Payments for M-KOPA Solar power through M-PESA are made by loading credit onto the user's phone like airtime and requesting to make solar payments when necessary (Desjardins et al 2014). Energy service is denied to customers when their prepaid balance has been used or is expired; enabling access again when the customer adds prepaid credit to their account (Winiecki et al, 2014). Concerning the potential of this system for the South African context, the M-KOPA system coupled with M-PESA, allows for payment by customers to be easily monitored and enforced when necessary, leaving little room for debt accumulation and illegal connections, both of which are common in South African informal environments.

PAYG solar businesses often serve customers who do not currently have access to other forms of formal finance, which is largely the case concerning many shack dwellers in South Africa. For many off-grid consumers, completing PAYG payments for their solar product might be the first formal credit history in their life. In the future, this data can be used to fulfil prerequisites for the same consumers to obtain other financial services that typically require a formal credit history. In the South African context this may include affordable rental accommodation or social housing.

Since the launch of M-PESA, many banks have begun to offer micro-savings applications that can be integrated with the cellular M-PESA system. These services allow individuals without formal bank accounts to accumulate savings. One of these services is called M-Shwari, and it has proven to be the very successful with over 3 million M-PESA users subscribing to it in under 6 months. The more one manages to save on M-Shwari, as a user of the product, the higher the loan amount one qualifies for. Many residents using M-KOPA have saved money, which would otherwise have been spent on other sources of energy, into such micro-savings accounts. This has translated into available funding for further investment by users in crop fertiliser or informal trading stock, which in turn has resulted in additional income generated (Blowfield and Johnson, 2013).

Similarly, consumers are now able to access micro-insurance and make micro-payments for productive equipment that falls into the same technological market as M-KOPA – a market that assists disadvantaged households to sustain themselves. Such technologies, and the cycle of financial accumulation they offer support resident self-sustenance thereby breaking poverty traps that are well entrenched in South Africa's informal settlements.

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Figure 3: The above figure illustrates the sustainable cycle achieved through the M-KOPA system supported by the payment mechanism, M-PESA.

Direct impacts from the use of M-KOPA products involve; an increase in the exam pass rate of school children using the lights to study further at night (Blowfield, 2014), risk reduction of fires or burns caused by kerosene, and increased surveillance against crime (M-KOPA, 2015). In addition, M-KOPA's growth also has significant impact on the local economy. In 2014, the staff complement consisted of 500 employees in Nairobi and a further 200 in rural areas, representing a 100% increase from 2013 (Lundin Foundation Report, 2014).

Similarly, the results of an initial assessment of the iShack Project showed conclusive benefits. These included 4 to 6 hours of extra thermal comfort each day, reduced fire risk and improved lighting (Swilling, 2013). In addition, solar power helps protect poor households from the consequences of ever-increasing energy prices (which have doubled over the past 4 years and are predicted to double again in the next 4 years). It allows many poor South African residents who are currently paying a large portion of their salary on an illegal service, to save on energy costs while contributing to the long-term payment plan for a personal asset. In turn, residents become energy-independent as they move away from relying on Eskom's centralised grid system.

In addition, community members of informal settlements are trained as solar technicians thus creating the human capital base for a new local economy (SI, 2013). Once informal communities realise the benefits of this cooperative action, states the SI, they will have in place social and institutional structures that will make it possible to continue to struggle for further improvements, including secure land rights, access to subsidies for housing, jobs, and other much needed services (SI, 2013).

## 6. RESEARCH CONTRIBUTION

The research, with the support of the two cases, illustrates the importance of an effective network of contributors in the delivery of basic services. These projects present a potential framework for South African government institutions to adopt appropriate technologies in the delivery process of housing and informal settlement upgrades.

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Many development projects fail because they do not adequately address core business concerns such as intelligent marketing, distribution, and branding (Mas, 2012). An essential lesson for government therefore, is the business logic that underpins and lends itself to the overall long-term sustainability of each project. The network of actors and their responsibilities in each of the cases presented, make up a critical delivery structure that ensures shared success amongst all stakeholders, including informal settlement dwellers.

The state's involvement in the establishment the iShack Project through the Green Fund demonstrates that state funding in informal settlements can set up the foundations for financially sustainable local economies, community-run businesses, community mobilisation, the scaled upgrading of informal settlements and the state as an active participant in income-generation. This marks a fundamental break from the traditional state welfare approach or the traditional donor-funded approach (Swilling, 2013).

The iShack also teaches us that if issues are context-dependent then so are solutions. We should aim to have practical expectations and strategies that are appropriate for individual contexts (Toyama, 2010). Non-technologists from communities with local knowledge such as a concerned teacher or an experienced businessman should therefore be consulted. They may be more successful in identifying the shortcomings of technologies in given contexts and better equipped to foresee how proposed technological solutions complement or compete with other available non-technological solutions as well as to anticipate the political and institutional backlash that can result from choices of ICT technology such as the M-KOPA system (Morozov, 2012).

The paper illustrates that the transformation of informal settlements can be realised through the collaborative intervention of government, businesses, civil society and communities in the coproduction, distribution and use of technologies that provide opportunities for impoverished communities to break poverty traps and move up the income ladder. This opens up an alternate approach to traditional state service delivery and reinvents previous conceptions of urban planning in informal settlements as a service to be provided for by state urban planners. By exploring the potential for innovative technologies as a driver of change within state processes that offer the promise of transformation we can conclude that the structure and practice of planning in South African informal settlements does not lie solely in the hands of the state but can be redefined rather as most effective through the co-generation of knowledge and capabilities.

## **7. DISCUSSION & CONCLUDING REMARKS**

The paper advocates that it is critical for the South African spheres of government to take on innovative approaches to service delivery by accelerating the transition of new, environmentally friendly, general purpose technologies (GPT) that will construct an economy that is equitable and supportive of productive growth. It has provided an approach that aims to move away from disconnected welfare systems towards a comprehensive engagement of government with market-related opportunities for social justice and equitable growth.

The case studies presented introduce innovation into the way we respond to state service delivery, the incremental upgrading of informal settlements and the livelihoods of the poor. They offer approaches that can empower South African institutions and communities to accelerate tangible, environmentally conscious, socio-economic responses. M-KOPA's profit-driven model demonstrates the value of a viable business model supported by a strategic institutional and funding framework that delivers on a context-specific technology.

The iShack Project, on the other hand, seeks to develop and demonstrate a viable, large-scale alternative (social) enterprise model for incremental informal settlement upgrading, using environmentally sound

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technology and building local skills and meaningful jobs. While the drivers of the initiative state that the primary objective has already been largely achieved, there is still work to be done concerning the creation of a collaborative and enabling institutional framework characterised by political acceptance, advocacy, policy-changes and budget allocations if the state were to adopt such a model as a standard form of basic service delivery at national level.

In combination, the case studies illustrate how the provision of PAYG solar power in poor communities can contribute to such government objectives as; localisation of energy production, the equitable distribution of resources, increased opportunities for the poor, environmental conservation, community empowerment and inclusive economic growth.

In conclusion, sustainable technologies such as PAYG solar powered home lighting systems are not a sole solution. Nor are they an alternative to well-intentioned, community-based human settlement planning and development. Instead, they offer an effective service delivery mechanism alongside other mechanisms in the collective response to achieve sustainable human settlements.

## 8. REFERENCES

Africa, G., 2012. The Eskom Factor: Power Politics and the Electricity Sector in South Africa. *South Africa: Greenpeace Africa*.

Bisseker, C., 2015. FISCUS: GDP growth essential, *Financial Mail*, INTERNET: <http://www.financialmail.co.za/features/2015/01/08/fiscus-gdp-growth-essential> [Accessed 3 Mar. 2016].

Blowfield, M. and Johnson, L. 2013. Turnaround challenge: Business and the city of the future. Oxford University Press

Bhorat, H., Hirsch, A., Kanbur, R., & Ncube, M. 2014. Economic Policy in South Africa Past, Present, and Future (No. 180150).

Bhorat, H., Cassim, A., & Hirsch, A. 2014. Policy co-ordination and growth traps in a middle-income country setting. KOICA working paper, 2014(7), 1-59.

Bhorat, H., 2015. *Is South Africa the most unequal society in the world?* [online] The Mail & Guardian, INTERNET: <http://mg.co.za/article/2015-09-30-is-south-africa-the-most-unequal-society-in-the-world> [Accessed 5 Jan. 2016].

Desjardins, S. Games, R. Pursnani, P and West, C. 2014. Access to Energy Report 2014, Shell Foundation. INTERNET: [http://www.shellfoundation.org/ShellFoundation.org\\_new/media/Shell-Foundation-Reports/Access\\_to\\_Energy\\_Report\\_2014.pdf](http://www.shellfoundation.org/ShellFoundation.org_new/media/Shell-Foundation-Reports/Access_to_Energy_Report_2014.pdf) [Accessed 18 Nov 2015]

[Department of Cooperative Governance and Traditional Affairs \(COGTA\). 2016. Integrated Urban Development Framework, COGTA, Republic of South Africa.](#)

Department of Energy (DoE). 2013. A Survey of Energy Related Behaviour and Perceptions in South Africa: The Residential Sector. INTERNET: <http://www.energy.gov.za/files/media/Pub/DoE-2013-Survey-of-EnergyRelated-Behaviour-and-Perception-in-SA.pdf>

Department of Energy (DoE)., 2015. FAQ's, Department of Energy, Republic of South Africa, INTERNET: [http://www.energy.gov.za/files/faqs/faqs\\_freebasic.html](http://www.energy.gov.za/files/faqs/faqs_freebasic.html) [Accessed 4 Mar. 2016].

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Department of Human Settlements (DoHS), 2009. Subsidy Quantum - Incremental interventions (Part 3 of the National Housing Code) [online].

Department of Science and Technology (DST)., (2011). Ten Year Plan for Science and Technology, Department Science and Technology, Republic of South Africa.

Dlodlo, N., Olwal, T. and Mvelase, P., 2012. The Internet of Things in bridging the gap in municipal service delivery in South Africa.

Etzinger, A., 2014. *How much electricity is stolen in South Africa*. [online] [Businesstech.co.za](http://businesstech.co.za/news/general/75246/how-much-electricity-is-stolen-in-south-africa/). INTERNET: <http://businesstech.co.za/news/general/75246/how-much-electricity-is-stolen-in-south-africa/> [Accessed 12 Apr. 2015].

Ferreira, L., 2015. Social grants in South Africa; Separating myth from reality, *Africa Check*, INTERNET: <https://africacheck.org/factsheets/separating-myth-from-reality-a-guide-to-social-grants-in-south-africa/#sthash.O3PLh1UC.dpuf>, accessed 13 January 2016.

Goven, G., 2010. Kosovo informal settlement upgrade. *Counter Currents, Experiments in Sustainability in the Cape Town Region*, pp.146-159.

Housing Development Agency (HDA)., 2013. Informal settlements status: Gauteng. Johannesburg.

Johnson, L. 2013. *Petropolis now: Are cities getting too big?* [online] [Newstatesman.com](http://www.newstatesman.com/2013/11/petropolis-now). INTERNET: <http://www.newstatesman.com/2013/11/petropolis-now> [Accessed 20 Aug. 2014].

Leibbrandt, M., Finn, A. and Woolard, I. 2012. Describing and decomposing post-apartheid income inequality in South Africa. *Development Southern Africa*, 29(1), pp.19-34.

Mahajan, S., 2014. *Economics of South African Townships: Special Focus on Diepsloot*. World Bank Publications.

Mahlaba, V. 2015. Happy Housing for Enkanini, *Environment News, SA Green Fund*, Department of Environmental Affairs, Republic of South Africa

Mas, I. 2012. *Can Technology End Poverty?* | *Boston Review*. [online] [Bostonreview.net](http://www.bostonreview.net/forum/can-technology-end-poverty/unique-promise-ict). INTERNET: <http://www.bostonreview.net/forum/can-technology-end-poverty/unique-promise-ict> [Accessed 9 May 2015].

M-KOPA. 2015. Media Fact Sheet [online]

Ogunleye, O., 2012. Enhancing the quality of government service delivery through the use of mobile technologies: A South African context.

Sustainability Institute (SI). 2013. Non-published Report - Incremental Upgrading: the iShack initiative, Sustainability Institute

Swilling, M., Tavener-Smith, L., Keller, A., Von der Heyde, V., & Wessels, B. 2013. Rethinking incremental urbanism: Co-production of incremental informal settlement upgrading strategies, Sustainability Institute

Swilling, M. 2014. Rethinking the science-policy interface in South Africa: experiments in knowledge co-production. *South African Journal of Science*, 110 (5-6), 01-07.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Swilling, M. 2014. Internal Strategic document; iShack Briefing – The Scalability Question

Swilling, M. 2015a. Personal Communication on the iShack Project, September 9, 2015

Swilling, M. 2015b. *Informal Settlement Upgrading in Enkanini*.

Toyama, K. 2010. Can Technology End Poverty? *Boston Review*. [online] Bostonreview.net. INTERNET: <http://www.bostonreview.net/forum/can-technology-end-poverty> [Accessed 28 May 2015].

Vermeulen, J. 2015. *This is how people steal electricity in South Africa*. [online] Mybroadband.co.za. INTERNET: <http://mybroadband.co.za/news/energy/116854-this-is-how-people-steal-electricity-in-south-africa.html> [Accessed 5 Feb. 2016].

Ward, M. 2015. M-KOPA Media Release (received via personal communication), Levanter Africa

Wild, S. 2015. iShack delivers power (and television) to the people. [online] The M&G Online. INTERNET: <http://mg.co.za/article/2015-03-13-ishack-delivers-power-and-television-to-the-people> [Accessed 7 Feb. 2016].

Wills, A. 2012. *M-Kopa*. [online] M4dimpact.com. INTERNET: <http://www.m4dimpact.com/analysis/case-studies/m-kopa> [Accessed 7 Aug. 2015].

Winiecki, J., & Kumar, K. 2014. Access to Energy via Digital Finance: Overview of Models and Prospects for Innovation. Consultative Group to Assist the Poor (CGAP), Washington, DC, USA.

**Conference Proceedings:**

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# Reflections on Affordable and Sustainable Housing through the Angolan Model: A Case study of Nova Cidade de Kilamba

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## Abstract

Sustainable development has become a guiding principle on the development agenda across the world, intensified by global population increases and intensified rural to urban migration. In this regard, governments and development agencies regularly cite the now almost clichéd call for more balanced economic, social and environmental development. However, realising economic growth has generally been placed as primary concern to the detriment of the other legs held in the sustainability trinity. Africa is no stranger to an overemphasis on economic advantages to the detriment of its people and natural resources, endured in a shared history of colonialism. The almost singular focus on the economic has remained, shown in this paper and its discussion on housing affordability in Angola. Following its colonial past, and especially its more recent civil war, the Angolan government had to rebuild its economy and proceed with the business of servicing its people. Despite tremendous increases in oil production, the Angolan state remained unable to provide housing for its burgeoning poor population without foreign help. In this regard, the Angolans turned to the People's Republic of China and oil-backed housing construction to promote economic exchanges and develop tentatively affordable housing to resolve a post-war housing crisis – in what has become known as the 'Angolan Model'.

This paper shows however, that the housing that resulted, such as the satellite city of Nova Cidade de Kilamba, Luanda provided everything but affordable accommodation. The desktop case study conducted in this research showed that Nova Cidade de Kilamba provided housing far beyond the means of most Angolans, transforming the project into a ghost city due to a lack of suitability to its context and target market. Remedial price cuts ensued, but only paved the way for middle-class citizens to take up residence. The Angolan model may thus be regarded as successful when considering economic opportunities facilitated via housing construction and development related revenues, but failed to take societal needs into account – thus failing to realise real sustainability. This research adds to the dialogue on developing suitable solutions to the African context, placing the focus on the poor who are most in need of sustainable aid.

## Keywords

Sustainable development; affordable housing; Angolan Model; Chinese investment; Nova Cidade de Kilamba

## 1. INTRODUCTION AND METHODOLOGY

Africa is experiencing intense population growth and it is expected that the continent's 2010 population of 1 billion will double by 2050 (Mendy & Muzima, 2015:16). Population growth will continue to present challenges for urban planning, largely related large-scale urban to rural migration and finding sustainable housing solutions. Challenges will be compounded by the socio-economic profiles of African migrants who leave the poverty, poor living standards and limited opportunities in rural areas for employment and prospects in urban centres, but arrive there with, and may maintain, poor purchasing power. Housing will continue to be a major challenge in Africa, with many governments

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now involving foreign investors, especially from Asia, in their approaches to housing development. Accordingly, this paper provides some background on Afro-Asian collaboration, using China and its involvement in Angolan housing development as case study – viewed broadly through the lens of suitability and sustainability. The paper will start out by providing sustainable development principles. This will provide background on what is needed to create a sustainable housing development. Once the sustainable development principles are established, the report will elaborate on affordable housing, since the case study – Nova Cidade de Kilamba – was initially planned as a social housing development. As further background to the study, the relationship between Angola and China will be discussed, providing insight into the oil-backed loans and how Nova Cidade de Kilamba came into being. The remainder of the report will focus on establishing the success as Nova Cidade de Kilamba as a social housing development.

## 2. SUSTAINABLE DEVELOPMENT PRINCIPLES

The last three decades have seen the sustainable development concept becoming a core focus globally, largely as a result of international events, initiatives and publications. The shift towards a more sustainably-minded way of thinking was placed on the world stage by the publication of the 1987 Brundtland report, *Our Common Future* (Brundtland et al, 1987) with its definition of the concept remaining the most widely cited globally. The Brundtland report provided the definition: ‘Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED, 1987; Claes et al., 2012:10; Barkereyer et al., 2014:16; Imran et al., 2014:134; Blewitt, 2015:9). In accordance, it has been accepted that sustainable development may be based on a concentric model that consists of economic, social and environmental spheres, commonly named the three pillars of sustainable development, or the ‘triple bottom line’ (Barkemeyer et al., 2014:17). According to the triple bottom line elucidation, sustainable development thus requires some negotiation between economic, social and environmental spheres in pursuit of establishing and maintaining wellbeing in the present and future (Ciegis et al., 2009:34; Claes et al., 2012:10; McCormick et al., 2013:4). The expressions ‘sustainable development’ and ‘sustainability’ are often used as synonyms, but for Weingaertner & Mober (2014:123) sustainable development refers to a process of change in pursuit of sustainability objectives, whilst sustainability, referring to the ability to sustain, is an ideal end state to be maintained over time. Accepting this distinction, we should recognise that sustainability is an ever-changing mark and we can at best aspire to be more sustainable than we are at present (Childers, 2014), by adopting sustainable development patterns that are not self-destructive (Brunner, 2012:5).

Towards increased sustainability and less destructive futures, it is apt to recognise that the Brundtland definition and derived concentric model of sustainability (Figure) have been critiqued severely over time. Censures have included that the 1987 definition places an undue primary focus on industrialised modernisation and market forces as leading imperatives to be pursued around the globe (Blewitt, 2015:9). The social component, though presented as equal in the concentric model, is often left as an auxiliary. However, social sustainability must be regarded with equal gravitas, with development never pursued at the cost of societal needs. Social sustainability is broadly dependant on equality – impacted by development in the form of, *inter alia*, equal access to basic services, housing opportunities, employment and education (Burton & Mitchell, 2006:12). With the rise of poverty globally, but especially in the global South, establishing equal opportunity becomes all the more challenging. The poor rarely have the financial means to secure housing, services, employment, education and other necessities, placing the onus on governments to fulfil these needs, with limited resources. Money does indeed make the world go round and economic development may allow some social and environmentally minded interventions to progress, but cannot be allowed to dominate or be pursued at ‘the people’s’ expense. Following these types of critiques and warnings, Giddings et al (2002) suggest that the widely accepted model for sustainable development (see Figure 2), is indeed misleading. The concentric model implies that the economy, environment and society are separate factors to be brought together if sustainable development is to be achieved. As a result, sustainable development is

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misinterpreted, with one aspect, mostly the economy, receiving more focus. For Giddings et al (2002:191) a more nuanced approach in which the ‘economy (is) nested within society, which in turn is nested within the environment’ would be more advantageous. Figure 1 provides a visual representation of this relationship, providing that the economy cannot exist without the society, and that society in turn, cannot exist without the environment. As such, the three aspects are interweaved and should be dealt with simultaneously towards sustainability.

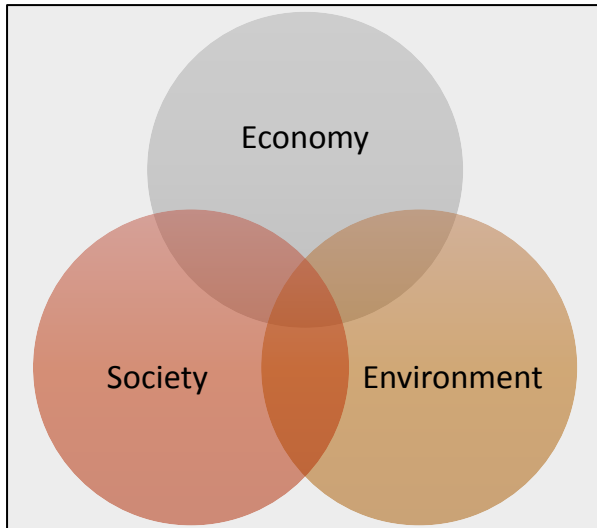


Figure 1: Three ring sector view of the economy  
Source: Own adaption based on Giddings et al (2002)

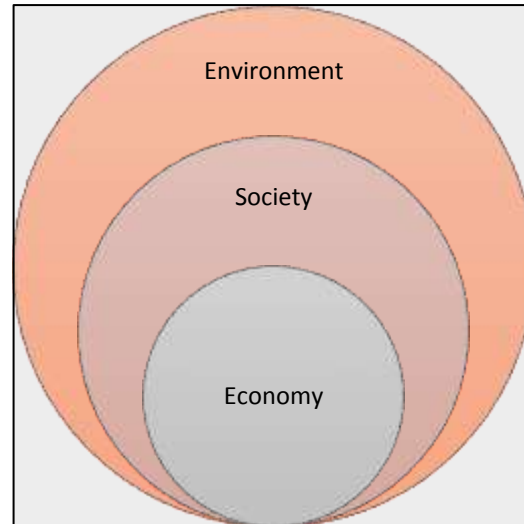


Figure 2: Nested sustainable development  
Source: Own adaption based on Giddings et al (2002)

### 3. AFFORDABLE HOUSING SOLUTIONS

Developing countries generally have a lack of affordable housing in common (Brueckner & Lall, 2014:2). In most cities in Asia, Latin America and Africa, low-income households remain unable to afford adequate housing opportunities (Mitlin, 2008). For Tipple (2015:414), the main obstacle to housing access in Sub-Saharan Africa is not housing cost, but household income that remains too low to facilitate housing access as low incomes continue to render housing stock unaffordable to the masses. This paper takes this view on board and accepts that housing can be regarded as unaffordable, only if housing costs do not reflect household income. Housing affordability is influenced by two key variables, dependent on household income to meet expenses. These variables are capital variables such as purchasing costs, and occupation variables, reflecting the costs related to keeping a house. Purchasing cost is influenced by the costs related to land, infrastructure, labour, building materials (Brueckner & Lall, 2014:49) and profit as well as the ability of households to access finance to purchase property. Occupation variables include the ability to pay for, *inter alia*, land leases and rates, service costs, maintenance, loan repayments and other non-housing related expenditure (UN-Habitat, 2011:10).

Affordable housing is generally understood as that which provides adequate quality and location and is made available at a cost that does not prohibit occupants from meeting basic living costs or impedes their basic human rights (UN-Habitat, 2011:9). Affordability may well depend on the trade-offs households will concede to when choosing between housing and other requirements, but not at the expense of basic essentials. Trade-offs depend on household budget (Brueckner & Lall, 2014:49). Andrews (1998) defined affordable housing as shelter that costs no more than 30% of the income of the household accommodated therein. These expenses may include mortgage repayments (for owner-occupiers), rent payments (for tenants), and direct operational expenses such as taxes, insurance and service payments (UN-Habitat, 2011:11). Following prescripts by the United Nations in 1996, Alaghbari et al. (2010:85) contend that any expenditure above 30% of household income on housing

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may render households incapable of affording essentials such as food, education, clothing, transportation and medical care.

Housing affordability has significant and varied impacts. Of these, its impact on economic factors may be most fundamental as housing generally represents the single largest expenditure item on the budget of most households, presenting the most significant asset for most households as potential wealth repositories (Arku & Harris, 2005:895; Brueckner & Lall, 2014:1; Quigley and Raphael, 2004; Alaghbari et al., 2010:85). As such, homeownership may have a positive influence on an individual's or a household's economic, social and psychological status, with aggregate economic and social ramifications for a region and country as a whole (Ariff & Davies, 2011:270). Housing may thus play an important role in economic development (Brueckner & Lall, 2014:1) by supporting household level security and growth, whilst impacting the economy as a key component of development, with builders employing workers and having a multiplier effect on suppliers and lenders (Arku & Harris, 2005:895) in any economy.

#### **4. AFRICA AND OUTSIDE INFLUENCE**

Africa has come to exemplify a region that requires more context sensitive and locally generated planning and development, as the 'dark continent' faces more acute challenges than almost anywhere else (Watson, 2002:34; Parnell et al., 2009:233). Although very diverse, Africa is unified by a shared history of colonialism and the appropriation of its resources from beyond its shores (Watson, 2002:29). In the past, the pursuit of Africa and its riches was termed 'the scramble for Africa' (Chamberlain, 2014) when European powers vied for control. Today the colonies have been released, yet the west continues to nurture interest in the continent, joined in force by new stakeholders from the east. China in particular has infiltrated Africa's construction sector by providing 'resource for infrastructure' loans (Benazeraf & Alves, 2014). In fact, Bräutigam (2010:7) makes the bold statement that every country in Africa, except for Swaziland, has benefited from Chinese aid.

Africa is undergoing incremental change, with a myriad of international development agencies attempting to develop the continent and address its urban challenges. Many of these interventions, however, introduce development models quite unsuited to the African context (Parnell et al., 2009:233; Benazeraf & Alves, 2014). As such, new master plans are regularly unveiled, echoing the modernist dream and rooted in the assumption that Africa will eventually 'catch up' economically and that its cities will be occupied by moderately well-off and formally employed households who own cars and have everything in common with urbanites around the world (Watson, 2009:173). These master plans perpetuate the myth of an urban Eden to be established in the course of Africa's 'rise', based on similar connotations made referencing India and China - following on the heels of advances in the Middle-East, where 'mega-urbanisation' was first initiated and cities such as Abu Dhabi and Dubai, absorbed surplus wealth generated from oil reserves (Harvey, 2008). In effect, the plans for new African cities reflect places more akin to Dubai, Singapore, and indeed Shanghai (Watson, 2014:215). Most of these plans have remained as visions on a board room table, whilst a select few have been fast-tracked to implementation. Angola's *centralidades* are prime examples of projects that have progressed based on existing Chinese prototypes (Cain, 2014:3). Angola is China's principal trading partner in Africa and is a benefactor of Chinese infrastructure investment on the back of oil-backed loans (Benazeraf & Alves, 2014). Through its access to Chinese credit and subsequent development, Angola is now regarded as a pioneer of new urbanism in Africa (Cain, 2014:4). The following section engages with Angola as case study.

#### **5. ANGOLA AND ITS CAPITAL, LUANDA**

Angola is located in Sub-Saharan Africa, on the continent's south-eastern Atlantic coast, bordering the Democratic Republic of the Congo, the Republic of Congo, Namibia and Zambia (See Figure 3). The country was a Portuguese colony from 1648 – 1975 (Bender, 1978) but is most known in recent history for its long civil war, which ended in 2002. High economic growth is mainly attributed to an expansion

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in oil production, Angola is now the second largest producer of oil in Sub-Saharan Africa (CAHF Yearbook, 2015). The country produced approximately 0.9 million barrels of oil per day in 2003 and approximately 1.85 million barrels per day by 2010 (See Figure 4). Increased oil production led to economic growth rates exceeding 10% between 2005 and 2008 (See Figure 5).



Figure 3: Location of Angola  
Source: Jones, 2012

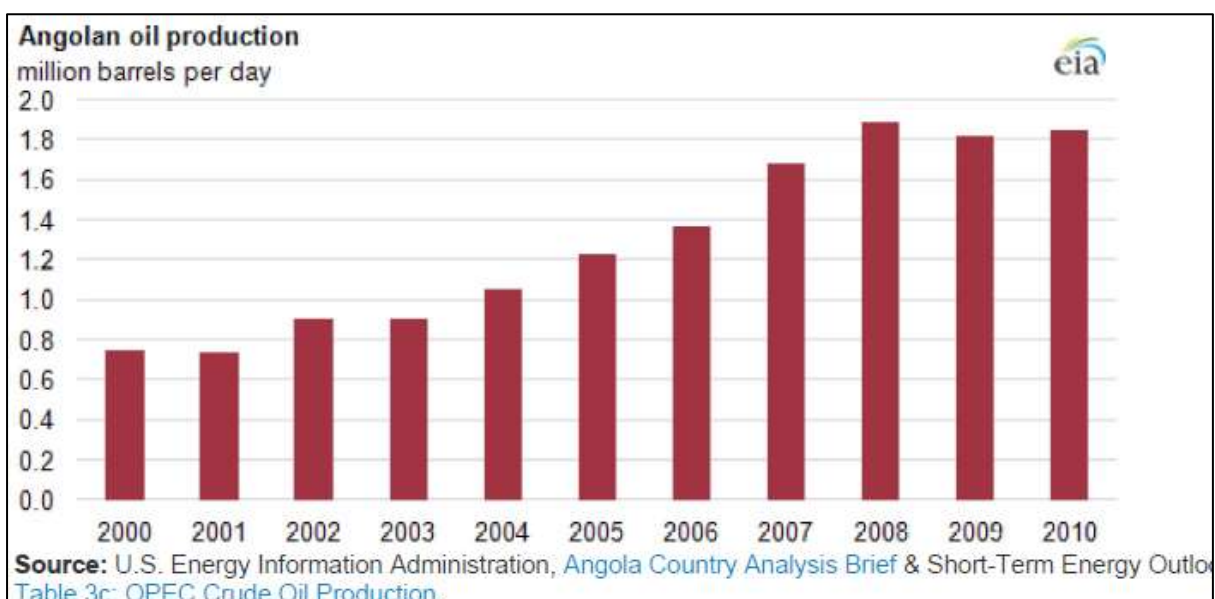


Figure 4: Angolan Oil Production, Source: U.S. Energy Information Administration

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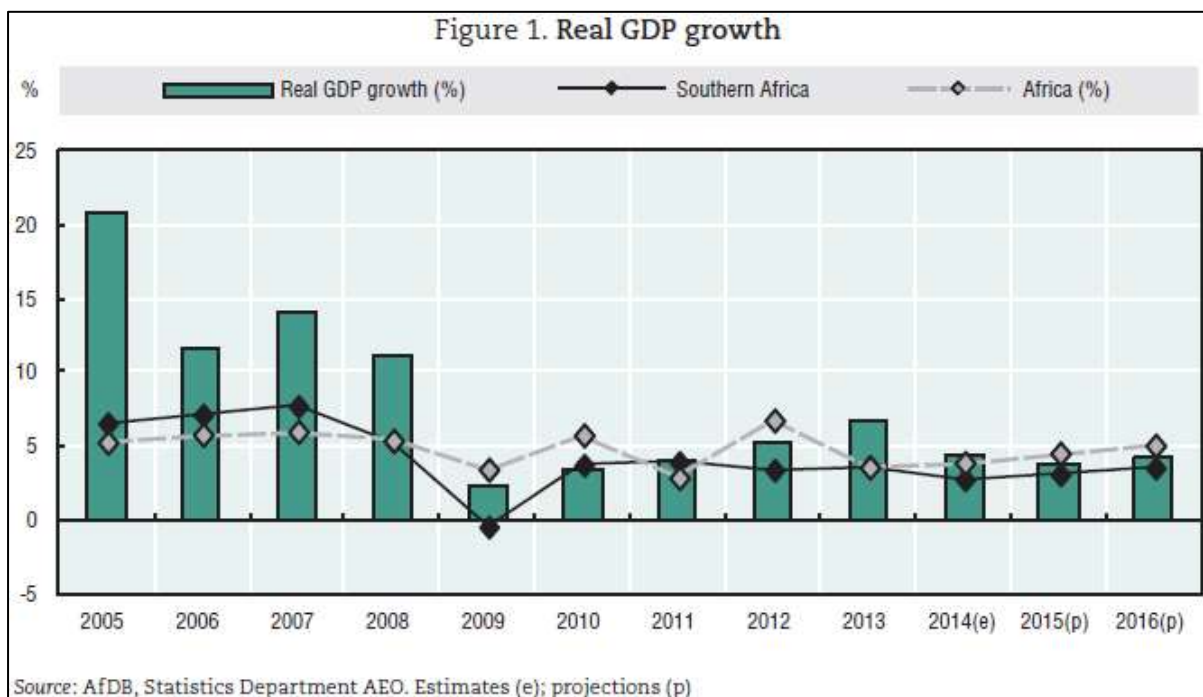


Figure 5: Angolan Real GDP Growth, 2005 - 2016

Source: Mendy & Muzima 2015:3

Economic growth encouraged significant population growth and rural-urban migration in the post-war period. As a result, Angola presented an urbanised population of 62.3% (Dionísio, 2014:3) out of a total population of approximately 24 383 301 people as recorded in the first census conducted after the war in 2014. Figure 6 indicates the population of the municipalities within the Province Luanda. The 2014 census further showed that 6 542 944 people (26.8%) were located in Province Luanda and 2 107 648 (8.6%) resided in the capital city of Luanda. As a result, Luanda city housed nearly a third (32.2% or 2 107 648 people) of the provincial population, reflecting a 12-fold population increase since the 1970 Census (Dionísio, 2014:3).

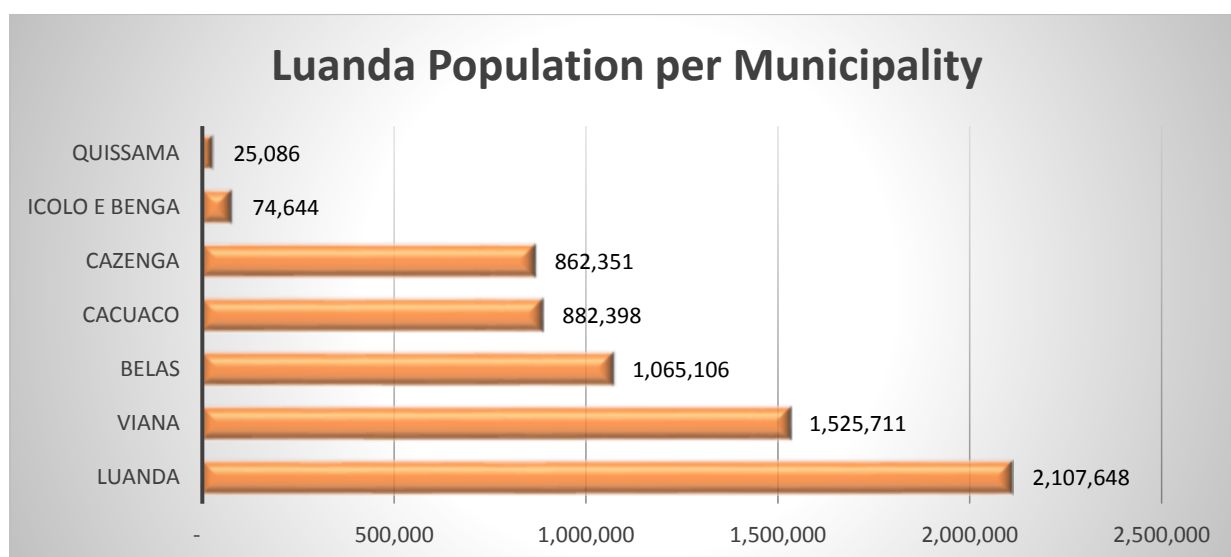


Figure 6: Luanda Population per Municipality, 2014

Source: Census, 2014

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## 5.1 A History of Luanda Planning and Housing

Luanda has a colourful history – founded by the Portuguese in 1575 / 1576, occupied by the Dutch from 1641 to 1648, and taken again by the Portuguese in 1648 (Njeru, 2016; Jenkins *et al*, 2003). The Portuguese presence remained until 1975 and as a result, past urban development in Luanda was based on Portuguese planning principles and urban processes (Viegas, 2012). Due to its coastal location and later infrastructure developments linking the city to the interior, Luanda thrived and was regarded as a modern city by the time of independence in 1975 (Njeru, 2016). The city of Luanda may have been modern, but also troubled and turbulent. The city experienced urban war; the emigration of technicians; an influx of migrants from rural areas in search of employment and social upward mobility (Okpala, 2009:5); and the consequent collapse of infrastructure (Njeru, 2016). Luanda proved unable to provide infrastructure at the same rate as urban growth, with large urban areas developed without any planning or building control (Jenkins *et al*, 2003). The city has continued to struggle in this regard, despite concerted efforts to address housing needs. For example, in 1982 the law of “auto-construção”, or self-help housing, was introduced by the state to deal with the housing crisis, by demarcating stands and providing subsidised building materials for beneficiaries to construct their own homes. However, severe over demand saw the programme collapse and shelved (Jenkins *et al*, 2003). In the 1990s the Office for Mussequete Upgrading (GARM) established the Sambizanga Upgrading Project. The project received wide acclaim but was unable to decrease housing demand substantially (Jenkins *et al*, 2003). It was only in the post-war period that Angola started to develop its first real housing policy (Croese, 2011:2).

After the war, Province of Luanda had to address the hazards of a city originally planned for approximately 500 000 people, but occupied by more than 6 million residents (Croese, 2011:2). By 2002, it was estimated that 70% of residential units in Luanda, were informal dwellings (Jenkins *et al*, 2002:8). It was further estimated that the housing backlog in 2008 stood at approximately 1.9 million units (Cain, 2016) and that by 2012 approximately 83.1% of households were living in informal dwellings (Viegas, 2012) resulting in a backlog of approximately 3.5 million dwellings. These informal, self-built structures have remained prevalent (CAHF, 2015) especially on the outskirts of the city. More recently, a number of projects were initiated to provide housing for combatants, civil servants, and evictees (Croese, 2011:2). These projects have included Kilamba and other similar satellite cities, providing approximately 70 000 housing units (excluding Kilamba), with another 30 000 units still under construction (CAHF, 2015). By the end of 2015 a total of 172 575 housing units were under construction (Cain, 2016). The following segment provides some insight into the funding and partnerships secured to facilitate these and future projects.

## 5.2 Oil-Backed Loans and Development

Angola presented neither the capacity nor funds needed to develop the infrastructure, housing and social facilities its people required. To compensate for these shortcomings, the Angolan state turned once again to its most valuable natural resource, securing funding through oil-backed loans. The use of oil-backed loans was nothing new, as the state had engaged in such transactions with other stakeholders, such as Brazil, in the past. However, contemporary arrangements diverged in two ways. Now Angola’s main partner was the People’s Republic of China and the magnitude of new oil-backed loans was unparalleled (Croese, 2011:2). The new partnership has continued to work for several reasons - *inter alia*, due to Angola’s increased oil production and development needs; and China’s increasing need for oil (Alves, 2010:6) combined with cheaper labour and low-cost, faster construction methods (Vanes, 2014). These oil-backed loans have thus presented a sort of symbiotic relationship in which both Angola and China find favour - Angola in terms of addressing its housing backlog and China in securing oil over the long term, regardless of fluctuating oil prices.

It is difficult to define China’s assistance to Angola, since it falls between official development assistance (ODA) and a form of commercial loan (Alves, 2010). These arrangements do not comply with western standards for ODA, because these engagements do not include a 25% grant component.

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China is furthermore not a fully developed country and can therefore not be classified as a traditional donor (Alves, 2010). On the other hand, Chinese credit cannot be regarded as a commercial loan, since the interest rate agreed on (usually around 1.5%), is much lower than typical commercial loan standards of approximately 10% (Alves, 2010). Alternatively, China's assistance is often described as tied aid because of the oil-backed component (Alves, 2010) or as structured financing.

In 2004 an oil-backed deal was struck between Angola and the Exim Bank of China, enabling Angola to use oil revenues for construction contracts with Chinese companies (Vanes, 2014; Alves & Benazeraf, 2014:1-2). As an outcome, by 2010, the main import to Angola from China was cement (Vines, 2014) and Angola was the second largest supplier of petroleum to China (Alves, 2012:105-106), indicating the magnitude of Chinese construction projects in Angola. It is estimated that approximately 50 state enterprises and between 400 and 500 private companies from China have done work in Angola (Bingfei, 2014; Vines, 2014; Benazeraf, 2014:2), resulting in approximately 258 000 work visas issued to Chinese workers in Angola up to 2014 (Vines, 2014). The oil-for-construction model has become known as the "Angola Model" (Alves, 2010:6; Redvers, 2012, Tembe & Xu, 2013), through which one of the largest residential development projects yet undertaken in Angola has been facilitated – Nova Cidade de Kilamba, discussed accordingly.

## **6 NOVA CIDADE DE KILAMBA – SOCIAL HOUSING FOR WHO?**

Construction of the Nova Cidade de Kilamba Satellite City was awarded to the wholly Chinese owned company, CITIC Construction in 2008. The contract was valued at approximately 3.5bn to 4.2bn USD (Bo, 2014). Nova Cidade de Kilamba will ultimately cover approximately 8.8 km<sup>2</sup> with a construction area of 3.31 million square meters (Bo, 2014) and will ultimately comprise of:

- 20 002 apartment units in 710 buildings
- 246 ground floor shops
- 3 parks
- 2 churches
- 24 kindergartens
- 9 primary schools
- 8 secondary schools
- 1 sewage treatment plant (45 000t/d)
- 1 water purifying plant (35 000t/d)
- Electric system
- Telecommunication system
- Traffic signal system
- 400 civil roads

It should be noted that although some of the ancillary uses indicated above, have been built. But that supply of economic facilities are limited and people still have to travel to the City of Luanda for work, with an average drive time of 50 minutes, without traffic. Given the fact that Nova Cidade de Kilamba was planned to house low income earners, the ownership of private vehicles will be low and the money to make use of public transport will be limited – ultimately limiting the sustainability of the development.

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Figure 7: Location of Nova Cidade de Kilamba  
Source: Google Earth, 2016



Figure 8: Artist Impression of Nova Cidade de Kilamba  
Source: Bo, 2014

As evidenced in the list of uses provided above, residential opportunities in Nova Cidade de Kilamba will be provided in the form of high-rise apartment blocks. This housing typology resembles the housing opportunities commonly presented in Chinese cities (as seen in Figure 9 and Figure 10), where apartment living has facilitated the accommodation of expanding urban populations close to employment opportunities. The introduction of such typologies in Nova Cidade de Kilamba has led to arguments that the development is based on Chinese planning principles that have not been adapted to the local Angolan context (Alves & Benazeraf, 2014:3), echoing contentions raised in this paper’s literature review.

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Figure 9: Kangbashi Ghost Town  
Source: Anon, 2015



Figure 10: Kangbashi Ghost Town  
Source: Anon, 2015

Nova Cidade de Kilamba is described as a social housing project (Bingfei, 2014; Alves & Benazeraf, 2014:3) intended to provide formal housing to the millions of Angolans living in informal dwellings, as low-income earners. Average household income in Angola in 2014 was established as US\$12 408 per annum (CAHF, 2015). Buire (2014) reported that the initial starting rent for an apartment in Nova Cidade de Kilamba was approximately US\$600 and the average purchasing price ranged from US\$120 000 to US\$200 000 (CAHF, 2015). Accepting the contention provided in the literature review of this paper that housing may be regarded as affordable when a household spends no more than 30% of income on housing (Andrews, 1998), the average household in Luanda can only afford a monthly instalment / rent of US\$310 – half of the starting rent for an apartment in the social housing development, Nova Cidade de Kilamba. With this argument it is important to note that an average household income of US\$12 408 per annum is not indicative of earnings in the low-income segment. This is underscored when considering that in Angola, 48.5% of national income is earned by the top 20% of the population (World Development Indicators, 2016). As such, average income per capita for people living in *musseques*, will be much lower, and will more closely reflect rural income levels than urban income levels. Alves and Benazeraf (2014:3) document the unaffordability of Nova Cidade de Kilamba’s apartments, indicating that these apartments are affordable to only about 30% of Luanda’s population.

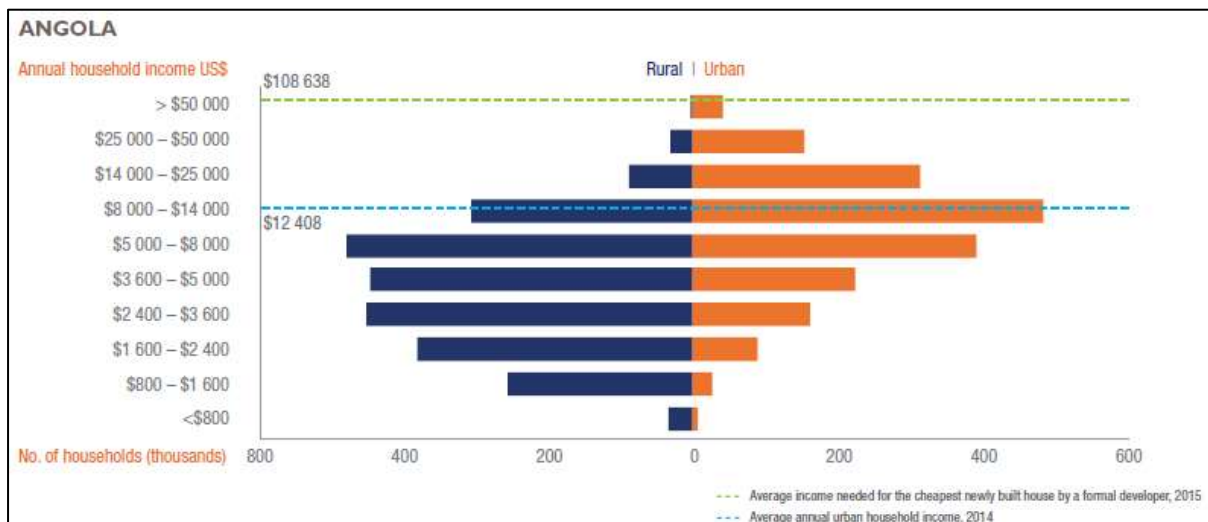


Figure 11: Angola Household Income, 2015  
Source: CAHF, 2015

Housing opportunities were initially priced beyond the reach of most low-income earners from the *musseques* for whom they were intended. In addition, properties had to be accessed in a banking system unable to provide mortgages (Buire, 2014). In Angola, only 39% of adults have a bank account and

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only 8% of the population enjoy access to credit, resulting in a very limited section of the population with access to long-term financing for housing (Mendy & Muzima 2015:9) and in 2009, only 7.6% of all housing loans, were bank loans (CAHF, 2015). Property prices and access to credit were not the only exclusionary factors to housing access in Nova Cidade de Kilamba, as apartments were furthermore only made available to civic servants supported by their employers (Buire, 2014). As a result of these factors, Nova Cidade de Kilamba was soon dubbed a ‘ghost city’ where the only people seen, were the Chinese who were employed there (Redvers, 2012) (see images below). The Mail & Guardian (Redvers, 2012) reported that “Kilamba is rapidly turning from a flagship reconstruction project into an expensive white elephant that is mocked on social networking sites and has become a must see for every visiting overseas journalist.” At the time of the article, November 2012, approximately 4 000 units had been sold, of which less than 600 units were paid for and even fewer occupied (Redvers, 2012).



Figure 12: Nova Cidade de Kilamba  
Source: Badkar, 2012



Figure 13: Nova Cidade de Kilamba  
Source: Badkar, 2012

Realising the implications of the pricing catastrophe and to reverse its ghost city status, the average asking price for property in Nova Cidade de Kilamba was reduced from US\$120 000 to US\$70 000 in 2013 and any formally employed person, not just public officers, could now benefit from the state-subsidised mortgage (Buire, 2014). Other initiatives were also incorporated. SONIP, the real estate arm of the Angola National Oil Company, was to provide subsidies for new housing developments based on a rent to buy scheme with interest rates of 3% (CAHF, 2015). Following such advances, approximately 70 000 people (2014) moved into Nova Cidade de Kilamba (Bingfei, 2014) and the project is now a budding city with new shops opening their doors, increased enrolments in schools, parks enjoyed during the day and residences and parking lots occupied by night (Buire, 2014).

Yet, the question remains: Who are these new buyers? According to Buire (2014), the ‘typical resident is male, between 25 and 35 years of age, (a) long-term inhabitant of Luanda, who has some kind of higher education, has possibly even studied abroad, and has now been employed in the formal sector for several years’. Take for example, Antonio Luvualu de Carvalho, a professor of international relations at Angola's University Lusitana, who now calls Nova Cidade de Kilamba home (Tao, 2015). Residents are now more likely from the middle class than the squalor of Luanda’s slums. This does not imply that the middle classes are not in need of affordable housing. For Luanda, cited as the most expensive city to live in for three years running (Mercer, 2015), provides very little affordability in general. Accommodation in Luanda can typically be rented for between US\$3 750 (1 bedroom) and US\$10 700 (3 bedroom) a month with average prices ranging from US\$3 750 per m<sup>2</sup> (outside city centre) to US\$8 500 per m<sup>2</sup> (inside city centre) (Numbeo, 2016), rendering housing only truly affordable for high income earners. Developments such as Nova Cidade de Kilamba and alike further offer an improved living environment compared to downtown Luanda where most middle income residents previously lived (Tao, 2015). It is thus no surprise that middle income earners turn to such social housing projects such as Nova Cidade de Kilamba and that they do not become the refuge of the urban

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poor (Alves and Benazeraf, 2014:4). But what then become of the Angolan state's aspirations to house the poor? And what of the poor themselves?

## 7 SYNTHESIS

Sustainable development has become a buzzword around the world. This paper's literature review engaged with the concept of sustainability and showed that the commonly held model of sustainable development does not hold, mostly because of its overemphasis on the economic sphere of development. An overemphasis on the economic side of development was echoed in the evaluation of the cases study of Luanda's Nova Cidade de Kilamba development. Here the so-called 'Angola Model' and its oil-backed loans and partnerships with Chinese construction companies resulted in expensive housing options that are far from opportune for the poor. These housing developments required far more than 30% of household income to be spent on housing, placing such homes beyond the limits of affordable housing prescribed in the literature review. Instead developments such as Nova Cidade de Kilamba have provided Luanda's middle classes with a home, even after price cuts were introduced to make these dwellings more affordable. The paper showed however that Angola's middle class are also in need of affordable housing opportunities. There are further question marks hanging over the contextual suitability of extreme high rise residential development on the scale seen in Nova Cidade de Kilamba, which seem to be more attune to China and its ghost cities. As a result of this, there are doubts on whether low-income migrants from rural areas or *musseques* would choose to live in these sorts of developments, even if the choice was made available to them in terms of affordability. It is fitting here to quote Benimana who asked: "What community do you want to create? What kind of society do you want to create? It's easy to come and put in a housing development, but it's another to think of housing as a social fabric that has to accommodate different levels of income and social backgrounds. It's different than building 50 houses that look alike," (Kuo, 2015). It is recommended that more integrated approaches to housing development are sought in the future that optimize foreign investment opportunities, but meet the needs of the poor, in Angola and the rest of Africa.

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## 9. BIBLIOGRAPHY

Anon. 2015. *Kangbashi Abandoned Tour*. Available at <http://baliroomsforrent.net/kangbashi-abandoned-city-tour/> (Accessed 14 April 2016)

Alves, A.C., 2012. China's economic statecraft and African mineral resources: changing modes of engagement. *Carta Internacional*, 7(2), pp.3-22.

Alves, A.C., 2012. Taming the dragon: China's oil interests in Angola'. *China and Angola: A Marriage of Convenience?* p.105.

Andrews, O.N. (1998), "Trends in the supply of affordable housing meeting America's housing needs (MAHN): a habitat 11 follow-up project", available at: [www.nlihc.org/doc/mahnsupply.pdf](http://www.nlihc.org/doc/mahnsupply.pdf) (accessed 2 February 2010).

Ariff, N.R.M. & Davies, H. 2011. Multi-owner low-cost housing management in Malaysia Effects of owner-occupant characteristics and occupancy rates

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Arku, G. & Harris, R. 2005. Housing as a Tool of Economic Development since 1929. Volume 29.4 December 2005 895–915

Badkar, M., 2012. Check out the Massive Chinese-Built Ghost Town in the Middle of Angola. Available at <http://www.businessinsider.com/chinese-built-ghost-town-kilamba-angola-2012-7?op=1> (Accessed: 15 April 2016)

Bagheri, A. and Hjorth, P., 2007. Planning for sustainable development: a paradigm shift towards a process-based approach. *Sustainable Development*, 15(2), pp.83-96.

Barkemeyer, R., Holt, D., Preuss, L. & Tsang, S. 2014. What Happened to the ‘Development’ in Sustainable Development? Business Guidelines Two Decades After Brundtland. *Sustainable Development*. *Sustainable Development* 22, 15–32 (2014)

Benazeraf, D. & Alves, A. 2014. ‘Oil for Housing’: Chinese-built New Towns in Angola. SAIIA Policy Briefing 88.

Bender, G.J., 1978. *Angola under the Portuguese: the myth and the reality* (No. 23). University of California Press.

Bingfei, W., 2014. Chinese-Built Angolan “Ghost Town” Wakes Up. *China in Africa: the real story*. Johns Hopkins School of Advanced International Studies. 2 April 2014. Available at <http://www.chinaafricarealstory.com/2014/04/chinese-built-angolan-ghost-town-wakes.html> (accessed 23 March 2016)

Blewitt, J. 2015. *Understanding Sustainable Development*. Second Edition. Routledge. New York.

Bo, H., 2014. Practice in Angola: Kilamba Kiaxi (K.K.) Satellite City Project. *Housing Finance, Jobs and Growth*.

Brundtland, G., Khalid, M., Agnelli, S., Al-Athel, S., Chidzero, B., Fadika, L., Hauff, V., Lang, I., Shijun, M., de Botero, M.M. and Singh, M., 1987. *Our Common Future* (‘Brundtland report’).

Brueckner, J.K & Lall, S.V. 2014. *Cities in Developing Countries: Fueled by Rural-Urban Migration, Lacking in Tenure Security, and Short of Affordable Housing*.

Brunner, A. 2012. *The Effects of Urban Sprawl on Daily Life*. Master of Transportation Program, South Carolina State University.

Buire, C., 2014. The dream and the ordinary: an ethnographic investigation of suburbanisation in Luanda. *African Studies*, 73(2), pp.290-312.

Burton, E and Mitchell L. 2006. *Inclusive Urban Design: Streets for Life*. Architectural: Oxford

Cain, A. 2014. African urban fantasies: past lessons and emerging realities. *Environment & Urbanization* Vol 26(1): 1–7. DOI: 10.1177/0956247814526544

Centre for Affordable Housing Finance in Africa. 2015. *Housing Finance in Africa: A Review of Some of Africa’s Housing Finance Markets*.

Chamberlain, M.E. 2014. *The Scramble for Africa*. 2nd Edition. Pearson. PP144

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Childers, D.L., Steward T.A. Pickett, S.T.A., Grove, J.M., Alison, L.O., Whitmer, A. 2014. Advancing urban sustainability theory and action: Challenges and Opportunities. *Landscape and Urban Planning* 125 (2014) 320–328
- Ciegis, R., Ramanauskiene, J. & Startiene, G. 2009. Theoretical Reasoning of the Use of Indicators and Indices for Sustainable Development Assessment. *Inzinerine Ekonomika-Engineering Economics* (3). 2009
- Claes, K., Vandenbussche, L., Versele, A., Klein, R., Verbist, B. 2012. Sustainable urban planning and construction in the South. KLIMOS working paper. P. 1-42.
- Croese, S., 2012. One million houses? Chinese engagement in Angola’s national reconstruction. *China and Angola: a marriage of convenience*, pp.124-138.
- Dempsey, N., Bramley, G., Power, S. and Brown, C., 2011. The social dimension of sustainable development: Defining urban social sustainability. *Sustainable development*, 19(5), pp.289-300.
- Dionísio, T.B., 2014. Census 2014 and State of the Union Address. *The Angolan Economy*. Eaglestone
- Giddings, B., Hopwood, B. and O'brien, G., 2002. Environment, economy and society: fitting them together into sustainable development. *Sustainable development*, 10(4), pp.187-196.
- Harvey, D (2008), “The right to the city”, *New Left Review*, September–October, pages 23–40
- Imran, S., Alam, K. & Beaumont, N. 2014. Reinterpreting the Definition of Sustainable Development for a More Ecocentric Reorientation. *Sustainable Development* 22, 134–144 (2014)
- Jenkins, P., Robson, P. and Cain, A., 2002. Luanda. *Cities*, 19(2), pp.139-150.
- Jones, B., 2012. Hamburgers cost £32 and a one-bed flats go for £7,500 a month... this boy lives in the most expensive city in the world (sadly for him, he's on the wrong side of the tracks) <http://www.dailymail.co.uk/news/article-2183616/Luanda-The-capital-Angola-expensive-city-world.html#ixzz45v84yp1y> (Accessed 15 April 2016)
- Kuo, L. 2015. Photos: African Cities are starting to look eerily like Chinese ones. *Quartz Africa* .
- McCormick, K., Anderberg, S., Coenen., L. & Neij, L. 2013. Advancing sustainable urban transformation. *Journal of Cleaner Production* 50 (2013) 1e11
- Mendy, F.R. & Muzima, J.D. 2015. African Economic Outlook: Angola. Available at [www.africneconomicoutlook.org](http://www.africneconomicoutlook.org) (accessed 12 March 2016)
- Mitlin, D. 2008. Finance for low-income housing and community development. *Environment & Urbanization Brief* – 16
- Njeru, P. 2016. History of Luanda. *The African Executive*. Available at <http://www.africanexecutive.com/modules/magazine/articles.php?article=836#> (Accessed 14 April 2016)
- Numbeo. 2016. Cost of Living in Angola. Available at [http://www.numbeo.com/cost-of-living/country\\_result.jsp?country=Angola](http://www.numbeo.com/cost-of-living/country_result.jsp?country=Angola).(Accessed 14 April 2016)

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Okpala, D., 2009. Regional Overview of the Status of urban planning and planning practice in Anglophone (Sub-Saharan) African countries. *Global Report on Human Settlements*. Available at <http://www.unhabitat.org/grhs>. (Accessed 13 February 2016)

Parnell, S., Pieterse, E. & Watson, V. 2009/ Chapter 5. Planning for cities in the global South: an African research agenda for sustainable human settlements, in H. Blanco, M. Alberti / *Progress in Planning* 72 (2009) 195–250

Quigley, J.M. and Raphael, S. (2004), “Is housing unaffordable? Why isn’t it more affordable?”, *Journal of Economic Perspectives*, Vol. 18 No. 1, pp. 191-214, available at: [http://urbanpolicy.berkeley.edu/pdf/QR\\_JEP04\\_ingenta.pdf](http://urbanpolicy.berkeley.edu/pdf/QR_JEP04_ingenta.pdf) (accessed 24 June 2007).

Redvers, L. 2012. Angola’s trophy City a “Ghost Town”. *Mail & Guardian*. 23 November 2012.

Simons, H. (2009). *Case study research in practice*. London: SAGE.

Struwig, F.W. & Stead, G.B. 2011. *Planning, designing and reporting research*. Eighth Edition 2011. Pearson Education South Africa. pp 1-279.

Thomas, G. 2011. A Typology for the Case Study in Social Science Following a Review of Definition, Discourse, and Structure. *Qualitative Inquiry* 17(6) pp 511-521 2011

Tipple, G. 2015. Housing policy-making in Africa: Ten common assumptions. *Habitat International* 49 (2015) 413-418

Un-Habitat. 2011. *Affordable Land and Housing in Africa* Volume 3. Pp 1-97

VIEGAS, S., 2012. Urbanization in Luanda: geopolitical framework. A socio-territorial analysis. In INTERNATIONAL PLANNING HISTORY SOCIETY (IPHS) Conference (Vol. 15).

Wa’el Alaghbari, W., Salim, A., Dola, K. & Ali, A.A.A. 2010. Developing affordable housing design for low income in Sana’a, Yemen

Watson, V. 2014. The Case for a Southern Perspective in Planning Theory. *International Journal of E-Planning Research*, 3(1), 23-37

Watson, V. 2002. The usefulness of normative Planning theories in the Context of sub-Saharan Africa. *Planning Theory*. Vol 1(1): 27–52

Watson, V. 2009. ‘The planned city sweeps the poor away...’: Urban planning and 21st century urbanization. *Progress in Planning* 72 (2009) 151–193

Watson, V. 2014. African urban fantasies: dreams or nightmares? *ENVIRONMENT & URBANIZATION* Vol 26 No 1 April 2014. Vol 26(1): 1–17. DOI:

Weingaertner, A. & Moberg, A. 2014. Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products. *Sustainable Development* 22, 122–133 (2014)

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

ZAFAR, A. The growing Relationship Between China and Sub-Saharan Africa: macroeconomic, Trade, Investment, and Aid Links. Available at [http://sites.davidson.edu/pol341/wp-content/uploads/2013/03/The-Growing-Relationship-Between-China-and-Sub-Saharan-Africa - Macroeconomic-Trade-Investment-and-Aid-Links.pdf](http://sites.davidson.edu/pol341/wp-content/uploads/2013/03/The-Growing-Relationship-Between-China-and-Sub-Saharan-Africa_-_Macroeconomic-Trade-Investment-and-Aid-Links.pdf) (Accessed 22 March 2016)

Zhang, X., 2005. Critical success factors for public–private partnerships in infrastructure development. *Journal of construction engineering and management*, 131(1), pp.3-14.

**Conference Proceedings:**

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# Is Planning Paying Attention to ‘the future’? Experiences in Eight South African Municipalities

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## Abstract

Planning is inherently about looking ahead. The profession holds the promise of bringing hope of a better future. Among planners it is sometimes taken for granted that planning is concerned with the future and that planners will confront the future and inevitably have a positive impact. However, a number of theorists have claimed that planning is neglecting the future and that planning tends to be reactive. This paper asks whether municipal planning in South Africa has an active engagement with the future. It draws on a literature review of mainstream planning literature in the English language. It further draws on the findings of and specifically the interviews conducted by a group of students at the University of Pretoria during 2014 and 2015. The interviews with key IDP role players in a number of municipalities dealt with issues such as timeframes of plans, plans’ focus on the future and the tools/techniques used to engage with the future. It was found that planning’s engagement with the future is in most cases merely a response to legislative requirements. The paper will highlight the reasons for planning’s ‘neglect’ of the future and will conclude with a reflection on the implications for municipal planning in South Africa.

## Keywords

Planning theory; futures; foresight; integrated development planning.

## 1. INTRODUCTION

Planning originated as a profession that brought hope of a better future. The profession has a history of visionaries selling the idea of a better world and a better life (think Frederick Law Olmsted, Daniel Burnham, Ebenezer Howard, Clarence Stein, Le Corbusier, Tony Garnier and Rexford Guy Tugwell). Such noble views on planning are further promoted by descriptions of planning as ‘the organisation of hope’ (Blum in Forester, 1989:20) and ascribing to planning the virtue of ‘making hope reasonable’ (Bryson and Crosby, 1996:463).

Although this somewhat idealistic perspective might leave the average planner uncomfortable, one of the defining traits of planning is its engagement with the future. Any discourse on planning inevitably concerns time (Mandelbaum, 1985:185). A future orientation is a tenet of planning and Connell (2009:86) cites a number of examples from planning theory literature of how planning definitions/descriptions often include a reference to the future: “the exercise of deliberate **forethought** by people” (Alexander, 1992), “persuasive storytelling about the **future**” (Throgmorton, 1992), “to prepare for **future** activity” (Myers & Kitsuse, 2000), “attaining a preferred **future** physical environment” (Hodge, 2003) and a “focus on the **future** and pathways of change over time” (ACSP, 1997). Planning’s orientation is further implied in often-used terms such as ‘goals’, ‘growth’,

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‘improvement’, ‘progress’, ‘development’, ‘vision’, ‘objective’, ‘prospect’, ‘potential’, etc. Planning’s central claim is that change will be better for its intervention (Gilg & Kelly, 2000:269).

In this paper, planning’s engagement with the future is explored within the context of South African municipalities. The paper first discusses planning’s complex relationship with the future, drawing on a literature review of mainstream planning literature in English (mainly Australian, European and North American), highlighting in particular the reasons why planners struggle to engage the future consciously. As the focus is on exploring similar issues within South Africa, the next section considers the South African planning context, specifically highlighting the legal requirements to engage with the future. The methodology to explore individuals’ experiences within South African municipal planning processes is then described. The next section presents and discusses the findings of the interviews conducted by a group of students at the University of Pretoria during 2014 and 2015. The paper concludes with reflections on the implications of the findings.

## **2. PLANNING AND THE FUTURE**

Among planners it is sometimes taken for granted that planning is concerned with the future and that planners will confront the future and inevitably have a positive impact in space (Dalton, 2001:401). This is not always the case. A number of theorists have claimed that planning is merely reacting to current problems and in some cases it is not even fixing these problems, but simply “abandoning the past” (Tewdwr-Jones, 1999:26). Planning often denies the unexpected by accepting that the future will be an extrapolation on existing trends (Albrechts in Friedman, 2004:63). The planning profession is generally concerned with two universal dimensions - space and time. Planners’ strong focus on spatial analysis has often led to a neglect of the time aspect of planning (Myers & Kitsuse, 2000:222). This ‘loss’ of the future had two significant implications.

By neglecting or ignoring the future, planning first lost its ability to inspire and enchant planners, communities and politicians. The practice of short term incremental decision-making dominates and takes away energy and focus from the shared vision all role players are working towards. Planning should entail more than work packages, tick box exercises or hypotheses testing, it requires “vision and ideals, creativity as well as analysis, and judgment as well as technique” (Myers & Kitsuse, 2000:222). Planning could potentially tell stories about our settlements as places for belonging, sites for development, platforms for growth and arenas for political redistribution (Robinson, 2008:86), inspiring all relevant role players to get involved with the co-production of these new spaces.

A further implication of planning’s neglect of the future is the inability of planners to provide a reasonable and informed evaluation of possible futures. While planning is not about extending the present into the future (Connell, 2009:90), examining different trends across sectors and analysing associated causal relationships is necessary to give substance to and validate plans (Tewdwr-Jones & Goddard, 2014:775; Friedman, 2004:54). Planning proposals and accompanying options often are not substantiated through basic forecasting and futures analysis exercises, resulting in plans that cannot be implemented and expectations that cannot be met. For instance densification might be promoted without considering the implications for infrastructure retrofitting and maintenance over the next few decades or housing developments are planned without considering urban-rural migration patterns. Climate change mitigation and adaptation is another reality that has to be addressed and without investigating what might happen in the future, our settlements will not be able to respond appropriately and in time. Planners need to understand their own perceptions about alternative futures in which today’s decisions might play out to get a picture (or pictures) of what could happen and to think about what this would mean, whether it should be welcomed or how it might be avoided (Tewdwr-Jones & Goddard, 2014:781).

Over the past two to three decades there have been repeated calls for planning to be more deliberate and explicit in its engagement with the future (Freestone, 2012; Myers & Kitsuse, 2000; Krawczyk & Ratcliffe, 2005; Cole, 2001; Connell, 2009; Ratcliffe & Krawczyk 2011; Friedman, 2004; Tewdwr-Jones & Goddard, 2014).

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## 2.1 Why do planners neglect the future?

“Although not all practices of professional planners are aimed at the future, the function of planning always is” (Connell, 2009:97). Why then is it necessary to remind planners that they should not lose sight of the future? Freestone (2012:13) identifies six reasons why planners neglect the future:

### 2.1.1 The urgency of the present

Planners do not spend their days only setting goals and objectives and formulating planning strategies. Research has shown that, while critical, plan-making is not the dominant function of most practising planners (Dalton, 2001:400). Planners have a multitude of other (often mundane) tasks to attend to and quite often these tasks focus on the immediate problems. There is relentless pressure to deal with day-to-day confrontations and resources available for long-range work are limited. Many planners spend a significant portion of their time negotiating the complexity of contemporary governance frameworks (Steele in Freestone, 2012:13). Municipal planners are often trapped assessing land use management applications and do not get opportunity to partake in strategic planning and policy-making exercises. Planning has become procedural and planners often apply a plan-as-you-go approach (Morphet, 1999:18).

### 2.1.2 Bound by short electoral cycles

Quite often plans are linked to three to five year electoral cycles, forcing planners to focus on ‘quick wins’. Sandercock (in Freestone, 2012:13) explains: “For politicians involved in urban governance, the greatest risk of all is to think beyond the short-term – yet that is precisely what’s necessary when the sustainability of cities is at stake”. The local government context is described by a municipal planner: “As a planner, my client is my councillors. I have a brand new market every three years” (Taylor & Hurley, 2015:10). These planners are forced to place emphasis on short-range actions that are possible within given political and resource constraints (Friedman, 2004:65).

### 2.1.3 Uncomfortable with uncertainty

Planning’s focus on the future is further complicated by uncertainty. According to Abbott (2005:237) uncertainty in planning arises from (1) the environment (social, economic and physical) and (2) the process of planning intervention itself. He quotes Peter Marris: “Planning means, essentially, controlling uncertainty – either by taking action now to secure the future, or by preparing actions to be taken in case an event occurs”. An increasingly complex society implies an increasingly unknowable future (Connell, 2009:95). Add to the equation the possibility of ‘wild card’ or ‘black swan’ events which imply high impact, planners lose their confidence in knowing the future. With planning seeking to minimise, if not avoid uncertainty, short-term approaches become attractive and the unexpected is often ignored (Walton, 2000:35).

### 2.1.4 Lack of technical and theoretical tools

The technical and theoretical tools at the disposal of planners are not always sufficient to provide the critical answers about the future. Current models cannot always provide accurate predictions over the long term, particularly with regard to climate change (Batty, 2010:959). Planners’ methods for addressing the time dimension of planning are far less developed than those for space as the dominance of spatial mapping and evaluation tools overshadowed the analysis of temporal relationships (Myers, 2001:365).

Freestone (2012:14) argues that contemporary planning theory has failed practicing planners by not providing them with appropriate knowledge on planning with the future in mind. An uncomfortable allegation is that the collaborative planning paradigm contributed to neutering the profession by emphasising the micro-politics of negotiation and conflict resolution. Innes’ argument that the important part of planning is not deciding on a course of action for the next twenty years, but about “being adaptive and creative as the future unfolds” (1998:viii) is symptomatic of what Huxley (2000:372) argues could result in paralysis where consensus, however provisional, is a desirable end-

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state in itself. Postmodern time horizons are shortening to the point “where the present is all there is” (Harvey in Freestone, 2012:15).

#### 2.1.5 The legacy of planning

A further complicating factor for planners’ engagement with the future is the legacy of planning that is the value-laden, quasi-religious search for a concrete utopia that resulted in (often public) failure accompanied by some disillusionment (Meyer & Oranje, 2005:30). As a consequence of these bad outcomes, planning has steadily retracted its visionary dimension. Fainstein (in Freestone, 2012:15) lists some of the many manifestations of poor planning: social displacement, break-up of communities, inefficiency, corruption, waste and just plain failures which seemed like good ideas at the time. Planners must now reconstruct the future for a reluctant public (Connell, 2009:96).

#### 2.1.6 Preference for the everyday

Freestone (2012:15) concludes his list of constraints to foresight with the common human preference for coping first and foremost with the everyday. Human concerns are typically concentrated temporally on now and next week rather than across lifetimes and generations and spatially on home and neighbourhood rather than region and globe. Dealing with the future can vividly expose the limitations of human understanding, resulting in understandable discomfort.

### 3. PLANNING SOUTH AFRICAN FUTURES

While European and British town planning has been influenced by the idealism of the modernist movement in architecture, planning in South Africa has a different history. According to Oranje (2014:4) town planning in South Africa was “more about regulation of transformation from farmland to urban land than about preparation of grand modernist schemes for the salvation” of urban dwellers. Town planning practice was dictated by the need for control and regulation and not by the idealism of creating settlements where people can thrive.

1994 saw the publication of South Africa’s Reconstruction and Development Plan (RDP), setting the scene for undoing the impacts of apartheid on South African settlements and taking a decidedly future-orientation. “Simply removing segregationist land use regulations was insufficient to create integrated and sustainable living, working and recreational areas” (Hendler, 2015:8) and planning law reform had to play a key role in achieving spatial transformation. The Integrated Development Plan (IDP) became the key planning instrument in post-apartheid South Africa (Harrison, 2001:175) and every municipality was required in terms of the Municipal Systems Act (No 32 of 2000) (MSA) to produce an IDP (Berrisford, 2015:5). The recently enacted Spatial Planning and Land Use Management Act (No 16 of 2013) (SPLUMA) contributed to clarifying specifically the content of the Spatial Development Framework (SDF), which forms part of the IDP. Both the MSA and the SPLUMA oblige municipalities to make declarations about the future, by making the formulation of vision statements a statutory requirement.

Section 26 of the MSA lists the core components of an Integrated Development Plan (IDP) including “(a) *The municipal council’s vision for the long term development of the municipality with special emphasis on the municipality’s most critical development and internal transformation needs*”.

Section 12(1) of SPLUMA determines that “*the national and provincial spheres of government and each municipality must prepare spatial development frameworks that- (b) are informed by a long-term spatial development vision statement and plan*” and section 21 says that “*a municipal spatial development framework must – (c) include a longer term spatial development vision statement for the municipal area which indicate desired spatial growth and development patterns for the next 10 to 20 years*”. Section 26 (5) further instructs that “*a municipality may, after public consultation, amend its land use scheme if the amendment is – (c) in order to further the vision and development goals of the municipality.*”

Recent policy also emphasises the importance of the future. The National Development Plan 2030 (NDP) contains a lengthy vision statement and it calls for “a national discussion on the future of towns,

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cities and rural settlements” (National Planning Commission, 2013:276). According to the NDP “(u)nleashing citizens’ popular imagination, creative thinking and energies are needed to tackle the challenges and opportunities that settlements face” (National Planning Commission, 2013:283).

#### 4. METHODOLOGY

During 2014 and 2015 eight students at the University of Pretoria’s Department of Town and Regional Planning completed research towards their Bachelor and Master degrees in Town and Regional Planning. Their respective studies were all aimed at answering the following question: Is planning engaging with the future, and if so, how? Among them they interviewed 101 people who were involved in one way or another with the formulation of an IDP over the previous five years. Eight different municipalities within seven provinces of South Africa formed part of the study. The eight municipalities comprised five local municipalities, one district municipality and two metropolitan municipalities. The year of study, type of municipality, province and number of interviewees are listed in the table below:

Table 1: Summary of interviews

Year of study	Type of municipality	Province	Number of respondents
2014	Category A: Metropolitan	Gauteng	11
2014	Category C: District	KwaZulu-Natal	15
2014	Category A: Metropolitan	Western Cape	11
2015	Category B: Local	Eastern Cape	5
2015	Category B: Local	Mpumalanga	15
2015	Category B: Local	North West	8
2015	Category B: Local	North West	21
2015	Category B: Local	Northern Cape	15

Interviews were semi-structured and open-ended and key roleplayers included municipal council officials (planners, engineers, municipal managers, mayors, IDP managers, Local Economic Development (LED) managers and housing officials), provincial department officials, national department officials, private consultants, planning academics, councillors and a variety of community members.

The interview questions focused on (1) timeframes of plans, (2) plans’ focus on the future as opposed to the present and the past respectively and (3) tools/techniques used to engage with the future.

#### 5. RESEARCH FINDINGS AND DISCUSSION

The responses of interviewees provided a sample of opinion and attitudes. Using the guiding themes as set out in the literature review, a cautious exploration was done of planners’ engagement with the future within the South African municipal context.

##### 5.1 Timeframes of plans

The first two questions of the interviews dealt with the timeframes attached to municipal plans. According to section 25 of the MSA an IDP that is adopted by a municipal council remain in force until an IDP is adopted by the next elected council, which implies that the timeframe for implementation is a period of five years. The SPLUMA determines that the SDF should include a longer term spatial development vision statement for the municipal area which indicates desired spatial growth and development patterns for the next 10 to 20 years.

###### 5.1.1 The five-year timeframe of IDPs

The respondents were asked whether the five year period for implementing an IDP and its associated sector plans is a realistic timeframe for achieving the desired long term vision. The answer to the question was overwhelmingly negative, with most respondents explaining that the five year timeframe is not sufficient for implementation.

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“From experience I can tell you that with municipal plans generally three years are for planning, two years for proposals and funding and another two to three years are for implementation” (Mothoa, 2015:54). As already argued by Morphet (1999:18) the result of this pressure for implementation is that planning has become low-key, short-term and project-based.

Another reason why planners are not engaging sufficiently with the future is that it takes substantial effort to negotiate the complex governance system. The funding of projects in particular was cited as a challenge within the five-year period: “Five years is purely not feasible, remember implementation of the IDP comes with financial implications, our municipality in particular doesn’t generate enough revenue if any at all and as such we are reliant on grants. What happen if we can’t get grants for a particular year? The projects should be rolled over to the following year and as such, five years are not adequate” (Mlambu, 2015:36).

The achievement of the IDP and SDF visions over a five-year timeframe was also viewed by some as impossible as spatial restructuring does not happen overnight. “For instance, the long term vision of the municipality currently speaks about achieving a developmental state and a prosperous life for all. I personally don’t think the two are achievable in five years” (Mlambu, 2015). The respondent’s observation is supported by Meng (2009:49) when he states that planning’s results take years to manifest in space. Another issue that has been highlighted by respondents is the “fast pace of actual events and the slow process of the formulation and adoption of a plan” (Balducci in Friedman et al 2004:60).

Some respondents were pragmatic and acknowledged that even though short electoral cycles constrain planners in foresight, a five-year timeframe will not be changed easily as “politics and administration can’t really be separated” (Mlambu, 2015).

A benefit of a shorter timeframe is that it might speed up delivery. “Communities cannot be expected to wait for a period longer than five years for service delivery” (Bango, 2015:36). “If the period is elongated it would delay service delivery, there would be no sense of urgency” (Mlambu, 2015:36).

#### 5.1.2 A suitable timeframe for plan implementation

The respondents were then asked about a suitable timeframe for the implementation of a municipal plan.

Proposals made by respondents ranged from 7 to 10 to 25 to 30 to 50 years as reasonable for achieving the vision. Most of the respondents acknowledged that a combination of different timeframes for different plans could be appropriate. “It’s got to be short term action towards the long term plan” (Fullard, 2014). Myers & Kitsuse (in Freestone 2012:28) support these long and short-term rhythms, which they labelled ‘multiple temporal processes’. Some of the municipalities have long term strategies that are implemented in tandem with the five-year IDP plan. The IDP can then serve as a service delivery budget implementation plan. “I think the lower the order plan the shorter the timeframe should be. It also has to be strategic - if you’re colouring every property, it can only last six months and it’s outdated” (Galego, 2014).

## 5.2 Planning’s relationship with the past, present and future

The next two questions dealt with how planning relates (1) the present with the future and (2) the past with the future.

### 5.2.1 Planning present versus planning future

Respondents were first asked whether IDPs address the ‘now’ or the long term future of the city or town. The majority responded that IDPs and sector plans are focused on the present. A harsh reality is that the alignment with the electoral cycle often results in political impetus driving the planning process. “Our council unfortunately addresses the now, because they use that for the elections” (Sekane, 2015:28). Another respondent adds: “I don’t think decision-makers/politicians are interested in the future; they are interested in immediate political gains. Why should they be engaging with the future if they are not going to be in power” (Fullard, 2014)?

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The tight timeframes for implementation of projects result in a pre-occupation with the present. One participant described it as a process of “fire-fighting” as the municipality creates short-term fixes and solutions to put out fires that are arising on a daily basis (Robertson, 2014:32). “The IDP as it is currently is mostly about projects, not necessarily about the future. The only time we relate to the future is in the vision statement and the objectives; from there we never relate the projects back the vision... the IDP as it is, makes no mention really about future state of development other than its SDF aspect” (Mlambo, 2015).

A few respondents argued that it is difficult to separate the present from the future in planning actions: “It is not possible to address now without addressing the future. Today always speaks to tomorrow. In order to build a better future, we must start from today” (Mlambo, 2015:37).

However, when plans do focus on the future, it is not always done in a responsible and informed manner. A planning consultant highlighted the following: “Planners draw corridors and nodes, but they don’t always understand the implications of it. We calculated the amount of funding the municipality would’ve had to put in to achieve the SDF and just infrastructure will take 300 years of their budget. So, it’s unachievable. The solutions were just words” (Galego, 2014).

The question also prompted one respondent to share how the particular high premium placed on collaborative planning constrains planners’ attempts to engage with the future: “The negative experience I have had during the formulation of municipal plans would just be the mere fact that the people who are responsible for IDP are more like secretaries, we go to communities and all they do they scribe down all that which is being put forth by communities without necessarily advising the feasibility and how it will affect the whole community in the long run” (Mlambo, 2015).

### 5.2.2 Planning past versus planning future

Respondents were then asked whether planning interventions within the municipality are generally informed by ‘fixing the past’ or are they driven by creating new possibilities in the future. The majority responded that planning interventions are focused on ‘fixing the past’.

The reality within South African municipalities is that projects are generally focused on addressing backlogs and the provision of basic services such as water, electricity, housing and sanitation. A community development worker that was interviewed related that over the past 14 years all their IDPs were dominated by projects that request better access to basic services (Bango, 2015:37). Little resources are left for strategic interventions that might facilitate desirable futures.

Some respondents argued that it is difficult to separate the past from the future in planning actions. One cannot fix the past without looking to the future and one cannot look into the future without fixing the past (Soldati, 2015:30).

## 5.3 Tools/techniques used to engage with the future

The final questions dealt with the use and appropriateness of techniques to engage with the future.

### 5.3.1 Future-shaping and future-seeking planning techniques

Respondents were provided with a list of future-oriented techniques (visioning, forecasting/projections, backcasting, trend analysis, scenario development, Delphi surveys) and definitions and asked whether any of these were used in the formulation of municipal plans.

All of the respondents were familiar with the tool of visioning and confirmed that it was used in the formulation of their municipal plans. Some respondents replied that forecasting/projections and scenario development were also used, but even though definitions were provided, it became clear that not all of the participants understood the somewhat foreign concepts.

### 5.3.2 Visioning

As visioning is prescribed by legislation, respondents were asked whether visioning made a positive contribution to the municipal plans and planning process.

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Most of the respondents expressed negative sentiments about the vision statement and the visioning process. One of the respondents said: “The vision does not really speak to the plan. It is just there” (Mlambo, 2015:42). Another tried to explain this sentiment: “The IDPs are already in their third generation and most participants were not around for the first generation IDPs where some visions that still exist today were developed. Some felt the vision had not changed as “councils have been choosing to adopt the existing vision and just extending the timeframe the vision was expected to be realised in” (Robertson, 2014: 40). Visioning has failed in its purpose to inspire and unify different roleplayers in their efforts to realise the envisaged settlement. It was found that planning’s engagement with the future is in most cases merely a response to the legislative requirement to formulate a vision statement. “Slogans alone do not make contributions to the future” (Soldati, 2015:37).

A planning consultant shared the following anecdote:

“I am not a fan of visioning. We do it because we have to. We had this experience in the Waterberg, we did the analysis, went back to the area, we had a very difficult client. The municipality was very difficult. So I said, “now can we discuss the vision? We have to go through the process”, and they said they were very insulted because the consultant should’ve set up the vision. So I pulled out my laptop, quickly typed a sentence and said well actually yes I did but I thought we should first discuss it. And that was the vision that ended up being selected, because the vision says nothing. Show me a vision in a municipality that really means something” (Galego, 2014).

There were some positive comments on the visioning process as well. It was also argued that the vision assists with the review of plans and provides essential guidance: “It is fundamental because without vision, it means we will be operating in a dark house and with high risk of failing to execute our own projects. Every project here is done to make this municipality competitive and a leading municipality” (Sekane, 2015:31).

### 5.3.3 Other futures techniques

In conclusion respondents were asked to select from a list additional techniques that can or should be considered when preparing plans.

Respondents in general were keen to use forecasting and/or projections as well as trend analysis in planning. One respondent cited an example of where a forecasting exercise illustrated the magnitude of urban growth that can be expected over the next 20 years (Galego, 2014). “As a municipality we have been preparing IDPs for some time and very little change can be notable, maybe we need to change our ways of doing thing, analyse trends to tell us the needs” (Mlambo, 2015).

There were mixed views on the use of scenarios. One respondent argued that scenario development is over-rated (Galego, 2014) and another regarded it as a marketing trick and not very useful (Fullard, 2014). Although scenarios were used by some, the implementation did not have the desired effect of opening up new ways of perceiving the future and challenging planners to think what this would mean, whether it should be welcomed or how it might be avoided (Tewdwr-Jones & Goddard 2014:781). “There is seldom the luxury of planning for different scenarios. You often take the likely scenario and you do planning for that” (Galego, 2014).

One respondent questioned the use of any of the futures techniques as planners are once again faced with Freestone’s ‘urgency of the present’: “Those techniques, by and large, are very academic. We are forced by local government to be more pragmatic. So you really try to keep it simple, partly for the reason you are forced to produce these plans over a short period of time. There is no real time for fancy tricks. Secondly, and it also relates back to public participation, if you go with that terminology to public participation, you will go nowhere. Frankly they don’t care about those techniques” (Galego, 2014).

## 6. CONCLUDING REMARKS

Planners at municipal level fight an uphill battle to meet the minimum requirements as determined by legislation. Engaging deliberately and sensibly with the future is mostly viewed as a luxury. If planning does not fix this state of affairs, the combined challenges of climate change, demographic pressures,

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fiscal stress, technological and managerial advances will overpower us and diminish our chances to ever transform our fragmented settlements and provide South Africans with decent livelihoods.

Planners' deliberate engagement with the future is not only a necessity for the profession, it can also be regarded as a beckoning prospect. Our endeavours to come up with appropriate solutions can be greatly enhanced through active analytical and intuitive engagement with the future.

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## 8. REFERENCES

- Abbott, J. 2005. Understanding and Managing the Unknown: the nature of uncertainty in Planning, *Journal of Planning Education and Research*, 24, 237-251.
- Bango, Z. 2015. *The future-orientation of municipal planning in South Africa*, Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.
- Batty, M. 2010. The unpredictability of the near and far future, *Environment and Planning B: Planning and Design*, 37(6), 958-60.
- Berrisford, S. 2015. The Evolution of Urban Planning Law and Policy, 1994-2014: Implications for South African cities, in *The Urban Land Paper Series*, 1: 1-12. South African Cities Network (SACN).
- Bryson, J.M. and Crosby, B.C. 1996. Planning and the Design and Use of Forums, Arenas and Courts, in *Explorations in Planning Theory*, edited by S.J. Mandelbaum et al. New Brunswick, New Jersey: Centre for Urban Policy Research, Rutgers, the State University of New Jersey.
- Cole, S. 2001. Dare to dream: Bringing futures into planning, *Journal of the American Planning Association*, 67(4): 372-83.
- Connell, D. 2009. Planning and its Orientation to the future, *International Planning Studies*, 14(1): 85-98.
- Dalton, L. 2001. Thinking about tomorrow: Bringing the future to the forefront of planning, *Journal of the American Planning Association*. 67(4): 397-401.
- Forester, J. 1989. *Planning in the Face of Power*, Berkeley: University of California Press.
- Freestone, R. 2012. Futures Thinking in Planning and Education Research, *Journal for Education in the Built Environment*, 7(1): 8-38.
- Friedman, J. 2004. Strategic Spatial Planning and Long Range, *Planning Theory & Practice*, 5(1): 49-67.
- Fullard, J. 2014. *The future orientation of municipal planning in Cape Town, an exploratory study*. Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.
- Galego, B. 2014. *The pyramid of planning: Ekurhuleni Municipality engaging with the future*. Research report submitted in partial fulfilment of the requirements for the degree Bachelor of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Gilg, A.W. and Kelly, M.P. 2000. Managing change in the new millennium, *Town Planning Review*, 71(3): 269-88.
- Harrison, P. 2001. The genealogy of South Africa's Integrated Development Plan, *Third World Planning Review*, 23(2): 175-93.
- Hendler, P. 2015. The History of Spatial Planning and Land Use in South Africa, *The Urban Land Paper Series*, 1: 1-12. South African Cities Network (SACN).
- Huxley, M. 2000. The Limits to Communicative Planning, *Journal of Planning Education and Research*, 19: 369-77.
- Innes, J. 1998. Viewpoint: challenge and creativity in postmodern planning, *Town Planning Review*, 69(2): v-ix.
- Krawczyk, E. and Ratcliffe, J. 2005. Predict and Provide vs Explore, Envision and Plan: transforming the urban planning approach towards the future, *Futures Academy*, Dublin Institute of Technology.
- Mandelbaum, S.J. 1985. Historians and planners: the construction of pasts and futures, *Journal of the American Planning Association*, 51:185-188.
- Meng, L. L. 2009. Megatrends driving planning education: How do we future-proof planners?, *Australian Planner*, 46(1): 48-50.
- Meyer, E. 2005. *Possibilities, Probabilities and Prospects: Finding the Future in Planning*. M TRP-dissertation, University of Pretoria, Pretoria.
- Meyer, E. and Oranje, M. 2005. Planning and[/in] the future: the place of utopian thinking and the utopian thinking about place, *Stads- en Streekbeplanning/Town and Regional Planning/Meralo ya Ditoropo le Mabatowa*, 49: 26-33.
- Mlambu, Q. 2015. *Finding the future in planning: Case Study of Bushbuckridge Local Municipality*. Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.
- Morphet, J. 1999. Modernising planning?, *Planning*, 27 August: 18.
- Mothoa, M. 2015. *An investigation into the future orientation of municipal planning in the Greater Taung Local Municipality*. Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.
- Myers, D. 2001. Symposium: Putting the Future in Planning, *Journal of the American Planning Association*, 67(4): 365.
- Myers, D. and Kitsuse, A. 2000. Constructing the Future in Planning: A survey of theories and tools, *Journal of Planning Education and Research*, 19: 221-31.
- Oranje, M. 2014. Back to where it all began...? Reflections on injecting the (spiritual) ethos of the Early Town Planning Movement into Planning, Planners and Plans in post-1994 South Africa, *HTS Teologiese Studies/Theological Studies*, 70 (3), Art #2781, 10 pages.  
<http://dx.doi.org/10.4102/hts.v70i3.2781>.
- Ratcliffe, J. and Krawczyk, E. 2011. Imagineering city futures: The use of prospective through scenarios in urban planning, *Futures*, 43(7): 642-653.
- Robertson, B. 2014. *The future orientation of plans in the mGungundlovu District Municipality*. Research report submitted in partial fulfilment of the requirements for the degree Bachelor

#### **Conference Proceedings:**

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of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.

Robinson, J. 2008. Developing ordinary cities: city visioning processes in Durban and Johannesburg, *Development and Planning A*, 40: 74-87.

Robinson, P. 2014. 2<sup>nd</sup> ed. *Future, Change and Choices. Strategic planning methods for built environment professionals*. Durban, South Africa: Osborne Porter Literary Services.

Sekane, N.P. 2015. *Is planning still actively pursuing a better future? The case of Tlokwe City Council Local Municipality in North West Province, South Africa*. Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.

Soldati, N.N. 2015. *The future-orientation of municipal planning in South Africa. A case of King Sabata Dalindyebo Local Municipality*. Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Town and Regional Planning in the Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.

Taylor, E.J. and Hurley, J. 2015. "Not a Lot of People Read the Stuff": Australian Urban Research in Planning Practice, *Urban Policy and Research*, Published online 17 Feb 2015.

Tewdwr Jones, M. 1999. Beyond a joke: facing up to some home truths about planning, *Planning*, 30 July: 26.

Tewdwr-Jones, M. and Goddard, J. 2014. A future for cities? Building new methodologies and systems for urban foresight, *Town Planning Review*, 85(6): 773-794.

Walton, D. 2000. A massive and enduring market for planning, *Planning*, 8 December: 35.

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# Understanding the Factors behind the Emergence of New Informal Settlements Post an In Situ Upgrading: A Case Study of the Phelindaba Informal Settlement in Virginia, Matjhabeng Local Municipality, Free State

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## Abstract

Although the South African housing policy and legislation have undergone a number of transformations in order to provide adequate housing, the number of informal settlements in South Africa has increased from just over 300 in 1994 to more than 2 600 by the end of 2012. This study explored the underlying factors that influenced the emergence of new informal settlements, particularly after an in situ upgrading: a case of the Phelindaba informal settlement in Virginia, Free State. An exploratory qualitative case study research methodology was employed in this study. The study revealed that mine downscaling played a significant role in the increase of informal settlements in the Goldfields in general. Specific to the Phelindaba informal settlement, it was found that poor land use management facilitated by the local authorities was a major underlying factor, followed by the political nuances of ward councillors who instructed local people to invade land. In addition, the expansion of the informal settlements attracted more dwellers which contributed to the further growth of the informal settlement. The study concluded that there is a sense of urgency with regard to understanding the factors that lead to the emergence of new informal settlements, as this will improve informal settlement upgrading processes as well as the related policies.

## Keywords

Informal Settlements; Land Use Management; Mine Downscaling; Poor Governance.

## 1. INTRODUCTION

Despite the changes in the South African housing policy over the years, with the aim of fast-tracking the housing backlog and eradicating informal settlements, the number of informal settlements had increased from 300 in 1994 to more than 2 600 in 2012 (Bennet and Fieuw, 2012). This increase is against the backdrop of a global emphasis placed on the eradication of informal settlements and delivery of formal houses (Huchzermeyer, 2009:60), rather than the enhancement of the cohesion between informality and formality. Huchzermeyer (2011:24) argues that the government is more inclined to depend on convenient explanations that depict informal settlements as a ‘problem’ that need to be ‘controlled’. In addition, the moment informal settlements are perceived as a problem, it becomes easy to deprive the poor of their rights.

Consequently, the South African government has been, and still is, confronted with challenges of providing sufficient housing, as well as addressing the devastating living conditions of the previously disadvantaged groups, more specifically black people (Bolnick and Bradlow, 2011:35; Graham, 2006:23). Hence, the inadequacy of South African housing policies in curbing or decreasing the number of informal settlements is their inability to address the underlying processes that deepen domestic disparities of informal settlements (Huchzermeyer, 2011:24; Msindo et al., 2013:171; Otiso, 2002:265). Such is the case for Phelindaba as a small informal settlement that emerged north-west of Mahaleng, after an in situ upgrading of Mahaleng (Figure 1). The Phelindaba informal settlement is situated in

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Meloding, which is the township of Virginia in the Free State. Virginia is a small mining town in the Matjhabeng Local Municipality. As such, this study explores the underlying factors that played a role in the emergence of the Phelindaba informal settlement, after the in situ upgrading of the Mahaleng settlement.

The study area is located at the entrance of the Meloding Township when coming from the town of Virginia, which is north-east of the study area. The Phelindaba informal settlement spreads over three different properties, namely: Erf 12374, Meloding Extension 4; Erf 6632, Meloding Extension 10 (initially earmarked for a park); and the Remaining Extent of Farm 138, Stilte. All the properties are owned by the Matjhabeng Local Municipality and have Eskom powerline servitudes registered to them, running from north-east to south-west of the study area.

This paper is divided into seven sections, starting with an introduction and background, followed by a literature review of the problems of the area in which this study is situated. The objectives and research questions of the study are followed by an outline of the methodological approach. The following section presents the research findings and a discussion on findings. Specific attention is placed on three factors: (1) the socio-economic profile of the Phelindaba informal settlement; (2) the underlying factors; and (3) the aspirations of the Phelindaba residents with regard to their stay in this informal settlement. The final sections present the research contribution, the research limitations; and a discussion and concluding remarks.



Figure 1: Locality of Phelindaba Informal Settlement (adopted from Google Maps, 2015)

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## 2. LITERATURE REVIEW

The world population has continued to be predominantly urban with 2007 marked for the first time in history as the year that the world urban population exceeded the rural population (Kötter, 2004:1). Hence, the population explosions experienced in urban areas around the world has presented a range of challenges for the urban inhabitants such as inadequate housing, access to water, and unemployment, as well as the governing structures that are supposed to put strategies in place to address these challenges.

This section of the paper depicts a theoretical and conceptual framework in which this study is situated. The section provides an overview of the factors that play a significant role in the emergence of informal settlements, the role of government in informal settlements, South African approaches to informal settlements, as well as the level of satisfaction of the people living in informal settlements.

### 2.1 Urbanisation

The developed world<sup>21</sup> has long experienced urbanisation and there have been trends of dis-urbanisation<sup>22</sup> and sub-urbanisation<sup>23</sup> because of high levels of motorisation, coupled with the development of traffic and communication infrastructure (Kötter, 2004:1). However, in the developing world, urbanisation is much more prevalent today – more specifically in African and Asian cities (UNDESA, 2014:1). For instance, within the South African context, cities continue to experience an annual inflow of large numbers of new occupants in pursuit of job opportunities and improved living conditions (Richards et al., 2007:375; Seekings, 2010:6; Turok, 2012:12).

The term ‘urbanisation’, as defined by Donnelly and Jiwanji (2010:16), refers partly to the migration of the rural population to urban areas, with the second part of urbanisation being the natural increase in the urban population by virtue of child birth. Moreover, there are difficulties in determining the levels at which the urban population increase. It is influenced by migration and high fertility rates due to limitations of information provided by census data. Slightly different, urbanisation is also referred to as solely the broad-based migration of the population from rural to urban areas (McGranahan and Satterthwaite, 2014:6).

Turok and Borel-Saladin (2014:675) have argued that urbanisation is an essential but disputed process due to its extensive social and economic implications. They further state that urbanisation has been postulated to coincide with the increase in employment, as well as the provision of urban infrastructure, leading to improved access to services and decreased backlogs.

For the purposes of this study, the definition that has been adopted is in line with Peng et al. (2000:2) who stated that the process of urbanisation is largely influenced by economic development, as well as industrialisation, as rapid urban migration is a factor that plays a vital role in small mining towns.

#### 2.1.1 South African perspectives on urbanisation and informality

Despite the fact that informality is loosely understood, the rigid difference between formal and informal sectors introduces the likelihood that informal markets could be complementary, rather than incompatible to formal markets (Groenewald et al., 2013:93). With a constant increase in informality in major cities, Huchzermeyer (2009:62) contests that the unwillingness of both provincial and national government to

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<sup>21</sup> Regions that are considered to be modern or developed (Crampton, 2009:4).

<sup>22</sup> This concept refers to the population decline in the city centre exceeding the population gain at the periphery of the city, resulting in an overall decrease in urban population (Rontos et al., 2006:2).

<sup>23</sup> The population migration from the city centre to the periphery of the city (Rontos et al., 2006:2).

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recognise informality as a process that could have a positive impact on the urban space, presents many challenges for the urban poor. As such, the definitions as well as comprehension of settlements' informality should not be concluded by the simplistic and contrasting political decisions, opinions or agendas. Rather, a clear understanding of the collaboration between government programmes/visions/goals, the market as well as the processes of change in informal settlements, should inform allocation of resources, together with the informal settlements' intervention procedures (Huchzermeyer, 2009:11).

In major cities there has been a constant increase in informality (Rojas & Cibils 2009:2). Moreover, there has been an emergence of new forms of informality in certain areas, whereas in others there has been a reestablishment of old forms (AlSaiyyad, 2004:15). The main attribute that defines informality is the lack of legal acknowledgement of informal settlements, which refers to the scarcity of security of tenure on the occupied land (Shrestha et al., 2014:18).

Bolnick and Bradlow (2011:41) argue that the South African government perceives informality as a threat and has distanced the informal world from the provision of basic services. However, it ignores the fact that informality expands its effects to all properties of the city structure, the sectors in the local economy, as well as the spheres of social interaction (Rojas, 2009:19).

## **2.2 Housing in South Africa**

According to Omoyini and Jiboye (2011:129), housing refers to a dwelling structure in which one or more people reside. Section 26(1) of the Constitution of the Republic of South Africa, Act 108 of 1996, states that "everyone has a right to housing". The accessibility of housing and the relationship between the demand (waiting lists, overcrowding of city centre apartments, and escalating informal settlements) and supply (subsidy housing and bonded housing) has been largely reviewed by policy writers and in literature (Rust, 2006:4). According to Tissington (2011:25), accessibility of housing is linked to other socio-economic products and amenities such as accessibility of land, water, sanitation, transportation, schools, institutions of higher learning, as well as public open spaces.

## **2.3 Housing Backlogs**

According to Jayayi (2012:5), the government's efforts have resulted in the provision of over 1.5 million subsidy houses between 1994 and 2003. By the end of 2010, the figure of subsidy houses had risen to 2.8 million. Tissington (2011:8) argued that the government does not have the capacity to deliver housing units on a scale that is needed at a sustainable rate. This point becomes eminent when considering that the housing backlog was over 2.4 million and increasing (Le Roux, 2011:1). Furthermore, the number of informal settlements increased from 300 in 1994 to over 2 600 by 2012 (Bennet & Fieuw, 2012). The housing backlog, together with the lack of housing funds, implies that a large number of new occupants in urban areas are left with no choice but to reside in informal settlements. Provided the significance of these settlements, Richards et al. (2007:375) argue that more research should be directed on determining the approaches that can be implemented to improve the living conditions of people in informal settlements.

## **2.4 Informal Settlements**

There are a number of international terms that can be utilised interchangeably to refer to informal settlements – these include 'favelas', slums, shanty towns, squatter camps, and shack-lands (Huchzermeyer, 2008:1; Leary & McCarthy 2013:332). These terms are all applicable to the South African context, with the exception of 'favelas'. In addition, there are also local terms such as 'mekhukhu' (from the central and northern provinces), 'mjondolo' (originating in KwaZulu-Natal) and 'amagali' (in the Eastern Cape) (Huchzermeyer, 2008:1).

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The definition for informal settlements that has been adopted for the purposes of this study is from The National Housing Code's Upgrading Informal Settlement Programme, (RSA, Department of Human Settlement, 2009:16), as follows:

*“Informal settlements typically can be identified on the basis of the following characteristics: illegality and informality; inappropriate locations; restricted public and private sector investment; poverty and vulnerability; and social stress.”*

Informal settlements are then linked with housing shortages induced by expeditious urban population growth that is not complemented by the equivalent provisioning of housing amenities, of which South Africa is no exception (Groenewald et al., 2013:95). The UN-Habitat (2013:150) has approximated that 45% of the urban population in developing countries is informal households. Furthermore, Huchzermeyer (2008:1) highlights that the definitions of informal settlements are largely focused on the physical properties, informal housing, which refers to the actual informal structures.

#### 2.4.1 Significance of informal settlements

Although informal settlements may not have the attributes of formal settlements, they offer their residents certain benefits as well as aspirations (Groenewald et al., 2013:94). Wekesa et al. (2011:238) have specified that informal settlements play a significant role in providing shelter for the urban poor in developing countries who are unable to obtain accessibility to sufficient shelter through formal channels. Misselhorn (2008:5) states that these settlements award their dwellers a first point of access to the city for immigrants and those that are migrating to other regions of the city. The following aspects of accessibility are afforded to the informal settlement dwellers:

- Accessibility of job and other economic opportunities (which are often a survival mechanism).
- Accessibility of social amenities (for instance clinics and schools).
- Accessibility of political systems (access to ward councillors as well as the liberty to vote).
- Enhanced accessibility to the legal system.
- Possible accessibility to housing and basic services (through the government initiatives on human settlements that assist informal settlement dwellers) (Misselhorn, 2008:5).

#### 2.4.2 The properties of informal settlements

According to Osrin et al. (2011:919), the difference in informal settlements can be categorised in three properties: physical, health, and socio-economic properties.

##### A. Physical properties

Wekesa et al. (2011:239) state that the difference in the physical properties of informal settlements is largely influenced by the income levels of the inhabitants. Generally, these settlements are situated in areas that have low environmental quality, for instance near dumping sites or marshy areas. The National Housing Code (RSA, 2009:12) characterises informal settlements based on the following properties: “illegality and informality; inappropriate locations; restricted public and private sector investment; poverty and vulnerability; and social stress.”

According to Wekesa et al. (2011:239), informal settlements often lack basic services such as tap water, sanitation, and storm water drainage. Such conditions could be detrimental to the well-being of the inhabitants, and are often exaggerated by the already severe social and economic conditions of the impoverished.

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## B. Health-related properties

Additional health-related properties are lack of basic services (sanitation and water), lack of quality housing, high density levels, and unpredictable residential status (Osrin et al. 2011:919). Due to lack of basic infrastructure, coupled with unavailability of electricity, air conditioning, and food storage, informal settlements have become associated to health issues such as diarrhoea and respiratory illnesses (Richards et al., 2007:376). In addition, the people residing in informal settlements have been said to be more susceptible to diseases like HIV/Aids than the people residing in formal settlements.

## C. Socio-cultural properties

Despite informal settlements often being associated with the illegal development of residential areas and insufficient basic services such as water and sanitation, Tsenkova et al. (2008:9) argue that this type of interpretation only scratches the surface of the deep-rooted and complex socio-cultural processes that precede the formation of informal settlements. Furthermore, Tsenkova et al. (2008:9) state that in order to comprehend the phenomena of informal settlements, it is a necessity to conduct an analysis of this socio-cultural context.

Informal settlements are also prone to social problems such a crime. This negatively affects the residents of informal settlements, as they do not feel safe in the evening because of poor social amenities, policing services, and infrastructure, for instance street lights (Richards et al., 2007:376). Additionally, ineffective governance has been classified as one the issues that needed improvement.

## 2.5 Security of Tenure

There are structural disadvantages of insecure tenure, which include instability, susceptibility to harassment, poor accessibility to essential services, as well as health problems, on a medium- to long-term period. Coupling the unstable incomes of the informal settlement dwellers with their lack of tenure security on their dwellings marginalises them from small finance systems for both production and consumption, hindering their capacity to invest in the productivity of their enterprises (Rojas, 2009:34). According to Englin (2009), in order to provide the poor with security of tenure, currently and in the future, a system that is affordable to develop and sustain needs to be created. This system should subsidise for the investments of the people on their property, subsequently condoning the continuous upgrading and maintenance.

Furthermore, the Centre on Housing Rights and Evictions (2008:10) has highlighted that it has come to a point where there is a paradigm shift from a ‘tenure security and control’ oriented perception of informal settlements, which is highly based on the eradication of these settlements, to a more ‘pro-poor’ perspective that is directed towards the security of housing rights for a greater number of people.

## 2.6 Ineffective Governance

Luyt (2008:3) states that poor governance comprises corruption, bad performance of government officials in their facilitation of public resources, and the unwillingness to report underperforming officials. According to UN-Habitat (2015:2), poor governance fails to properly address informal settlements from both a policy planning and a land use management sphere, which then results in the illegal invasion of land and expansion in the number of informal settlements.

### 2.6.1 Local government

Local governments remain detached from the local communities despite the goals highlighted in the housing legislations and policies. The Isandla Institute (2012:3) identified three main areas of weakness in local government:

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- Public participation has been proven to be ineffective as ward committees do not make sufficient provisions to allow poor citizens to state their priorities and distresses, particularly in the decision-making process.
- There has been an increasing trend in the culture of compliance and risk aversion in local government, which then prohibits the capacity to provide dynamic and context specific solutions.
- The decision-making at a local government level persists to struggle in reflecting the needs of the local communities, to enhance equitability and sustainability, throughout the South African cities.

### 2.6.2 Political influence

Political influence is said to be one of the factors that hinders the processes of addressing informal settlements (Tshikotshi, 2009:3). Although, in the case of Eporth, Zimbabwe, political influence hindered the full execution of ‘operation Murambatsvina’, which involved the clearing of informal settlements throughout Zimbabwe. In the case of Kumasi, Ghana, political influence is one of the factors that were identified to have played a significant role in the emergence of informal settlements (Msindo et al., 2013:174). Furthermore, Du Plessis and Wilson (2005:29) claims that the widespread corruption in the allocation of subsidy housing and the construction contracts is a well-recognised problem in the South African context.

## 2.7 Mine Downscaling

The downscaling of mines has been a global phenomenon due to the continued resource exhaustion that has resulted in the declined value on some commodities (CDS, 2006:2). According to Strongman (1992:13), when the local government is frail and the non-mining revenue is low with slight workforce mobility, the closure of mines has a traumatic effect on the local communities, particularly in isolated regions. Neil (1992:21) highlighted four characteristics that prevail, at different degrees, in mining communities:

- The mining communities may not necessarily be cohesively united, as there could be ‘social cleavages’ between the miners and the non-miners.
- Because of overdependence on the mine, there could be a lack of entrepreneurial culture and experience in mining communities.
- Due to the support provision to mining communities by the mines, the local governments could be less active in the development of mining communities than in non-mining communities (the case of Goldfields).
- The community members who have the capacity to promote community mobility and endorse local development are the ones who are likely to have the community emigrate when the mine closes.

Mine downscaling in the Goldfields had a number of severe implications for the economy of the Free State. The economy of the Free State transformed from being largely driven by the primary sector towards being more driven by the tertiary sector as shown in Figure 2 (Marais, 2013:509). Subsequently, there was a rigorous decline in the number of available jobs as most of the retrenched people were not appropriately skilled to acquire employment in the secondary and tertiary sector.

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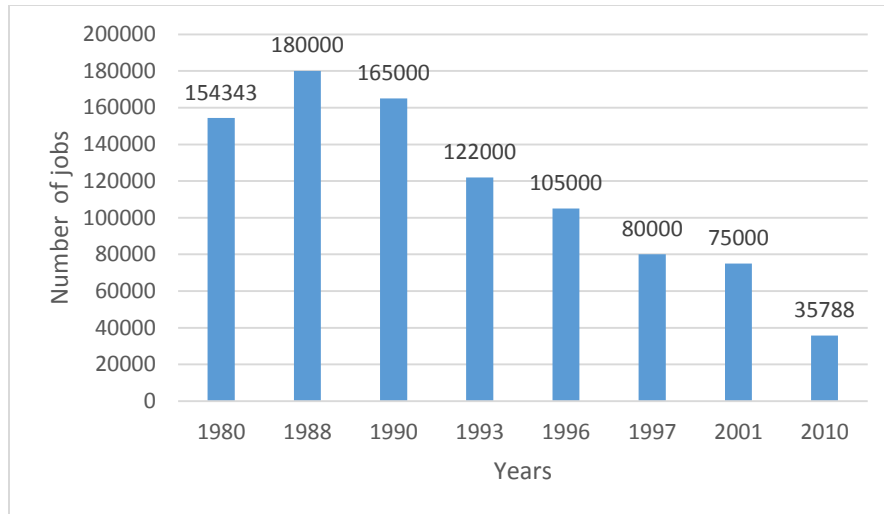


Figure 2: Total mine employment in the Free State Goldfields, 1980-2010 (Marais, 2013:510)

According to Marais (2013:514), the downscaling of mines in the Goldfields led to the increased number of informal settlements in the area, as a large number of mine workers who lived in single-sex hostels vacated the hostels for informal settlements.

### 3. OBJECTIVES AND RESEARCH QUESTIONS

#### 3.1 Objectives

The broad objective of this paper is to examine or establish the underlying factors that influence the continued emergence of informal settlements, especially after municipalities had done an in situ upgrading, using the Phelindaba informal settlement as a case study.

The specific objectives of the study are:

1. To establish the socio-economic profile of the dwellers in the Phelindaba informal settlements;
2. To describe the underlying factors that influenced the emergence of Phelindaba, after the upgrading of the Mahaleng informal settlement; and
3. To describe the aspirations of the Phelindaba informal settlements dwellers.

#### 3.2 Research Questions

The main research question of this study is: What are the contributing factors influencing the emergence of a new informal settlement adjacent to the upgraded Phelindaba informal settlement? The subsidiary research questions of this study are:

1. What is the socio-economic profile of the Phelindaba informal settlement dwellers?
2. What factors contributed to the emergence of the Phelindaba informal settlement, after the upgrading of the Mahaleng informal settlement?
3. What are the aspirations of the Phelindaba informal settlement dwellers?

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#### **4. APPROACH AND METHODOLOGY**

This study was conducted between February 2015 and January 2016 in partial fulfilment of the main author's Master of Urban and Regional Planning. To describe the people's experiences in residing in the Phelindaba informal settlement and to get a deeper understanding of the study area, a qualitative research design was adopted, more specifically, a descriptive case study. A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2009:18). The emergence of the Phelindaba informal settlement after an in situ upgrading of the Mahaleng settlement justifies this study as an extreme or rare case.

The data collection process included semi-structured interviews with the inhabitants of the Phelindaba informal settlement, as well as officials from the Matjhabeng Local Municipality. For the inhabitants of Phelindaba, purposive, heterogeneous sampling were utilised during the data collection to ensure that the sample was representative of the total population of the study area (Ritchie et al., 2013:113). Furthermore, given the emergence of the Phelindaba informal settlement next to the in situ upgraded Mahaleng, a critical case sampling is also selected on the basis of the community members who were not provided with security of tenure during the upgrading project, and subsequently formed part of the group in the emerging settlements (Ritchie et al., 2013:114). The Matjhabeng municipal officials were chosen on the basis of their knowledge of informal settlements, in situ upgrading as well as the study area.

#### **5. RESEARCH FINDINGS AND DISCUSSION**

This section of the study offers nuanced analysis of the data collected. Regarding the first research question, "What is the socio-economic profile of the Phelindaba informal settlement dwellers?", there was an indication that the Phelindaba informal settlement is generally comprised of elderly males, while the age of females varies from the youth to the elderly. Furthermore, the majority of the residents of Phelindaba are South African citizens. However, most of them do not originate from Virginia; they come from the rural areas (previous homelands and farms neighbouring Virginia) and migrated to Virginia in pursuit of job opportunities and improved living conditions. Although most of the residents of the Phelindaba informal settlement are married and have children, a large number of children do not reside with their families, but live at their parents' places of origin, as the parents believe that the living conditions in this informal settlement are not conducive for their families. All the Phelindaba residents do have some sort of education and that most of them have an education level between Grade 7 and Grade 9.

The majority of the respondents are unemployed as they were retrenched due to mine downscaling in the Goldfields. As such, they have resorted to the Phelindaba informal settlement for residence as they could not afford to purchase or rent formal housing while they are still pursuing other job opportunities. Despite the skills they have acquired working in the mining industry, they have been struggling to get employment in other economic sectors as they claim that the skills they obtained are not applicable.

In relation to the second research question, "What factors contributed to the emergence of the Phelindaba informal settlement, after the upgrading of the Mahaleng informal settlement?", there are three underlying factors that emerged, namely: ineffective land use management by municipal officials, poor governance by the ward councillor, as well as the in situ upgrading process of the Mahaleng informal settlement opposite the Phelindaba informal settlement.

The St John's Church in Meloding was granted permission to erect a new church building on an unutilised site that had been earmarked for a park, as the site originally owned by the church had been illegally invaded

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and settled on. In 2012, the St John’s Church identified erf 6632, Meloding Extension 10, and erected their structures on this site, as shown in Figure 3. However, the permission that was granted by the municipal officials and ward committee was not formal, as there was rezoning of the land to allow for the development of a ‘place of worship’ and a change of property ownership at the Deeds Registry office. Since the church did not own the site officially, they were given permission to erect temporary structures, and that once the people illegally occupying the original site owned by the Church could be moved to new sites, the church would relocate to its own site.

Meanwhile, as the church was erecting their structures on Erf 6632, the Mahaleng formalised settlement was in the final stages of the in situ upgrading, which is the handover of stands to the people who qualified. The people who did not qualify for the subsidy stands were left with no option but to evacuate the Mahaleng settlement. However, one of the interviewees stated that the ward councillor, together with the Ward Committee, promised the people who did not qualify that they would be provided with land for temporary residence as long as they voted for the political ruling party in Ward 7 (ANC) during the May 2011 local government elections.

Subsequently, the informal settlement, now called Phelindaba, emerged as the residents of Mahaleng started moving there when they saw the informal settlement growing, as shown in Figure 4. In 2013 the Phelindaba informal settlement had 21 households and one church. Even though this area is large enough for upgrading and provision of stands to the dwellers, there are two main problems that arise: (1) the area is earmarked for a park, and (2) the area is also comprised of Eskom powerline servitudes (see Figure 1).

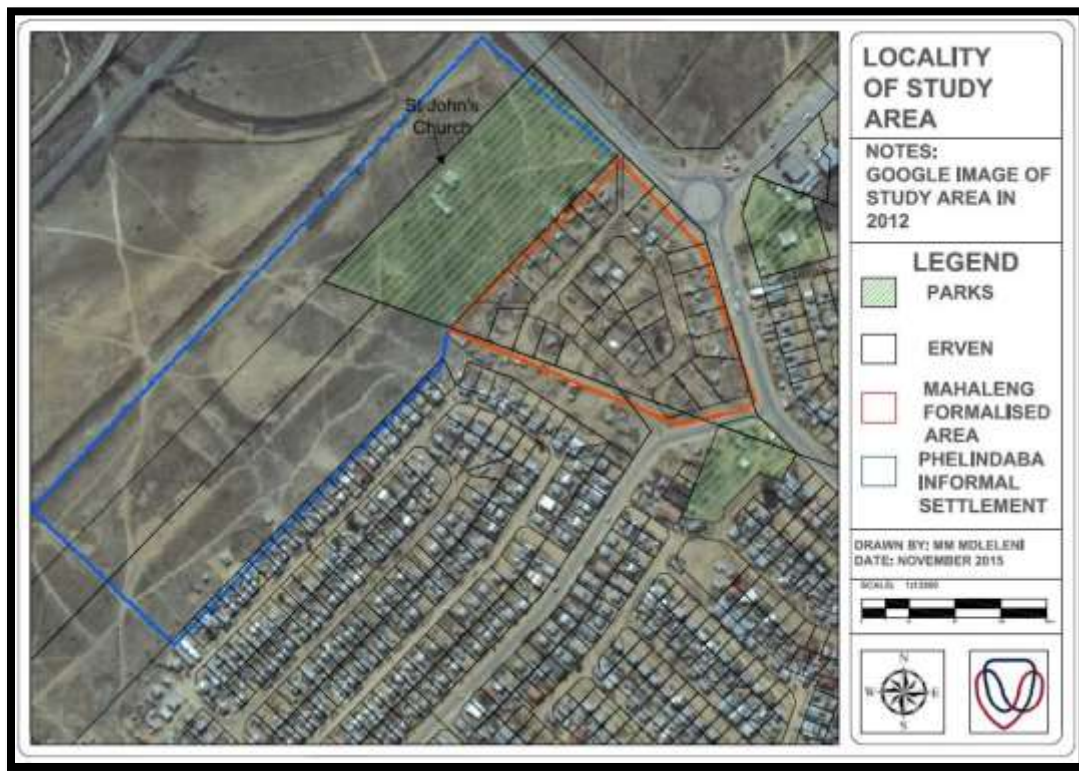


Figure 3: Google image of the study area in 2012 showing the new church buildings (adopted from Google Earth, 2015)

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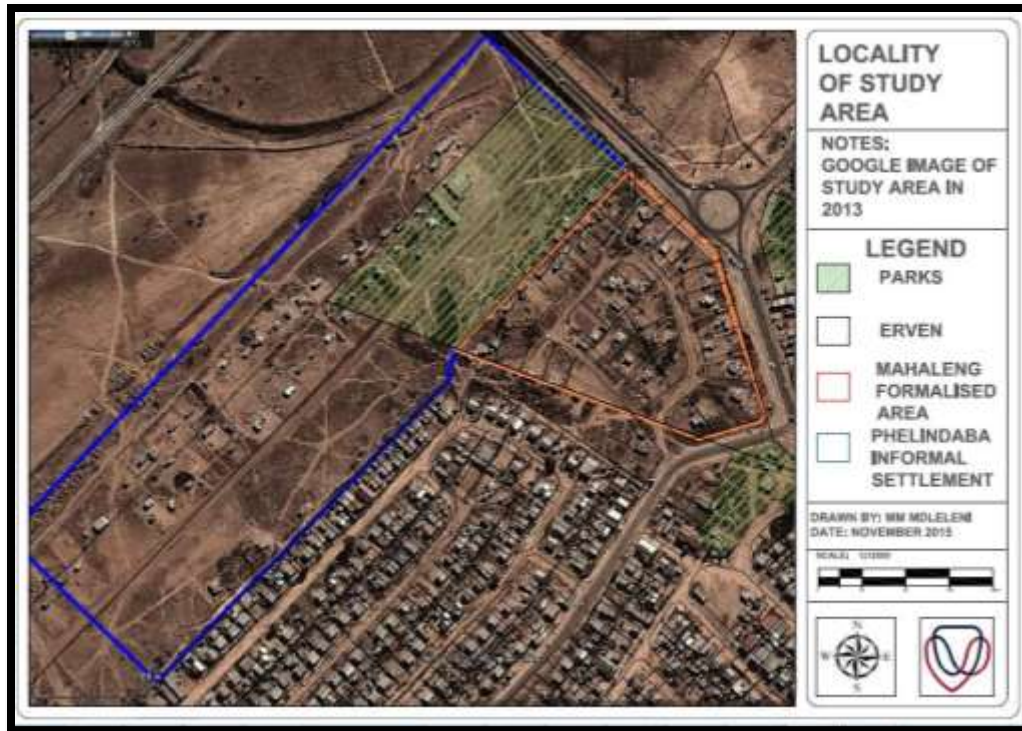


Figure 4: Google image of the study area in 2013 showing the expansion of the informal settlement (adopted from Google Earth, 2015)

With regard to the third subsidiary question, “What are the aspirations the Phelindaba informal settlement dwellers?” there are two main aspirations which stood out:

- (1) Access to basic services and infrastructure as means to improve their livelihoods: Basic service provision, including water and sanitation, would ensure that the health of the Phelindaba residents is improved and they are less susceptible to hygiene related illnesses such as cholera. There is also a need for provision of basic infrastructure such as access roads, street lights, electricity as well as storm water drainage in the Phelindaba informal settlement, to make the community much safer, user-friendly and accessible.
- (2) Acquiring affordable security of tenure in a well-located land: Virginia, in general, is faced with a lack of availability of well-located land that is affordable and can provide subsidy security of tenure to those who are unable to afford it. The Phelindaba informal settlement is an example, as the residents have stated that they aspire to be provided with affordable security of tenure in close proximity to employment opportunities and social amenities.

## 6. RESEARCH CONTRIBUTION

In making sense of the future development in African cities, planning, when used effectively, has the capacity to address the imbalances created by the colonial-apartheid and post-apartheid eras, as well as to improve the socio-economic issues that poor communities are currently facing. However, there are other factors, as proven in this study, which play a significant role in hindering the full capacity of planning. It is therefore essential that these factors be vividly understood and addressed in the policy-making and application processes.

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## 7. RESEARCH LIMITATIONS

One of the most prominent limitations to this study was the ward councillor's unavailability, despite numerous attempts made by the researcher to set up an appointment with her. Another limitation to the study was the unavailability of certain residents during the data collection stage of the study, together with the unwillingness of residents to discuss sensitive issues such as political influences within the informal settlement.

## 8. DISCUSSION AND CONCLUDING REMARKS

This study has explored and highlighted crucial factors that influenced the emergence of the Phelindaba informal settlement, which include poor land use management, ineffective governance, as well as the in situ upgrading. Through this study, it has been established that there is sense of urgency, as well as significance, in the matters that have been highlighted in this study with regard to the emergence of new informal settlements in South Africa, such as the provision of basic services and affordable security of tenure. The ever-increasing number of informal settlements, despite the government's efforts to eradicate them, is indicative of how crucial the factors that lead to the emergence of informal settlements are within this context.

## 9. REFERENCES

- AlSayyad, N. 2004. Urban Informality as a "New" Way of Life. In *Urban Informality: Transnational Perspectives from the Middle East, Latin America, and South Asia*, edited by A. Roy and N. AlSayyad. New York: Lexington Books.
- Bennett, J. and Fieuw, W. 2012. *ISN Gauteng Implements CUFF Projects*. SDI South Africa Alliance, October 31, 2012.
- Bolnick, J. and Bradlow, B. 2011. Rather a Better Shack Now Than Wait Twenty Years for a Formal House. *Shack Dwellers International and Informal Settlement Upgrading in South Africa, Dialog*, 104(1), 35-41.
- CDS (Centre for Development Support). 2006. *Towards a post-mining economy in a small town: Challenges, Obstacles and Lessons from South Africa*. CDS Research Report: LED & SMME Development. University of the Free State, Bloemfontein, South Africa.
- Centre on Housing Rights & Evictions (COHRE). 2008. *Business as Usual? Housing Rights and 'Slum Eradication' in Durban, South Africa*. Geneva, Switzerland: COHRE International Secretariat.
- Crampton, A. 2009. Global Aging: Emerging Challenges. *The Pardee Papers*, 6, 1-25.
- Donnelly, J. and Jiwanji, A. 2010. *Urbanization and Children in the Pacific*. Unicef, Pacific.
- Du Plessis, J. and Wilson, S. 2005. *Any Room for the Poor? Forced Evictions in Johannesburg, South Africa*. Draft for discussion. Centre on Housing Rights and Evictions.
- Eglin, E. 2009. *Between a Shack and an RDP House: Alternative Forms of Tenure Security*. Afesis-Corplan, East London.
- Graham, N. 2006. Informal Settlement Upgrading in Cape Town: Challenges, Constraints and Contradictions within Local Government. In *Informal Settlements: A Perpetual Challenge*, edited by M. Huchzermeyer and A. Karam, A. Cape Town: UCT Press, 231-249.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Google Earth Map. 2015. Available at: <https://www.google.co.za/maps/place/Virginia/@-28.1369417,26.8874192,829m/data=!3m1!1e3!4m2!3m1!1s0x1e919f8a06cc9bb3:0x42f3569f51e956e6!6m1!1e1> [Accessed August 2015]

Groenewald, L., Huchzermeyer, M., Kornienko, K., Tredoux, M.J., Rubin, M. and Raposo, I. 2013. Breaking down the Binary: Meanings of Informal Settlement in Southern African Cities. In *Governing Cities in Africa: Politics and Policies*, edited by S. Bekker and L. Fourchard. Cape Town: HSRC Press.

Huchzermeyer, M. 2008. *Settlement Informality: The Importance of Understanding Change, Formality and Land and the Informal Economy*. Paper presented at the Groupement de Recherche sur Development International (GRDI) Workshop on Informality, Centre for Urban and Built Environment Studies (CUBES), University of the Witwatersrand, 3-4 July.

Huchzermeyer, M. 2009. The Struggle for In Situ Upgrading of Informal Settlements: A Reflection on Cases in Gauteng. *Development Southern Africa*, 26(1), 59-73.

Huchzermeyer, M. 2011. *Cities with 'Slums': From Informal Settlement Eradication to a Right to the City in Africa*. Cape Town: UCT Press.

Isandla Institute. 2013. *Planning for Informality: Exploring the Potential of Collaborative Planning Forums. A Propositional Framework*. Kenilworth: Isandla Institute.

Jayayi, J.R. 2012. Strategies for Sustainable Housing Co-Operatives in South Africa (*PhD Dissertation*). Nelson Mandela Metropolitan University.

Kötter, T. 2004. Risks and Opportunities of Urbanisation and Megacities. Plenary Session 2 – Risk and Disaster Prevention and Management. *Proceedings of the FIG Working Week*, Athens, Greece.

Leary, M.E. and McCarthy, J. 2013. *The Routledge Companion to Urban Regeneration*. Routledge.

Le Roux, E. 2011. *The Provision of Low-Cost Housing in South Africa: A Wicked Problem with a Systems Theory Solution (Masters Dissertation)*. University of Stellenbosch.

Luyt, D. 2008. Governance, Accountability and Poverty Alleviation in South Africa. In *United Nations Social Forum*, 2 September 2008.

Marais, L. 2013. The Impact of Mine Downscaling on the Free State Goldfields. *Urban Forum*, 24(4), 503-521.

McGranahan, G. and Satterthwaite, D. 2014. Urbanisation Concepts and Trends, *Human Settlements Working Paper*. International Institute for Environment and Development.

Misselhorn, M. 2008. Position Paper on Informal Settlement Upgrading. *Part of a Strategy for the Second Economy*. Office of the South African Presidency. Cape Town: Urban LandMark.

Msindo, P.D., Gutsa, I. and Choguwa, N.Z. 2013. Squatter Settlements an Urban Menace in Zimbabwe? Examining Factors behind the Continued Resurfacing of Squatter Settlements in Epworth Suburb, Harare. *Journal of Settlements and Spatial Planning*. 4(2), 171-182.

Neil, C. 1992. Introduction. In *Coping with Closure: An international Comparison of Mine Town Experiences*, edited by Neil, C. Tykkylainen, M. and Bradbury, J. London: Routledge, 1-26.

Omoniyi, S. and Jiboye, A.D. 2011. Effective Housing Policy and Sustainable Development in Nigeria. *International Journal of Development Studies*, 6(1), 129-135.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Osrin, D., Das, S., Bapat, U., Alcock, G.A., Joshi, W. and More, N.S. 2011. A Rapid Assessment Scorecard to Identify Informal Settlements at Higher Maternal and Child Health Risk in Mumbai. *Journal of Urban Health*, 88(5), 919-932.

Otiso, K.M. 2002. Forced Evictions in Kenyan Cities. *Singapore Journal of Tropical Geography*. 23(3), 252-267.

Peng, X., Chen, X and Cheng, Y. 2000. Urbanization and Its Consequences. Demography, II. Encyclopedia of Life Support Systems (EOLSS).

Republic of South Africa. 1996. The Constitution of South Africa, Act 108 of 1996. Cape Town: Government Gazette.

Republic of South Africa (RSA). Department of Human Settlements. 2009. Incremental Interventions: Upgrading Informal Settlement. *The National Housing Code*, Volume 4, Part 3.

Richards, R., O’Leary, B. and Mutsonizwa, K. 2007. Measuring Quality of Life in Informal Settlements in South Africa. *Social Indicators Research*, 81, 375-388.

Ritchie, J., Lewis, J., Elam, G., Tennant, R. and Rahim, N. 2013. Designing and Selecting Samples. In *Qualitative Research Practice: A Guide for Social Science Students and Researchers* (2<sup>nd</sup> edition), edited by J. Ritchie, J. Lewis, C.M. Nicholls and R. Ormston. Los Angeles: Sage, 111-146.

Rojas, E. 2009. Building Citizenship through Neighbourhood Upgrading Programmes. In *Building Cities: Neighbourhood Upgrading and Urban Quality of Life*, edited by E. Rojas. New York: Inter-American Development Bank, 33-38.

Rojas, E. and Cibils, V.F. 2009. Building Citizenship for a Better Quality of Life. In *Building Cities: Neighbourhood Upgrading and Urban Quality of Life*, edited by E. Rojas. New York: Inter-American Development Bank, 7-32.

Rontos, K., Mavroudis, C. and Georgiadis, T. 2006. *Suburbanization: A Post World War II Phenomenon in the Athens Metropolitan Area, Greece*.

Rust, K. 2006. *Analysis of South Africa’s Housing Sector Performance*. FinMark Trust, Johannesburg, South Africa.

Seekings, J. 2010. *Race, Class and Inequality in the South African City*, CSSR Working Paper No. 283. Centre for Social Science Research: Social Surveys Unit, University of Cape Town.

Shrestha, R., Tuladhar, A.M., Zevenbergen, J.A. and Banskota, M. 2014. “Decades of Struggle for Space”: About the Legitimacy of Informal Settlements in Urban Areas. In *Engaging the Challenges – Enhancing the Relevance*, Proceedings of XXV FIG Congress, 16-21 June 2014, Kuala Lumpur, Malaysia.

Strongman, J. 1992. *Mine Closure: An Overview of the Issues*. The Government of Indonesia Mine Closure Workshop. Jakarta.

Tissington, K. 2011. A Resource Guide to Housing in South Africa 1994-2010. *Legislation, Policy, Programmes and Practice*. Pretoria: Socio-Economic Rights Institute (SERI).

Tsenkova, S., Badyina, A. and Potsiou, C. 2008. In Search for Sustainable Solutions for Informal Settlements in the ECE Region: Challenges and Policy Responses. *Proceedings of the 6th Session of the*

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

*Economic Commission for Europe, Committee on Housing and Land Management, Geneva (22-23 September 2008).*

Tshikotshi, V. 2009. *The Challenges of Eradicating Informal Settlements in South Africa by 2014: The Case of Seraleng Sustainable Human Settlement, Rustenburg Local Municipality, North West Province* (Master's dissertation), University of the Witwatersrand.

Turok, I. 2012. *Urbanisation and Development in South Africa: Economic Imperatives, Spatial Distortions and Strategic Responses*. Urbanization and Emerging Population Issues Working Paper 8. London: Human Settlements Group, International Institute for Environment and Development, United Nations Population Fund.

Turok, I. and Borel-Saladin, J. 2014. Is Urbanisation in South Africa on a Sustainability Trajectory? *Development Southern Africa*, 31(5), 675-691.

UN-Habitat. 2013. *State of the World's Cities 2012/2013: Prosperity of cities*. Kenya: United Nations Human Settlements Programme.

UN-Habitat. 2015. *Habitat III Issue Papers: Informal Settlements*. New York.

UNDESA (United Nations Department of Economic and Social Affairs). Population Division. 2014. *World Urbanization Prospects: The 2014 Revision, Highlights*

Wekesa, B.W., Steyn, G.S. and Otieno, F.F. 2011. A Review of Physical and Socio-Economic Characteristics and Intervention Approaches of Informal Settlements. *Habitat International*, 35(2), 238-245.

Yin, R.K. 2009. *Case Study Research: Design and Methods*, 4<sup>th</sup> edition. Thousand Oaks.

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# The Morphological / Settlement Pattern Classification of South African Settlements Based on a Settlement Catchment Approach, to Inform Facility Allocation or Service Delivery

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## Abstract

South Africa, as a developing country, is faced with a number of challenges, one of which is the provision of social facilities in an equitable and sustainable manner. The problem is compounded by uneven and dualistic development arising from the apartheid era as well as geographical variations in respect to resource availability. This has resulted in a wide variety of development patterns and resultant settlement types ranging from well-developed neighbourhoods usually found within city limits to under-developed settlements in deep rural areas. Development patterns impact on the provision of social services as geographical dispersion and low density sprawl are major factors influencing the efficiency of service delivery. With the above in mind, it is of the utmost importance that a critical evaluation of settlement structure and patterns is undertaken to directly inform the manner in which social services are delivered in different settlement types.

Using the CSIR's accessibility analysis and facility location approach, the whole country was subdivided into service catchments for social service provision around the towns/settlements identified in the CSIR/SACN typology. Then, using other national datasets, the spatial distribution structure of the dwelling points that represent the distribution of buildings in each of the catchments was analysed and classified. This was done to better understand the morphological structure of each catchment, since morphology is important in understanding the character of spaces and as such is critical to the planning of facility location and distribution networks. Nine dominant settlement types were identified and these can inform decision making with respect to the best options available in the distribution of services so as to better match settlement distribution.

This paper briefly indicates the approach used to allocate the dwelling frame and SPOT building count data to a national set of service catchments. Following this, it discusses the process used to analyse and classify these catchments according to their morphology. It highlights the nine main types identified and then provides some detail on the most common environments where these catchments occur. It also addresses the implications for service delivery of each of the different settlement types.

## Keywords

Settlement Morphology, Social Facilities, Location, Rural

## 1. INTRODUCTION

The delivery of services to citizens has always been one of the expected duties of any government. Good service delivery contributes to the improvement of standards of living and quality of life while poor service delivery undermines these. Most democratic constitutions around the world put pressure on governments to provide essential social services needed by its citizens. This is further emphasized by the United Nations through its Sustainable Development Goals. Since countries differ with regards to development, some

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countries are consequently doing better than others with regards to delivering basic services to citizens. Developing countries, in particular, still face major backlogs in service delivery, both in urban and rural areas. According to Wild *et al.* (2012), there is growing recognition that, despite considerable increases in resourcing, service delivery is still failing in many developing countries; and political and governance factors are some of the contributors to this failure. However, where delivery of services is occurring, a better understanding of the settlement morphology (the form/structure which settlements take) can improve how services are rolled out.

In South Africa, an often overlooked yet crucial component in service provision and distribution is the understanding of the varying settlement patterns and morphologies. Better understanding of these patterns can ensure that facility provision closely relates to residential development patterns. It is known that dense areas are more cost effective in terms of the provision of services than sparse areas. Analysing catchments around identified central service points enables facility planning to respond according to the unique character of each catchment thus making it possible to target and customise service distribution networks.

Over the past decade much research on service delivery, especially of social services, has focused on aspects such as facility population thresholds, distance thresholds and ranges, population density and service capacity, with limited attention given to the structure of settlement morphology in relation to the distribution and delivery of services. This is of particular importance in the case of non-urban settlements that did not develop in the same manner or pattern as conventional urban settlements that have defined places of high concentration. Thus, it is the purpose of this paper to evaluate and discuss the observed settlement patterns/morphologies in South Africa and how these different settlement configurations could affect the provision and distribution of services and; inform governments and other service providers in delivering services in different contexts.

To enable the analysis of areas, the project first demarcated the country into wall to wall catchments around service points. Following an analysis of each catchment according to its settlement dwelling pattern (morphology) was then performed. Each catchment was profiled and includes information such as where people live, how far they are to a closest town/node, population density per catchment and settlement morphology, amongst others, all of which are crucial for service delivery planning with the intention of informing planning standards for social facilities and service delivery in general.

The following section focuses on local and international literature on the matter of service delivery and settlement morphology.

## **2. LITERATURE REVIEW**

Fox and Meyer (as cited in Kanyane, 2010) argue that public service delivery is the provision of public activities, benefits of satisfactions; the range of public services provided relates both to public goods which are tangible and to services which are intangible. Service delivery is one of the important tasks of every government around the world and the provision of basic services is one of the determining factors of a progressive government. Governments are under pressure to provide these services to citizens as doing so leads to the betterment of the citizens' lives and also a step towards the global goal of poverty alleviation and equity as highlighted by the United Nations Sustainable Development Goals formulated in 2015 ([www.un.org](http://www.un.org)). Given this pressure, there have been considerable efforts by governments all around the world to streamline service delivery; however, in developing countries, this has been somewhat thwarted by a number of issues relating to corruption, technical know-how, lack of effective policies, and so on. As noted by Wild *et al.* (2012), despite significant increases in resourcing, public service delivery is still failing in many developing countries. This slacking behind in service delivery has given rise to riots and strikes by citizens demanding what they believe they deserve.

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Amidst all this continuing tension, what remains a core challenge is the provision of services in an efficient manner while not compromising on meeting the citizens' needs. Settlement morphology, although often overlooked, has a strong impact on the distribution of services. The continuum of space is not uniform and thus requires each area to be dealt with according to its unique structure/character. Settlement morphology can be defined as the distribution or pattern of the dwellings and other structures of human development within a defined catchment or demarcation. Over the years, little has been done to include settlement morphology as one of the informants to facility provision and distribution. As noted by Bidwell (2001), low density settlement morphologies create diseconomies of scale and extra distribution costs for the production of any good or service. Providing services to these areas has proved to be economically challenging due to the sparsity of the settlements and this impacts negatively on the costs of providing infrastructure and services. This could explain why sparse areas have often been overlooked.

The Organisation for Economic Co-operation and Development (OECD) published a report in 2008 regarding the issue of servicing sparse areas in its member countries. According to the OECD (2008) report, the discussion on service delivery is not complete without a consideration of the dilemma of equity versus efficiency. Equity pushes for services to be equally available to both dense and sparse areas. Efficiency on the other side favours areas of agglomeration since it is in these areas that high levels of efficiency can be achieved. Since agglomeration in the sparse settlements is not common, this puts inhabitants in these areas at a disadvantage. The unconventional and generally uncoordinated settlement patterns usually present in areas such as these pose a challenge to service providers, but it is argued that the better the areas are analysed and understood – the better the planners can respond to needs of services across areas.

Thus, planners need more 'spatially smart' ways of thinking. "Principles of efficient and effective service delivery should be emphasised and maintained in every developing country and every state should ensure that such principles are successfully implemented by each responsible person" (Byaruhanga, 2011:9). Research has been conducted in an attempt to develop solutions to issues such as settlement morphology or structure with regards to service delivery. The questions that government is often faced with when planning especially rural development policies for services and infrastructure are, 'who gets what and where and how much of it?' Nleya (2011) states that public policy inherently involves value maximisation within constraints and that decision makers in services provision have to decide on what constitutes an acceptable level of access, quantity and quality, and ascribe a different weight to each of these three different components of the service delivery matrix. Thus, one can argue that value maximisation without a proper understanding of settlement structure is not as effective.

Looking at the South African context, Khumalo *et al.* (2003) argues that the process of municipal service delivery in South Africa takes place not only within the context of political and institutional reforms, but also within administrative and financial constraints. Given these constraints, there has been considerable progress as the government has been investing in knowledge dissemination and the creation/revision of guidelines through legislature to aid in planning decisions. This is evident by such legislature as the Municipal Systems Act of 2000 which places the IDP as the mandatory overarching plan for every municipality in the country. There have been good initiatives like the Rural Household Infrastructure Programme (RHIP) of 2009, among many others, which have indicated the government's effort to improve the livelihoods of rural inhabitants in South Africa. These initiatives, however, fall victim to the scarcity of a sound scientific based rationale for distributing and allocating facilities.

Farrant (2007) argues that to a large extent spatial analysis had been entirely absent from most social and infrastructural planning. Although, research into social facilities and infrastructure spatial analysis has been conducted in South Africa for the metropolitan areas of some provinces and a few municipalities, most small municipalities in South Africa still face difficulties with regards to spatial analysis for social and infrastructure planning. Small local municipalities often rely upon ward councillors to inform them about

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what communities need. This, however, creates an opportunity for imbalanced service provision as some councillors will have more say than others and or be more politically affiliated.

To support the sustainable distribution of social facilities, the Department of Rural Development and Land Reform (DRDLR) commissioned research in 2015 to develop differentiated standards for rural areas that would help address, but is not limited to, the morphological issues in relation to service provision in a range of rural areas. Prior to this project, a national morphological classification of areas to a settlement level has never been performed. This classification lets service providers plan on a settlement level as each settlement is unique. Thus, the work done will lay a foundation for future work aimed at achieving efficiency in service delivery through an advanced understanding of settlement structure and pattern.

A similar morphological study was carried out in the United Kingdom (UK) but mainly focusing on population density in the rural areas. The Countryside Agency of the UK carried out a study in 2004 in which it claimed that the lack of geographical detail in distinguishing rural areas was an obstacle to the targeting of rural policies pertaining to service delivery (The Countryside Agency, 2004). For this reason it distinguished rural areas from urban areas using spatial analysis. As the government in England and Wales classified rural areas as having between 1 500 and 10 000 inhabitants, the agency recognised the shortfall in the definition through its lacking a spatial context. It could be that 9 000 people live within a 2km<sup>2</sup> or a 50km<sup>2</sup> area and surely the two cannot be treated the same even though the population may be the same. The former can be considered to be densely populated while the latter is sparse and therefore this information is critical for policy makers.

The Countryside Agency developed a grid covering England and Wales with 1 hectare cells (100m by 100m). To determine dwelling density, it used the Royal Mail's postcode addresses. The postcode addresses showed where houses were and this information was overlaid on the grid. Dwelling density was calculated by determining how many postcode addresses were in each one hectare cell in the grid. This density information was then constrained to the existing municipal boundaries. The result was that policy makers not only knew how many people lived in certain areas, but that the different densities of the areas were also available to aid in decision making. This assisted in the distinction between urban and rural areas. With such information, governments are able to develop specific policies like 'clustering of facilities' based on population densities within areas that are classified as remote or disjoint. In some instances, sharing facilities across boundaries was encouraged based on density information.

This approach, however, differs slightly from the one adopted in this study. For one, the Countryside Agency set out to distinguish between urban and rural areas while this approach seeks to classify each settlement catchment regardless of its location. This is because there are settlements in rural areas in South Africa that are as dense as urban areas. Thus, a classification of an area as rural does not tell the whole story. The approach followed in this study also adds the distance factor to the morphology, i.e. how many people live between 10km to 15km of a node/ service point. This morphological classification was performed on already defined catchments around potential service points.

The following section presents the research question and is then followed by a discussion on how the settlement catchment classification approach was used to classify every area in the country based on its morphology, population, economy, and so on.

### **3. OBJECTIVES /RESEARCH QUESTIONS**

Can a better understanding of settlement morphology contribute to a better balance of equity and efficiency for public service provision throughout SA?

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#### 4. APPROACH & METHODOLOGY

Being that this research reported on here is but a single component of a larger project, it is necessary to firstly contextualise the process that took place prior to the settlement pattern analysis and classification that was undertaken.

In order to classify the pattern of a ‘settlement’ the first step was to define the ‘boundaries’ or the extent of the service areas around towns so as to enable the analysis of settlement patterns within a defined space. The analysis took abstracted concepts from Christaller’s Central Place Theory (King, 1984) and principles of accessibility. Using the assumption that people would travel to the nearest central place / settlement that can provide the service or function they need, several datasets were used in unison, analysed and processed using Geographic Information Systems (GIS) spatial analysis functions to create service catchments. The datasets used to undertake the demarcation included the following:

- The CSIR/South African Cities Network (SACN) functional settlement typology town points (CSIR)
- National Roads dataset (AfriGIS)
- ESKOM SPOT Building Count Points dataset (ESKOM)
- 1x1km grid of South Africa (CSIR).

With the above datasets and theoretical assumptions in mind, the first step was to create the service catchments. The goal was to assign every square kilometre grid cell in the country to its nearest town/settlement point based on the road network. The data was inputted into a routing solving operation to create an Origin-Destination (OD) distance matrix. The OD matrix finds and measures the shortest distance paths along a road network from multiple origins to multiple destinations. In this case, the centroids of the grid were used as the origins and the town points as the destination and the road network and each grid-cell was attributed to a town. Once all cells were attributed to the nearest town, the grid was dissolved to create catchments around each town, with the assumption that people located within that catchment would receive at least lowest order service from their closest town/node that was the central place in that catchment.

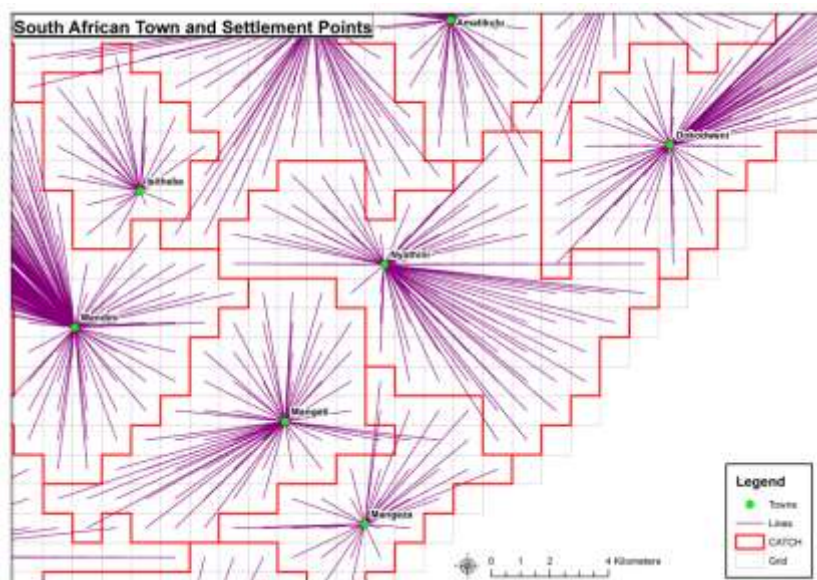


Figure 1: Creation of settlement catchments around places of concentration

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Having created the catchments around all the towns, the SPOT Building Count (SBC) was overlaid on the catchments to begin the morphological/settlement structure analysis. See the figure below.

*Figure 9: Updated SBC base layer (Source: Mudau 2010)*

The SBC is a points dataset that maps the locations of building structures across the entire country, and is constructed through a process whereby:

*‘All the dwellings and building structures are mapped by points. Where up to date cadastral exists, one point per cadastral rule was applied to capture dwellings in urban areas. The townhouse group is represented by a point per cadastral portion. In rural areas, each building structure is mapped and represented by a point. All individual buildings structures around resorts and mines are mapped by points. All the mapping and classification of the structures are done through image interpretation and no field work has been conducted at this stage of the project.’ (Mudau, 2010: 50)*

The points dataset was used as a proxy for dwellings, and this along with satellite imagery was used to visually inspect, interpret, identify, analyse and classify the structure of settlements within each of the catchments in the country. Having approximately 12 000 000 points, it is one of the most comprehensive and widely used building count datasets in the country, and is thus the most appropriate and complete dataset that could be utilised to undertake this type of classification. An interpretive approach was employed in the morphological classification in each area through visual inspection, pattern analysis and interpretation of observed building and settlement patterns in each of the catchments.

Several other processes and datasets along with the building point dataset were used as control checks. A population and distance grid of 1km<sup>2</sup> was created, this grid contained the distance of the centroid of the grid to the town point in the catchment and the population total in each cell. This grid was used to evaluate population densities in the catchment to evaluate whether it was fairly distributed, centralised or scattered. The distance attribute was used to evaluate the distance from the central point and how this related to the distribution of the population in the catchment. Google Earth satellite imagery was also used in instances of uncertainty which also added to the accuracy of the classification.

This process was undertaken for all catchments, and the results are presented in the next section of the paper.

## **5. ANALYSIS FINDINGS**

Following the classification of all 1 328 catchments as set out in the methodology in the previous section, 9 major morphological classes were identified. Figure 3 below graphically depicts the 9 classes that were identified and classified through the analysis.

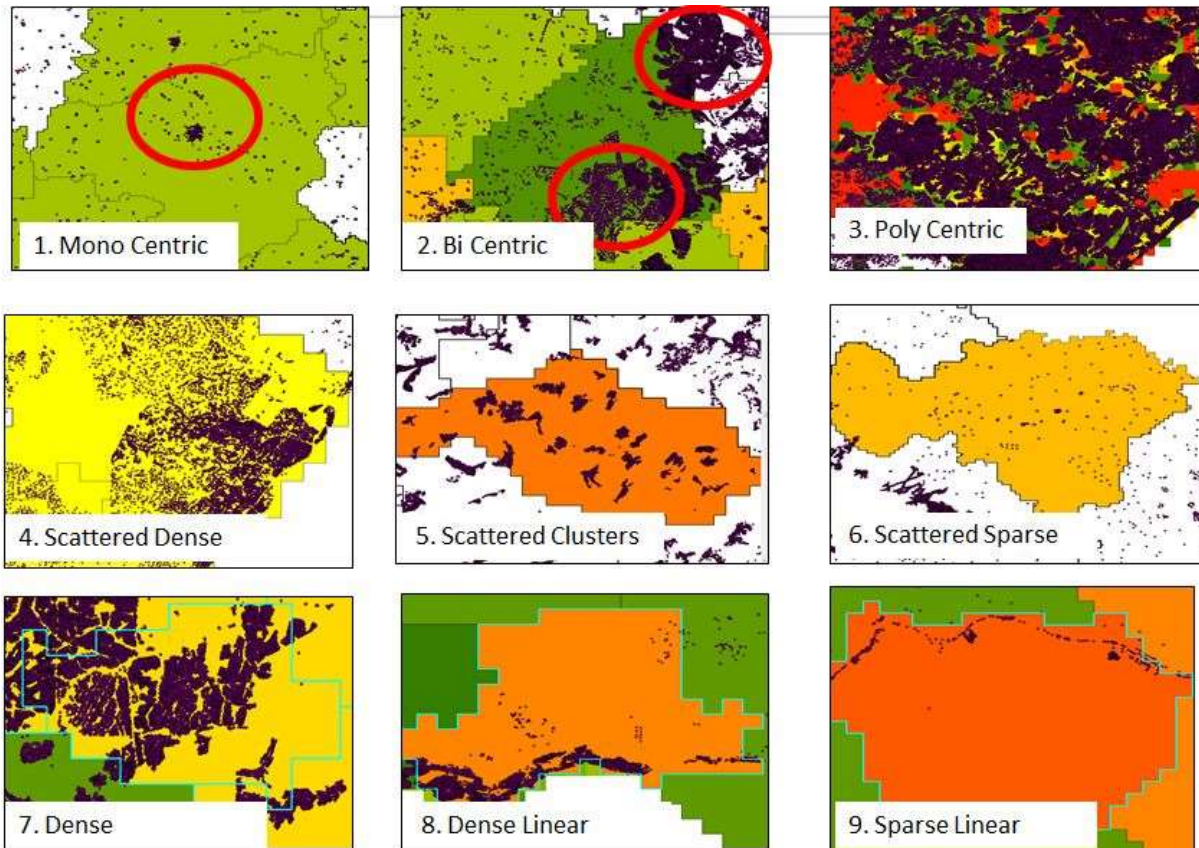


Figure 2: Nine identified morphology types

The key characteristics of each of the nine morphological types and examples of town / settlement catchment areas that these patterns were found in are as follows:

- a) **Mono Centric** – Has only one distinct concentrated settlement in the catchment (e.g. Aliwal North, Beaufort West, Cradock)
- b) **Bi Centric** – Has two distinct concentrated settlements in the catchment (e.g. Paulpietersburg, Virginia, Moruleng)
- c) **Poly Centric** – Has more than two distinct settlements in the catchment (e.g. Johannesburg, East London, Durban)



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- d) **Scattered Dense** – Has a continuous dense point settlement coverage structure (not as dense as cities but also not too sparsely populated, in many instances with a density of over 100 people per km<sup>2</sup>) (e.g. Hlabisa, Coffee Bay, Sterkspruit)
- e) **Scattered Clusters** – Has clusters of non-uniform and non-continuous dense settlements across the catchment (e.g. Libode, Jericho, Hartebeesfontein)
- f) **Scattered Sparse** – Has sparsely scattered settlement points irregularly distributed across the catchment (e.g. Riebeeck East, Ogies, Alexander Bay)
- g) **Dense** – Largely composed of continuously dense settlement with no distinguishable centres or town points (e.g. Lusikisiki, Driekop, Scottburgh)
- h) **Sparse Linear** – Has a linear pattern of sparsely populated settlement; this may mean it has developed alongside a river, coast or road (e.g. Leerkrans, Kanoneiland, Gouritsmond)
- i) **Dense Linear** – Has a linear pattern of densely populated settlement; this may mean it has developed alongside a river, road or coast (e.g. Jeffreys Bay, Mutale, Ga-Rakoma)

It is important to note that this is not the classification of the town / settlement node that the service area / catchment were developed around, but the evaluation of the total pattern of settlement in the catchment area. This information along with information about the number of people that potentially live within different distances from the main town becomes critical when planning for an area and the populations in its hinterland. As stated earlier, an often overlooked yet crucial component in service provision and distribution is the understanding of the varying settlement patterns, and a better understanding of the settlement morphologies can improve how essential services are rolled out.

## 6. RESEARCH CONTRIBUTION

These 9 types were added to the catchment profile and will be an assessment informant for planners on where and how to allocate facilities based on the distribution of population. These nine types also informed the adaptation of planning standards for rural/sparse areas throughout the country, thus laying a foundation for service delivery that is not only based on equity but also on efficiency.

Prior to this study, a morphological classification of all settlement catchments has never been performed. The results presented in this study pave a way for further and more detailed research pertaining to settlement morphology and service delivery.

## 7. RESEARCH LIMITATIONS

The limitation in the research relates to the fact that the available points dataset that was used does not take into account the type of building, i.e. high rise/ single dwelling/ residential / commercial building or the population per dwelling; it is purely based on observed building patterns.

## 8. DISCUSSION & CONCLUDING REMARKS

The settlement catchment approach used is based on familiar concepts like ‘the central place’ which means that people are more likely to travel to their closest point of service to get their needed services. The point of service then has a catchment with people who are closest to it – this is its market share. Knowing how many people are within a catchment is important. However, one needs to go further to find out how people are distributed within a certain catchment. As previously alluded to in the literature review, the inclusion of morphology in an area classification can lead to a better understanding of the area which will then lead to a more informed decision when distributing facilities in that area.

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## 8.1. Implications of morphology on service delivery

The table below indicates that almost 48% of all the towns/settlements in South Africa are classified as monocentric (see 6<sup>th</sup> column from the left). This monocentric morphology is widely distributed across small and larger catchments. The very first column in the table shows a ranking of towns/settlements in orders from 1 to 10, Order 1's being the largest towns (city/metro) and Order 10's being a small town catchment. Mono Centric, Bi Centric and Poly Centric catchments make up 57% of all town/settlement catchments in the country. This means that the distribution of service or social facilities in these areas should potentially be considerably more efficient in comparison to the other types of morphologies. In addition to these, Dense catchments (2.2%) also make it possible to achieve greater efficiencies in the distribution of services as dwelling units are close together.

Table 1: Number of catchments within identified morphology types

Town Order	Catchment Count	Cumulative Catchment Count	Avg Density/ km2	Cumulative %	01_MonoCentric	02_BiCentric	03_PolyCentric	04_ScatteredClusters	05_ScatteredDense	06_ScatteredSparse	07_Dense	08_SparsityLinear	09_DenseLinear
1	6	6	1 342.42	36.40%	0	0	6	0	0	0	0	0	0
2	7	13	369.94	41.59%	1	0	6	0	0	0	0	0	0
3	44	57	193.91	50.40%	35	3	5	0	1	0	0	0	0
4	128	185	99.95	61.63%	87	9	7	7	10	2	3	0	3
5	27	212	371.29	67.51%	9	5	6	2	4	0	1	0	0
6	67	279	201.89	73.67%	19	2	5	15	15	2	6	0	3
7	257	536	119.96	87.37%	87	19	7	57	61	5	16	0	5
8	270	806	74.25	94.85%	121	26	4	59	34	18	4	0	4
9	262	1068	43.14	98.58%	150	7	1	40	23	32	0	0	8
10	261	1328	19.75	100.00%	124	9	3	15	6	89	0	4	2
Total	1328		0.00		633	80	50	195	154	148	30	4	25
					47.63%	6.02%	3.76%	14.67%	11.59%	11.14%	2.26%	0.30%	1.88%

The other types of morphology being those of scattered, clusters and sparse catchments present a great challenge to service delivery. In these catchments, a much greater understanding of the local residential pattern, mobility, income levels and age breakdown is required. In these places, middle order facilities (such as 24-hour clinics, Home Affairs offices) can be located at the central node – depending on the threshold and average travel distance. However, with respect to lower order facilities (such as schools and clinics) which have a much smaller service reach, a good interpretation of the morphology can help to ensure the correct placement of facilities close to residents while avoiding ‘white elephants’ where there is not sufficient demand. The morphology is also extremely useful to plan service points for mobile and periodic services.

The classification of catchments according to morphology, amongst other classifications, has a direct impact on how facilities are planned for and distributed in each catchment. The findings supported the narrative that services cannot be uniformly provided across settlements by merely considering the population and density as is the conventional thought. What the morphological classification of catchments allows planners to do is to plan according to a very localized context. Not all rural areas are the same, and with a detailed classification of morphology down to a settlement level, it is possible to have more insight into the context of each area throughout the country. This knowledge results in a more people orientated approach to planning while also allowing for greater efficiencies from the service provider’s perspective.

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The practical impacts of the morphology for any order of place are evident. Consider having two catchments that have the same number of people (say 9 000) within each, knowing how large each catchment is (the land extent) and how people are distributed in each catchment is key to providing an optimal number of services for both these hypothetical areas. For example, if you wanted to put a clinic in one of the areas you would be able to tell if the whole catchment population warrants a clinic and of what size. Morphological information would also be able to identify the most central place where everyone would have approximately equal access to the clinic. All this information is attributed to each catchment. If one of the two catchments happens to be mono centric, which typically is a small town surrounded by a sparse hinterland (e.g. farmlands/forest/desert), one would not have difficulties in planning for the placement of social facilities or services. This is because the town/settlement is the only inhabited place within the larger catchment and thus all the facilities would have to be placed at the central place.

However, if the second town/settlement catchment was classified as scattered clusters, for instance, the approach adopted for placing facilities would differ. This is because this time there will not be an apparent single place of concentration within the catchment. To overcome this challenge, one would have to look for an area of the greatest population density and adapt the size of facility to match the area of greatest density within the catchment, an area that is more central and equally accessible to the rest of the catchment. This information is crucial for services that involve the deployment of mobile units like health clinics. With the morphological information, the Department of Health, for instance, can determine where to place a fixed facility from which mobile facilities can be deployed.

In one of the case studies undertaken for the project, a team of researchers travelled to Butterworth to study the varying morphologies within the Butterworth catchment. Butterworth has a holiday resort development by the sea in Mazeppa Bay and during the field trip it was discovered that people in the vicinity of the holiday resort were being served by a mobile/satellite clinic. There was a fixed wooden structure where people gather around when the mobile clinic with medical equipment arrives on a predetermined day. The wooden structure itself has no equipment besides a bed. Within the Mazeppa Bay catchment, there is a district hospital from where these mobile clinics are deployed. If the Department were to look at deploying another mobile service, the morphological information would be important to inform decisions about the most suitable location and also to determine the frequency of the service based on the number of people in the target location.

Another important attribute included in the morphology classification of catchments is that of the number of people within distance bands from a catchment's central point. Its practical applicability comes into play when deciding what size a facility should be and who will be served by it. With the morphological information, any service provider will be able to know how many people are within 5km of the main node, for example, within the catchment; and from this information they will be better positioned to carry out service provision in a more efficient and specific manner.

The implications of this morphological classification of catchments on service delivery are extensive. Governments and other decision makers will now have rationale based information to support their decision making with regards to the placement of facilities. This information has been prepared for catchments across the country. This morphological information is also incorporated into a planning application guide; this provides a step by step guide on how to apply planning standards for social facilities placement/distribution, thus assisting decision makers in making informed decisions and better serving communities. For convenience, all this morphological information has been freely made available to the public in the form of an online portal, accessible here: [www.socialfacilityprovisiontoolkit.co.za](http://www.socialfacilityprovisiontoolkit.co.za). This means that all decision makers who have internet access and are interested in getting morphological information about the areas they are planning for, can freely access this information from the online portal.

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## 8.2. Conclusion

Service delivery is one of the duties of every government around the world. Rural areas have been relatively overlooked and development has been focused mainly on urban areas. Since the United Nations put pressure on governments by identifying common global goals and making some services basic human rights, every government has been trying to pay attention to the deficit in basic services in both urban and rural areas. However, these efforts have been met with challenges as the absence of sufficient information, like understanding and adequately responding to settlement patterns, has undermined service provision. This is exacerbated by limited financial resources.

In light of this challenging task of delivering services efficiently to rural areas, scientifically sound methods have been applied to try and balance the needs of communities with efficiency (given the finite financial resources of every government). Internationally, there have been various methods of addressing this through the use of various spatial analysis techniques. This project adopted an advanced approach to analysing spaces which puts emphasis on the morphology of settlements as this is viewed as the key informant in service delivery for any area. The analysis identified nine types of settlement morphologies common in the South African landscape. With this information, service providers and planners can be better positioned to achieve efficiency in the distribution of services while not neglecting equity. The morphological information was an important input to the creation of a planning application guide which is designed to assist planners in planning for service delivery and addressing any morphological challenges.

## 9. REFERENCES

- Bidwell, S. 2001. Successful Models of Rural Health Service Delivery and Community Involvement in Rural Health: *International Literature Review*. Centre for Rural Health: Christchurch, New Zealand.
- Byaruhanga, J. 2011. Improving Service Delivery in Developing Countries; Approaches, challenges and methodologies. *Case Studies from Uganda*. University of Osnabrueck, Germany.
- Farrant, F. 2007. GIS and the developmental objectives of Buffalo City. PositionIT, Johannesburg.
- Kanyane, H. 2010. Public service delivery issues in question. In: Kondlo ,K and Maserumule, MH. 2010. The Zuma administration: *critical challenges*. HSRC Press, pp.77 - 94
- Khumalo, G, Ntlokonkulu, L & Rapoo, T. 2003. Alternative service delivery arrangements at municipal level in South Africa: *assessing the impact of electricity service delivery and customer satisfaction in Johannesburg*. The Centre for Policy Studies, Johannesburg.
- King, J. 1984. The Central Place Theory. SAGE Publications, London.
- Mudau, N. 2010. SPOT Building Count supports informed decisions. Position IT October 2010. <http://www.ee.co.za/wp-content/uploads/legacy/PositionIT%202009/PositionIT%202010/SPOT.pdf>
- Nleya, N. 2011. *Linking service delivery and protest in South Africa: an exploration of evidence from Khayelitsha*. Unisa Press.
- Organisation for Economic Co-operation and Development. 2008. Innovative Service Delivery: *Meeting the challenges of rural regions*. OECD, Germany.

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The Countryside Agency. 2004. *The new definition of urban and rural areas of England and Wales*. The Countryside Agency, United Kingdom.

USAID. 2013. *Sustainable Service Delivery in an Increasingly Urbanized World*. USAID Policy, Washington DC.

Wild, L, Chambers, V, King, M, Harris, D. 2012. *Common constraints and incentive problems in service delivery*. Overseas Development Institute, London.

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# Using Cognitive, Participatory and Community Mapping Methods for Spatial Analysis

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## Abstract

The purpose of this paper is to investigate the use of cognitive mapping as a way of collecting social spatial information that describes the way people perceive their environment. In this case cognitive mapping is grounded in outdoor digital plans and interrogated using Geographic Information System (GIS). Participatory GIS (PGIS) combines sketch maps, aerial photographs, satellite imagery, Global Positioning System (GPS) and GIS to present peoples spatial knowledge in the form of maps that are used as a means for spatial analysis and advocacy. The plans are used to negotiate with stakeholders during planning meetings. The aim of this research is to demonstrate the value of community mapping by providing a well-informed narrative of two communities that have benefited from this method of communication. Qualitative data are collected through cognitive mapping while quantitative data are collected using GPS and tape measurements. Community-led mapping allows residents to own their own information and to keep it accurate and up-to-date.

There is a clear indication from this study that the use of cognitive, participatory and community mapping methods helps planners to understand people's perceptions of space. In this case cognitive mapping has provided a way of understanding linear space that is only visible to the local community. The inclusion of these perceived places in a quantitative spatial analysis adds value to the solution. Furthermore the process of community mapping has provided a meaningful way of engaging with the community. The collection of indigenous knowledge and the understanding of individual's connection with their physical environment can significantly enhance the quality of urban planning, urban design, and management of environments. Social capital and social networks emerge in the process empowering communities to participate in their own development.

## Keywords

Cognitive mapping, participatory GIS (PGIS), community mapping, re-blocking, spatial analysis

## 1. INTRODUCTION

Community mapping refers to a process by which the members of a community assume some responsibility for their own development. In doing this they can influence the direction and execution of their own growth. This paper looks at two case studies in which land ownership and tenure are unclear and where there is limited state capacity to carry out planned development or provide adequate infrastructure. In these projects community mapping allows local residents to assess the trends and opportunities in their community and contribute to possible solutions. The perception residents have of place is captured using the cognitive mapping process. Ultimately a tangible GIS map of the overarching spatial picture of the community is drawn. The tangible map supports participatory mapping that continues as a catalyst for information and knowledge building by providing freedom of discussion about people and place.

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The Department of Town and Regional Planning at the Cape Peninsula University of Technology (CPUT) has participated in two community engagement projects in the Western Cape, being Flamingo Heights Informal Settlement and Goedverwacht Moravian Mission Station. Students were required to assist the community in applying the concept of community mapping and thereby educate themselves in society's problems and understand community issues first-hand (Bringle, 2010:228). Students were able to gain a broader appreciation of academic content relating to their course while assisting community members in the planning of their community. The function of academics in this endeavour is to facilitate learning and ensure the transfer of knowledge. Community members are able to use the University's geospatial technology to update and maintain spatial and non-spatial datasets. Different mapping techniques were used during the projects, such as field-based observations, remote sensing using low-cost aerial photography, satellite imagery and cognitive mapping. Video footage was used to code, store, recall, and decode inter-discursive communication with residents capturing the perceived concept of their environment.

## **2. LITERATURE REVIEW**

This literature review investigates four topics. The first is cognitive, participatory and community mapping methods. The second reflects on modern planning theory from the turn of the 20<sup>th</sup> century to postmodern normative planning. The third section puts into context the bottom-up and top-down approach to planning. Finally academic based community engagement and service-learning pedagogy is discussed as well as the value of Mode 2 indigenous knowledge.

### **2.1 Cognitive, Participatory Community Mapping Toolbox**

According to Downs and Stea (2011:312) a physical map is a theoretical representation of a place. Once the physical space has been mapped the meaning behind the space needs to be known. A place is not designed in a vacuum, it is the product of the abstract interaction between the physical and cultural identity of people who reside there. Locational information is only useful if qualitative attribute data are identified that indicate the kind of phenomena it is and what characteristic pattern of stimulation is regularly associated with it.

The physical context does not tell us of the function of space or its meaning. The physical manifestation of space has an element of human material culture which represents the human mind. According to Glassie (1975:114) context is both descriptive (practical) and explanatory (the abstracted context). The descriptive context is its setting, behavioural surface, physical existence and its position in the real world. The abstract context is invisible and is the context in mind. Once a map has been drawn it can be analysed and the competence of space determined. However without understanding the abstract context of a place the descriptive context becomes superficial. Therefore the abstract context controls the competence of space. When the competence of space changes it is not enough to simply describe these changes, it is necessary to recover the abstract context in order to explain the change.

Cognitive mapping is an important part of this current research however it is not something newly discovered. When we investigate phenomena such as spatial patterns we tend to overlook the context of what we see. A general definition of cognitive mapping is the process of collecting psychological transformations about the relative locations and attributes of phenomena in a spatial environment. A cognitive map is therefore not necessarily a spatial map but is a cognitive representation of space recorded as feature attributes (Downs and Stea, 2011:312). According to Gray et al (2015) individuals in a community interact and thus construct knowledge by assigning meaning to environmental stimuli and experiences. Knowledge constructed in this manner can be harnessed through cognitive mapping to gain an organised understanding or illustrative example of a person's internal conceptual structure of the issue in question. Gribble (1989) suggests that mind awareness is about the nature and formation of environments

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rather than a brief insight of space. Although mind awareness describes locational information in terms of distance and direction it is not the same as linear coordinates on a map.

Kevin Lynch made a connection between cognitive thinking and the environment. Lynch evaluated the performance of spatial patterns of a settlement by observing the behaviour of its inhabitants to see if they remembered the physical form or not (Lynch, 1981: 151). He believed people only feel comfortable in their environment if they recognise and remembered where places are and how to get there. Lynch believed that the legibility of the physical form is determined by the cognitive map people have of the environment (Lynch, 1960:2).

Environmental surroundings such as noise, colour, smell and touch are all reminders that prompt a person's spatial cognition, and spatial representation of the physical structure. A local inhabitant has a more accurate and legible cognitive map of the environment than a visitor because clarity is improved with familiarity, memory and meaning (Lynch, 1960: 1). Edges that define systems are of great value and need to be documented, preserved and enhanced. Edges can be well-trodden paths or marginalised invisible features that are only perceived in cognitive thought. A vision is not necessarily seeing things as they are but as they potentially can be. Although the stability of edges is important the stability of a system depends on flexibility and change. Urban systems are constantly changing which generates an illusion of no stability. In this context urban design must be seen as evolutionary rather than revolutionary.

PGIS is a way of documenting urban change through community participation and engagement. PGIS is not intended to impart technology skills or to share spatial information openly but to reuse the information provided by the community. According to Warner (2015) local knowledge of spaces is needed to complement existing surveyed data sets. It is important to understand and compile local knowledge in order to understand the complexities of communities. Community mapping on the other hand is intended to allow the community to gain the technical skills to edit the spatial data and directly influence the final product. GPS is a tool that gives a community the opportunity to determine the location of features themselves. The maps produced can be simple geographic or topological maps. The two case studies used in this research embrace cognitive, participatory and community mapping methods.

## **2.2 Modern Planning Theory**

Urban planning has taken on many different forms throughout the history of its practice. Rational comprehensive planning dominated the 20th century until the 1950s when planners began to identify shortcomings in the so-called blue print planning. Longer term or medium distance planning with control and feedback mechanisms was suggested by Meyerson while Banfield saw planning as a means to an end. Lindbloem suggested a pragmatic approach where incremental decision making was proposed. A mix of both rational and incremental decision making was envisaged by Etzioni in the mixed scanning approach. In the 1960s Davidoff recognized that planning could no longer be top-down in its approach where government's decisions are taken on behalf of communities. Davidoff advocated that the role of the planner be advocacy, to be a pleader and facilitator. Webber supported the notion of comprehensive planning where the rights of the individual are considered and where communities are encouraged to make their own choices. Public participation was becoming a contentious issue in planning. Arnstein compiled a typology of public participation where the rank of citizen power is displayed in the form of a ladder. Friedman (1973) developed the transactive planning approach in response to the widening gulf in communication between technical planners and their clients. The transactive style however is not applicable to every situation particularly where expert knowledge is joined to action. It is inappropriate for instance, where expertise carries sufficient authority to act without the benefit of mutual learning. Kloesterman supported the notion that value free planning is impossible since planning had become political. Forester maintained that power is entrenched in information and that the planner must obtain the peoples vision rather than rely entirely on

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design. In response to the influence of postmodernism Healy (1992:143) suggested a communicative approach (Steyn, 2015:38-50).

Communicative planning theory advocates socially constructed reality that facilitates culture-building and social-learning in a bottom-up approach that mobilises and empowers communities. Mutual learning and personal relationships need to be established between the planner and community through face-to-face contact with the people. Field surveys and data analysis cannot be done without interpersonal dialog with people. Planning is not separate from other social actions and goes beyond establishing what can be done for people in terms of delivery. Planning takes cognisance of how actions affect people's dignity and capacity for growth through cooperation and generosity (Freedman, 1973). Planners are required to help people clarify their individual and community goals which would eventually enable them to achieve collective self-determination (Sandercock; 1998:175-8).

The communicative model of planning is being used extensively today however Steyn (2015:48) believes that it is not always successful in practice due to conflicting values in the public participation process. Steyn (2015:54) points out that in many instances planning in South Africa is done by people who have little knowledge of the community they are working with. Neat theoretical models and guidelines are devised but the actual participants are not actually part of the process and accordingly the power they are supposed to derive from it bypasses them. In fact a lot of conflict is created because people have different opinions about what should be changed and how. The question is can planners really represent the interest of people especially if the planner comes from a different social environment. Planning conflicts are based on the fact that people are in different power positions and they do not share cultural backgrounds, even though they might be neighbours in space. Alberts (2004:750) cited in Steyn (2015:50) warns against so called democratic public participation were the public participation is only based on the knowledge and capabilities of certain individuals in the community. This can perpetuate problems of socio-economic inequalities and create political unfairness. Arnstein (1969:217) addresses the heated controversy of public participation by suggesting a typology of participation and non-participation. Arnstein defines participation as an instrument to eliminate conflict. She argues that public participation facilitates the redistribution of power that allows citizens to be part of the economic and political process. One of the challenges encountered with democratic planning is the NIMBY (not in my back yard) syndrome. Community opposition can be a considerable barrier to the efficient siting of less desirable developments (Steyn, 2015:44).

### **2.3 Community-led Bottom-Up Planning verse Top-Down Planning**

Top-down and bottom-up planning are clearly conflicting however the conflict between the two creates an opportunity for dialog and negotiation. According to Campbell (2014) top-down planning relies upon the planner's theoretical background while bottom-up relies on a community's stimulus of perception. In the bottom-up approach there is no preconceived goal and therefore allows planning theory to evolve. Although top-down and bottom-up planning are opposing they need each other. In the case of Flamingo Heights Informal Settlement in-situ upgrade project the bottom-up approach was initiated through a community-led savings scheme followed by community-led mapping. This exercise allowed the community to build networks that created the social capital needed to negotiate with the service provider and lobby for better services. The bottom-up approach in this instance prevented a ridged and controlling outcome while the top-down approach imposed rules and regulations necessary to prevent chaos and despair.

### **2.4 Community Engagement and Service-Learning Pedagogy**

In the postmodern era of today higher education in South Africa is called upon to become more committed to making available information and infrastructure for community service programs. The Higher Education Act of South Africa promulgated in 1997 (DoE, 1997) demands that higher education institutions in South

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Africa demonstrate social responsibility and that 'knowledge-based community service' be a basis for program accreditation and quality assurance (Hall, 2010:3). Community engagement in Higher Education can be understood as a cluster of activities that includes service-learning, problem-based teaching and action research (Hall, 2010:7). The question is how this form of knowledge is structured and how the content is validated. Knowledge production in this situation should be socially constructed and mediated locally (Tierney, 1997: 15-16). Muller (2009) distinguishes between the two types of knowledge being symbolic codified and communicated tacit knowledge. Gibbons refers to knowledge generation as Mode 1 and Mode 2 knowledge. Mode 1 is the traditional structured way of knowledge generation while Mode 2 is knowledge gained in context of the application and is more socially accountable and reflexive (Gibbons, 2000:150). Mode 2 knowledge is produced in the context of the application rather than scientifically (Musson, 2006:12).

### **3. OBJECTIVES / RESEARCH QUESTIONS**

The objective of this research is to report on how cognitive, participatory community mapping can significantly enhance spatial analysis and provide a more rigorous and holistic solution to managing space. Community mapping was applied during the Flamingo Heights informal settlement re-blocking and in the Goedverwacht Moravian Mission Station settlement where land ownership and tenure are unclear and where there is limited state capacity to carry out planned development or provide adequate infrastructure. The general assumption is that community mapping provides a bottom-up approach that allows community members to contribute to the analysis of space and participate in their own development.

The aim of this research is to provide a well-informed narrative of two communities located in the Western Cape that have benefited from community-led mapping. Flamingo Heights is an informal settlement located on an industrial site while Goedverwacht is a well-established mission station that has grown informally. Although these two communities have informal layouts they present very different housing topologies. The two studies are intended to provide evidence that indigenous knowledge plays a significant role in spatial planning.

The interrelated research questions are:

- 1) Can spatial analysis be based simply on the descriptive context of a community?
- 2) Does the abstract context (context in mind) significantly enhance spatial analysis?
- 3) How is the abstract (invisible) context applied in spatial analysis?

### **4. APPROACH AND METHODOLOGY**

The humanistic-interpretation of space through community-led mapping requires an ethnographic approach where extensive time is spent with the community. The study is inductive with an emphasis on the participants and not any pre-set theory or explanation. The case study approach adopted for this research uses a general method of analysis where the researcher makes recommendations or alternatively leaves the situation as it is. Qualitative cognitive data was collected through open-ended conversations with residents and through participant observation. Quantitative data included vector data surveyed and measured describing physical features. Qualitative cognitive data were recorded using sketches, maps and written notes. The results were listed as attribute data attached to the georeferenced features in a GPS. Quantitative data was collected using conventional mapping technology. GIS spatial analysis was used to identify areas of high social value. Once this was done thematic maps were produced that were used for further participatory mapping. A comparison analysis was done of spatial information at the beginning and end of the project. To start with only descriptive spatial data was available. The final spatial layout included both the descriptive and abstract context after the cognitive, participatory community mapping had happened.

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## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

Flamingo Heights is a low-income informal settlement with high population densities located within an industrial setting. The residents are former squatters who were provisionally moved by the local authority to a piece of land in Lansdowne industrial zoned public open space in the Cape Town allotment area of the Cape Town Metropole. The legal recognition of their occupation has resulted in its rapid expansion over the past decade. Census data was not available for this community and local authorities did not have enough information to plan tasks such as service delivery or resource allocation. The Department of Town and Regional Planning at CPUT agreed to participate in the re-blocking of Flamingo Heights where a community-based in-situ upgrading approach was taken. The curricular pedagogy of service-learning was identified as a means for students and academics to engage with the community. The community mobilisation and organisation phase of the Flamingo Heights project was initiated by the Informal Settlement Network (ISN). This was followed by community-led mapping and enumeration (Pinfold, 2014). Community mapping is a bottom-up approach that gives the community an important opportunity to provide information about their space. Furthermore during the process community members can identify various issues that need to be prioritised for problem solving (Pinfold, 2015).



**Plate 1:** Town and Regional Planning students from CPUT team up with Flamingo Heights residents to measure and map the community

The Flamingo Heights mapping exercise began with a sketch drawn by the community representing all the dwellings, toilets, fresh water taps and tracks within the community. The sketch was surprisingly accurate in its information however there was no scale or spatial reference. Students were asked to assist the community in redrawing this plan using geospatial technology to achieve better accuracies. The students being unfamiliar with field work struggled to achieve the required accuracies. As a result students had to return to the site a number of times to improve on their measurements. The repetitive site visits allowed the students to connect with the community and become more familiar with the abstract context of the community (see Plate 1). This resulted in a significant amount of community engagement and trust. The

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plan that was finally produced by the students was accurate, georeferenced and visually pleasing. The plan was plotted on paper and displayed in the community office where residents were able to identify their shack and give comment. The participatory approach ensured that the plan reflected the correct enumeration information. This was important as the plan became a form of tenure for the residents and confirmed each person's existence within the community. This map (document) of ownership allowed the next phase to happen which was to design a new layout for re-blocking where residents agree to dismantle their shacks and rebuilding them according to the new layout. The proposed layout design was considered together with the community and students (see Plate 2). The residents were able to decide where they wanted to rebuild their shacks and how the common spaces would work.



**Plate 2:** Using a field plan and cardboard cuttings of each shack the residence advised students where they would like their structure moved to while the students advised residents on the best solution as per their learning

Once this was done the layout plan was formalised and re-blocking took place. Each new structure was built with new fire resistant corrugated iron cladding and provided with a full waterborne flushable toilet, fresh water tap, greywater drainage and electricity. Roads, pavements and hard open spaces were constructed with kerbing and paving. The result is a community that understands their space having contributed to its development.

During the Flamingo Heights re-blocking project six distinct plans were produced (1) community drawn paper map (2) a digitised plan using georeferenced aerial photography (3) an accurately surveyed plan measured and drawn by university students with the community (4) community-led proposed spatial layout determined with students on site (5) final spatial layout accepted by the local authority (6) an 'as built plan' after re-blocking (see Plate 3). During the project cognitive, participatory and community mapping methods were used resulting in a spatial layout that was acceptable to both the community and the local authority. Communal space was positioned according to the priorities indicated by the community resulting in it being a fully functional place. The community showed no dissatisfaction or animosity during the re-blocking process. This is accredited to the community mapping process. It is evident that the plans evolved from

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misrepresentative (digitised map – 2), to a theoretical description (physical 3D plan -3) into an explanatory interactive map (community-led layout – 4) and finally a community endorsed layout.



**Plate 3:** Flamingo Heights Re-Blocking (1) Community drawn map, (2) Digitised from aerial photography, (3) Accurately surveyed and measured 3D plan, (4) Cardboard cuttings – proposed community layout, (5) Re-blocked layout superimposed over community layout - 4, (6) Re-constructed layout (as-built).

The Goedverwacht Moravian Mission Station community engagement project is ongoing and will only be fully evaluated in the future. The project does however provide a useful account of cognitive, participatory community mapping. The Goedverwacht Moravian Mission station located in the Platklouf River valley situated in the Bergrivier Municipality near Piketberg in the Western Cape is the second community mapping project discussed in this paper. Moravian Mission stations are governed by the Rural Areas Act, 1987 (Act No 9 of 1987) which means that the land is held in trust by the Minister of Land Affairs for the benefit of the residents. The Goedverwacht Moravian Mission station community is not bound by any spatial planning or land use ordinance/act. These circumstances have resulted in the village growing and developing informally along the Platklouf River (see Figure 1). The objective of the Goedverwacht community engagement project is to create a PGIS that documents existing land use, infrastructure and topography. Community-led mapping involves the community and students identifying important features and any other information that coexist between them. Of specific interest are vector spaces that have some kind of restricting topology that is only visible to the residents themselves and not the researchers. The resident and student together clarify and sketch the information on a piece of paper. During the mapping process conversation between the student and resident reveals the abstract context of their space. These invisible cognitive pictures are visualised through attributes that are used to produce thematic maps in GIS.

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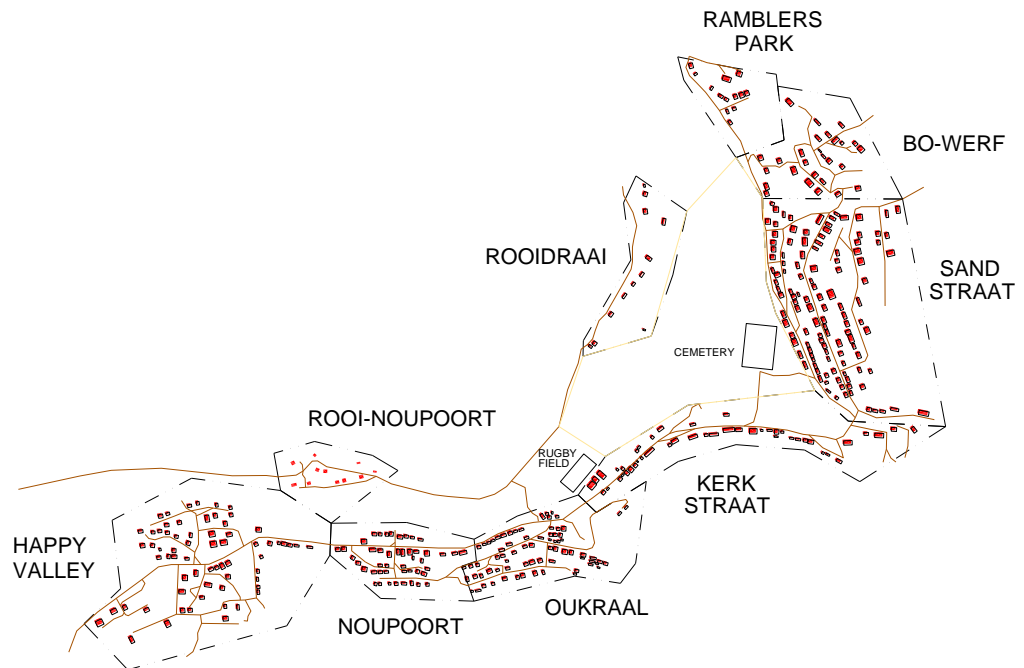


Figure 1: Goedverwacht – digitised from aerial photography - the physical context here describes the place however does not tell us anything about its abstract context.

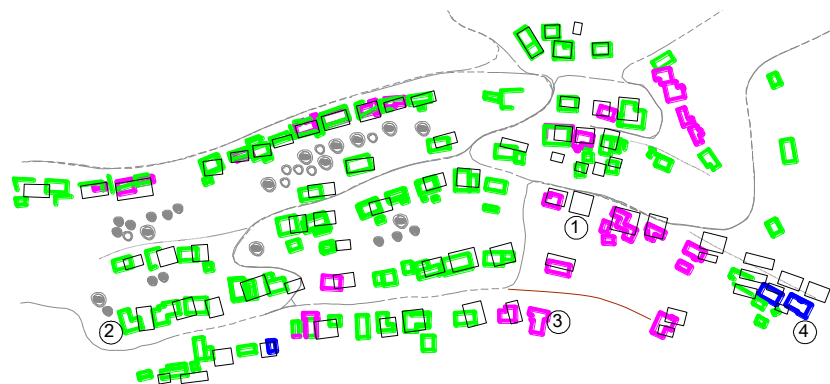


Figure 2: Oukraal – Community Mapping combines a range of geospatial information management tools allowing the community to generate and manage spatial information themselves. Community empowerment is achieved through this integrated application of geospatial technologies. (1) Buildings digitised from aerial photography, (2) Buildings measured and georeferenced by students and community members using GPS (3) Building re-measured by community members (4) Building measured by resident without assistance

Residents were asked to draw sketches showing important features and boundaries. The residents spoke about what they liked and disliked about the area and how they thought it could be changed (see Plate 4). Conversations were noted, georeferenced and sometimes recorded/videoed. The sketches drawn by the students and residents were varied in presentation and content and were mostly incorrectly orientated, not drawn to scale and had no reference. The students were required to transfer the sketches into AutoCAD Computer Aided Design (CAD) software ensuring that the sketches were drawn correctly using standard cartography, scale and georeferenced techniques. The project has been in progress for two years allowing a meaningful gestation period. As time passes tensions that exist between different sectors of the community become evident and are recorded. Participants in the mapping exercise also become more representative of the community.

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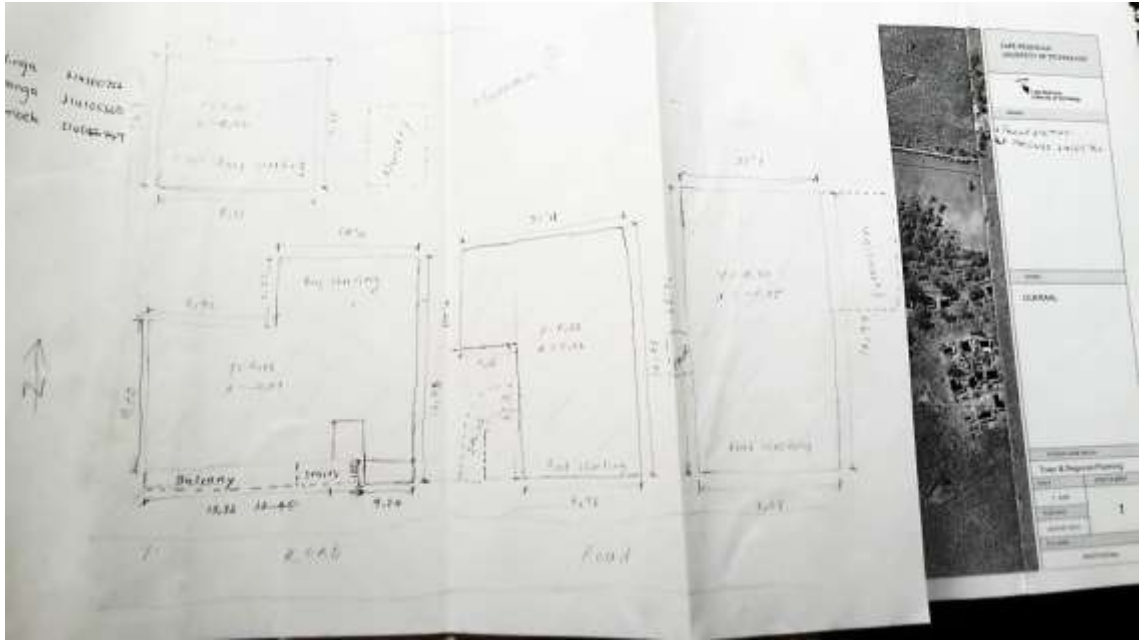


Plate 4: Participatory GIS includes the use of sketch maps. Residents were asked to draw simple sketches showing important features and boundaries. Students transferred the sketches into AutoCAD. Only once the abstract context of the space had been determined and recorded as attribute data could the student reflect on the competence of the space (using GIS).

All sketches (CAD) and documented conversations (spreadsheet) were finally incorporated entered in a GIS. Printed thematic maps provided information at community meetings and walkabouts. More information was obtained such as noise levels, condition of latrines, broken water pipes, where flooding takes place, illegal tapping of water and electricity recorded in a spreadsheet. The enumeration process begins at this stage identify dwelling numbers, name of families and individuals related to the structure (see Plate 5). Photographs are important as well as video clips. If dwellings are uninhabited or vacant it is noted. Database management and spatial analysis is best done using computers however forms and ledgers must be compiled at community level so that the information is understandable and accessible to the community. Mobile GIS is very useful for data maintenance and storage. With the use of GPS and waypoints students can easily return to households and update electronic forms at different times. It is also important that data is verified which will mean returning to households several times. Participatory mapping allows the community to contribute to the information. Once geospatial data is available various spatial analysis tools can be used such as growth prediction models, site location models, multivariate statistical analysis and determination of high social value areas etc.

The Goedverwacht community mapping project is ongoing. New thematic plans are being produced by students for the next phase of participatory mapping. It is obvious thus far that community participation contributes significantly to the quality of the plans.

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Plate 5: Looking, listening and recording. A CPUT student measures while talking to a resident.

## 6. RESEARCH CONTRIBUTION

This research reflects on the view that in postmodernist planning communication is critical. The study provides two case studies where communication is achieved through storytelling, words, pictures and sounds that are processed by means of quantitative data analysis (GIS). Community-mapping has been used to gather this information and demonstrates the value to both planner and community. In this instance the community learns about itself and the planner becomes sensitive to concealed community issues. In this collaboration the planner acquires the knowledge that the local inhabitants possess and in turn is able to convey future direction for the area. Moreover the community is empowered to negotiate better with high interest groups and provides the community with the means to influence its political, intellectual and social development. The purpose of this research has been to show that individuals have the ability to effectively participate in the planning process, especially in very poor informal settlements where people have limited skills.

## 7. RESEARCH LIMITATIONS

This research adopts the case study format where two projects are presented and analysed. A well-documented disadvantage of the case study format is the lack of generalisability of results and its non-standardisation of measurement. The aim of this study has been to evaluate the use of indigenous knowledge in analysing spatial patterns and distributions within two specific communities and not to develop a general understanding of principles which determine the location of human and physical characteristics within all communities.

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## 8. DISCUSSION AND CONCLUDING REMARKS

Postmodern normative planning methods such as communicative planning rely on public participation and to some degree a bottom-up approach. In South Africa the effectiveness of public participation depends on the way civic society is approached and if marginalised group's interests are attended to.

The Flaming Heights project is a re-blocking exercise to facilitate improved service delivery. Community mapping was used during the process of re-blocking. The mapping began with a community drawn plan showing assets such as the position of dwellings, water tap, chemical toilets, roads and tracks. The plan was redrawn with the assistance of CPUT students who used modern mapping technology to produce an accurate, georeferenced and correctly scaled plan. The participatory mapping process ensured an inclusive description of the physical spatial context of the place. PGIS was used to refine the plan and ensure that the data became more accurate. During the participatory mapping process cognitive mapping allowed the residents to reflect on the abstract context of spaces as they saw it. The resident's concerns and desires were recorded in an attribute table that was georeferenced in a GIS. The second phase of the project was the design of a new layout to facilitate service delivery. The community mapping process ensured that residents were able to edit and directly influence the final product. Once the layout had been drawn and approved the re-blocking commenced and services were provided. The third phase of the project consisted of an 'as built' plan of the spatial layout where residents were encouraged to learn the technical skills needed to capture and edit spatial data and thus be in a position to take charge of the data.

The Goedverwacht community project began in 2014 with an agreement that CPUT students would embark on a community mapping exercise. Students adopted a community mapping approach where residents were expected to contribute and be involved. The mapping exercise began with the measuring and positioning of building footprints that were used to describe the place. During the mapping process residents were asked their opinion about the competence of the space around them. This cognitive map provided the abstract context needed to understand the area. Residents were able to draw sketches and tell stories of how they felt and what they would do to improve things. This information was captured in an attribute table and georeferenced in a GIS. Students were able to produce a new plan using this information that reflects both the descriptive context and the perceived context of the place. Students will continue to present these plans to the residents so that more information can be gathered. The intension is that the residents will eventually take charge of the data and continue to use it and update it when necessary.

This research answers the following questions:

### 1. Can spatial analysis be based simply on the descriptive context of a community?

It is often thought that a place can be adequately described by simply mapping its physical spatial layout. Sometimes this is done remotely using aerial photography, satellite imagery and more recently UAV's (drones). However this descriptive account of a place does not explain the interaction between the physical and cultural identity of people. What this achieves is merely a guess of the function and meaning of a place.

### 2. Does the abstract context (context in mind) significantly enhance spatial analysis?

It can be said that the descriptive context of a place can only be explained (analysed) through the recovery of the abstract context. This is because the abstract context surrounds the competence of space and controls and prods it so that the things generated out of it will fit into their descriptive context. Only once the abstract context of a place has been established can comprehensive spatial analysis take place.

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### 3. How is the abstract (invisible) context applied in spatial analysis?

Cognitive information is entered as attribute data joined to georeferenced features (point, lines or polygon). The georeferenced attributes can then be included in a spatial analysis.

## 9. REFERENCES

Arnstein, S. 1969. A ladder of citizen participation. *Jrnl of the American Institute of Planners*, 35:216–24.

Bingle, R.G., Phillips, M.A. and Hudson, M. 2004. *The Measure of Service-Learning: Research Scales to Assess Student Experiences*. Washington, DC: American Psychological Association.

Campbell, K., 2014. Massive Small top-down vs. bottom-up. Kevin Lynch Memorial Lecture, 2014.  
[https://www.youtube.com/watch?v=QO2vCv\\_JYWw](https://www.youtube.com/watch?v=QO2vCv_JYWw) [accessed: 17 March 2016].

Department of Education. 1997. Higher Education Act 101 of 1997. Pretoria: Department of Education.

Downs, M and Stea, D. 2011. The Map Reader: Cognitive Maps and Spatial Behaviour: Process and Products, in *Theories of Mapping Practice and Cartographic Representation, First Edition*, edited by M. Dodge, R. Kitchin and C. Perkins. John Wiley & Sons, Ltd publishers, 312-317.

Friedmann, J. 1973. *Retracking America: a theory of transactive planning*. Anchor Press/Doubleday, Garden City, NY.

Gibbons, M. 2000. Mode 2 Society and the Emergence of Context Sensitive Science. *Science and Public Policy* 27: 159-163.

Glassie, H. 1975. *Folk Housin, in Middle Virginia*. University of Tennessee Press.

Gray, S.A., Gray, S., De Kok, J., Helfgott, A., O'Dwyer, B., Jordan, R., and Nyaki, A. 2015. Using fuzzy cognitive mapping as a participatory approach to analyze change, preferred states, and perceived resilience of social-ecological systems. *Ecology and Society* 20(2): 11.  
<http://dx.doi.org/10.5751/ES-07396-200211> [accessed: 10 March 2016]

Gribble, J. 1989. Verlorenvlei Vernacular: A Structuralist Analysis of Sandveld Folk Architecture. *Unpublished M.A. Thesis*, University of Cape Town.

Hall, M. 2010. Community engagement in South African higher education. In *Community Engagement - Kagisano\_No\_6\_January 2010*.

Healey, P. 1992. Planning through debate: the communicative turn in planning theory. *Town Planning Review* 63 142 -162

Lynch, K. 1960. *The image of the city*. Cambridge: MIT Press.

Lynch, K. 1981. *Good city form*. Cambridge: MIT Press.

Muller, J. 2009. Forms of knowledge and curriculum coherence. *Journal of Education and Work*, 22:3, 205-226

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Musson, D. 2006. The Production of Mode 2 Knowledge in Higher Education in South Africa. University of South Africa. *Unpublished Doctoral Thesis*
- Pinfold, N. 2015. Community Mapping In Informal Settlements for Better Housing and Service Delivery, Cape Town, South Africa. *Geospatial World Forum*, 25-29 May 2015, Lisbon, Portugal
- Pinfold, N. 2014. Using Geographic Information System (GIS) Pedagogy As A Catalyst For Community Engagement. *Geo-Spatial World Forum*, Geneva, Switzerland, 2014
- Sandercock, L. 1998. *Towards cosmopolis: Planning for multicultural cities*. Chichester, New York: Wiley and Sons.
- Steyn, J. 2015. *Reforming Normative Planning: Essay on a Christian Approach to Planning*. Prisca Uitgewers.
- Tierney, W. 1997. Organizational socialization in higher education. *Journal of Higher Education*, 68(1), 2-21.
- Warner, C. 2015. Participatory Mapping: a literature review of community-based research and participatory planning. *Spring 2015*, 1-20.

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# An Investigation into Land Tenure Opportunities for the Goedverwacht Moravian Mission Station in the Western Cape

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## Abstract

According to Section 25 (6) of the Bill of Rights citizens of South Africa who live in communal areas have the right to legal land tenure. Since the 1980s the Moravian Church in the Western Cape has considered land tenure reform measures for its residents. In 1996 the Genadendal Accord was signed between the South African government and the Moravian Church committing both State and Church to work towards land reform and development. The aim of this paper is to stimulate discussion about land reform at Goedverwacht and the effect it will have on the community. The research methodology is participatory with residents of Goedverwacht contributing significantly to the research strategy. Qualitative method of data collection is used to gain an understanding and insight of community dynamics. Students from the Cape Peninsula University of Technology (CPUT) contribute to the study through the cooperative teaching method of service-learning. Goedverwacht is situated on three farms which are held in trust by the government under the Rural Areas Act (House of Representatives) No 9 of 1987. As a result the Goedverwacht community has not been bound by any spatial planning or land use ordinances. The newly enacted Spatial Planning and Land Use Management Act, 2013 (SPLUMA) and the Western Cape Land Use Planning Act 2015 (LUPA) have no influence on the development of the village. These circumstances have resulted in its informal spatial layout. Mission towns in South Africa have in the past provided a place for the marginalised in society rather than to serve religious, administrative and commercial needs. Mission towns were places where people could live simple but dignified lives under the guidance of the church. Possible land tenure systems are discussed i.e. private ownership, communal ownership or mixed tenure systems. Residents of Goedverwacht have mixed feelings about the prospect of change. In response CPUT has setup a land information system to document existing land uses and infrastructure.

## Keywords

Land tenure; communal tenure; land reform; rural development; mission towns

## 1. INTRODUCTION

According to Section 25 (6) of the Bill of Rights in the 1996 Constitution of South Africa, all citizens in South Africa are entitled to legal land tenure. Since the 1980s the Moravian Church in the Western Cape has considered land tenure reform measures for residing residents. In 1996 the Genadendal Accord was signed between the South African government and the Moravian Church committing both State and Church to work towards land reform and development. The community must now consider individual landownership opposed to the current informal communal tenure that exists at the mission station. The cost of implementing freehold tenure is high starting with a comprehensive land audit. Furthermore planning and subdivision approval would be needed before Deeds of Transfers can be issued. The alternative to

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freehold land tenure is for residents of Goedverwacht to continue with the present informal communal land tenure system however in South Africa there is no formal communal land registration system. The Goedverwacht community engagement project intends to provide a comprehensive land audit and reliable integrated land information system for the village. An integrated land information system consists of property ownership, physical topography, man-made features as well as cultural information such as land use and demographics. The land information system will reside in a Geographic Information System (GIS) referenced to the South African coordinate reference framework. The graphic component of the GIS database consists of multiple independent, interrelated layers containing homogeneous map features.

## 2. LITERATURE REVIEW

Individual land tenure in South Africa is well developed however communal land tenure needs to be modernised and legalised to ensure property rights. The public now days demands land security and want to be more involved with planning issues that relate to the development of their communities. As a result the public is becoming more spatially enabled and vocal. Land tenure reform in African is intend to address the issues of rapid urbanisation where illegal land occupation and land grabbing is prevalent. Land title formalisation is a means to secure titles, stimulate land markets, and motivate investment (Baffour and Hammond, 2013:56). The ancient act of land measurement and land ownership has become part of society and rule of law. The precise demarcation of land has been intended to protect people's interests and to prevent illegal occupation of land. Today cadastre has gone far beyond recording ownership, location, area and value to include additional information that facilitates planning and monitoring of land use (Dasgupta, 2012:7). Today there is increasing pressure on governments to manage natural and manmade resources in a sustainable way. Communal areas in South Africa invariably lack cadastre and other information needed for sustainable planning (Kurwakumire, 2014:64). Pienaar (2013:20) refers to the two property administrations that exist alongside one another in South Africa:

- Individualised common-law landownership, co-ownership and limited real rights that are registrable
- Communal land tenure, which is predominantly based on the shared use of land by communities in terms of indigenous law principles which is not registrable.

Due to the fact that the present registration system does not provide for the registration of communal land tenure in rural areas official information in respect of indigenous land occupation is currently insufficient and unreliable (Pienaar, 2013:20). The requirement for the registration of real rights in the South African Deeds registry is that the land must be properly surveyed and that there must be individualisation of land-use rights for the property. This is not possible in the case of communal land and thus results in a weak permit-based entitlement in communal land that is not able to be registered.

Okoth-Ogendo, (1989) states that in indigenous tenure the right of an individual or group to access land is secure so long as the land is productively used. Therefore one can consider this access to land as an individual real right under the system. Du Plessis (2011) adds that indigenous tenure can never be secured with a title deed as indigenous communities will continue to evaluate their rights and security in tenure in the social context rather than relying on the title deed. Du Plessis (2011) suggests that if African indigenous land tenure is to be formalised the system must recognise existing occupancy rather than ownership. It must also include a wide spectrum of other rights. According to du Plessis (2011) the common law view of property and ownership is inconsistent with pre-colonial and present-day African indigenous land tenure. Du Plessis (2011) points out that in indigenous land tenure the right of access to land is multiple and therefore no one person or group can have exclusive control over the land or the management of its resources. It is therefore impossible for one person to own a property.

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It has been noted that although the South African land registration system does not legally recognise communal land and fragmented real rights in respect to property it has shown evidence of becoming more flexible in this regard. Pienaar, (2013:22) points out that the promulgation of the Sectional Titles Act No 95 of 1986 is evidence of this. Firstly sectional title allows sectional title units within a building to be registered in a sectional title register for that specific sectional title scheme instead of a conventional land register. Secondly a management structure forms part of the sectional title register where conduct rules are specified and enforced by the body corporate of the scheme. Furthermore the registration system in South Africa has further demonstrated its intent in become more flexible in its approach to land registration by introducing the Deeds Registries Amendment Bill, 2016 that provides for an electronic deeds registration system. A fully computerised registration system offers the possibility to incorporate different land tenure models, such as individual landownership, fragmented land tenure and communal land tenure in different registers in the same registration system (Pienaar, 2013:22).

South African legislation has in accordance with the constitution attempted to promulgate laws that facilitate social cohesion within communities by connecting them legally to their land. The Communal Property Associations Act 28 of 1996 attempted to facilitate juristic persons in communities to acquire, hold and manage land on behalf of a community in terms of a written constitution. Unfortunately this Act was too sophisticated for some communities which resulted in their constitutions being written in a way that excluded some local customs. The communal spirit of tenure in most cases was ignored. The Communal Land Rights Act, No 11 of 2004 (CLARA) was enacted to facilitate the role of local governments in administering land in communal areas and services to communities on communal land. This Act was recently found to be unconstitutional and scrapped in its entirety by the Constitutional Court (Pienaar, 2013:22). Another difficulty is defining what constitutes a community. The definition described in the Restitution of Land Rights Act 22 of 1994, Section 1 is a group who has shared rules in determining access to their land. Pienaar (2013) refers to recent case law, Richtersveld Community v Alexkor Ltd for help in defining what constitutes a community. The constitutional court ruled in this case that community refers to same culture, language, religion, social and political structures, customs and lifestyle. Customary rules in the use and occupation of land was recognised as part of culture. The Richtersveld cases also clarifies that security of tenure for communities can only be identified using a comprehensive land information system. Pienaar (2013) believes that a fully computerised registration system will allow not only individual ownership of real rights but layers that reflect flexible and layered fragmented use rights. Pienaar concurs with du Plessis (2011) that communal land tenure is based on flexible use rights exercised by a range of members of a community within a specified area. Pienaar further states that the borders of these areas are often vague or flexible, and may change from time to time due to specific uses or agreements. This can only be recorded by a computerised land information system specifically developed to record communal land rights.

The failure to provide tenure security for indigenous communities can be attributed to many factors. In Ghana there is a low compliance of land registration due to the fact that the title deed system is costly and inefficient. Furthermore the complex procedures for implementation and lack of awareness of the legal title requirement in Ghana are deterrents in registering legal tenure (Baffour and Hammond, 2013:55). In Ghana there are two overlapping land administration systems, the bureaucratic state land system and customary tenure where land issues are administered in a plural environment, with customary laws and norms operating alongside state law.

### **3. OBJECTIVES /RESEARCH QUESTIONS**

Communal land tenure cannot be accommodated in the current South African Title Deeds Registry system. According to Section 25 (6) of the Bill of Rights in the 1996 Constitution of South Africa, all citizens in South Africa are entitled to legal land tenure. This creates a dilemma for the residents of the Goedverwacht Moravian Mission Station in that land reform could result in the abandonment of their traditional communal

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life style. Since the 1980s the Moravian Church in the Western Cape has considered land tenure reform measures for residing residents.

### **3.1 Research Objectives**

- To investigate the possibility of individual land ownership in a communal settlement
- The effect land reform (freehold tenure) will have on communal cultures
- The role of a digital cadastre (electronic land management and land administration) in documenting communal land
- The possibility of drawing (documenting) property boundaries in communal areas where cadastre do not exist

### **3.2 Research Questions**

- How can residents in a communal settlement own land?
- What are the implications of converting communal land to Freehold Land Tenure
- Is it possible to have a dual land tenure system where formal (individual) and informal (communal) are registered in the Deeds Registry System in South Africa?
- How does one define a community?

## **4. APPROACH & METHODOLOGY**

This study is participatory in its approach as the residents of Goedverwacht are an integral part of the research strategy.

- Quantitative methods of data collection are used to gain an understanding and insight into the life-worlds of the community.
- Furthermore this research has an explicit (political) commitment to the empowerment of the Goedverwacht community and challenges the status quo of social conditions within the community. The empirical application of this study suits the educational action research done where students from CPUT are required to engage in Mode 2 knowledge production (Gibbons,2005) through the cooperative teaching method of service-learning.
- Additionally this research is inductive in that there was no pre-set theory or explanation before the study commenced. The analysis of the results is a collaborative effort between the researchers and the Goedverwacht community.
- Qualitative data was collected using open ended discussions and conversations. This was done during the community mapping project currently taking place at Goedverwacht. The data collected was in the form of narratives that was recorded and documented. A participatory analysis was done with the residents to gain an understanding and insight into the lives of the community. The conversations were simple and informative and were a collaborative effort between the researcher and the residents.
- In order to gain a true understanding of community dynamics an ethnographic approach was used. Overnight accommodation was arranged so that family dynamics and traditions could be observed. This had a profound impact on the way the researchers perceived the community. The aim of the ethnographic approach was to gather insight into how people live; what they do; how they use things; or what they need in their everyday or professional lives. During this ethnographic experience observations and interviews were recorded using videos and photographs. This approach was particularly valuable at the beginning of the project.

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## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

Mission towns in South Africa were mainly established to provide a place for the marginalised in society rather than to serve religious, administrative and commercial needs. Goedverwacht was slow to develop due to the uncertainty of property rights of its inhabitants and only achieved formal status in 1889 (Fransen, 2006:138). Goedverwacht initially only accommodated approximately 200 inhabitants however the town has now mushroomed to approximately 412 residential dwellings. Goedverwacht has been administered as a private village on private land and as such there has been no urban planning input by the local Bergrivier municipality. It is these circumstances that have resulted in Goedverwacht's informal spatial layout and its continual informal development. CPUT has signed a memorandum of understanding (MoU) with the Goedverwacht Moravian Mission station to cooperate in the development of a spatial plan of the village. Presently the Mission Station is managed and run by a Board comprising of members of the Goedverwacht Moravian Church which is associated to the Moravian Church headquarters in Cape Town. The village straddles the Platklouf River in a linear development that extends for approximately 3.8 kilometres. The main land use is low density residential with subdivided agricultural land in the Platklouf River floodplain. Permaculture is customary in the village with vegetable crops planted around village dwellings. Some gardens sprawl without definition, merging and mingling with neighbouring gardens while other boundaries are well defined. Some properties sprawl across to veld to areas where animal pens and chickens are kept. Approximately 412 dwellings are located in eight distinct precincts along the river (Figure 1).

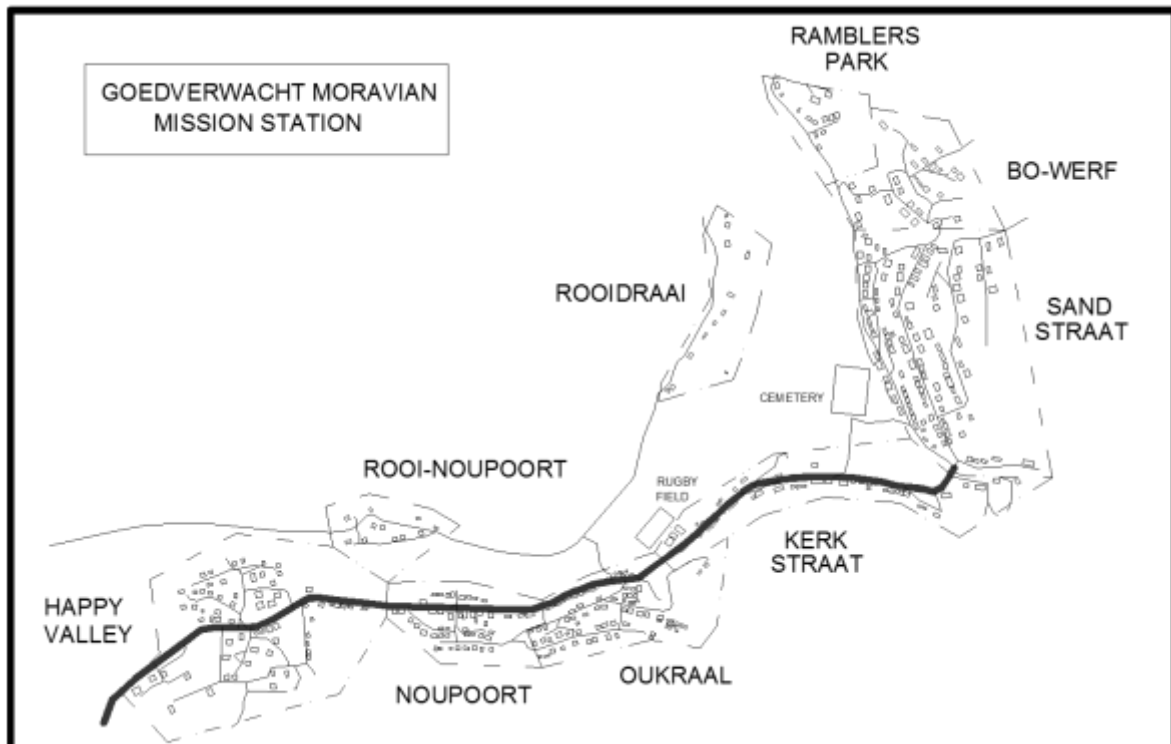


Figure 1: Goedverwacht Moravian Mission Station

Although residents do not have legal land tenure they do have long-term guarantee of rights to the use of property on the farm. Nevertheless without legal tenure some residents have little incentive to invest in property improvements. This is particularly problematic along the main road where many dwelling facades

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reflect the heritage of the village. Furthermore farmers are unlikely to invest in irrigation equipment and other systems without more secure land tenure. Boundaries of properties are sometime poorly defined or not defined at all and are only known by general reference to natural features. When property is assigned and transferred without formal diagram or general plan the land boundary is often subject to dispute. Furthermore usufruct or praedial servitudes may exist that other people do not know about. Because there is no legal account of these rights they carry no security. Goedverwacht is situated on three farms being, Farm Goedverwacht (146), Wolfkloof (141) and Ezelsfontein (147) and is held in trust by the government under the Rural Areas Act (House of Representatives) No 9 of 1987. Thus the Goedverwacht community is responsible for their own development and are not bound by the Spatial Planning and Land use Management Act, 2013 (SPLUMA) or Western Cape Land use Planning Act 2015 (LUPA) or building restrictions imposed by the Bergrivier Municipality. In turn the Bergrivier municipality has no legal obligation to provide services to the community. The Bergrivier municipality does however provide core municipal functions such as refuse removal and water boreholes. Bulk Electricity is supplied by Eskom however it's the responsibility of the community to pay for their services. Refuse is removed once it's been collected by the community. There is no storm water system along the main tar road or on the internal gravel roads. Service delivery is a major problem within the community and requires urgent attention.

Although there is no formal land tenure at Goedverwacht there is a form of communal land tenure administered by the church. Even before the Bill of Rights in the 1996 Constitution of South Africa stated that all persons who have land that is legally insecure be entitled to legal tenure, the Moravian Church in the Western Cape showed willingness to address land reform. Furthermore the Bergrivier municipality in the Western Cape stated in its 2012-2017 spatial development framework report that it supports the provision of individual ownership for residents of the Goedverwacht Moravian Mission station.

Ultimately the Western Cape Provincial Land Reform office is responsible for administering the process of land reform however budgetary constraints have resulted in the delay of its implementation. This delay is also a result of the uncertainty among the Goedverwacht residents regarding the question of state-led land reform. There has been a mixed reaction regarding possible freehold tenure and its consequences. One of the main concerns is how the provision of essential services will affect the community. The cost of privatising essential services such as water, sewerage and electricity might require residents to pay more money than they currently do. It is apparent that the poorer residents are more sceptical of land reform and would prefer to continue living under the current church system. Furthermore many residents are suspicious of the Bergrivier Municipality's intention, specifically on taxation. The racial injustice of the past has instilled mistrust in the municipality regarding land issues. The richer residents are very supportive of state-led land reform program and are notably impatient in its implementation.

Questions remain as to what land should be transferred from the church and what should remain with the church. Some feel that all the land should be transferred including agricultural land with the church, school and crèche remaining church property. Others feel that only residential plots should be transferred with agricultural land collectively owned. The other issue is whether the church should sell the land to the residents. Many feel that paying taxes over the years has been sufficient revenue for them to acquire their land. The issue of selling community assets in a bid to recover the debt incurred by the church has been met with contempt. There was an acknowledgment that tension existed between the moral obligation of the church and fiscal constraints of running the Mission Station. Residents want to know what the financial situation is before the selling or transferring of land goes ahead as this might well impoverish the poor. Many residents felt that the communal character of the mission station is under threat and that it will change their way of life. Residents are worried about crime which is currently manageable however an influx of outsiders might result in an increase in crime. One of the biggest concerns is that there has been very little information afforded to residents regarding land reform. This has created uncertainty amongst the residents. Additionally the church is ignorant of what is happening within the community. There is an urgent need for an audit of land use and community assets.

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One of the objectives of this research is to investigate the possibility of drawing (document) property boundaries in communal areas where cadastre does not exist. During this study a survey was done of the Oukraal precinct at Goedverwacht as an experiment to see if mapping of boundaries could be done with residents. Most of the boundaries were defined by fences or by other means however many could only be determined with the residents input. In some areas there were overlaps where communal activities meant that the area had multiple owners. Dwellings and other features were captured to provide information about the settlement. A land information system can accommodate fuzzy boundaries and areas that overlap. A land information system would reside in a GIS that is referenced to the South African coordinate reference framework with the graphic component of the database consisting of multiple independent, interrelated layers containing homogeneous map features. The land information system could assist in documenting land use rights and play a role in a digital cadastre system that improves land management and land administration. An electronic land information system is possibly solution for capturing communal land rights currently able to be registered in the South African registration system.

## **6. RESEARCH CONTRIBUTION**

This paper contributes to the discussion on land tenure and sustainable rural development. Furthermore it demonstrates how community mapping and land information systems can be used as a method of assisting communities, policy makers and planners in understand development challenges. It is important to consider alternative ways of administering land and to re-examine institutional arrangements on how people's rights to land and resources are recorded. Access to secure land and other natural resources is critical for sustainable rural development.

## **7. RESEARCH LIMITATIONS**

Participatory research assumes that ordinary people are knowledgeable and are capable of articulating knowledge (Mouton, 2010:150). The intension is to encourage residents to participate and to make them realise that their contribution is valuable. This is empowering for people as they value their own knowledge and do not feel powerless. However the limitation in this is if there is distrust and conflict among participants. There will always be some form of power struggle among community members that can hamper progress. Individuals may use their power for personal gain where most of the benefits go to them. Furthermore the length of time needed to develop consensus around goals, mission, and methods means substantial time is needed. Informing and training people in research methods, how to collect data and what an analysis is can be challenging. The participant needs to learn some skills especially when technology is used. This can cost money and time therefore a good organisational structure and support structure is needed. Group work is important in order to achieve an outcome. It is sometimes difficult to gather the right people and convince them to participate. If they lose interest then a new team needs to be assembled and wastes time. Fortunately the Goedverwacht community engagement project has been in operation for two years. This incubation period has allowed the researchers the opportunity to familiarise themselves with the community and establish a working relationship with them.

## **8. DISCUSSION & CONCLUDING REMARKS**

There has been a mixed reaction by the residents of Goedverwacht regarding the state-led land reform program. It is apparent that the poor and retired residents are more sceptical about land reform and would prefer to continue living under the current church system. Some residents believed that both freehold and communal land tenure at Goedverwacht is possible with residential plots becoming freehold and agricultural land being collectively owned. The moral obligation of the church has been scrutinised regarding the future of the poor and retired resident's. Many residents felt that the communal character of the mission station is under threat and that it will change their way of life.

### **Conference Proceedings:**

The first objective of this research has been to investigate the possibility of individual land ownership in a communal settlement. The literature confirms that the current land tenure system in South Africa does not allow communal ownership of land however the constitution of South Africa states that all citizens of South Africa are entitled to legal land tenure. This is a dilemma considering the only form of land tenure is individual rights to land. This means that residents of Goedverwacht could be forced to take ownership of their properties and abandon the communal arrangement it currently has with the Moravian church.

The second objective was to investigate the effect land reform would have on the communal culture. During this investigation it was evident that some residents were undecided about abandoning the communal arrangement with the church. Some residents were opposed to the Bergvriër Municipality taxation system and felt that they would not manage financially if the church system was abolished. Some residents felt strongly about having freehold ownership to their properties and wanted the opportunity to develop separately. There was a strong sense of nostalgia during conversations with many residents who recalled the hardship of Apartheid and the threat of evictions. It was also suggested that certain parts of the community remain communal such as the agricultural area, sports fields and school. Residents believed that a dual land tenure system would be beneficial. It was apparent that more needs to be done to inform residents of what their rights are and what the consequence will be when land reform happens.

The third objective is to investigate the role of a digital cadastre (electronic land management and land administration) in documenting communal land tenure. A mapping exercise was conducted at Oukraal precinct to demonstrate that it is possible to build a land information system (LIS) where cadastre does not exist and that it can be a reliable way of documenting property ownership. Overlapping fuzzy boundaries and dual ownership of land can be accommodated in a LIS provided multiple layers are available. It is paramount that when establishing property boundaries residents need to be involved and participate in the demarcation.

The final objective was to investigate how property boundaries could be drawn. A community mapping exercise has been envisaged that will enable residents to map the spatial layout of their community themselves. At present there is a community mapping project implemented where residents are actively involved in this process. The community mapping project is in its infancy and is still continuing in the future. The idea is to create a community-led LIS.

This research attempts to answer the following questions:

1. How can residents in communal settlements own land?

The current situation at Goedverwacht is that land tenure is in the process of being formalised. At present residents have informal ownership of their properties through an arrangement with the church, but this will change in the future.

2. What are the implications of converting communal land to Freehold Land Tenure?

At present Goedverwacht is governed by the Rural Areas Act (House of Representatives) No 9 of 1987. Thus the Goedverwacht community is responsible for their own development and are not bound by the Spatial Planning and Land use Management Act, 2013 (SPLUMA) or Western Cape Land use Planning Act 2015 (LUPA) or any other restrictions imposed by the Bergvriër Municipality. However if freehold ownership is imposed on the community of Goedverwacht it will become part of the Bergvriër Municipality and therefore be subjected to Municipal management.

3. Is it possible to have a dual land tenure system where formal (individual) and informal (communal) systems are registered together in the current Deeds Registry system in South Africa?

The South African Deeds Registries Act 47 of 1937 does not allow for communal land ownership.

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4. How does one define a community?

According to recent case law, Richtersveld Community v Alexkor Ltd the constitutional court ruled in this case that community refers to same culture, language, religion, social and political structures, customs and lifestyle.

## 9. REFERENCES

Baffour, A. and Hammond, F. 2013. Prognosis of Land Title Formalization in Urban Ghana: The Myth and Reality of Awareness and Relevance. *African Studies Quarterly*. Vol 14 Issue 1 & 2

Dasgupta, A. 2012. From no-win to win-win. *Geospatial World*. Vol 62 issue 11.

du Plessis, W. 2011. African Indigenous Land Rights in a Private Ownership Paradigm. *PER / PELJ* 2011(14)7

Evers, S., Spierenburg, M. and Wels, H. 2003. *Competing Jurisdictions: Settling Land Claims in Africa*. Brill Academic Publishers, Netherlands.

Fransen, H. 2006. *Old Towns and Villages of the Cape*. Jonathan Ball, Johannesburg.

Gibbons, M. 2000. Mode 2 Society and the Emergence of Context Sensitive Science. *Science and Public Policy* 27: 159-163.

Kurwakumire, E. 2014. Digital Cadastres Facilitating Land Information Management. *South African Journal of Geomatics*, vol. 3, no. 1, pp. 64-77

Mouton, J. 2008. *How to Succeed in Your Master's and Doctoral Studies: A South African Guide and Resource Book*. Hatfield, Pretoria: Van Schaik Publishers.

Okoth-Ogendo, H. 1989. Some issues of theory in the study of tenure relations in African agriculture. *Africa*, 69(1).

Pienaar, G. 2013. Land Tenure Security: the Need for Reliable Land Information. *The Journal of the Helen Suzman Foundation*, (70).

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## **UN-Habitat's Rapid Planning Studio: A Case Study of Integrated Planning for City Extensions in Africa**

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### **Abstract**

Beneath the global trend toward 70% urbanization at mid-century lie geographically strongly differentiated urban growth dynamics. In particular medium-sized cities in the developing world are set to undergo a period of dramatic growth. Local municipalities often fail to plan in advance and at scale for the expected population increase due to both centralized administrative environments and low institutional capacities at local level. The failure to provide, or facilitate the provision of, adequately serviced land contributes to growth in form of informal settlements. If plans are created, they often fail to take into consideration the needed financing and are drafted to legal requirements out of step with reality and not conducive to the needs of compact urban centers. These and other shortcomings result in a lack of plan implementation and call for a much-needed change in contemporary planning practice.

To make planning processes more implementable, an integrated, trans-sectoral approach is necessary. In response, UN-Habitat proposes three operational enablers: urban planning & design, urban legislation, and urban finance & economy (the Three-Pronged Approach or 3PA). This approach supports the implementation of Sustainable Development Goal 11 (“make cities inclusive, safe, resilient and sustainable”), and the objectives and principles of the New Urban Agenda. The authors, representing the agency, have been involved in translating this approach into a workshop for plan development and implementation of city extensions called the Rapid Planning Studio (RPS). The workshop is a simulation of a full planning process in an intense three-day format tailored to technical municipal staff. As practitioners involved in supporting municipalities in the formulation of urban extension plans, we are concerned with tools and methods aimed at overcoming the implementation deficiency of Sub-Saharan African planning realities. In this paper, we aim at identifying systemic hindrances, misconceptions and shortcoming of current planning practice extrapolated from first-hand experience in conducting the workshop in six countries and twenty-five cities over the last four years.

A number of key lessons emerged, among which are: (1) although planning is as much a political as a technical exercise, planners often perform their duties without precise policy directions. (2) Local planning authorities lack sufficient capacities to supervise subcontracted plan development. (3) Plans rarely acknowledge the rapidity of urban growth and related issues of tenure and informality. (4) Cities tend to allocate insufficient land to public space, relying too often on expropriation to acquire it. (5) Cities lack mechanisms to capitalize on increased land value generated by public investment. (6) Regulations on plot coverage and setbacks (and lack thereof) rarely allow for compact development and its benefits. (7) The concept of incremental implementation in phases is not sufficiently understood.

Despite widespread implementation of the RPS, the findings of this case study cannot be generalized without caution. The workshop is currently designed to train planners only in the field of city extensions.

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Although comparable findings might be expected in other areas of urban intervention - city infill, transformation, slum upgrading, etc. - this remains to be confirmed.

### **Keywords**

UN-Habitat, Sub-Saharan Africa, City Extension, Rapid Urbanisation, Planning Methodology, Rapid Planning Studio

## **1. INTRODUCTION**

### **1.1 Urbanisation as Threat**

Behind the global trend towards 70% urbanisation by mid-century lie significant regional differences in urban growth rates. For example, due to increased natality and rural-to-urban migration, Africa's urban population is projected to triple, reaching 1.3 billion in 2050 (UN DESA, 2015). Medium-sized cities in Sub-Saharan Africa are among those most rapidly urbanising. Within this reality, medium-sized cities in the region are not only the fastest growing but also, due to an array of issues, the least equipped to cope with the consequences (UN-Habitat, 2009). Specifically, these issues include a heavily centralised administrative environments (Llop, 2015), widespread poverty, and low institutional capacities at the local level (UN-Habitat, 2010). As a result, municipalities often fail to plan in advance and to scale for projected urban growth. Inevitably this contributes to sprawling informal settlements: an everyday reality for currently 62% of urban dwellers in Sub-Saharan Africa (UN-Habitat, 2013a). Living conditions in most informal settlements pose enormous challenges to both policy-makers and inhabitants.

### **1.2 Urbanisation as Chance**

The pace of urban growth, along with negative environments it often produces has tempted the view of urbanisation as a threat to be curbed. Failed attempts aside, such a view foregoes the opportunity to harness the immense transformative potential of urban settings. Coinciding roughly with the Habitat II conference 1996 in Istanbul, urbanisation began to be seen as precondition to basic service access, increased possibilities in education and health as well as an overall higher quality of life. Further, broad challenges such as climate change and poverty cannot be meaningfully addressed without a renewed focus on—and embrace of—the urbanisation process (The World Bank, 2013). Cities are also economic powerhouses, generating a significant part of a country's gross domestic product (McKinsey, 2011; The World Bank, 2013). In fact, productivity and personal income level tend to increase with city size and density (Combes, Mayer & Thisse, 2008; Glaeser & Gottlieb, 2009). Consequently, for Sub-Saharan Africa, well-managed urbanisation holds the potential of significant and meaningful increases in economic and social prosperity.

### **1.3 Sustainable Urban Development as Policy Objective**

While “the path to prosperity inevitably runs through cities” (Glaeser & Joshi-Ghani, 2013:1), not every highly urbanised country is wealthy. Certain benefits of development cannot occur without urbanisation; while urbanisation alone is not sufficient to generate these. UN-Habitat's mission is to promote good urbanisation to generate these positive effects. The agency is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. This mandate is echoed by the 2030 Sustainable Development Agenda. UN-Habitat employs a number of instruments to foster sustainable urban development including National Urban Policies, the City Prosperity Initiative, Participatory Slum Upgrading methodology, the People's Process, Planned City Infill and Planned City Extension.

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## **1.4 The Implementation Gap**

Rapid urbanisation is not the only challenge in sustainable urban development. Another issue is the regular failure of plan implementation in Sub-Saharan Africa, where planning legislation is often antiquated (UN-Habitat, 1999; Motasim, Rae & Petrella, 2010; Berrisford, 2011) and local governments face the well-nigh impossible task of funding the necessary infrastructure (UN-Habitat, 2015b). Institutional practices of colonial masterplanning and comprehensive planning, persistent until today in many developing countries (UN-Habitat, 2009), prove inadequate and ill-equipped to confront new realities of urban growth and poverty. Their approach is too rigid for dynamic and diverse contexts, too resource-intensive for institutional and legal capacity and too expensive for governments and citizens. The outcome is two-fold: plans are not created at all or, if they are, end up on shelves. This is especially true whenever plans are developed on grounds of statutory obligation or as political projects (UN-Habitat, 2009) rather than out of developmental necessity or, even better, out of foresight. Both unfortunately and fortunately, it is precisely the institutional capacity that holds the key to a needed change in direction, a principle famously demonstrated on a larger scale by Acemoglu and Robinson (2012).

## **1.5 Integrated Planning for Implementation Success**

To improve municipal capabilities to plan for growth in a more implementable manner, UN-Habitat promotes three operational enablers, also referred to as the Three-Pronged Approach (3PA) to sustainable urban development. This methodology combines a focus on (1) sound and flexible urban planning and design, (2) enforceable and transparent urban legislative and regulatory frameworks, and (3) urban finance for affordability and cost-effectiveness. Integrating the three disciplines aids to balance crucial conflicts of sustainable development: ambitions and available resources, demands for growth and protection of the environment, the prosperity of economic development and its fair distribution to reach social objectives (Vaggione, 2013). To be clear, the 3PA, in and of itself, is not normative. Rather, it is both an analytical and a problem-solving method, embedding implementability into planning processes. This method has to be paired with principles of sustainable urban development to achieve policy objectives such as prosperity or inclusion.

## **1.6 The Rapid Planning Studio**

An example of a didactic UN-Habitat initiative, which combines both policy principles and the 3PA to support planning, specifically city extensions, is the Rapid Planning Studio (RPS). The RPS format aims to strengthen municipal planning capacity by collaboratively performing a rapid version of a planning process with actionable next steps towards supplying adequate amounts of serviced land. Technical staff of participating municipalities undertake a guided city-wide urban analysis, focusing specifically on local challenges regarding planned city extensions. Participants evaluate the provision of a quality, connected street network, sufficient public space and serviced buildable plots, among other urban features; via the three focus areas of the 3PA: urban planning and design, legislative and regulatory frameworks, and finance. The objective of RPS is to harnesses the knowledge, talent and zeal of municipal technical staff to identify a context-specific, achievable process towards sustainable urban development.

As authors of the RPS methodology, we intend to reflect upon our practice of holding the workshops in six countries and twenty-five cities. Specifically, we aim to extrapolate from our experience and bring to light systemic challenges of current planning practice. The paper will proceed to review topic-framing literature, before advancing a response to above research question.

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## **2. LITERATURE REVIEW**

### **2.1 Plan Implementation Challenges in Sub-Saharan Africa**

For decades, literature has consented that current planning frameworks and practices are inadequate to manage Africa's unique contexts and challenges (Rakodi, 1997; UN-Habitat, 1999, 2008; Berrisford, 2011), including the obvious issues of rapid urbanization and informality. In the region, urban plans are often drafted to legal requirements that are no longer compatible with the contemporary situation (UN-Habitat, 2013b) and rarely take into consideration the needed financing, leading to failure of plan implementation. While the reasons for implementation deficiencies are defined by their unique context, three interrelated themes emerge in the region.

In Africa, urbanisation occurs at lower average national income levels compared to any other region (Ijjasz-Vasquez, 2015). Paired with an immense, urban growth-induced demand for new public infrastructure and -services, many local authorities face a widespread gap between spending needs and available resources (UN-Habitat, 2013b, 2015b; Palmer & Berrisford, 2015). Central governments are of little help as they continue to control the bulk of potentially lucrative funds (UN-Habitat, 2015b). As Smoke (2015) notes, although public sector decentralisation has been widespread and popular in many developing countries, the effectiveness of fiscal decentralisation has been disappointing. Transfers from central governments are often irregular due to both political tensions across government levels and fear of political backlash from taxpayers.

Service delivery is undoubtedly a question of financial resources. However, governance plays an equally important role. In fact, the lack of the former can often be explained by "administrative and capacity constraints or by the absence of legal powers to raise them" (Palmer & Berrisford, 2015: vii). To complicate matters, across the region, urban planning law is outdated and still inextricably linked to colonial practices (UN-Habitat, 1999; Motasim, Rae & Petrella, 2010; Berrisford, 2011). In fact, most contemporary planning ordinances in Anglophone Africa are in some form successors of a single British model law: the Town and Country Planning Act of 1947 (UN-Habitat, 1999, 2013b) implemented by the former British Colonial Office.

For the most part, urban planning in the region is characterised by import of European models and theories and the subsequent lack of innovation and reform. One such model was the master planning or comprehensive planning approach, persistent up to today in many developing countries (UN-Habitat, 2009; DfID, 2015), often unapologetically rigid in process and top-down in nature (Lwasa & Kinuthia-Njenga, 2012). Jenkins, Smith and Wang (2007), alongside other studies, indicate major criticisms of these models: (1) a preoccupation with the plan-as-product and a consequent lack of attention to process, (2) a prioritization of spatial land-use patterns over social, economic and environmental concerns, (3) a disregard of local realities, especially of contemporary informal urbanisation and its intricacies and (4) an inadequate consideration of available financial resources and legislation.

### **2.2 The Need for Integrated Planning**

Solving this complex web of interrelated issues requires coordination. Disjointed or lack of coordination is a key challenge for contemporary Africa (UN-Habitat, 1999). This is true across municipalities, scales and sectors. Therefore, urban planning is usually separated from other line-function departments within municipalities. In practice, however, spatial planning, legislation and finance are strongly intertwined, in form of both synergistic relationships and inherent contradictions. Couch (2016) gives examples of the latter: economic expansion and protection of the environment, aspirations of the individual and society, and social costs of economic activity, which are not borne by the market. If coordination is poor, and if these

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contradictions are not managed, they play out in form of fragmented, highly inefficient urban space (UN-Habitat, 2009). Yet, cooperation between municipal departments may not be enough: the public sector alone cannot ensure successful implementation of plans. Rather, “all parties, including the private sector and civil society organizations, need to learn from each other about how to shape future development trajectories” (UN-Habitat 2009:xxiv).

### **2.3 UN-Habitat’s *Three-Pronged Approach***

UN-Habitat’s brand of integrated planning is called *the Three-Pronged Approach*. UN-Habitat (2015a:3) describes the components of the approach, already linking them to policy objectives, as follows:

1. *Enforceable and transparent legal framework*. The emphasis should be on the establishment of a system of rules and regulations that provide a solid and predictable long-term legal framework for urban development. Special attention should be paid to accountability, implementability and the capacity to enforce the legal framework where applicable.
2. *Sound and flexible urban planning and design*. Specific attention should be paid to the design of the common space, since it is one of the main contributors to urban value generation, with provision of appropriate street patterns and connectivity and the allocation of open spaces. Equally important is clarity in the layout of the buildable blocks and plots, including appropriate compactness and mixed economic use of the built area, in order to reduce mobility needs and service delivery costs per capita. Finally, the design should facilitate the strengthening of the social mix and interaction and the cultural aspects of the city.
3. *A financial plan for affordability and cost-effectiveness*. The successful implementation of an urban plan depends on its sound financial basis, including the ability of initial public investments to generate economic and financial benefits and to cover the running costs. Financial plans should contain a realistic income plan, including the sharing of urban value between all stakeholders, and an expenditure provision to address the requirements of the urban plan.

These components have to be considered in mutual interaction and interdependence and have normative as well as operational consequences (UN-Habitat, forthcoming). For example, regulations directly affect the provision of public space and built form through determination of distances, offsets or density limits (Mboup, 2013:51-52). The renaissance of the focus on urban design is a response to the excessive preoccupation with zoning and land-use, often leading to separation of functions and social strata. To promote compactness, density and mixed-use, it is necessary to elaborate a spatial layout, which designs the public space as well as the street network, and in consequence the blocks and plots. For density to work well, adequate public space is required. The financial dimension describes the need to plan for economic sustainability from the beginning to allow for the securing and financing of these spaces, the service infrastructure they carry and the maintenance they require, using instruments such as local taxation, central government funding, value-sharing and land-readjustment.

### **2.4 Alternative Models of Integrated Planning**

UN-Habitat is not alone with its call for more integrated planning. Rather, there is a welcome tendency of current urban development models to promote cross-disciplinary conceptualisations. The World Bank, for example, employs a three-dimensional urban development framework: (1) planning, (2) connecting and (3) financing. The seeming omission of legislation is relativized, however, since “for the framework of planning, connecting, and financing to work, a good governance structure is prerequisite” (2013:2).

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Connecting is featured prominently as “planning must allow for people and products to be mobile” (ibid.). The German Rapid Planning initiative shows an even stronger emphasis on mobility as it puts supply and disposal infrastructure at its centre, while seeking “to develop a rapid trans-sectoral urban planning methodology” (Steinbach et al 2015:6). Other examples include GIZ’s Urban Nexus approach, which aims to identify synergies between sectors and domains in its quest for sustainable urban solutions and Cities Alliance’s (2006) City Development Strategy (CDS) organised around the five themes of (1) livelihood, (2) environmental sustainability and energy efficiency, (3) spatial form and infrastructure, (4) financial resources and (5) governance.

Glaeser & Joshi-Ghani (2013) critique both sectorally isolated approaches as well as an overly broad, objective-based approach and propose a hybrid of these two. They argue that the former fails to successfully solve overarching issues (e.g. quality of life) while the latter fails to evaluate different disciplinary approaches (e.g. congestion charges vs. building more roads to alleviate traffic). We like to believe that the 3PA circumvents either shortcoming by - risking repetition - distinguishing between objectives (such as prosperity or environmental sustainability) and means to achieve those objectives (such as financing and governance). These (and other) contemporary approaches have much in common: they are implementation-oriented by considering existing realities across several domains and by being stakeholder-involving rather than merely expert-driven.

## **2.5 The Need for Knowledge Transfer and Capacity-Building**

Adequate capacities to enforce urban planning regulations is lacking in many developing countries and should be given high priority (UN-Habitat, 2009). A related impediment to plan implementation is the severe under-resourcing of the planning profession in most countries (UN-Habitat, 2013b); especially municipal administrations have inadequate numbers of staff with the necessary planning capacity. Consequently, there is a need to “develop new tools and transfer knowledge across borders and sectors that promote integrative, participatory and strategic planning” (UN-Habitat, 2015a:26). We agree with Eskemose et al. (2015) that sociocultural mechanisms of guidance and facilitation are more successful and apt planning instruments than state-based land-use control practice, in particular when the state is weak.

## **3. RESEARCH OBJECTIVE & METHODOLOGY**

### **3.1 Research Question**

As practitioners involved in supporting municipalities in the formulation of urban extension plans, we are concerned with tools and methods aimed at overcoming the implementation deficiency of Sub-Saharan African planning realities. The introduced Rapid Planning Studio is conceptualised to be one such tool. In this paper, we aim at identifying systemic hindrances, misconceptions and shortcoming of current planning practice extrapolated from first-hand experience in conducting the RPS workshop in six countries and twenty-five cities over the last four years.

### **3.2 The Rapid Planning Studio**

The Rapid Planning Studio was developed and tested over a four-year cooperation between UN-Habitat’s Urban Planning and Design Branch, Urban Economy Branch and Urban Legislation Unit, within the frameworks of the Achieving Sustainable Urban Development (ASUD) programme and the Kenya Municipal Programme (KMP). Originally piloted in Kisumu, Kenya in February of 2012, the RPS has since been held in 25 cities across Kenya, Rwanda, Ethiopia, Mozambique, Malaysia and the Philippines.

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Each RPS consists of an intense three-day workshop, taking place in the city of hosting municipalities. During these days, a full 6-18 months planning process - from assessment to implementation - is reproduced collaboratively. First, the city is analysed and profiled to develop informed extension scenarios. Then, a chosen extension is planned with a strong focus on public space and street layout, private space and plot layout, as well as urban design. To strengthen implementability of the plans, both analysis and planning steps are approached through the eyes of spatial design, legal frameworks, and finance (i.e. the Three-Pronged Approach). The results aim at achieving both increased planning capacity through knowledge transfer and an actionable draft strategy addressing sustainable development principles as well as strategic planning and budgeting recommendations at various scales and policy levels - all while employing basic and pragmatic tools.

The RPS is built around a set of three pedagogical principles: participants at the centre, learning by doing and peer-to-peer learning. First, each workshop asks participating municipalities to prepare and present their unique challenges in dealing with urban growth. General principles are contextualised and applied to find possible ways of addressing those. Second, participants are learning through practice. Each step of the planning process is divided into three input presentations (representing the 3PA) and followed by an integrated exercise, each in preparation to undergo a full, basic planning process upon completion. Third, peer-to-peer learning is fostered by bringing together practitioners with similar challenges, opportunities and potentials, thus establishing relations of professional exchange and strengthening urban development capacity.

## **4. RESEARCH ANALYSIS & FINDINGS**

### **4.1 Planning Process**

Urban planning is arguably the most important tool that governments have at their disposal for managing rapid urban population growth, promoting social inclusion and creating economic development. For these and other reasons, planning is not purely a technical exercise but a political one. Every decision taken has implications on private property rights and on the balancing of competing private interests. Despite far-reaching political implications, planners perform their duties without precise policy directions and planning frameworks continue to be based on technical considerations without much consideration of feasibility, appropriateness and local implementation capacity. The inability of municipalities to implement plans is attributable to the fact that plans are often overly ambitious without sufficiently considering the financial and human resources needed for their implementation. Thus, financing and implementability of a plan should be considered during the planning process, not as an afterthought.

Planning is often seen as ‘anti-poor’ and as instrument that hardens social exclusion in cities. The widespread belief is that “in the planned city... the poor should at best be hidden or at worst swept away” (Tibaijuka, 2006). This belief is a consequence of the current approach to planning that, again, is driven by overly technical considerations and fails to take into account the realities on the ground, the income of the residents, their economic activities and means of livelihood, their transport needs and affordability, their capacity to comply with certain standards etc. The fact that urban regulations and planning requirements are not in line with the needs of the majority has contributed to a high degree of non-compliance and resulted in a loss of credibility of planning and its potential.

Indeed, a review of planning practices in *RPS* project countries reveals that planning is generally seen as a reactive rather than proactive exercise. Here, planning systems rely on development control, which forces local authorities to spend their time trying to control rather than to forecast need and to think creatively about the possible shape and form of their cities. Consequently, planning processes focus more on restricting growth rather than facilitating it as a means to realizing a desirable city. Despite unambiguous demographic projections, cities continue to fail at accommodating their growing populations, which, more

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often than not, settle informally and with little access to basic urban services. The costs of reacting to spontaneous urban growth and ‘fixing’ its consequences retrospectively are enormous. It is against this background, that UN-Habitat advocates proactive planning at scale (of the expected urban growth), focusing on select basic elements such as street grid and public space, which, in turn, support the incremental provision of further infrastructure when necessary resources become available.

In this context, urban legislation has an important role to play: defining conditions for access to land, infrastructure, housing and basic services; laying out rules for planning and decision making; guiding the improvement of livelihoods and living conditions by setting requirements for urban development initiatives; setting the context within which urban authorities, local governments and communities are expected to fulfil their mandate and reacting to emerging challenges. However, urban legislation has proven to be far from perfect. The experience in *RPS* project countries shows that urban legislation often suffers from misguided assumptions, overambitious expectations and inadequate appraisal of costs and consequences. For example, planning laws are often outdated, irrelevant and inappropriate for the contexts within which they operate. Laws that fail to make land available in pace with rapid urbanization, result in insufficient land supply, increases in land prices and expedited slum formation. Laws that are not in line with local socio-economic realities such as urban poverty and informality result in high degrees of non-compliance, not to mention their selective application in favor of elites. Other common problems include regulatory barriers that limit opportunities in formal land markets, exacerbate inequality and discourage investments, laws with high compliance costs and laws that are not enforced and implemented. The predominance of informal structures and the prevalence of the interests of elites over the majority is proof of the failure of planning laws. It is not rare that legislation designed to protect the public from negative externalities of urban land development has been used to enhance the value of land owned by the wealthy.

Against the background of these structural deficiencies, UN-Habitat proposes a simplified approach based on the establishment of a basic system of regulations and rules that provides a solid and predictable long-term framework for urban development, adequate to real needs, real capacity and available resources. Similar to the spatial planning, municipalities are encouraged to adopt essential elements of laws that are grounded in sustainable processes and systems, and move on to more elaborated arrangements and legal instruments as governance institutions mature.

## 4.2 Public Space

Public space enhances community cohesion, civic identity and the quality of life. The publicness it produces can lead to well-maintained and safe urban environments, making the city an attractive place to be. Having access to public spaces does not only improve the quality of life however, it is also a first step toward civic empowerment and access to political spaces. Properly designed public space not only contributes to an improved visual character of a city, but also, and more importantly, stimulates economic activities and enhances productivity. The experience derived from conducting the *RPS* reveals that most African countries have in place neither clear requirements for the adequate provision of sufficiently connected and well-designed public space nor legal mechanisms for its creation. On the contrary, streets, green areas and open spaces are often overlooked in the planning process, and if included, are rarely implemented. A fundamental element every planning framework should address is the possibility to obtain public space from landowners in the process of urbanization. All too often, we observe that African cities rely solely on expropriation. Expropriation, however, is not the most effective way to deliver public space: not only is it economically and politically costly, it also is frequently and rightfully challenged in courts.

Financially, the creation of public space is often seen as an investment without return. Yet, the contrary is true! Public space is one of the most effective value-generating element of urban planning. Properly designed streets and public spaces increase the value of adjacent properties and stimulate the economic productivity of the city. Cities that are successful in delivering quality public spaces have put in place

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mechanism to raise municipal revenues through land value sharing. These instruments allow cities to share with the landowners unearned value increments on real property.

### **4.3 Private Space**

The plot is the basic unit of urban development, a measured and recorded piece of developable land accessible from public space. Though plot and property may coincide, and often do, what defines a plot is not its property but its accessibility. Despite the fact that size, shape and orientation of plots have a number of consequences for the morphology and shape of the city, plans rarely go into the details of plotting, leaving the task to private landowners. When regulation on plot size does exist, it is often inadequate for compact urban development. Further, we observe that in many African countries the minimum plot size remains too large and thus in discordance with the need of walkable urban centres. For example, in the Nigerian State of Kogi plot size ranges between 900 and 1350 square meters. Due to a market preference to supply single-use developments and mass produced housing stock, there is a trend towards larger plots. This has a number of disadvantages ranging from lost street life and suburban homogeneity to an exclusionary effect on access to serviced land for poor households. Finally, larger plots also have negative financing implications, requiring substantially higher resources for basic infrastructure supply.

During the RPS, we propose to increase the supply of small serviced plots, affordable for the majority of individuals or groups of individuals, who are encouraged to develop the plot independently or collectively.

### **4.4 Urban Design**

Productive, vibrant and socially inclusive cities need good urban design to turn their public spaces into places where people enjoy walking and spending time, that encourage social interaction and promote economic growth. However, the majority of the streets we see are infrastructural corridors primarily designed for cars - even in cities where only a small percentage of the residents can afford a car. When cities plan streets, there is a preoccupation with engineering issues, all too often neglecting social and economic considerations.

Rules and regulations guide the use and form of land occupation, prescribing what can be built where. Although it is known that economically vibrant cities benefit from street life, commercial activities, walkability, density and diversity in the uses and activities, urban regulations are often not rooted in these policy objectives. During the RPS, we observe that the most common regulations on setbacks, land use zoning and plot coverage bring about opposite effects. For example, setbacks, especially when fenced, have a negative impact on the quality of the street life and increase insecurity. Several countries in Africa have strict regulations on setbacks that buildings have to keep from the streets. While Kenya's current building code requires a 6 metres open space along the width of the building front (KEBS, 2009), the Nigerian State of Kogi requires a 15.2 metres setback for township roads. Equally, we observe that economic considerations and the impact on the local economy are not taken into account when planning. In several African countries, street vendors form a large portion of the urban workforce and contribute considerably to the urban economy. For example, national level statistics reveal that street vendors account for 15 per cent of total urban employment in South Africa (ILO & WIEGO, 2013). Despite this relevant contribution to local economic activities, urban plans normally do not take into account the needs of informal vendors. On the contrary, plan implementation has often been one of the main justifications behind street vendor evictions. Urban plans should identify and design vending or market areas to accommodate street vendors in public space rather than attempting to relocate vendors into off-street commercial spaces.

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## 5. RESEARCH LIMITATIONS

Despite learning from a series of *Rapid Planning Studios* in a range of Sub-Saharan African countries, the findings of this case study cannot be generalized without caution. The workshop is currently designed to train municipal staff only in the field of city extensions. Although comparable findings might be expected in other areas of urban intervention - city infill, housing, slum upgrading, etc. - this remains to be confirmed.

## 6. CONCLUDING REMARKS

While planning and its original dream of serving the collective interest needs to be rediscovered and re-tuned to respond to the needs of the African majority rather than to those of its elites, efforts to establish more clearly how to counter the privatization of the city and the dismissal of the state (as custodian of the collective interest) are crucial to create the conditions for a democratic discussion on the city. One such effort is to build municipal capacity to plan in an integrated manner - within its reach, the RPS is aiming to do just that. However, it is important to further analyse how integrated and implementable planning can be achieved in the resource poor context of African cities and which interim steps may be envisaged to avoid leaving too many behind.

## 7. ACKNOWLEDGEMENTS

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## 8. REFERENCES

- Acemoglu, D. & Robinson, J. 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*, New York: Crown.
- Berrisford, S. 2011. Why it is Difficult to Change Urban Planning Laws in African Countries, *Urban Forum*, 22(3), 209-228.
- Chenal, J. 2016. *Capitalizing on Urbanization: The Importance of Planning, Infrastructure and Finance for Africa's Growing Cities*. In Foresight Africa, Sy. A. (ed). Africa Growth Initiative at Brookings: Washington, D.C.
- Cities Alliance. 2006. *Guide to City Development Strategies: Improving Urban Performance*, Washington D.C.: Cities Alliance, UNEP and ICLEI.
- Combes, P. P., Mayer, T. & Thisse, J. F. 2008. *Economic Geography: The Integration of Regions and Nations*, Princeton: Princeton University Press.
- Couch, C. 2016. *Urban Planning: An Introduction*, London: Palgrave.
- Eskemose, J., Jenkins, P. & Nielsen, M. 2015. Who Plans the African City? A Case Study of Maputo, Part 1- The Structural Context, *International Development Planning Review*, 37(3), 331-352.
- GIZ & ICLEI. 2014. *Operationalising the Urban Nexus: Towards Resource-Efficient and Integrated Cities and Metropolitan Regions*, Eschborn.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Glaeser, E. L. & Gottlieb, J. D. 2009. The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States, *Journal of Economic Literature*, 47(4), 983-1028.

Glaeser, E. L. & Joshi-Ghani, A. 2013. *Rethinking Cities: Toward Shared Prosperity*, Poverty Reduction and Economic Management Network, Number 126. Washington, D.C.: The World Bank.

Ijjasz-Vasquez, E. 2015. *Making Urbanization Work for Africa*, World Bank, available at <http://blogs.worldbank.org/sustainablecities/making-urbanization-work-africa-0> [accessed: 04 April 2016].

ILO & WIEGO. 2013. *Women and Men in the Informal Economy: A Statistical Picture*, Second Edition. Geneva.

Jenkins, P., Smith, H. & Wang, Y. P. 2007. *Planning and Housing in the Rapidly Urbanizing World*, Abingdon, New York: Routledge.

Kenya Bureau of Standards. 2009. *KS Code: Building Code of the Republic of Kenya*, Reg. 17. Nairobi.

Llop Torné, J. 2015. *Base Plan in Intermediate Cities - Guide Document*, Sant Cugat des Vallès: Universitat Politecnica de Catalunya & DUOT.

Lwasa, S. & Kinuthia-Njenga, C. 2012. *Reappraising Urban Planning and Urban Sustainability in East Africa*, In Urban Development, Polyzos, S. (ed). InTech.

McKinsey Global Institute. 2011. *Urban World: Mapping the Economic Power of Cities*.

Motasim, H.; Rae, K. & Petrella, L. 2010. *Planning Sustainable Cities*, Nairobi: UN-Habitat.

Mboup, G. 2013. *Streets as Public Spaces and Drivers of Urban Prosperity*, Nairobi: UN Habitat.

Palmer, I. & Berrisford, S. 2015. *Urban Infrastructure in Sub-Saharan Africa: Harnessing Land Values, Housing and Transport. Final Report on Land-Based Financing for Urban Infrastructure in Sub-Saharan African Cities*, African Centre for Cities & UK Aid.

Rakodi, C. 1997. *The Urban Challenge in Africa: Growth and Management of Its Large Cities*, Tokyo: United Nations University Press.

Slack, E. 2015. *Innovative Governance Approaches in Metropolitan Areas of Developing Countries*, In UN-Habitat, 2015: The Challenge of Local Government Financing in Developing Countries. Nairobi/Barcelona: UN-Habitat, City of Barcelona & Province of Barcelona.

Smoke, P. 2015. *Urban Government Revenues: Political Economy Challenges and Opportunities*, In UN-Habitat, 2015: The Challenge of Local Government Financing in Developing Countries. Nairobi/Barcelona: UN-Habitat, City of Barcelona & Province of Barcelona.

Steinbach, I., Schultheis, A, Lange, S., Peterek, M., Reichhardt, U., Hebbo, Y. & Korovina, O. 2015. *Rapid Planning*, Karlsruhe: Rapid Planning Consortium.

The World Bank. 2013. *Planning, Connecting, and Financing Cities-Now: Priorities for City Leaders*, Washington, D.C.

Tibaijuka, A. 2006. *Address to Word Planners Congress*, Vancouver.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- UN DESA, Population Division. 2015. *World Urbanization Prospects: The 2014 Revision*, New York.
- UN-Habitat. 1999. *Reassessment of Urban Planning and Development Regulations in African Cities*, Nairobi.
- UN-Habitat. 2008. *The State of African Cities 2008: A Framework for Addressing Urban Challenges in Africa*, Nairobi.
- UN-Habitat. 2009. *Global Report on Human Settlements 2009: Planning Sustainable Cities*, London/Sterling, VA: Earthscan.
- UN-Habitat. 2010. *The State of African Cities 2010: Governance, Inequality and Urban Land Markets*, Nairobi.
- UN-Habitat. 2013a. *The State of the World Cities Report 2012/13*, New York/Nairobi: Routledge & UN-Habitat.
- UN-Habitat. 2013b. *The State of Planning in Africa: An Overview*, Nairobi.
- UN-Habitat. 2014. *A New Strategy of Sustainable Neighbourhood Planning: Five Principles*, Nairobi.
- UN-Habitat. 2015a. *International Guidelines on Urban and Territorial Planning*, Nairobi.
- UN-Habitat. 2015b. *The Challenge of Local Government Financing in Developing Countries*, Nairobi/Barcelona: UN-Habitat, City of Barcelona & Province of Barcelona.
- UN-Habitat. Forthcoming. *Policy Paper on the Principles of Planned Urbanisation*, Nairobi: UN-Habitat.
- Vaggione, P. 2013. *Urban Planning for City Leaders*, (2nd ed.). Nairobi: UN-Habitat.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
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# **Pursuing Rural Development Whilst Maintaining Ruralism: A Case Study of Qunu (Empa), Eastern Cape South Africa and Tsholotsho (Hwange, National Park), Zimbabwe**

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## **Abstract**

Robert chambers pointed the world to the injustice of the urban bias. Investments, education, socio-economic prosperity, are all associated with the city, thus leaving the rural as a passive participant or factor in the economies of nations. Development theory has also neglected the question of rural development, with the assumption that for development to be achieved within rural settlements, they must be modernised and urbanised. Overall, Third World Nations have to live up to the expectations of modernisation, and are under pressure to catch up with the “modernised” world. Countries such as South Africa and Zimbabwe have adopted development policies that promote development in the sense of modernisation, as opposed to development in a holistic manner. Thus, for such countries rural development has been limited to attempting to urbanise rural settlements. This paper looks at the problematic association of development with modernisation and urbanism, whilst alternatives rural development models remain insignificantly explored. Ultimately, the paper aims to propose a harmonious rural development model that recognises the unique and specific needs of rural populations and economies, without compromising the rurality of such settlements.

**Keywords:** urban bias, development, modernisation; rural development; ruralism, rural development models.

## **1. INTRODUCTION**

The concept of development has, over the years, been narrowed down to the idea of massive urbanisation and commercialisation of spaces. This may be the result of the history of development having occurred through modernization (where, as seen in the industrial revolution of the eighteenth century in Europe, the abandonment of traditional society, rural society, led to this industrialization (and thus modernization) to be seen as the optimal form of socio-economic development and prosperity.). Willis (2011:2) states that for many people, ideas of development are linked to modernity. Modernization can be seen as the general mechanism by which the social transformation from agricultural dominance to domination by trade and industry takes place, and the permanent continuation of this process. (Charlton &Andras, 2003:5). This is when the traditional sense and function of society is taken over by massive industrialisation, thus society abandoning traditional and primary activities of society.

The less developed countries such as countries in Africa and Asia, which industrialised a little later than Europe wanted to follow suit. In the 1950s industrialization was seen as key to progress for the underdeveloped countries, (Chambers, 1997:16). They (the civil servants) want to modernise fast; they rightly observe that rich nations are non-agricultural and that their own agriculture is poor ; and they

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wrongly conclude that rapid industrialization at the expense of agriculture can produce rapid development'. (Lipton, 1978: 65). They want to avoid rural administration. They believe that it is more difficult to plan for thousands of small farms than for a few big urban firms and that planning has little scope for changing rural life. This has resulted in continuous efforts to commercialise rural spaces and settlements, essentially compromising the rurality of such spaces.

This has not only resulted in commercialisation of rural spaces and settlements, but also, complete negligence of rural developmental needs, thus great rural depopulation and rural urban migration rates. This because, development and innovation has now been centralized and concentrated within non-rural settings. Where people found better living conditions, with economic opportunities, employment, access to better housing. In his book, Chambers (1983: 4), chambers notes the extremes of differences in rural livelihoods to those of urban livelihoods. He deems this phenomenon as the “urban bias”. In comparing the differences he states that, “At one end there coexist rich, urban, industrialised, high status cores, and at the other, poor, rural, agricultural and low status peripheries.” Therefore, in light of this, this study shall look at the development quest, in view of establishing development methods that seek to retain rurality, one that will not impose the ideals of modernisation in the pursuit of rural development.

## **2. LITERATURE REVIEW**

### **2.1. Defining Development**

In strictly economic terms, traditionally development has meant the capacity of a national economy, whose initial economic condition has been more or less static for a long time to generate and sustain an annual increase in its Gross National Product (GNP) at rates of 5%-7% or more. Todaro, 1997: 13. Thus Todaro goes on to define development as “the process of improving the quality of all human lives.” He then points out the three important aspects of development, which are: 1. Raising peoples living levels-their incomes and consumption levels of food (which implicates the ideals of modernism-massive consumption), medical services, education etc, through relevant economic growth processes; 2. Creating conditions of conducive to growth of people’s self-esteem through the establishment of social, political, and economic systems and institutions that promote human dignity and respect; and 3. Increasing people’s freedom by enlarging the range of their choice variables, as by increasing variety of consumer goods and services. Thus, Peet and Hartwick, 2001: 1, note that development means making a better life for everyone. In the context of a highly uneven world, a better life for most people means essentially, meeting basic needs: sufficient food to maintain good health; a healthy place in which to live; affordable services to everyone and being treated with dignity and respect.

Singh (1986: 20) states that the term rural development connotes overall development of rural areas with a view to improve the quality of life of rural people. It is a comprehensive and multidimensional concept, and encompasses the development of agriculture and allied activities, village and cottage industries and crafts, socio-economic infrastructure, community services and facilities, and above all, the human resources in the area. Where, The World Bank Sector Paper on Rural Development 1975, defined rural development as “a strategy designed to improve the economic and social life of a specific group of people- the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas. The group includes small-scale farmers, tenants and the landless.

### **2.2. Development, Modernisation and Rurality**

“Development cannot be defined in a universally valid manner, because development is a normative term. In other words, development is subjective and discursively constructed (Foucault, 1970). The term also carries different connotations for different people, countries, and scholars. Singh (1999:19) states that development is a subjective and value loaded concept, and hence there cannot be a consensus to its meaning. Many a times, development has been closely linked to economic growth, however, Singh (1999:22) points

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out that, while economic growth is an essential component of development, it is not the only one, as development is not a purely economic phenomenon.

Development in relation to modernisation has meant that, in order for societies to develop, they must abandon their traditional ways of being and completely modernise, which essentially means urbanise. Coetzee, et al, 2001, asserts that, modernisation refers to the total transformation that takes place when a traditional or pre-modern society changes to such an extent that new forms of technological, organisational, or social characteristics appear. De beer and Swanepoel, 1997 grant that, Walt Rostows views on the stages of economic growth is one of the classical examples of the application of the modernisation theory, which they point out that, the basic departure of this school of thought is that poor countries will become developed if they follow the path of taken by northern countries before them. Development is therefore equated with the universal process of modernisation where Western values, production systems, technology and consumption patterns have to be simulated by poor countries in an attempt to modernise their societies along capitalist lines.

Uchendu Eugene Chigbu, 2013, in his paper titled: Rurality as a choice: Towards ruralising rural areas in sub-Saharan African countries, asks a fundamental question, do rural communities want development (in the modernisation sense) that erases their very heritage or identity? He continues to note that, this critical question deserves a thorough debate, and practitioners should have their own answers ready before undertaking any rural development projects. However, this is not always the case. Their inability to answer this question undermines rurality as a possible choice for SSA communities – that is, their ability to follow a rural path rather than simply accept any development vision imposed on them.

To define what constitutes a rural setting also poses some challenges, this because, largely, what is rural is often looked at from the basis of what isn't urban. A natural definition of rurality is to define it by exclusion, as that which is not urban, where urban is defined on the basis of population agglomerations. (Anríquez&Stamoulis 2007). Ward & Brown (2009:1239) identified rural areas as 'places of tradition rather than modernity, of agriculture rather than industry, of nature rather than culture, and of changelessness rather than dynamism'.

### 2.2.1. Rural Development in South Africa and Zimbabwe

Both countries having have a history of British colonialism, development models applied to both countries, have been similar, from rural reserves under colonial and apartheid governments, to land reform under independence and democracy. Having obtained independence much earlier, Zimbabwe undertook extensive work in rural development. Zimbabwe introduced various strategies, such as the Growth Pole Centres (which, to the contrary were used by the apartheid government in South Africa), rural industrialisation, through industrial decentralisation, the development of secondary cities, as well as the adoption of John Friedmann's development model. (Chazireni, E: 2003).

At the wake of independence, both countries centered rural development on land reform and redistribution, where much of the land reform process in Africa is based on bringing balance to the spatial imbalances created by former colonial administrations, Clout notes that in European counties, such as Italy , the objective of land reform were of a social and political nature, namely to provide farms for landless agricultural workers, thereby creating a "rural democracy", and to enlarge existing smallholdings through the division of massive under-used estates. Whilst, Where, Singh, k , notes that a sound land reforms policy can contribute significantly to agricultural and rural development, and therefore deserves high priority,(Sachikonye, 2005), (Davies, 2005), cited by Sam Moyo, note thatof late, the conflict of unequal distribution of land is not based on racial differences, rather on societal class differences. Zimbabwe's fast track land reform has been considered to be an odd aberration (Bernstein, 2002), contrived for political electoral advantage Thus, the poor remain last in the line.

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## 2.3 Barriers to Rural Development

Urbanisation is a main feature of development processes. The two concepts often go hand in-hand in sociological discourse, as development typically implies an increase of population living in sizeable urban centres. (Requen, 2015). This universal connotation of development has been the main driving force of stunted rural development. Lu & Chen, 2014 express a similar sentiment, by attesting that, in most countries, urbanization correlates to development. Not only has this influenced the understanding of development, but it has also influenced development policy making. Public policies at national level and resource mobilization at both national and international levels have not always recognized the multiple potential of the rural economy. Public policies and investments in developing countries have historically favoured industrial, urban and service sectors at the expense of agricultural and other rural sector development. Anríquez and Stamoulis, 2007.

### 2.3.1. The Urban Bias

The green paper on Spatial Planning and Land Use management, 2016 in the Eastern Cape Province of South Africa, looks at issues associated with Land Use Management. Being a predominantly rural province, the paper recognises urban bias as one such issue relating to Land Use management. The paper states that, Legislation, regulations and bylaws catering for land use management have been structured to respond mainly to urban land use scenarios within the statutory regulatory environment (focus on urban land use definitions and terminology, surveyed cadaster, freehold title, formal administrative systems etc.), leaving a large vacuum as far as the reality in informal settlements and rural parts of the province is concerned, in terms of the following:

- Local community structures and traditional practices (protocols) around how consultation takes place and agreements are reached.
- The way land is administered in terms of occupation rights and use rights (tenure).

Todaro 1997: 726 defines the urban bias as, “the notion that most LDC governments favour the urban sector in their development policies, thereby creating a widening gap between the urban and rural economies.” Jones, 2010: 2, gives a much similar understanding of the phenomenon, where, he describes it as, “the notion that development policies in the global south have been systemically distorted in favour of the interests of the urban areas and against the (in most cases) majority of rural population.” This of course stems from the notion that, investment in industrialisation, urbanisation and modernisation, as opposed to ruralist and subsistence development is the sole path in which a state can undertake to ensure development.

The urban bias remains particularly evident in the LDCs around the world. Where, De Beer & Swanepoel note that, one of the problems of Third world development was the struggle between the interests of the urban areas and those of rural areas. The question was always either/or...they, grant the problem of rural underdevelopment, thus the urban bias to this “either/or” approach, where they also note that, the approach has not only stagnated the development of rural areas, but continues to pose significant developmental impediments to urban areas as well

However, the urban bias, has also been proven not only a threat to rural development, but also to the imagined urban developmental state, as it poses threats to the overall regional development, and ultimately creating regional inequalities. “...the either/or approach has failed to really benefit the urban areas because of the greater movement to urban areas it has triggered. This is due to urban areas being part of one system with the rural areas and thus they cannot escape the harm done through urban bias.” De Beer & Swanepoel 2002: 19.

## 2.4 Alternative Development Models

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Olsson, 1974: 16, advises that, if we continue along the methodological and manipulative path we have been following thus far, then we run the risk of increasing those social, economic and regional inequalities, which the planning initially was designed to decrease. This therefore calls for development theories and models that bring answers to questions of social, economic, regional, and spatial inequalities and injustices. (Potter et al. 2003), therefore notes that, In reaction to the failings of top-down approaches to development, a series of 'alternative' theories and practices emerged from the mid-1970s, focusing on the basic needs, equity in development, and later 'participatory development' (Binns et al. 1997; Potter et al.

In countries such as India, Strategies initiated included the; Growth Oriented Strategy, Welfare Oriented Strategy, Responsive Strategy and the Integrated Strategy. In on the broader context, these include; sustainable development, VijjivyaUjamaa (socialist villages), globalisation, Asset Based Community Development (ABCD), the Feminist Theory. etc. Although these, (with the exception of Ujama Villages) have had substantial influences on the development discourse (with regards to sustainability, gender equality, participation, etc), they still maintained rural development as a passive part of regional economies, thus, creating regional inequalities, with rural populations being the worst affected.

#### 2.4.1 Reflections on the Pre-colonial African settlement

If to seek rural development models that do not compromise rurality of African rural settlements, by imposing western modernisation ideals, reflections on pre-colonial African settlement growth and planning must be made, Amankwa-Ayeh, grants that, several great cities and towns had arisen and fallen in Africa, long before the arrival of foreign influence on the continent. He mentions such examples as, Kumasi, Tmbuktu, Goa etc. Contrary to common belief that settlement planning is a foreign concept to Africa, it has been proven that planned settlements in African societies existed way before the arrival of Europeans on the shores of Africa. Amankwah-Ayeh, further notes that, perhaps planning needs to take cognizance of research done over the past two centuries by geographers and historians who worked tirelessly to reveal the truth about the African continent, so as to show that the pre-colonial towns of Africa were built on sound town planning, design and architectural principles.

To look at past settlement patterns in this study is essential in order for better understanding of what it would take to better rural settlement planning today. Silberfein grants that, the matter of origins would seem to be particularly relevant to a study of the many relationships between settlement patterns and rural development since the settlements we inhabit today are all embedded in past experiences. They are the result of decisions taken about where and with whom to live in order to resolve two fundamental issues: how best to harness environmental resources and how to organise social life in advantageous ways. This therefore calls for communal use of resources and the establishment of harmonious living environments. Looking at pre-colonial towns, such as M'zab in Maghreb, according to Zghal and Stabouli, the town had its own legal system (land use management systems), its own market (for economic activities), as well as a "strong moral consensus binding the members of the community to each other", thus creating socially viable settlements.

In acknowledging the historical background of African settlement planning, and taking into considerations its principles, presents a possible alternative for today's rural settlement planning, particularly those in Africa. For instance, such settlements encouraged principles such as infill development through clustered settlement designs, Amankwa-Ayeh, grants that, these were adept at maintaining a feeling of smallness and intimacy keeping strong social, economic, cultural and physical linkages even in areas of high population densities.

### 3. OBJECTIVES/RESEARCH QUESTIONS

The main aim of this study is to develop an alternative development model that does not compromise the character of rural settlements by imposing modernisation on them, but one that ensures sustainable rural livelihoods and embraces rurality and ruralism.

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The study sought to achieve the following objectives;

- To review existing rural development models.
- To identify the meaning of development to communities and development practitioners in Tsholotsho and Qunu.
- To investigate factors that may hinder or promote rural development in Qunu and Tsholotsho
- To propose an alternative and appropriate development model for Qunu and Tsholotsho.

#### **4. APPROACH AND METHODOLOGY**

To achieve the set objectives, and in light of its main aim, the study employed a mixed methods case study approach.

##### **4.1 Data Collection Methods**

###### **4.1.1 Survey Questionnaire**

De Vos&Fouche, 1998 define a questionnaire as an instrument with open or closed questions or statements, to which a respondent must react. The questionnaire consisted of five sections, of which (excluding the demographic profile) were divided on the basis of the set research objectives, and were open ended.

###### **4.1.2 Interviews**

Formal key informant interviews were undertaken with specific development practitioners in both study areas. The interview questions differed in terms of terms of the specific area it related to; the first one was with a development practitioner for the Tsholotsho Rural Development Council and the second one with the private investor responsible for Empa mall. The questions in both interviews were centered around the purposes of the different development entities; the mall and the park, as well as the impacts these entities have had in the developmental state of both areas. The aim of these interviews was to obtain “informed” responses in relation to development in both study areas.

#### **5. STUDY AREA**

##### **5.1 Qunu**

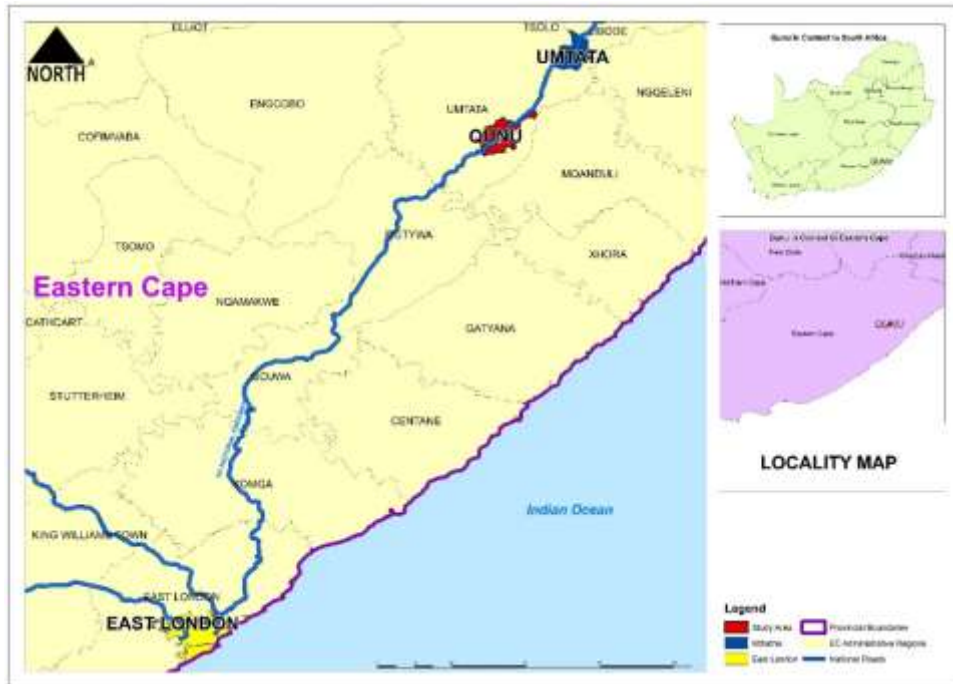


Figure 1: Location of Qunu

Qunu, is located in the Eastern Cape Province of South Africa, largely known for being home to the First President of South Africa, Mr. Nelson Mandela. Qunu is located about 37km South West of Mthatha. It lies on the N1 between Mthatha and East London. Qunu was chosen as a rural area within South Africa that possesses immense potential for livable rural settlements. It lies along the main route between two major urban centers, which would mean better accessibility. It was also chosen because of its historic context, and thus tourism potential, however, specifically looking at the possibility of these potentials being utilized without compromising the rurality of the settlement.

The specific model of development chosen for Qunu was the construction of a shopping mall within the Qunu area. The idea is modernist in nature. The mall was constructed with the hope of bringing services, particularly commercially services to the area, whilst providing possible employment opportunities for local residents. It was constructed by a private developer, an interview was held with the investor responsible. The outcomes of the survey with local residents, as well as the specific interviews will be discussed in chapter four.

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## 5.2. Tsholotsho

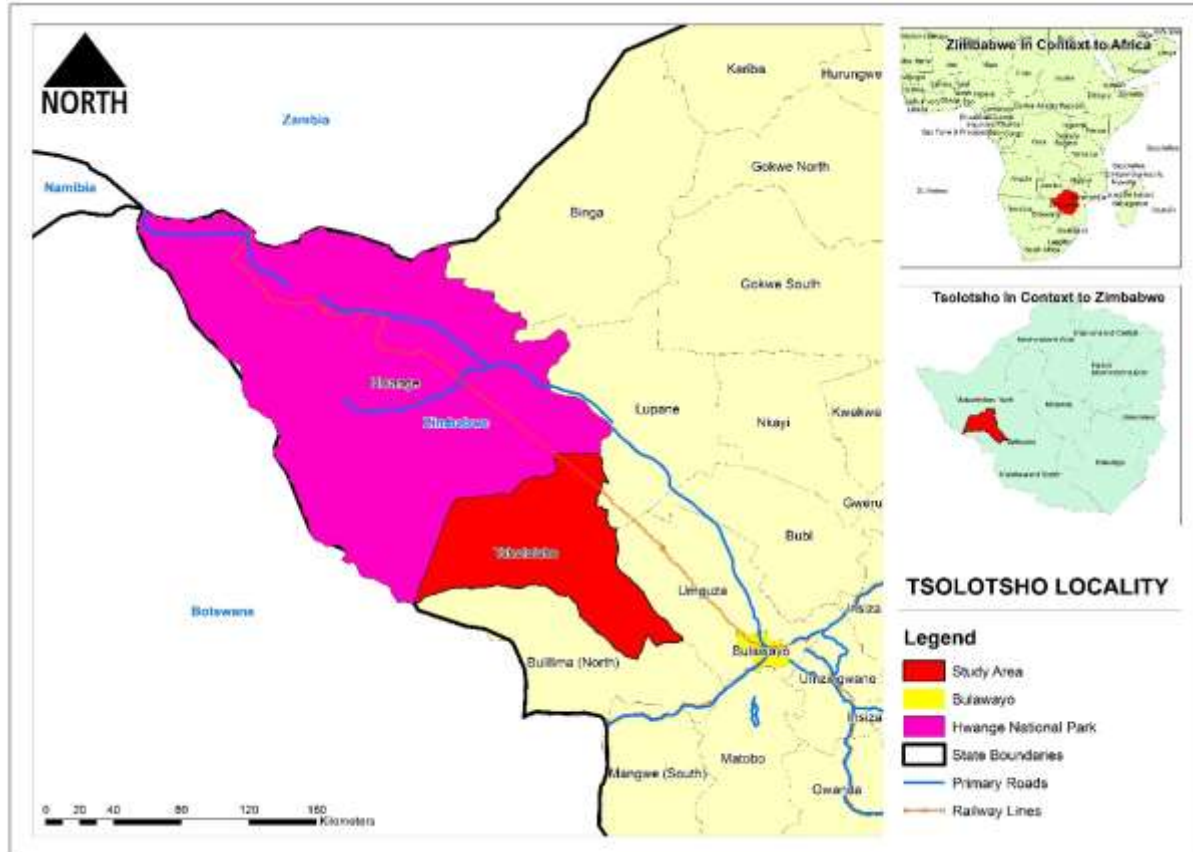


Figure 2: Location of Tsholotsho

Tsholotsho is a rural district in central western Zimbabwe; it lies south west of Harare and 98km north-west of Bulawayo. The name Tsholotsho was derived from the San word “Holohou”, which means, “the head of an elephant. It comprises of numerous villages and borders the south of Hwange National Park. Tsholotsho is made up of 22 Wards, each ward consisting of at least six villages. The area has a “Growth Point”, which serves as a service center for commercial, municipal and health services.

The method in this area is that of using nature based entities in order to pursue development. The entity being Hwange National Park (wild life to be specific). To do this, the area adopted what is known as the CAMPFIRE (Community Areas Management Programme for Indigenous Resources) project. The project emerged in the mid-1980s, with the recognition that as long as wildlife remained the property of the state no one would invest in it as a resource. CAMPFIRE includes all natural resources, but its focus has been wildlife management in communal areas particularly to those adjacent to national parks, where people and animals compete for resources. CAMPFIRE begins when a rural community, through its elected representative body, the Rural District Council, asks the governments wildlife department to grant them the legal authority to manage its wildlife resources and demonstrate its capacity to do so....CAMPFIRE makes wildlife valuable to local communities because it is an economically and ecologically sound land use. (Tsholotsho Rural District council).

## 6. RESEARCH FINDINGS AND ANALYSIS

### Demographic Analysis

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Thirty participants/respondents were selected in both Qunu and Tsholotsho. The highest turnout of respondents was observed within the youth group which falls under the economically active group 18-35, followed by the group from 36-65, which is still part of the economically active group. However, from age 65 and above, the population reflected a significant decline. This has negative implications regarding the life expectancy amongst populations in both areas, and thus implications on the health facilities available within the two settlements.

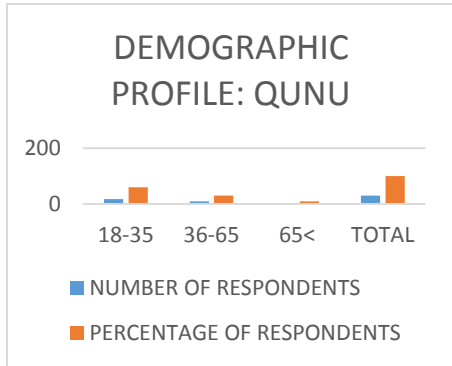


Figure 10:

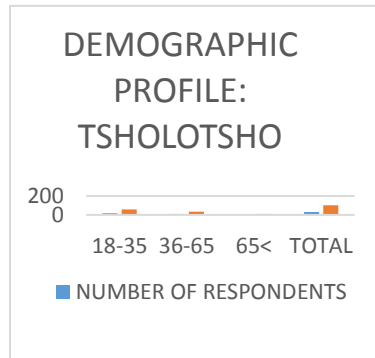


Figure 11

### Literacy Profile

The United Nations recognizes that primary school enrolment improved in Sub-Saharan Africa from 52% to 80% between 1990 and 2015, however 43% of the respondents in Qunu expressed that they had, whilst 50% of the respondents in Tsholotsho said they had received basic primary education. This poses negative implications of the actual availability or access to primary in schools, as reflected on the basic services available, in both areas, respondents expressed that primary schools were accessible in the area. However, this could also be because of the difference in ages between the respondents and the current school going age group. There was a decline in access to tertiary education; this could be attested to issues such as high rates of school drop outs and unaffordable tertiary education, which comes not as a surprise. It is typical of rural populations to have to seek other means of making a progress in life outside of education, this could be, for instance urgent needs to make incomes to support families.

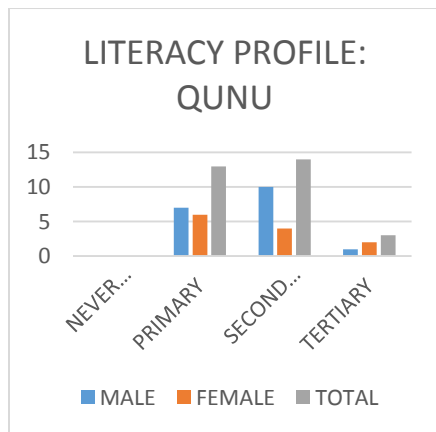


Figure 12

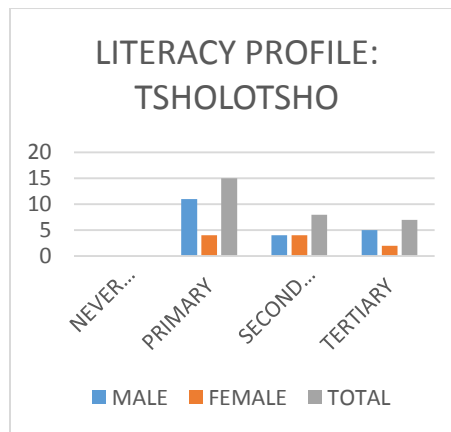


Figure 13

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## Employment Profile

The United Nations recognizes that, top employers within developing nations such as South Africa are, agriculture at 64%, services at 26% and industry at 10%. However, Qunu, and the surrounding areas do not have a significant agricultural sector, sufficient to maintain employment. Of the respondents interviewed, 90% makes up the economically active group (18-65 years of age), of which 48% is employed, the remaining 52% is unemployed, and merely 5% of which is still in school. The remaining 47% is unemployed and lives on support by family or will find odd jobs to survive. This therefore implicates that such populations live on much less than \$1.25 a day, which is regarded as the standard measure for the poverty line.

Employment rates in Tsholotsho reflected a high. 63%, which means 63% of the respondents live on less than \$1.25 a day, which is below the poverty line. From that less than \$.25 a day, the United Nations recognizes that, the average household in developing nations spends 49% on food. However, this part of the country is largely traditional in economic activities, in that, although the population does not spend much on purchasing food, they grow their own food. This also might be compromised by the lack of access to water for irrigation (access to water will be discussed on the basic services section). Although this might be a positive, it also has some downsides, because much of subsistence food production is largely carbohydrate produce, therefore healthy nutrition becomes questionable. Also, with the land distribution process that took place in the country, populations have seen larger yields, where the United Nation recognizes that, Sub-Saharan Africa is the only region that where food production was primarily due to increased crop area, not crop yield.

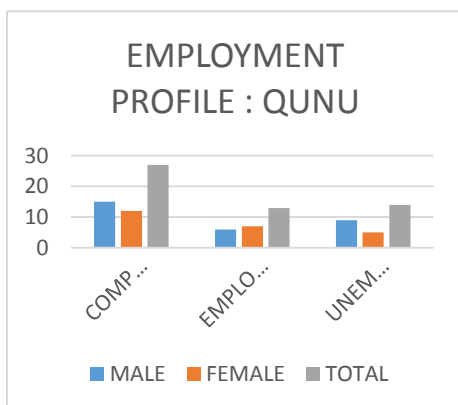


Figure 14

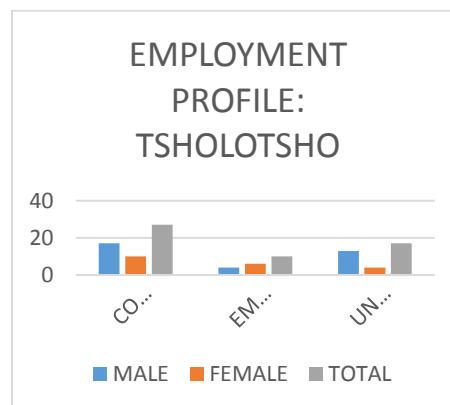


Figure 15

## Basic Services

Chapter four (Economic Infrastructure) of the South African National Development Plan recognizes that, in its key points, South Africa needs to maintain and expand its electricity, water, transport and telecommunications infrastructure in order to support economic growth and social development goals. Where, its key points on Integrated and Inclusive Rural Economy, Chapter Six, one of its key points is to ensure access to basic services, healthcare, education and food security, the results reflected that, although some of these goals have been met, such as the availability of electricity in Qunu, some aspects such as accessible roads still remain unmet.

The graph below reflects that, 30% of the respondents had no access to water. In an area that is reported that, one in three people (in Sub-saran Africa have access to proper water facilities, this is not a surprising

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reflection. Although, less than the estimation, it remains a negative reflection. Of the thirty respondents, none of them had no access to basic education, hence the 100% reflection of accessibility of schools. This reflection also isn't surprising, as the United Nations grants that primary school enrollment in Sub-Saharan Africa improved from 52% to 80% between 1990 and 2015. On its own, South Africa emphasizes this in its basic human rights as stipulated in the 1996 constitution.

Regarding basic services, all the respondents in the survey expressed that there was a viable number of schools in the area. The least of services they had available to them was good roads. From the observation by the researcher, it can be attested that the roads are in the worst of conditions, thus it was observed that public transportation in the area was not so viable, which implicates lack of mobility and accessibility within the area, and also in relation to surrounding areas, such as Bulawayo. The respondents also noted that, although such services were available to them, they had to travel longer distances to make use of them.

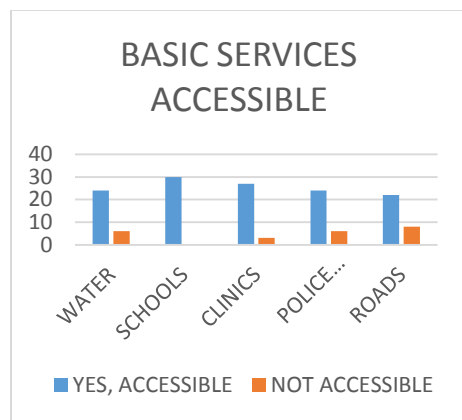


Figure 16

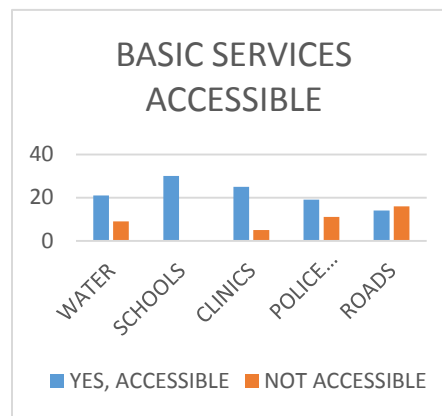


Figure 17

### The Impact of Empa Shopping Complex

The aim of this section was to obtain residents' views on the impacts of the developmental entity at their disposal. In the case of Qunu, It is Empa Shopping complex. After having had an interview with the founder of the complex, the point of departure was to find what the basic idea behind the initiation of the entity was, followed by the procedures followed in the process, with regards to land acquisition, the developmental procedures followed, involvement of local residents in the process, as well as the impacts of the entity on local residents.

The idea behind the initiation of the complex was to create an entity that would create employment opportunities, whilst promoting Qunu as a Tourist destination. The view from the residents in relation to this idea, is that, although a handful of the local residents are employed at the mall, it has not created employment opportunities as anticipated. The demographic survey showed that, of the 83% of the population employed, 93% were employed outside of the Qunu area, either in nearby Umthatha or Viedgesville.

In initiating the entity, the founder responded that the obtaining of the land involved the traditional method of obtaining land, where one obtains land from the local chief. This therefore means that there was no formal application followed, hence this is on communal land and out of municipal jurisdiction. However, he noted that, the residents were involved in terms of public participation, before the initiation of the project.

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The most notable impact of the complex in the area is that of the availability and provision of commercial services. Respondents noted that they no longer needed to travel to Umthatha or Viedgesville for services such as ATMs (although they noted that they wished that it was not just ATMs, but complete banking branches), hardware stores, salons, and supermarkets. However, the founder noted that he has faced challenges in sustaining the entity as, particularly because of infrastructural issues such as road networks' condition, as well as telecommunication connections.

The idea behind the complex is justified. However, with observation, to sustain such an entity an area would need substantial populations to make the entity viable, Not just populations in numbers, but populations that is able to support commercial services at large scales. The employment rates in the area are low. Thus some services in the complex might not make economic sense to the service provider; therefore, they can't afford to employ more people. In the long run, some of these services might have to close down due to lack of support.

### The General Perception of Qunu

This section was aimed at obtaining the views of residents with regards to their place of living. In traditional society, the reason for one to reside in an area is usually because of their traditional connection to the area. Of the 90% residents who believed that Qunu is livable, although they give reasons to this including the availability of basic services such as water and electricity, as well as the ability to practice subsistence farming, many noted their ancestral and traditional connection to the area. Whilst the 10% who said the area wasn't livable, their reason was mainly the lack employment prospects.

Whilst such a substantial number believed that the area is livable as it is, quite another substantial amount of them at, 73% wish that Qunu would be a city. With the recent talks of the area being turned into a city because of its historical significance, those who anticipate this believe that the urbanization of the area would implicate better lives for them. Noting that, the urbanization of the area would bring employment prospects, better infrastructure and services available to them. The 27% that said not, they would wish for Qunu to remain rural gave reasons such as that it would bring crime, and noting that the area should remain as it is in order to retain its historical significance and thus remain attractive to tourists interested in the area.

### General Perceptions on Development

This section was aimed at obtaining what residents viewed as the state of being developed; this included a question asking if they thought Qunu was developed as it is. Many respondents expressed that they understood development as the availability of basic services, with specific reference to services such as; water or roads; Schools and clinics; proper housing, as well as opportunities for better living conditions, sustainable housing and safety, prospects of employment. The communities also expressed an understanding of development as modernisation, believing that with modernisation all these aspects of development they point out would be possible.

The questions asked included development initiatives that have been in the area in the past twenty years. The most notable mentioned were the farming projects, the service, and the old aged centre. Many noted that they view the area as developed because they have basic services such as; Water, Electricity, as well as entities such as The Museum, The Mall, as well as A filling station. Essentially many perceived Qunu as developed.

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## 7. OBSERVATIONS

The researcher undertook some general observations of the two study areas. With Qunu, what was observed was that, the area, because of its historical context and its location in relation to main routes had greater advantage and potential with regards to development prospects. The two advantages will be discussed below;

- HISTORICAL CONTEXT; the area is home to South Africa's first democratically elected president, Mr Nelson Mandela. This has meant that the area continues to receive international attention, in terms of tourism, investment and socio-economic development initiatives. Initiatives such as the Nelson Mandela Museum, and Mandela's home itself, are one of the entities in the area that attract international tourists.
- LOCATION IN RELATION TO MAIN ROUTES; Qunu lies along the N1 between East London and Umthatha. This is seen as an advantage in terms of accessibility and mobility.

### 7.1 The Impact of Hwange National Park

The selection of Tsholotsho for specific reference in the case study was based on its relation to Hwange National Park, and its CAMPFIRE project involvement. Much of the respondents noted the advantage of having the park particularly referring to the CAMPFIRE project. Of the advantages of being part of the CAMPFIRE projects, the respondents noted the building of schools from the CAMPFIRE project funds as well as improved knowledge on wildlife management.

Having had an interview with a development practitioner from the Tsholotsho Rural District council and attended a committee meeting for the Tsholotsho Campfire project, for the purposes of observation, it was found that, the CAMPFIRE project is about natural resources management, with the aim of empowering and benefiting local residents, in terms of how these natural resources are used, and in this case, it is the wildlife surrounding the area. The project runs on hunting programs and redistribution of revenues.

What also stood out from the committee meeting was learning that the whole process of the CAMPFIRE project aims to largely involve women in the development processes of their community. They placed emphasis on women being elected as part of the elected committee.

### 7.2 The General Perceptions of Tsholotsho

This section was aimed at obtaining the views of residents with regards to their place of living. 60% of the respondents felt that Tsholotsho was a livable environment, noting that they believed so because they had access to land, and water, schools and health facilities. With such services, however, they also expressed that they wished water was available at shorter distances or more boreholes were provided. Which in a way supports their perceptions on what development connotes as mentioned above. As to considerations of the area being possibly turned into a city, 87% of them said yes, this was largely supported by their general belief that a city would result in better living conditions, employment opportunities, better facilities etc. which again, shows their association of development with modernization and urbanism.

Again, just as was the case in Qunu, in Tsholotsho, the researcher had undertaken some observation, within the Tsholotsho growth point as well as the villages in the area. Unlike Qunu, which comprises of merely villages, Tsholotsho has some sort of "business center. The Tsholotsho Growth Point is somewhat a "town", it provides services within the villages of the District. These services range from socio-economic to commercial services. The observations discussed here are those from the two distinctive parts of the district;

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- Tsholotsho Growth Point; this seems as an attempt to “urbanise” the area. Residents in this part of the district maintain urban and modern ways of livelihoods. The main prospects of employment are informal trading. However, with its urban prospects, the area is isolated from major routes that would promote mobility and accessibility in the area. The state of the road between Tsholotsho and Bulawayo poses limit for the movement of people between the two towns, thus making it difficult for such people to access services that they would wish to access in Bulawayo.
- Tsholotsho villages; what stood out the most about Tsholotsho rural populations is their main mode of transportation. In this area people cycle to get around. In cases where one cannot cycle, (for instance, as observed, women in a traditional society cannot cycle), they will use carts. Basically, life in Tsholotsho villages remains very rural and traditional. And again, unlike in Qunu, homesteads (houses) still take on very traditional forms; the settlements are dispersed, with almost all the families owning large tracks of land, which they use for subsistence farming. Access, however, in the form of transportation and roads to other parts of the country is very limited. Again, the state of the road, the availability of transport modes limits the mobility of people in the area.

## 8. CONCLUSIONS AND RECCOMENDATIONS

The questionnaire was divided into five main sections, which were enquiries into, Demographics, Basic services, that particular developmental entity (Hwange National Park and/or Empa Shopping Complex), General questions on living conditions and the views of residents about their specific area (Qunu and/or Tsholotsho), and finally the views of local residents on what development means to them. The last three sections on the impacts of the specific entities, the general perceptions of residents about their area, as well as their general understandings of development was based on seeking to understand what constituted development for both areas, and whether or not they were satisfied with their rurality.

It can therefore be concluded that, both areas are moving forward. However, improved services, such as access to education for females in Tsholotsho still need to be given much attention. In both areas, the majority of the villagers expressed satisfaction with their living environments. However, as this may be the case many also felt that, they were opened to further “improvements”, through their expression of wishing that their specific areas could possibly be turned into cities. This essentially explains their general perceptions of what it means to be developed, and in this case, that being modernized.

Therefore, as a way forward, without absolute rejection of modernization, it is proposed that we again reflect on pre-colonial settlements. This would allow for planning of rural settlements that embraces African settlement planning, as opposed to accepting western modernization as the sole path towards developmental states. Amankwah-Ayeh , on his paper, titled “Traditional Planning Elements of Pre-colonial African Towns”, grants that, understanding the functions of the structural elements of planning in in pre-colonial cities and towns may help breathe new life and inject fresh ideas into the planning and creation of new environments adapted to African culture, traditions and heritage. And as observed from the findings, a substantial amount of the respondents placed great importance on their relation to their places of living and birth, viable farming economies, and their rurality.

## 9. REFERENCES

Akgün, A.A., Baycan, T. and Nijkamp, P., 2015. Rethinking on sustainable rural development. *European Planning Studies*, 23(4), pp.678-692.

Bealer, R. C., Willits, F. K., & Kuvlesky, W. P. (1965). THE MEANING OF RURALITY IN AMERICAN-SOCIETY-SOME IMPLICATIONS OF ALTERNATIVE DEFINITIONS. *Rural sociology*, 30(3), 255-266.

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- Berry, K.A., Markee, N.L., Fowler, N. and Giewat, G.R., 2000. Interpreting what is rural and urban for western US counties. *The Professional Geographer*, 52(1), pp.93-105.
- Barbbie, M. 2010. *Research Methodological Foundations*. Canada: Nelson Education Ltd
- Bryman. A. and Bell, E. (2008). *Business research methods*. New York: Oxford University Press.
- Bueno, R.D.A., 2009. Globalisation, Economic Policy and Rural Development in Europe. *Romanian Journal of Political Science*, 9(1).
- Cant, M. (2011). *Marketing Research*. Claremont: New Africa Education.
- Chambers, R. (1997). *Whose reality counts?: putting the first last*. Intermediate Technology Publications Ltd (ITP).
- Charlton, B., & Andras, P. (2003). *The modernization imperative* (Vol. 8). Imprint Academic.
- Chari, S., & Corbridge, S. (2007). *The development reader*. Routledge.
- Churchill G.A. and Brown, D. (2006). *Marketing Research: Methodological Foundations*. 5<sup>th</sup> Ed. United States: Saunders College.
- Collins, H. (2011) “Creative Research: The Theory and Practice of Research for the Creative Industries” AVA Publications
- Converse, Jean M. and Presser, S. 2006. Survey Questions: Handcrafting the Standardized Questionnaire. Sage University Paper series on Quantitative Applications in the Social Sciences, 07-063, Beverly Hills: Sage Publications.
- Cooper, M. Donald, R. Pamela, R. (2006) Business Research Methods. (9<sup>th</sup> Edition) Boston: Irwin, McGraw-Hill
- Crowther, D. & Lancaster, G. (2008) “Research Methods: A Concise Introduction to Research in Management and Business Consultancy” Butterworth-Heinemann
- De Lisle, J., 2011. The benefits and challenges of mixing methods and methodologies: Lessons learnt from implementing qualitatively led mixed methods research designs in Trinidad and Tobago.
- Delost, M.E. and Nadder, T.S., 2013. Guidelines for Initiating a Research Agenda: Research Design and Dissemination of Results. *Clinical laboratory science: journal of the American Society for Medical Technology*, 27(4), pp.237-244.
- Du Pisani, J.A., 2006. Sustainable development–historical roots of the concept. *Environmental Sciences*, 3(2), pp.83-96.
- Flora, C. B., Flora, J. L., Spears, J. D., & Swanson, L. E. (1992). *Rural communities: legacy and change*. Westview Press.
- Harmse, A., 2010. Node Selection for the integrated sustainable rural development programme in South Africa. *Development Southern Africa*, 27(3), pp.429-445.
- Harper, C., Jones, N., & Marcus, R. (2013). *Research for development: a practical guide*. Sage.
- Hipwell, W.T., 2009. An asset-based approach to indigenous development in Taiwan. *Asia Pacific Viewpoint*, 50(3), pp.289-306.
- Khanya-mrc (2000) *Rural planning in South Africa: A case study*. A report prepared by Khanya – managing

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7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

rural change, Bloemfontein. Environmental Planning Issues No. 22, International Institute for Environment and Development, London

Kolb, B. (2008). *Marketing Research: A practical Approach*. London: SAGE Publications Ltd

Lazarus, S., Naidoo, A.V., May, B., Williams, L., Demas, G. and Filander, F.J., 2014. Lessons learnt from a community based participatory research project in a South African rural context. *South African Journal of Psychology*, p.0081246314528156.

Mack, N., Woodson, C., MacQueen, K.M., Guest, G. and Namey, E., 2005. *Qualitative research methods: a data collectors field guide*.

Mason J (2012) *Qualitative Researching* (2nd edn) London: Sage Publications.

Patton, M.Q. 2002. *Qualitative Research and Evaluation*. USA: SAGE

Schuurman, F. J. (1993). *Beyond the impasse: new directions in development theory*. Zed Books.

Marcus, A. and Asmorowati, S., 2006. Urban Poverty and the Rural Development Bias Some Notes from Indonesia. *Journal of Developing Societies*, 22(2), pp.145-168.

Moore, H.L., 2015. Global Prosperity and Sustainable Development Goals. *Journal of International Development*, 27(6), pp.801-815.

Nyerere, J. K. (1973). *Freedom and Development: Uhuru Na Maendeleo. A Selection from Writings and Speeches 1968-1973*. Oxford University Press, USA.

Paul, B.D., 2008. A history of the concept of sustainable development: Literature review. *The Annals of the University of Oradea, Economic Sciences Series*, 17(2), pp.576-580.

Pieterse, J.N., 2010. *Development theory*. Sage.

PlanAfric (2000) *Rural planning in Zimbabwe: A case study*. A report prepared by PlanAfric, Bulawayo. Environmental Planning Issues No. 23, International Institute for Environment and Development, London

Schneider, L. (2004). Freedom and unfreedom in rural development: Julius Nyerere, ujamaavijjini, and villagization. *Canadian Journal of African Studies/La Revue canadienne des études africaines*, 38(2), 344-392.

Shafeek, S. (2009). Enhancing the Strategy for Developing Small Growth Potential Firms in the Eastern Cape. *Journal of African Research in Business Management*, 4(4), 27-56.

Singh, K. (2009). *Rural development: principles, policies and management*. Sage Publications.

Tustin, D.H., Ligthelm, A.A., Martins, J.H. And Van Wyk, H.D.J. 2005. *Marketing Research in practise*. Pretoria: University of South Africa

Wilson, V. (2010). *Marketing Research in practise*. Pretoria: Van Schaik

Zindiye, L (2008) “Rigour”, “Ethical integrity” or “Artistry”? Reflexively reviewing criteria for evaluating qualitative research. *British Journal of Occupational Therapy* 69 (7) 319-26

Willis, K., 2011. *Theories and practices of development*. Taylor & Francis.

Zikhali, P., 2010. *Livelihoods after Land Reform in Zimbabwe*.

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# The Role of Innovations in Municipal Solid Waste Management to Attaining Sustainable Cities: Case of City of Johannesburg

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## Abstract

Globalisation, industrialisation and urbanisation processes have given rise to improved standards of living in most cities of the World. In turn, this has resulted in high volumes of municipal solid waste being generated in the ever-growing urban centres, thus creating new pressures in the form of waste management. In response, municipalities have developed innovative ways of managing municipal solid waste and among them is the capturing, flaring and conversion of landfill gas to electricity. In order to further knowledge on the role of landfill gas capturing and flaring technologies in creating cleaner urban environments, this paper investigated the operations within the Johannesburg city regions, focusing on Marie Louis and Robinson Deep landfill sites. In particular, the paper aims to highlight the impact of the innovations not only in managing municipal solid waste in cities but also in achieving sustainable urban centres. A case study research design and a qualitative research approach were adopted to gather data from key informants through the application of interviews and observations and photographic surveys of landfill sites and solid waste management approaches within the City of Johannesburg. The study revealed that there have been reasonable innovations in the collection, transportation, disposal and treatment of municipal solid waste at the landfill sites, thus improving the sustainability status of the city. Although the innovations still face some challenges, if concerted efforts are exerted in adopting and applying the novel ways of managing municipal solid waste, cities will be safer and sustainable in the near future.

## Keywords

Municipal solid waste, Waste to energy, Sustainable cities, Landfill gas, Innovations.

## 1. INTRODUCTION

Solid waste management, land shortage, global warming and the energy crisis have become the most pressing issues facing civilisation today (Muzenda & Belaid et al., 2011). Solid waste management is one of the most important municipal services and serves as a prerequisite for other municipal action (Hoorweg & Bhada-Tata, 2013). It is usually one service that falls completely within the local government's purview (Hoorweg & Bhada-Tata, 2013). Over the years this has led to poor management of solid waste such as poor solid waste storage, poor solid waste collection and poor solid waste disposal which has had a large impact on health, the local and global environment and the economy. Johannesburg's population growth has led to less space being available to hide solid waste thus leading to illegal dumping sites. As the population grows, land becomes a scarce resource, landfill sites fill up quicker and the energy demand far outweighs the energy supply (de Ligneris, 2013).

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South Africa, particularly in Johannesburg and EThekweni have developed innovative ways in dealing with solid waste management (Gumbo, 2013). However, there are no explicit studies that inform the impact of these innovations. Since there is a lack of scholarly literature on the impact of such innovations, this paper evaluates innovative ways in which municipal solid waste can be managed in the Johannesburg city region in order to tackle the issue of land scarcity for new landfill sites. Waste to energy facilities will contribute significantly to reaching the goals of waste management, sustainable development and environmental protection by means of mitigating greenhouse gas emissions and resource conservation (Brunner & Rechberger, 2014).

This paper aims to evaluate innovative ways in which municipal solid waste (MSW) is being managed in the Johannesburg city region and how this will lead to sustainable cities and pollution reduction. The aim is achieved through the following specific objectives; to identify the various sources of municipal solid waste; to evaluate the approaches used in MSW collection, transportation and disposal; to identify the various innovations used to treat municipal solid waste; to highlight the possible benefits of innovations in MSWM and to highlight the challenges being faced in adopting innovations.

The impact of innovations in municipal solid waste management where MSW has been used to generate electricity will be discussed in this paper. Case studies of the current MSW management processes in Johannesburg's region F and D are examined. An intense investigation of sources of solid waste, solid waste management processes, the technologies or resources that are needed, the benefits and challenges being faced in the management of solid waste is discussed and investigated in this paper and the issue of land for more landfill sites running out in both regions is highlighted.

## **2. BACKGROUND**

Currently world cities generate about 1.3 billion tonnes of solid waste per year thus demonstrating that the global impacts of solid waste are growing even faster than the rate of urbanization (Hoornweg & Bhada-Tata, 2013). The rates of municipal solid waste are fastest in China, parts of Asia, parts of Eastern Europe and The Middle East (Hoornweg & Bhada-Tata, 2013). Continents such as Asia, Latin America and Africa account for nearly 40% of the annual methane emission from a landfill, which is equal to the amount of air emissions from more than 102 million cars (Basura et al., 2002).

Improper management of solid waste has resulted in the emission of atmospheric gases called greenhouse gases that affect the earth's climate (Basura et al., 2002). In urban centres throughout Africa, less than half of the solid waste generated is collected, 95% of it is neither contained nor recycled (Simelane & Mohee, 2012). It is thrown away at dumping sites on the periphery of urban centres or at temporary sites; polluting not only the air but also nearby water sources and serving as breeding grounds for diseases (Simelane & Mohee; 2012).

As a result, South Africa has noted the impact of waste as a big challenge to the twenty first century (Simelane & Mohee, 2012). According to the 1999 state of environment report; South Africa generates over 42 million m<sup>3</sup> of solid waste every year (State of Environment Report, 1999). In 2010 Gauteng constituted 42% of South Africa's waste making it by far the country's biggest waste generator (Muzend et al., 2011). In 2013 the total waste volume generated in Gauteng was 3.02 million tons (de Ligneris, 2013); with the city of Johannesburg generating a total of 1 492 000 tonnes of general waste per annum (Gauteng Department of Agriculture, Conservation and Environment, 2008).

The City of Johannesburg's rapid population growth caused by rural to urban migration, natural increase, high rates of urbanization and industrialization has led to land shortage for new landfill sites and an increase in municipal solid waste generated which has resulted in astronomical rises in energy consumption which

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is derived mainly from fossil fuels that contribute to climate change (de Ligneris, 2013). Many countries have however, embraced innovative ways of generating electricity.

An example that has embraced innovative technologies to convert waste into energy is the EThekweni municipality located in South Africa's, Kwa-Zulu Natal province which is a developing country (Gumbo, 2014). The gas is converted into electrical energy by the turbines and a step up transformer is used to assist in feeding the electricity of the same voltage into the municipality's grid system (Gumbo, 2014).

On the other hand, China which is a transitional country undergoing rapid urbanization, with a population reported to be over 1.3 billion in 2005 (Nie, 2008) is faced with the problem of MSW disposal (Nie, 2008). Currently, China is faced with a problem of lack of space for new landfills which has become a major challenge even for its municipal authorities ;as a result an increasing number of cities in China have constructed or are planning to construct incineration plants (Dong , 2011) and LFG recovery plants (Willumsen, undated). There are four major types of MSW incineration technologies in China namely Stoker, Circulating fluidized bed which is based on the co-firing of MSW with coal, rotary kiln and paralysis (Nie, 2008) and approximately 3 LFG recovery plants in China (Willumsen, undated).

In Canada, methane emissions from municipal solid waste landfills have increased by 24 % between 1990 and 2005, while there has been a simultaneous increase in LFG capture and combustion over the same time (Profile and Strategic Plan for Canada, 2009). In 2005 there were 47 active landfills involved in capturing landfill gas in Canada. A total of 306 Kilo tonnes of landfill methane were captured and combusted in 2005 of which 52% was utilized and 48% was flared (Profile and Strategic Plan for Canada, undated). There were 21 sites that utilized the LFG and 26 sites that flared LFG. Although LFG is a convenient and safer alternative for waste to energy conversion. The main waste to energy technologies used in Canada is Landfill gas capture, incineration, gasification and plasma gasification.

If there is a positive correlation among population concentrations in urban centres, increased demands of energy sources and huge quantities of generated waste, then solid waste can be properly managed and creatively harnessed in service of sustainable cities.

### **3. CONCEPTUAL ISSUES IN INNOVATION IN MUNICIPAL SOLID WASTE MANAGEMENT**

Urbanisation and industrialization go hand in hand with the generation of solid waste in urban centres. In developed countries, these processes took place simultaneously beginning in the 18<sup>th</sup> century while transitional and developing countries have greatly been experiencing high urbanisation rates since the 20<sup>th</sup> century leading to increased energy consumption and increased waste generation (Gumbo, 2013).

Increased consumption on fossil fuels has led to changes of the atmospheric processes resulting in global warming. Solid waste management is complex, multifaceted and involves different stakeholders at various stages and processes from generation, collection, disposal and treatment of an assortment of waste types in urban areas (Gumbo, 2013). It is important than to adopt and apply the collaborative planning theoretical framework in order to understand the various components involved in the conversion of MSW to energy (Gumbo, 2013 ; Tchnobannoglous & Kreith, 1993).

The collaborative planning framework is built on a process of bringing all relevant participants together to work towards shared goals and innovative approaches when faced with colossal and challenging issues (Healey, 2003). It is a framework that combines each respective stakeholder's information, expertise, responsibility and asset ownership with the goal to optimize a given objective (Han et al., 2014). Inter-departmental coordination is an important factor for the success of a project therefore, possibilities for the optimization of the planning for other individual is created (Windischer *et al.*, 2009).

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Each agent has a subset of tasks for which it is responsible and owns a set of heterogeneous assets. Each task is modelled by a vector of resource requirements, a processing time and a start time (Han *et al.*, 2014). Collaborative planning framework includes aspects that enable the other person to recognize how individual plans should be adapted according to which criteria the planning can be optimized and which restrictions in the common planning must be accepted (Windischer *et al.*, 2009). So in essence multiple agents need to allocate assets to tasks to maximise an expected mission performance that is defined by how well all of the tasks requirements are satisfied by the allocated asset capabilities (Han *et al.*, 2014).The framework also makes it clear on how to meet the demands of economic competitiveness, environmental sustainability and social cohesion (Healey, 1996).

The collaborative planning framework helps to impart understanding and action in urban planning, development and management in this instance of Municipal solid waste in the process impacting on social, economic and environmental status of urban centres in the African content (Gumbo, 2013). The framework also ensure that there is a common understanding among stakeholders for example the private sector may work together with local authorities and the residents may participate in identifying landfill sites and in the storage and collection points, thus ensuring effective urban service provision and management of municipal solid waste (Healey, 1996;Gumbo, 2013).

It has been estimated that in excess about 95% of waste generated in South Africa is disposed of in landfills, while the world figure is at an excess of 25% (Muzenda *et al.*, 2011).These landfill sites are usually produced around the periphery of their cities which requires the acquisition of large areas as well as well supervised operation to minimize potential negative environmental impacts which represents a big threat for life of the population (Rand *et al.*, 2000).

Due to the fact that waste currently buried in South African landfills pollutes the soil, the water, produces methane and leads to a lack of space for new landfills, solid waste to energy innovative technologies have been initiated to play an important role in MSW management (Nie, 2008;Muzenda *et al.*, 2011). A shift from coal to natural gas as a major source of fuel for domestic use has become imperative (Nie, 2008) in order to reduce reliance on fossil fuels and counter rapidly diminishing landfill airspace and the environmental burden of landfilling waste (Kohler, 2015).The use of waste to energy production will mitigate the negative environmental impact of urban waste disposed while providing clean energy resources in the form of methane for either direct combustion ( cooking, heating , other uses) or electricity which will in turn ensure that scarcity of landfill sites is addressed (Ouedraogo, 2005).

This has called for more secured, clean energy sources that are critical for economic growth and sustainable development (Pilusa & Muzenda, 2014). There are various technologies available for energy generation from MSW, which include Landfill gas capture, incineration, gasification, generation of biogas and utilization in a combined heat and power plant, generation of biogas and conversion of fuel (Pilusa & Muzenda, 2014). Some of these various technologies will be discuss in this paper.

This section serves as the literature review of this paper. It starts off with an overall introduction that point to the main concept in the topic. It is followed by a discussion the theoretical framework that will help in understanding the study ; a brief discussion on the sources of municipal solid waste, the municipal solid waste collection processes, the technologies used to generate waste to renewable energy, the challenges, the benefits of waste to energy, a discussion on landfilling.

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### 3.1 Sources of Municipal Solid Waste

There are several sources of municipal solid waste they include household waste, industrial waste, commercial waste, construction and demolition waste, agricultural waste and municipal services waste which are discussed in detail below (Hoorweg & Bhada-Tata, 2013: 7).

Household waste is generated by single and multi-family dwellings. It includes waste such as paper, plastics, metals, wood, ashes, glass, leather, yard wastes, e-waste (computers, phones and televisions), cardboards, food waste and household hazard waste (Hoorweg & Bhada-Tata, 2013: 7). Industrial waste is generated by construction sites, power and chemical plants, fabrication, light and heavy manufacturing. It includes waste such as food wastes, hazardous wastes, ashes, packaging, housekeeping wastes and construction and demolition waste (Hoorweg & Bhada-Tata, 2013: 7)

Commercial waste is generated by stores, hotels, office buildings, markets and restaurants. In lower income countries, food markets contribute a large proportion of the commercial waste (Tchobanoglous et al., 1993). Commercial waste includes waste that is the same as industrial waste above (Hoorweg & Bhada-Tata, 2013: 7). Construction and demolition waste is generated by demolition of building, renovation sites, road repair and new construction sites. It includes wood, dirt, bricks, tiles, concrete, and steel waste materials (Hoorweg & Bhada-Tata, 2013: 7; Rand, Haukohl & Marxen, 2000).

Agricultural waste is generated by crops, diaries, farms, feed lots, vineyards and orchards. The type of solid waste produced from agricultural waste is spoiled food wastes, hazardous waste such as pesticides and agricultural wastes such as rice husks, cotton stalks, coconut shells and coffee waste (Hoorweg & Bhada-Tata, 2013: 7). Municipal services waste is generated by street cleaning, parks, beaches, landscaping, water and waste water treatment plants (Hoorweg & Bhada-Tata, 2013: 7). Solid waste produced from municipal services includes landscaping and tree trimming, general wastes from parks, beaches and other recreational areas, sludge and street sweepings (Rant *et al.*, 2000).

The fundamental problem that faces the management of all solid wastes is that they are made up of complex mixtures that are subjected to indifferent storage conditions resulting in deterioration before collection and subsequent treatment (Hammer, 2003). Waste accepted in municipal waste landfills in developed countries normally consist of MSW's, commercial and non-hazardous industrial waste. In many low to medium income parts of the world, where uncontrolled dumping is common, all waste tends to be dumped together regardless of its origins or its hazardous nature (Taylor & Allen, undated); a discussion of how MSW is collected follows next.

### 3.2 Approaches used in MSW Collection, Transportation and Disposal

Traditionally, MSW has been collected and disposed by municipal authorities as part of the community services and sanitation responsibilities (Gumbo, 2013). The different and mixed processes of managing MSW range from eco-design of production plants to reduce waste at the source, to reusing, recycling and recovery of waste generated, as well as composting, incineration and landfilling of collected waste from different sources (Muzenda *et al.*, 2012). Disposal of waste at landfill sites can be done directly from the source or from temporary community collection points such as skips, bunkers, trailers and open lots (Gumbo, 2013).

The collection of unseparated (commingled) and separated (recyclables) solid waste is an important part of any SWM program. Collection starts with the containers holding materials that a generator has designated as no longer useful and it ends with the transportation of SW or recyclables to a location for processing,

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transfer or disposal (Tchnobannoglous & Kreith, 1993). Solid waste collection involves the provision of a service and the selection of appropriate technologies to collect waste (Tchnobannoglous & Kreith, 1993).

The collection of wastes separated at the source is done using three principle methods which are: Firstly, curb side collection using conventional and specially designed collection vehicles; secondly, incidental curbs side collection by charitable organizations and thirdly, delivery by residents to drop-off and buy back centres (Tchnobannoglous & Kreith, 1993).

The processes used in collection of MSW from waste generation to landfilling are discussed next. Waste generated is collected and separated into different material streams. Once collected and separated, waste is either processed, this includes steps as waste sorting, dismantling of products and production of refuse derived fuel (RDF) or waste is recycled for example paper from waste paper, steel from ferrous metal scraps. Solid waste is then treated through various technologies such as thermal treatment, chemical treatment of hazardous wastes, mechanical or biological treatment. It is then utilized for example treated bottom ash is used for road construction, compost for agricultural applications or thermal utilization of RDF and then finally waste is sent to landfilling sites (Sabbas et al., 2001).

In order for the waste to energy initiative to become a success certain technologies are needed to convert solid waste into renewable energy, these technologies are discussed below.

### **3.3 Various innovation methods used to treat MSW**

The following MSWM innovations are in use globally;

#### *Incineration*

Municipal solid waste is incinerated or disposed of in landfills and gas is extracted from the waste, which is then converted to electrical energy (Gumbo, 2014). The greenhouse gasses emitted during the energy-generation process from the waste is recycled in the process which aids in reducing GHG's into the atmosphere. This technology is more viable then the burning of fossil fuels such as coal which release carbon dioxide into the atmosphere (Hamer, 2003).

#### *Gasification*

Solid waste is heated at a temperature of above 1000°C in a gasifier, in an atmosphere starved of oxygen in order to have an incomplete combustion of the waste. A gas called syngas is produced which can be used as a fuel (Pilusa & Muzenda, 2014). The gas is made up mostly of carbon monoxide, hydrogen and methane. The exact composition of the gas is influenced by the air, the temperature and water content which can be changed to yield the required gas composition. In South Africa there are no such plants but a few exist in the world (Pilusa & Muzenda, 2014).

#### *Combustible waste- refuse derived fuel (RDF)*

RDF is produced thermally via a mechanical pre-treatment method suitable for general waste, from this process pellets are produced and can be used as fuel in approved facilities (Pilusa & Muzenda, 2014). The RDF process produces higher quality fuel products with a higher calorific value than the initial waste and they are easy to use, transport and handle. Even though there are a number of RDF plants in the world, none has been erected in South Africa (Pilusa & Muzenda, 2014).

#### *Landfill Gas (LFG)*

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A LFG plant consists of an extraction system and a utilization system. The extraction system usually consists of vertical perforated pipes, horizontal perforated pipes and in some cases a membrane covering under which the produced gas is collected (Willumsen, undated). Gas is sucked out of the landfill through a pump or a compressor leading the gas into the production system. The gas is commonly used as fuel in a gas engine running an electric generator. It can be used in a gas boiler to produce hot water for heating (Daskalopoulos et al., 1997). Under normal circumstances the gas is not purified but if the gas is to be used in a gas boiler or gas engine impurities are removed. In other cases the gas is upgraded to almost pure methane which is then used in the natural gas network (Willumsen, undated). An example that has embraced innovative technologies to convert waste into energy is the EThekweni municipality located in Kwa-Zulu Natal province (Gumbo, 2014). Gas collector wells are drilled into the mount in the landfill to suck the gas that is transported to all the pipes to the gas pump and flare station.

### **3.4 Possible benefits of innovations in MSWM**

Waste to energy is indeed a necessity as it will enhance the quality of life, ensuring a decrease in illegal dumping sites and a decrease in the use of landfill sites which are the main cause of climate change (Muzenda et al., 2011). Waste to energy will also address the issue of land scarcity for landfill sites as less landfill sites will be needed. It will promote the transfer of pollutants from one medium to another. The GHG's which result from fossil fuel combustion will be reduced and a low carbon economy by waste utilization will be achieved. Waste to energy will also lead to waste minimization and will promote the development of pollution prevention technologies (Brunner & Rechberger, 2014). It will ultimately promote the effective use of energy, materials and resources (Muzenda et al., 2011). Every solution does however have certain challenges which are discussed next.

### **3.5 Challenges faced in adopting innovations**

A challenge faced globally is the lack of proper infrastructure to ensure waste minimisation and the safe location of energy facilities in proximity to the community (Muzenda, 2011). Challenges faced by most African countries are lack of technologies such as equipment to suck gas from landfills, engines that cool and convert gas into electricity these are lacking due to prohibitive costs. There is a serious shortage of experienced and well trained personnel who are able to use waste to energy technologies. Appropriate policies that support investments in the product of renewable energy are lacking in most African countries and serious inconsistencies in their application have been noted in countries where they do exist (Gumbo, 2014).

### **3.6 Landfilling**

One of the major problems facing South Africa in terms of waste management is the lack of space for landfills. Waste management is inadequate in most cities of developing countries. Dumping sites are essentially uncontrolled due to problems such as shortage of cover, lack of leachate collection and treatment, inadequate compaction, poor site closing and many pickers working at the site (Vaverková and Adamcová, 2015).

Thus, resulting in considerable health, safety and environmental problems and landfills are supposed to be built with optimised and adopted top and bottom liners system in the developed countries but in most developing countries, especially Asian landfills which are merely large shallow holes in the ground filled with waste (Visvanathan et al., 2003). The establishment of sustainable landfills is a key strategy in modern waste management as landfills are known for releasing harmful emissions (Daskalopoulos et al., 1997). Waste in landfills converts to organic and inorganic compounds in the form of gaseous or liquid states by

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undergoing various chemical and biological transformations, leading to the formation of LFG and landfill leachate (Vaverková and Adamcová, 2015).

The temperature of landfills plays an important role in determining the long term potential of landfill emission. The actual landfill temperature can vary within one landfill and is affected by the size, height of the landfill, climate conditions and landfilling operations which determine the circumstances in which microbial decompositions occurs (Vaverková and Adamcová, 2015). Understanding the impact of temperature on landfill emissions is important for the improvement of long term landfill management strategies in order to minimise landfill emission, accelerate waste stabilization and shorten the landfill aftercare period (Vaverková and Adamcová, 2015; Daskalopoulos et al., 1997). Many countries in both developing and developed countries still prefer landfill sites as a means of solid waste disposal.

#### **4. OPERATIONALISING THE STUDY - METHODOLOGY**

This section presents; analysis and discusses data that has been collected at Marie Louis and Robinson Deep landfill sites. The data has been collected through interviews with managerial pickup officials and communications officers for both regions. Site observations and photographic surveys were conducted

#### **5. STUDY AREA**

The Apartheid history has had a major influence on the manner in which cities in South Africa have been planned. South African cities were built on spatial divisions. In past-apartheid Gauteng, spatial divisions still exist (Tomlinson, Beauregard *et al.*, 2003). Land is becoming a scarce commodity in Johannesburg thus in this section two case study areas are discussed. Region F and Region D respectively, their historical background and the methodology used to carry out the investigation is discussed.

##### **5.1 Region D and F Background**

As illustrated in Figure 1, region F is bound by Killarney Ridge in the North, Houghton and orange Grove (Region E) and Parktown (Region B), Ekurhuleni to the east, Klipriver to the South, to the west Soweto (Region D) and Johannesburg South (Region G). Region F also includes Fordsburg, Southgate and Mayfair (Regional Spatial Development Framework for Region F: 2010-2011).

Region D is situated to the western edge of the city. It is surrounded by Parktown (Region B) and Roodepoort (Region C ) to the north, Inner city (region F) to the east and Johannesburg South (region G) to the south as illustrated in Figure 1 (Regional Development Spatial Framework for Region D:2010).

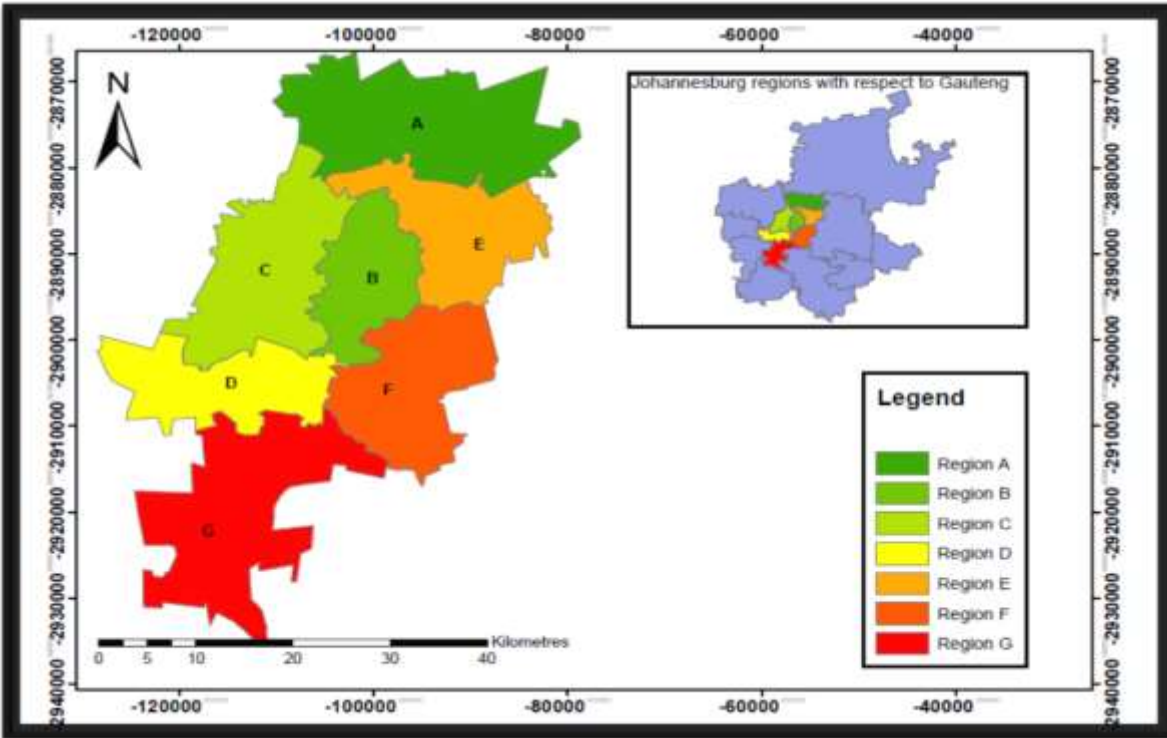


Figure 1: Joburg’s city regions. (Adopted from COJ, 2015 and modified)

Region F is the site of the original mining camps of the city of gold which were established towards the end of the 19<sup>th</sup> century. The region has some of the most important facilities and attraction including the University of Witwatersrand and the world class theatres; it is the hub of the city’s transport network. The provinces only inland container terminal City Deep is situated in Region F (Regional Spatial Development Framework for Region F: 2010-2011).

Region D which is made up of Soweto is originally an acronym for South Western Townships. Soweto was at the centre of campaigns to overthrow the Apartheid government. In 1976 the Soweto uprisings began in Soweto and spread to the rest of the country (Regional Spatial Development Framework for Region D: 2010). The area has spawned many political, sporting and social luminaries including Nelson Mandela and Desmond Tutu. Since its inception, Soweto has been faced with perennial problems including poor housing, overcrowding, high unemployment and poor infrastructure (Regional Spatial Development Framework for Region D: 2010).

A qualitative approach was used for this study and it facilitates the gathering of qualitative data. The research was executed through structured interviews with personnel involved in municipal solid waste management. This study involves the evaluation of municipal solid waste management in the two regions F and D hence both primary and secondary data was used it provided interfaces of theory and practice. Observations and photographic surveys were done through site visits to the landfill sites and photographs using a camera were taken of the actual landfill site and the various processes used in solid waste disposal at both Marie Louis and Robinson Deep landfill site. Qualitative data collected was analysed through content analysis. The purposive sampling method was used to identify key informants who are involved with solid waste management within Region D and Region F.

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## **6. THE NATURE OF INNOVATIONS IN MUNICIPAL SOLID WASTE MANAGEMENT: CASE OF MARIE LOUISE AND ROBINSON DEEP LANDFILL SITES**

This section, analysis and discusses data that has been collected at Marie Louis and Robinson Deep landfill sites. The data has been collected through interviews with managerial pickitup officials and communications officers for both regions. Site observations and photographic surveys were conducted. The section starts off with a discussion of the findings of sources of MSW in both regions; then followed by the processes used to collect MSW in both regions; the technologies/ resources used to generate waste to energy at both landfill sites; the challenge of more land for establishment of new landfill sites; the solid waste to energy challenges; the possible benefits of landfill gas plant and this section ends with an overall conclusion.

Environmental concerns, increasing energy demand and the abundance of municipal solid waste have called for waste to energy technology innovations. Currently, world cities generate about 1.3 billion tonnes of solid waste per year (Hoornweg & Bhada-Tata, 2013). Countries such as Asia, Latin America and Africa account for nearly 40% of the annual methane emission from landfills (Basura et al., 2002) which is the ultimate cause of global warming. In urban cities throughout Africa, 95% of the solid waste collected is neither contained nor recycled (Simelane & Mohee, 2012) but is thrown away at dumping sites on the periphery of urban centre or temporary site resulting in air pollution, pollution to nearby water sources and creating a breeding ground for diseases. In South Africa, at national level landfills are filling up every year. Gauteng accounts for approximately 42% of South Africa's waste making it by far the country's biggest waste generator (Muzenda et al., 2011). There are currently 17 landfill sites in Gauteng with only a few left with 7 years before reaching their carrying capacity (de Ligneris, 2013). It is clear then that there is a need for innovative strategies to generate sustainable, clean, reliable and renewable energy sources from alternative sources such as municipal solid waste (de Ligneris, 2013).

### **6.1 Sources of municipal solid waste in both regions**

Solid waste disposal in both region D and F are regulated by the DWAF waste permit that was granted by DWAF and is audited by GDARD to confirm permit compliance. The permit specifies what type of waste is allowed to be disposed of on the landfill site. At Marie Louis landfill site, the different sources of municipal solid waste allowed are household waste, green waste and building rubble waste which gets crushed by the crusher machine and is used for roads and the tip phase of the slopes of the landfill site. The green waste gets chopped by the chipper machine and is taken and stock piled to make compost which is not sold to the public but is used for the vegetable garden on the landfill site.

At Robinson Deep landfill site, the different sources of municipal solid waste allowed are general waste such as domestic waste, green waste and recyclable waste is disposed of at the landfill site. The amount of different sources of municipal solid waste that were disposed of at both landfill sites in 2013 and in 2014 are illustrated in Figure 2 with household waste always being the most waste disposed at both Marie Louis and Robinson Deep landfill site.

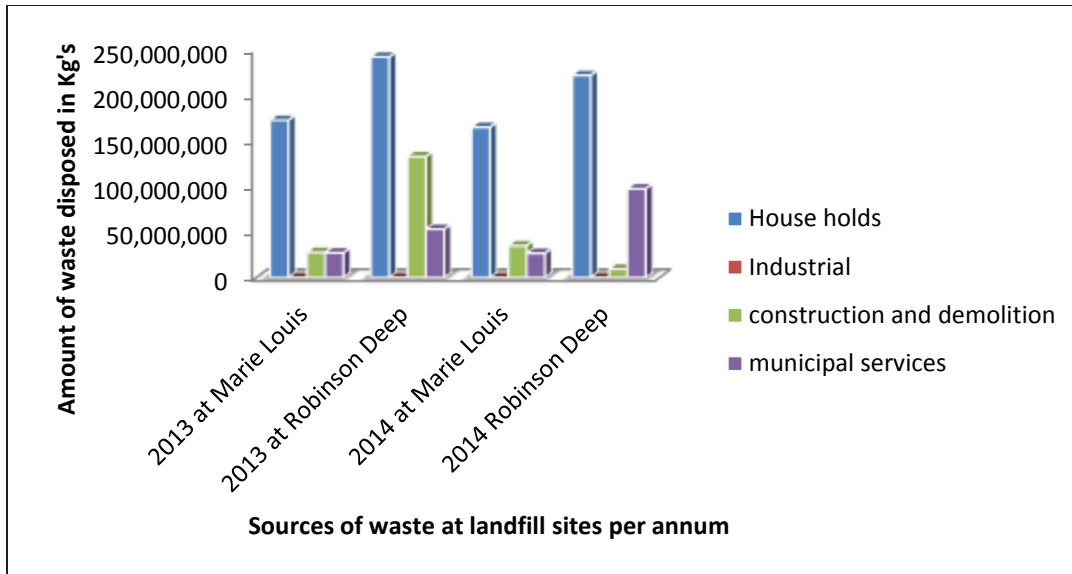


Figure 2: Sources of waste at landfill sites per annum

In 2013 a total of 64 116 321 381 132 kg and in 2014 a total of 65 906 308 431 663 kg of waste was disposed of at Marie Louis landfill site. The increase in amount of waste disposed at Marie Louis landfill site of 179 987 050 531 kg in 2014 is illustrated in Figure 3. From data collected there are approximately 31 illegal dumping sites that are known of in Region D, thus showing a serious need for innovations in solid waste management.

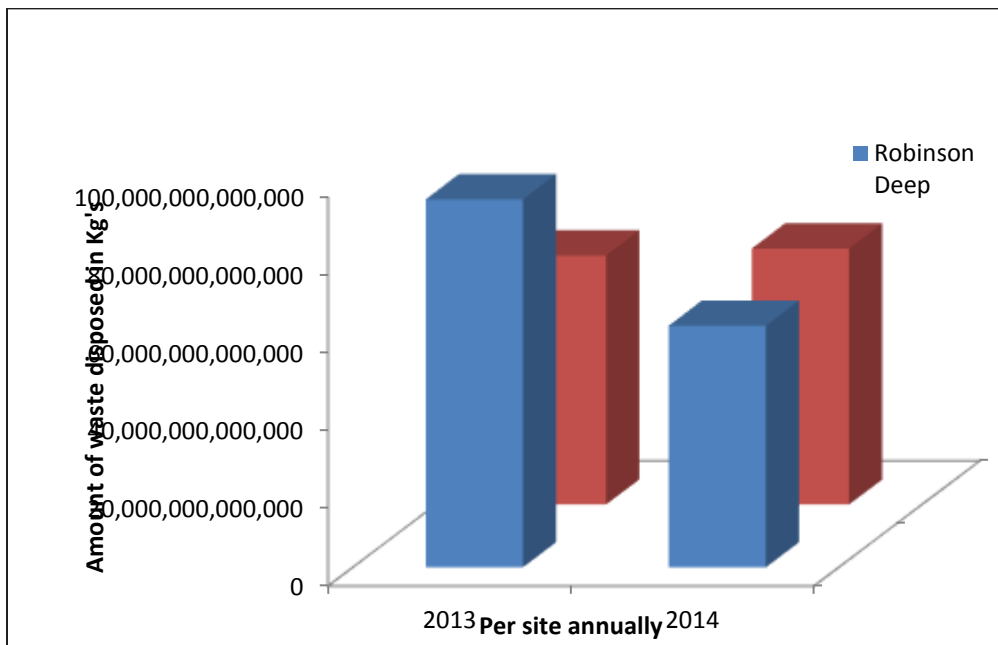


Figure 3: Amount of waste disposed at Marie Louis and Robinson Deep landfill sites in 2013 and in 2014

At Robinson Deep landfill site in 2013 a total of 94 686 556 080 535 kg and in 2014 a total of 62 315 465 530 237 kg of waste was disposed of at the site. The increase in amount of waste disposed at

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the landfill site in 2014 is illustrated in Figure 3. There are approximately 36 illegal dumping sites that are known of in Region F of which 35 are resolved and 1 unresolved, thus showing a serious need for innovations in solid waste management which will encourage communities to dispose of their waste in proper waste disposal bins.

## **6.2 Techniques used to collect and transport municipal solid waste within the regions Collection system**

Marie Louise landfill site is served mainly by Zondi, Avalon and Roodepoort depots. The depots collect household waste from the respective areas using the RCR (Round Collection Refuse) trucks and these trucks transport the waste to Marie Louise landfill site. Robinson Deep landfill site is served by 6 depots which are Southdale, Selby, Norwood, Waterval, Randburg and Melboro depots. 18 tonne compactor vehicles from the various depots are scheduled to collect compact waste from households and transport it to the landfill site.

## **6.3 Transportation system**

At Marie Louis landfill site waste is transported through the security gates, then over the weigh bridge as illustrated in figure 4, where waste is weighed to see if it meets the requirements for disposal and then transported up to the tip where it is disposed of at the waste cell.



Figure 4: Marie Louis Weight Bridge under construction

At the Robinson Deep landfill site, waste collected is supposed to be weighed on a weigh bridge but as illustrated in Figure 5, the Robinson Deep weigh bridge is still under construction and is expected to be fully functioning by the beginning of 2016. Once waste has gone over the weigh bridge, it is taken to the landfill site on the tip phase area.

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Figure 5: Weighbridge still being constructed at Robinson Deep landfill site.

Once the waste has been transported over the weigh bridge, it is transported to the tip phase area of the landfill.

#### **6.4 Disposal system**

As seen in Figure 5 once the solid waste is disposed of at the tip of the phase, the informal waste reclaimers collect recyclable waste from the disposed waste and in Figure 6 they put the waste into white bags in different categories. The informal waste reclaimers sell the recyclable waste that has been collected and separated to the recycle market.

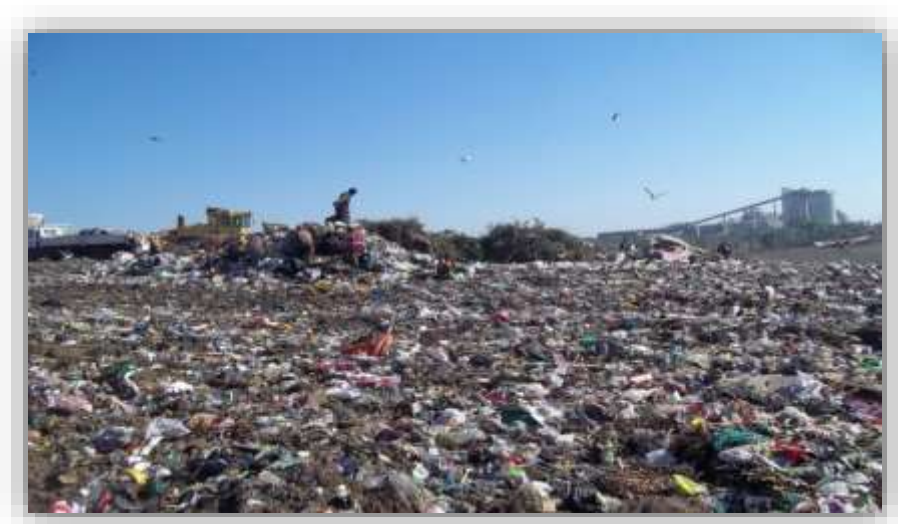


Figure 6: Reclaimers collecting waste from the tip

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There are currently, 160 men and 140 women involved in informal waste recovery at Marie Louis landfill site.



Figure 7: Reclaimers putting waste into different categories for recycling purposes

At Robinson Deep landfill site; as seen in Figure 7, once the municipal waste reaches the tip phase the informal waste reclaimers collect waste and separate it into different categories. After the waste has been collected and separated by the informal waste reclaimers, the disposed waste at the cell is compacted by a compactor truck as seen in Figure 7 and covered with 5cm height of soil and it is watered.



Figure 8: Pikitup truck off-loading the waste at the tip of the phase, reclaimers collecting and separating waste and compactor truck compacting waste.

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As discussed above, at both landfill sites waste is spread daily on the active cell.

### **6.5 The innumerable innovations used to treat municipal solid waste**

Globally, various innovations to treat MSW have been adopted which range from incineration of solid waste, gasification of solid waste and landfill gas. A number of technological innovations have been adopted and are discussed as follows;

#### **6.6 Compacting**

Once waste has been transported, disposed and reclaimed by the reclaimers; at both landfill site the disposed waste at the cell is compacted by a compactor truck. The compacting of waste helps to reduce the waste volume by forming cavities. After the waste has been compacted; it is covered with soil to reduce odours and keep pests out.

#### **6.7 Watering tank**

After the waste has been collected; separated by the informal waste reclaimers; compacted by a compactor truck and covered with 5cm height of soil. The compacted and covered waste is watered using a watering tank. The cell is watered to reduce dust being blown to the nearby residents and to reduce the amount odour from the cell.

#### **6.8 Landfill gas sucking and flaring**

Both Marie Louis and Robinson Deep landfill site have an energy plant of which the gas manifold suck landfill gas such as methane and carbon dioxide from the landfill. When the gas reaches the condensation, trapped water is removed and only gas is left, the suctioned gas passes into the compressor and is flared.

Currently, there is an energy plant on the Marie Louis landfill site which is being used to flare gas from the landfill and according to future plans; from the beginning of 2016 the flared landfill gas will be converted into energy via a co-generation plant. The energy will then be put into the transformers and into Eskom and Joburg's city power electricity grid to supply neighbouring areas with electricity at a cheaper rate.

The Robinson Deep landfill site is a candidate for landfill gas recovery, as the landfill gas recovery project was started in 2004. It is expected that the flared gas will be converted into electricity and put into the electricity grid system in 2016.

## **7. POSSIBLE BENEFITS OF INNOVATIONS IN MUNICIPAL SOLID WASTE MANAGEMENT**

### **7.1 Economic benefits**

Carbon credits collected from the LFG energy system can be sold on the green energy regulator. The other economic benefits of innovations in municipal solid waste management are discussed as follows:

The informal reclaimers that collect waste and separate it benefit greatly economically from selling the recycled waste to the informal waste market. Compacting of solid waste will decrease waste and increase the lifespan of the landfill site; this will in turn help reduce the need by the Johannesburg city regions to look for and purchase land for landfilling. The water spraying of waste will help reduce the release of gases such methane and carbon dioxide into the atmosphere. Thus leading to less cost to health care for nearby communities.

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The flaring of landfill gas and later putting the flared gas into the grid system will help benefit the regions greatly in providing electricity to the neighbouring areas. The extraction of fossil fuels are difficult and more costly to extract compared to solid waste that does not have any extraction costs, which is essentially free (Brown, 2013). Unlike the conventional fuels such as coal and uranium, the transportation footprint of landfill waste is relatively low (Davis, 2002). There will also be a reduction in the potential for explosions in structures at or near a landfill (Davis, 2002). The energy needs of the inhabitants will be met without imposing unsustainable demands on local or global natural resources such as coal (Satterthwaite, 1997).

## 7.2 Environmental benefits

Innovations in municipal solid waste management are achieved through various methods discussed in this paper, these methods lead to the following environmental benefits;

### *Recycling*

The waste from the tip phase as seen in Figure 8 will have been recycled thus reducing the amount of waste that takes years to be broken down.



Figure 9: Recycling of waste by the reclaimers

Recycling of waste will be environmentally beneficial because in total it takes 2-5 months to breakdown biodegradable waste; 10-30 months to breakdown combustible waste such as plastic and rubber and it takes 80-100 years to breakdown non-combustible waste such as metal and building rubble (Hugo *et al.*, 1997). Therefore, recycling helps to alleviate the soil from breaking down waste.

### *Compacting*

Compacting as seen in Figure 9 helps to reduce the amount of waste on the tip phase.

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Figure 10: Compactor vehicle

The compacting technique also helps to form cavities which result in reduced waste.

### 7.3 Water spraying

As illustrated in Figure 10 when compacted waste is sprayed with water, this helps to reduce the amount of dust from the landfill tip phase to neighbouring communities and it also helps to reduce odours and unwanted pests.



Figure 11: Watering truck

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## **7.4 Flaring**

Flaring of the landfill will increase the lifespan of the landfill site; since landfill gas will be suctioned out of the landfill this will cause the landfill cell to have cavities which can be closed using solid waste. When renewable source provides energy to the grid, the demand for electricity is reduced from traditional sources (fossil fuels) such as coal, which release large quantities of carbon dioxide into the atmosphere. Gas generation at a landfill unlike wind and solar power rarely comes to a stop (Brown, 2013).

## **7.5 Social benefits**

Ultimately these innovations will lead to clean air, clean water and clean land; which are environmentally safe, socially inclusive and economically productive cities (World economic and social survey, 2013; Lia & Tiberiu, 2010) which are basically an enhanced quality of life.

Poverty will be reduced through the selling of waste by reclaimers to the informal recycling market. Through the municipal solid waste management innovations more jobs will be created both skilled and unskilled personnel will be needed for the innovations to be built and run effectively.

## **7.6 Challenge of more land for establishment of new landfill sites**

Marie Louise is the only landfill site in the whole of region D. Therefore, if it closes down there will be a serious problem since there is no space for another landfill site to be built in the region. The landfill site has been divided into 4 cells and there is only one cell left still in operation; the other 3 cells have reached their maximum carrying capacity.

Pikitup has however, asked GDARD for a height extension of the landfill site, which will allow them to raise the landfill site by another 20m, the current height of the landfill is 26m. A waste hub initiative or a mirf were the waste will go into the waste hub and the reclaimers will go through the waste and do recycling and the waste that cannot be recycled will go up to the landfill site tip phase has been starting at the landfill site. Through the above methods, the lifespan of the landfill site will be increased by another 4-5 years.

Robinson Deep landfill site is also the only public land fill site in Region D. If all the cells were to fill up there would be a serious problem of where to dispose the waste and this problem would hit pikitup financially as there is a private landfill site close to Robinson deep but it costs a lot of money to dispose waste as it is a privately owned site. The Robinson Deep landfill site has been divided into five cells and the maximum height has already been reached on certain parts of the cell; the Eastern and Northern side of the cell still have another 7 years to go before reaching the maximum height.

## **8. CONCLUSIONS AND RECOMENDATIONS**

It can be noted then that from the data collected at Marie Louis and Robinson Deep landfill sites, household waste is in quantity the waste that is mostly disposed of at these landfill sites. The weigh bridges at both Marie Louis and Robinson Deep landfill sites are still being constructed; thus, giving the impression that the total amount of waste disposed of on the tip phase is estimated. Since waste is only separated at the landfill site by the reclaimers this gives the impression that there is no at source separation of municipal solid waste taking place at both Region F and Region D. The various benefits identified being economic, environmental and social benefits are important pillars in promoting sustainable cities in the Johannesburg city regions. Thus, challenges faced by Marie Louis and Robinson Deep landfill site need to be addressed systematically as these challenges are intrinsically interconnected to one another. Solid waste management, global warming and the energy crisis have become the most pressing issues facing civilisation today. In response to these demands Marie Louis and Robinson Deep landfill sites have embraced innovative waste

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to energy technologies. As a result, this paper tenders the following recommendations: Since the weigh bridges at both Marie Louis and Robinson Deep landfill sites are still being constructed; thus, giving the impression that the total amount of waste disposed of on the tip phase is estimated. These weigh bridge construction need to been completed urgently so as not to be giving out false quantities of waste being disposed at the landfills as this can have a negative effect on efforts for innovations in municipal solid waste management. Since there is no at source separation of municipal solid waste taking place at both Region F and Region D. It is encouraged that through awareness that citizens be educated on different ways in which they can separate solid waste as source, as this will help reduce the amount of time it would take if it took place at the landfill site. Since one of the main challenges in innovation of MSW is lack of qualified personnel, it is recommended that through workshops and public engagement that people are made aware to what qualifications are needed to take part in the SWM innovations and training of personnel to improve skills set in the regions can be carried out. Other challenges include the high costs and political influence, government and his cabinet need to be made aware of the MSWM crisis the region is being faced with in order to help fund innovations. Private companies can also be approached my Pikitup requesting for funding. Waste needs to be regarded and treated as a valuable resource. This can be achieved through a change in attitude towards waste; raising awareness in communities and sensitising the population to its usefulness.

## 9. REFERENCES

Basura, Garbage, Gomi, Ordures, Afval & Spazzatura. 2002. *Solid waste management and climate change* [Online]. Available: <http://www.epa.gov> . [Accessed 2 April 2016].

Brown, J.P. 2013. *Economic value and benefits of landfill gas as renewable energy strategy* [Online]. Available: <http://www.energymanagertoday.com>. [Accessed 2 April 2016].

Brunner, P & Rechberger, H. 2014. *Waste to energy- key element for sustainable waste management* [Online]. Available: <http://dx.doi.org> . [Accessed 2 April 2016].

Daskalopoulos, E. Badr, O. & Probert, D. 1997. Economic and environmental evaluations of waste treatment and disposal technologies for municipal solid waste. *Applied energy*, 58, 209-255.

Davis, G. 2002. *Economic and financial aspects of landfill gas to energy project development in California. Consultation report* [Online]. Available: <http://www.energy.ca.gov>. [Accessed 2 April 2016].

de Ligneris, J. 2013. *Aiming at zero waste the solution for Gauteng* [Online]. Available: <http://www.gdard.gpg.gov.za>. [Accessed 2 April 2016].

Dong, Y. 2011. *Development of Waste-To-Energy in China; and Case Study of the Guangzhou Likeng WTE plant*. M.S. Columbia University [Online]. Available: <http://seas.columbia.edu>. [Accessed 16 April 2016].

GDACE (Gauteng department of agriculture, conservation and environment) .2008. *Gauteng waste minimisation plan: status quo report v3* [Online]. Available: <http://sawic.environment.gov.za> . [Accessed 14 March 2016].

Gumbo, T. 2014. Scaling up sustainable renewable energy generation from municipal solid waste in the African continent: lessons from EThekweni, South Africa. *The journal of sustainable development*, 2 (1), 46-62.

Gumbo, T. 2013. *Towards a green energy revolution in Africa: reflections on waste to energy projects* [Online]. Available: <http://www.ai.org.za>. [Accessed 2 March 2015].

Hammer, G. 2003. Solid waste treatment and disposal: effects on public health and environment safety, (22)71-79.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Han, X. Mandal, S. Pattipati, K. Kleinman, D & Mishra, M. 2014. An optimization-based distribution planning algorithm: a blackboard based collaborative framework. *IEEE transactions systems, man and cybernetics: systems*, 44, 673-686.
- Healey, P. 2003. Collaborative Planning In Perspective. *Planning theory*, Sage publications, 2, 101-123.
- Healey, P. 1996. Consensus—building across difficult divisions: new approaches to collaborative strategy making. *Planning practice and research*, 2, 207-216.
- Hoornweg, D. & Bhada-Tata, P. 2013. *What a waste: A global review of solid waste management* [Online]. Available: <http://www.web.worldbank.org>. [Accessed 2 March 2016].
- Hugo, M.L. Viljoen, A.T. & Meeuwis, J.M. 1997. *The ecology of natural resource management: The quest for sustainable living, a text for South African students*, Pretoria, Kagiso Publishers.
- Kohler, N. 2015. *Waste to energy considered for urban area of South Africa* [Online]. Available: <http://www.golder.com> [Accessed 4 June 2015].
- Lia, C. & Tiberiu, R. 2010. *Aspects regarding the implementing of the concept of sustainable development in the educational management* [Online]. Available: <http://www.un.org>. [Accessed 16 April 2016].
- Methane to markets landfill and subcommittee country- specific profile and strategic plan for Canada energy sector management assistance program* [Online]. 2009. Available: [http:// www.globslmethne.org](http://www.globslmethne.org) . [Accessed 2 April 2016].
- Muzenda, E. et al., .2011. Reflecting on waste management strategies for South Africa. *World of science, engineering and technology journal*, (2), 1-6.
- Nie, Y. 2008. Development and prospects of municipal solid waste incineration in China. *Springer*, 2, 1-7.
- Ouedraogo, F. 2005. *Landfill gas capture opportunity- Sub-Saharan African* [Online]. Available: [http:// www.esmap.org](http://www.esmap.org). [Accessed 2 April 2016].
- Pilusa, J. & Muzenda, E. 2014. Municipal solid waste utilisation for green energy in Gauteng province-South Africa: A review. *Integrated waste management and environmental engineering*, pp. 174-179.
- Rant, T. Haukohl, J. and Marxen. 2000. *Municipal solid waste incineration: requirements for a project*, The World Bank Washington D.C, USA.
- Regional Spatial Development Framework Region D. 2010. Available: [www.joburg.org.za](http://www.joburg.org.za) . [Accessed 25 March 2016].
- Regional Spatial Development Framework Region F. 2010-2011. Available: [www.joburg.org.za](http://www.joburg.org.za) . [Accessed 25 March 2015].
- Satterthwaite, D. 1997. Sustainable cities or cities that contribute to sustainable development? *Urban studies*, (34), 1667-1691.
- Simelane, T. & Mohee, R. 2012. *Future directions of municipal solid waste management in Africa. Briefing no 81. South Africa: Africa institute of South Africa* [Online]. Available: <http://www.ai.org.za>. [Accessed 2 March 2016].
- Tchnobannoglous, G. and Kreith, T. 1993. *Handbook of solid waste management*. 2<sup>nd</sup> ed, USA, McGraw Hill.
- Tomlinson, R. Beauregard, R.A. Bremner, L. and Mangeu, X. 2003. *Emerging Johannesburg, perspectives on the past apartheid city*, New York, Routledge.

#### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Vaverková, M. & Adamcová, D. 2015. Long- term temperature monitoring of a municipal solid waste landfill. *Environmental studies*, (24), 1373-1378.

Visvanathan, J et al., .2003. Landfill management in Asia: Notions about future approaches to appropriate and sustainable solutions. In *9<sup>th</sup> international waste management and landfill symposium*, 2003, Sardinia, Italy.

Willumsen, H. undated. *Energy recovery from landfill gas in Denmark and worldwide* [Online]. Available: [http:// www.lei.lt](http://www.lei.lt). [Accessed 2 April 2016].

Windischer, A. Grote, G. Mathier, F. Martins, S and Glardon, R. 2009.Characteristic and organizational constraints of collaborative planning. *Springer*, 11, 87-101.

World economic and social survey. 2013. *Sustainable development challenges. Department of economic and social affairs* [Online]. Available: [http:// www.sustainabledevelopment.un.org](http://www.sustainabledevelopment.un.org). [Accessed 2 March 2016].

**Conference Proceedings:**

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# A Policy and Legislation Investigation Supporting the Creation of Child-Friendly Spaces

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## Abstract

Child-friendly spaces are a scarce commodity in South Africa, due to problems such as lack of qualitative open spaces and limited policies and legislation guiding the planning and protection of such spaces. This study will investigate international legislation and policies which supports the planning of child-friendly spaces, and accordingly compare the local policy and legislation framework to evaluate if such supports the concept of child-friendly spaces and the planning thereof. These policies and legislations are evaluated from a planning perspective, providing insight on the international approach towards planning for child-friendly spaces and identifying possibilities for planning and development within the South African reality. For the purposes of this study, policies and legislation applicable to green space provision and planning for child-friendly spaces was included. A policy and legislation matrix was compiled as final output of this research, to summarise the findings regarding the effectiveness of legislation and policies in supporting the planning of child-friendly spaces internationally and locally.

## Keywords

Child-Friendly Spaces, green space provision, legislation and policies

## 1. INTRODUCTION

Open spaces within the South African urban planning context include areas such as parks, boulevards, green belts, buffer strips, lagoons, escarpments, trails etc., All of these examples, including outdoor play spaces, are components that create an open space system and provide numerous benefits for the public and community in terms of social cohesion, recreational opportunities, health and aesthetic enjoyment (Clouston & Stansfield, 1981:6; Harper, 2009). Open spaces such as parks are crucial in developing healthy-communities as it contributes to quality of life by improving, protecting and preserving the quality of the urban environment. Numerous of literature confirms that outdoor play spaces are vital for children's learning and developing stages throughout life (Moore et al., 1987:6; Shackell, 2008:9 and Zomervrucht et al, 2005:8). Marcus & Francis (1998:263) confirm this statement by emphasizing the importance of play spaces for normal child development. Development includes 1) Physical development (large-muscle or gross motor activities) such as climbing, running and jumping and 2) Intellectual development (manipulative play) where children begin to formulate concepts of action and relationship by energetically manipulating the elements of the environment.

Many aspects define child-friendly spaces and emphasise the importance of creating such spaces.

According to Horelli (2007:268) a child-friendly space can be defined as "*a community product developed from local structures beyond the individual level. It comprises a network of places with meaningful activities, where young and old can experiences a sense of belonging whether individually or collectively. The participation of children and youth in the shaping of their setting plays a central role in the creation*

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*of child-friendly environments.*” Research has shown that children prefer to play in natural areas and need access to rich stimulating environments. Natural spaces offer sensory stimulation and physical diversity which is critical for childhood experiences outdoors (DTLR, 2002:13). Child-friendly spaces support the concept of “urban greening” which refers to the integration of natural elements and urban environments. Research proofed that children’s direct social and individual involvement in nature has a positive effect on children’s motor skill development, social development, attentiveness and activity level (Parsons, 2011:2). It can therefore be stated that integrating the natural environment as part of urban space planning, is a crucial element when considering child-friendly spaces, because it contributes to the children’s environmental identity and guide their future environmental actions (DTLR, 2002:13; McAllister, 2008:5; Parsons, 2011:2; PLAYLINK, 2000).

### 1.1 Challenges faced by children in South African urban areas

South Africa faces many unique problems brought along by the apartheid and post-apartheid eras. Apartheid spatial planning had a few consequences namely, cities that are undersized, sprawling cities, marginalising, decentralising, obstruction of movement within cities and under serviced areas. The post-apartheid settlement planning had its own consequences namely, housing-driven settlement planning, de-densification, on-going decentralisation and worsening service levels in sprawling new informal settlements (Campbell, 1996:5). The current problems facing South African environments and communities today include, but are not limited to, increasing urbanization, increasing poverty, unstable political structures, increasing health concerns, lack of open spaces and environment derogation. The underlying causes of these problems are lack of public awareness, crime, insufficient governance, poor policies, and the lack of knowledge. These mentioned problems affects children in numerous ways such as the lack of safe, crime free play areas, their mobility are restricted due to crime and lack of public awareness and insufficient funding towards children development such as child-friendly spaces (Department of Economic and Social Affairs, 2013). Children in South African urban areas are faced with the following challenges constraining their access to child-friendly spaces:

*Challenge 1: Urbanisation:* Due to the rapid urbanisation taking place all over the world, open spaces are under development pressure to release as much possible economic benefits. However this leads to a lack of open spaces and the potential of creating child-friendly spaces are lost (Department of Economic and Social Affairs, 2013).

*Challenge 2: Independent Mobility:* The term “children’s independent mobility” refers to their freedom to move around without adult supervision, that is critical for their physical, social, cognitive and emotional development. In modern society, the active, independent mobility of children is becoming increasingly restricted for various reasons, such as a lack of safe environments and support bases, limited facilities and development opportunities, increased road traffic and crime. All of these reasons have negative consequences for children, resulting in further concerns such as obesity due to lack of exercise, lack of risk taking opportunities, lack of environmental contact and the lack of a sense of environmental preservation (Sohn, 1973:21). These factors can restrict a child to discover their internal abilities and fall behind in their social and personal development, physical development and cognitive development (Zomervrucht 2005:8). On the other hand, independent mobility helps promote children bonding with their peers, how to preserve and interact with the natural and built environments, thus, creates a stronger sense of community and responsibility for the environment, a reduced fear of crime, and increases feelings of isolation during puberty (Carver et al., 2012:1; Huby & Bradshaw, 2006:10; Nordström, 2004:45 & Zomervrucht et al., 2005:7).

*Challenge 3: Participation:* The importance of comprehensive public participation as part of spatial planning processes is well document in literature. Children are mostly neglected in land use planning, and participatory planning approaches, in one of two ways. Firstly, they are given little consideration when it

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comes to design and secondly, there is lack of planning for children. Involving children in the planning process can contribute to the broader sustainability thinking in terms of space-usage, addressing actual needs and designing spaces for a specific target group, consequently creating a connected feeling in children towards the created space and the need to maintain the space for future usage (CABE, 2008; Moore et al., 1987 & PLAYLINK, 2000).

*Challenge 4: Crime and Safety:* The fear of crime and concern for personal safety is one of the critical issues concerning all communities in South Africa. Consequently, leading to a change in the way in which communities use public spaces. Safety and security are also major factors in determining the quality of children's outdoor play environments. The fear of crime limits a child opportunity to play in the outdoors, thus impacting on risk-taking and challenges, an especially important part of children's play development (Moore et al., 1987:7 & Shackell, 2008:10). Safe spaces must be created to enable children to participate in activities with some independence. In this sense, the root causes of crime needs to be considered, such as disadvantages, neglected and lack of open spaces and recreation opportunities and discrimination.

Based on these challenges, it is essential to plan and develop child-friendly spaces within the local context, linked to the broad benefits that open spaces can provide, extensively captured in research, linked to health and wellbeing and the range of ecosystem services provided by such spaces (CABE, 2008:4). Discussion about parks and open spaces (especially the successful implementation and management thereof) is noticeably absent from current government policy agendas in South Africa such as the NSDP (2006), The South African Constitution (1996) and White Paper on local Government (1998). South African policies and legislation are limited in providing guidance on creating child-friendly spaces and how to implement these spaces, consequently there are no guidelines for planners. Creating child-friendly spaces in urban areas could address (some of) the above challenges and help develop healthy and "developed" children which can improve their quality of life as children and have spin-off benefits until adulthood.

## **2. RESEARCH APPROACH AND METHODOLOGY**

This research aimed to evaluate if there are sufficient policies and legislation that provides guidance towards the planning and implementation of qualitative open spaces, in specific child-friendly spaces internationally and in South Africa, as point of departure for creating a framework for the planning of such spaces. This study evaluated recent policies and legislation frameworks relevant to the planning of child-friendly spaces, and the provision of green open spaces.

## **3. LITERATURE REVIEW**

### **3.1 International policy and legislation on child-friendly spaces**

The following International policies and legislation were included in this section; Sustainable Cities Program, United Nations Convention of the Rights of the child, Local Agenda 21, Agenda 21, UNICEF, Planning for Open Space, Sport & Recreation Act and United Nations Convention on the rights of Persons with Disabilities. These policies and legislation were chosen based on their contribution to child rights and environmental importance. The policies and legislation is evaluated from a planning perspective in order to provide insight on the international approach towards planning for child-friendly spaces. The selected policies and legislative frameworks are discussed in chronological order in order to illustrate the progress in thinking, regarding this research focus.

#### **3.1.1 Sustainable Cities Program: SCP (1990)**

SCP is a feasible response to the global search for sustainable development and city greening programs. The SCP was launched in 1990 by the United Nations Environment Programme and the United Nations

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Human Settlements Programme. The SCP focuses mainly on capacity building in urban environmental planning and management and promotes and develops a more efficient way to resolve urban environmental challenges. The main goal of the SCP is to achieve visible improvements in the living environments of urban residents all over the globe. The SCP was one of the first policies used for city planning and promoting programmes that contribute to city greening (Leitmann, 1999:170 & UN-Habitat & UNEP, 1990:2). Green spaces integrates the environment and creates a more environmentally play space for children and therefore it can be assumed that the SCP forms the basis of green space planning internationally. In terms of scope, the SCP supports green space provision, but in terms of relevance it lacks reference to the planning or provision of child-friendly spaces as part of broader sustainable city planning.

### 3.1.2 United Nations Convention of the Rights of the child: CRC (1990)

The CRC is a unique provision in a human rights treaty and addresses the legal and social status of children, who, on the one hand lack the full autonomy of adults however, on the other, are subjects of rights. The CRC addresses the child's right to participate and right to use public space, to engage in play and recreational activities appropriate to the age of the child through the provision of child-friendly spaces (CRC, 2009). In terms of scope, child-friendly spaces are supported by the CRC, and in terms of relevance it can be concluded that it lack guidance on the development on green space provision as point of departure for creating child-friendly spaces.

### 3.1.3 Local Agenda 21: LA21 (1991)

The necessity of sustainable living spaces was noticed in the late 1970's and early 1980's. During this time era legislation and programs, that supported the movement of sustainability occurring around the world, did not exist. Therefore the urgency to lay down ground rules about sustainable living was initiated and one of the first initiatives to grow from this movement was the LA21 in 1991 created by the International Council for Local Environmental Initiatives. The LA21 was the first in organizing each stakeholder's responsibility towards the planning of a sustained environment. Shortly after, the LA21 was adopted as Agenda 21, by the UN at the Rio Earth summit in 1992, as key mechanism for local authority (ARIES, 2002 & Leitmann, 1999: 172). In terms of scope the LA 21 focusses strongly on green space provision however there is no support or legislation on the planning of child-friendly spaces and is therefore questioned in terms of relevance to support the planning and provision of child-friendly spaces.

### 3.1.4 Agenda 21 (1992)

Habitat Agenda is a global request to take action at all levels. Proposals are made within a framework of goals and principles and obligations, with the main goal to create a positive vision of sustainable human settlements. Supporting and guiding the vision into reality "*where all have adequate shelter, a healthy and safe environment, basic services, and productive and freely chosen employment*" (UNSD, 1992:6). The Agenda 21 has a few key dimensions that support the creation of child-friendly spaces in namely; children especially in rural areas need to participate in making insights on their thoughts regarding their living environment; the planning, provision and maintenance of, parks and open spaces are important and to ensure that children have access to the natural world on a daily basis through free play outdoors, and establish education programmes to help children investigate their community environments, including natural ecosystems (UNSD, 1992). In terms of scope, Agenda 21 can be used as framework in producing child-friendly spaces that supports pedestrian-friendly areas, therefore, located in residential areas where surrounding residential properties can safeguard the space via visibility from the street. In terms of relevance to this research, Agenda 21 supports green space provision and child-friendly space.

### 3.1.5 UNICEF (1996)

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The Child Friendly Cities Initiative was launched by UNICEF and UN-Habitat in 1996 to develop national level strategies, policies and programs supporting the awareness in attaining children's rights in countries. Furthermore the need aroused to bring the children's rights program down to the local level in order to enhance the awareness and understanding to fulfil the rights of children in the most rural communities. In every country where the UNICEF development programmes operates the most disadvantages communities and the inequalities they face are first identified. The programme enables to extend high-impact services and produce support opportunities to those rural communities, especially for the basic needs of all children such as nutrition, health, water and sanitation (CERG, 2008 & UNICEF, 2004).

According to the CERG (2008:16) and Woolcock & Steele (2008:12) the UNICEF guidelines for the programs should include the following dimensions when improving children's wellbeing and the physical environment.

- Increase the ability of children to make choices and be able to freely access a wide range of community areas and activities.
- Improve the capacity for children to participate in play and develop confidence in their local community environment.
- Ensure that children are safe and healthy within the public places.
- Encourage the ability of children to feel protected and connected within their physical and social environments.
- Create a space that creates a sense of welcome, belonging and support amongst children.
- Increase access to green, natural areas for play and relaxation.

The scope of UNICEF is linked to the main objectives highlighting the importance of child-friendly spaces which are the following; the space is friendly and inclusive for all children therefor no discrimination; maximise the survival and development of all its children such as their physical, mental, spiritual, moral, psychological and social development (UNICEF, 2004). In terms of relevance the UNICEF supports and guides the rights of children and their right to child-friendly however lack guidance on green space provision.

### 3.1.6 Planning for Open Space, Sport & Recreation Act (2002)

Open space, sport and recreation areas all improve the quality of life and is essential for the physical, mentally and cognitive normal development of children. The Key Attributes of the Open Space and Sport and Recreation Provision Act is accessibility, quality, multi-functional, the primary purpose of the space and quantity. The act ensures that children and young people have opportunities to interact with their peers and learn social and movement skills within their community environment (CABE Space, 2008 & ODPM, 2008). The Open Space, Sport & Recreation Act supports child-friendly spaces through; identifying facilities that are of high particular value to a local community and protects these areas of open space that can offer recreational and play opportunities; these open space areas should promote accessibility by walking, cycling and public transport, and ensure that facilities are accessible for people with disabilities; furthermore the act illustrates the broad range of open spaces that may be of public value such as the provision of open space for children and teenagers that includes play areas, skateboard parks, outdoor basketball hoops, and other more informal areas (CABE Space, 2008 & ODPM, 2008). It is broad in scope. In terms of relevance to this research, the Act not only support child-friendly space but ensures the protection and developed of green space provision.

### 3.17 United Nations Convention on the rights of Persons with Disabilities (2006)

The Convention has a few key dimensions that support the access to recreational areas such as child-friendly spaces for children with disabilities namely; to ensure access to people with disabilities, on an equal basis

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with others, to the physical environment and to other facilities and services open or provided to the public, both in urban and in rural areas; to ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure (UN Convention, 2006). In terms of scope and relevance the Convention supports child-friendly spaces although lacks support on green space provision.

### 3.1.8 Summary

The International Policies are mainly centred on the same concept, thus, providing healthy and safe environments for children that are of high quality and accessible for all, including children with disabilities. Furthermore improving the well-being of people and sustaining the natural environment through integrating the natural features into the child-friendly spaces. In the table below each of these international policies and legislation are compared according to their relevance relating green space provision and child-friendly spaces.

Table 1: Comparative summary of International policies and legislation

<b>Policy/Legislation</b>	<b>Green space provision</b>	<b>Child-friendly space</b>
<b>Identification</b>	<b>✓ / ✗</b>	<b>✓ / ✗</b>
Sustainable Cities Program	✓	✗
United Nations Convention of the Right of the child	✗	✓
Local Agenda 21	✓	✗
Agenda 21	✓	✓
UNICEF	✗	✓
Planning for Open Space, Sport & Recreation Act	✓	✓
United Nations Convention on the rights of Persons with Disabilities	✗	✓

### 3.2 South African National policy and legislation on child-friendly spaces

The following South African National policies and legislation were included in this section; The South African Constitution; Bill of rights; National Urban Development Framework; Rural Development Framework; White Paper on Local Government; National Spatial Development Perspective; White Paper on Sport and Recreation; UNICEF South Africa and Child Welfare South Africa. These policies and legislation were chosen based on their contribution to the potential provision of child-friendly spaces and which indirectly address the issues of green space planning. The policies and legislation is evaluated from a planning perspective in order to provide insight on the local approach, and possibilities, towards planning for child-friendly spaces. The selected policies and legislative frameworks are discussed in chronological order in order to illustrate the progress in thinking, regarding this research focus.

#### 3.2.1 The South African Constitution (1996)

The Constitution is the highest law in the country and everyone is obligated by the Constitution therefore forming the main part of all law and legislation in South Africa, consequently making it the main law that should be used in the planning of sustainable human settlements (Office of the President, 1996:4). The main policies supporting children's rights and the environment in the Constitution are summarised as; child participation that regards any matter concerning the child; children with disabilities has the right to parental care and participation in social, cultural, educational and religious activities; children have the right to an environment that is not harmful to their health or well-being; the environment must be protected, conserve, sustainable and free from pollution and ecological degradation (Office of the President, 1996). In terms of scope the Constitution makes provision for environmental protection and child rights but in terms of relevance, it lacks any information on green space provision and child-friendly spaces.

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### 3.2.2 Bill of rights (1996)

The Bill of Rights as contained in the Constitution of South Africa is regarded as the cornerstone of democracy and has many basic rights applicable to every South African resident. What follows is some of the topics that are applicable to this particular study on creating child-friendly spaces namely; every person has the right to a healthy and safe environment; every person must have adequate access to health care, food, water and social security; encourage a sustainable environment in communities; every resident has the right to adequate access to socialising opportunities (Office of the President, 1996). The Bill of rights, as in the case of the South African Constitution, focusses on disadvantages groups (scope) but lack support on the importance of planning and providing child-friendly spaces and green space provision (relevance).

### 3.2.3 National Urban Development Framework: NUDF (1997)

The NUDF tries to highlight the importance of the environment and the urban lifestyle to work in sync with one another; through integration this will be achievable. Government is therefore devoted to guarantee that its policies and programmes support the development of urban settlements (Department of Housing, 1997). The NUDF main focus is the rebuilding and upgrading of townships and informal settlements, through transforming them into sustainable, liveable, productive, environmentally healthy and safe urban environments, free from crime and violence. Rebuilding the townships cannot occur in isolation from integrating strategies. The intention is to move actively away from the segregation of different parts of the city and to guarantee equity across the urban landscape, thus offering all urban residents access to opportunities and facilities (SACN, 2009:39). The scope and relevance of the NUDF is evident through above statement that the NUDF supports green space provision and child-friendly spaces by means of emphasising the integration of all aspects.

### 3.2.4 Rural Development Framework: RDF (1997)

In 1997, the Rural Development Task Team has been assembled as part of the old RDF office to prepare the RDF for the National Department of Land Affairs. The RDF advocated a holistic approach to rural development and poverty alleviation, focusing on local democracy, rural local economic development and development of rural infrastructure (Rural Development Task Team, 1997:9). Sustainability is hard to achieve and is even harder if the area is struggling with poverty and lack of services. The RDF were founded to focus on rural development and built up of the economy in rural areas (scope) but have no policies on green space provision and child-friendly spaces and therefore questioned in terms of relevance to this research.

### 3.2.5 White Paper on Local Government (1998)

The White paper on Local Government (1998) states that the government should take responsibility for countering the racial division of the local space imposed by apartheid to create unified urban and rural areas, where all community members have equal access to municipal service. The White paper promotes the active participation of local communities in decision-making through community participation in the budgeting process (White Paper Committee, 1998). In terms of scope it is evident that the act supports and highlights the importance of rural planning however in terms of relevance, no attempt is made to guide green space provision and child-friendly spaces.

### 3.2.6 National Spatial Development Perspective: NSDP (2006)

The NSDP seeks to eliminate poverty and reduce inequality as well as create opportunities for all citizens, especially the youth. The plan attempts to attack poverty and build a non-racial and non-sexist South Africa. The NSDP is a key achievement in the constant drive by the State to eliminate the damage shaped by decades of colonial and apartheid manipulation of settlement patterns and economic activity in South Africa

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(The Presidency RSA, 2006:10). ). The act supports and highlights the importance of rural planning however, in terms of relevance, no attempt is made to guide green space provision and child-friendly spaces.

### 3.2.7 White Paper on Sport and Recreation (2010)

The White Paper (2010:10) defines sport and recreation as “*all forms of physical activity that contribute to physical fitness, mental wellbeing and social interaction, such as play, recreation, organised or competitive sport, and indigenous sports and games*”. According to the UN (2010:14) on sport and recreation the right to play and to participate in sport is a fundamental right as stipulated in the Convention on the Rights of the Child; and the Convention on the Rights of Persons with Disabilities. In terms of scope, the White Paper attempts to maximise access, improve social cohesion, improve quality of life, include all South Africans and improve environmental sustainability (White Paper Committee, 2010:45). In terms of relevance to this research, the Act highlights green space provision and the creation of child-friendly spaces.

### 3.2.8 UNICEF South Africa (2011)

The UNICEF South Africa is based on the UNICEF national level strategies, policies and programs that support the awareness of children’s rights in countries. The policies of the United Nations Convention of the Rights of the child and The Constitution are incorporated into this Act (UNICEF, 2011:15). The main objectives of the act supporting this study includes; the right of every child to a standard of living adequate for the child’s physical, mental, spiritual, moral and social development; children’s Rights to early childhood development and education and children’s right to social security (UNICEF, 2011). In terms of scope and relevance, the UNICEF supports the right of children to development opportunities such as child-friendly spaces however lack any information on green space provision.

### 3.2.9 Child Welfare South Africa: CWSA (2011)

CWSA is the largest non-profit organisation in South Africa providing services in the fields of child protection, child care and family development. According to Theron (2011:2) the CWSA initiative for children aims to; create safe and caring environments for children and promoting community mobilisation and the development of capacity in organizations that provides support services to children and families. The CWSA principles are based on the CRC, UNICEF and Children with Disabilities Act. Similar to the other Acts, the CWSA support the development of children through spaces such as child-friendly spaces (scope) but nevertheless there is no mentioning of green space provision as catalyst for doing so (relevance).

### 3.2.10 Summary

Discussion about open spaces (especially the successful planning, implementation and management thereof) is noticeably absent from current government policy agendas in South Africa (refer to amongst others the NSDP (2006), The South African Constitution (1996) and White Paper on local Government (1998)). Similarly, discussion about child-friendly spaces (the planning, implementation and management thereof) is limited, only referring to some rights of children and issues of community participation. In the table below each of these local polies and legislations included in this research are compared according to their scope and relevance relating to green space provision and planning and provision of child-friendly spaces.

Table 2: Comparative summary of South African policy and legislation

<b>Policy/Legislation</b>	<b>Green space provision</b>	<b>Child-friendly space</b>
<b>Identification</b>	<b>✓ / ✗</b>	<b>✓ / ✗</b>
The South African Constitution	✗	✗
Bill of rights	✗	✗
National Urban Development Framework	✓	✓

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Rural Development Framework	✘	✘
White Paper on Local Government	✘	✘
National Spatial Development Perspective	✘	✘
White Paper on Sport & Recreation	✓	✓
UNICEF South Africa	✘	✓
Child Welfare South Africa	✘	✓

### A. From policy to practice: Local guidelines for planning child-friendly spaces

To evaluate the link between policy and practice, local guidelines for the planning of child-friendly spaces were evaluated in terms of scope and relevance. The Red book on Guidelines for human settlement planning: Chapter 5.4: Soft open spaces (2005) describes and provides a few guidelines on the planning of play spaces as summarised accordingly:

*Red Book Chapter 5.4: Soft Open spaces:*

*Location:* Play spaces should be incorporated with other public open spaces to support multi- functionality. Play spaces can be situated within clusters of primary schools and close to pre-school and day-care facilities, to facilitate the shared use of these facilities as safe and encouraging play areas. Play spaces can be located within parks, relatively close to entrance points to support surveillance and safety (CSIR, 2005:178).

*Access:* Play spaces should be located within easy walking distance from primary school buildings and crèches, and should be located within 500 m to 1 500 m or 10-15 min. walking distance of other users (CSIR, 2005:178).

*Size and Dimensions:* The area and dimensions of a play space differ according to the nature of the play equipment. Play spaces should be small enough to permit easy supervision and recognition ( $\pm$  25 m maximum). Play spaces should therefore be between 450 m<sup>2</sup> and 1 000 m<sup>2</sup> in size, with widths of between 15 m and 25 m, and lengths of between 30 m and 40 m. The size and surface of play spaces could have an influence on their use, particularly in areas where necessary resources are not available to keep them in a public value to play activities, consequently smaller play spaces are used for rubbish dumping, parking, etc. (CSIR, 2005:180).

*Edges:* Detached playgrounds should be defined by bordering buildings, in order to provide shelter from the wind and sun, and enable easy supervision for adults from surrounding areas. Detached, unfenced playgrounds with direct road access should be protected by traffic barriers such as trees, shrubs or fences (CSIR, 2005:181).

*Surfaces:* Areas of intense play that required high durability should have a hardened surface, whereas areas where children are likely to fall and hurt themselves should have a soft surface. Surfaces should define play spaces for children of different age groups. Small soft spaces suit young children of pre-school age while larger soft spaces suit contact games of older children (CSIR, 2005:182).

*Public furniture:* Public furniture can include interactive and challenging play objects such as wooden building blocks and stepping stones. Benches must be situated to overlooked play areas and improve overall safety. Play grounds may require water points for drinking and toilet facilities (CSIR, 2005:183).

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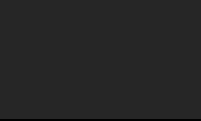
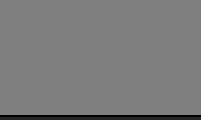

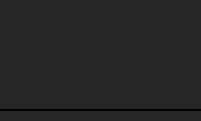

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In terms of scope, these guidelines provide basic design considerations when planning child-friendly spaces. The relevance thereof is questioned however, due to the lack of supporting policy and legislative frameworks enforcing the planning and development thereof.

#### 4. RESEARCH FINDINGS AND CONTRIBUTION

The International Policies and legislations illustrated a universal focus on providing healthy and safe environments, especially for children, and of various (dis)abilities, by supporting the development of high quality and accessible environments. South African policies and legislation suggested a far more limited approach to both green space planning and the planning of child-friendly spaces. There are some broad objectives linked to community participation, the rights of children and environmental considerations, but no actual policy enforcing such. There are some basic design considerations applicable to the local context, but no guidelines guiding planners through the planning and implementation process of developing child-friendly spaces. The following table is a matrix of the international and local policy and legislations, summarising the scope and relevance thereof, and evaluating to what extent it supports child-friendly spaces.

Table 1: policy and legislation matrix

Policy/ Legislation	Child Centred	Environ Centred	Aspects Which indicate support	Evaluation
<b>Identification</b>	✓ / ✗	✓ / ✗	<b>Quotes</b>	
<b>International</b>				
Sustainable Cities Program	✗	✓	“promotes and develops a more efficient and equitable use of our natural resources and controls environmental hazards through better guidance”	
United Nations Convention of the Right of the child	✓	✗	“the right of the child to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts”	
Local Agenda 21	✗	✓	“the initiative seeks to enhance the institutional and participatory capabilities of local authorities to manage critical environmental problems”	
Agenda 21	✓	✓	“Promoting socially integrated and accessible human settlements, including appropriate facilities for health and education, combating segregation and discriminatory and other exclusionary policies and practices, and recognizing and respecting the rights of all...women, children, persons with disabilities, people living in poverty...”	
UNICEF	✓	✗	“Providing the optimal conditions for childhood, for the child’s life now. And “development” in the context of the Convention means children’s physical, mental, spiritual, moral, psychological and social development”	
Planning for Open Space, Sport & Recreation Act	✓	✗	“open spaces within rural settlements contribute to the quality of life and well-being of those people situated in rural areas...provide	

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			opportunities for social interaction...children of all ages through play”	
United Nations Convention on the rights of Persons with Disabilities	✓	✗	“To ensure that children with disabilities have equal access with other children to participation in play, recreation and leisure”	
<b>Locally/ South African</b>				
The South African Constitution	✓	✗	“ ensure sustainable provision of services, to promote social and economic development, to promote a safe and healthy environment, to give priority to basic needs”	
Bill of rights	✓	✗	“ rights of every South African and, in this sense, embodies the legal values of dignity, equality and freedom”	
National Urban Development Framework	✗	✓	“ Commitment to inclusive pro-poor urban development...environmentally sustainable through supporting the balance between quality built environment and open spaces”	
Rural Development Framework	✓	✗	“ to focus on rural development and built up of the economy in rural areas”	
White Paper on Local Government	✓	✗	“ where all community members have equal access to municipal service”	
National Spatial Development Perspective	✓	✗	“to eliminate poverty and reduce inequality as well as create opportunities for all citizens, especially the youth”	
White Paper on Sport & Recreation	✓	✓	“ promoting a common sense of belonging, eradicating poverty, enhance youth development and skills development”	
UNICEF South Africa	✓	✗	“ the right of every child to a standard of living adequate for the child’s physical, mental, spiritual, moral and social development”	
Child Welfare South Africa	✓	✗	“child protection, child care and family development”	

	Supports Child-friendly spaces (Weak)
	Supports Child-friendly spaces (Medium)
	Supports Child-friendly spaces (Strong)
✓	Yes
✗	No

Source: Own Creation

Based on the findings of this research, the following proposals are made to guide future planning and incorporate child-friendly spaces as part of broader sustainability thinking and supporting policies and legislations:

- (1) Ensure the provision of a detailed framework, guiding the planning of child-friendly spaces in South-Africa.
- (2) Include open spaces, especially child-friendly spaces, as part of the essential services and needs of communities, substantiated in terms of improved quality of life, safety and social challenges within local communities.
- (3) Highlight the importance of access to recreational opportunities and child-friendly spaces in the legislation and policy approaches, and ensure the planning and provision of such spaces.

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- (4) Link the health agenda with the broader environmental agenda and provide qualitative recreational and play spaces to support healthy and sustainable communities.

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## 6. REFERENCES

Abolahrar, A. 2011. *Freedom Play Sticks for Play Spaces*. Gothenburg. 2-24.

ARIES. 2002. *Local Agenda 21*, available at: [www.deh.gov.au/esd/la21/framework](http://www.deh.gov.au/esd/la21/framework) [accessed: 12 February 2016].

CABE Space. 2008. *Open Space Strategies: Best Practice Guidance*, available at: [www.london.gov.uk](http://www.london.gov.uk) [accessed: 27 February 2016].

Campbell, S. 1996. *Green Cities, Growing Cities, Just Cities. Urban Planning and the Contradictions of Sustainable Development*. Journal of the American Planning Association.1-7.

Carver, A. , eds. 2012. *Young and free. A study of independent mobility among urban and rural dwelling Australian children*, available at: [www.sciencedirect.com](http://www.sciencedirect.com) [accessed: 12 February 2016].

CERG. 2008. *The Child Friendly Cities Research Program*, 1-19.

Clouston, B. and Stansfield, K. 1981. *Trees in Towns: Maintenance and management*, London: Architectural Press, 8-133.

CRC. 2009. *United Nations Convention on the right of the Child*, 1-85.

Department of Economic and Social Affairs. 2013. *World Economic and Social Survey: Sustainable Development Challenges*, available at: <https://sustainabledevelopment.un.org/content/documents/2843WESS2013.pdf> [accessed: 05 January 2016].

Department of Housing. 1997. *Urban Development Framework*, available at: <http://www.info.gov.za> [accessed: 20 January 2016].

CSIR. 2005. *Guideline for human settlement planning: Chapter 5.4 Soft open spaces*. Volume 1.166-185.

Harper, J. 2009. *Planning for Recreation and Parks Facilities: Predesign Process, Principles, and Strategies*, Pennsylvania: Venture, 2-180.

Horelli, L. 2007. *Constructing a theoretical framework for environmental child-friendliness: Children, Youth and Environments*, 4th ed, available at: <http://www.colorado.edu/journals> [accessed: 15 March 2016].

Huby, M. & Bradshaw, J. 2008. *A Review of the environmental dimension of children and young people's well-being*. Heslington. 4-39.

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9



Leitmann, J. 1999. *Sustaining Cities – Environmental Planning and Management in Urban Design*, 1st ed. McGRAW – HILL, 3-203.

Marcus, C. C. and Francis, C. 1998. *People Places: Design Guidelines for Urban Open Spaces*, 2nd ed. New York: Wiley, 5-293.

Moore, R. , eds. 1987. *Play for all: Guidelines*, Berkeley: MIG Communications, 6-155.

Nordström, M. 2004. *Child-friendly cities – sustainable cities*. Sweden. 44-45.

ODPM. 2008. *Planning Policy Guidance 17: Planning for open space, sport and recreation*, available at: [www.communities.gov.uk](http://www.communities.gov.uk) [accessed: 12 March 2016].

Office of the President. 1996. *Constitution of the Republic of South Africa: No 108 of 1996*, available at: <http://www.saflii.org> [accessed: 12 January 2016].

Rural Development Task Team. 1997. *Rural Development*, available at: <http://www.polity.org.za> [accessed: 20 January 2016].

Shackell, A., eds. 2008. *Design for Play: A guide to creating successful play spaces*, England, 1-130.

Sohn, L.B. 1973. *Stockholm Declaration on the Human Environment*, available at: <http://www.heinonline.org> [accessed: 20 January 2016].

The Presidency RSA. 2006. *National Spatial Development Perspective*, available at: <http://www.thepresidency.gov.za> [accessed: 05 February 2016].

Theron, A. 2011. *Child Welfare South Africa*, available at: <http://www.childwelfare.org.za> [accessed: 10 February 2016].

UN Convention. 2006. *United Nations Convention on the Rights of Persons with Disabilities*, available at: <http://www.un.org/esa> [accessed: 20 March 2016].

UN-Habitat & UNEP. 1990. *Sustainable Cities Programme*, 1-50.

UNICEF. 2011. *South Africans Children: A Review of Equity and Child Rights*, 3-76.

UNSD (United Nations Sustainable Development). 1992. *UN Conference on Environment & Development*, available at: <http://www.un.org/esa> [accessed: 20 March 2016].

White Paper Committee. 2010. *White Paper on Sport and Recreation*, available at: <http://www.info.gov.za/whitepapers> [accessed: 05 February 2016].

Whitzman, C. , eds. 2009. *Walking the Walk: Can Child-Friendly Cities Promote Children’s Independent Mobility*, 1-51.

Woolcock, G. and Steele, W. 2008. *Child-Friendly Community Indicators: A Literature Review*, 1-48.

Zomervrucht, J., eds. 2005. *Gradually grow to cycle: Experiences with a child-friendly public space*, Netherlands, 8-17.

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# The Potential of Social Media to Demarcate the Catchment of Commuters of the Gautrain Public Transit System

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## Abstract

The paper systematically analyses the phenomena of being smart in light of the growth of information and communications technology being incorporation into urban development. In a setting where technological advancements are taking hold of every aspect of peoples' lives this paper explores the potential of geographical location data derived from social media platforms can be used to demarcate the catchment area of the Gautrain. The study demonstrates how social media data can be used to analyse the variations in the catchment area of the various nodes with the Gautrain system, with the use of word counts and linguistic measures to interpret posts made on web 2.0. Consequently the users' opinions about the Gautrain were used to interpret the variations in volumes of commuters over a 6 month period. The results of the study will assist in identifying areas of potential expansion and areas in need of intervention, hence highlighting points of interest within Gauteng catchment area.

## Keywords

Web 2.0, Gautrain, Commuters, Location data.

## 1. INTRODUCTION

The Gautrain Management Agency has over the years been reinforcing its presence through the use of social media (Musakwa, 2014). This has led to the Gautrain being able to be at the centre of all social communications surrounding the brand and hence fashioned a direct communication line between existing commuters, potential commuters and stakeholders (Gautrain, 2009). The GMA has also integrated social media tactics with their marketing strategy, in a bid to grow the brand as a smart transportation alternative which is safe, reliable and efficient for commuters within the Gautrain province (Musakwa, 2014). Furthermore, social media has been used to address any adverse or negative perceptions commuters may have about the GMA, this has in turn significantly improved the public's perceptions about GMA as a brand and also lead to more commuters perceiving the Gautrain as a reliable source of public transportation. The paper systematically seeks to analyse the phenomena of being smart in light of the growth of information and communications technology being incorporation into urban development. In a setting where technological advancements are taking hold of every aspect of peoples' lives this paper explores the potential of geographical location data derived from social media platforms can be used to demarcate the catchment area of the Gautrain.

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## 2. LITERATURE REVIEW

The etymology of the words origin and destination (O-D) relate to a point or place where something begins and a place where a trip ends, therefore the O-D would refer to the point of inception of a trip and where it ends. Bricka et al (2009) further articulates how O-D surveys are a manner of representing spatial interactions of the flows of entities between pairs of geographic locations. This description is further evident in how O-D surveys have historically proven to be a usefully tool which provides a comprehensive depiction of travel patterns within a given location or city region. In transportation planning O-D surveys are carried out to understand the factors that influence the why, how and where of trips generating from an area or towards an area. Gao et al (2012) have further expressed how data collection and analysis has historically been undertaken through travel surveys, traffic counts and positional technologies.

The travel survey based technique involves the collection of raw data based on travel behaviour of the target sample. The data collection methods encompass conducting interviews with key informants, distribution of questionnaires, observations, and video recording with the general nature of this data relating to the demography, movements patterns and socio-economic characteristics. The desired outcome of these O-D surveys is to obtain information relating to displacements of a population, and hence formulating models for planning or restructuring the transport network (Wolf et al. 2003). However this exercise has proven to be time consuming and costly to conduct, with a strain on human resources to conduct interviews and distribute questionnaires. O-D surveys through having their disadvantages still carry the merit of allowing the researcher to obtain valuable information, which is usually obtained only via face to face interaction.

After the new millennium, Global Positioning System (GPS) technologies were used in O-D surveys. Accordingly Wolf et al (2001, p1) have also express how GPS data, “provides second-by-second position data with accuracies of three to five metres, as well as highly accurate velocity and time data, introduce a whole new level of comprehensiveness and accuracy to travel surveys”. The utilization of GPS in O-D surveys has brought with it the ability to automatically record trips, whilst recording the geo-location, speed and distance travelled. This which previous could not be accurately record from trip surveys. Also as from the year 2000, the automatic vehicle identification (AVI) systems, were used in O-D surveys (Asakura et al. 2000). The AVI system involves of placing two charge-coupled device cameras positioned separately, with 5-10 kilometres between them. As a motor vehicle passes the first camera, the number plate is recorded and also recorded as it passes the second camera. These recordings are then used to calculate the fraction coefficient, which is the volume of vehicles in a link at a time interval entering from an area at preceding time interval. Combining the fraction coefficient with the traffic volumes observed using roadside traffic counts, the least squares model representing the flows is formulated (Asakura et al. 2000). However the utilization of the AVI system has resulted in an accumulation of big data, and without appropriate analytic techniques the analysis for the survey becomes time consuming resulting in an accumulation of errors. Over the years this methodology has been improved, through placing numerous cameras at various locations, hence through an analysis of the photographs, the origin and destination of the various motorist are identified over a larger area.

### 2.1 Emerging Approaches

In the recent past years there has been a rapid growth in the incorporation of social media data in transportation studies. Lorenzi et al (2014) have articulated how a middle class individual’s life now revolves around the use of smart-phones. The continued development of smart phones has led to these devices having inbuilt mobile location sensors. Furthermore this has given rise to an increase in development of mobile applications which rely on these location sensors (such as Facebook; Instagram; Strava Metro; Google Maps). The data generated by these applications has the potential of being used to analyse the day to day movement networks of man. However in analysing this data, set backs were

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identified by Lorenzi et al (2014) in that the information measured was subject to noise and uncertainties, hence leading to imprecise results if these were not excluded in the analysis.

## 2.2 Web 2.0

The notion of Web 2.0 originated in the year 2004, when scholars realised that a second generation of web had emerged, which introduced new possibilities that were previously unattainable. This growth in the web has led to new technological advancements and an incorporation of smart phones and Web 2.0 platforms, such as social media platforms (Facebook, Twitter and Instagram), this could be reflected visually through Mapbox (figure 1). The locations of individuals, with smart phones in Gauteng can be seen and also the software allows for a comparison on the type of operating system of these smart phones that is the percentage of android; Iphone; blackberry and other users within the particular area. However while data generated automatically generally has limitations, the sheer granularity has the potential to open new research avenues, which were pervious unattainable from data acquired from field surveys (Bauer et al. 2012). This data could be adopted in the current research in that the geo-tagged data from social media can be mapped to create a continuous spatial density to show the trip generation.

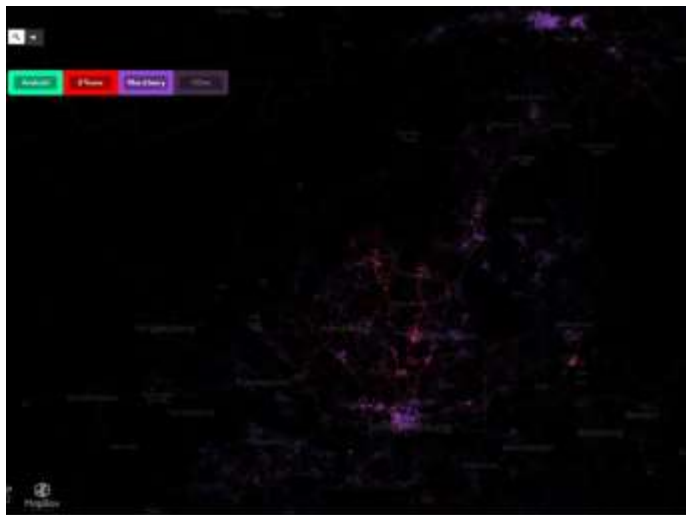


Figure 1: Showing smart-phones in Gauteng; Source Mapbox; 25-06-2015

## 2.3 Big Data

The term big data has become pervasive and yet its definition is still unclear as it has been used to express various notions from social media, large quantities of statistics and real-time data. This advancement has facilitated development, as it has made it possible for people to become more connected, as they can express their views and this information is collected from various sources in a bid to inform decision making. With regards to urban planning, this has reduced the time taken to respond to service delivery grievances, as the community can easily inform council of any grievances via mobile applications, thus bridging the gap between the ordinary citizen and local authorities.

Although big data has a huge potential to assist planners, it has some inherent short-comings in that it can be exploited. Privacy of potentially sensitive information depends on restrictions such as the capability to extract, examine and correlate data (Bryant et al. 2008). In order to preserve peoples' privacy many platforms have given the user the ability to control what information can be shared via the internet, and an example is how mobile phones give the user the choice whether to share their location or not. Also big data may include regulated information such as ownership details of property, hence such data should only be used according to set regulations.

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## 2.4 Internet of things

The 21st century generation's lives has now become emissary reliant on the internet, as millions of people upload and share information on a daily basis. This internet of things has made it possible for people and devices to stay connected and build relationships over large distances, from meetings being moved from the traditional board rooms to being held via skype or directions being given via tom-tom instead of paper maps. The origins of the notion internet of things (IoT) can be traced back to 1982, when a modified coca cola dispenser , could give information on the temperature of the coca cola inside, this was made possible by the dispenser being connected to the internet (Farooq et al. 2015). Then 10 years later Joy in 1999 hinted on the possibility of device to device connectivity and Ashton (2009) proposed the term internet of things. Shen & Liu (2011) have outlined how IoT is founded on the ideology of allowing the autonomous transfer of useful data through invisibly embedded diverse uniquely distinguishable devices, "which are sensed by sensor devices and further processed for decision making, on the basis of which an automated action is performed" (Farooq et al. 2015, p 1). This expresses how data can now be transferred and analysed almost automatically through machine to machine interaction, with little human interface.

## 3. OBJECTIVES /RESEARCH QUESTIONS

The Gautrain seeks to expand their rail network system, however before new bus routes and train stations can be chosen, there is a need to first identify the extent of the Gautrain's catchment area. However there seems to be a challenge in identifying the catchment area of the various nodes within the Gautrain transport network system, as their market base is wide and generally dispersed (Musakwa, 2014). The use of geo-location based data has been identified as a possible solution to defining the nodes (catchment areas) of public transit systems (Stopher & Greaves, 2009). As geo-location data can take the form of geo-tagged data from social media and crowd sourced geo-location based data, perhaps spatial analysis of this data can facilitate in deriving a model that represents the nodes that define the hot and cold spots of the Gautrain system. To create a geo-visualized model for identification of trip generation.

## 4. APPROACH & METHODOLOGY

An explorative research design was adopted for the research, as it allows the research to unpack the potential of web 2.0 data to inform transporation planning. As this study is premised on the utilisation of social media big data to monitor the points of interest of Gautrain users, it becomes evident that privacy concerns arise. The data under analysis carries with it sensitive personal data of the users, that is the user's name and unfiltered tweet or facebook post, the researchers had to ensure that the data was only used for academic and planning purposes.

The social media data, was obtained from Echoecho. Echo-echo is an independent private company that collects and analyses social media data from various web 2.0 platforms. 42630 geo-location social media (Facebook and Twitter) data records for the period January to June 2015 were received in excel format from Echoecho. This dataset had labelled time series information with fields including the user; latitude; longitude; message; source; date. Using sentiment analysis and semantics analysis Echo-echo untangle the big social data to derive meaning from these large quantities of text. A content analysis using Focus areas, revealed the movement patterns of commuters, (that is trips made to go to work; home; leisure). Also further examination over the 6 months period was used to demonstrate how social media interaction is a crucial tool in crisis control and brand management. The results were captured live and analysed as a means to visualise a Gautrain's 'voice' and where discussions are blossoming or stagnating. Besides the location and social maps, Echo-echo measures segmentation; psychology; language and linguistics; and word clouds and topics.

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## 5. RESEARCH ANALYSIS & FINDINGS

The Gautrain Management Agency has over the years reinforced its presence through the use of social media (Musakwa, 2014). This has led to the Gautrain being able to be at the centre of all social communications surrounding the brand and hence created a direct communication line between existing commuters, potential commuters, stake holders and the GMA as evident in figure 3 and 4. The GMA has integrated social media tactics with the marketing strategy, in a bid to grow the brand as a smart transportation alternative which is safe, reliable and efficient commuters within the Gautrain province (Musakwa, 2014). Furthermore social media has been used to address any adverse or negative perceptions commuters may have about the GMA, this has in turn significantly improved the public's perceptions about GMA as a brand and also lead to more commuters perceiving the Gautrain as a reliable source of transportation. As a means to control public opinions and also facilitate public participation the GMA, has been engaging with the public from the initial development process of the Gautrain. This social media presence that has been growing over the years has led to the Gautrain having more than 120000 twitter follows and having an average feed rate over 75000 posts for the period January to June 2015 (see figure 2), consequently the GMA now uses social media as a mitigation and evaluation tool of their operations. Moreover, opportunities of analysis the social media data exist, as this could led to a greater insight on the Gautrains commuter points of interest.

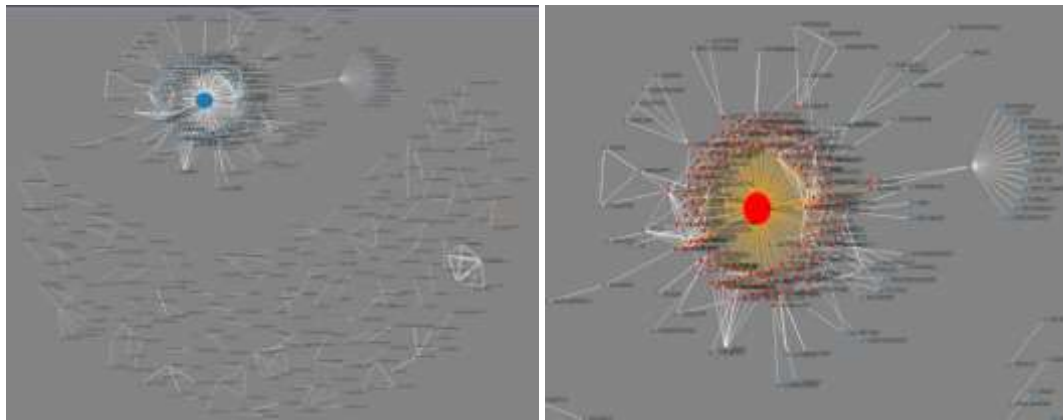


Figure 2: Gautrain Network Nodes 2015: Source Echoecho, 2015

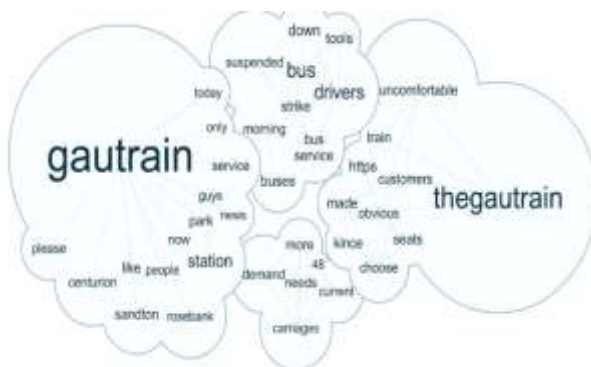


Figure 3: Gautrain Word cloud: Source Echoecho, 2015

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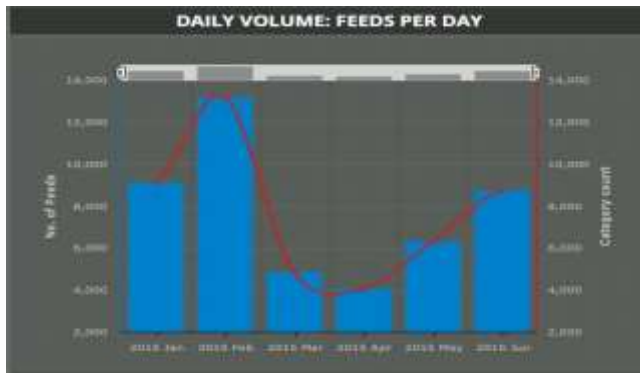


Figure 4: Feeds from January to June 2015: Source Echoecho, 2015

The public conceptions about the GMA are periodically generated in reports which bring together users' posts on the various social media platforms on the Gautrain (Musakwa, 2014). Through the use of Echocho, these conceptions can be viewed to either show positive or negative emotions, with the posts from January to June 2015 showing 5.6% and 3.9% respectively. These emotions can generally be defined as intense feelings or judgement made with regards to a particular person or brand. Hence the continued measurement of these negative and positive emotions is essential to protect the GMA brand. Consequently the users' opinions about the Gautrain were grouped into the following linguistic measures;

- Space- how much are people talking about the space around them when they refer to the brand.
- Perception- how perceptive is the audience are they open to greater interpretation through seeing and hearing or are they driven by a lower propensity of understanding.
- Motion- words relating to movement how long people are standing in a queue is the queue moving or stationary.
- Time- How much are factors of time being mentioned in updates.

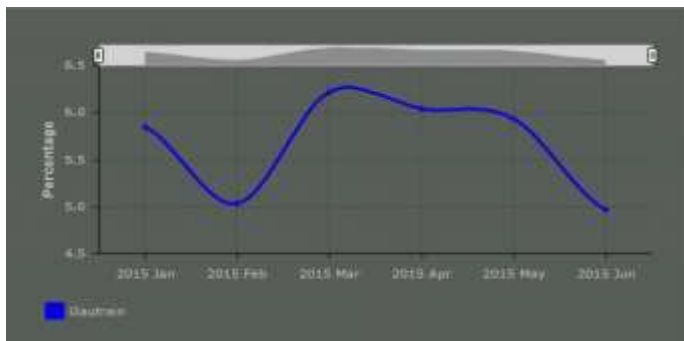


Figure 5: Linguistic measure Space: Source Echoecho, 2015

Pertaining to the linguistic measure of space (see figure 5), the public's options were positive at the beginning of the year, with over 5.5%, however there was a steep fall toward February. This could either be due to an end of a promotion or lack of feedback by the GMA to commuter posts. However as the months progressed, GMA was able to have improved public emotions. This could be due to improved service delivery or improved public relations. Research on the determinants of person perception with regards to service delivery has greatly facilitated the growth of brands. With regards to the Gauteng commuters, their main priority is obtaining a reliable, fast and efficient public transportations means, which would lead to an increase in the number of commuter using the services of a particular brand. Henceforth the occurrence of delays within a system will adversely lead to less favourable impressions being made. There seems to be a need for improvement with regards to the publics' perception of GMA (see figure 7), as generally the posts have been negative through the months with little improvement around the May period.

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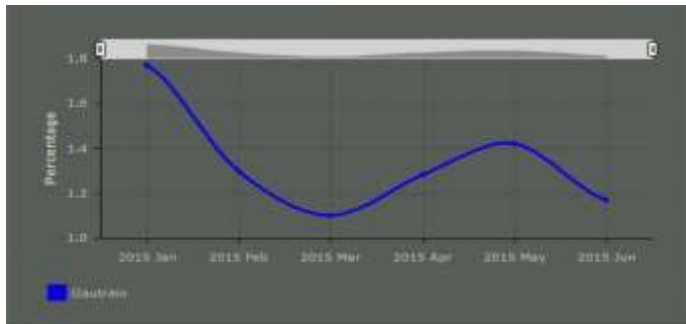


Figure 6: Linguistic measure Perception: Source Echoecho, 2015

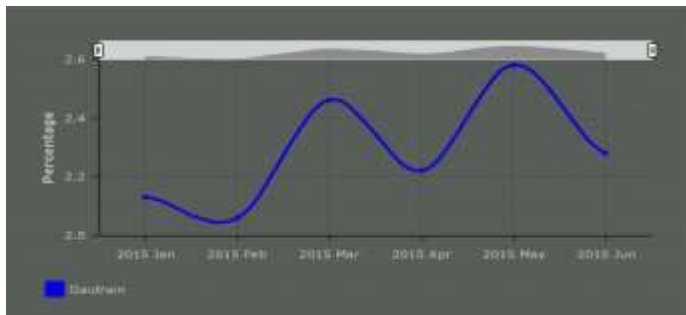


Figure 7: Linguistic measure Motion: Source Echoecho, 2015

Improving the positive magnetism of railway transportation is essential for sustainable development. The manner in which commuters' relate to a brand that is the linguistic measure of motion can either build or hinder the growth of the brand. Studies have shown encumber of waiting seems to be significant in the commuters perceived waiting time and relating to commuter satisfaction. Consequently improving wait times perceptions will lead to better service delivery and commuter satisfaction. With regards to the Gautrain (see figure 8) commuters social media posts at the beginning of the year reflect poor emotions, and with a steep increase towards the March. Hence generally it seems commuters' linguistic measure for motion is generally not constant with sharp variations of time.

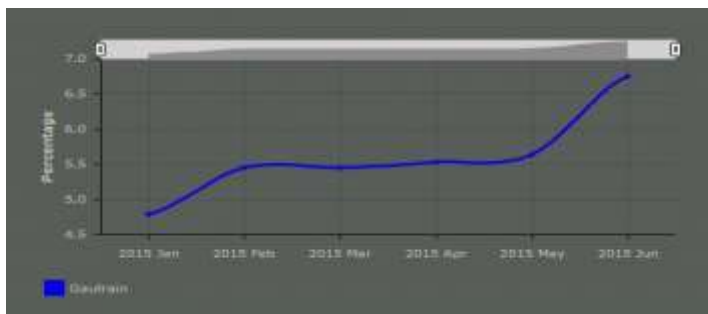


Figure 8: Linguistic measure Time: Source Echoecho, 2015

As historical research on transit users' perception of travelling time has proven to have severe implications on mode choice. Generally commuters' perception is based upon the mode of transportation being able to follow its time table, thus any sudden deviations would lead to adverse emotions. Most commuters of the Gautrain use the railway system as an alternative to driving or using commuter taxis on the highways. Accordingly, the introduction of the Gautrain was ideally meant to ease traffic congestion as the railway system would serve as an alternative to driving or using commuter taxis on the highways. As can be seen in figure 8, commuters linguistic measure on time, has greatly improved as there has been a steady growth in the number of positive comments on social media.

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## Word Count: Time series analysis

Posts published within the time period of January 2015 to June 2015 were used to profile of the level of interaction on social media platforms by the participants within the study area. Word counts were henceforward used as the parameterisation to measure the frequency of main topics of interest being discussed during this respective time period. In trying to visualise this data it soon become evident that creating an illustration of all the individual-words in the data set would lead to scribbled visualisation of the big data, hence Tagul was used to present the top words used in the discussions on social media.

The results shown in figure 9 reveal that within the Gauteng city region most of the posts in the data set were comments of users and the Gautrain engaging, as the word ‘Gautrain’ and ‘theGautrain’ were mentioned 30586 and 13211 respectively. With sure a high frequency in the mention count this shows the Gautrain’s brand has grown over the years, since the Gautrain initial inception in 2010. Meaning the strategies of using social media as a means of building communication linkages and collaborations between the Gautrain and potential commuters are working. “By listening and participating in social media conversations, Gautrain has the opportunity to build authentic, two-way relationships with social media users including mainstream media users and social media opinion leaders who require content to be instantly available, mobile and shared in social networks” Musakwa (2014, p 725). This in conjunction with the mention count frequency measured using Echoecho it becomes lucid that the Gautrain brand has grown over time and that social media interaction is a decisive marketing tool for Gautrain. The first two months of the year saw a steady increase of posts on the social networks, which lead to an increase in commuters using the Gautrain. This growth could be due to social word of mouth that is social media users engaging recommend to other users to use the Gautrain due to satisfaction with the service received.

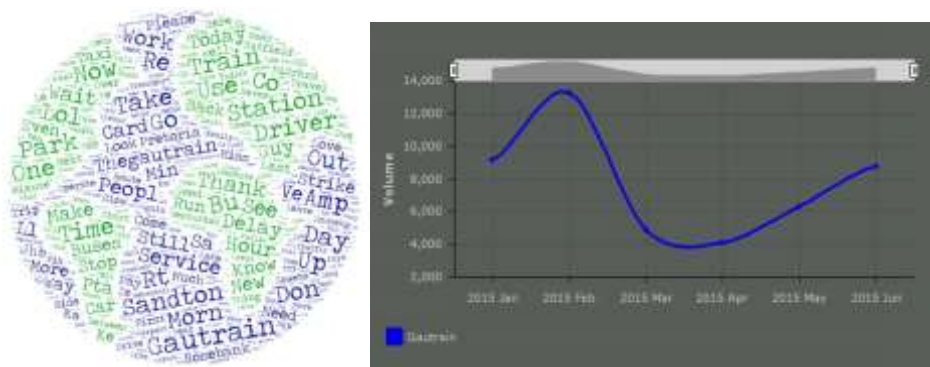


Figure 9: January to June Top words: Gautrain 30586, theGautrain 13211; bus 7105; station 6964; train 4100; sandton 3416; service 2936; no 2847

An analysis on Echoecho’s emotion focus reveals attention-grabbing results with positive emotions being at 5.6 % and negative emotions being at 3.9 %. As emotion influences peoples’ preference and mode chose, introducing emotion detection allowed for direct unspoken feedback measurement and evaluation. Hence the emotion focus count could be used to explain the sharp fall between February and April. It is safe to say identifying the expressed emotion in the social media posts is challenging, as twitter users are only able to use 140 characters in their posts hence their emotions can end up becoming hidden in posts which do not have explicit reference to key words such as disappointment or happy. Henceforth further analysis using a time series approach for the months needed to be undertaken to analyse for such patterns and determining remedies to improve commuters’ perceptions.

The results on the time series analysis for the 6 months reveals that social media interaction between Gautrain and social media users seems to be highest during the middle of January with rapid increases and

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declines on the days thereafter with the 27<sup>th</sup> being the last recorded with high volumes as shown in figure 10. The low volumes between 1<sup>st</sup> and 10<sup>th</sup> of January 2015 could be due to that most people generally leave the province and go on holiday during the festive season. Consequently less people would be using the services of the Gautrain, hence the low volumes. The increase in social media posts after the 10<sup>th</sup> of January also concurs with this hypothesis as generally most people would be returning to work and schools would be opening during this period. The effect of the end of the holidays also seems to spill over on to February as the level of social media post is still high at the beginning of this month as shown in figure 11. However due to the bus driver strike that occurred during this month, the peaks from the 1<sup>st</sup> to 12<sup>th</sup> of February could also be a direct result of social media users discussing this. Consequently this lead to negative emotions raising to 4.8% and positive emotions being 6.2%, such an imbalance generally shows dissatisfaction with regards the brand. However with time, the level of interaction between the Gautrain and social media users begins to reduce steadily, due to the half-life of social media posts.

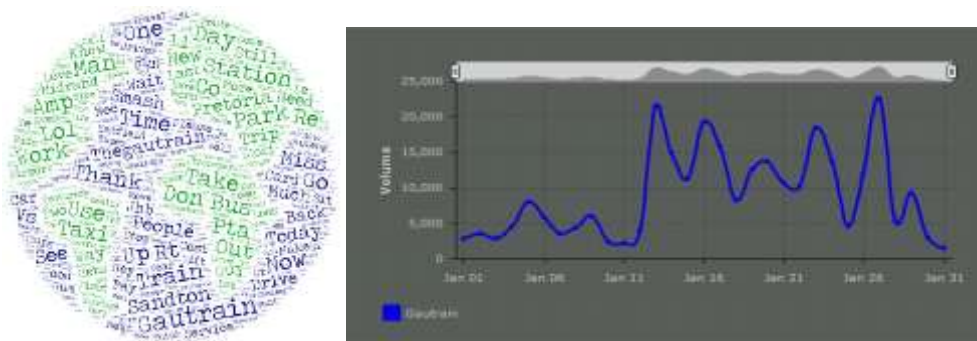


Figure 10: January: Top words: Gautrain 7,343; Station 1905; theGautrain 1714; friend 962; add 961; train 857; bus 791; Sandton; 693; and man 654

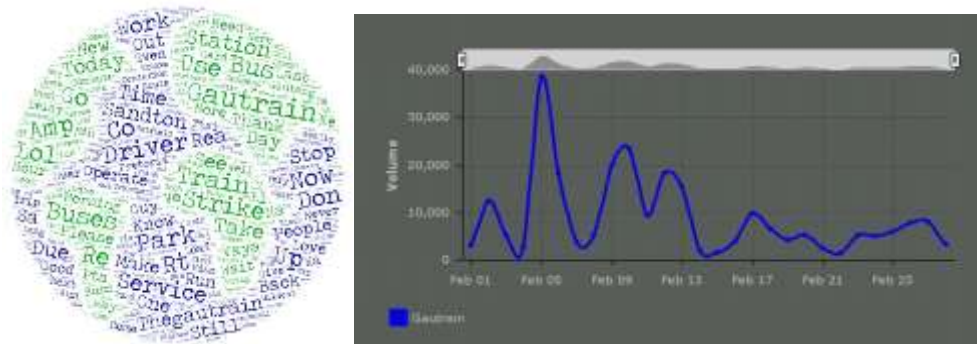


Figure 11: February Top words; Gautrain 8109; theGautrain 4574; Bus 3575; strike 2350; drivers 1938; station 1637; service 1562; train 1087; sandton 1042; no 957

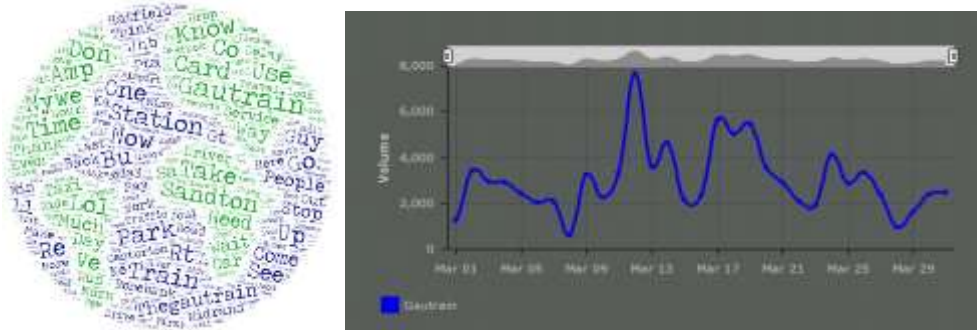


Figure 12: March Top words Gautrain : 3193; theGautrain 1238; station 889; bus 501; sandton 394; get 342; now 342; train 324; like 286

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Whilst social media is currently a multifaceted marketing channel, the potential use of this big data represents a gold mine for planners. With regards to the Gautrain, the month of March and April had fluctuating volumes and an increased level of positive emotions being 6.3% and negative emotions being 4.7% as shown in figures. This could be linked to the quick resolution of the bus driver strike and the Gautrain continuously engaging with the public to ensure all concerns were addressed quickly. However a challenge becomes evident, that is of ensuring a control on the levels of participation between social media users and the Gautrain. Whilst such issues are native to social media it seems a tedious exercise, to expand the life of a social media trend. However history has shown that expanding the life-line of a trend acts as a reinforcing agent which builds a brand and allows it to compete in the market.

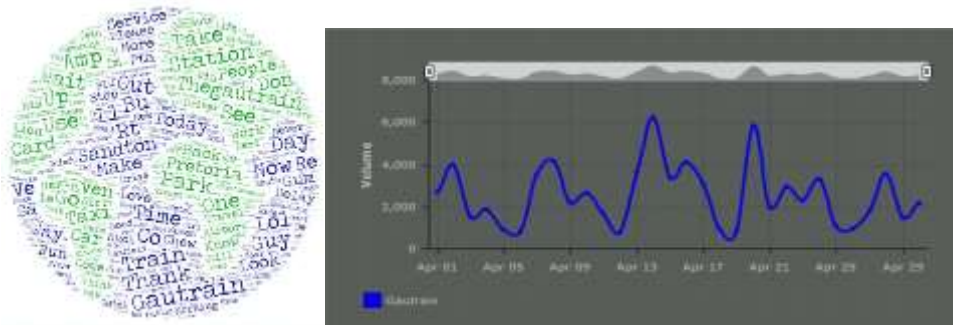


Figure 13: April Top words: Gautrain 2483; theGautrain 1383; station 655; like 429; bus 369; park 316; train 290; gum 282

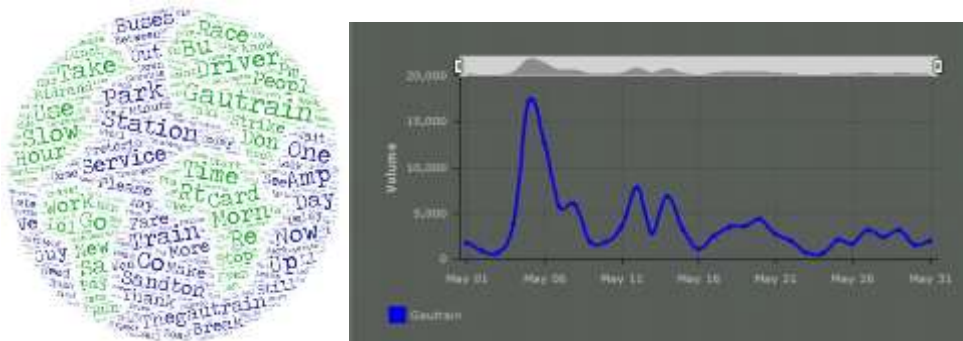


Figure 14: May Top words: gautrain 3951; theGautrain 1815; bus 1428; station 1010; #gautrain 577; drivers 547; sandton 389; up 357; get 354

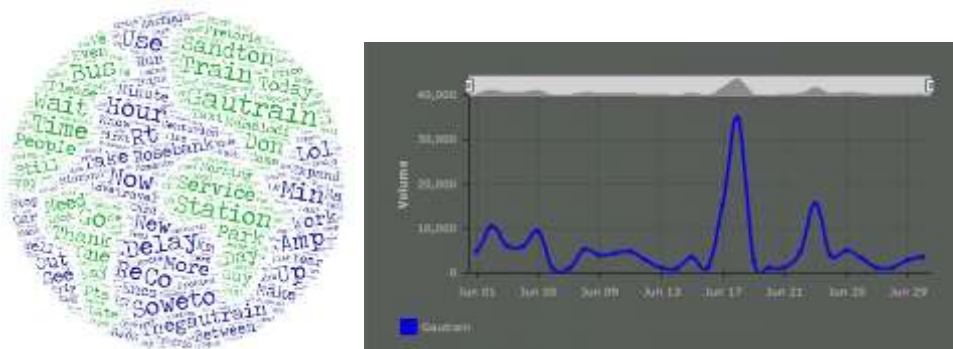


Figure 15: June Top words: gautrain 5507; theGautrain 2487; train 1201; station 868; Soweto 786; #gautrain 765; sandton 691; mamelodi 645; now 559

The involvement of communities in social media has evolved through the years, as public discussion on issues such as strikes and service delivery are now possible through platforms such as Facebook and

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Twitter. Hence regarding the looming strikes the terms ‘bus and drivers’ had high volumes, during the last months of the study period. Also these lead to an increase in negative emotions rising to 5.0% and positive emotions being 6.3% in May and June seeing a reduction in negative emotions to 4.6% and 5.9% positive emotions as shown in figure 14 and 15. Consequently having such an imbalance in emotions over time could lead to commuters not using the Gautrain as they would lose faith in the brand, as most users who rely on the Gaibus had to find alternative means to commuter to and from points of interest. In order for the Gautrain not to lose brand loyalty they had to ensure they responded quickly whilst reassuring the public the grievance were being resolved, with minimum disruptions to service delivery.

## 6. RESEARCH CONTRIBUTION

This examination over the 6 months period demonstrates how social media interaction is a crucial tool in crisis control and brand management. However as shown by the abrupt variations in the emotions of the posts one major drawback of social media then becomes evident, that is posts have a half-life. If companies are unable to continuously adapt, this will affect the company’s brand and customer loyalty. This initial analysis of the social media data was used to unpack the pre-existing nature of the crowd sourced data from users living within the Gauteng province and was used to explain the monthly variations in the data set. Furthermore an analysis of the geographical location of social media posts on Echocho shows the Gautrain’s geographic presence that is the extent of social media buzz that is generated by the GMA brand. Initially the social media data was viewed at a holistically level for the year 2015. The population count for the social media posts was subdivided as follows for visualisation purposes:

- Blue representing 10 posts or less
- Yellow representing 100 posts or less
- Red representing 1000 posts or less
- Pink representing 10 000 posts or less
- Purple representing 100 000 posts or less



Figure 16: World twitter and facebook posts: Source Echoecho, 2015

At a worldwide scope (as shown in figure 16) the catchment area of the Gautrain seems to cover the Southern parts of North American, with over 1500 users; West and South Europe having over 2000 users and Austria having the least number of users engaging on topics involving the Gautrain. The possible node that serves these users could be the Gautrain station at OR Tambo international air-port as most of these users would ideally use the air-port to enter the Gauteng. Whilst at a regional level in South Africa (as shown in figure 17), the Gauteng province has the most users engaging with the Gautrain, this may mainly be due to the Gautrain directly serving people in this province. The Western Cape was the next province

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with the highest users engaging with the Gautrain, this could be due to the close historical economic relationship between the two provinces as these two have the highest contribution to the country's gross domestic product. The Limpopo province has also a large number of users who engage with the Gautrain, this may either be due to two reasons, namely the province serves as an entry point (road) for the rest of the African in South Africa or due to the growth in economic activities in Limpopo, this has led to growth in the socio-economic relationship between the provinces.

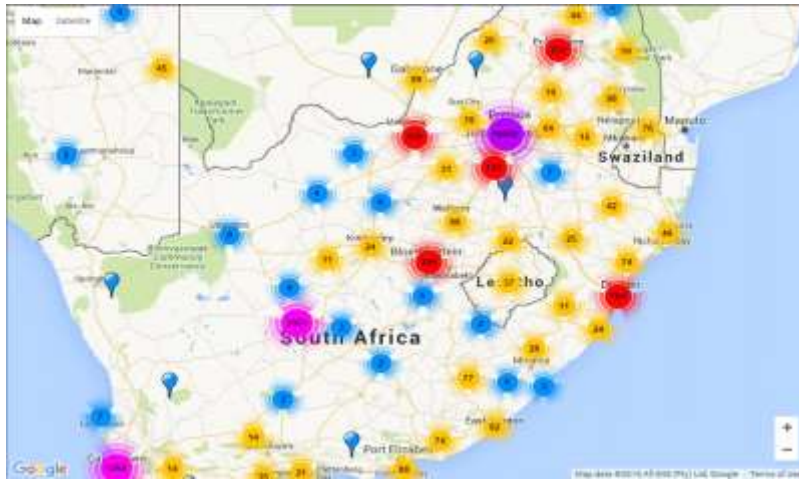


Figure 17: S.A twitters and facebook posts: Source Echoecho, 2015

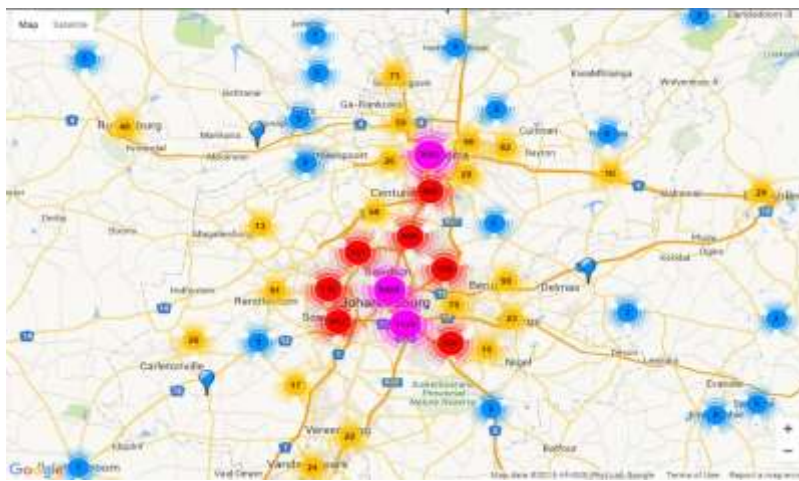


Figure 18: Gauteng twitter and facebook posts: Source Echoecho, 2015

Having an efficiently and effectively run public transportation system is a crucial and indispensable factor for the any developing city region. However as the provision of public transportation is a multifaceted process, with intertwining elements such as culture, politics, finances and shareholder interests. Smart means of monitoring and mitigating the challenges faced in the provision of public transportation need to continuously be developed. The Gauteng city region is likewise faced by this challenge, with the region being the economic hub of South Africa, this has greatly affected the operation of the Gautrain, as more and more people require a fast and reliable transportation means to traverse in and out the metropolitan cities. This is evident by the numerous social media posts made at the existing nodes such as at Park Station; Sandton and Pretoria as shown in figure 18. Also this poses a challenge to clearly demarcate the catchment areas of these nodes whilst visualising the areas of hot and cold spots to be identified for future developmental projects.

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## 7. RESEARCH LIMITATIONS

When using the assumption that people who post about the Gautrain are either existing or potential commuters, then yes the model does show the sphere of influence of the Gautrain. However in the real world situation, this may not always be the case. As there is currently no clear manner to ensure that everyone who posts about the Gautrain is a current or potential commuter. Also as the research follows an explorative approach, a means of validating the results is needed. Hence perhaps in further studies an experimental approach could be adopted, which would ensure there is a control and experiment as a means to check the validity of the results of the model whether it does accurately represent the variations existing in the nodes.

## 8. DISCUSSION & CONCLUDING REMARKS

In using web 2.0 data as the input for transportation planning many obstacles still need to be tackled. Currently knowledge gaps still exist, with regards to how to exploit this data to inform planning. Hence a bridge is still needed to link what is available (big data) and what could be done (planning). As no model can be used as a one glove to fit all situations, a need to continuously develop and renew planning models exists. Critics have highlighted that the data used in the analysis is only a representation of twitter and facebook users, and that not everyone uses these platforms, as some prefer to use Instagram or Flickr. However as the GMA has shown keen interest in focusing their marketing resources on these two platforms (Musakwa, 2014), the assumption that commuters will generally respond or post were they will receive feedback comes into play. As a result the social media big data from twitter and facebook presents the majority of the Gautrain's sphere of influence. Consequently this reveals how the analysis is deeply imbedded in the utilization of big data for the model to be effective. An understanding of correlation between the observed social media data points is of great importance, as noted in the word count and linguistic measure. However this also is dependent largely on time that is the duration of the study. As over time, more insight on the data can be gathered, hence a seasonal or yearly co-relational analysis can be developed to identify the key factors that influence.

## 9. REFERENCES

- Asakura, Y., Hato, E. & Kashiwadani, M., 2000. Origin-destination matrices estimation model using automatic vehicle identification data and its application to the Han-Shin expressway network. *Transportation*, pp. 419-438.
- Ashton, K., 2009. That Internet of Things' thing. *RFID Journal*
- Bauer, S. et al., 2012. Talking Places: Modelling and analysing linguistic content in Foursquare. pp. 1-10.
- Bricka, S., Zmud, J., Wolf, J. & Freedman, J., 2009. Household Travel Surveys with GPS. *Transportation Research Record. Journal of the Transportation Research Board*, 2105(5.1), pp. 51-56.
- Bryant, R., Katz, R. & Lazowska, E., 2008. *Big-Data Computing: Creating revolutionary breakthroughs in commerce, science and society*. Washington, DC: Computing Community Consortium.
- Carnegie Mellon University, School of Computer Science, 1982. "The Only Coke Machine on the Internet".
- Farooq, M., Waseem, M., Khaiji, A. & Kamal, T., 2015. A Review on Internet of Things (IoT). *International Journal of Computer Applications (0975 8887)*, 113(1), pp. 1-7.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Gautrain, 2009. *Gautrain to be the backbone of integrated public transport*. [Online] Available at: <http://www.gautrain.co.za/newsroom/2009/02/gautrain-to-be-the-backbone-of-integrated-public-transport/> [Accessed 12 March 2015].

Gao, S., Yang, J., Yan, B., Hu, Y., Janowicz, K & McKenzie, G. (2012). Detecting origin-destination mobility flows from geotagged tweets in greater Los Angeles area.

Khan, S., 2014. Historical evolution of Durban's public transport system and challenges for the post-apartheid metropolitan government. *New Contree*, Volume 70, pp. 173-194.

Kling, F. & Pozdnoukhov, A., 2013. When a City Tells a Story: Urban Topic Analysis. pp. 1-10.  
Lorenzi, D., Vaidya, J., Chun, S., Atluri, V. (2014). Enhancing the government services experience through QR codes on mobile platforms. *Government Information Quarterly*, 31: 6-16.

Musakwa, W., 2014. The use of social media in the Gautrain in Gauteng Province, South Africa: analysis and lessons learnt. *REAL CORP 2014 Proceedings*. . Page 721-727

Oxford University Press, 2015. *Oxford Dictionaries*. [Online] Available at: <http://www.oxforddictionaries.com/definition/english/origin> [Accessed 19 May 2015].

Shen, G. & Liu, B., 2011. "The visions, technologies, applications and security issues of Internet of Things", in *E-Business and E -Government (ICEE)*. pp. 1-4.

Stopher, P. & Greaves, S., 2009. "Missing and inaccurate information from travel surveys – pilot results". *32nd Australasian Transport Research Forum*.

Wolf, J., Oliveira, M. & Thompson, M., 2003. *Journal of the Transportation Research Board*. "Impact of underreporting on mileage and travel time estimates: Results from global positioning system-enhanced household travel survey transportation research record", Volume 1854, pp. 189-198.

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# How Sound Planning Sense Should Disrupt the Different Power in the Planning World

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## Abstract

Through history planners is and was confronted by the different manifestations of power. Important power manifestations that influence planning are political, financial, social, technological and informational forms of power. In totalitarian states, monopolies and other types of “empires” where power are exclusive, universal planning goals based on sound planning sense are difficult to achieve. This paper will use a Dutch academic, Prof. H.M. Goudappel’s Urbanistic Concept (1985) to show how ideological, theoretical and practical issues concerning power could be dissected. The Urbanistic Concept advocates sphere sovereignty as a structural principle in planning and society. Sphere sovereignty prevents conflicts of interest in society that exists because of power forms. By identifying the force of power, whether it be the state, the church, the business or any other organisation or person(s) the extent of the power’s authority can be managed by sound senses. Without sphere sovereignty the power’s authority might be unrestricted over people, their lives, their rights, their conscience, their religious believes and their planned environment. Sound senses are necessary to confront the different forms in which power manifest in the South African planning environment. In example peoples power should be managed by sound governance and not by buying votes. People think that through mass action in the streets or voting in elections, they can demand more, even more rights, amongst other’s a right to housing. Thus hundreds of thousands of houses are built in areas where there are no employment possibilities, a planning tragedy that cannot achieve the social agenda. Hans Blumensfeld (1979), a self-confessed Marxist and former chief planner of Moscow, wrote that people don’t need houses – they need employment. In the example of housing in South Africa a disruption of power is needed to reinvent the social agenda, sound planning sense dictates housing should be near employment for a sensible social agenda. By accepting that there are set norms for human society and laws for nature, a conscious choice can be made for promoting the social process in a specific direction. Planners should understand the structural principles of different value systems, like humanism, socialism and capitalism, then planning can create the conditions for man and society to be led to • greater responsibility • greater freedom and • a richer variety of spatial uses that are in harmony.

## Keywords

Planning, Power, Sphere Sovereignty, Values, Society

## 1. INTRODUCTION

*“Whether or not power corrupts, the lack of power surely frustrates”* (Forester 1982:67).

Through history planners are confronted by the different manifestations of power. Important power manifestations that influence planning are amongst others political-, financial-, social-, technological- and informational forms of power. In totalitarian states, monopolies and other types of “empires” where power are exclusive, universal planning goals based on sound planning sense are difficult to achieve. This paper will deal only with power in the form of absolute control, the power to control people and events. The best known are political power and economic power with which planners are confronted, however planner have power through information. Forester (1982) identifies five perspectives on the use of information by planners but also addresses several types of misinformation that is used by people or organisations to manipulate. This paper will demonstrate that the physical environment (the what) is not only a manifestation

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of the power of organization (the how) but also of the value system (the why) that lays behind it. Understanding the whether the aim is practical, procedural or value driven can help the planner to confront the power behind a plan.

## 2. LITERATURE REVIEW

The history of planning shows how has developed from planners drawing plans for practical layouts of cities to organizing the process of planning and ending by questing the values behind the plans.

### 2.1 Blue Print Planning

Urban planning developed along with the urbanization of mankind. The oldest reference to it in writing is by the Greek Hippodamus (fifth century B.C.) but unfortunately no copy has been preserved and we only know about it through the writings of Aristotle (Mumford 1966:202). The next known reference work is by the Roman architect Vitruvius in his *De Architectura*, a treatise in ten ancient volumes on Greek and Roman architecture, translated as *The ten books on Architecture*. It dates from about 28 B.C. and one of those volumes is about the origin and layout of cities (Morgan 1960:17-32). Since the fifth century B.C. up to the beginning of the twentieth, urban planning was about the layout and design of cities, mostly by architects. This is termed **blueprint planning** because layouts had to be implemented slavishly like a building design.

### 2.2 Process Planning

In 1909 the first two university departments in urban planning were founded respectively at Harvard University in the USA and the University of Liverpool in Britain. Planners' task now was to draw up plans, set guidelines for enforcing them and then seeing to it that these were applied. Batty described this golden era of planning as follows: "*The Planner, free from political interference, serenely sure of his technical capacities, was left to get on with the job.*" (Hall 1988:324). Theoreticians on urban planning are concerned with the **WHAT** question in planning. The content of planning is under discussion and is called **Theory IN Planning**, also known as **Substantive Theory** (Faludi, 1973:7).

The Second World War brought huge developments in science, new approaches to economics and management as well as the discovery of medicines such as penicillin. This leads to a population explosion in the first two decades after the war and gives birth to the term "*baby boomers.*" Blueprint planning was no longer serviceable and plans had to be continually adapted. Planning was ruled by the process of planning rather than its product and is called **process planning**. The major issue is the question of **HOW**. Urban planning theoreticians are involved in the **Theory OF Planning**, also termed **Procedural Theory** (Faludi, 1973:6-7).

Hall (1988:327) describes this development as follows:

*"... the discipline of physical planning changed more in the 10 years from 1960 to 1970, than in the previous 100, possibly even 1000 years. The subject changed from a kind of craft, based on personal knowledge of a rudimentary collection of concepts about the city, into an apparently scientific activity in which vast amounts of precise information were garnered and processed in such a way that the planner could devise very sensitive systems of guidance and control, the effects of which could be monitored and if necessary modified."*

### 2.3 Normative Planning

This rational, comprehensive planning process as described by Meyerson (1956) and Banfield (1959) is queried by Lindblom (1959) and others who consider it beyond achievement. Davidoff (1965) concludes

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that planners can no longer take up a neutral position regarding values. This eventually leads to Klosterman (1978) finding that values-free planning is impossible in principle since planning is essentially political in nature. Who gets what, when and where is what it is all about (Klosterman 1978:39). Planning is now governed by values and is known as **Normative Planning**. **Normative Theory** is about normative planning issues, the **Theory FOR Planning**, and it attempts to supply an answer to the **WHY** question (Stejn,1996:38).

## 2.4 Power in Planning

The Cambridge Advanced Learner's Dictionary refer to thirteen different definitions of power (Walter, 2008:1109). Absolute power in the sense of supreme control like in an empire can be in the hands of one man, a family or an organisation (Walter, 2008:459). For Beckman (1973:262) power of planners lays in the "power of the idea" by which they will persuade the politicians in the correct direction. For Davidoff (1973:282-283) power is in the argument of the planner who is an advocate pleading "for his own and his client's view of a good society". Arnstein (1969:216-217) found that power should be in the hands of the citizens in the form of citizen control on the top of her ladder of public participation. Forester (1989, 1999) and Healey (1997) although talking about power do this from a communicative rationality view, thus believing that using communication as power will solve planning problems. Flyburg (2002:353) accuses them of not understanding the world of realpolitik . His methodology is phronetic planning research which "runs from Aristotle to Machiavelli to Nietzsche to Foucault" (Flyburg, 2002:353). ). Four value-rational questions stand in the core of his research in Aalborg namely:

- "Where are we going with the planning and democracy in Aalborg?"
- Who gains and who loses by which mechanism of power?
- Is the development desirable?
- What should be done?" (Flyvbjerg 2002:356)

People with different value systems will have different answers for these questions. Low and Walter (1982: 59) contend that:

*"Values are embedded in the community institutions such as family structure, religious institutions, educational systems as well as the minds of individuals ..... the greater the diversity of ethnic type, socio-economic group or religious orientation, the less likely that the values of social rules applying to one group of individuals will apply to other local individuals or groups".*

## 3. OBJECTIVES

The objectives of this study are to show that values are the basis of different political approaches and promises to solve the problems of society. People think they have power because of a democratic system where their votes count in politics and their money in the business world. This paper will show that neither capitalism nor communism will solve the planning problems of this world. Planners must use sound planning sense.

## 4. APPROACH & METHODOLOGY

The paper is based on literature review. The intention with this article is to apply Goudappel's (1985) concept of urbanistics to distinguish between practice, science and ideology in urban planning. In some cases it will prove to be useful to keep politics out of practical matters but when a difference in principle exists about the appropriate approach, it will be shown up and this will require deliberation.

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In Urbanistics a distinction is made between the framework of thought or reflection and the framework of conduct or action (Stejn, 1989:14). Within the thought framework (figure 2.1), where the theory of planning belongs, a distinction is made between the three levels at which a problem may be approached:

- The **INFRASTRUCTURE** level; the most basic level concerned with the physical appearance of things and events. In the case of planning this may be considered to be built artefacts in the environment.
- The **SUPERSTRUCTURE** level, one step more advanced, in which the organizing and functioning of the infrastructure is considered.
- The **IDEOSTRUCTURE** level, in which the deeper backgrounds in philosophical, ideological and religious levels are examined (Goudappel, 1985:180).

These three levels may also be seen as the questions ‘What?’ (infrastructure), ‘How?’ (superstructure) and ‘Why?’ (ideostructure) (Stejn, 2011:2) and are particularly useful in classifying planning issues (practical, theoretical and ideological). In this way it becomes clear whether a problem is only at the level of infrastructure (and thus easy to solve); whether it is a superstructure problem (more advanced, but still capable of solution without too many problems, even in a diverse community); and whether it is a problem of ideostructure (and therefore fundamental in nature).

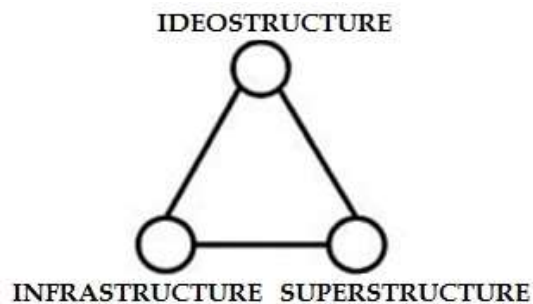


Figure 1: The thought framework (Goudappel, 1980:486)

To be able to really take part in the planning process it is necessary to distinguish the level at which the problem exists. If it is at the practical level agreement is easily reached; for example, “*How much water do five thousand people need for their daily living in the city?*” That is to say, the **WHAT** question. Engineers may put forward various theories about how to design the best distribution network – the question of **HOW**. However, when the notion of values concerning the provision of water arises, the question “**WHY?**” – ideological differences – can not be solved by public participation. Thus it is clear that the **WHY** question in the capitalist approach of “*No money, no water*” is not to be reconciled with the ideological socialist approach that all people have a right to water.

## 5. ANALYSES AND FINDINGS

According to Klosterman (1978:37) planning was influenced by two major intellectual traditions – the rational and the reformist – in the USA and Britain. In the rational tradition planning is seen as the application of scientific methods to the findings of social aspects. This point of view had the planner taking the role of a technician making a plan. Decisions on what might be in the *public interest* should be left to politicians (Glass, 1973:51–53). This group of planners want to do their work only and they decline involvement in the politics of the day.

On the other hand the reformist tradition demands that the planner should be bound to continual reform and to ensuring that any suggestions should promote the interests or the general public to the utmost. In this,

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American planners had much less confidence in political functionaries and they wanted to influence decision-making processes themselves (Davidoff, 1965; Arnstein, 1969). Planning was no longer considered to be values-free. Considerable pressure on the theory of planning was also exerted by neo-Marxist arguments of scholars like Harvey, Castells and Lefebvre. It is to be noted that reform is entirely different from revolution. In reform or reformation the current situation is improved or adapted and there is no break with the past as in a revolution.

In our modern world two extreme views on how a society should be governed and what power is can be demonstrated on a continuum stretching from total freedom to absolute control (figure 2).

TOTAL FREEDOM	ABSOLUTE CONTROL
Result: CHAOS	DICTATORSHIP
CAPITALISM (in theory)	COMMUNISM (USSR-style)
Individualism	communalism

Figure 2. Continuum of power.

Both capitalism and communism are siblings of humanism where respectively man as individual or as group is the measure for what is right or wrong. In contrast to these two extremes Christians perceive that all power is from God, man is just a steward who does not have absolute power, but must govern according to God’s laws. Christians accept as most other religions that the choice is not for the one or the other of the extremes as the measure for what is right or wrong is something else.

### 5.1 Applying Goudappel to Poverty

Poverty is one of the biggest problems facing South Africa and planner should have an idea how to address it. In both cases the three questions from the urbanistics namely the WHAT, HOW and WHY can be used to get an understanding of the problem facing us.

WHAT is poverty? The Cambridge Advanced Learner’s Dictionary defines it as “the condition to be extremely poor” or “*the lack of something or when the quality of something is extremely low*” (Walter, 2008:1108). In a sense these definitions are vague as are value, culture and place related. In capitalist terms it is measured in monetary terms. From a socialist viewpoint “*each person has to have an equal right to the most extensive basic liberty compatible with an equal liberty for others*” (Klosterman, 1978:43. This means that in a world with a growing population more pressure is put on the environment which must provide the ‘goods’ for the use of the people. Few people give a thought to living in a sustainable manner while most would agree that society should ensure that the environment is not ruined. Such destruction is mostly driven by man’s drive to achieve a better standard of living, particularly in materialistic terms.

A person with sound sense will ask the question, “*when is a person rich?*” and the answer is very simple – “*when one has enough.*” The problem in modern society is of course: How much is enough? Jane Jacobs (2004:114) in her *Dark Age Ahead* warns about a cultural dead end as “*greed becomes culturally admired as competence, and false or unrealistic promises of cleverness*”.

HOW should poverty be addressed? In capitalist world it is a matter of growing the economy through the private sector or public-private partnerships (Jacobs, 2004:114). The solution is top down and will come from the IMF, the World Bank and other elites (Bond,2006:136). From a socialist viewpoint the government must provide through plans like the NEPAD (Bond, 2004:224) or the National Development Plan (Terreblanche, 2014:149-156). From a radical point of view it should be a bottom-up movement

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(Bond,2006:136). Both rely on some kind of power to change the world. On the one hand the market will solve the problem and on the other hand the people through political power. A person with sound sense will know that any ideology that does away with personal responsibility leads to a dogma of equality. Equality should be concerned with the principle that all people should be treated equally rather than making every thing and every person equal. It is not surprising therefore that Onyeani (2000) warns in his book, *Capitalist Nigger*, that successful communities accept responsibility for their own condition while unsuccessful ones blame others.

WHY is there poverty? Capitalists according to [Worstall](#) (2015) in *It's Not Capitalism That Causes Poverty, It's The Lack Of It* argues "that poor places are characterized by the absence of capitalist firms and by self-employment, employment: these are small peasants and farmers or owners of small shop. In these settings, there are no wages, there's no employment relationship. There are no pensions. There is no unemployment insurance. The trappings of a capitalist labour market do not exist." The lack of markets and employment is thus the cause for poverty. The socialists (SPG, 2016) on the other hand found that "What is required is not a reform of this system ..., but its abolition and its replacement by one in which the Earth's resources become the common heritage of all humanity. Only on this basis can these resources be mobilised to eradicate world poverty and ensure a decent life for every man, woman and child on the planet." Bond (2006:xiii) found that Africa is kept poor because "Looting is a system driven from capitalist institutions in Washington, London and other Northern centres and is accommodated by junior partners across the Third World, including African capitals, especially, Pretoria." According to Rist (1997) the West strives after an ideal of development. Everybody thinks that the future must bring more of everything for humanity and it must all get continually better. Growth in personal wealth must increase and any country's Gross Domestic Output must expand endlessly. Thus modern man will find happiness and contentment by achieving ever-increasing material wealth. This is an illusion and people with sound sense must be aware that global warming and the depletion of resources is a reality. In many countries diseases of the lung at local levels because of atmospheric pollution are on the increase. People see these things happening but little is done about it. In fact, the environment and poverty are two areas in which money is still to be made by exploiting the naivety of people. Once every human individual realizes that sustainability must begin with one's self, there will be hope that the environmental issues will be addressed. Thus a man in a distant rural hamlet following a primitive lifestyle by Western standards may have a sufficiency of earthly belongings and be enjoying a meaningful life. It is not necessary to have a cell phone, a television set and lots of consumer goods to be happy and have a meaningful life.

## 5.2 Curbing Power through Sphere Sovereignty

On the question who should address the problem of poverty the two mentioned approaches differ. For the capitalists the market will put things right while for the communists the government must do it. The provision of housing can be taken as an example. From a capitalist view the market will deliver housing according to need but from a socialist view a person has a right to housing and the government must provide it. From a sound sense approach an outspoken Communist like Hans Blumenfeld (1979:84), who in the 1930's was the chief town planner of Moscow, wrote that people do not need housing to solve poverty, they need jobs and then they can address the problem according to their preferences. The idea that one type of power, whether it be the private sector or government can solve all problems is putting too much power in the hands of such a body or section in society.

To limit the authority of any single power to rule over each sphere in society it is necessary to understand the Calvinist principle of sphere sovereignty (Kalsbeek, 1970:89). The sphere of authority of societal structural principles is limited because no highest authority may exist on earth (Van Riessen, 1973:88). Kuyper stated this as follows "Without sphere sovereignty, state power is indefinitely imperative; it has the power over persons, their lives, their rights, their conscience and even their faith"(Kalsbeek, 1970:89). A

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good example is children, who do they belong to and who should decide what and how should they be taught, the state, the school, the church, the neighbours or the parents?

### 5.3 Guidelines for sound planning

The history of culture is the history of man and this cannot be dissociated from a metahistorical question or be explained by science. Ellul (1977:180) even goes so far as to say that the city portrays the sum total of man's work. To the Christian, this is explained by the disclosure of creation, the origin of mankind (Dooyeweerd, 1953:264).

According to Dooyeweerd (1953:262), the development of culture and the spreading of humanity across the earth in different culture groups is a task of humanity. Within his unique cultural context, man will have to create the conditions for liveability under which man can fulfill his daily task.

Nijkamp and Douma (1974:104) qualify liveability by the meaningfulness of human existence, man's stewardship and man's positive enjoyment of creation<sup>24</sup>. Thus a good environment must reflect the diversity in society, create the possibility to develop and maintain good social relationships, not alienate man from nature and promote individual and social development of society. To Van Riessen (1973:337–356), the test for shaping society is the establishment of lasting organized communities<sup>25</sup> in a society between active, free and responsible people.

The position of man in his cultural environment must also be taken into account. On the one hand, the uniqueness of each individual and his responsibility to make choices must be taken into account<sup>26</sup>.

On the other hand, the physical character and the development of modern society must be such that it can lead to a meaningful existence. Thus man must form the basis for the environment which serves as background to a coherent existence.

The meaningful totality of society must be reflected and man must not be alienated from this through his man-made environment<sup>27</sup>. According to Van Riessen (1973:355), a sound living environment shows a harmony in the relationship from artificial to natural.

The origin of spatial planning must be considered within the planning context. If planning is aimed at arranging society, does it mean put in order, arrange, give guidance or is it programme, organize or control? Any answer that may be given concerning these possibilities claims to know what the origin and aim of man and space is. The answer is based on religion because by implication it is recognized that account must be given if the aim is not achieved. To the Christian, the responsibility is towards God; to the humanist, it is towards man (individual or group) and to the rationalist, it is towards reason (science).

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<sup>24</sup> Meaning or ultimate purpose in life is not maximum liveability; likewise, positive enjoyment is not degeneration to egoism or licentiousness (Nijkamp and Douma, 1974:104). Concrete expression of the preconditions will differ from area to area and from culture to culture. For the Western urban dweller the requirements for housing will require individual housing desires and protection of family unit as a loving unit without limiting social contact outwards.

<sup>25</sup> Kalsbeek (1980:197) distinguish between organized communities such as church, state, organizations, businesses *et cetera* and natural communities such as marriage, nuclear family and cognate family.

<sup>26</sup> In a society focused on the masses, the individual is of lesser importance. For example, each person's individual rhythm and tempo is determined by his technological milieu rather than by himself (Van Riessen, 1973:202).

<sup>27</sup> The influence of the environment on an increase in crime, alienation and anomy may be an indication of the price to be paid for the degeneration of the environment.

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With planning, a conscious choice for promoting the social process is made in a specific direction. Van Riessen (1973:210) infers that the drive in planning is faith in the ideal of developing a community<sup>28</sup>. This means that man knows what the ideal community or type of utopia is. There can only be community when people have something in common, where the “something” is the meaning of coherence (Van Riessen, 1979:15)<sup>29</sup>.

The more differentiated the society and the less the coherence at religious level, the more man searches to conform on a materialistic basis. Faith in progress and man-made security in a world free of worries (for example the welfare state) stimulates interest away from any extra-human force. On the one hand, narcissism entails a feeling that happiness can only be achieved by realizing more and new experiences. This search caused man to be confident that the forces of science, technique and organisation (also planning) would effect better possibilities for development and greater freedom for man<sup>30</sup>.

According to Schuurman (1977:20), nobody will deny that modern society has become so complex that important decisions about the future (also future spatial planning) cannot be made without scientific knowledge and analysis. He qualifies the statement by saying that in the practice of science not only laws are laid down as to what must be done, but that attempts are made at enhancing man’s personal and joint responsibility.

Nijkamp (1980b:84) subscribes to this by referring to a developmental programme which consists of ideas directed at the normatively responsible orientation of society. As a functional view for a Christian approach to spatial planning, planning must create conditions, set norms and enrich the spirit (Nijkamp, 1980a:14-15). Spatial planning must be aimed at creating conditions under which man and his social relationships can develop more freely and responsibly into a greater variety<sup>31</sup>. This means then to allow for new innovations (uses), as long as they remain within the norm-setting boundaries<sup>32</sup>. A general action for setting norms will have to be measured by the degree in which the freedom of fellow man (or relationship or nature) is affected by a present usage, or a change in usage, of space. A wrong use creates a nuisance (obstruction) in the cultural environment and a plague in the natural environment or it leads to environmental pollution<sup>33</sup>. Conditions for a change in use will then have to prove that no nuisance, plague or environmental pollution develops or can develop from the proposed action<sup>34</sup>. It enriches the mind in the sense that it creates a balanced society, in which harmony and justice are reflected. A society therefore in which responsibility holds the key to development. If such a call on individual responsibility is ignored or not accepted, one will have to rely on collective responsibility to correct degeneration. Only then may the authorities act to arrange spatial usage in such a way that meaningful development can indeed take place and that evil can be halted. This corrective process must be seen as an intermediate step.

It must not sanction planning, but it must control the chaos and create the conditions for redress (also of responsibility). Understanding the different levels of all problems planners are dealing with through the

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<sup>28</sup> Planners are no longer so idealistic and pragmatism now also plays a significant part. Doevedans and Stolzenburg (1988) actually examine the rise and waning in community formation in the Netherlands.

<sup>29</sup> Any communality not bound together by meaningful coherence carries within itself the germ of its undoing and must be considered conformism (Van Riessen, 1979:15).

<sup>30</sup> Developmental possibilities which are aimed at displaying the greatness of man and his powers so as to be more free of responsibility.

<sup>31</sup> Variety is the richness of variations that must come to development within the structure of creation as part of the cultural task of man.

<sup>32</sup> Border situations within the multiplicity of possible spatial solutions will in many cases not be solved by the norm-setting preconditions but fall within the field of tension between individual and collective responsibility.

<sup>33</sup> At institutional level freedom is affected by the infringement of sovereignty in a community’s own circle causing tensions in society.

<sup>34</sup> Current usages that lead to clashes of interests will have to be conducted in accordance with norms of fairness and moderation of action in an evolutionary process leading to the restoration of harmony.

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urbanistics concept will help the planner to be able to think out of the box and use sound sense to come to a meaningful conclusion.

In summary, planning should be aimed at creating the conditions for man and society to:

- Feel called and be led to greater responsibility,
- Greater freedom to develop as a unique being and to look for possibilities, and
- Allow a climate to develop in which man can develop, through creativity, a rich variety of spatial uses that are in harmony.

## 6. RESEACH CONTRIBUTION

By accepting that there are set norms for human society and laws for nature, a conscious choice can be made for promoting the social process in a specific direction. Planners should understand the structural principles of different value systems, like humanism, socialism and capitalism, then planning can create the conditions for man and society to be led to greater responsibility, greater freedom and greater diversity.

## 7. RESEARCH LIMITATIONS

These are personal points of view, written down without fear or favour. It might be wrong or skew as it is only one person contemplating over a lifetime of insights obtained on people and planning. Every person has a system of values in accordance with which he or she lives while identity is determined by upbringing and culture. Most people don't think deeply about these matters and never apply it to their entire lives, including their professions. Only by testing these views and improving insight planners can come to a better understanding of what they are trying to do.

## 8. FURTHER RESEARCH

Planners should spend more time understanding the world within which they work, such as "*The meaning of man's existence, his opinion of himself and his society, as well as the reality in which he finds himself, influence the operation of planning as an interdisciplinary subject that makes use of science, technology and organization to achieve its goal*" (Steyn, 2015:98).

The more differentiated the society and the less the coherence at religious level, the more man searches to conform on a materialistic basis. Faith in progress and man-made security in a world free of worries (for example the welfare state) stimulates interest away from any extra-human force. On the one hand, narcissism entails a feeling that happiness can only be achieved by realizing more and new experiences. On the other hand, it entails nihilism if the former does not mean anything. This search caused man to be confident that the forces of science, technique and organisation (also planning) would affect better possibilities for development and greater freedom for man<sup>35</sup>.

## 9. DISCUSSION AND CONCLUDING REMARKS

The last century has given man a feeling of freedom through the development of science, technology and organization. Man now considered himself independent of all extra-human forces, mature enough to determine his future himself. This coming of age was short-lived because the development of science, technology and organisation was so dynamic that man could not keep up with it. Human tradition once determined attitude and behaviour, now the autonomy of the forces set the pace and ruled. The forces started ruling instead of being ruled.

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<sup>35</sup> Developmental possibilities which are aimed at displaying the greatness of man and his powers so as to be more free of responsibility.



These forces rest in the inner laws of science, technique and organisation being made absolute (Van Riessen, 1979:115). Man wants to use the belief in the autonomous and sovereign operation of objectivised forces as basis to serve society. Man wants to enhance life with the absolutised force of technique; man hopes to rectify all that is wrong (crippled) with the absolutised force of organisation; and man hopes to serve humanity with the absolutised force of science with reliable and purposeful truth, which takes the place of religious truths that are not to be tested (verified) and therefore rest on nothing (Van Riessen, 1979:211).

In science, the search is on for certainty and confidence and this leads to a belief in science, rather than a belief in God as Creator, Maintainer and Finisher of all things.

According to Schuurman (1983), the degree of alienation that sets in between man and reality can be divided into three problem degrees of complexity. The first degree is where only science, technique or organisation are used separately. The second degree of complexity is where the scale enlargement in science and technique has reached the point where teams of people working together are united by the organisation and where direct contact between colleagues is excluded. The third degree of complexity occurs when the organisation must make use of the second degree of technique (for example the computer) to achieve results.

## 10. REFERENCES

- Arnstein, S.R. 1969. Ladder of Public Participation. *American Institute of Planners Journal*, 35(4), 216-224.
- Banfield, E.C. 1959. Ends and means in planning, in Faludi, A., 1973. *A Reader in Planning Theory*, Oxford, Pergamon Press, 1973:139-149.
- Beckman, N. 1964. The Planner as a Bureaucrat. In: Faludi, A. 1973. *A Reader in Planning Theory*, Oxford, Pergamon Press, 1973:139-149.
- Blumenfeld, H. 1979. *Metropolis and Beyond*, Toronto, John Wiley. & Sons.
- Bond, P. 2004. *Walk Left, Walk Right: South Africa's Frustrated Global Reforms*, Durban, University of KwaZulu-Natal Press
- Bond, P. 2006. *Looting Africa: The economics of exploitation*, Pietermaritzburg, KZN Press.
- Davidoff, P. 1965. Advocacy and Pluralism in Planning. *Journal of the American Institute of Planners*. Vol 31 No 4:331-338.
- Dooyeweerd, H. 1953. *A new Critique of Theoretical Thought*. Vol. II. Amsterdam, Uitgeverij H.J. Paris.
- Ellul, J. 1977. *The Meaning of the City*. Grand Rapids, Michigan, W.B. Eerdmans Publishing Company.
- Faludi, A. 1973. *Planning Theory*. Oxford, Pergamon Press.
- Flyvbjerg, B. 2002. Bringing Power to Planning Research: One researcher's praxis story. *Journal of Planning Education and Research*, 21, 353-366.
- Forester, J. 1982. Planning in the Face of Power. *Journal of the American Planning Association*, 48(1), 67-80.

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Goudappel, H.M. 1985. Urbanistics: A way to a new understanding of man's relationship with the environment. *Man-Environment Systems*, 15(5&6), 179-184.

Hall, P. 1988. *Cities of Tomorrow: an Intellectual History of Urban Planning and Design in the Twentieth Century*, Oxford, Basil Blackwell.

Hall, P. 2002. Planning: the millennial prospect. *Town and Regional Planning*, 45, 5-11.

Jacobs. J. 2004. *Dark Age Ahead*, New York, Random House.

Kalsbeek, L. 1970. *De Wysbegeerte der Wetsidee*, Amsterdam, Buijten & Schipperheijn.

Klosterman, R. E. 1978. Foundations for Normative Planning. *American Institute of Planners Journal*, 44(1), 37-46.

Morgan, M H 1960. *Vitruvius: The Ten Books on Architecture*. New York, Dover.

Mumford, L. 1961 *The city in History*. London, Penguin.

Nijkamp, P. 1980a. *Herfsttij der vooruitgang*, De vuurbaak, Groningen.

Nijkamp, P. 1980b. Waarden en waarheid in de Ruimtelijke Wetenschap. *Radix*. Vol 6 No. 1:2-19.

Nijkamp, P. & Douma, J. 1974. *Het Gelaat van de Aarde*. Groningen, Vuurbaak BV.

Onyeani, Y. 2000. *Capitalist Nigger: the Road to Success*, New York, Timbuktu Publishers.

Schuurman, E. 1977. *Reflections on the Technological Society*. Toronto, Wedge Publishing Foundation.

Schuurman, E. 1983. Lecture notes taken on 10 November 1983 at the Technical University of Eindhoven, Eindhoven.

Steyn, J.J. 1996. Publieke deelname: 'n tegniek, 'n proses of 'n geloof? *Stads- en Streekbeplanning*. Nr. 41:37-42.

Steyn, J J. 1989. Publieke Deelname as 'n Kulturele Determinant in Beplanning binne die Denkkader van die Urbanistiekonsept (translated as Public Participation as a Cultural Determinant in Planning within the Thought Framework of the Urbanistic Concept). Unpublished Ph.D. thesis in the Department of Urban and Regional Planning, Free State University, Bloemfontein.

Steyn, J.J. (ed) 2011. *Hendrik M. Goudappel: Mobility and Space (Vol.1 & 2)*. (Published in Dutch as: "Hendrik M. Goudappel: Mobiliteit en Ruimte", in two volumes). Goudappel Coffeng, Deventer, The Netherlands.

Steyn, J.J. 2015. *Reforming Normative Planning: Essays on a Christian Approach to Planning*. Orania, Prisca Uitgewers.

SPGB (Socialist Party of Great Britain). 2016, What causes world poverty? (<http://www.worldsocialism.org/spgb/education/depth-articles/state/what-causes-world-poverty> visited on 15 April 2016).

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Terblanche, S. 2014. Verdeelde Land: Hoe die oorgang Suid-Afrika faal (translated as Divided Land: how the change failed South Africa), Kaapstad, Tafelberg.

Van Riessen, H. 1973. De maatschappij der toekomst, The Netherlands, Uitgeverij T Wever, Francker.

Van Riessen, H. 1979. Mondigheid en Machten. Kampen, J.H. Kok NV.

Walter, E. 2008.3<sup>rd</sup> edition. Cambridge Advanced Learner's Dictionary, Cambridge, Cambridge University Press.

[Worstall, T. 2015. It's Not Capitalism That Causes Poverty, It's The Lack Of It, in Forbes Opinion, December 19, 2015 \(http://www.forbes.com/sites/timworstall/2015/12/19/its-not-capitalism-that-causes-poverty-its-the-lack-of-it/#7fe238e01b8b](http://www.forbes.com/sites/timworstall/2015/12/19/its-not-capitalism-that-causes-poverty-its-the-lack-of-it/#7fe238e01b8b) visited on 15 April 2016).

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# Sustainable Transport for Urban Poor: A Case of Johannesburg

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## Abstract

According to Gomide (2008) poverty in urban areas manifest through spatial disparities / isolation of the underprivileged poor areas which is often linked to lack of public services and inadequate infrastructures, where the procurement of mass transportation is inappropriate as far as cost and also accessibility. These impediments restrict urban poor to explore / access possible income and employment opportunities due to lack of mobility. The urban poor are then compelled to limit/ restrict their commuting pattern with regard to the needs like trips related to work, availing education or accessing key households needs. Access to affordable transport is crucial for the urban poor as it offers a method for financial, social and physical disconnection. Transportation systems are planned to commute individuals and merchandise from its origin to destination in a sustainable way through secured, affordable and rapid means. Some of the land based public transport modes in Johannesburg incorporate trains, busses, mini busses and taxis. The city of Johannesburg transport services lacks smart or integrated transport systems, especially in the Central Business District (CBD) where poor people have a higher rate of dependence on taxis compared with rich individuals. Transportation can play an exceptionally crucial part in reduction of poverty, because of its reciprocal interlinkages with economy and development and its effect poor people needs. The methodology used for this research is a mixed method that covers both qualitative and quantitative data based on information obtained from respondents through interviews, questionnaires and direct observation of various modes of transportation. Both primary and secondary research methods were used to collect data. The paper outlines the role of sustainable transport in terms of mobility, accessibility and affordability for the urban poor in Johannesburg and identifies the key issues/ challenges in sustainable transport for urban poor. The study highlights that the urban poor commuters have further opportunities to avail sustainable transport system which could be more accessible with reduced travel times and affordable.

## Keywords

Sustainable Transport, Accessibility, Mobility, Affordability, Sustainability, Urban Poor

## 1. INTRODUCTION

Transportation can play an exceptionally crucial part in reducing poverty, because of its reciprocal interlinkages with economic development and its effect on the needs of poor people. As indicated by Lau (2013) numerous issues with access to employment have their roots in the development of areas outside the conventional transport planning model for instance in the United States, spatial mismatch commuting issues occur because of the fact that job decentralization harms the low income inhabitants of inner cities. According to Kain (1968), the critical variables which are responsible for spatial mismatch includes: urban sprawl, housing segregation, exclusionary zoning, long and troublesome commutes.

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The urban poor living is often faced with numerous hardships which result in the restricted access to livelihood, secured housing and services and is often surrounded by violent and unhealthy environment with limited or no social protection mechanisms, access to health and education services (World Bank, 2002). The most widely recognized indicator of poverty in numerous cities especially in developing countries is the presence of slums and squatter settlements. As cities grow spatially poor people are compelled to live either in the inner city slums or on the urban outskirts. The spatial structure of urban areas frequently demonstrates centralization which is characterised by old and run down housing access on cheap rent. The other aspect observed is about the concentration around the urban fringe as a result of government resettlement programs or spontaneous settlements on account of urban renewal programme or forced evictions of unauthorized / illegal occupations (Faiz, 2011). Both the inner city and peripheral areas highlight the trends having deficient urban infrastructure and services or priority.

Some of the land based public transport modes in Johannesburg incorporate trains, busses, mini busses and taxis. In spite of the fact that the City of Johannesburg has different transport services according to Bethlehem (2013) the city of Johannesburg transport services lacks smart or integrated transport systems, especially in the CBD where poor people have a higher rate of metered taxis compared with rich individuals. Access to affordable and sustainable transport is crucial for the upliftment of urban poor as it offers a method for financial, social and physical disconnection. Sustainable access to public transport has various facets, for instance it may be physical in a sense that the user has to commute considerable distances to find suitable public transport to commute or it may be financially unaffordable or the transportation mode may have insufficient capacity (Sohail et al., 2006).

Poverty at city level is characterized by multidimensional problems which depends on the functional character of cities. According to Kaltheier (2002) the street beggars in Madras, the kiosk salesperson living in the Favelas in the hills of Rio de Janeiro and the café waiter in Buenos Aires living on the outskirts and supporting a family of five have many different monetary resources, but have poor access in common. According to Poswa (2008) in South Africa the urban poor are those who are unable to consume a basic quantity of clean water and those who are subject to unsanitary surroundings, lack the minimum energy requirements and have extremely limited mobility or communications beyond their immediate settlements.

Sustainable transport can be defined as a transport that is characterized by meeting commuters travel needs, brings economic development, and promotes sustainable affordability, community and institutional engagements, participation and service delivery (Stanley & Lucas, 2013). As outlined in the Brundtland Report (World Commission on Environment and Development, 1987) sustainable transport fulfils the requirements of present without sacrificing the resource utilisations by future generations

Urban poor commonly have limited access / ownership of private automobiles and therefore mostly are dependent on public transport for their commuting and travel (Sohail et al., 2006). This means that for the use of motorized automobiles the poor's modal choice is restricted to public transport only. "Therefore it is mostly the poor who are affected by the lack of sufficient and affordable public transport provision. Sometimes the very poorest of the urban poor may not even have access to public transport to meet their access and mobility needs" (Fouracre et al., 1999). The White Paper on National Transport Policy of 1996 and the Moving South Africa (MSA) of 1999 highlights the critical elements of provision of public transport in addressing mobility requirements of urban poor through policy and strategic framework recommendations.

According to Bethlehem (2013) the the public transport service levels in Johannesburg just like in other cities in developing countries is insufficient to meet user's needs. The severe inadequacy of the existing

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public transport service hardly meets the definition of a system and it also produces daily hardships for poor citizen's who live far from major centres of their work destination, commercial or social facilities (Bethlehem, 2013; CoJ, 2013; CoCT, 2006). The urban poor do not only have to put up with the poor standards of public transport services, they are also somewhat overstrained by the lengthy journey times as well as high distance associated with costs which have an unfavourable impact on the family income (Bethlehem, 2013). As it clear that public transport provision in the City of Johannesburg is insufficient and ineffective, the introduction of the Rea Vaya Bus Rapid Transit (BRT) system is a public transport initiative to solve public transport problems such as the rising car use, congestion, accessibility and poor mobility between the different parts of the city (CoJ, 2013; CoJ, 2012).

## **2. LITERATURE REVIEW**

The vicious cycle of motorization, urban sprawl and declining modal share of public transport are impacting on the mobility and accessibility patterns in big cities of the developing world (Gomide, 2008). Public transportation is intensely subsidized in many cities to guarantee access and mobility for needy people. In this way, cities are confronted with need to have the commuting fares very low, however in enabling such facility / service provision they sacrifice on transit quality and comfort. This compels certain class especially the middle class riders to purchase their own transport systems in the more prosperous countries which leads to the declining share of the public transport.

### **2.1 Definitions of urban poor**

The presence of urban poverty cannot be denied and exists in different forms of intensity, scale and is often measured or recognised in terms of standard of living conditions, income levels, and access to basic services and among others. The scale of urban poverty and the issues around it cannot be neglected and requires urban planners, policy and decision makers to focus on various approaches and solutions to reduce its impact on the poor. Poverty is characterized by a lack of income, which results in multiple forms of deficiencies and inability to afford basic goods and necessities. As a consequence communities may be excluded and marginalized from involving, engaging and participating in activities that are considered the norm within societies (Mtantato, 2011). Poverty is a multidimensional problem which is observed in different ways depending on the conditions in the cities and issues surroing them. According to Kaltheier (2002) the urban poor's common issues / characteristics are in form of:

- Poor access to secure income sources
- Poor access to health facilities (doctors, midwives, and hospitals)
- Poor access to educational institutions (primary and secondary modern schools, vocational training institutions and higher education institutions)
- Poor access to safe accommodation
- Poor access to social policy and other social-cultural institutions enabling them to participate in public affairs.

Although the different people mentioned above by Kaltheier have different financial resources the fact that they all have poor access to basic needs and services because of the amount of income they get this makes them be categorized as the urban poor.

According to Poswa (2008) in South Africa urban poor are lack access to adequate basic quantity of potable / drinking water, sanitation, minimum energy requirements and have limited access to mobility / public transportation. Due to rapid urbanization, the city migration in South Africa is witnessing and experiencing increasing population growth. The poor are continued to get attracted by greater development, better living conditions and more resource accessibility. Howveer the urban poor settlements are highly vulnerable

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settlements and the communities are often seen as under-served groups with multitude of problems and basic access in terms of health, water and sanitation, electricity and living space.

## **2.2 Sustainable transport**

According to Sheng Han (2010) “an increasing level of car use leads to greater mobility and it has been indirectly assumed for years that there is a close link between mobility and wealth. Motorization is not only a reflection and outcome of wealth accumulation but it is also a catalyst to economic growth through vehicle consumption and production. These links can have an impact on urban planning objective if national policy encourages motorization. The motorization represents a trend of unsustainable development since it involves an inefficient use of resources and produces environmental pollution”. According to Low (2003:22) and Barter (2008:98) the mobility does not have similar characteristics and does not necessarily address the issues for various end users. The sustainable transport requires more balanced approaches towards its multiple dimensions of development.

According to WCED (1987) sustainable development can be defined as “a process of change in which exploitation of technological investment and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations”. The most important elements of sustainable development are satisfaction of human needs now and in the future so it is not only about the life today but also about the life to come. According to Black (2000) sustainable transport can be defined as “satisfying current transport and mobility needs without compromising the ability of future generations to meet these needs”. According to Transport Research Board (2008:4) “sustainable transport allows the basic access and development needs of individuals, companies and society to be met safely and in a manner consistent with human, ecosystem, and health and promotes equity within and between successive generations. Sustainable transport is affordable, operates fairly and efficiently, offers a choice of transport mode and supports a competitive economy as well as balanced regional development”.

A suitable framework for application in sustainable transportation is to consider the three main elements or ‘pillars’ of sustainable development namely “economic development, social development and environmental protection” (UN General Assembly, 2005:11). In Johannesburg the characteristics of sustainable transportation to accommodate pedestrians as well as public transport vehicles includes critical elements but not limited to density, land use pattern, pattern of urban road network, street designs, and among others. There is an increasing shift from various modes of transport to bus based system and is attributed due to rational investments in such systems (Mackett & Edwards, 1996). According to Flyvbjerg et al. (2004) the shift observed is possibly linked with the recent investments in Bus Rapid Transit System (BRTS) as it is less risky as compared to other forms in terms of cost, overruns and patronage, for example in Johannesburg the Rea Vaya is cheaper than the Gautrain. X`

## **2.3 Sustainable transport principles**

### **2.3.1 Access**

Accessibility is a dominant concept to the sustainable transport argument. According to Munier (2007) transport access is the crucial objective of practically all commuting and therefore it is key influence for trip generation and distance. According to Littman (2008) access is the measure of ease whereby destinations can be reached; Vasconcellos (2001) defines access as a great measure of flexibility in selecting mode of transportation to specific destinations. Munier (2007) simply defines accessibility as a potential for people to interact. Therefore, access can be concluded as an element of a given good, service, activity or product and it can either be good in such a way that it can be reachable and poor in such a way that it can be unreachable.

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Most of the time accessibility is often confused with mobility, mobility is the ability to move and it is largely a product of income and physical health (Munier, 2007; Vasconcellos, 2001). It is unfortunate that the current transportation planning tend to be in favour of mobility as a measure for moulding transport efficiency and planning (Munier, 2007), which result in an urban spatial arrangement that benefits the middle to high income, healthy citizens at the expense of the underprivileged and disabled by propagating the use of private cars and encouraging urban sprawl (Herala, 2003; Vasconcellos, 2001). Non-motorised transportation modes become unrealistic in such areas because travel distances become long and travel conditions become dangerous or risky.

Since majority of cheap and unoccupied land is located on the periphery, maximum of poor communities will also locate in these areas (DoT, 2007). This aspect together with the sprawling car oriented city efficiently cuts off poor communities' ability to access services and economic opportunities around the city. Even in cities well planned with public transport; urban sprawl persuades trips, which are unreasonable to the urban poor in relation to cost and time. However, sometimes middle and high-income groups suffer the same issue. According to Newman and Kenworthy (1991) private automobiles are the fastest and popular land based modes of transport, and private automobiles causes increased levels of traffic congestion and energy use.

Transportation planning needs to be informed by principles that can integrate transport and land use planning (Curtis, 2008). According to Straatmeier (2008) the aim of transportation planning should be to focus on the connectivity of urban areas and improvement of the quality of life, rather than to focus on predictions regarding future congestion levels. From the abovementioned information, access as a principle of sustainable transportation can be defined as: A process that maintains and encourages the practicality of various transportation options and promotes access rather than mere mobility.

### 2.3.2 Social Equity

Transportation systems just like other services providers to people tend to be a reflection of the needs and wants of the majority of its client base. Majority of automobiles on the roads today are private cars, the transportation choice of both the middle and high class. The middle and high class represents the majority of taxpayers globally, therefore putting a strong influence on the public decision-making where transportation planning is concerned. Therefore, the majority of the global transportation systems serve the needs of a privileged few (Shaw, 1998).

It is unfortunate that the transportation systems do not only discriminate against the urban poor, they also target specific groups within societies. Discrimination based on gender within transport is a global problem and it is also a major contributor to transport inequality in many ways. Women have different transport needs as opposed to man, because of their "double burden" of running both the household and a family, and having a regular job they are often disadvantaged in terms of the necessity to access distant locations, using transportation during off-peak times and traveling for long (Harrison et al., 2003). Mostly, very few females hold drivers licenses than men and households that are headed by single parent women normally earn less than households that are headed by single parent male, therefor this leaves women with less income available for them to travel (Harrison et al., 2003). According to Transport Research Board (2008) women report high levels of fear of crime in public spaces and when using public transportation especially during off peak times. Therefore, travel patterns of women are regularly affected by fear, causing them to be biased against the public transportation systems. This is relevant in South Africa where majority of low-income women are confined to use the public transport.

Disability is another factor that is an example of major marginalization in the transport systems (Casas, 2007). According to Casas (2007:2) disability can be defined as having an impairment, which include having difficulties standing or walking, being in a wheelchair or using a cane, being deaf or blind, or being

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mentally ill. Disabilities disadvantage public transport users because disabled passengers are dependent on public transport and most of the time it becomes difficult for them to use public transport due to poor designs. Poor designs do not only refer to busses, taxis and trains it also refers to transportation planning and infrastructure. The effect of age structure is closely related to disability on transport equity. According to Lucas (2006) old people make few trips by car especially after the age of 60 and they will eventually become unable to drive and rely on public transport. If there is a lack of effective public transport, the older people will be at a position of transport discrimination.

### 2.3.3 Safety & Security

Safety is the vulnerability of human to traffic accidents. According to World Bank (2002:65) there is an estimation by WHO that 1.171 million people were killed in 1999 in road accidents and 25 to 30 million were injured in road accidents worldwide. Majority of the victims are cyclists and pedestrians. According to Whitelegg and Haq (2003:15) about 1.5 billion people are exposed to air pollution levels which exceeds WHO recommended levels that cause approximately 400 000 deaths each year globally. Transportation noise is a major source of noise pollution in urban area, which can lead to hearing loss, learning disability and high blood pressure. According to standards of WHO noise level must not surpass 55 decibels (dB), however cities in developing countries experience approximately 75 to 80 (dB) especially along busy roads (Whitelegg & Haq, 2003). According to UITP (2003:3) 20% of Europeans are exposed to high noise pollution levels, this indicates that noise pollution is not a challenge in the developing countries only.

Personal security while using public transportation facilities is an increasing challenge globally (World Bank, 2002). Important travel needs such as work and health care, forces people to place their lives at risk of possible harm with very little ability to reduce their exposure. World Bank categorizes transport related security risks into four categories which are theft by stealth, theft by force, sexual harassment and, political and social violence.

### 2.3.4 Affordability

Affordability of transport is influenced by many characteristics, some of which are beyond the influence of local planning like inflation rate and increase of fuel price, nonetheless majority of the factors are products of local planning. According to Littman (2008:3) the affordability is often influenced by factors such as daily household and work responsibilities, Special needs, physical and mental disability. According to Harrison et al. (2003) residential location can be added to Littman's list because settlements located on the periphery causes longer travel distances in South Africa (average of 20 km) than in other countries (average of 11km in Europe and 9km in Asian countries). This has negative financial consequences because households on the periphery end up spending almost half of their salary on transport. From the above mentioned it is clear that there is a relationship between affordability and the principle of access mentioned previously.

Transport affordability is linked to methods that is being adopted by the government to recover expenses related to transport to make transport affordable for commuting. If the government recovered costs by tax increases or subsidizing by reducing fuel costs, transport affordability may increase but this is done through other means of cross subsidizing (Littman, 2008; Munier, 2007). The affordability can be summarized as: transport strategies and services which are affordable to the low income groups taking into consideration the transport costs according to income and mode of transport utilized.

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### **3. OBJECTIVES /RESEARCH QUESTIONS**

- Identify the areas dominant in low income/ urban poor settlements.
- Identify and assess public transport systems available to urban poor in Johannesburg.
- Investigate and assess mobility and affordability of community spending on public transport system by urban poor.
- Identify key issues/challenges in sustainable transport for urban poor.

### **4. APPROACH & METHODOLOGY**

#### **4.1 Approach & Methodology**

Methodology is a demonstration of the different procedures and strategies that were used in identifying different sources used. The methodology used for this research is a mixed method that covers both qualitative and quantitative data. This research is based on information obtained from respondents through interviews, questionnaires, generally people's own written or spoken words and direct observation of various modes of transportation. This research also involved field survey of the CBD area as taxis, BRT and Metro busses have routes linkages from commercial to residential communities. Both primary and secondary research methods will be used to collect data. The study also drew on statistical and other written evidence, such as the Statistics South Africa, government policies regarding transportation and the increasing transportation research literature in South Africa. Using the mixed approach is convenient and effective for this research because it evaluates the perception of people and a statistical analysis of the people using public transport almost everyday.

There are various instruments that can be used to collect data from the respondents. Below is a list of data-collection methods by Maree (2007: 156): Group administration questionnaire: The data most often used is group administration of questionnaires where the researcher waits while a whole group of respondents complete questionnaires; Postal survey: Questionnaires are mailed to respondents who have to read instructions and answer the questions; Telephone surveys: The respondents are phoned by interviewers, who ask the questions and record the answers; Face-to-face survey: Well-trained interviewers visit the respondents, ask the questions and record the answers. This study applied a face-to-face survey. The researcher scheduled individual meetings with interviewees. In this study a questionnaire was used as an instrument to collect data and assist the researcher to structure the interviews. In face-to-face survey interviews the researcher was able to ask for more answers from the interviewees to further explain their answers. This method provided the researcher with the opportunity of further explaining the questions in the event where an interviewee was not clear about the meaning, and the researcher was able to go deeper into the answers provided by the interviewee to get an understanding beyond the logic of their answers.

#### **4.2 Study Area**

The Central Business District has always been the central area of Johannesburg since its commencement. Its location in the centre of the city as well as the careful planning has led it to be selected as the best place for residential and commercial development, particularly during the economically prosperous 1960s and 1970s. Numerous large commercial produces were completed during this era, such as the Carlton Centre, which is still one of the tallest buildings in South Africa and the African continent. In early 2000s transportation systems and patterns in South Africa were created for private car use this meant that the poor

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population groups who could not afford cars depended on public transportation such as trains and taxis (Bethlehem, 2013).

This research study area focused on Johannesburg CBD, as currently the BRT and other modes of transport are in operation to some parts of the CBD and surrounding townships. According to the (COJ IDP, 2013:14) Johannesburg is home to 4.4 million people, and it is approximately 16645 km<sup>2</sup> in extent. Furthermore the CBD covers 1.09km<sup>2</sup> in extent and road coverage of 82km to 94km. According to Statistics South Africa (2011) there are about 1 434 856 households in the CoJ municipality with an average household size of 2.8 people per household, 64.7 households have piped water, 26.9% have access to water in their yard and about 1.4% of households do not have access to piped water. There is about 2 261 490 economically active people in CoJ, 25% are unemployed and 31.5% is unemployed youth between the ages of 15 to 35 years (Stats SA, 2011).

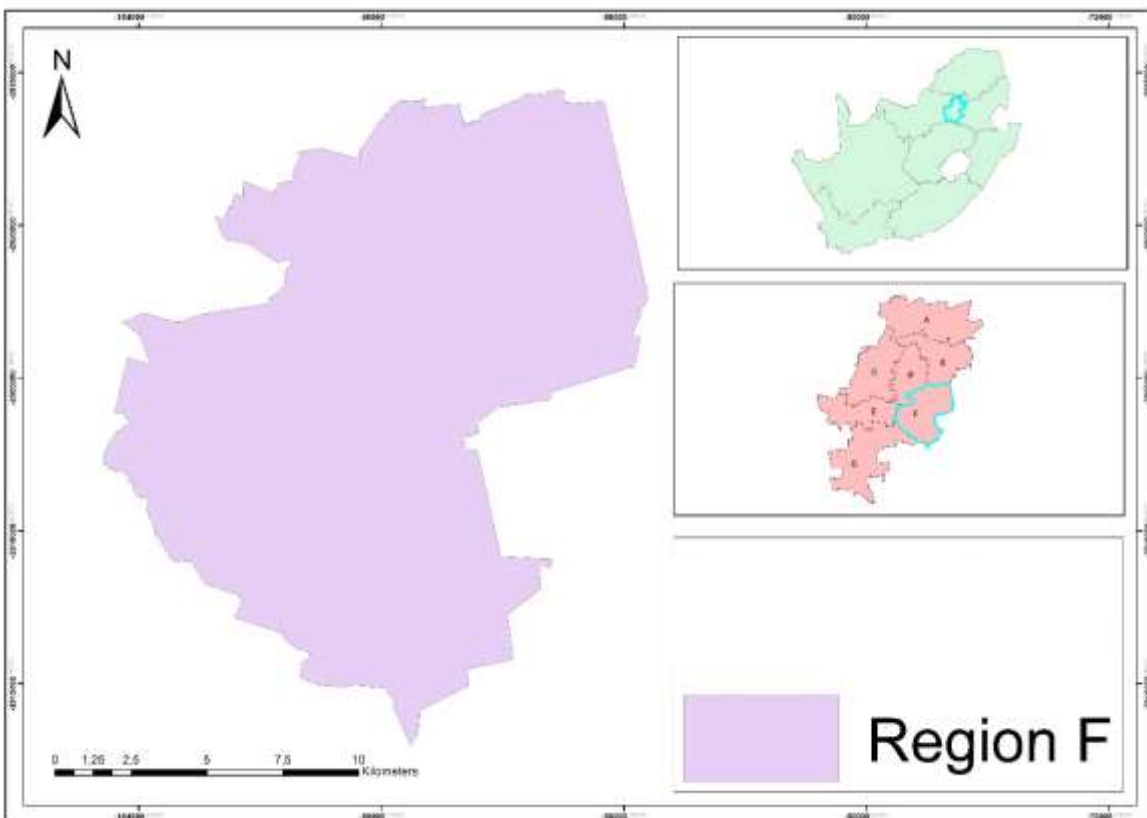


Figure 1: Study Area

## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

### 5.1 Demographics

Sixty questionnaires were distributed to both commuters of public transport and residents in the Johannesburg CBD, from the 60 participants that took part in the survey 67% were female and 33% male. About 19% of the participants were married, 27% were single and the rest were divorced, widowed or separated. Black Africans were the majority participants with 45% followed by Indians/Asians with 39%

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and coloureds with 16% unfortunately there were no white participants in this survey. About 4% of the participants were younger than 18 years, 44% were between the ages of 19 to 35, 30% were between the ages of 36-55 and 22% were older than 55 years. Most of the participants were employed (87%) because one of the many reasons that people go to the CBD is for employment and they earn approximately R5 000 per month because they mainly work in the informal trading business sector or employed as sales people. Education is regarded as the most important tool that no one can take from anyone and most of the time when you are looking for jobs education background is required and sometimes work experience, but in this case not everyone who was employed had an academic background especially people involved in informal trading. Figure 3 shows the relationship between people who had no education, only primary education, secondary education, grade 12 and higher education. Although it is possible to get a job without having an educational background most of the people who are employed are people with higher education which make up about 80% of this survey.

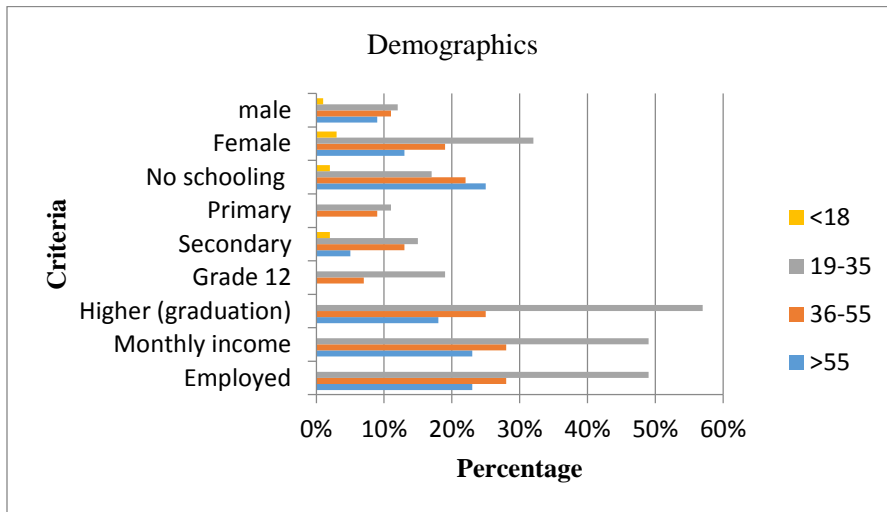


Figure 2: Demographics of respondents in Johannesburg CBD

## 5.2 Accessibility

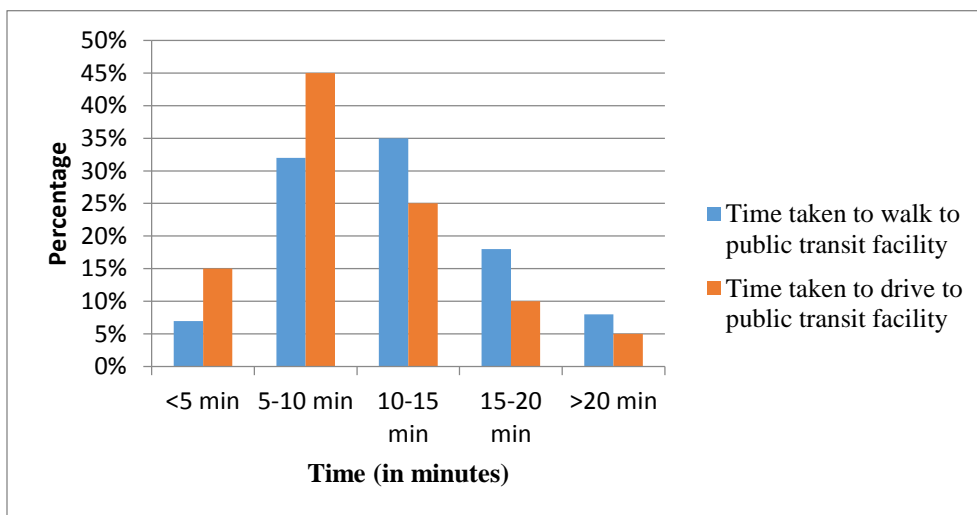


Figure 2: Time taken to reach public transit facility

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The above figure shows that commuters are likely to spend more time (10-15 minutes) to walk to the designated public transport facilities and they tend to spend less time (5-10minutes) if they drive to the public transit facilities. In this case, the commuters spending more time to walk to the public transport facilities are the ones affected by the poor services of public transportation because public transport services are to some extent difficult and time consuming for them to access, therefore their total commuting distances becomes longer.

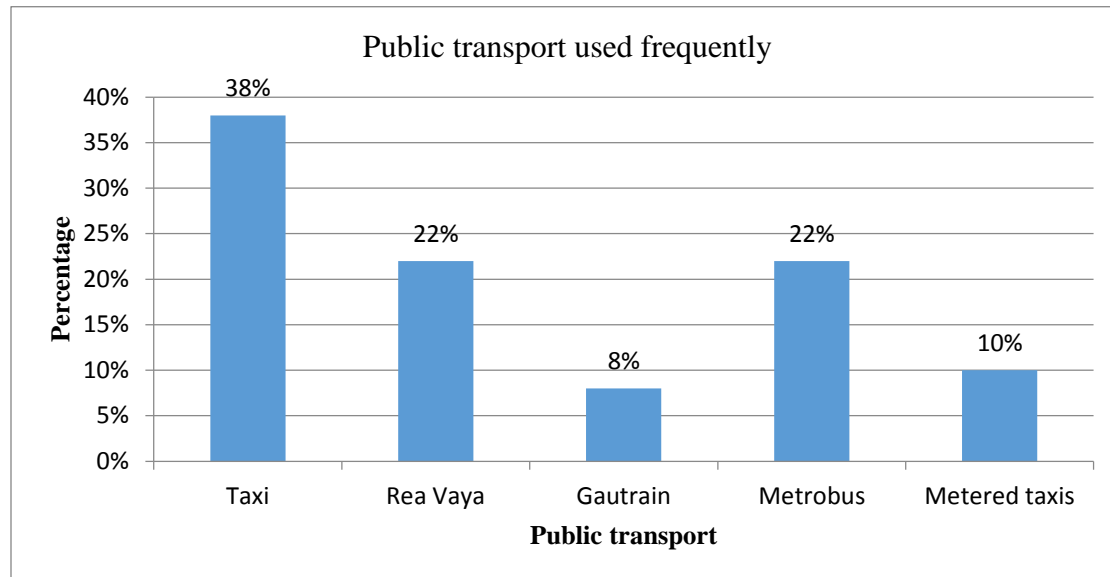


Figure 3: Public transport used frequently

Sometimes commuters do not have a choice in terms of the type of public transport they use but mostly it is based on the public transport in close proximity, this is why commuters believe that the transportation sector still has a long way to go in terms of improving the transportation system to make sure that commuters have a choice regarding which public transport they want to use instead of being compelled to use a specific public transport because of unchangeable circumstances such as accessibility. Figure 3 indicates that 38% of the respondents use taxis because they are easily accessible and convenient, about 22% use the Rea Vaya and Metrobus because they are convenient and safe but most of them are not easily accessible for example people have to walk long distances to get to the Rea Vaya terminals or bus stops especially in areas located on the periphery and sometimes you have to connect a few times approximately three times before you can get to your desired location, Metered taxis are mostly used during emergencies and after peak hours were no other transport is available this is because they are highly priced for example a metered taxi from Johannesburg park station to Doorfontein is R80,00 while a normal taxi is R8,00. The least used public transport is the Gautrain (8%) this is because the Gautrain is costly and it only covers a few areas so people would rather use the Metrorail instead of Gautrain because Metrorail accommodates every class and Gautrain accommodates the middle and high income classes.

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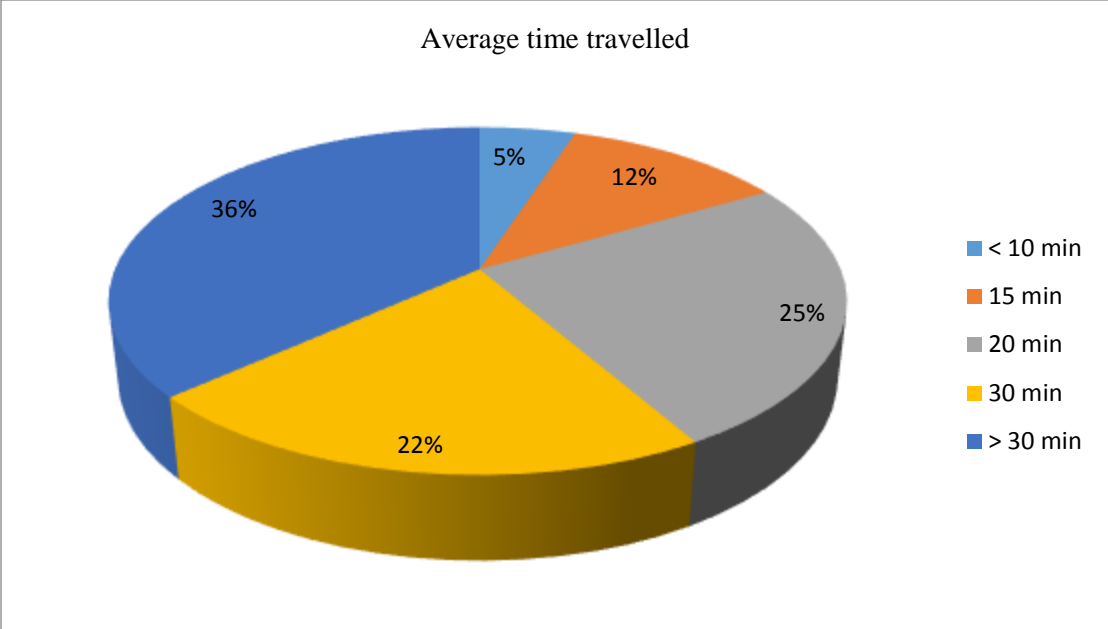


Figure 4: Average time travelled from home to work/School

The figure above shows that majority of the commuters (36%) travel more than 30 minutes from home to work or school and this means they spend more money on public transport because the longer you take to travel the more money you have to pay. On the other hand this means that the commuters who spend less time traveling experience faster public transport trips and services, and they also spend less money on public transport. The people who take less time traveling to their workplace or school are the people who live close to public transport facilities and workplaces.

**5.3 Affordability**

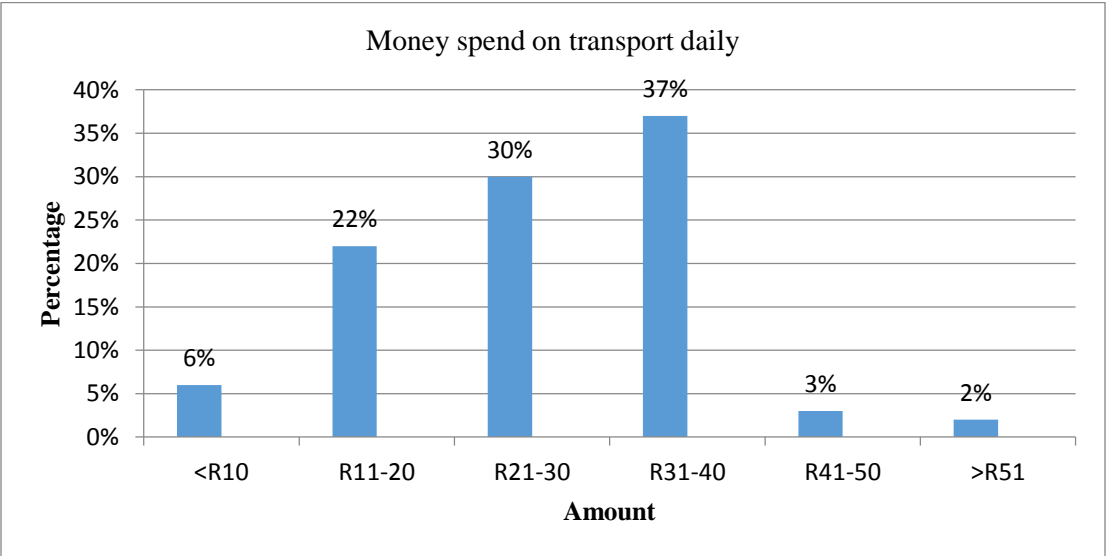


Figure 5: Money spend on transportation daily

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Economic concerns are a major aspect in an individual’s life, therefore this study also determined the income of the respondents, the source of the income and how they use such income. The intention was to evaluate not only the impact on the social life but also the economic life of individuals. Figure 5 indicates that 37% of the respondents uses between R31-40, 30% uses about R21-30 this includes both trips from home to work/school and from work/school to home. The amount of money they spend also differ based of the type of transportation they use in this case since most respondents use the taxi then the dominant transportation will be the taxis and it also varies on the distance travelled .

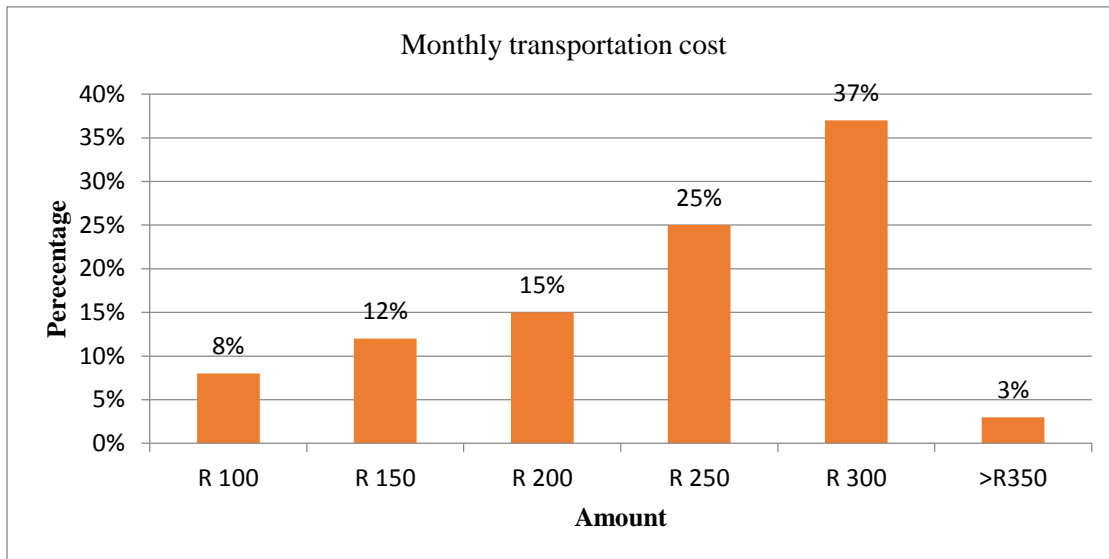


Figure 6: Monthly transportation cost

Figure 6 indicates that 37% of the respondents use approximately R300 from home to work/school and from work/school. This is because most of the respondents use taxis and taxis are often priced higher than buses such as the BRT, BRTs are cheaper than taxis and other public transportations because they are subsidized by the government to make sure that even the poorest of the poor can afford to move from home to work. Most of the respondents only calculated the fixed amount they use to travel from home to work only and other activities such shopping and emergencies are not calculated, if they were to be added then this amount was going to be higher.

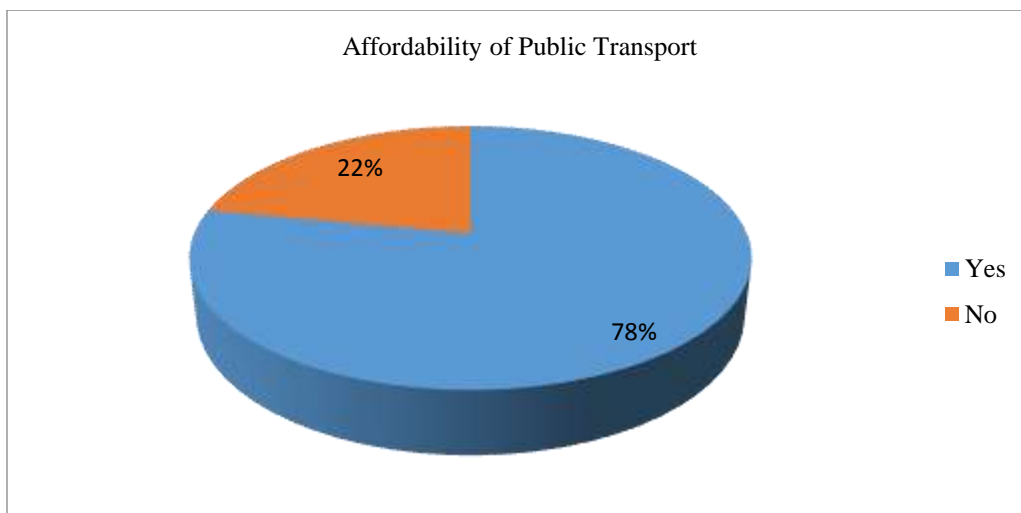


Figure 7: Affordability of public transport

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78% of the respondents believe that the public transport is not affordable and they are forced to limit their travel because if they don't budget properly for every month then somehow by the end of the month money for transport will be short which will cause them to be absent at work until they receive their monthly income. It was also outlined that affordable transportation such as the Rea Vaya are too far from where they live so sometimes if you want to use it you have to wake up very early to make sure that you can make it to work on time and after work sometimes it is not safe to use it because it is dark especially in winter. The remaining 22% that makes up the survey believe that public transport is affordable as opposed to private cars because petrol is too expensive and even people who own private cars find themselves using public transport because of the costs associated with petrol. Most of the people who believe that public transport is cheap live close to their workplace and they also don't have to take more than one transport to get to work.

## 5.4 Mobility

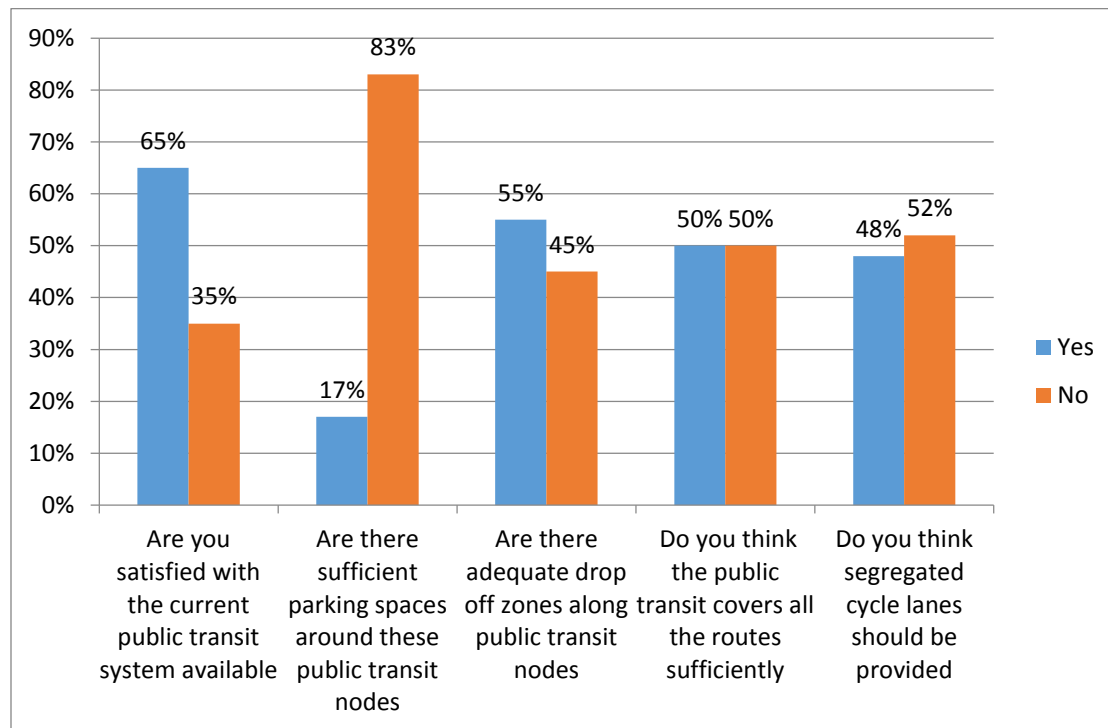


Figure 8: Mobility feedback

Mobility is an important element when it comes to public transportation, figure 8 shows that 65% of the respondents are not satisfied with the current public transit system available and this is because they often have to walk long distances before they can access them and some are forced to use old run down transportation which is uncomfortable especially when travelling long distances. 55% agree that there is not enough drop off zones along public transit nodes and 50% don't think that the public transit covers all routes sufficiently hence some cannot use the Rea Vaya or Metrobus but use taxis instead. 52% agree that segregated cycle lanes should be provided in the CBD because people who live in areas around the CBD would use bicycles instead of public transportation or private cars which will result in less traffic congestion.

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## 5.5 Safety and security

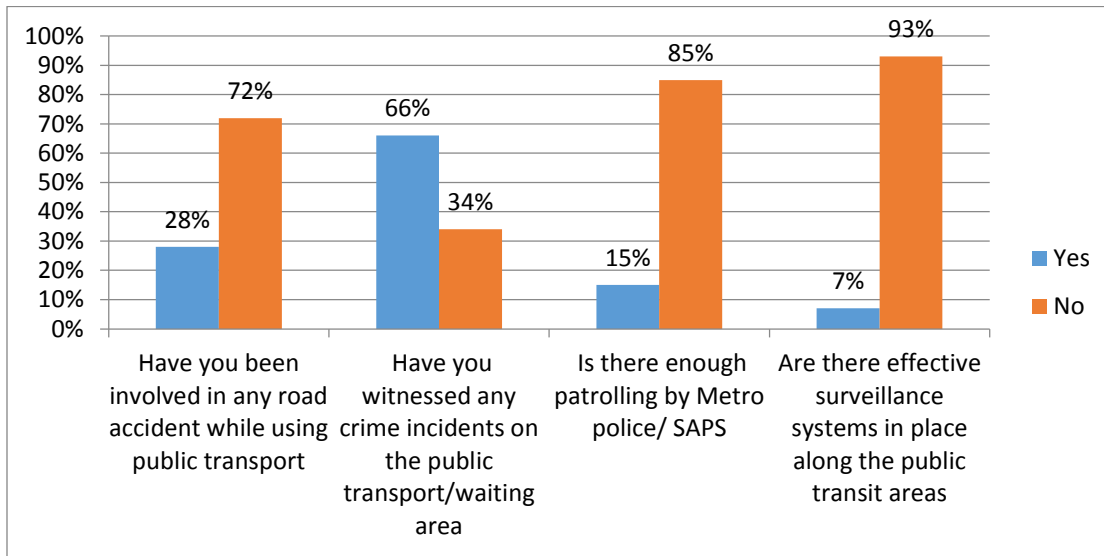


Figure 9: Safety and security feedback

One of the reasons why middle class people do not use public transport is because they believe that public transport is not safe but for the urban poor it's a different situation because they do not have a choice since they cannot afford private cars. Figure 9 shows that 66% of the respondents have been involved in crime incidents on the public transport or public transport waiting areas this is mainly because there is not enough patrolling by Metro police and SAPS around public transportation waiting areas. 93% of the respondents also agreed that there are no effective surveillance systems in place along public transport areas this is why a lot of people get mugged at public transport drop off zones and taxi ranks. From this survey it can be concluded that indeed public transport is not always safe and people will opt for a safer transportation if they have a choice.

## 5.6 Quality of life & Environmental conservation

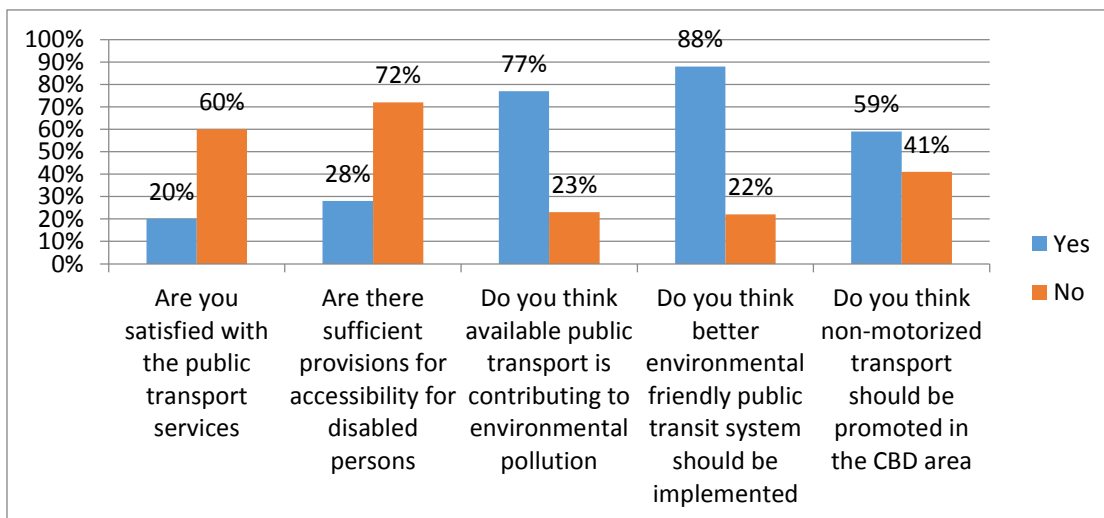


Figure 10: Quality of life and environmental challenges caused by transportation

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Many environmental issues are caused by pollution through automobiles especially in cities where people prefer using private cars instead of public transportation. However, cities come up with ways to solve these issues by introducing sustainable transportation and non-motorized transportation. Figure 10 shows that 77% of the respondents think that public transportation is contributing to the environmental pollution, 88% agree that better environmental friendly public transport should be implemented in the CBD, 59% agree that non-motorized transportation should be promoted in the CBD and 41% doesn't believe that non-motorized transport should be introduced in the CBD because they believe that the CBD is not a safe place and most of the drivers are not cautious when driving and this is mostly the taxi drivers, but if dedicated lines such as cycling lanes are demarcated for the non-motorised transport then maybe non-motorised transport is a solution for the traffic congestion in the CBD which causes pollution and other environmental challenges.

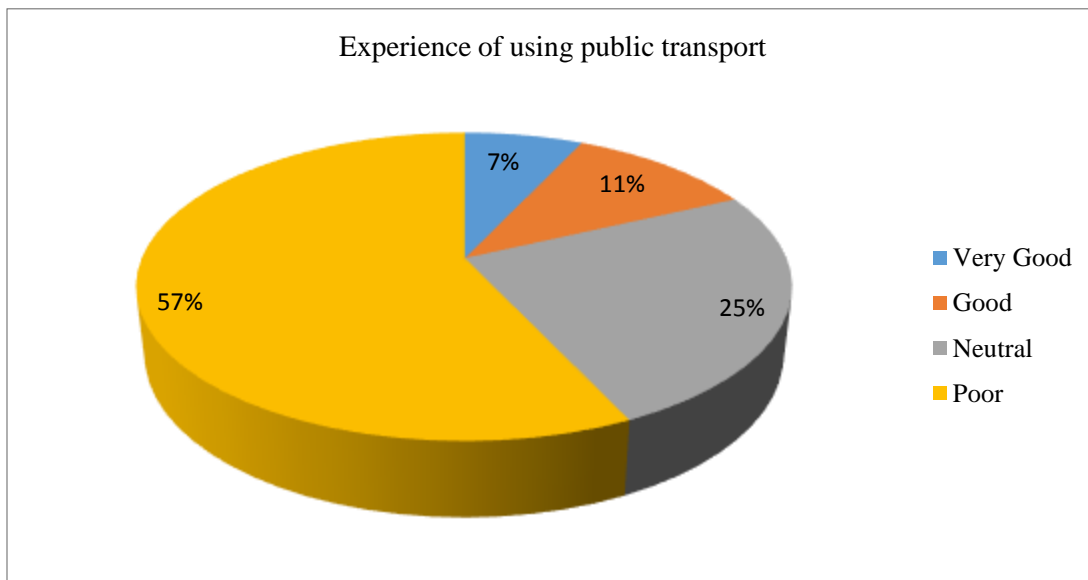


Figure 11: Experience using public transport

The above figure shows the rating of public transportation by the respondents, the rating will differ according to public transportation but majority (57%) rated the experience as poor because of the situations they face at the specific public transport individually, 25% rated the experience neutral, 11% Good and 7% very good because they use either the Rea vava, Metrobus or the Gautrain which are not really bad as compared to taxis

### 5.7 Social background and living conditions

Table 1: Areas or origin and current area

	Area/Province	Percentage
Area/province of origin	Johannesburg	19%
	Other provinces	47%
	Foreign countries	34%
Current area in Johannesburg	Soweto	23%
	Alexandra	15%
	Diespsloot	43%
	CBD	13%
	Other	6%

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The above table shows the areas of origin of the respondents and the current area they live in Johannesburg. Majority of the respondents originate from other provinces in South Africa making up 47% of the survey, 34% originate from foreign countries such as China and India, and only 19% originate from Johannesburg this is because Johannesburg is the economic hub of South Africa so many people leave their province to search for a better life in Johannesburg. Majority of the respondents live in informal settlements such as Diespsloot (43%) and Alexandra (15%). Respondents mentioned that the disadvantages of living in their areas are lack of services and facilities such as water and having to travel long distances before they can catch public transportation. Some of the advantages mentioned are that they don't have to pay rent and some get to live in low cost houses instead of shacks.

## 5.8 Observations



Plate 1: Rea Vaya Terminal

Plate 1 shows a Rea Vaya terminal in the Johannesburg CBD. This is one of the safest drop off zones for public transport because it is enclosed and only passengers or people who have access cards can enter this premises. There are a lot of reports of people experiencing crime situations inside the Rea Vaya terminals but rather they only experience them when they leave this premises to their respective places. However not all Rea Vaya drop off zones are enclosed terminals like the one in figure 14, some drop off zones are just bus stops with no shelter to protect commuters from unfavourable weather conditions.

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Plate 2: Different modes of transportation in the Johannesburg CBD

Plate 2 shows a functional mobility pattern and an integrative mobility between taxis and private vehicles. Some streets in the CBD are too small therefore there are no dedicated lanes for Rea Vaya, this means that the Rea Vaya has to share lanes with other modes of transport which creates congestion especially during peak hours where everyone is rushing to get home. The above picture was taken during off peak hours where only a few vehicles use the road because people are still at their workplaces or schools. Less accidents happen during off peak hours as opposed to during peak hours because only a few people travel during off peak hours and congestion is less.

## **6. RESEARCH CONTRIBUTION**

Sustainable transport studies have often focus on policy and among other constraints, however the broader contexts of analysis with regard to institutional and end user dynamics especially around urban poor are discussed with limited contexts. The research highlights that not all public transportations are beneficial to the urban poor in the area of mobility, accessibility and affordability. However, the success of public transport in primarily delivering benefits to the urban poor is contingent upon adopting appropriate measures to rationalize the public transportation system. The paper contributes in these dimensions and provides insights from Johannesburg on regarding sustainable transport for urban poor.

## **7. RESEARCH LIMITATIONS**

The study is limited to research around CBD area of Johannesburg and provides insights from selected regions of the city and is influenced / limited to the suburbs connecting the CBD area. There may be broader issues with regard to other regions of the city which may not have been covered as part of the research focused on CBD.

## **8. DISCUSSION & CONCLUDING REMARKS**

The fragmented and incoherently institutional framework within which the increasingly ineffective provision of public transport occurs; for example, service regulation, planning and infrastructure provision responsibilities remain fragmented across the three spheres of government and subsequently the planning and provision of modal integration to improve passenger choice and service levels will also remain difficult to achieve. Institutional fragmentation of responsibilities needs to be sorted to make transportation planning

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an integrated task.

As mentioned in the literature review, affordability is an important factor mainly relevant for the provision of public transport services to the urban poor. As the urban poor live far from major centres of employment, higher order commercial and social facilities and would therefore face the highest distance-related transport fare costs, it is recommended that the experimental flat fare system be maintained instead of changing to initially proposed distance based fare system. According to Wright (2004) flat fare systems can be a tool to ensure greater social equity within public transport services.

Routing is very important for public transportation. It is only a more rationalized routing structure that can mean shorter travel distances and much less in vehicle travel times. Therefore, in order, to ascertain the best means of improving route networks for public transportations such as BRTs and Metrobus to benefit the poor commuters it is recommended that the routing structure be revised and rationalized to make in- vehicle travel times further shorter, particularly for the poor commuters who face the longest commuting distances and times.

## 9. REFERENCES

- Barter, P. 2008. *Singapore's urban transport: sustainability by design or necessity?* Dordrecht: Springer.
- Bethlehem, L. 2013. A new dynamic urban regeneration in the Johannesburg CBD, *The Journal of the Helen Suzman foundation*, 69, 17-24.
- Black, W.R. 2000. *Towards a measure of transportation sustainability*, Washington D,C: Transportation Research Board.
- City of Cape Town. 2006. *Integrated Transport Plan (ITP) for the City of Cape Town (2006 to 2011)*, Cape Town: City of Cape Town.
- City of Cape Town. 2008. *Putting policy into practice*, Cape Town: City of Cape Town.
- City of Johannesburg. 2012. *2012/16 Integrated Development Plan (IDP)*, Johannesburg: City of Johannesburg.
- City of Johannesburg. 2013. *Strategic Integrated Transport Plan Framework for the city of Joburg*, Johannesburg: City of Johannesburg.
- City of Johannesburg. 2003. *City of Johannesburg: Spatial Development Framework, a growth management approach*. Johannesburg: City of Johannesburg.
- Curtis, C. 2008. Planning for sustainable accessibility: the implementation challenge, *Transport Policy*, 15, 104-112.
- Department of Transport. 2007. *Public transport strategy*, Johannesburg: National Department of Transport.
- Faiz, A. 2011. Transportation and the urban poor, *ITE Journal*, 13, 40-43.
- Flyvbjerg, B., Holm, M.K.S. & Buhl, S.L. 2004. What causes cost overrun in transport infrastructure projects? *Transport Reviews*, 24(1), 71-88.

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Fouracre, A., Astrop, A. & Maunder, D.A.C. 1999. *Accessibility for the urban poor*. Unpublished paper.
- Gomide, A. 2008. *Mobility and the urban poor, urban age*, London: London school of economics.
- Harrison, P., Huchzemeyer, M & Mayekiso, M. (eds.). 2003. *Confronting fragmentation: Housing and urban development in a democratizing society*. Cape Town: University of Cape Town Press.
- Herala, N. 2003. Regulating traffic with Land use Planning, *Sustainable development*, 11, 91-102.
- Kain, J.F. 1968. Housing segregation, Negro employment and metropolitan decentralization. *The Quarterly Journal of Economics*, 82, 175-197.
- Kaltheier, R.M. 2002. *Urban transport and poverty in developing countries, analysis and options for transport policy and planning*, Germany: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.
- Lau, J.C. 2013. Sustainable urban transport planning and the commuting patterns of poor workers in a historic inner city in Guangzhou, China, *Habitat international*, 39, 119-127.
- Littman, T. 2008. *Evaluating transport affordability*, Victoria: Victoria Transport Policy Institute.
- Low, N. 2003. *Is urban transport sustainable?* New York: Palgrave Macmillan.
- Lucas, K. 2006. Providing transport for social inclusion within a framework for environmental justice in the UK, *Transportation Research*, 40, 801-809.
- Mackett, R.L. & Edwards, M. 1996. An expert system to advice on urban public transport technologies, *Computers, Environment and Urban Systems*, 20, 261-273.
- Maree, K. 2007. *First steps in research*, South Africa: Van Schaik Publishers.
- Mtantato, S. 2011. *Chapter 11: Impact of current land use patterns on public transport and human settlements*, Midrand: Financial and Fiscal commission.
- Munier, N. (ed). 2007. *Handbook on urban sustainability*, Dordrecht: Springer.
- Newman, P. & Kenworthy, J.R. 1991. *Cities and automobile dependence*, England: Gower publishing Limited.
- Poswa, N. 2008. *Characteristics of households living in poverty*, Cape Town: City of Cape Town.
- Sheng-Han, S. 2010. Managing motorization in sustainable transport planning: the Singapore experience, *Journal of Transport Geography*, 18, 314-321.
- Sohail, M., Mauder, D.A.C. & Cavill, S. 2006. Effective regulation for sustainable public transport in developing countries. *Transport Policy*, 12, 177-190.
- Stanley, J. & Lucas, K. 2013. *Delivering Sustainable Public Transport, 13th International Conference on Competition and Ownership in Land Passenger Transport (Thredbo)*, Oxford, September 2013.

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Transportation Research Board. 2008. *Sustainable Transport Indicators: A Recommended Programme to Define a Standard Set of Indicators for Sustainable Transportation Planning*, Transportation Research Board.

UITP. 2003. *Ticket to the Future: Three Stops to Sustainable Mobility*, UITP.

Vasconcellos, E.V. 2001. *Urban Transport, Environment and Equity: The Case for Developing Countries*, London: Earthscan Publications Ltd.

Whitelegg, J. & Haq, G. (eds). 2003. *Earthscan Reader in World Transport Policy and Practice*, London: Earthscan Publications Ltd.

World Bank. 2002. *Cities on the Move: A World Bank Urban Transport Strategy Review*, Washington DC: World Bank.

World Commission on Environment and Development. 1987. *Our Common Future, World Commission on Environment and Development*, USA: Oxford University Press.

Wright, L. 2004. *Bus Rapid Transit – Sustainable Transport: A Source Book for Policy-Makers in Developing Cities*, Module 3b, Eschborn, Germany.

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## **Barriers Experienced by the City of Windhoek in Facilitating Land Development Applications under the Windhoek Town Planning Scheme of 1976 in Klein Windhoek and Katutura Suburbs**

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### **Abstract**

The City of Windhoek, as with all Third World cities, is experiencing a tremendous influx of people from rural areas, seeking employment and the promise of a better life. This influx results in the need for resources in the city to be used in a sustainable way. Considering the fact that Windhoek is experiencing rapid urbanization, which keeps increasing as the year's progress, the utilisation of land resources in relation to the number of people currently residing in the city and the area of land available for human use is under pressure. The primary purpose of this study was to explore the barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme of 1976. The study adopted a qualitative case study method, conducted in Klein Windhoek and Katutura suburbs of the City of Windhoek. Consequently, semi-structured interviews with town and regional planners were conducted, supported by direct observations and content analysis of official reports, policies and legislation of City of Windhoek. The respondents were selected using the purposive sampling method, its usefulness enabled the researcher to identify key respondents deliberately by virtue of their knowledge and experience. The study revealed four major barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme in Klein Windhoek and Katutura respectively. These included the shortage of staff members in land use management within the City of Windhoek. City of Windhoek is experiencing a shortage of staff members in its strategic departments which results in poor enforcement of its policies and legislations; outdated Town Planning Ordinance and Town Planning Scheme; inadequate awareness on land development applications particularly in Katutura; and the rigid nature of the Windhoek Town Planning Scheme. The study further found that the enforcement of the Town Planning Scheme is inconsistent in Klein Windhoek and Katutura. Hence, proactive implementation of the land use management systems in Windhoek and the creation of public awareness on town planning procedures and processes are crucial. Effective facilitation of land development applications and the consistent enforcement of the Windhoek Town Planning Scheme is necessary in both Klein Windhoek and Katutura. Hence, the study concluded that there are major inconsistencies in terms of the facilitation of land development applications in the two suburbs.

### **Keywords:**

Land use management systems, enforcement, Town Planning Scheme, Katutura, Klein Windhoek

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## 1. INTRODUCTION

Windhoek, as with all Third World cities, is experiencing a tremendous influx of people from rural areas, seeking employment and the promise of a better life. It is home to approximately 325 858 people out of the 2.1 million people in the country, with an area of approximately 5 133 km<sup>2</sup> (NSA, 2012: 31). This influx is placing significant stress on the availability of affordable developable land, as well as life-sustaining natural resources, such as water and energy (De Groot, 2006: 177). It also places pressure on urban infrastructure, which makes the work of municipal planners challenging. The City of Windhoek (CoW) uses its Town Planning Scheme, as mandated by the Town Planning Ordinance 18 of 1954 to address land use management as the main legislative framework. This ordinance mandates local authorities to develop and enforce Town Planning Schemes.

The occurrence of rural-urban migration comes with a string of problems for city planners, of which Namibia is no exception. Most of these people flocked to the outskirts of the city, generally around the low-income areas, such as Katutura and Otjomuise; looking for better job opportunities, good education, health facilities and institutional headquarters are situated (Friedman, 2006). Considering the fact that Windhoek is experiencing rapid urbanization, which keeps increasing as the years progress, the utilization of land resources in relation to the number of people currently residing in the city and the area of land available for human use is under pressure. The city's annual rate of urbanization was estimated to be 3.14% between 2010 and 2015 (Indongo, Angombe & Nickanor, 2014: online). Thus, the ineffective enforcement of land use management systems produces inconsistencies in some parts of the city. This paper strives to explore the barriers experienced by the City of Windhoek in facilitating land development applications under its Town Planning Scheme in Klein Windhoek and Katutura, as well as its consistency in these suburbs.

Research problem

In Namibia, and particularly in Windhoek, land use management is practiced through the enforcement of the Windhoek Town Planning Scheme, which was developed to regulate and manage land use in the city as mandated by the Town Planning Ordinance No. 18 of 1954. After independence and to date, development in the city, specifically in Klein Windhoek and Katutura, has amplified. It can be suggested that the enforcement of land use management systems is not evident in the Katutura suburb, as opposed to Klein Windhoek. The lack of effective enforcement in Katutura can be observed by the growing number of informal settlements surrounding the suburb. Katutura is regarded as the first point of entry by those seeking a better livelihood and various local economic activities are taking place in its surroundings, with no expansion of settlements in the form of informal areas in the vicinity of the high-income areas, such as Klein Windhoek, because of the level of enforcement practices in this suburb, resulting in well-managed services and activities.

Thus, this paper will endeavour to minimise the current gap by exploring the barriers experienced by the City of Windhoek in enforcing its Town Planning Scheme and to further determine whether the enforcement of WTPS is consistent.

Study area

The case study area is in Windhoek's two suburbs, namely: Klein Windhoek and Katutura. Klein Windhoek and Katutura were selected as case studies for this research from over 30 suburbs because they are the oldest settlement areas in Windhoek formed before and during the colonial regimes. It is only feasible to perform a comparative analysis of the effective enforcement of the Windhoek Town Planning Scheme on two suburbs, which were developed in the same era.

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## Katutura

Katutura is located in the north-western part of Windhoek approximately 6 km from the City Centre. It is one of the most dense suburbs with a population size of 24 600 (NSA, 2012). Katutura was formed in 1959 during the apartheid regime (the South African colonial regime).

## Klein Windhoek

Klein Windhoek is an affluent suburb of Windhoek. It is the oldest part of the town established in 1840 by Jonker Afrikaner (Vedder, 1997). It is one of the upmarket suburbs of Windhoek, located in the Windhoek East Constituency, with about 22 600 inhabitants (NSA, 2012). It is also situated only five minutes' drive from the City Centre.

This paper is divided into seven sections including the introduction. The first section presents the Literature review followed by the research objective. Section three deals with the methodological approach of the research which draws into the analysis and findings of the results. Before concluding the paper the research contributions and limitations are highlighted.

## **2. LITERATURE REVIEW**

With land as a primal natural resource without which human existence and survival would be impossible, the past and present use of land resources has many decisive influences on the development prospects of any society (APFM, 2007: 15). One of the major global concerns is the problem of declining land resources that are being threatened by rapid human population growth. Therefore, there is an increasing need to use resources in a sustainable way, increasing production, but at the same time protecting the environment, biodiversity, and global climate systems. This requires careful land use/resource planning and decision-making at all levels. In the context of this paper, land use management is defined as the process of managing the use and development of land resources in both urban and rural areas (Randolph, 2004: 24; Tollan, 2002: 185).

In most countries, land use management systems manage the use and development of land within their jurisdiction and also safeguard their natural resources. Moreover, urban areas are the main focus of human activities and land use management in these areas is a primary tool in the struggle for a sustainable future (Vejre, n.d.). Hence, human activities in their varying forms are affecting land use management by altering the land surface with the products and services humans engage in.

### **2.1 Land Use**

Land use mean different things to different people, and from person to person. There is not one agreed-upon definition of what LUMS are. For instance, Cruz (2010: 22) argues that the concept of land covers a variety of functions that usually are classified into the categories of the environment, economics, society, and spirituality. Thus, land use represents a critical intersection of economic and ecological systems. Land-use changes, as Chen, Liu, Liaw and Yu (2005: 24) posit, are most often directly linked with economic decisions and the goals of planning. Charlton (2008: online) indicates that land use can be seen as the human modification of the natural environment or wilderness into built environment such as settlements, agriculture or pasture. Humans are transforming the environment through defining new functions to the land, hence giving it different utilities. Vancutsem (2008: online) explains that management is a human activity, meaning the action of people working together in the aim to accomplish desired goals. Land use is one element in a suite of land management tools, and is intended to promote coordinated harmonious and environmentally sustainable development (SPC Land Resources Division, 2010: online).

### **2.2 Land Use Management**

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“Land use management generally refers to the officially recognized system that determines and regulates the use of land” (Charlton, 2008: online). It can be seen as a sub-component of the broader concept of land management, which can be conceptualized as having four dimensions, as illustrated in Figure 2.1 below (FIG, 2006: online). Berrisford and Kihato (2008: 383) provide a useful way of locating LUM activities by suggesting that “the broad concept of planning” has two parts: activities that are “geared towards shaping development over a period of time” such as Integrated Development Plans, and activities that implement the strategic plans.

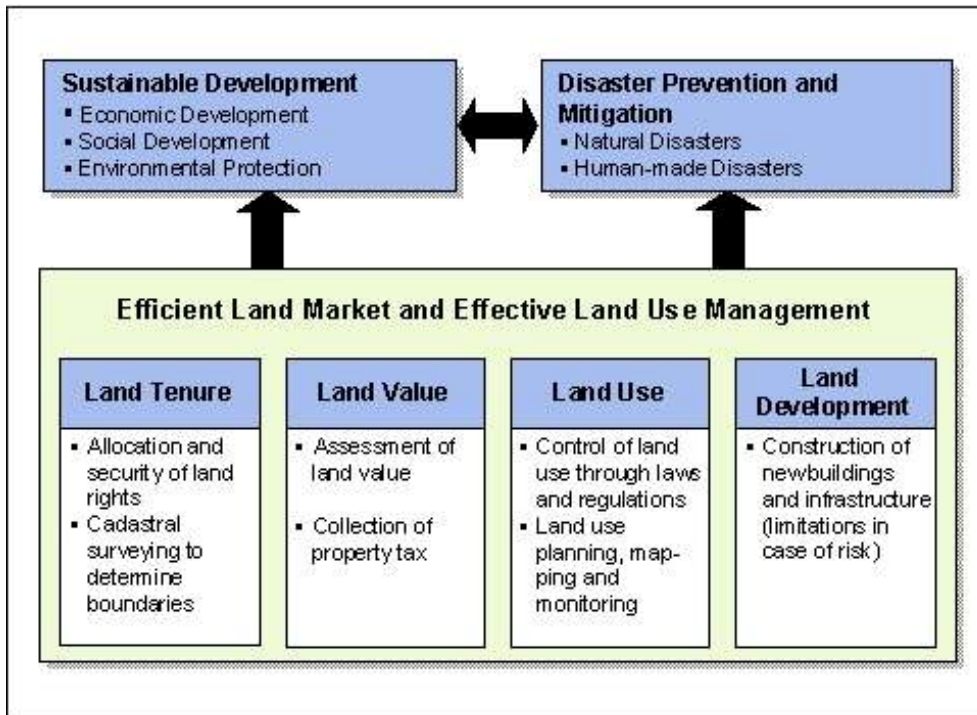


Figure 2.1: Sustainable land use management as a tool  
Source: FIG, 2006: online

In the framework of this paper, LUM refers to the local government activity which seeks to influence or control the ways in which individuals use their land (Booth, 2009). Enemark (2007) indicates that the success of a flexible LUM relies on its ability to allow “everyone to understand the role of the land administration functions (which are land tenure, land value, land use and land development)”.

### 2.3 Land Use Management Systems

Kim (2011: 36) brilliantly points out that LUMS are mostly implemented to better manage the spatial arrangement of various human activities by controlling the associated uses of land for these activities. This linkage is particularly observable in low-income areas. The South African Spatial Planning and Land Use Management Act of 2013 defines LUMS as the system of regulating and managing land use and conferring land use rights through the use of schemes and land development procedures (South Africa. Spatial Planning and Land Use Management, 2013: 12). It is the system of legal requirements and regulations that apply to land in order to achieve the desirable and harmonious development of the built environment (Berrisford & Kihato, 2008: 383). LUMS involve zoning, development control and decision making.

Görgens and Denoon-Stevens (2013) support the argument that updating and improving the flexibility of LUMS may well have some pro-poor effects; examples of such include increasing the supply and availability of urban land and housing. There is need for LUMS to find credible ways in which to partner

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with communities to construct locally appropriate regular structures and practices (Nel, 2015: 8). It is equally important to determine whether there is an under supply or over supply of certain land uses within an area (Görgens & Denoon-Stevens, 2013). For instance, traditional zoning is mainly designed to implement a spatial form that minimizes negative externalities among different types of urban activities by separating conflicting uses (Kim, 2011: 36).

The process of planning and the regulation of land use can be traced back thousands of years in some parts of the world, such as the United Kingdom, the United States of America, and Europe (Charlton, 2008: online). Aspects of town planning can be seen in ancient cities, *inter alia* the first grid-iron layouts and that they were already familiar with the idea of regulating land uses.

### 2.3.1 Global Perspective on Land Use Management

In the **United Kingdom**, modern land use management was developed in reaction to the conditions of the Industrial Revolution, which began towards the end of the 18<sup>th</sup> century in Great Britain (Bryant, Russwurm & McLellan, 1982: 80). This reaction was prompted by the growth of cities due to the Industrial Revolution, which started attracting people into the city in search for work whereby they ended up living in cities that could not support them. This movement of people placed tremendous pressure on the cities, translating into the city officials not having control over land uses, building standards, sanitation and health, together with unbearable living conditions (Houghton, 2003: 379). This state of cities forced the authorities to enact measures to control development and improve the living conditions by introducing health and building regulations.

In the 19<sup>th</sup> century many cities in the **United States of America** had ordinances with some zoning-like features, such as fire and building regulations, height restrictions and nuisance laws. For instance, in 1916 New York City adopted the first comprehensive zoning ordinance called the New York Zoning Code 1916 (SA Planners, 2014: online), which had a pyramid approach. The concept of zoning in the USA began because of an obvious need to reduce the congestion of land use, which was a major problem during the 1800s and early 1900s (Qian, 2010: 32). Among other issues, commercial areas were crowded in with private dwellings, and industries were located throughout residential areas. Before zoning regulations came into being city officials had no effective mechanisms for controlling such developments.

### 2.3.2 Land Use Management in Southern Africa

The origins of LUM in Southern Africa was as a result of colonial planning, such as the British town planning activities, which were concerned with improving the health and safety of urban residents living under bad social conditions such as overcrowded areas with inadequate services, facilities and amenities (Charlton, 2008: online; Parnell & Pieterse 2010: 148). Land resources are a source of food, shelter and economic development. Managing land resources sustainably is crucial to ensuring they continue to provide important ecosystem services such as watershed protection, biodiversity conservation and carbon sequestration (SPC Land Resources Division, 2010: online). Land use planning is probably one of the most well-known instruments of LUM, representing and illustrating a public policy (FIG, 2006: online).

Similar to South Africa, the **Namibian** planning system is based on the South African apartheid planning systems and the German colonial planning administration. The implementation of LUMS in Namibia is mandated by the Town Planning Ordinance of 1954, which requires local authorities to develop Town Planning Schemes. Evidently, the effective enforcement of LUMS in any set up is not possible without the appropriate policy and legislation in place.

The origins of LUMS and planning in **South Africa** is connected to both the British planning system and the Dutch planning system. Between the colonial period, from 1652 until the 1800s, the Dutch settlers introduced formal planning and development towns through the survey, layout and registration of streets

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and erven (Denoon-Stevens, 2014; Nel, 2015). By then the early towns demonstrated a form of LUM in that provision was made for certain uses such as markets, churches and playgrounds. During this period the need for formal LUM was not necessary because the land was in abundance and the natural separation of land uses were regarded as sufficient. Post 1994 saw the introduction of a normative framework for planning and development, together with a regulatory (process) framework which governed spatial planning and LUM. The main goal of LUM is to guide and manage development and the use of the land according to the vision, strategies and policies as stipulated in the Integrated Development Plans and the Spatial Development Frameworks (Charlton, 2008: online; Harrison, Todes & Watson, 2008: 21).

### 2.3.3 Rationale and Objectives of LUMS

LUMS deal with uncontrolled land development through facilitation, by discouraging uncoordinated land development and to ensure safety and aesthetics and the distribution of land rights (Chen *et al.*, 2005: 25). Uncontrolled development of the land can lead to overcrowding, environmental damage and unsafe building construction as some land uses can be detrimental to the health and safety of the inhabitants. It deals with promoting desired land developments (including optimal utilisation of land at the highest and best use). It also facilitates in order for development goals and related plans and policies to be implemented.

### 2.3.4 Benefits of LUMS

Some of the benefits of having LUMS in place, as outlined by City Renewal (2012: online), are to resolve conflict between different land uses and to control negative externalities while promoting the certainty of land uses which protects property values and creates investor confidence. It is also believed that LUMS promotes convenient access to opportunities and services and the creation of safe and healthy living environments. It provides the legal basis for the participation of the general public in LUM matters in order to balance the interests of individuals with those of the public. The SPLUMA (South Africa. Spatial Planning and Land Use Management Act, 2013: 2) states that LUMS also promotes sustainable urban management. Several regulations were adopted to guide the quality and location of land use.

### 2.3.5 Challenges of LUMS

LUM is criticized based on its two key aspects. It is constituted that its rigidity suppresses the smooth functioning of any land market, and its bureaucratic and legal form limits the access of the poor to formal opportunities to land (particularly to urban land) (Booth, 2009). The implementation of LUMS is faced with a range of challenges, and town and regional planners are at the forefront of these challenges. These challenges result in negative criticism against LUMS.

The administrative and management jargon associated with the implementation of LUMS makes the approval process too lengthy because they exercise too much control, compared to facilitation. The time-consuming nature of work at local authorities results in the poor enforcement of LUMS in major cities and towns. This is evident in Windhoek, as confirmed through this research. Another reality is that LUMS is not applied in informal settlements, and not effectively applied in low-income areas (Indongo *et al.*, 2014: online). Critics view LUMS as a system that is not people-centred, which cannot deal with the current reality. Planning controls such as LUMS are viewed to be discriminatory against the poor and tend to exclude them from the benefits of urban living because of their socio-economic status (Jauch *et al.*, 2009). Therefore, it is regarded as a non-people friendly approach which does not involve people in the decision-making process and that does not recognize the needs of the people who are really affected. It is argued that LUMS, as is, does not have any control over informality.

On the one hand, the enforcement of LUMS has had a negative impact on the land market, depriving the working class of certain benefits. The planning system directly and indirectly is curbing the supply of land,

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and in so doing, pushing up the cost of land and making it unaffordable for the average person. This reality is currently being experienced in South Africa and Namibia alike whereby an average working class individual cannot afford a standard property. LUMS has also been viewed as an anti-development instrument/system of planning based on the time constraints, costs of applications, and restrictions of development in terms of location, type and intensity. In reality it happens that certain developments are promoted where they are not feasible and prohibited where they are feasible, which leads to non-development.

### 3. OBJECTIVES /RESEARCH QUESTIONS

This paper has two research objectives namely:

- To explore the barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme of 1976 in Klein Windhoek and Katutura.
- To determine whether the enforcement of the Windhoek Town Planning Scheme of 1976 is consistent in Klein Windhoek and Katutura.

The key research question is:

**What are the barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme of 1976 in Klein Windhoek and Katutura suburbs?**

This research question is guided by the following subsidiary research questions:

Subsidiary Research Questions:

- What do planners of the City of Windhoek experience as barriers when facilitating land development applications under the Windhoek Town Planning Scheme of 1976 in Klein Windhoek and Katutura?
- Is the enforcement of the Windhoek Town Planning Scheme of 1976 consistent in Klein Windhoek and Katutura?

### 4. APPROACH & METHODOLOGY

In order to achieve the main objective of the study, which is to explore the barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme of 1976 in Klein Windhoek and Katutura, this research relies on the qualitative research method whereby both primary and secondary data sources were consulted and used. Key respondents in the field of land use management were **interviewed** and **direct observation** of the enforcement of the Windhoek Town Planning Scheme in Klein Windhoek and Katutura was done. **Document and policy analysis** of the most relevant documents, reports and policies was performed. The data collection process was conducted over a period of four months. It started on 1 June 2015 and was concluded on 30 September 2015. All the interviews were conducted in person. The duration of a single in-person interview session ranged from 30 to 60 minutes on average.

The key research questions, as well as their objectives and subsidiary questions, required a data collection strategy that combines different qualitative methods. The research additionally determined whether the enforcement of the Windhoek Town Planning Scheme of 1976 is consistent by comparing its enforcement

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in the Klein Windhoek and Katutura suburbs; this was only possible through the qualitative research methods. The key research questions that form part of this research strategy are highlighted in Table 4.1

Table 1: Research Strategy Employed in the Study

Objective	Research question	Primary source	Secondary source	Analysis
To explore the barriers experienced by the City of Windhoek in enforcing the Windhoek Town Planning Scheme of 1996 in Klein Windhoek and Katutura.	What are the barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme of 1996 in Klein Windhoek and Katutura suburbs respectively?	Semi-structured interviews	Document analysis	Content analysis
To determine whether the enforcement of the Windhoek Town Planning Scheme of 1996 is consistent in Klein Windhoek and Katutura.	Is the enforcement of the Windhoek Town Planning Scheme of 1976 consistent in Klein Windhoek and Katutura?	Semi-structured interviews Direct observations	Document analysis	Content analysis

Source: Author, 2015

#### 4.1 Sampling Procedure

In terms of the sampling procedure, the purposive method was employed to identify individuals for the semi-structured interviews. Purposive sampling was used for this research because there are only a limited number of people with Town Planning expertise specializing in land use management in Windhoek. Therefore, a specific sample of 15 key respondents were selected from the public and private sector based on their appropriateness for the study.

#### 4.2 Sample size

The sample size for this research was 15 respondents, four employees from the Municipality of Windhoek (Group 1), five lecturers from the Polytechnic of Namibia (Group 2), and six private consultants in the town planning field (Group 3). The sample size was informed by the need to provide a more in-depth qualitative analysis which could yield the most information and have the greatest impact (Creswell, 2013 in cited Guetterman, 2015: 9).

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Table 2: Overview of Key Respondents Interviewed

Code	Institution	No. of Respondents
<b>Group 1</b>	Municipality of Windhoek	4
<b>Group 2</b>	Polytechnic of Namibia	5
<b>Group 3</b>	Private Planners	6

Source: Author, 2015

## Data Collection Process

### Document and Policy Analysis

By applying the secondary data collection method a comprehensive literature review of government publications, legislative and policy documents, academic papers, published books, journals, organizational reports/records, and corporate studies was done. The available, though limited, number of studies on land use management were reviewed. Besides relevant previous research, secondary data sources mainly included the following:

- Official records related to LUM, namely, Windhoek Municipality Annual Report, Municipal Council Resolutions, Annual Mayoral Report and Guidelines of Town Planning Procedures from the City of Windhoek were collected and analysed. Local Authorities guidelines and the Local Authorities Annual Report from the Ministry of Urban and Rural Development were equally analysed.
- Official documents regarding land use management collected from private consultants, which mainly comprise of town planning applications within Windhoek such as rezoning.
- Documents on existing spatial planning by reviewing maps of the city whenever obtainable from the City of Windhoek.
- Existing rules and regulations regarding land use management and systems such as the Windhoek Town Planning Scheme, Windhoek Structure Plan, Local Authorities Act, Regional Councils Act, Urban and Regional Planning Bill, Town Planning Ordinance, Township and Division of Land Ordinance, and Land Use Planning Policy were analysed.
- Newspaper articles from different newspapers about current events and policy measures in land use management were sourced.

### 4.3 Direct Observations

The direct observation of the city was crucial as it helped to better understand the situation under investigation. Through direct observation, the researcher was looking to identify consistency in the enforcement of LUMS in Katutura and Klein Windhoek and also to determine what could have contributed to the current inconsistency.

### 4.4 Semi-structured Interviews

Semi-structured interviews were held with City of Windhoek employees from the Urban Policy, Planning and Sustainable Development sections, private town planning consultants and town and regional planning academics from the Polytechnic of Namibia. Participants were selected based on their experience in land use planning and land use management in Windhoek, especially in relation to planning and zoning controls and their implementation. In this paper semi-structured interviews were used as a tool to complement the other methods applied.

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## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

The data collected through the different qualitative methods was organized and arranged in a chronological order and later categorized and clustered into meaningful groups. It was then thoroughly examined and interpreted for precise meaning that will relate to the topic. The data analysed was graphically illustrated in forms (graphs, charts, figures and tables).

### 5.1 Presentation of Findings

The findings of the research will be discussed by answering the two research questions as outlined in Section 3. The study revealed that there are four barriers that are experienced by the CoW in facilitating land development applications under the Windhoek Town Planning Scheme of 1976 in Katutura and Klein Windhoek, namely: (1) lack of capacity in Land Use Management within CoW, (2) outdated Town Planning Ordinance 18 of 1954 and Windhoek Town Planning Scheme of 1976, (3) no public awareness on land development applications in Katutura and Klein Windhoek, and (4) rigidity of the Windhoek Town Planning Scheme of 1976. However, due to the nature of this paper only the first two barriers will be discussed in more detail.

#### Lack of Capacity in Land Use Management within CoW

Based on the semi-structured interviews conducted with Group 1, the Town Planning Officers of CoW are responsible for land development applications under the Windhoek Town Planning Scheme in Windhoek. It was learnt that only the Town Planning Officers under the Urban Policy and Planning section are responsible for dealing with land development applications and not those under the Sustainable Development section. There are only four officials, whereby each is responsible for close to eight areas and he/she needs to attend to all land development applications from the specific areas allocated to him/her. The current state of the office is resulting in delays of municipal works and testifies that the municipality is highly under-capacitated.

Table 3: Town Planning Officers – Areas of Responsibility 2015

<b>Officer 1: Town Planning Officer</b>	<b>Officer 2: Town Planning Officer</b>	<b>Officer 3: Town Planning Officer</b>	<b>Officer 4: Town Planning Officer</b>
Windhoek South	Okuryangava	Havana	Windhoek North
Brakwater	<b>Katutura</b>	Wanaheda	Eros
KleineKuppe	Otjomuise	Khomasdal	Pionierspark
Dobra and Ujams	Nubuamis	<b>Klein Windhoek</b>	Elisenheim
Academia	Prosperita	Cimbebaia	Dorado Park
Finkenstein	Rocky Crest	Auasblick	Hochland Park
Omeya	Goreangab	Hakahana	Windhoek EBA Farms
Emmarentia	Lafrenz	Olympia	

Source: City of Windhoek, 2015

The analysis of corporate reports, council resolutions and responses from the semi-structured interviews from the three groups highlighted that the lack of capacity within the municipality is evidently visible and results in a number of negative effects. These negative effects range from land development applications that are being processed over a longer period than desired and approvals which require the involvement of various planners that are delayed considerably. As a result of the lack of capacity and the time-consuming nature of operations, the municipality has been presented with unintended consequences. At least four out of six Group 3 respondents indicated that they have stopped doing business in Windhoek and have moved to the smaller towns. All land development applications received by the department are distributed among the town planning officers according to their respective areas of responsibility, as illustrated in Table 5.1.

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According to Billawer (2015: personal communication), in the year 2014 about 207 rezoning applications were received of which only 50% might be approved within the next two years.

### Outdated Town Planning Ordinance and Windhoek Town Planning Scheme

The Town Planning Scheme of Windhoek is the most important instrument for the management of land uses and was developed in accordance with the Town Planning Ordinance 18 of 1954. The Scheme has not been updated since its inception and all the respondents (Groups 1, 2 and 3) felt that the Windhoek Town Planning Scheme is outdated as it has not been reviewed or improved.

According to the Town Planning Ordinance 18 of 1954, an approved town planning scheme must be reviewed every five years with a view to its variation or revocation (Owoses-/Goagoses, 2013: 64).

*Section 27(4) of the Town Planning Ordinance 18 of 1954; every approved scheme shall be reviewed periodically at intervals of not more than five years with a view of its variation or revocation in terms of subsection (1): Provided that the Minister may on application extend the interval in any case upon such conditions as he may deem proper.*

MURD instructed the municipality to review and update their Town Planning Scheme over a period of one year. During this period the municipality was not supposed to place any applications, as such applications would not be processed. This decision by the ministry affected the city's residents more than it affected the municipality as no applications could be processed and certain developments and activities could not take place, as alluded by one respondent from Group 1. This basically means that the untimely actions of the municipality ends up affecting its residents negatively. The municipality however failed to meet its deadline of submitting the reviewed and updated Town Planning Scheme to the MURD. They only submitted a draft review of the Scheme, which the ministry decided to accept. One of the reasons given by the city as to why they could not submit a completely reviewed and updated Town Planning Scheme was because of "its lack of adequate capacity" (Group 2 Respondent). All the respondents interviewed however indicated that the legislative framework was sufficient, even though it was developed decades ago and might need to be updated. The analysis further found that the Town Planning Scheme is the most important land use management system that the CoW uses to facilitate land development applications.

### Non-applicability and acceptability of the Windhoek Town Planning Scheme in Katutura and Klein Windhoek

At least nine of the 15 respondents interviewed indicated that LUMS is not applicable and acceptable to the wider community as it does not cater for all residents' needs. The Windhoek Municipal area has a unique set-up; one which was adopted from colonial times. It contains five categories of income classes and different suburbs that relate to each one of them.

The implementation of LUMS is different in the low-income areas compared to the high-income areas as the activities that take place in these two areas are different. Therefore, the provision of services varies across these income classes. Townships and suburbs have been developed to serve and cater for these income classes. You will not find an ultra-high income area close to an ultra-low income area in Windhoek, as is the case in other parts of the world such as Ethiopia and India (African Planning Association, 2013). However, the CoW only has one legislative framework to serve all these categories of income class townships. Based on the direct observation and resident-based experiences, this legislation is not applicable in the low and ultra-low income classes. This variance makes land use management in the city across these categories challenging and difficult.

The research has revealed that enforcements are not done on an equal basis. The implications of such a system is that it presents a city that is segregated because the one section of the city consist of well-planned,

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managed and regulated suburbs where everything is in place. The other section comprises of chaos, which makes it difficult to distinguish between different zones, be it residential, commercial or industrial, as everything is found all over the place. When the City develops a LUMS that applies to all the income class areas individually it will become an integrated city that is well presented. It further indicates that in higher-income areas (such as Klein Windhoek), land use regulations are enforced, while in low-income areas (predominately black residential areas such as Katutura), there is little or no land use management, and little or no concern for the health, safety and amenities of residents of these areas. As such it undermines “the right to a safe and environmentally protected city” (Parnell & Pieterse, 2010: 1567; Nel, 2015: 3). The absence of the enforcement of land use regulation in Katutura makes it prone to the influx of people and the development of informal settlements around its periphery.

It was found that the capacity to perform land use management, the preparation and maintenance of a town planning scheme, the processing, evaluation and decision on applications for land development, as well as the law enforcement component, are unevenly spread throughout the city - especially between Katutura and Klein Windhoek. The restrictions imposed by the town planning scheme on the use of houses for business purposes are widely regarded as a limiting factor in the provision of supplementary income-generating activities for less wealthy residents (Nel, 2015: 6), especially in Katutura. Based on direct observation, the current situation is that nine out of ten houses in Katutura are being utilised for some type of economic activity, such as shebeens, car-washes, hair-salons, home shops, and so on. This difference can be linked to income inequality and the unfair distribution of wealth in the city, as Katutura is a low-income suburb and Klein Windhoek is a high-income suburb (Jauch, Edwards & Cupido, 2009: 34; National Planning Commission, 2007: 9). However, in the high-income suburbs, such as Klein Windhoek, homeowners are rezoning their properties to high density, which allows them to have both office and residential land use on their properties. The ineffective enforcement of land use regulation is resulting in major development challenges. Therefore, based on a thorough document analysis, the concept of land use management in the city is not receiving as much attention in research as it should (Billawer, 2015).

## **6. RESEARCH CONTRIBUTION**

The types of contributions this research will make to the planning fraternity in Namibia is enormous. It being one of the only studies conducted on LUMS and the facilitation of land development applications gives its recommendations more relevance for implementation by the CoW. This research explored the area of LUMS in Windhoek in depth. It can be regarded as relevant study for contemporary Namibia Land Use Management System.

## **7. RESEARCH LIMITATIONS**

As with many studies, minor challenges were experienced during this research. These related mostly to the data collection stage, while arranging appointments for the semi-structured interviews. It was difficult to fix appointments either telephonically or in person with the various key respondents, especially the councilors. The collection of secondary data from relevant stakeholders, such as the City of Windhoek, was an additional challenge. However, it is important to note that these limitations were not of such a scale that they could have prevented the research from being carried out. It is also important to note that this paper has been limited to only two of Windhoek’s suburbs, namely Katutura and Klein Windhoek, where the emphasis was on the enforcement of the Windhoek Town Planning Scheme.

Due to the time allocated for this research and the scope of the paper residents from both Katutura and Klein Windhoek were not engaged. The other limitation was the difficulty in tracing council resolution records to ascertain when exactly the policy/policies were implemented, as well as the non-existence of relevant data in public and private offices. In addition, there was the lack of cooperation from relevant

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stakeholders, which resulted in important information being withheld and the ultimate cancellation of interviews. This hampered the timeframe of the data collection schedule.

## 8. DISCUSSION & CONCLUDING REMARKS

This research is possibly the first attempt to contribute to the debate on the barriers experienced by the City of Windhoek in facilitating land development applications under the Windhoek Town Planning Scheme of 1976 in Klein Windhoek and Katutura suburbs in Namibia. It is relevant for town planners and city residents that should ensure the consistency in the enforcement of the Windhoek Town Planning Scheme.

The research revealed that there are major inconsistencies in the enforcement of LUMS in Klein Windhoek and Katutura in that the latter benefits more from the system. LUMS in Windhoek is not applicable to the low-income areas and the informal settlement as its conditions do not consider their socio-economic setting. The research further found that the enforcement of the Windhoek Town Planning Scheme of 1976 is not consistently applied in Klein Windhoek and Katutura. This was determined through the direct observations done in these two suburbs. The enforcement of the Windhoek Town Planning Scheme of 1976 in the Katutura suburb was more relaxed, while in Klein Windhoek it was applied more strictly. This difference in enforcement between the two suburbs presents an inconsistency as the Windhoek Town Planning Scheme was developed for the effective and efficient enforcement throughout the city, and not only for certain areas.

The inconsistency is directly linked to the barriers experienced. The first barrier, the lack of capacity, is a major player in the inconsistency. The insufficient capacity of the city translates into it paying more attention to the suburbs closer to the Central Business District and neglecting those further away so as not to shift the focus from the city centre and surroundings. The available capacity works promptly in the high-income areas (Klein Windhoek), compared to in the low-income areas (Katutura). This inconsistency has resulted in Katutura being one of the densely-populated suburbs in Windhoek. The respondents interviewed also confirmed that enforcement of the Windhoek Town Planning Scheme is not consistent.

In conclusion, the effective facilitation of land development applications and the consistent enforcement of the Windhoek Town Planning Scheme is necessary in both Klein Windhoek and Katutura. It should not be based on the income class, level and public awareness as the current situation presents. The present LUMS of the City of Windhoek requires improvement in order to cater for all its residents, in high-income and low-income suburbs, and to increase the city's growth and development potential.

## 9. REFERENCES

- Owoses-/Goagos, F. 2013. *Planning Law in Namibia*. Cape Town: Juta & Company Ltd.
- Acharya, A. S., Prakash-Saxem, P. & Nigam, A. 2013. Sampling: Why and How of it. *Indian Journal of Basic and Applied Sciences*, 5(6), pp. 170-180.
- AFRICAN PLANNING ASSOCIATION and UN-HABITAT. 2013. *The State of Planning in Africa: An Overview*. Nairobi: UN-Habitat.
- Associated Programme on Flood Management [APFM]. 2007. *The role of land use planning in flood management: A tool for integrated flood management*. [online] Available from: [http://www.apfm.info/helpdesk/ifm\\_tools.htm](http://www.apfm.info/helpdesk/ifm_tools.htm) [Accessed on 28 March 2013].
- Begu, E. 2003. Assessing Feasibility Study of Informal settlements upgrading: Are the GI Policy and Management implications? Case study of Windhoek, Namibia. Unpublished Thesis. Enschede: International Institute for Geo-Information Science and Earth Observation.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Berrisford, S. & Kihato, M. 2008. Local government planning legal framework and regulatory tools: vital signs? In: van Donk, M., Swilling, M., Pieterse, S., (eds.) *Consolidating Developmental Local Government: Lessons from the South African Experience*. Cape Town: UCT Press.

Billawer, W. 2015. (Town Planner: City of Windhoek). Personal Interview about land use managements systems in Windhoek. Windhoek, 15 June.

Booth, P. 2009. Managing land-use change. *Land Use Policy*, 26, pp. 154-159.

Bryant, C. R., Russwurm, L. J. & McLellan, A. G. 1982. The city's countryside. Land and its management in the rural-urban fringe. [n.p.]: [n.p.].

Charlton, S. 2008. *Inequality and Economic Marginalization: The state of land use management in South Africa*. [online]. Available from: [http://www.tips.org.za/files/2E\\_Charlton\\_Landuse\\_April08.pdf](http://www.tips.org.za/files/2E_Charlton_Landuse_April08.pdf) [Accessed on 16 February 2015].

Chen, C., Liu, W., Liaw, S. & Yu, C. 2005. Development of a dynamic strategy planning theory and system for sustainable river basin land use management. *Science of the Total Environment*, 246(1), pp. 17-37.

City Renewal. 2012. *Land Use Management Systems – South Africa, you are Warned*. [online]. Available from: <http://gibb.co.za/Portals/0/media/January%202012/SA%20Affordable%20Housing%20-%20Land%20Use%20Management%20Systems.pdf> [Accessed on 16 February 2015].

City of Windhoek. 2015. *City of Windhoek Map Portal*. [online]. Available from: <http://41.190.84.123:8080/windhoek/> [Accessed on 16 November 2015].

Crouch, M. & Mckenzie, H. 2006. The logic of small samples in interview-based qualitative research. *Social Science Information*, 45(4), pp. 483-499.

Cruz, L., 2010. *Responsible Governance of Land Tenure: An essential factor for the realization of the right to food*. Rome: FAO.

De Groot, R. 2006. Function-analysis and valuation as a tool to assess land use conflicts in planning for sustainable, multi-functional landscapes. *Landscape and Urban Planning*, 75(3), pp. 175-186.

Denoon-Stevens, S. P. 2014. The Role of Land Management in shaping (or preventing) the creation of sustainable human settlements. In: Davidson, K (ed.). *From Housing to Human Settlements: Evolving perspective*. Pretoria: South African Cities Network, pp. 123-148.

Enemark, S. 2007. Integrated Land-Use Management for Sustainable Development. *Spatial Information Management toward Legalizing Informal Urban Development*. FIG Commission 3 Workshop. Athens, Greece, March 28-31, 2007.

FIG. 2006. *The Contribution of the Surveying Profession to Disaster Risk Management*. [online]. Available from: <http://www.fig.net/pub/figpub/pub38/figpub38.htm> [Accessed on 23 February 2015].

Friedman, F. M., 2006. Beyond the Post-Apartheid City: De/Segregation and Suburbanization in Windhoek. Unpublished Report. Windhoek.

Görgens, T. & Denoon-Stevens, S. 2013. Towards Facilitative and Pro-poor Land-Use Management in South African Urban Areas: Learning from International Experience. *Urban Forum*, 24, pp. 85-103.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Guetterman, Timothy C. 2015. Descriptions of Sampling Practices Within Five Approaches to Qualitative Research in Education and the Health Sciences [48 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 16(2), Art. 25, <http://nbn-resolving.de/urn:nbn:de:0114-fqs1502256> [Accessed on 02 December 2015].

Haidula, T. 2012. Reaching out to informal settlements. *The Namibian*, 05 December, p.2.

Harrison, P, Todes, A & Watson, V. 2008. *Planning and transformation: Lessons from the Post-Apartheid experience*. London: Routledge.

Houghton, R. A. 2003. Revised estimates of the annual net flux of carbon to the atmosphere from changes in land use and land management 1850-2000. *Tellus*, 55, pp. 378-390.

Indongo, N., Angombe, S. & Nickanor, N. 2014. *Urbanisation in Namibia: Views from semi-formal and informal settlements*. [online]. Available from: <http://www.unam.edu.na/wp-content/uploads/2014/09/Urbanisation-in-Namibia.pdf> [Accessed on 28 October 2015].

Jauch, H., Edwards, L. & Cupido, B. 2009. *A Rich Country with Poor People: Inequality in Namibia*. Windhoek: Labour Resource and Research Institute (LaRRI).

Kahm, M., Von Riesen, A. & Jewell, P. 2001. *Kwazulu-Natal Land Use Management System: Guideline Manual*. The Town and Regional Planning Commission: Pietermaritzburg.

Kim, J. H. 2011. Linking Land Use Planning and Regulation to Economic Development: A Literature Review. *Journal of Planning Literature*, 26(1), pp. 35-47.

Namibia Statistics Agency [NSA]. 2012. *2011 Population and Housing Census: Khomas Regional Tables based on 4<sup>th</sup> delimitation*. Windhoek: Namibia Statistics Agency.

National Planning Commission. 2007. An Analysis of the Economic Challenges of Namibia and How the Donor Community should assist. *Country Paper for the International Conference on Development Cooperation with Middle Income Countries (MICS)*, Madrid 1-2 March 2007.

Nel, V., 2015. Spluma, Zoning and Effective Land Use Management in South Africa. *Urban Forum*, pp. 1-14.

Parnell, S. & Pieterse, E. 2010. The 'Right to the City': Institutional imperatives of a developmental state. *International Journal of Urban and Regional Research*, 34(1), pp. 146-162.

Patton, M. Q. 2002. *Qualitative evaluation and research methods*. 3<sup>rd</sup> edition. Newbury Park, CA: Sage.

Qian, Z. 2010. Without zoning: Urban development and land use controls in Houston. *Cities*, 27, pp. 31-41.

Randolph, J. 2004. *Environmental Land Use Planning and Management*. Washington, DC: Island Press.

SA PLANNERS. 2014. *LUMS Criticism*. [online]. Available from: [www.saplayers.org.za/documents/page-65.html](http://www.saplayers.org.za/documents/page-65.html) [Accessed on 14 December 2015].

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Sem, T. D. 2010. A study on poverty alleviation in the informal settlement communities in Windhoek: A case study of Babylon Community. Unpublished Thesis. Windhoek: University of Namibia.
- South Africa. 2013. *Spatial Planning and Land Use Management Act, Act No. 16 of 2013*. Pretoria: Government Printers.
- SPC LAND RESOURCES DIVISION. 2010. *Land Use Management*. [online]. Available from: <<http://www.spc.int/lrd/focus-areas/land-use-management>> [Accessed on 16 February 2015].
- Sridhar, K. S. 2010. Impact of Land Use Regulations: Evidence from India's Cities. *Urban Studies*, 47(7), pp. 1541-1569.
- Tjitemisa, K. 30% of Windhoekers live in informal settlements. *New Era*, 28 November, p.1.
- Tollan, A. 2002. Land Use change and floods: what do we need most research or management? *Water Science and Technology*, 45, pp. 183-190.
- Tryfos, P. 1996. *Sampling Methods for Applied Science Research: Text Cases*. New York: John Willey & Sons Inc.
- Vancutsem, D. 2008. *Land Use Management for Sustainable European Cities*. [online]. Available from: <[http://www.urbact.eu/fileadmin/Projects/LUMASEC/.../LUMASEC\\_Flyer\\_Web.pdf](http://www.urbact.eu/fileadmin/Projects/LUMASEC/.../LUMASEC_Flyer_Web.pdf)> [Accessed on 16 February 2015].
- Vedder, H. 1997. Das alte Südwestafrika. Südwestafrika Geschichte bis zum Tode Mahareros 1890 [The old South-West Africa. South-West Africa's history until Maharero's death 1890] (7th ed.). Windhoek: Namibia Scientific Society.
- Verje, H. n.d. Land Use Planning and Management in Urban and Peri-Urban Areas. *Land Use, Land Cover and Soil Sciences*, 4.

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# Assessment of Environmental Impacts of Urban Housing Informality on Residents: Experiences with Water, Sanitation and Waste Management in Alexandra Township

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## Abstract

The need to protect and preserve urban environments can never be emphasised enough given the essential role cities in general and housing in particular play in the people's lives be it physically, economically or socially. Although numerous studies have been conducted on informal settlements, particularly their causes, prevalence and general conditions, very little is understood about the impact of water, sanitation and solid waste conditions on residents. Interestingly, the struggles people face on a daily basis as they make efforts to access water, sanitation and waste management services are not well documented. This work therefore explored in detail the nature of relationships that are forged by service providers, the level of service provision and daily experiences of the residents of Alexandra. A case study research design and a qualitative research approach were adopted and applied to gather relevant and meaningful data using interviews of key stakeholders and the residents.

The work extended the frontiers of existing knowledge by bringing to the fore new insights on the direct impact of poor state of water supply, deplorable sanitation and glaring inadequacies in municipal solid waste management on residents. First, temporary water storage facilities such as drums and buckets; a mechanism to respond to water supply challenges; results in small particles being formed at the bottom of the facility and if consumed they result in water-borne diseases. Second, the use of pit latrines and the bucket system as a response to poor sanitation in Alexandra has given rise to outbreaks of diseases that are related and caused directly by lack of proper sanitation. Third, the absence of waste disposal facilities and the erratic nature of waste collection services have forced residents to use open pits in their yards to dispose waste or have resorted to open fire burning of waste thus exposing residents to risk of injury, poisoning and infection. Furthermore, uncollected solid waste obstruct storm water drainages, leading to the formation of stagnant pools of water, which in turn facilitate the breeding of mosquitoes and other insects in the Alexander informal settlement. This work concludes by recommending relevant stakeholders to support efforts of residents to improve their living environments and to adopt a collaborative approach to resolving the environmental challenges being faced in this informal settlement. Such an approach will give rise to massive improvements as opposed to piecemeal and disjointed interventions by different stakeholders.

## Keywords

Environmental Impact, Urban Housing, Informality, Water and Sanitation

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## 1. INTRODUCTION

Protection of the environment has become a worldwide important criterion in order to sustain human .However, environmental issues have been a concern for some time worldwide in developed, developing and transitional countries particularly in the urban centres of the developing world. Although quite a number of studies on informal settlements have been conducted on social conditions, economic and planning, little has been done on the environmental issues emanating from informality. Through the collation of information from a series of stakeholder interviews, a community consultation, a literature review, a database search and site visits to Alexandra, this paper identifies and describe a selection of environmental concerns occurring in Alexandra which include the state of water situation, sanitation and waste management. Despite the initiative to try better Alexandra through the Alexander Renewal Project (ARP) and other projects to try and resolve the current situation of Alexander, the township still remains largely a slum, with grossly inadequate water, sanitation and refuse removal services. Planning and development departments have enormous power to determine, in both the short and longer term, levels of environmental quality.

## 2. BACKGROUND

Living in informal settlements is associated, theoretically with the exposure to environmental problems (Castellano, 2009).The number of people in informality is rising in cities of South Africa. In conjunction with growing urban poverty levels, the major urban management challenge facing the cities is the rise in the growth of informal settlements (Connell & Lea, 2002). According to Jones (2012), there is a growing body of literature that indicates that informal settlements are now a permanent feature of the towns and cities. These settlements mainly formulate due to the increasing rates of population migration from rural areas to urban areas (Chand &Yala, 2008). According to Allan & Heese (2013) ,most migrants find themselves unemployed, living in one of the many hundreds of informal settlements on the periphery of large metros, effectively marginalised from both access to economic opportunity, housing and services (Allan & Heese, 2013).

Although quite a number of studies on informal settlements have been conducted on social conditions, economic and planning, little has been done on the environmental issues emanating from informality (Waweru, 2005).According to Akca et al (2007), these problems affect everything, from the tiniest organism to the greatest country, and they vary according to living conditions, the structure of the sector or the geographic and socio-economic situation of the country: “the major environmental issues at a city level have to do with land use and transportation, the quality and availability of water and sanitation services, air quality, solid and liquid waste management, as well as noise and the aesthetic role of the environment” (Akca et al., 2007).

As far as informal settlements are concerned, overcrowding, inadequate housing, inadequate access to clean water and sanitation, growing amounts of uncollected waste, and deteriorating air quality are already serious problems in informal settlements and may worsen substantially if effective and timely action is not taken. These issues together constitute what has become known as the ‘brown agenda’, a central tenet of current urban environmental management (Wekesa, 2011). The brown agenda has been defined as the most immediate and critical environmental problem facing informal settlements in the South (Beall et al, 2012). However, with the above mentioned, as far as this paper is concerned the purpose of this research study is to explore the relationship of Johannesburg’s poor to the urban environment focusing on the state of water ,sanitation and solid waste as far as the brown agenda problems are concerned in Alexander township.

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### 3. CONCEPTUAL ISSUES

Environmental issues have been a concern for some time worldwide in developed, developing and transitional countries particularly in the urban centres of the developing world (Alvare et al, 2013). Proliferation of the informal settlements in developing countries is of great concern because it impacts negatively on the quality of life specifically on the living environment. The increasingly high profile of global environmental concerns from the 1980s, the urban agenda for developing countries has seen progressive shifts toward a focus on urban environmental issues, collectively termed the ‘brown agenda’(Akca et al.,2007). The most critical and immediate development issues facing cities of the developing world in informal settlements are those of water supply, sanitation and solid waste management, (Wekesa et al. 2011).

Below are definitions of the key terms in relation to the study:

#### Informal settlements

Informal settlements can be defined as “dense settlements comprising communities housed in self-constructed shelters under conditions of informal or traditional land tenure. They are a common feature of developing countries and they are typically the product of an urgent need for shelter by the urban poor” (Mason & Fraser, 1998).

#### Brown Agenda issues

The brown agenda issues can be defined as issues of safe water provision, sanitation, and drainage; inadequate solid and hazardous waste management, air pollution including uncontrolled emissions from motor vehicles, factories and low-grade domestic fuels (Allen et al., 2002).The brown agenda emerged as a matter of concern and debate because of a perceived lack of attention to the specifically urban environmental problems of the developing world mainly within informal settlements

#### *Water supply*

According to Goebel (2007), water supply is the provision of water by public utilities, commercial organisations, community endeavours or by individuals, usually via a system of pumps and pipes.

#### *Sanitation*

Sanitation means the prescribed minimum standard of services necessary for the safe, hygienic and adequate collection, removal, disposal or purification of human excreta, domestic waste-water and sewerage from household, including informal households (Davis, 2006)

#### *Waste Management*

The term ‘waste’ refers to materials which have ceased to be useful to the person who is producing it. In other words, it is a discarded or unwanted material.

### 4. EXPERIENCES ON WATER, SANITATION AND WASTE PROBLEMS IN INFORMAL SETTLEMENTS

According to Johannessen et al (2014), one of the largest risks to people living in informal settlements in the developing world is the lack of improved water and sanitation. Especially, the state of sanitation is a global crisis, and addressing the Millennium Development Goal (MDG) for sanitation is lagging significantly behind the other goals (Roma et al, 2010). Sanitation and water supply are often inadequate in

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cities in developing countries like Cameroon (Brocklehurst et al, 2005). Therefore, as a result, many low-income urban communities in these countries rely on groundwater from shallow aquifers for drinking and other domestic purposes (Roma et al, 2010). These communities also usually constitute the high density and low income urban poor population that live in shattered informal settlements with deplorable housing and inadequate basic service infrastructures for sanitation, waste disposal and piped water supply thus affecting the environment (Delvoie 2005).

With the above mentioned, Kibera is the largest and most densely populated informal settlement in subSaharan Africa. With an estimated population of at least 500,000, the informal settlement of Kibera is home to at least a quarter of the population of Nairobi (Brocklehurst et al, 2005). In the informal settlement of Kibera in Nairobi, Kenya, more than half a million poor people have little or no access to the utility water supply. Instead, their demand for water is met by a burgeoning informal water market in which more than 650 local entrepreneurs sell water through kiosks scattered throughout the settlement

Furthermore, according to Brocklehurst et al (2005), some Kibera slums dwellers use sewerage and water from the river for bathing and washing. They also use borehole, rainwater, and sometimes draw water from broken pipes. This water is highly contaminated and filthy especially when plastic pipes burst and can potentially cause contagious diseases. For many years, Kibera slums has not had clean water points as most collected water comes from Nairobi dam (Rasnah, 2010). Moreover, along with population growth and rapid urbanization process, the volume of solid waste management within informal settlements in China has been increasing sharply in the past 30 years and the total amount of waste yields will continue to increase. Now more and more Chinese informal settlements are facing the predicament of being surrounded by waste yards which in turn affect the urban environment (Tiana et al, 2013). The urban population has reached to 669.8 million, and the ratio of urban population in China has increased from 19% in 1980 to 50% in 2010. Concurrently, the waste generation rate has increased from 0.5 kg/capita/day in 1980 to 1.1 kg/capita/year in 2010, over doubled during the past three decades.

## **5. APPROACH AND METHODOLOGY**

A case study research design and a qualitative research approach were adopted and applied to gather relevant and meaningful data using interviews of key stakeholders and the residents. The work extended the frontiers of existing knowledge by bringing to the fore new insights on the direct impact of poor state of water supply, deplorable sanitation and glaring inadequacies in municipal solid waste management on residents.

Methodology demonstrates the various procedures and strategies that were used in identifying different sources used. The research methodology approach adopted for this study is a mixed method approach that covers both aspects of qualitative and quantitative data

### **Methods**

- Previous journals and case studies done on informal settlements and environmental problems
- Field surveys , observations , questionnaires and interviews
- Sample size and content analysis
- Reports- City of Johannesburg long and short term intervention report and strategies in place for Alexander
- Newspaper articles. Relevant articles on environmental problems in informal settlements

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## 6. RESEARCH FINDINGS AND ANALYSIS

### 6.1 State of Water Supply in Alexander

This study determined that 67 % of the sampled respondents use household standpipe to get their water, whilst 33 % respondents use public taps. With that said, it normally takes about 5 –10min of 33% of the respondents to fetch water from the public taps.

Below is a figure showing one of the respondents fetching water from a public tap



In informal settlement, water is usually collected from unreliable public taps and stored in drums and other storage facilities for domestic purposes (Kumar ,2005).This is the case in Alexander .Water is collected from street standpipes and stored in drums and buckets for easy access when it is needed. Due to the periods that water is stored in the storage facilities, small particles are formed at the bottom of the facility.

As a result, the biological make-up of water is compromised and the water becomes contaminated. Such water is not safe for human consumption as it has lost its quality. Over and above, 93 % of respondents in Alexander say that they don't treat the water before they actually get to use it. However 7 % of the respondents say that they treat the water and make it safe to drink by boiling the water. In addition, 7% of the sampled respondents rate the water supply condition to be bad, whilst 33% of the respondents say that the water supply is satisfactory and 60% of the respondents say that the water supply condition is fairly good.

Lastly, most of the respondents in Alexander say that the water supply conditions is not properly managed and the government needs to intervene to resolve the current state of water supply crisis. Most of the respondents say that inadequate water supply can result in water-borne .One of the respondents added on to say that: *“When one drinks water that is contaminated with coliform bacteria she/he is very likely to have diarrhoeal diseases and diarrhoea is the prime cause of infant mortality”*

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Below is a figure of Pools of standing water in Alexander along piles of waste



## 6.2 State of Sanitation in Alexander

Due to the lack of proper water supply within the informal settlements, there is no adequate sanitation (Staff 1993). This is also the case in Alexander. Pit latrines, chemical/ and bucket system is used as sanitation facilities. 67% of the sampled respondents in Alexandra have access to a flush or chemical toilet, whilst 25% of the respondents use pit latrines and 8% of the respondents use the bucket latrine. With that said, 83% of the respondents in Alexander say that they don't share the sanitation facility with other households whilst 17% of the respondents say that they share the sanitation facility, this shows that most households have chemical toilets inside their households.

Moreover, 10% of the respondents rate the sanitation facility to be good, whilst 22% of the respondents say that the sanitation facility is bad and 68% of the respondents say that the sanitation facility is very bad. With that said, most of the respondents in Alexander say that the quality of the sanitation in Alexander is very bad and not properly managed and the government needs to intervene to resolve the current state of the sanitation crisis. The respondents further complained that the spread of sanitation-related diseases occur through a number of ways. They say that, ill health may be triggered through direct contact with faeces, when children, for example, put unclean fingers into their mouths, or indirectly, when bacteria or other organisms are transferred to food or water by agents such as insects, rodents and fomites.

General conditions of sanitation facility in Alexander. Most of the respondents in Alexander say that the quality of the sanitation in Alexander is very bad and not properly managed and the government needs to intervene to resolve the current state of the sanitation crisis.

Furthermore, visual observations in Alexander reveals that some of the people in Alexander share the sanitation facilities and the facility is indeed not looking good as seen in the below:

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### 6.3 State of Waste Management

Due to the lack of formal service provision in the informal settlements, there are no waste disposal facilities, nor is the waste collection facilities (Delvoie, 2005) .This the case in Alexander. In this regard, informal settlement populations use their waste management mechanisms to manage the waste generated. According to literature, informal settlements population normally use big tins or buckets to dispose waste and when full (Wekesa, 2011). In Alexander this case also seem to be prevailing. Households use their own sources like small pits that are dug in the yards to dispose waste. The residents dig small pits in their yards and dispose waste inside those pits and burn the contents when the pits are full. The waste dumps act as the breeding zone for pests and vectors of diseases.

However, 72 % of respondents in Alexander say that they use rubbish bins, 18% of the respondents use plastic and 10% respondents say that they use other mechanisms. Although households are supplied with plastic bags for waste disposal, many of these are left on the road and ripped open by animals. Some do not make use of bags and waste is illegally disposed of along streets and in other spaces. Most residents in Alexander own their composting bins which accounts 82% of the respondents whist 18 % of the respondents do not have composting bins.

Furthermore, 82% of the respondents say that the collection of waste is bad, whilst 18% of say that it is satisfactory and none of them have found the waste collection to be good. In addition, 65% say that illegal dumping in Alexander is very bad as waste is found everywhere even on the streets .Furthermore, 33 % of respondents say that it is found to be bad with only 3% of the sampled respondents finding it to be satisfactory.

With that said, most of the respondents in Alexander say that the general condition of waste management in Alexander is very bad and not properly managed and the government needs to intervene to resolve the current state of waste management. Lastly most of the respondents in Alexander say that, uncollected solid waste pose numerous risks to the local population. They say that young children are at risk of injury, poisoning and infection from waste in streets or local open space. They say that organic waste attract insects and other household pests, as well as animals. They further say that uncollected solid waste obstruct storm water run-off, leading to the formation of stagnant pools of water, which in turn facilitate the breeding of mosquitoes and other insects in Alexander informal settlement.

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Below is a figure showing waste along the streets of Alexander



## 7. CONCLUSIONS

Water supply problems, inadequate sanitation, littering and dumping of waste along the streets are the main problems experienced by the community of Alexander. They live in cramped conditions and their houses are not in the best state of repair. The shacks are cramped together and water flows everywhere. An organised and clean environment is one of the most important things that guarantee good health and well-being of residents. Alexander Township is neither organised nor clean, thus the resident's good health and well-being is not guaranteed. There is no adequate housing within the settlement because the concept of 'adequate housing' includes access to safe water, sanitation refuse removal, and these are the things that Alexander Township does not have. Therefore, if no urgent intervention measures are put in place in addressing these housing environmental problems, there will be high levels of environmental degradation in the years to come in the community of Alexander.

Despite the initiative to try better Alexander through the Alexander Renewal Project (ARP) and other projects to try and resolve the current situation of Alexander, the township still remains largely a slum, with grossly inadequate water, sanitation and refuse removal services. Planning and development departments have enormous power to determine, in both the short and longer term, levels of environmental quality. A drive or walk through the streets of Alexander provides powerful support for the old adage that "prevention is better (and cheaper) than cure". Decades of bad planning and development decisions in the context of apartheid have left a legacy of environmental degradation and hazards to health and safety in Alexander, which local authorities and other stakeholders are now battling to address. Therefore further research as to why local authorities and other stakeholders are battling to address these housing environmental issues needs to be done.

## 8. RECOMMENDATIONS

The quality of the living environment is well recognized to be a powerful determinant of community health status. Settlement planning and upgrading efforts, if the environment is to be optimised, requires holistic approaches and integrated input from a wide range of sectors and stakeholders, as well as investment from the state. Settlement upgrading initiatives are costly. To ensure that investments are directed towards interventions of high yield in terms of environmental quality, it is important that decisions are based on sound research and information, and that impacts are evaluated. In this regard, communities can play an

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important role. With the above mentioned, recommendations to try alleviate the current housing environmental problems in Alexander are given below:

### **Recommendations on the state of water supply in Alexander:**

- The current water supply state in Alexander is a deviation to Constitutional rights which in terms of water supply, the local government has to fulfil its Constitutional responsibility of providing access to water services to all because the South African Constitution, 1996, Section 27 states everyone's right to have access to sufficient food and "water". Furthermore, it adds on to saying that the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of the rights. Therefore the government needs to try to adhere to mandates of the constitution so as to improve the current state in Alexander
- The municipality needs connect household standpipes for those that have to walk long distances to fetch water from the public taps, this will help residents to stop storing water in storage facilities thus avoiding water contamination.

### **Recommendations on the state of sanitation in Alexander:**

- Health education and hygiene awareness should be encourage in Alexander to better the current state of sanitation. (Promotion and health education are the key elements to achieve adequate sanitation.
- Ventilated Improved Pit (VIP) latrines are improved pit latrines which are recommended for Alexander as individual or public sanitation systems. VIP latrines cancel harmful side effects (smells and flies) related to traditional pit latrines. It is cheap comparing to other improved hygienic systems and can be accessed by the community, skilled labour are accessible since not complicated, it is easy to maintain and different types of cleansing materials both solid and water can be used.
- The city of Johannesburg should try fast track the provision of sanitation through the free basic household sanitation programme to those residents in Alexander who cannot afford to build their own sanitation facilities
- Monitoring mechanisms by the Municipality should be put in place as to ensure that residents in Alexander meet the minimum required housing standard of a safe sanitation facility.

### **Recommendations on the state of solid waste management in Alexander**

The following will probably lead to a better or improved waste management system, enhancing the quality of life in Alexander Township .These recommendations are considered to be answering the part of the research question which focuses on what the state of waste management is in Alexander informal settlement:

- For improving waste management in Alexander, there is a need for placing dust-bins in different points within the settlement. The points should be easily accessible by both solid waste collectors and local community. Waste from inaccessible locations should be collected in residential improvised bins including plastic bags.
- Residents in Alexander should be educated and encouraged to abide with the current by laws regulating waste management. This well help in regulating dumping of waste
- Education and awareness creation campaigns accompanied by community consultation can help to enhance willingness of the local community. This way, solid waste management, and particularly collection would improve tremendously.

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- Collecting the waste on weekly basis can help reduce the establishment of waste dumps within the Alexander .This can help keep the environment clean.

## 9. REFERENCES

Allen, K. & Heese, K. (2013). Understanding why service delivery protests take place and who is to blame. Available at: <http://www.municipaliq.co.za/>. (Accessed 16 March 2015)

Beall, J., Crankshaw,O. & Parnell ,S. (2012) Victims, Villains and Fixers: The Urban Environment and Johannesburg's Poor. *Journal of Southern African Studies*.26:4, 833-855, DOI: 10.1080/713683609

Castellano, D. (2009). Sanitation services for the informal settlements of Cape Town, South Africa. *Desalination* ,2, 330–337

Chand, S. & Yala, C. (2008). Improving access to land within the settlements of Port Moresby. Special Publication No. 49. Port Moresby: National Research Institute

Chaplin, S. (1999).Cities, sewers and poverty: India“s politics of sanitation“. *Environment and Urbanization*, 11(1),145-158.

Davis, M. (2006). *Planet of slums*. London: Verso.

Kumar, R. (2005). Research methodology. A step by step guide for beginners. 2<sup>nd</sup> ed. London: Sage Publications

Roma, Buckley, C., Jefferson, B & Jeffrey,P.(2010). Assessing users' experience of shared sanitation facilities: A case study of community ablution blocks in Durban, South Africa. University of KwaZulu-Natal Durban .South Africa

Wekesa,B.W.,Steyn,G.S, & Otieno,F.A.O.(2011). A review of physical and socio-economic characteristics and intervention approaches of informal settlements. *Habitat International*. (35): 238-245

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# **Providing Infrastructure in a Bankrupted Environment: Efficient Land Management for Dar-es-Salaam – Lessons from Latin America**

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## **Abstract**

The world is rapidly urbanising. Cities are growing everywhere and Tanzania is not the exception. While the national government lacks resources, it still provides 75 percent of each of its municipalities' budget. Consequently, Tanzania's commercial capital Dar es Salaam, for instance, performs very poorly regarding basic infrastructure and services. Approximately 70 percent of the city's territory consists of informal settlements, and its rapid population growth is likely to squeeze the resources of the urban space even more. Due to the fact that Tanzania has a highly centralised political system, local governments have few possibilities to administrate their territories, which in turn leads to a deficient service provision. Although, the Tanzanian institutional framework supports land management by local governments, in practice, the finances are insufficient and the dependency on national rule persists. Making strategic use of the legal basis, however, bears the potential of implementing innovative financing mechanisms, which through the capitalisation of revenues could sustain the provision of infrastructure, attract investment and improve the overall quality of life of the citizens. This paper discusses the enhancement of financial resources of local governments through land management instruments and their preconditions of implementation on the basis of success stories from Latin America, thus facilitating a cross-learning process in the context of south-south cooperation.

## **Keywords**

Land management, financial resources, local government, informality, Latin America, Tanzania.

## **1. INTRODUCTION**

In the current situation of rapid urbanisation, which represents an unprecedented challenge (UN-Habitat, 2014), governments are highly dependent on external funds and local authorities are seriously indebted or bankrupted, especially in developing countries (Lupala and Namangaya, 2014; Ingram, 2011). Urbanisation is a multifaceted concept. While on the one hand, the population grows and agglomerates in urban spaces, on the other hand public authorities struggle ever more to provide the growing demand for urban infrastructure. Furthermore, the limited capacities within the public sector further hinder key challenges from being tackled (UN-Habitat, 2014; Lupala and Namangaya, 2014; Kombe and Kreibich, 2001; Viitanen, 2002). This paper argues that planning and land management can contribute to generate cash incomes for local budgeting reinvestment (Huddleston, 2007). Its main objective is to discuss the ways financial resources can be generated from the organisation and management of urban land.

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Therefore, the paper departs from the particular context of Dar es Salaam, Tanzania's economic capital and one of Africa's fastest growing cities, and analyses planning instruments and alternative policy approaches on the basis of success stories from Latin America. The knowledge exchange between Africa and Latin America, a developing region that has faced similar challenges in its recent past, is expected to make a significant contribution to the land management debate in Africa in the context of south-south cooperation. In the literature review the current discussion on land management and its major obstacles in Tanzania are briefly outlined. Subsequently the research questions and the applied research methodology are presented. In the main part selected land management instruments are analysed and complemented with concrete experiences made by planning practitioners and scholars from different Latin American countries. Furthermore, important legal and political preconditions that are crucial for land related revenue creation are identified and related to the current situation in Dar es Salaam. In the final part, the links between the discussed instruments, legal frameworks are pointed out as a policy guideline for Dar es Salaam and other African cities that seek to increase their revenue collection through efficient land management.

## **2. LITERATURE REVIEW**

### **2.1 Urbanisation and Land Management in Tanzania**

Over the past decades, the global economy has grown massively without clearly translating into a greater welfare and development of a vast part of the world population, especially in the global South. Besides that, the world is increasingly becoming urbanised. According to the United Nations, urbanization is an unprecedented challenge. By the middle of this century, four of every five people are projected to live in towns and cities, which is also translated in requirements for infrastructure and services provision (UN-Habitat, 2014:22).

Obviously not all of the growing urban areas face the same changes and challenges. For example, the prevailing worldwide view that cities are engines of growth and human development is challenged by the unfolding realities in Africa which situation is not likely to change unless the urban economic growth is translated into a more inclusive development of the societies (UN-Habitat, 2014:16). The urbanisation of poverty, the insufficient provision of infrastructure and environmental damages, exclusion from social and economic opportunities are just some of the challenges growing cities are facing, especially in the global South (UN-Habitat, 2014; Lupala and Namangaya, 2014; Kombe and Kreibich, 2001; Viitanen, 2002).

One way to tackle these diverse challenges is through urban planning and efficient land management, which can contribute to generate financial resources for local government budgets (Huddleston, 2007:4). Moreover, the reinvestment into a city can unleash a cyclical process to provide new resources. For example, infrastructure (such as energy, telecommunications, transportation network, water supply, and sanitation) plays an important role in urban development, and it influences the city's and country's productivity (Ingram, 2011:1). A city with good infrastructure is more attractive for investment (and with this, job creation). Now, if more money flows into the city, the spending capacity increases, which makes it possible to collect more tax money to be reinvested in the quality of the urban area. According to Ingram et al (2013:19), the provision of good infrastructure is a key to a series of other benefits for the households, like for example improved health, access to education, and the enhancement of economic opportunities. Ingram and Flint (2011:23) state that economic growth will make it easier to finance investments in infrastructure, but investments in infrastructure are needed to increase economic growth. The challenge is to find a feasible way to break this vicious circle.

Today, despite the significant contribution of international donor funding, large and growing metropolitan areas in developing countries still need to raise big sums to finance urban infrastructure (Ingram, 2011:1). In the case of Tanzania, the picture seems discouraging. The figures describing the fiscal independency of local governments during the period from 2008 to 2011 show that eight of the country's biggest city

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councils are highly indebted. According to the report “The Tanzania State of the Cities 2013”, the relation between the income and expenditure of the municipalities is in average minus 73.13 percent. In detail, the Arusha City Council performs “best” with a minus 51 percent. In the case of the city of Dar es Salaam, the municipality of Ilala presents figures of minus 73 percent, Temeke minus 76 percent and Kinondoni minus 87 percent, having this last one the worst performance of the country (Lupala and Namangaya, 2014).<sup>36</sup> The report indicates that the overdependence on central government financing undermines the autonomy of cities and municipalities to provide services and develop their own projects.

Even though many sources highlight the importance of investing in infrastructure as a source of development (Ingram et al, 2013; Peterson, 2009), the question that remains is “how to obtain these resources and from where?”. Service provision continues to be inadequate in most of urban Eastern Africa, given the high percentage of slums and informality (UN-Habitat 2014:167). In this context the cycle of “investment attracts investment” is not easy to visualise. In developing countries, the projected annual cost of infrastructure investment is nearly 5 per cent of the countries’ aggregate GDP (Ingram et al, 2013). Nevertheless, despite significant economic growth, Africa as a developing region, still experiences massive urban poverty and other social problems that hinder the investment in infrastructure, keeping the region burdened with high service deficits and shortages in access to technologies (UN-Habitat, 2014:16,20).

It becomes necessary to identify fund raising instruments in order to respond to the needs of the growing urban areas (United Nations, 2016). Undoubtedly, local governments represent a good channel of service provision due to their proximity to the communities (Montgomery, 1972; Cheema and Rondinelli, 2007). However, local governments in developing countries such as Tanzania have little agency and autonomy and–Tanzania’s experiment to decentralise the country has widely been a failure in terms of fiscal independency (Lupala and Namangaya, 2014:38). Consequently, municipal councils perform poorly in terms of basic infrastructure and services which in the case of Dar es Salaam is further aggravated by the fact that 70 percent of the city’s territory consists of informal settlements, with a rapid population growth, squeezing the urban space resources even more (Kombe and Kreibich, 2001; Lupala and Namangaya, 2014).

According to the United Nations (2016:43) “cities cannot succeed without strong fiscal strategies”. Reese (2003: 2-18) states that more control over urban land is required. This “control” can be exercised through instruments that are categorised in the following chapters. Additionally, there is a need for innovative financing schemes to support rapid growth in the cities, which has drawn attention to the use of land-based financing (Ingram et al, 2013:10).

## **2.2 Land as an asset for value capture**

Land is a valuable asset, a source of income, rights and security (McAuslan, 1987: 32; De Soto, 2000) and it is a primary asset for survival and development in Africa (Kironde, 2009:1). The fact of possessing land opens the opportunity to pursue multiple activities, from housing, to industry and both for private and common purposes. These are only some aspects to which make of land a strategic factor for development (Rojas and Iracheta,1997).

According to the *New Urban Agenda* of the United Nations 2016, “municipal finance and local fiscal systems” are among the priority aspects in the contemporary policy discussion. The latest policy paper

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<sup>36</sup> Dar es Salaam was constituted by three municipalities: *Kinondoni*, *Ilala* and *Temeke*, and in early 2016, two more were created, namely *Kigamboni* and *Ubungo*. However, their respective institutions are still in the process of structuring. According to the National Human Settlements Development Policy (Tanzania, 2000) urban areas can be declared villages, towns, municipalities and cities, and change among them depending on the population size, the existing facilities, and capacities of self-sustenance.

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related to municipal finance (United Nations, 2016) indicates the existence of strong national interests in ensuring productive urban economies, which, at the same time, enhance the quality of life and the levels of citizen engagement in political development processes in their countries. For Reese (2003:3), the enhancement of local revenues and the improvement of management and planning capacities have become mandatory priorities for the current government agendas. Moreover, in order to achieve this, it is required to improve the capacities of local governments to fund services for the worldwide growing number of people living in urban areas, with transparency and accountability (United Nations, 2016:2-6).

About mechanisms that can effectively boost and manage the municipal finances, authors such as Connolly et al (2003:10) and Peterson (2009:30) discuss how planning and land management, constitutes a broad arena for municipal policies to finance urban areas, detonating the discussion of the possibilities of value capture.

According to Smolka and Amborski (2000:1), *value capture* is the process in which a portion of, or all land value increments are recouped by the public sector through taxes, fees, exactions and other fiscal means, or more directly in on-site land improvements for the benefit of the community. Since local governments are being promoted to better administrate their territorial borders, assessing, the design of local level policies for land uses regulation and fiscal activities inspired by the idea of land value capture, seem convenient (Peterson, 2009; United Nations, 2016; Smolka and Amborski, 2000). The need for innovative financing schemes to support rapid growth has drawn attention to the use of land-based finance (Ingram et al, 2013:10). However, it is important to highlight that planners and policy makers “must use care in designing the tools to fit the context and conditions” (Smolka and Amborski, 2000:18).

### **3. OBJECTIVES AND RESEARCH QUESTIONS**

The main objective of the research at hand is to discuss the ways financial resources can be generated from the organisation and management of urban land. Therefore, the research seeks to answer the following central research question:

*How can land management instruments generate financial resources to develop local infrastructure?*

In order to be able to respond it, two secondary questions have been formulated:

- (1) *Which land management instruments related to local financial resource generation can be identified and how do they operate?*
- (2) *Which are the necessary preconditions that facilitate the implementation of these land management instruments for local resource generation?*

### **4. APPROACH AND METHODOLOGY**

This research departs from the particular context of Dar es Salaam and analyses planning instruments and alternative policy approaches on the basis of success stories from Latin America.

The analysis is based on an extensive literature study of academic articles and policy papers on the topic of land management and urban financing. A special focus is put on authors and case studies from Latin America, a developing region that has faced similar challenges in its recent past, in order to facilitate a cross-learning process. This is expected to make a significant contribution to the land management debate in Africa in the context of south-south cooperation.

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## 5. RESEARCH ANALYSIS AND FINDINGS

### 5.1 Land Management Instruments for Value Capture

Instruments for land value capture seem to be strictly based on economic principles, yet, the goal of funding enhancement can only be reached if the implementation of those instruments follows certain planning principles and tools which guarantee a minimum “enabling framework that allows the mobilisation of revenue raising instruments” (United Nations, 2016:43). According to Huddleston (2007:8-12), land value is largely determined by the uses to which land is put, and the land subdivision process. Moreover, public infrastructure has direct impacts on property value and ultimately the total bundle of public revenues generated by land development (Huddleston, 2007). In contrast, poor local revenues are also the result of poor mechanisms for revenue collection, tax evasion and inadequate support from the central government (Kombe, 1995).

The International Union for Land Value Taxation<sup>37</sup> explains the issue of speculation and the losses urban authorities face. Many cities underutilize vacant lots, shoddy dwellings, and abandoned buildings. Furthermore, land speculators sometimes hold onto these properties for many years, hoping that someday they can be sold for a high rate of return. However, all of these negative situations can be remedied by capturing the land rent, creating effective incentives for private investment and securing revenue sources to fund infrastructure and public goods. According to Reese (2003:3), consequently, the urban land management is a fundamental mechanism for a sustainable process towards the socio-economic development of cities.

For this paper, several instruments have been revised. In order to organise them, they are divided in two groups for the discussion: (1) planning instruments and (2) Value-capture and Cost-Redistribution Instruments.

#### 5.1.1 Planning instruments

Urban planning interacts with local public finances<sup>37</sup>, more specifically with the local budget, in areas such as public infrastructure, revitalisations, economic development, resource management (Huddleston, 2007). Here, instruments that explicitly promote development, such as strategic plans, master plans, zoning plan, can rise land prices significantly (Rojas and Smolka, 1998). For example, registered land transactions in the Colombian city of Cali reflected price increases of more than 300 percent even before the City Council had announced its formal decision of upgrading the basic infrastructure in certain areas (Rojas and Smolka, 1998).

Having said that, the first instrument to discuss is the *readjustment plan*. This tool encourages the governments to purchase or acquire land (*expropriation, negotiation methods, and agreements tools*) and then, usually through a land trust, readjust the ownership patterns, i.e. redistributing all or part of the land among previous or new landowners (Doebele, 1982, Viitanen, 2002). In this process the government may decide to retain part of the land, for any purposes it deems necessary, including even selling it to recover the cost of urbanisation (Smolka and Amborski, 2000:27). The result is a number of new serviced and marketable plots, of which the municipality is usually granted a share of the profit, either based on in-kinds (i.e. properties, infrastructure, services) or through taxes over the increased value of the property (Viitanen, 2002; Smolka, 2013). Although the resulting plots differ in size and shape (Figure 1), the overall value is expected to be higher due to the investment. This is now where the local government needs to make use of

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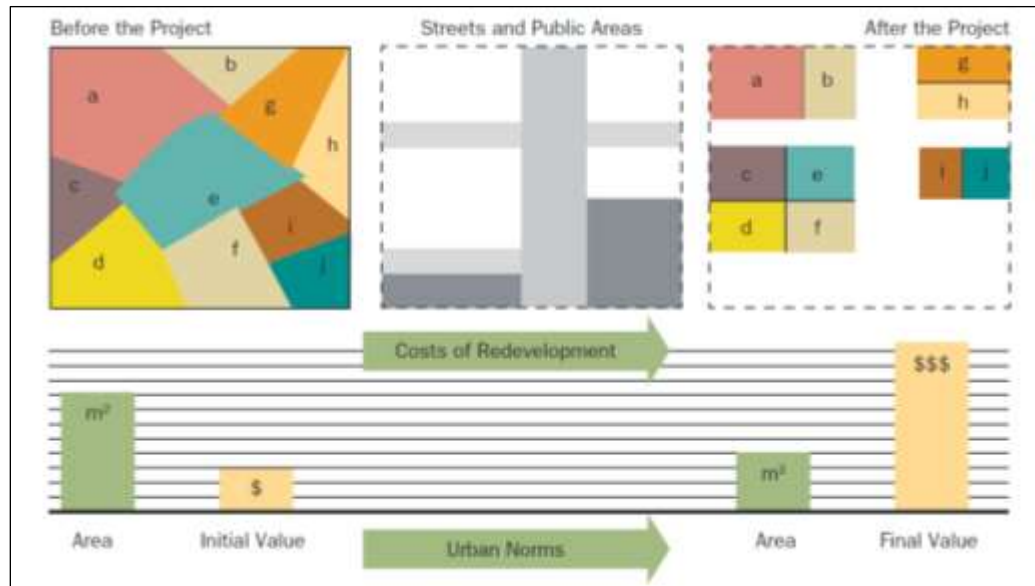
<sup>37</sup> Contributions of the *International Union for Land Value Taxation* for the discussion “Financing Urban Development”, “Habitat III, 2016, The New Urban Agenda” (March 3, 2016), Source: <https://www.habitat3.org/node/522354>, accessed April 4, 2016.

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a value capture instrument to redistribute the surplus value. In this case, the affected stakeholders will expect that the appreciation resulting from urbanisation will more than compensate for the smaller size of each readjusted plot, and they might bear that risk (Smolka, 2013:49).

Figure 1: Schematic Presentation of Land Readjustment



Source: Smolka, (2013:49)

Created by Maria Cristina Rojas Eberhard, 2011

The process of land readjustment requires a *detail scheme* or *detailed plan*, which discloses all the conditionalities and characteristics concerning land uses and three-dimensional issues. The detailed plan, which in the Latin American context is also called partial plan<sup>38</sup>, entails either a better overall configuration of individual properties or simply a redistribution of benefits and costs (Smolka, 2013:50). It adjusts broad city planning guidelines to lower scale conditions and relies on various value capture tools, including land readjustment and betterment contributions (Rojas and Rave, 2013). The plans are characterised by a redefinition of the land use configuration through by the assignment of different densities (Smolka, 2013).

Rojas and Rave (2013) presented the “Simesa Project” as an example of a partial plan in the city of Medellín. The case illustrates the redevelopment of the site of a former steel mill and other smaller factories into a fully self-funded residential complex. Thirty hectares with 22 businesses were readjusted to provide 37 units that combine residential, commercial and public uses. Due to this project the land value increased 19 percent and the full amount of the urbanisation costs corresponded to about 22 percent of the final value, which soon was recovered through the sale of the buildings (Rojas and Rave, 2013).

<sup>38</sup> From the Spanish “*Plan Parcial*”. In the case of Colombia, it is supported by the Law 388 of 1997. | ART. 13 (9): The adoption of guidelines and parameters for the formulation of partial plans, including the definition of urban development actions, actions, instruments of financing and other applicable procedures in the areas you hold to urbanization or urban operations through said plans. | ART. 27(1): the projects of partial plans will be elaborate by the municipal or local authorities of planning, by the communities or by the individuals interested, according to the parameters that al respect determine the plan of territorial code.

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Image (Left): One of the former steel mills on the site in 2006  
Image (Right): Aerial view of the Simesa project under construction in 2011.



Source: Valores Simesa (Smolka, 2013:51)

### 5.1.2 Value Capture and Cost-Redistribution Instruments

Cost redistribution is an important aspect of land management. In a city, some networks produce more wealth than others do which is an absolutely normal and valid situation. However, for the city-system to function, each network depends on the others and that is why the generated income and wealth must be shared and redistributed within the society. One way to make this redistribution effective is through instruments that seek for value capture from intervened properties or for controlling the existent land (Smolka and Amborski, 2000). They require the payment of either a tax or fee by the private landowner to facilitate the capture of the value for the public sector. The mechanism of cost-redistribution aims at collecting the surplus value of the properties and redistributing the benefits obtained for the development of other areas of the city (Reese, 2003).

Taxes and Fees imposed on landowners benefiting from some type of public investment are the most commonly recognized form of capturing land value increment (Smolka and Amborski, 2000:3). A widely known tax is the *property tax*, with all of the variations and different version as per country (*two rate tax, land tax, building tax*, etc.). It constitutes (at least potentially) the most important source of local revenues that can be used to provide urban infrastructure and services (Smolka and De Cesare, 2010:12). This family of taxes presents different strengths and characteristics depending on the local background and the particular capacities and focus on the institutions.

The idea of combining planning and financing tools not just enhances revenue creation, but also allows the local governments to curb land speculation and reduce land prices, particularly benefiting the urban poor (Smolka and Amborski, 2000:25). A suitable example of this is an experience made by local authorities of the Brazilian city of Porto Alegre<sup>39</sup>. The city, which counted about 1.5 million inhabitants during the first half of the 1990's, estimated a shortfall of more than 50,000 residential properties (De Cesare, 1998). Land speculators took advantage of large undeveloped sites near the city centre, waiting for a favourable moment

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<sup>39</sup> Porto Alegre is the capital of the state "Rio Grande do Sul".

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to undertake investment and sell their vacant sites. In parallel, sprawling continued as low income families were pushed to the peripheries, increasing social exclusion and demands for public services.

Even though, major economic and social problems limited the city's ability to provide housing for low-and-middle-income families, the local government was able to succeed by means of the implementation of urban policies and land management instruments (De Cesare, 1998). The city authorities defined *priority urban zones* for developments, identifying areas characterized by high-quality urban infrastructure, which would support larger densities without additional public investment. In the case that the development of the sites was not accomplished within the prescribed time periods, the property tax would be made progressive in those sites to stop speculation. Furthermore, the institutions responsible for planning permits facilitated construction projects on the designated sites. The interaction of these conditions allowed the local government to overcome the scarcity of financial resources and to invest in the required infrastructure in the periphery of Porto Alegre (De Cesare, 1998).

Another alternative to apply the property tax is to separate the value of the land from the building. An example of this can be found in the Mexican city of Mexicali<sup>40</sup> where the definition of the tax was rearranged, applying it exclusively on the land value and not on the value of any buildings or structures. The case is a success story where due to political commitment pertinent changes could be promoted that achieved to raise revenues by means of the property tax and the modernization of cadastral and collection systems (Perló, 1999). To be more precise, after launching a cadastre modernization programme (1989-1994), political will combined with a consultancy advice pushed for the change from a mixed-value tax base (land and buildings) to a land value system. Perló (1999) explains how “the results were spectacular in two ways: first, the new tax raised revenues quickly; and second, there was not a single legal or political objection from taxpayers”. As a result, this increase became the most important source of revenues of the municipality, allowing the launch of an important public works programme.

## 5.2 Informal Settlements and their Potential for Resource Generation

Informality is another major issue to be discussed in the context of land management in cities of the developing world and in Tanzania this represents one major challenge (Kombe and Kreibich, 2001; Lupala and Namangaya, 2014; Smolka and DeCesare, 2010). Informality refers in general to activities outside the formal procedures determined by the law, that makes the taxation of informal settlements a violation of many premises on which property tax systems are based upon (Smolka and DeCesare, 2010:1). Characteristics such as obscure tenure rights, incremental unfinished houses and non-adherence to standards and building codes, make public investment unlikely in most informal settlements retaining them in a vicious cycle of exclusion (Smolka and DeCesare, 2010; Kombe and Kreibich, 2001).

According to Smolka and DeCesare (2010), although the terms “informal”, “illegal”, “irregular” and “clandestine occupations” are used interchangeably and imply some type of deliberate act to break the law, they refer to slightly different conditions. In fact, for most families living in informality, those settlements are the only option available. As such, they may have a legitimate right to occupy the areas, reflecting an ambiguity where the fact of legality and legitimacy do not necessarily overlap (Smolka and DeCesare, 2010:2).

Another myth presumes a poor performance of the property tax in the context of informality. In order to test this hypothesis, Smolka and DeCesare (2010:7) conducted a study that could not provide any empirical support for this claim, suggesting that the relations between tax performance and informality are much more complex. In an attempt to relate property tax performance and the presence of informality in a total 5,506 municipalities in Brazil, they identified six factors that proved to influence the collection of the property

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<sup>40</sup> Capital city of the border state of Baja California.

tax (Smolka and De Cesare, 2010:11). The two factors related to informality confirmed, initially, the importance of a more universal tax base. Firstly, those governments including the informal properties in the cadastre reflected a better performance of the tax. Secondly, municipalities with slums collected more property taxes per inhabitant, what made the authors suggest that informality is more prevalent in economically dynamic cities. Even given the presence of informality, municipalities achieved better results by maintaining updated cadastres and maps, including informal properties in the cadastre, and providing a broad framework of urban regulation (Smolka and De Cesare, 2010:12).

In another example, a land market survey conducted in Latin America showed that the prices per square meter of serviced land on the periphery of many cities, made available by private developers, were comparable to cities in developed countries where the per capita income is seven to ten times higher (Smolka and De Cesare, 2010:13). Actually, in the case of un-serviced settlements, dwellers even require considerably more time and money to access housing and basic services, such as water, roads and electricity, but also education, transport and health (Ferguson and Smets, 2009; Lupala, 2002; Kyessi and Furaha, 2010). Therefore, the debate on property tax raises the question of how much those incapable-to-pay are indeed able to pay, how many of those capable-to-pay are actually paying and to what extent is the framework itself that allows some the access to infrastructure and service provision, whereas it denies it to others.

In other words, it is cheaper to make the effort to finance urbanisation processes since the beginning with appropriate instruments, instead of later pretending to correct the problems and committing mistakes such as trying to upgrade slums and informal settlements.

### **5.3 Preconditions to Enhance Local Funding through Land Management Instruments and their Challenges in the Case of Dar es Salaam**

Many land management instruments have evolved over time and developed their own nuances according to the specific local context. However, what is often forgotten are the operational conditionalities in the processes of policy making. Therefore, in order to make the instruments implementable, some preconditions have to be discussed.

The first one is a *minimum level of decentralisation* (Bahl et al, 2008:4). Even though, decentralisation is considered a rather recent trend (Cheema and Rondinelli, 2007), many developing countries have done efforts in order to both, financially and legally, strengthen the urban activities in their subnational unities. The Latin American region has taken a slow and rugged route towards decentralisation since the 1980's (Bossuyt, 2013), and also African countries, such as Kenya, are undergoing some kind of decentralisation process, although mostly still in its infancy (Cheeseman et al, 2016:4).

In the case of Tanzania decentralisation efforts started in the 1980's when some responsibilities were delegated back to the local authorities. The Human Settlements Development Policy (Tanzania, 2000) states in its point 2.3.11 that the absence of urban authorities in the period between 1972 and 1978 was co-responsible for the deterioration of infrastructure and services. Today, local authorities still face the problem of duplication of roles related to planning<sup>41</sup> (e.g. with the Ministry of Land), and collected revenues, such as land rent, have to be transferred to the national government making the local level still highly dependent on the national level. This duplication of duties related to planning and land management have even established a bureaucratic apparatus which is extremely slow with regard to the needs of the population and the market forces (Lupala and Namangaya, 2014; Kombe and Kreibich, 2001).

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<sup>41</sup> Urban Planning Act 2007, Part II, Art 3 - 4. Local Government (Urban Authorities) 1982, Part IV, Art. 54 - 61

A second precondition is the *existence of a framework of urban regulations*. Instruments - such as land use plans, master plans, strategic plans, expropriation, negotiation methods or valuation – enable the value capture, behaving as the platform for the generation of financial resources. In other words, they support indirectly the collection of value to be redistributed. Without a minimum supporting legal frameworks, none of the above presented successful cases could have succeeded (Smolka and DeCesare, 2010; Smolka, 2013; Perló, 1999; Viitanen, 2002; De Cesare, 1998).

The next precondition is the *availability of up-to-date information*. Cadastre, maps, and information on current market values are required to prepare and execute decisions, like in the case of Porto Alegre and Mexicali. In Tanzania, however, one of the key challenges that cities are facing is the informal urbanisation, which significantly hinders the creation and access to updated and accurate cadastres. Therefore, the inclusion of key information to the cadastres and registers related to informal settlements becomes crucial, especially when it comes to land rent and property tax collection.

Concerning the actual design of the property tax, Gary Cornia (cited in Bahl et al, 2008:307-310) argues about the importance of a clear base for the tax design, which ideally corresponds to the market value of the land. However, these standard methods of valuation do not travel well to the developing country setting, where the challenge of determining market values for land and structures represent the principal administrative impediment to the implementation the property tax (Bahl et al, 2008:8, 10).

A fourth precondition is *the technical capacity of the staff*. Success stories such as Porto Alegre and Medellin would not have been possible without technical staff that is trained to push forward the process. Planners must increase their understanding of how local budgets work and how their various activities affect the fiscal conditions of the cities and regions they work for (Huddleston 2007:17). Planners do have the potential to exert significant impact on municipal budgets. However, scenarios where planners (and local governments) lose opportunities to obtain revenues are not unusual and is not always due to legal or institutional restrictions (Smolka and Amborski, 2000).

Nevertheless, the capacities must not be limited to technical skills but also comprise the flexibility and adaptability of the staff to the contextual situation (Ascher, 2007). Perló (1999) highlights the importance of recognising that each experience follows its own and unique process and the “presented case” (e.g. Porto Alegre or Mexicali) is not the solution for every local government.

*Transparency as an eminent principle* is the following precondition. Given the case of land readjustment, according to Viitanen, “sites will not be available for building until the property and ownership structures are adjusted” (2002:2). Planning and land management usually imply protracted processes to achieve the final stage, therefore, the rules of the game need to be clear for everyone since the beginning (Smolka, 2013; Smolka and De Cesare, 2010; Viitanen, 2002).

Another decisive requirement in any planning process is the *political will*. Even though citizens tend to dislike rules and regulations, successful cases of land management showed how crucial political commitment and proper communication was for fund raising. Political will, for instance, was a crucial element to overcome the myths related to informality, incapacities to pay or difficulties to implement a tax. Planning practitioner have said: “it is more expensive to do nothing”, “regulated cities are more attractive for investments and provide better urban environments”, and “it is better extracting little form the many than extracting more from the few”, as statements to overcome some of those myths (United Nations, 2016; Smolka and Amborski, 2000; Smolka and De Cesare, 2010).

Finally, the last requirement is the *existence of a fiscal culture and acceptance by the general public*. Smolka and DeCesare (2010:6) argue that higher administrative cost of taxing low-valued properties can be offset by the benefits of strengthening a fiscal culture throughout the city.

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It is not only the staff that needs to be capacitated and sensitized to properly apply the land management instruments, but also the communities that are involved in the processes (Rojas and Rave, 2013:25). Public policies and legal frameworks can only be effective once the communities have appropriated them as part of their daily work and endeavours (Rojas and Rave, 2013:25). Thus, communication is a strategy that goes hand in hand with the reinforcement of the fiscal culture. In the cases of Mexicali (Perló, 1999), Medellin (Rojas and Rave, 2013) and Porto Alegre (De Cesare, 1998) the communication between the local authorities and the population was a key element for the success of the process.

## **6. RESEARCH CONTRIBUTION**

Even though Tanzania has faced big changes in terms of land management over the last decades, very little attention has been paid to the topic of value capture. Urban areas in Tanzania do have a legal framework that supports instruments for land management and other fund raising efforts, but yet in most cases they remain indebted and unable to invest in basic infrastructure.

The indebtedness and bankruptcy seems to be an overwhelming reality, which instead could be a matter of effectively using the legal framework and rearranging the previously discussed list of preconditions. Many of those preconditions exist in a way or another in developing contexts, including Tanzania, but often they are simply not properly located.

The paper at hand, far from providing a blue-print to solve these urgent issues, opens up the discussion and outlines possible pathways for a more efficient urban land management. A valuable contribution to the debate is made by the introduction of concrete experiences from Latin American, a developing region which recently has encountered problems similar to the ones that many African cities face today.

## **7. RESEARCH LIMITATIONS**

Some constraints of this research is the limited access or lack of accurate data and official figures related to local governments finances. Another limitation, particularly of this paper, is that the analysis is exclusively based on secondary data. This is due to the fact that this paper is part of a larger research project, which is still in process. In a forthcoming stage, qualitative data from fieldwork will enrich the theoretical arguments and provide a more practical insight in the reality of land management in Tanzania.

## **8. FURTHER RESEARCH**

Further research is recommended on the applicability of the discussed land management instruments in an African context, paying special attention to the respective legal frameworks and socio-economic dynamics.

## **9. CONCLUDING REMARKS**

This paper discussed how local finances generation can become more efficient when the procedures rely on a combination of land management instruments. More than that, those instruments are of little use if certain preconditions are not given. Those instruments require a minimum level of decentralisation, the existence of a framework of urban regulations, the availability of updated information, well capacitated technical staff, transparency and acceptance by the public, which altogether goes further than the instruments themselves. By strengthening these preconditions, the possibility to mobilise monetary resources increases significantly. Thus new infrastructure can be provided without the need to establish new laws or sophisticated instruments and the quality of life of the city's inhabitants can be improved.

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## 10. ACKNOWLEDGMENTS

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## 11. REFERENCES

- Ascher, F. 2007. *Los nuevos principios del urbanismo*, Madrid: Alianza Editorial S.A.
- Bahl, R.; Martinez-Vazquez, J. and Youngman, J. (Eds.) 2008. *Making the Property Tax Work: Experiences in Developing and Transitional Countries*, Cambridge: Lincoln Institute of Land Policy.
- Bossuyt, J. 2013. Overview of the Decentralisation Process in Latin America: Main achievements, trends and future challenges. Discussion paper 148. *European Centre for Development Policy Management ECDPM*. Ecuador.
- Cheema, G.S. and Rondinelli, D.A. 2007. *Decentralizing Governments: Emerging Concepts and Practices*, Washington DC: Ash Institute for Democratic Governance and Innovation, and Brooking Institution Press, 1-20.
- Cheeseman, N., Lynch, G. and Willis, J. 2016. Decentralisation in Kenya: the governance of governors, *The Journal of Modern African Studies*, 54, 1-35.
- Connolly, P.; Goldsmith, W. and Mabin, A. 2003. Urban Responses to the “Lost Decades”, *Land Lines*, 15(2), 9-13.
- De Cesare, C. 1998. Using the Property Tax to Value Capture: A case from Brazil, *Land Lines*, 10(1).
- De Soto, H. 2000. *The Mystery of Capital: Why Capital Triumphs in the West and Fails Everywhere Else*, London: Bantam Press.
- Doebele, W. A. 1982. *Land Readjustment*, USA: Lexington Books.
- Ferguson, B. and Smets, P. 2010. Finance for incremental housing; current status and prospects for expansion. *Habitat International*, 34(3), 288-298
- Huddleston, J. R. 2007. The intersection between Planning and the Municipal Budget, Working paper, *Lincoln Institute of Land Policy*.
- Ingram, G. K. 2011. A Global View of Infrastructure and Its Financing, *Land Lines*, (10).
- Ingram, G. K. and Flint, A. 2011. Cities and Infrastructure: A Rough Road Ahead, *Land Lines*, 20-23.
- Ingram, G. K., Z. Liu, and K. Brandt. 2013. Metropolitan infrastructure and capital finance, in *Financing metropolitan governments in developing countries*, edited by R. W. Bahl, J. F. Linn, and D. L. Wetzel. Cambridge: Lincoln Institute of Land Policy.
- Kironde, J. M. 2003. The New Land Act and Its Possible Impacts on Urban Land in Tanzania, Conference paper, *Lincoln Institute of Land Policy*.

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4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Kombe, W. 1995. Formal and informal land management in Tanzania – The Case of Dar Es Salaam City. *SPRING Research Series (1)*, Dortmund.

Kombe W. and Kreibich. 2001. Informal Land Management in Tanzania and the Misconception about its Illegality. Conference paper. *Coping with Informality and Illegality in Human Settlements in Developing Countries*. Brussels. Available at:

[http://www.ucl.ac.uk/dpu-projects/drivers\\_urb\\_change/urb\\_infrastructure/pdf\\_land%20tenure/ESF\\_naerus\\_kreibich\\_Land.pdf](http://www.ucl.ac.uk/dpu-projects/drivers_urb_change/urb_infrastructure/pdf_land%20tenure/ESF_naerus_kreibich_Land.pdf)  
[accessed: 10 June 2016].

Kyessi, A. and Furaha, G. 2010 Access to housing finance by the urban poor: the case of WAT-SACCOS in Dar es Salaam, Tanzania, , 3(3), 182-212.

Lupala, A. 2002. Peri-urban Land Management for Rapid Urbanisation. The case of Dar Es Salaam, *SPRING Research Series (2)*, Dortmund.

Lupala, J. and Namangaya, A. 2014. *The Tanzania State of the Cities Report 2013*.

McAuslan, P. 1987. *Urban land and shelter for the poor*, London: International Institute for Environment and Development.

Montgomery, J. 1972. Allocation of Authority in Land Reform Programs: A Comparative Study of Administrative Processes and Outputs, *Administrative Science Quarterly*, 17, 62-75.

Perló, M. 1999. Mexicali: A Success Story of Property Tax Reform, *Land Lines Article*, 11(5).

Peterson, G.E. 2009. *Unlocking Land Values to Finance Urban Infrastructure. Trends and Policy Options*. 7, The World Bank, Public Private Infrastructure Advisory Facility.

Reese, E. 2003. Instrumentos de gestión urbana, fortalecimiento del rol del municipio y desarrollo con equidad, Working paper, Lima: *Lincoln Institute of Land Policy*.

Rojas, F. and Iracheta A. 1997. Article: Land as a Strategic Factor for Urban Development in the State of Mexico. *Land Lines*. 9(5).

Rojas, F. and Smolka, M. 1998. New Colombian Law Implements Value Capture. *Land Lines*, 10(2).

Rojas, M. C. and Rave, B.E. 2013. Reajuste de tierras en Medellín, Colombia. Conference paper, *Foro Latinoamericano sobre Instrumentos Notables de Intervención Urbana*, Lincoln Institute of Land Policy and Ministerio de las Ciudades de Brasil (May 6–10).

Smolka, M. 2013. Implementing Value Capture in Latin America. Policies and Tools for Urban Development, Policy Focus Report, Cambridge: *Lincoln Institute of Land Policy*.

Smolka, M. and Amborski, D. 2000. Value Capture for Urban Development: An Inter-American Comparison, Working Paper, Cambridge: *Lincoln Institute of Land Policy*.

Smolka, M. and De Cesare, C. 2010. Property Tax and Informal Property: The Challenge of Third World Cities, Working paper, Cambridge: *Lincoln Institute of Land Policy*.

Tanzania, United Republic of. 2000. *National Human Settlement Development Policy*.

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UN-Habitat. 2014. *The State of African Cities 2014. Re-imagining sustainable urban transitions*, International Report, Nairobi, Kenya.

United Nations. 2016. Municipal finance and local fiscal systems. Policy paper 5, *United Nations HABITAT III, Conference on Housing and Sustainable Urban Development*, available at: <https://www.habitat3.org/bitcache/7d2af5cfe4e95035725b8027a002879975c355c4?vid=572974&disposition=inline&op=view>

Viitanen. K. 2002. The Finnish Urban Land Readjustment Procedure in an International Context: What Can Be Learned Commonly, Conference Paper, *Lincoln Institute of Land Policy*.

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# Comparative Analysis of Public Participation Strategies in Spatial Planning and Development of Metropolitan Cities of Gauteng, South Africa

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## Abstract

Public participation as the term indicates could be looked upon as a process by which the inhabitants of a particular nationality are involved in or made part of the development processes that concerns them. However according to contrasting planning cultures of the countries throughout the world, it is understood in a different manner. Although a number of theorists have attempted to debunk the definition of the concept in question, fewer consensuses have reached thereon. In nature public participation has been looked upon as a more radical process in relation to public engagement for as far as urban planning or policy making processes are concerned. Public participation continues to form the most integral part of urban planning and has been looked upon as one of the most integral driving forces behind comprehensive and thorough planning processes. However, controversies remain in relation to the manner in which its processes are carried out. Strategies and/or approaches adopted in most cases have been associated with a number of discrepancies.

The study aimed to: Identify the public participation strategies; Investigate and assess the extent of public participation strategies and approaches followed by the metropolitan municipalities in Gauteng; Identify key issues and challenges faced in the implementation of public participation strategies in planning and development projects; and to identify key determinants which favour successful involvement and implementation of public participation in planning and development projects. The study was conducted in Ormonde Suburb part of Johannesburg South, Kempton Park in City of Ekurhuleni and Mamelodi in City of Tshwane. Based on qualitative research methodology, the study involved community surveys and interviews of town planners from the three metropolitan cities.

The findings thereof revealed that, public participation reached to the communities was minimal as responded by the communities. Public participation is a legal requirement as it is informed by a number of planning instruments applied at municipal level. Although such instruments have been put in place to ensure comprehensive and constructive public participation processes, the findings have in contrast indicated their uncertainties. The study concludes with the line that, it is conspicuous that the strategies used by these municipalities are ineffective. As a point of departure, it is recommended that new modes of consultations such as “on line communication”, with factual feedback and more technological advances be implemented.

## Keywords

Public Participation, Strategies, Metropolitan Planning, Planning Instruments, Gauteng.

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## **1. INTRODUCTION**

Public Participation forms an integral part of planning processes worldwide. However, the concept's application or rather the approaches adopted to include the public in the planning processes vary from country to country. Underpinning the above, the European Institute for Public Participation (2009) confirms that community engagement is understood in many different ways in accordance with a particular country's planning culture. In that case public participation in South Africa is practiced in its own distinctive technique according to its planning culture or context. Participation in South Africa is enclosed essentially within the context of local government and outlooks of service delivery from government (Buccus et al 2008). Although the concept in question has been recognised as a crucial factor in the planning profession and other related fields, it has yet in so many cases criticised to be falling short and/or successful at some instances. This is due to the criticisms that it is only undertaken only through issues related to service delivery. In this regard it should be remarked that, as contemplated in the legal devices the civic is ought to be involved from the inception to the completion of the particular projects.

## **2. LITERATURE REVIEW**

### **2.1. Unpacking the concept Public Participation**

Public participation as the term indicates could be looked upon as a process by which the inhabitants of a particular nationality are involved in or rather made part of the development processes that concerns them. However, according to contrasting planning cultures of the countries throughout the world it is said to be understood or applied in a different manner. Although a number of theorists or scholars have attempted to debunk the definition of the concept in question, fewer consensuses have been reached concerning its exact meaning. Steelman and Ascher (1997) are of the argument that the subject in question is an indefinite term signifying distinct things to distinct people. However, it has been argued that, participatory processes are said to have originated from political sciences in relation to democracy and citizenship particularly within the setting of regional and local planning (De Felice and Petrillo, 2013).

Additionally Alterman et al (1984: 178) highlighted that “public participation may be used as a strategy to serve various goals”. Concisely the goals related herein could be associated with the positive impact on decision making processes, problem formulation, community empowerment, mitigation of bureaucratic system, enhancement of accountability and interrelationship amongst the spheres of government. Nonetheless such instances are said to likely result in a more enhanced robust cooperation between the citizens and their government. To this juncture, it has been found appropriate to reach a conclusion that public participation is not confined to a particular connotation but could therefore be variously defined based on one's experience.

### **2.2. Approaches and strategies adopted**

In making the processes of public consultation a success, it is said that there has to be a path or rather a route followed and/or adopted to conduct such processes. Nonetheless Chafe et al (2008) stress that, the success of the strategies adopted is normally dependent or is therefore determined by the available resources to undertake such processes. Rowe and Frewer (2000) reflect in Smith (1983), that community consultation comprises a cluster of events premeditated to engage and notify the public enabling those affected by the decision to actively partake towards its making. Considering such events, it has been outlined that there are both desirable and undesirable probable to result from each of the events, depending on the situation at that particular point in time. Typical public participation in most parts of the world are said to involve amongst others, however not limited to, citizen juries, expert fora and public summits (Ferkany and Whyte, 2012). Rowe and Frewer (2000) further expand that, the processes are usually inclusive of referenda, Public

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hearings, Public insights surveys, conversed rule making, Conferences, citizen panels, public advisory committee and focus groups.

The consultation processes as explained above, are said to be taking place in innumerable ways in Australia. Dallinger and Dollery (2008), state that participation in Australia is usually undertaken through completion of surveys, normal community meetings, working in conjunction with councillors in consultative groups and project steering committees. At times as part of participation processes it has been said that, flyers pertaining to a particular project or whichever matter if any, are usually put on show in community erections and neighbourhood surroundings. Cochrane (2015) adds on Dallinger and Dollery (2008)'s findings, with the notion that other methods used in Australia are inclusive of displays in billboards through the municipality, public notices in local newspapers, announcements usually incorporated in the speeches made by councillors and annotations on local community radio. The approaches or methods adopted are ought to furnish applicable forms of material, appropriate locations "for participation, and access to information centres which will empower the public to comprehend issues and communicate preferences" (De Felice and Petrillo, 2013). In addition it has been said that these strategies have two main prominent benefits which are recognized in processes of policy making. Participatory processes (with use such strategies) are said to be leading to excellent policy outcomes and also assist the communities to develop the capacity to improve their lives (Theron et al., 2007).

Having applied such methods for over decades now, some scholars as per their experiences still feel that, these methods have not been effective or rather sufficient in transitioning the development of cities. Connick and Innes (2003) outline that "the strategies are inadequate as they do not achieve genuine participation in planning or other decisions". The members of the public are not satisfied for not being heard (Cornwall, 2008). Additionally Pimbert (2004) also feels that the methods identified herein hardly improves any decisions made by public officials and agencies and broad public spectrum is not taken into account (Cochrane, 2015). During such consultations as Andrews et al (2008) highlights, citizens who are likely to bring to the fore the issue of fairness and justice are likely to be ruled out of order. On this note, Brabham (2009) suggests that new approaches to conducting meaningful and constructive public participation methods should be implemented with technology being the point of reference in this regard. The author is of the belief that technology is capable of enabling in-depth altitudes of involvement between the public and governments, principally through the mediocre of the Web.

### **2.3. Spatial Planning and Public Participation**

Spatial Planning in nature can be recognised as a set of mitigation measures to address inconsistencies or rather uncertainties amongst economic, environmental and social related policies. Substantiating the afore-stated Adams (2009) postulates that Spatial Planning has been said to be "a particular form of public policy, on that claims to be focused on the spatial dimensions of a wide range of other sectoral policies, from economic development, transportation and environmental protection". It has however been argued that, community should therefore be deemed as the resources of a particular place within which they fall. It has been conspicuous or rather it is known that, the public is only engaged in the later stages during community hearings and discussions of developments or spatial planning in this instance, when plans have already been put in place. As a response to the above, it can be argued that it has been found that so many communities nowadays have identified what is regarded to as "their right to the city". "A right to the city encompasses not just a claim to be in the city or entity's freedom to access urban resources, but also a right over the city, that is, a right to traverse and negotiate it, to 'inhabit well', (Manji, 2015).

Citizen participation thus forms an integral part of Spatial Planning. "Strategic Spatial Planning is an instrument capable of accommodating more active public participation, geared towards the shared building of a possible and desired future for the territorial community" (Goncalves and Ferreira, 2015:88) commented. In support of the above, Faehnle and Tyrväinen (2013) support the above with viewpoint that

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engagement of residents and other stakeholders in planning is associated with positive results and augmenting compliance of social ecological systems. On the similar note Bizjak (2012) ascertains that public participation has been found highly essential for efficacious spatial planning. Through the distribution of power between the state and its residents as coproduction approach entails, it is contended that the decision making process will be democratic with the basis on principles and facts.

## **2.4. Development Projects and Public Participation**

In principal a typical project may be defined as “capital investments to develop facilities, to provide goods and services which will increase the aggregate consumption benefits of people”, (Otto and Ukpere, 2013: 337). Urban poor are the most marginalised and/or disenfranchised group of individuals in urban environments. The above occur mostly in the participation or rather decision making processes of the development process that involve them. Landman and Ntombela (2006) argue that, the poor are deprived of various opportunities to engage and participate in public and community oriented projects, decision making, and lack access to information. It is because peoples’ minds are subjected to a mentality that poor people do not have relevant skills to can make sound decisions in a corporate world. It can be argued that, such instances are therefore the ones limiting the prosperity and the growth of a given society since the country is not making use of its available resources to the best of its capability. However, Devas (2001) postulates that at city level, the consultation processes are often decided and dominated by the local elites with little accountability to the local citizens inclusive of the poor.

As have highlighted already, development projects could be supposed as a tactical way of empowering the community and of building a strong social cohesion as a result. Additionally, the sustainability of a particular project as have been lamented by various scholars it is dependent on the level of engagement with various scholars. In support of the above, it has been stressed that in nature the notion of amalgamation of various entities has been deemed essential. Sustainability of any given project is determined by the level of participation, rather than just individuals’ contributions (Tango International, 2009). It could therefore be drawn from the above that participatory processes exaggerate the capability of a typical project in succeeding as opposed to non-participatory processes.

## **2.5. Municipal Planning and Public Participation**

### **2.5.1. Planning tools informing public participation**

The planning tools adopted at municipal level are regarded as remedies to the inevitable issues encountered in both rural and urban environments. Urban planning in nature is founded both on theory and practice. The point emphasised here is that, the instruments, plans, policies used by municipal planners for development purposes could be seen as the conceptual frameworks guiding the practice. In accordance with the above Abukhater (2009) adds that the reliance on theory inclines to provide organizations in the field of planning, a systematic guidance in circumstances of disagreements. As a result such frameworks are believed to leading to good management of resources, succession of the development projects at hand and sustainability in urban environments.

Community participation is seen “as an integral and inseparable part of the municipal planning system and the comprehensive Integrated Development Planning (IDP) system” (Coetzee, 2012). For it is corroborated by Alexander (2010) that public interest has always been recognized as an essential component in planning. Similarly it is confirmed by Cochrane (2015) that community engagement is still to date becoming a requirement and is most regularly commanded or rather assimilated in government policies together with planning processes throughout the world. Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) are regarded as the most notable planning mechanisms in the local sphere of government.

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The involvement of public in all facets of planning is associated with the positive outcomes favouring sustainability in urban environments. Municipalities are cornerstones of development and planning of urban and rural environments. In that sense, holistic approach to the inevitable social, environment and economic issues is needed. High proportion of recent conducted studies have sought to indicate that participatory processes are the most preferable as far as planning is concerned, simply because more radical incentives are developed through such processes. There is a growing literature review on the correlation between municipal planning and public participation, whereby as Dallinger and Dollery (2008) highlight that, high proportion of municipalities have increasingly incorporated public engagement undertakings as central constituents of their procedures. However, loopholes with regards to the above are said to be still to date hegemonic.

### 3. OBJECTIVES /RESEARCH QUESTIONS

This study was fundamentally framed by four (4) objectives, with each corresponding to a certain question. Initially the study sought to assess the planning tools and instruments pertaining to public participation processes in the study areas. It then, sought to investigate and assess the effectiveness of public participation strategies and approaches. Furthermore, the identification of issues and challenges faced in the implementation of public participation processes in the planning processes also formed an integral part of this study. Ultimately, it sought to identify key determinants favouring successful involvement of communities in the planning processes. Complementary to the afore-indicated objectives, a set of questions was formulated.

### 4. APPROACH & METHODOLOGY

Qualitative research method was found suitable to apply for the study related herein. As defined by Patton and Cochran (2002) Qualitative research connotes comprehension of some facets of social life with its procedures and techniques containing principally words rather than numeric figures. Yin (1994) demonstrate that in Qualitative research data is extensively gathered through conducting interviews, documentations, archival records, questionnaires and observations. It is therefore appropriate to highlight that this study adopted both the interviews and questionnaires for the gathering of data. The diagram below demonstrates the summary of the routes followed to conduct this study.



#### 4.1. Key Informant Interviews

The qualitative interview is one of the most important and preferred data gathering tools in qualitative research methods (Myers and Newman, 2007). Polkinghorne (2005) asserts that, interviews are deemed as the supreme extensively method to the invention of non-numerous data. Potter (1996:96) perceives interviewing as a “practice of collecting data from beings by questioning them and expecting vocal communication in turn”. The interview questions were aligned with the objectives and the questions which framed this study.

#### 4.2. Questionnaires

Questionnaires have been associated with accomplishing about positive and accurate results. Wilkinson and Birminghami (2003) argue that, questionnaires dominate over other forms of data collection in terms of

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their benefits. They are recognized research tools in both Qualitative and Quantitative. The questions thereon were also in accordance with the primary objectives and questions of this study.

#### 4.3. Targeted groups/ Participants

It has been proven by various scholars that a research with no target group(s) is considered meaningless. In that regard it is in the utmost importance to furnish the participants which were found suitable for this particular study. Public participation, as informed by a number of policies is a right to every individual residing in any given country. However, careful selection in relation to the participants was required for accurate and better results in this case. Individuals aged 18 and above were found relevant for the prospering of this study. These individuals were inclusive of, students, entry level workers, municipal officials, private entities and economic active individuals.

#### 4.4 Study unit / Area

The study was conducted in the selected regions representing the three metropolitan municipalities of Gauteng, namely the City of Tshwane, City of Ekurhuleni and City of Johannesburg Metropolitan Municipalities.

##### City of Tshwane Metropolitan Municipality

As per the 2011 census contemplated in the Gauteng municipal Report, the population herein has been estimated at about 2,921 488 with a density of 1,200 /km<sup>2</sup>. The notable features in the jurisdiction areas of the City of Tshwane metropolitan municipality are inclusive of but not limited to, the University of Pretoria (UP), Tshwane University of Technology (TUT), University of South Africa (UNISA) and Wonderboom Airport. The study will be undertaken specifically in Mamelodi Township.

##### Ekurhuleni Metropolitan Municipality

As per the 2011 census contemplated in the Gauteng municipal Report, the population herein has been estimated at about 3178 470 with a density of 4,200/ km<sup>2</sup>. The prominent features in the jurisdiction areas of the City of Ekurhuleni metropolitan municipality are inclusive of but not limited to, O.R Tambo International Airport and Ekurhuleni West College. The study herein will be undertaken in Kempton Park.

##### Johannesburg Metropolitan Municipality

As per the 2011 census contemplated in the Gauteng municipal Report, the population herein has been estimated at about 4 434 827 with a density of 1,200/ km<sup>2</sup>. The remarkable features in the jurisdiction areas of the City of Johannesburg metropolitan municipality are inclusive of but not limited to, the University of Johannesburg, University of Witswatersrand, Johannesburg Stock Exchange, Gold Reef City, Soccer City, Apartheid Museum and Constitution Hill. The study will be carried out in Ormonde Suburb, south of Johannesburg.

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## 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

### 5.1. Research Analysis

This signifies the evaluation of the information collected in depth and its conversion into useful information for better decision making and suggestion of solutions. The data collected herein, was initially captured on Microsoft Excel. Tables and graphs are used in this regard to indicate the results.

### 5.2. Findings

#### 5.2.1 Response rate

A total of ninety (90) questionnaires were initially handed out to the three metropolitan municipalities, as the basis of this study. Precisely, a number of thirty (30) questionnaires were distributed to each municipality. In Johannesburg the community survey was conducted in Ormonde located in Region F, Mamelodi in the CoTs and Kempton Park in the CoE. Of 30 questionnaires, 22 (73%) were returned from the CoJ and 27 (90%) were returned from the CoE. As for the CoT only 21 surveys were returned, reflecting a 69% response rate. Therefore in total 70 (overall 78% response rate) out of 90 questionnaires were used to draw conclusions for this study.

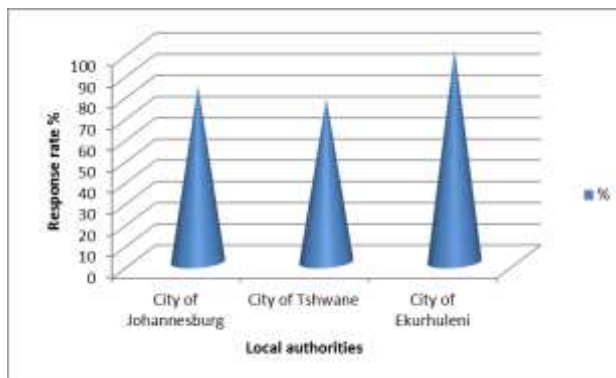


Figure 1: Participants' response rate

#### 5.2.2. Key informant interviews

The results indicated that, the planning instruments used by the three metros are similar. These included among others, SPLUMA, Gauteng Removal of Restrictions Act, Municipal Acts, IDPs, SDFs, Precinct Plans and Town Planning and Township Ordinance 15 of 1986 etc. One of the officials from the City of Tshwane mentioned that, these instruments are relevant to public participation in the sense that they offer the public an opportunity to exercise their legal and constitutional right to provide inputs on decisions affecting their lives. Hence the Ordinance and SPLUMA give the public an opportunity to provide comments for a land development application submitted to the municipality. Furthermore the public also have an opportunity to provide input on the formulation of SDFs.

Challenges brought to the fore included lack of coordination between the departments, all the metros alluded. Additionally it was also mentioned that, at times the communities make it impossible for the constructive public processes as they do not respond to invites to provide input during the open window period and once enacted and / or implemented they want to complain about what they see unfolding. Another issue was that, they tend to submit their comments to the municipality only after the objection period has lapsed. This could be mainly due to the fact that, not everyone could be reached through the strategies used. Additionally one of the concerns included that “the public is always angry”, therefore delaying the transformations ought to be implemented. The interviewees also brought to the fore the

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concern that, since not every community is reached through the current systems, strategies, methods and/or approaches used by the local authorities to engage with the public, that alone exhibits where the public stands. There are always complaints. It can therefore be said that the public seem not to be satisfied with the current strategies and approaches used by the local authorities.

Due to the discrepancies incurred by the local authorities, it was then found fit to ask the officials to provide the remedies that could be found worthy for implementation, to better the current conditions. CoJ mentioned that, better intergovernmental and interdepartmental coordination, better communication to citizens about where and when public meetings/ charrettes will take place. Skilled people should be employed, more especially those taking decisions from the top. City of Ekurhuleni recommended that, applicants/ developers physically drop off the required documentation into the directly affected property owners' mailboxes. They also added that house to house notice using the meter reader's personnel, fliers through municipal accounts distribution and smses will bring about positive results.

### 5.2.3. Community Surveys

#### 5.2.3.1. Public participation strategies and methods

The respondents indicated that, they were aware of projects taking place in their area. Whereas the remaining quantity had no idea of any projects taking place thereon. In that regard they claimed to have not been notified with such. Some of which brought to the fore, that consultations are usually held yearly, quarterly and monthly. Some have indicated that had never had any means of communication with their local authorities. Additionally, those who have been a part of the participation processes mentioned meetings, questionnaires, hearings and internet surveys as the main modes of communication with their local authority. The afore-stated method as per the findings, were found to be common in all the three metros. Although a higher number of these respondents mentioned the methods which they preferred, some still continued to criticise them. It was a result suggested that, there be online communication, news-papers and technological advances. Moreover it was also suggested that, the community representatives be elected by the society, factual feedback be given consistently, and meetings be monitored and that the municipality should actively engage with the community.

#### 5.2.3.2. Challenges faced

Although the meetings are held, the officials use an ambiguous language which results in communication barriers, the public complained. They also mentioned that, they are forbidden to raise their concerns in the language they better understand. The public also claimed to be hardly explained to, about the background of the projects at hand. Time allocated to such processes, according to the public is insufficient. Some asserted that, they are hardly even given time to raise their viewpoints. In cases where meetings are held, the public stressed that minutes are never noted with feedback not also being given. Furthermore it was also stated that, their views are never incorporated. Moreover, some claimed that there is favouritism/political influence and that there are usually conflicts which results in no consensus achieved. The local authority was criticised to always be clueless with the community's needs and sometimes not pitching at all.

## 6. RESEARCH CONTRIBUTION

It is fit to mention that, this study should be looked upon as a key to enhancing the manner in which public participation is carried out in South Africa. In that, it has revealed that public participation in South Africa is minimal. It is in no doubt to mention that, its ignorance affects the growth of this country.

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## 7. RESEARCH LIMITATIONS

This paper primarily seeks to evaluate and compare strategies undertaken by the three metropolitan municipalities to conduct public participation processes. The aim was to highlight issues encountered by planners and other developers and how public participation could be looked upon as an antidote. In this regard the omitted information which might be found necessary to intensify this study herein, does not signify any level of inferiority but will be covered in the future research studies.

## 8. DISCUSSION & CONCLUDING REMARKS

### 8.1. Planning tools for public participation

Urban planning in nature is founded both on theory and practice. The two are inherently correlated such that should one be neglected the other is unlikely to function on its own. The point emphasised here is that, the instruments, plans, policies used by municipal planners for development purposes are conceptual frameworks guiding the practice. Abukhater (2009) adds that the reliance on theory inclines to provide organizations in the field of planning, a systematic guidance in circumstances of disagreements. In South African context, municipal planning is undertaken under the guidance of numerous legal tools.

Contrary to the above, some authors and/or experts in the field have brought to the fore the concerns that, although these instruments are in operation, they have not done justice to the planning processes. Alonso (2014) attests that such strategic plans (IDPs, SDFs and Urban Design Plans, etc) are deemed as window dressing exercises and never become implemented. On the other hand Mautjana and Makombe (2014) argue that in most cases some of the public's inputs are not assimilated in the IDP documentations. Cornwall (2008) mentions that such instances are said to be clearly an indication that participation was for compliance.

### 8.2. Public participation strategies and methods

Although the above methods have been acknowledged for their contribution to the success of participation processes, the controversies thereon still remain. High quantity of participants reflected in their responses that there was no satisfaction with regard to the strategies and /or methods used. For instance the findings indicated that, a higher number of the community members brought to the fore that they are consulted sometimes with regards to the related stages. This includes getting involved either during only the planning stage, execution stage or implementation stage. Miskowiak (2004) supports the above with the argument that it has been witnessed in so many instances that such consultations are never carried out beyond the planning stages. Additionally some participants were firm on the concerns that they have been involved in neither of stages and/or phases pertaining to the projects at stake. It is in no doubt to conclude that the methods as adopted by the municipalities in question are to a larger extent ineffective and therefore calls for improvements and the introduction of new modes of consultation which will reach out to and favour all the inhabitants.

### 8.3. Planning and Development projects

It was discovered from the literature that public participation promotes sustainability within projects as it encourages justice and fairness, distribution of power, empowerment and capacity building (Yang et al 2013). Communities are likely to be empowered especially the urban poor through engagement in the development projects affecting them. Orievulu (2014) asserts that implementation of such projects have in parts of the world assumed to have empowered the poor and amongst other neglected people in numerous communities. In particular these projects are said to be primarily concerned with the effective satisfaction of the society's needs (Baranauskiene and Alekneviene, 2014). However, Keene (2007) stresses that

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projects are particularly prone to produce unfavourable outcomes should they be implemented without any multidisciplinary processes. Wlokas et al (2012) attest that in South Africa development projects with substantial community welfares components are likely to be prioritized.

#### 8.4. Challenges faced during public participation processes

The literature revealed that there are still to date controversies in relation to the manner in which public participation is carried out world-wide. Participants from the City of Johannesburg stressed the issue of the departments lacking coordination. Vaara and Monin (2010) support the above with the view that lack of coordinated efforts is witnessed with regards to public participation. Feldman et al (2009) emphasise that the absence of coordination simply means the failure of the entire processes of engaging with the public. Complaints brought forth by the members whom might have missed the publication period are said to be a challenge encountered in the City of Ekurhuleni. This, as the officials have outlined might have led to by instances whereby the adjoining neighbours infrequently check their mails. The systems used are in their nature problematic as not everyone can be reached through them, one of the officials outlined. On the similar note the issues which have been found inevitable and intolerable as highlighted by the participant from the City of Tshwane are that the community tends to not respond to the invites for inputs during the window period. Instead as the participant elaborated further, the public tend to gain interests once the comment period has lapsed.

Tewdwr-Jones (2011) supports the above with the claim that notification of the public is repeatedly executed inadequately. However, Taylor (2007) begs to differ with the argument that the time frame given for such commenting periods is too short and therefore unreasonable. Furthermore it was outlined that, due to the fact that the public is always angry, it is very rare for the meetings or consultations to finish as expected. The community in this regard begged to differ with the arguments provided by the interviewees (the planners) and they brought to the fore, the challenges they face during such consultations. The community complained that the protocols and the instruments used are never thoroughly explained to them. The deprivation of the poor with the opportunity voice out their concerns was also highlighted. The participants supported the above with the perception that it is because they have already been perceived by the government and/or the officials as being unskilful to can partake in such processes. The participants lamented that the current methods used are inadequate and therefore poor and are not benefitting them in anyway.

#### 8.5. Further Research

It is suggested that future research undertaken on the similar topic be carried out in other areas within other municipalities in South Africa. The objective could be aimed to investigate the extent of public participation and the efforts made by the government since the advent of democracy in South Africa. Further research on the serious note has to be taken on how the adverse conditions facing the South African municipalities can be mitigated. Moreover it is suggested that the research be based on the future of the current municipal planning tools, instruments and frameworks guiding public participation.

### 9. REFERENCES

Ali, S., Yang, L., Button, C. & McCoy, T. Career Education Programming in Three Diverse High Schools: A Critical Psychology—Case Study Research Approach. *Journal of Career Development*, 39(4), 357-385.

Alexander, E. 2010. Planning, Policy and the Public Interest: Planning Regimes and Planners' Ethics and Practices. *International Planning Studies*, 15(2), 143-162.

#### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Alfasi;N. (2003). Is Public Participation Making Urban Planning More Democratic? The Israeli Experience.*Planning Theory & Practice*. Vol. 4, No. 2, 185–202.

Alterman.R.; Harris. D., Hill. M. (1984). The Impact of Public Participation on Planning: The Case of the Derbyshire Structure Plan. *The Town Planning Review*.Vol. 55, No. 2 (Apr., 1984), pp. 177-196.

Andrews, R., Cowell, R., Downe, J., Martin, S. & Turner, D. 2008.Supporting effective citizenship in local government: Engaging, educating and empowering local citizens.*Local Government Studies*, 34, 489–507.

Aprioku.I. (1998). Local planning and public participation: the case of waterfront redevelopment in Port Harcourt, Nigeria. *Planning Perspectives*, 13 (1998) 69–88.

Atieno, O. 2009.An analysis of the strengths and limitation of qualitative and quantitative research paradigms.*Problems of education in the 21st century Journal*, 13, 13-18.

Bafarasat, A. 2015.Reflections on the Three Schools of Thought on Strategic Spatial Planning.*Journal of Planning Literature*, 30(2), 132-148.

Bandelli, A. &Konijn, E. 2012. Science Centers and Public Participation: Methods, Strategies, and Baxter, P. & Jack, S. 2008. Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13(40), 544-559.

Bonson, E., Torres, L., Royo, S. & Flores, F. 2012. Local e-government 2.0: Social media and corporate transparency in municipalities. *Government Information Quarterly*, 29, 123–132.

Brabham, D. 2009. Crowdsourcing the public participation process for planning projects.*Planning Theory*, 8(3), 242–262.

Buccus. I., Hemson. D, Hicks. J and Piper.L. (2008).Community development and engagement with local governance in South Africa.*Oxford University Press and Community Development Journal*. 2008.

Cochrane, R. (2015) Community visioning: the role of traditional and online public participation in local government. *Asia Pacific Journal of Public Administration*, 37(1), 18-32.

Connelly, S. (2010). Participation in a hostile state: how do planners act to shape public engagement in politically difficult environments? *Planning, Practice and Research*, 25 (3), 333–351.

Connick, S. & Innes, J. (2003) Outcomes of collaborative water policy making: applying complexity thinking to evaluation. *Journal of Environmental Planning and Management*, 46(2), pp. 177–197.

Cornwall, A. (2008). Unpacking participation: Models, meanings and practices. *Community Development Journal*.43(3), pp.269–283.

Dallinger, D. &Dollery, B. 2008. Community Engagement in Local Government Corporate Planning in Queensland: A Case Study of the Redcliffe City Council. *The Icfai Journal of Urban Policy*, 3(1), 33-50.

Dandekar.H. (2005).Qualitative methods in planning research and practice.*Journal of Architectural and Planning Research*, Vol. 22, No. 2, Theme Issue: Planning Methods (Summer, 2005), pp. 129-137.

Dede, O. &Ayten, A. 2012. The role of spatial planning for sustainable tourism development: A theoretical model for Turkey. *Original scientific paper*, 60(4), 431-445.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

De Felice, F. & Petrillo, A. 2013. Decision-Making Analysis to Improve Public Participation in Strategic Energy Production Management. *Studfuzz*, 305, 129–142.

Eisenhardt, K. 1989. Building theories from Case Study Research. *Academy of Management Review*, 14(4), 532-550.

Ferkany, M. & Whyte, P. 2012. The Importance of Participatory Virtues in the Future of Environmental Education. *Journal of Agricultural and Environmental Ethics*, 25, 419–434.

Garson, D. (2002). Case Study Research in Public Administration and Public Policy: Standards and Strategies. *Journal of Public Affairs Education*. Vol. 8, No. 3 (Jul., 2002), pp. 209-216.

Gil, A. Calado, H. and Bentz, J. (2011). Public participation in municipal transport planning processes – the case of the sustainable mobility plan of Ponta Delgada, Azores, Portugal. *Journal of Transport Geography* 19 (2011) 1309–1319.

Gray, V. 2002. Developing the corporate memory: the potential of business archives. *Business Information Review*, 19(1), 32-37.

Holgersen, S. 2015. Spatial planning as condensation of social relations: A dialectical approach. *Planning Theory*, 14(1), 5-22.

Houstin, G. 2001. *Public Participation in democratic governance in South Africa*, Pretoria, Human Sciences Research Council (HSRC) Press.

Hughes, H. & Bruce, C. 2013. International students' experiences of informed learning: A pedagogical case study. *International Journal of Pedagogies and Learning*, 8 (2), 106-119.

Hugo, M., Viljoen, A and Meeuwis, J. (1997). *The ecology of natural resource management: The quest for sustainable living*. Goodwood, National Book Printers.

Hyett, N., Kenny, A. & Dickson-Swift, V. 2014. Methodology or method? A critical review of qualitative case study reports. *International Journal of Qualitative Studies on Health and Well-being*, 9, 1-12. .

Jamshed, S. 2014. Qualitative research method- interviewing and observation. *Journal of Basic and Clinical Pharmacy*, 5 (4), 87-88.

Johnson, S. (1998). The internet changes everything: revolutionizing public participation and access to government information through the internet. *Administrative Law Review*, Vol. 50, No. 2 (Spring 1998), pp. 277-337.

Lo´pez, I. & Hicks, K. 2015. The participatory design of a performance oriented monitoring and evaluation system in an international development environment. *Evaluation and Program Planning*, 48, 21–30.

Luukkonen, J. 2015. Planning in Europe for ‘EU’rope: Spatial planning as a political technology of territory. *Planning Theory*, 14(2), 174-194.

Mazza, L. & Bianconi, M. 2014. Which aims and knowledge for spatial planning? Some notes on the current state of the discipline. *TPR*, 85(4), 514-531.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Mohamed.S. (2006). From ideas to practice: The involvement of informal settlement communities in policy-making at city level in South Africa. *South African Review of Sociology* (previously *Society in Transition*). 37.

Myers, M. & Newman, M. 2007. The qualitative interview in IS research: *Examining the craft*. *Information and Organization*, 17, 2-26.

Neverauskas.B. and Tijūnaitienė.R. (2007). Public Participation in City Governance Decision-Making: Theoretical Approach. *Engineering Economics*, 4 (54).

**Conference Proceedings:**

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# Assessment of Municipal Infrastructure Life Cycle: Case Study of Johannesburg

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## Abstract

Urbanisation poses complex institutional and fiscal challenges for urban areas across South Africa. The dynamics of urbanisation will have vast impacts in different parts of the country, as numerous municipalities continue to experience rapid population and economic growth. These trends are unlikely to be linear, predictable or determine the destiny of an area. The response to complex demographic and economic trends presents a challenge for the management of urbanisation and more importantly the management, operation and maintenance of municipal infrastructure assets and accurate service delivery. This calls for enhanced municipal infrastructure life cycle assessments to assist with accurately, efficiently and effectively assessing the amount of surplus bulk infrastructure capacity that is available, the age and condition of assets, the nature of projected service demand, and the resources available to finance investments. However to date, very limited research is observed on any formal broad-based audits or life-cycle assessments regarding the state of infrastructure assets from a South African municipality perspective.

This research developed a municipal infrastructure report card to assess the state and life-cycle of municipal infrastructure assets. Using results of research through literature review, questionnaire survey of leading industry stakeholders and semi – standardized interview of built environment practitioners involved in municipal infrastructure development, the research identified the relative importance of components relating to municipal infrastructure and service delivery and on such basis, developed ways of improving municipal infrastructure assessment practices. On such a platform, the developed infrastructure report card incorporated assessment practices of the American Society of Civil Engineers (ASCE) and the South African Institute of Civil Engineers (SAICE) for the evaluation of imperative categories of municipal infrastructure assets. The metropolitan municipality of Johannesburg was then used for testing, application and validation, before the infrastructure report card was finalised.

## Key Words

Municipality, municipal infrastructure, life-cycle, report card, urbanisation, service delivery.

## 1. INTRODUCTION

### 1.1 Research Background

Urbanisation poses complex institutional and fiscal challenges for urban areas across South Africa. The dynamics of urbanisation will have widely varying impacts in different parts of the country, as some areas experience rapid population and economic growth, others stagnation or decline (Savage, 2013). Still other

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areas may face population growth without economic growth, or forms of growth that do not produce employment opportunities. Furthermore, these trends are unlikely to be linear, predictable or determine the destiny of an area. The response to complex demographic and economic trends presents a challenge for the management of urbanisation and more importantly the management of municipal infrastructure and accurate service delivery.

According to Graham & Hunter (2013), growth projections cannot be translated simply into requirements for infrastructure investment, this implies that accurate municipal infrastructure life cycle assessments must be carried out. This is because they take account of availability and condition of existing infrastructure assets at a local level, the amount of surplus bulk infrastructure capacity that is available, the age and condition of assets, the nature of projected service demand, and the resources available to finance investments, which ultimately can be utilised as a response to economic and demographic changes. Bad choices can leave expensive infrastructure under- or over-utilised and municipalities with an unsustainable fiscal burden. Good choices can unlock a virtuous cycle of growth.

## **1.2 Rationale**

Very limited information / record is observed on any formal broad-based audits or assessments of the state of municipal infrastructure from a South African municipality perspective. According to the CSIR (2006) “some services authorities, among them some municipalities, have in the past performed audits in respect of their own infrastructure. Other studies and audits have been undertaken on an ad-hoc basis. Particularly lacking is any overview of trends regarding the state and performance of municipal infrastructure and its maintenance”. One of the critical reasons observed is due to the lack of the capacity or institutional systems in conducting such audits. Many of the municipalities are not conforming to the stipulated requirements and hence leads to the unreliable assessments. In the context of municipal infrastructure assets and often poor records that have been kept of its extent, the purpose of this research is to augment limited knowledge into the state and performance of municipal infrastructure and its maintenance.

## **1.3 Research Problem**

From a global context the state of condition of municipal infrastructure is a critical function to ensure adequate infrastructure planning and service provision to all present and future generations. According to the United Nations (2014), by 2020 the world’s population living in urban areas is expected to increase from 54 per cent to 66 per cent. This statistic begs questions relating to the sustainability, management and assessment of municipal infrastructure systems in its ability to cope with future projections for urbanisation. According to Wall (2006), many South African municipalities are not conforming to the requirements of the Municipal Systems Act of 2000 and other legislation that requires them to ensure that adequate life cycle assessments are undertaken. This is highly concerning, as when precise assessments and maintenance of infrastructure systems are not undertaken, adequate provision cannot be made for the long-term maintenance of infrastructure assets which eventually leads to a service delivery crisis and great fiscal challenges for the country.

Given this background there is a great need to gain greater comprehension of the inner workings of sectoral infrastructure systems at a local level in order to formulate mechanisms for improvement. Then, to critically analyse current municipal infrastructure assessment frameworks, both local and international in terms of their ability to accurately project strategic thinking regarding long term maintenance and service provision for municipalities and ultimately to formulate a municipal infrastructure assessment report card which is able to accurately, efficiently and effectively assess the state of municipal infrastructure systems, which according to Amekudzi & McNeil (2008), may be utilised to introduce measures that could be undertaken

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to improve sustainability, assist in the appropriate maintenance of municipal infrastructure and bolster service delivery.

## **2 LITERATURE REVIEW**

### **2.1 Municipal Infrastructure Maintenance**

Sound municipal infrastructure is a critical vehicle that supports both economic development and global competitiveness. According to Briceno-Garmendia et al. (2008), civic/public sector is the main funder of infrastructure in sub-Saharan Africa. However, administrations care for and maintain public infrastructure assets well below par, as emphasised by the vital need for rehabilitation and restoration across many of these countries. According to Briceno-Garmendia et al. (2008), “In environments characterised by weak fiscal management (non-transparent and politically dominated budget processes), assets often are neglected. Because maintenance yields little observable immediate benefit and is easily deferred, its budgetary allocations often are not protected by the executive or Parliament”. Adding to the “obscure” yield that a focus on maintenance of infrastructure brings, expenditure on maintenance has truncated priority, predominantly in third world countries, where exceeding priority is committed to redistribution efforts and, often, hefty civil service wage bills (Heller, 1979). When finances are under pressure, it is easier and more diplomatically acceptable to cut back on upkeeps and maintenance expenditure than to dismiss staff. Certainly, one of the main reasons for poor infrastructure maintenance is the disjuncture between those who decide on new infrastructure investment and those who are responsible for recurrent spending (Heller, 1979).

In many countries, the spending on infrastructure maintenance is often forfeited in favour of expenditure on items which would gain some form of governmental acknowledgement, what can administrations do to guarantee that infrastructure assets are sufficiently managed and cared for? For increased expenditure on infrastructure maintenance to materialize, two crucial conditions need to be satisfied: Firstly, adequate resources must be made available for this type of spending and secondly, stakeholders must be prepared to apportion funds for this purpose leading an important role play (Ostrom et al., 1993:29). Unlike individual capital investors, who endure the cost of infrastructure upkeep since they reap the related benefits, decisions regarding the care of civic/public infrastructure maintenance are made by role-players who do not endure either the total cost or the benefits of infrastructure maintenance. Hence, for government to alter the way in which the civic/public sector treats maintenance, the inducements driving the actions of role-players will need to be altered.

South Africa paid a great emphasis on sectoral infrastructure asset management from 2006-2008. The Department of Cooperative Governance (DCOG), previously known as the Department of Provincial and Local Government (DPLG), published the Local Government Infrastructure Asset Management Guidelines 2007–2009 (Boshoff et al., 2006). This manual supports, among others, that local government adopt a holistic approach to infrastructure asset management and formulate asset management strategies which enumerate asset life cycle needs in response to service needs, educated by a supporting implementation strategy addressing funding and administrative capacity issues. Since publication, DCOG has not rationalised or actively promoted this guidebook. It seems that the department has subsequently shifted its attention away from endorsing the implementation of sound lifecycle assessments and infrastructure asset management practice to gaining clean audit/assessment results by 2014.

In 2007, the Construction Industry Development Board (CIDB) published the National Infrastructure Maintenance Strategy (CIDB, 2007), which was followed by the Government Immovable Asset Management Act (GIAMA) enactment in 2008 by government, however its scope excludes local

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government (South Africa, 2007). In the same year National Treasury released its Local Government Capital Asset Management Guidelines (National Treasury, 2008). These strategies have not been updated despite developments such as the introduction of new accounting standards for infrastructure assets and best practices. The literature on the state of municipal infrastructure generally emphasises the deteriorating state of infrastructural assets, assigns numerous causes to this condition and provides contradictory viewpoints for addressing the situation. Many of the findings and estimated amounts are based on subjective evidence, and there appears to be little rigidity in estimating maintenance and renewal needs.

## **2.2 Infrastructure Life Cycle: Planning, Development, Implementation**

Hastak & Alvin (2006), elaborate on the large and bulk needs for infrastructure planning in the developing world, as various countries on account of the need for changing or replacing existing infrastructure systems due to rapid urbanization growth and migrations. Graham & Hunter (2013), emphasises on the importance of processes involved in conceptualising and planning sound infrastructure assessment frameworks, and also highlights various methods like analytical techniques that must be undertaken to evaluate the financial and economic viability in regard to planning an infrastructure project once assessments have been completed. Swilling (2006), highlights the importance of any city's infrastructure plans and investments being a mechanism to achieve sustainability. The life-cycle in the context of infrastructure refers to planning, design, management, implementation and maintenance of the assets providing service delivery throughout its period of service or age. In simpler words, it is the aging of the infrastructure asset and long term performance analysis.

According to Swilling (2006) South African government's planned investment in municipal infrastructure, must be guided and focused toward enhancing economic growth and poverty reduction. Graham & Hunter (2013), elaborate on government's lack of attention toward accurate infrastructure assessments especially in regard to sectoral infrastructure. The reviewed literature reveals strong arguments regarding the dangers of assuming that municipal resources will be available to support increasing urbanization trajectories in South African Cities.

### **2.2.1 Life Cycle: Infrastructure Development**

In South Africa, infrastructure development is now part of the objectives and actions for Vision 2030. The emphasis on the roll-out of bulk raw water infrastructure developments has changed considerably in the latest National Water Resource Strategy (NWRS2 2013). As part of IWRM, infrastructure is emphasised and the policy also gives significant emphasis on the formation of regional utilities whose main function is infrastructure development and maintenance. This must be viewed in conjunction with the fact that all regions have substantial infrastructure needs, but for different drivers according to their particular circumstance. Considering all the reasons, the Department of Water Affairs (DWA) estimates that the provinces with the major water services bulk infrastructure needs are the Eastern Cape, KwaZulu Natal and Johannesburg. The roll-out of infrastructure projects are explicitly addressed in the (NWRS2 2013), which highlights the specific requirements of infrastructure in more detail. However, the roll-out of all infrastructure projects required is not described in all areas because there is still outstanding information due to a lack of sound infrastructure lifecycle assessments.

### **2.2.2 Life Cycle: Infrastructure Implementation**

In Johannesburg, the significance of rolling-out of sectoral infrastructure development and maintenance in order to meet delivery goals cannot be more over-emphasised. Infrastructure mismanagement is often cited as the main reason for not meeting service delivery goals. Infrastructure, however, does not directly solve service delivery issues, but allows for the distribution of services by providing resources or connecting the

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resources with the reticulation infrastructure. In a nutshell, sectoral infrastructure planning, development and implementation is essential to meeting delivery goals for the city. Fundamentally infrastructure is the key to ensuring the sustainability of service delivery. According to NWRS2 (2013), planning, specifically integrated development planning, thus becomes crucial in the roll-out of these and other projects of a similar nature. Integrated development planning and decision making is indispensable on three main levels. Firstly, the integration and alignment of the design of the infrastructure throughout the value chain. The misalignment of the design of each of these components can lead to substantial inadequacies and can negatively impact on service delivery as well as the physical environment.

The second level is the actual planning behind the roll-out of infrastructure projects and the third and final level, is the tangible implementation and construction of infrastructure projects. While the timing of the planning of each component may be effectively aligned, often the issue comes in during the execution/implementation stage of the various different projects. Financial constraints and challenges with procurement can lead to one project been delayed by weeks, months and even years while the other project of another component could be completed on schedule. According to NWRS2 (2013) an engrained local perspective on all infrastructure projects related to service delivery is vital in order to safeguard a balance between needs, expectations and affordability. Without the involvement of local government, infrastructure designed to provide a certain level of service may not be acceptable and ultimately rejected by stakeholders. The contrary is also true that providing infrastructure that meets the requirements of the community may not be affordable and runs the risk of becoming too expensive to maintain once completed.

## **2.3 Municipal Service Delivery**

The South Africa is growing currently at around 1% p.a. in terms of population growth, and the urbanization rate in is around 1.2% p.a. The population is mainly urban and around 64% of the approximately 52 million total population live in cities or large towns, of which 40% are situated in the large metropolitan cities. This is anticipated to rise to 70% by 2030 (StatSA 2011, IUDF 2013). Cities and towns yield 80% of South Africa's Gross Value Added (GVA), and house around two-thirds of the country's population, but have some of the lowermost densities in the world. South Africa is classified as an upper-middle income country but comprises of profound socio-economic disparities (IUDF 2013). This is reflected in the urban-rural rift as well as within cities, as indicated by the substantial informal housing sector and absence of access by poor populations to city amenities and infrastructure. The apartheid segregationist urban form with all its detriments for the poor, as well as the adverse consequences for resource efficiency due to low overall densities, has changed little over the past couple of years.

The urbanization challenges need to be looked from the angle of urban settlements having high populations and growth rates. The urban settlements depending on the size of the population and growth rates, are observed to witness 2 to 4 per cent growth rates. Given the lack of capacity specifically in regard to accurate municipal life cycle assessment's in local/municipal government, unless major efforts are made to improve the situation it can be expected that such challenging urbanization rates will far exceed the municipality's ability to deal with the service delivery trajectories, resulting in stagnation or decline in welfare.

### **2.3.1 Infrastructure and Service Delivery**

The three spheres of government - national, provincial and local/municipal government in South Africa has their own mandates principally derived from the Constitution. They are required to collaborate with one and other, but are not functionally responsible for the mandates of others spheres however, national and provincial government is required to support local government in fulfilling mandates (COGTA 2013). The Department of Cooperative Governance and Traditional Affairs (COGTA) and South African Local

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Government Association (SALGA) provides a adequate functionary support amongst all the three tiers of governance on multitude of issues having critical significance.

Despite a strong emphasis on distribution of functions, mandates and policies across the three spheres of government, the issues of poor coordination and conflicts are observed. Municipalities are the seat of the delivery of services, and their mandate includes the following in terms of the Constitution (1996): building regulations, air pollution, electricity reticulation, municipal planning, street lighting, municipal public transport, storm water management, water and sanitation services, refuse removal and solid waste disposal, municipal roads and traffic and parking. The all-encompassing planning framework in each local government is their Integrated Development Plan (IDP) which spans over a 5 year period. This is supported by important planning strategies such as the spatial development framework.

The Johannesburg, Tshwane and Ekurhuleni municipalities have been growing faster in total and comparative terms than the other large municipalities. The population of Gauteng increased by 3.2 million between the periods of 1995 and 2009 (more than a third), at an annual rate of 2.6 per cent compared with the national rate of 0.6 per cent (OECD, 2011). More specifically, Johannesburg has a population of nearly 4 million people. It is estimated that the city grew 4% per year in the late 1990s. Some growth scenarios see metropolitan Johannesburg reaching almost 15 million people by 2017. According to StatsSA (2013) Johannesburg contributes to around 16 percent of country's GDP and employing around 12 percent of the national workforce, which is majorly in finance and trade. The annual per-capita income was R53,830 in 2008, accounting to the highest of all the metropolitan councils. The vision laid out by City of Johannesburg is to become a world-class African city. However, with high levels of poverty, inequality and aging infrastructure that characterise the city, and with continuing social and economic spatial divisions based on race and class this is becoming an increasing distant vision. Infrastructure inequalities have persisted since the birth of the city – while wealthy and middleclass neighbourhoods in the northern suburbs are well provided for and well maintained, other areas like the working class areas in the eastern and southern parts of the city are undersupplied and under maintained, although changing settlement patterns are beginning to challenge this historic pattern continues to persist. There is great concern regarding the capacity of municipalities to meet their service delivery mandates, particularly in the face of rapid urbanization occurring in large metropolitan areas. To add, local government's finances are often under pressure, because of capacity and inaccurate infrastructure planning leading to financial mismanagement as well as revenue deficits (FCC 2013). This aggravates service delivery backlogs and results in insufficient attention to life cycle assessment's as well as maintenance and upgrading of crucial infrastructure such as electricity distribution systems, sewerage, sanitation etc. The lack of attention and maintenance to municipal infrastructure is of great worry, degradation in the infrastructure distribution systems, while not necessarily short term, will have severe consequences for local government in the medium and long term.

## **2.4 Infrastructure Assessments & Report Cards**

Every business, every community and every family requires infrastructure to thrive. Infrastructure includes a multitude of engineering infrastructure spanning the country of South Africa. Amekudzi & Mcneils (2008) iterate on infrastructure assessments and reporting having an impact on how well municipalities understand their asset capabilities and demands (inventory, performance, costs and needs) and can effectively assist municipalities to communicate on these issues with superseding spheres of government. According to Hastak & Alvin (2006), there are several benefits to be gained from effective civil infrastructure reporting and assessment practices at national, regional and local levels of government. When implemented and managed assessments can assist municipalities in identifying the differences between asset valuation to support accounting practices and to support decision making. The essence of the infrastructure reporting is

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to communicate to political decision makers the value advantage and requirements of investing in civil infrastructure versus other priorities such as in sectors like healthcare, education, energy and security.

#### 2.4.1 Infrastructure Report Cards

According to ASCE (2013) Governments must provide a comprehensive assessment of its major infrastructure categories within a rigorous Infrastructure Report Card at least once every four years. The Report Card must provide a a holistic and comprehensive scenario about the assessment of current infrastructure conditions and needs, and should be able to assign the grades enable in and making recommendations on how to raise the grades. ASCE (2013), iterate on the vast requirement for an advisory council, tasked with assigning the grades according to criteria's such as capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation. The South African Institution of Civil Engineering (SAICE) released the Infrastructure Report Card (IRC) in 2006 on the state of municipal infrastructure in South Africa, which was then succeeded by the Infrastructure Report Card (IRC2) released in 2011. The report highlighted "the observations of the professionals responsible for the planning, construction, operation and maintenance of the nation's life-support system". Overall, it gave the country's infrastructure a C- grade an improvement from the D+ grade awarded in 2006. The report voiced a cooperative opinion provided by civil engineering professionals and technologists at SAICE in the custom of "expert witness", on the current state of infrastructure in South Africa. In the report, skills shortages, inaccurate sectoral infrastructure lifecycle assessments and lack of maintenance emerged as crucial themes across all sectors. Overall the examination of infrastructure by SAICE discovered that South Africa has achieved remarkable strides in the past two decades furthermore, it revealed that the country has provided infrastructural amenities to millions of inhabitants at a speed "unrivalled in its history" (SAICE 2011).

According to SAICE (2011) Infrastructure Report Cards demonstrate that the vast need for a nation to improve the current condition of its infrastructure. When investments are made in the correct areas projects move forward and service delivery is met. For example, greater private investment for efficiency and connectivity can bring improvements in the rail category; renewed efforts in cities can help address some of the most vulnerable bridges (SAICE 2011). Investing in infrastructure is vital to support vibrant, healthy societies. Infrastructure is also critical for medium to long-term economic growth, increasing GDP, household income, exports, and employment. The reverse is also true – without infrastructure needs being made a priority, worsening conditions can become a strain on the economy.

While the progress is encouraging, it is clear that South African municipalities have a substantial backlog of outstanding maintenance across almost all infrastructure systems, an unrelenting need for upgrading, and a vast need to create reliable, long-term funding sources to avoid wiping out recent economic growth. Infrastructure is the foundation that connects South Africa's people, communities and businesses, improving quality of life and driving the economy. For South Africa to emerge as a global economic power house, the nation requires a world class infrastructure system - transportation systems that move people and goods proficiently and at an affordable cost by water, land and air; electricity distribution systems that deliver low-cost, reliable power from a wide range of energy sources, and water systems that drive industrial processes as well as the daily functions in the homes we live in, which in totality relies on comprehensive infrastructure assessment, reporting and maintenance practices.

### 3. RESEARCH QUESTIONS

Based on the impetus and background of the investigation, the following questions are posed:

RQ1. What are the existing international / national frameworks to assess the municipal infrastructure status?

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RQ2. What does municipal infrastructure comprise of at a city level?

RQ3. What are the key performance areas and indicators in regard to municipal infrastructure assessments?

RQ4. What are the main challenges and issues in municipal infrastructure and service delivery?

Investigations must be carried to expand knowledge in regard to the sectoral infrastructure life cycle at a municipal level which specifically pertain to the composition, development, operation, life cycle, relationship and categories of municipal infrastructure at a city level. In order to develop a thorough municipal infrastructure assessment report card, the critical revision of existing infrastructure assessment frameworks must be carried out. Investigations must endeavour to explain how municipal infrastructure requirements and service delivery targets are produced. Further to this, cognisance in terms of the ability and effectiveness of various existing international and national infrastructure assessment frameworks must be undertaken. Research must address the critical assessment concerning the current performance of municipal infrastructure sectors in Johannesburg, specifically guided towards identifying the well performing and non - performing sectors with special attention paid to possible areas of improvement for municipal infrastructure life cycle assessments.

#### **4. RESEARCH OBJECTIVES**

The aim of this dissertation is to utilise knowledge gained during this exercise to synthesise a municipal infrastructure report card to assess the state and life cycle of municipal infrastructure assets. Research objectives are specifically guided toward:

- a. Assessment of the infrastructure life cycle at municipal level.
- b. To review the existing municipal infrastructure assessment frameworks.
- c. Development of a municipal infrastructure assessment report card.
- d. Assessment of the state of municipal infrastructure based on the developed municipal infrastructure report card.

#### **5. APPROACH AND METHODOLOGY**

In this research, numerous research methods were undertaken to assist the researcher in the creation of efficient and effective communication with respondents. Effective communication assists the researcher to gain insight into the key performance areas and indicators regarding municipal infrastructure assessments and the key challenges in efficient service delivery. Given that there is vast resource and time limitations for carrying out field surveys, choosing the most suitable research method was crucial. This investigation employed the research methods that provided depth and breadth to produce comprehensive and effective results and findings. Hence, the data collected was required to be stretched to ensure its accurateness and integrity for the purposes of this study. The research model selected numerous study methods that were best suited for research purposes, such as survey, case study, interview and overall observation.

#### **6. RESEARCH ANALYSIS & FINDINGS**

##### **6.1 Research Objective 1**

RO 1. Assessment of the infrastructure life cycle at municipal level.

Data analysis conducted during this study revealed that majority of the imperative categories of sectoral infrastructure in principle municipalities have exceeded their design life-cycles, leaving majority of these assets vulnerable to rapid deterioration. The literature review reveals that one of the main reasons for this

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is the disjuncture between who are the custodians of deciding about capital /new infrastructure investments and those who are responsible for recurrent municipal infrastructure life cycle assessments and maintenance. Given the lack of capacity in regard to accurate life cycle assessment's, it can be expected that challenging urbanization rates will continue to exceed a municipality's ability to deal with the service delivery trajectories, resulting in stagnation or decline in infrastructure assets and service delivery. Majority of stakeholders agree that municipal audits and assessments regarding infrastructure life cycles have been undertaken in an ad-hoc and inadequate fashion, which has ultimately resulted in poor preventative maintenance procedures and service delivery breakdowns. However, many stakeholders trust that the Department of Provincial and Local Government (DPLG 2012) and its provincial counterparts will soon be mandated and responsible for developing life cycle assessment policies, assessment procedures and systems to ensure the accurate preventative maintenance procedures and management of municipal infrastructure.

## **6.2 Research Objective 2**

RO 2. To review existing municipal infrastructure assessment frameworks.

The application of infrastructure assessment procedures provides a comprehensive valuation of a country's infrastructure conditions at various levels. Infrastructure assessment procedures involve an advisory council made up of leading industry stakeholders such as engineers, urban planners, academics and contractors tasked with grading infrastructure assets according to criteria's such as: capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation. Infrastructure Report Cards and assessment procedures demonstrate that the need for a municipality to improve the current condition of its infrastructure. The development of a municipal infrastructure assessment report card (chapter 5) reviewed existing infrastructure assessment frameworks of the American Society of Civil Engineers (ASCE) and the South African Institute of Civil Engineers (SAICE) respectively.

Findings reveal that the application of ASCE's infrastructure assessment report card occurs once every four years. America's built environment practitioners provide a comprehensive assessment of the country's major infrastructure categories. "Using a simple A to F school report card format, the Report Card provides a comprehensive assessment of current infrastructure conditions and needs, both assigning grades and making recommendations on how to raise the grades. An Advisory Council of ASCE members assigns the grades according to the following eight criteria: capacity, state, subsidy, future need, operation and maintenance, safety, elasticity, and improvement" (ASCE 2013). Furthermore, the application of SAICE's infrastructure report card provides a comprehensive assessment of current infrastructure conditions using a grading system ranging from A - world class to E – Unfit for Purpose. The report card is informed by collective opinions provided by various industry stakeholders and built environment practitioners on the current condition of infrastructure assets in South African municipalities. The SAICE report card covers 10 sectors such as water, sanitation, roads etc. and 27 sub sectors such as major urban areas, local distribution etc. across the country's major infrastructure categories (SAICE 2011).

Applying assessment procedures introduced by the American Society of Civil Engineers and the South African Institute of Civil Engineers, allowed all aspects of the valuation components related to measures in municipal infrastructure life cycle analysis to be evaluated in order to elicit meaningful data. Consequently, this provided a solid foundation for the development a municipal infrastructure assessment report card to fulfil the third objective of this research.

## **6.3 Research Objective 3**

RO 3. Development of a municipal infrastructure assessment report card

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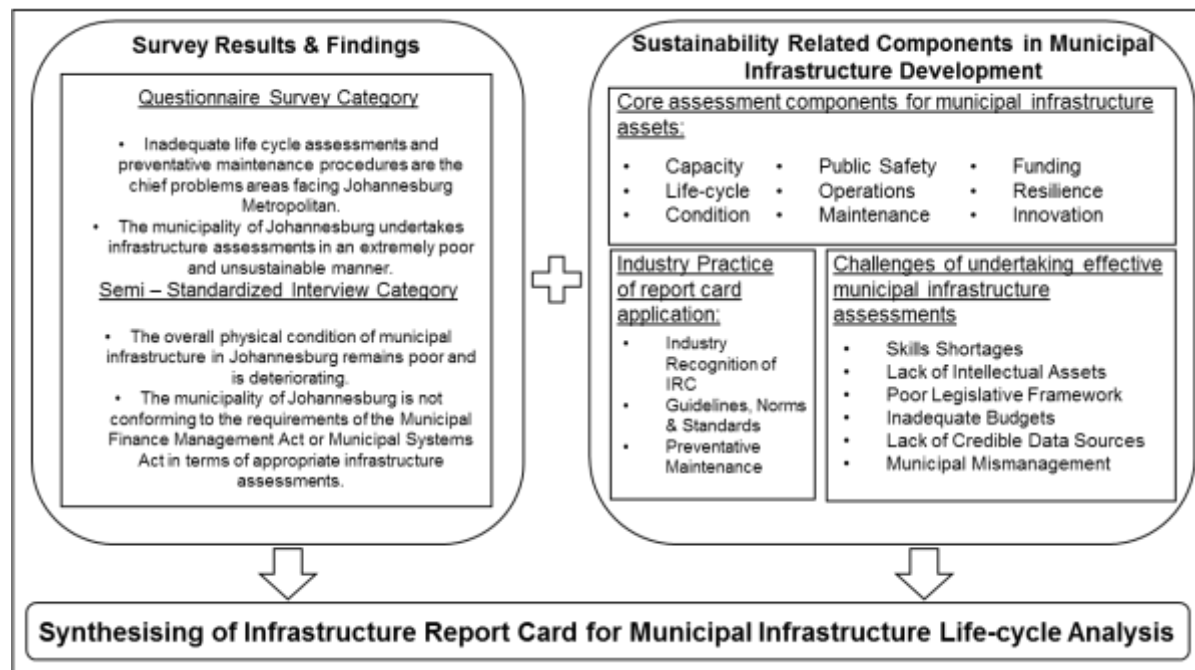
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The report card methodology was based on three stages: (1) review and analyse data collected from literature review and survey reports, (2) development of a summary report based on literature review and survey responses citing the condition and trends and (3) establishment of a grading framework based on data analysis and development by industry professionals. Eight (8) imperative categories of sectoral infrastructure components at municipal level constituted the report card. The report card consisted of two development stages: (1) the first stage identified the life cycle related assessment components and criteria through a review of literature and survey reports and (2) the second stage developed the overall infrastructure grading framework by the adoption of the American Society of Civil Engineers and the South African Institute of Civil Engineers decision support models.

The municipal infrastructure report card required real world scenario application and verification from senior industry stakeholders. The implementation and verification of the report card was reported through a case study of the municipality of Johannesburg. Findings of the suggestions examined during the validation phase establish that the municipal infrastructure report card successfully carried out the intended functions:

- The ability of the report card to ensure a systematic and effective evaluation of municipal infrastructure assets was achieved.
- The grading/rating system provided a comprehensive assessment criteria for municipal infrastructure assets and the overall status of infrastructure in the municipality
- The ability of the report card to reveal problem areas and areas of possible improvement was also established.

Figure 1: Municipal Infrastructure Assessment Report Card



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Table 1: Grading Criteria for Report Card

Symbol	Connotation	Description
A	World Class	The infrastructure in the network is in good to excellent condition and meets capacity needs for the future.
B	Fit For The Future	The infrastructure in the network is in good to excellent condition; some features display signs of overall deterioration that require attention.
C	Satisfactory	The infrastructure in the network is in fair to good condition; it displays overall signs of deterioration and needs attention
D	Unfit for Purpose	The infrastructure in the network is in an undesirable condition with extensive signs of deterioration.

Source: Adapted from SAICE, ASCE

The data analysis and development of the report card was overseen by survey participants from local regions, local government officials, senior urban planners, engineers and civil contractors involved in infrastructure projects and development. Through the consultation survey process, the following assessment criteria was proposed:

- Life Cycle – Aging of the infrastructure asset and long term performance analysis.
- Capacity – The infrastructure assets capacity to meet current and future needs of the municipality.
- Current Condition – The infrastructure assets existing physical condition.
- Operation and Maintenance – The municipality’s ability to operate and maintain the infrastructure appropriately and determine compliance with Municipal Systems Act and Municipal Finance Management Act.
- Municipal Safety – Extent in which the public’s safety is threatened by the condition of the infrastructure asset.

Table 2: Application of Numerical Values to Grading System

Overall Grade	Numerical Value Applied
A	3 - 4
B	2 - 3
C	1 - 2
D	0 - 1

The mathematical equation is expressed as follows:

$$\frac{\text{Municipal Infrastructure Asset}}{c + a + c0 + om + ps} = \text{Average Category Grading}$$

Where *c* is the infrastructure asset capacity, *a* is age of infrastructure asset *c0* is the current condition of the infrastructure asset, *om* is the operation and maintenance of the infrastructure asset and *ps* is the public safety applicable to the infrastructure asset.

And,

Overall Municipal Infrastructure Rating

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$$= \frac{\text{Total Category Rating}}{\text{Maximum Rating Achievable}} * 100$$

= (0 – 25% = D; 25% - 50% = C; 50% - 75% = B; 75% - 100% = A)

#### 6.4 Research Objective 4

RO 4. Assessment of the state of municipal infrastructure based on the developed municipal infrastructure report card.

The implementation of the developed report card was reported through a case study of the state of municipal infrastructure in Johannesburg Metropolitan. The report card covered eight imperative categories of municipal infrastructure, these categories were evaluated and graded accordingly. The assessment found that one category of municipal infrastructure is fit for the future. Five categories of municipal infrastructure are satisfactory and two categories of municipal infrastructure are unfit for purpose. The transportation category, electricity distribution category and sewerage category are ranked amongst the best and worst sectoral infrastructure assets respectively. The municipality of Johannesburg was awarded an Overall grade of C, which connotes to satisfactory and implies that the general condition of municipal infrastructure assets in the network is in fair to good condition but displays overall signs of deterioration and needs attention.

Furthermore, data analysis reveal that majority of the imperative categories of municipal infrastructure in Johannesburg have exceeded their design life-cycle, leaving majority of these assets vulnerable to rapid deterioration, this poses serious risks to public safety in general. This is worsened by the inability of the municipality of Johannesburg to effectively operate and maintain imperative infrastructure assets, an observation evidenced by extreme skills shortages and lack of capacity. Moreover, the municipality of Johannesburg was clearly not prepared for such rapid population, economic and overall capacity growth trajectories which has ultimately made operations, maintenance, rehabilitation and capital investment in infrastructure assets more difficult and costly.

### 7. RESEARCH CONTRIBUTION

This study contributed to the knowledge and understandings of municipal infrastructure life-cycle assessments in the context of maximising service delivery in the wake of rapid urbanisation. The specific contributions is attributed to two varying perspectives: the contributions to the municipal infrastructure development industry and to academic knowledge.

### 8. RESEARCH LIMITATIONS

The research has developed a report card framework with the ability to improve the current state of municipal infrastructure and promote higher levels of service delivery in municipalities. The research is limited in the following aspects:

The results and findings presented in the municipal infrastructure report card are reflective of specific types of municipal infrastructure assets such as water reticulation, water treatment, sewerage, sanitation, electricity distribution, public transport and municipal roads. Unquestionably, a wider coverage of other types of municipal infrastructure assets namely airports, ports, rail, healthcare, public schools, dams, bridges, public parks and recreation etc. would add and enrich the findings of this study. However, this was not the aim of focus of this research. This study is concerned with developing a framework and application model. Nonetheless, some enrichments and enhancements to the framework are needed to deal with other types of municipal infrastructure categories.

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Given the fact that majority of the participating survey respondents and the case study are from Johannesburg, the municipal infrastructure assessment framework is specifically applicable to the municipality of Johannesburg rather than to that of other municipalities in South Africa. This is primarily because different municipalities in South Africa have dissimilar statutory laws, cultural environments and political influences, which is unique and specific. However, the knowledge from this study can provide a healthy source of reference to municipalities in other regions of the country with slight modifications to fit the needs of the particular area.

## **9. CONCLUDING REMARKS**

The response to complex demographic and economic trends presents a challenge for the management of urbanisation and more importantly the management of municipal infrastructure assets and accurate service delivery. Therefore, it is evident from this study that improved municipal infrastructure life-cycle assessments, skills development and preventative maintenance procedures are highly needed. The case study of Johannesburg Metropolitan has revealed that there are evidences of satisfactory municipal infrastructure assets and service delivery provision, however also highlight an deteriorating infrastructure leading to poor and inadequate quality of municipal service delivery. Furthermore, the municipality of Johannesburg's budgets and staffing policies does not comprehensively cater to the growing infrastructure maintenance and risks there of. Several general issues contribute to inadequate infrastructure assessments, maintenance and poor service delivery in South African municipalities, ranging from best practice through to lack of intellectual assets. This is worsened by a most of the municipalities which are unable to make adequate long-term maintenance procedures, rehabilitation and eventual replacement of their infrastructure assets (Wall 2013).

It is clear that without a clear action plan many municipalities will not be able to improve their assessment, maintenance and service delivery policies and practices. If municipal infrastructure assessments, maintenance and service delivery is to be adequate, this study recommends the following:

- Strengthening of the policies and regulatory framework governing development and infrastructure planning, skills development, financial management for municipal infrastructure assessments and maintenance.
- Assisting institutions with non-financial resources such as human capital and intellectual assets.
- Developing the municipal infrastructure assessment and maintenance industry.
- Continued improvement in reporting, evaluation and monitoring.

## **10. REFERENCES**

- Alasutari, R. (2004). Innovation in qualitative research methods. A narrative review. 1 (1), 87-120.
- Amekudzi, A & McNeil, S (2008). Infrastructure Reporting and Asset Management: Best Practices and Opportunities. Virginia: American Society of Civil Engineers. 8- 178.
- Angus, K & Katona, E. (1953). Survey Research Method. Media Mimansa. 5 (2), 56 - 90.
- ASCE. (2013). Infrastructure Report Card. 2013 Report Card for Americas Infrastructure. 17 (1), 65-80.
- BANKSETA. (2009). Sector Skills Plan. 2009/10 Update. 1 (3), 34 - 56.
- Berg, B. (1995). Qualitative Research Methods for the Social Science. Allyn & Bacon. 4 (2), 98-110.

### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Binbasioglu, M. (1994). A Conceptual Modelling Approach. *Process Reengineering*. 2 (2), 276 - 301.
- Boshoff, L & Peters, S. (2006). Challenges, Constraints and Best Practices. *Rehabilitating Water and Electricity Distribution Infrastructure*. 2 (1), 98-110.
- Briceno, G. (2011). The High-level Design of Infrastructure Projects: Building Cooperative Agreements between Local Actors. *Fourth Annual Conference on Competition and Regulation in Network Industries*. 2 (1), 505 - 603.
- CIDB. (2007). *Annual Report. Vision 2012 and Beyond*. 1 (1), 425 - 433.
- City of Johannesburg. (2015). *Medium - Term Budget. Draft*. 1 (1), 98-110.
- Cooperative Governance and Traditional Affairs. (2013). *Annual Report. Annual Report for the Financial Year 2013/2013*. 2 (1), 78-101.
- CSIR. (2006). *The State of Municipal Infrastructure In South Africa. Towards a Framework for the Maintenance of Municipal Infrastructure*. 2 (2), 42-96.
- DBSA. (1998). *Infrastructure: A Foundation for Development. DBSA Development Report*. 5 (2), 56 – 96  
 Department of Water Affairs. (2013). *National Water Strategy. Water for an Equitable and Sustainable Future*. 2 (1), 505 - 603.
- Development Bank of Southern Africa. (2010). *The Municipal Infrastructure Investment Framework for South Africa. A capital investment perspective*. 11 (3), 34-96.
- Development Planning. (2013). *Integrated Urban Development Framework. Draft 5.0*. 1 (2), 11 - 15.
- DLPG. (2012). *Strategic Plan 2012. Government Strategic Agenda*. 1 (1), 78-101.
- Fellows, N & Liu, L. (2008). *Case Study as Research Strategy. Investigating Resilience*. 11 (1), 17 – 29
- Financial and Fiscal Commission. (2013). *Submission of the Division of Revenue. Technical Report*. 11 (1), 98-110.
- Goh, K. (2011). *Developing Financial Decision Support For Highway Infrastructure Sustainability. Construction Management*. 1 (1), 87-120.
- Hastak, G & Alvin, S. (2006). *Infrastructure Planning Handbook: Planning, Engineering, and Economics*. London: McGraw-Hill. 672 pp.
- Heller, M. (1979). *Civil Service Wage Bills. Infrastructure Maintenance and Management*. 2 (1), 677 - 687.
- Hemson, D. (2003). *The Sustainability of Community Water Projects. HSRC*. 19 (11), 111-142.
- IMESA. (2002). *Development of a South African Version of the International Infrastructure Manual. Scoping Report*. 9 (3), 96 - 156.
- Kvale, A. (1996). *Analysing Interview Data. Possibilities & Challenges*. 2 (1), 34 - 56.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
 4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Levy, M & Panchyk, R (2000). *Engineering the City: How Infrastructure Works, Projects & Principles for Beginners*. Chicago: Chicago Review Press. 8- 136.
- McNamara, A. (1999). Justifications for Qualitative Research in Organisations. *A Step Forward*. 3 (2), 6 - 34.
- Ostrom, A. (1993). Directions in Development Infrastructure. *Investment, Integration and Efficiency*. 1 (1), 444 - 446.
- Padayachee, V. (2003). Maintenance and Refurbishment Gaps. *National Electricity Distribution Maintenance Summit*. 1 (1), 121-162.
- Republic of South Africa. (2007). *Government Immovable Asset Management Act*. Act. 1 (1), 23 - 38.
- SAICE. (2011). *Infrastructure Report Card*. Infrastructure Report Card for South Africa. 2 (1), 6 -34.
- Savage, D. (2006). Institutional and Fiscal Challenges in responding to urbanisation in South Africa. *Urban Studies*. 11 (1), 11-42
- Simister, N. (1995). *Monitoring and Evaluation Modelling*. Praxis Paper. 23 (1), 276 - 301.
- Statistics South Africa. (2011). *Statistical Release*. Census 2011. 1 (1), 10 - 20.
- Statpac, I. (1997). A Selection from Statistics. *Survival Statistics*. 11 (2), 276 - 301.
- Struwig, S (2001). *Planning, Designing & Reporting Research*. 4th ed. South Africa: Maskew Miller Longman. 56 - 90.
- Swilling, M. (2006). *Sustainability and Infrastructure Planning in South Africa: A Cape Town Study*. School of Public Management and Planning, University of Stellenbosch, 5, 23 - 50.
- Wall, K. (2005). Water and wastewater treatment works in South Africa. *Poverty Reduction through Better Regulation*. 1 (1), 4-56.
- Yin, Y. (2003). *Qualitative Case Study Methodology*. Implementation for Novice Researchers. 1 (1), 499-515.
- Zikmund, W.G. (2003). *Business research methods*. Thomson South-Western. 5 (1), 11-42
- Zimu, S. (2002). *City Power, Personal Communication*. Road to an Infrastructure Strategic Framework for South Africa. 1 (2), 89-116.

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# Possible Futures: The Trajectory of Marlboro

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## Abstract

The advancement of the Gautrain in recent years has led to rejuvenation and upliftment of many precincts surrounding the various stations and this is very evident around the Sandton, Rosebank and Hatfield Gautrain Stations. These precincts experience constant ongoing development, increased investment in the precincts and the escalation of property prices. Yet, not all Gautrain stations have acted as the catalyst for development, and Marlboro is a clear example of this. The location of the Marlboro Gautrain station has not replicated the success of Rosebank and Sandton, with little added benefit as the precinct and the greater surround areas are highly underwhelming and underdeveloped. The precinct surrounding the Marlboro Gautrain station is not utilised to its best potential. Basic planning principles of inter alia densification or mixed-land use championed by many local authorities are not employed nor does the area have an effective public realm for socio-spatial enjoyment. In addition, infrastructure and service provision as well as housing are in a worrisome state.

This paper analyses the site and provides a status quo on the Marlboro precinct, the Alexandra Urban Renewal Programme, Linkage and Connectivity and lastly, Neighbouring Nodes. Utilising this analysis a best and worst case scenario for the Marlboro Gautrain station precinct and the greater surrounding area is presented. The worst case scenario looks at two possible routes as outcomes for the precinct if it's left to develop in the manner it has been developing in, as well as what could happen given external influence from the major close proximity economic nodes such as Sandon City (developed), Waterfall City (in construction phase) and Modderfontein City (to be developed). The first possibility is that the precinct will very likely to remain in its current state. The second possibility is that through pressure from surrounding nodal developments, gentrification of the site will occur, the current residents will become displaced and driven out from the area. The best case scenario or desired trajectory can be achieved through the utilisation of strategies and plans that take into account the principles of inclusive green urbanism. This allows for small neighbourhood scale projects or programmes that cater to the precinct making it a more desirable space for the current residents and integrating the site into the greater City of Johannesburg urban fabric.

## Keywords

Green Urbanism. Sustainable Cities. Green Cities. Energy Efficient Cities.

## 1. INTRODUCTION

The Gautrain started running in 2010, in time for the FIFA World Cup, connecting Sandton to OR Tambo International Airport (Gautrain Management Agency, 2011). Since 2010 all other stations have started running with the Gautrain transporting people on a daily basis. Looking at the implication of the Gautrain on the precincts surrounding the various stations around Gauteng, one starts to see a clear dichotomy which becomes very evident in Marlboro. Precincts surrounding Rosebank, Sandton and Hatfield have experienced rejuvenation, upliftment and increased investment and property prices, while Marlboro has remained unchanged in comparison (Ismail, 2015). Site inspections of the area surrounding Gautrain Station reinforce the contrast of Marlboro's Gautrain Station to that of Rosebank, Sandton and Hatfield. The location of the Gautrain station in Marlboro has not had any visible benefit that the other precincts have

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experienced. The area surrounding the station in Marlboro is highly underwhelming and underdeveloped with the precinct not utilised to its best potential. Basic planning principles such as densification or mixed-land use are not employed nor is there an effective public realm. Housing, services and infrastructure are visibly in a poor state and it appears that the residents have been left to their own devices. The theoretical lens utilises literature on inclusive green urbanism, with a look at the fifteen principles proposed by Lehmann (2011). The concept of inclusive green urbanism is a notion within the broader focus of sustainability.

This research delves into possible futures for the Marlboro precinct taking into account the Gautrain Station as an anchor, and presenting scenario for the area surrounding the station. The initial scenarios presented in this paper focus on ‘business-as-usual’ approaches that will result in possible futures if life in the area continues as is. The alternative scenarios takes into account inclusive green urbanism, analysis the preliminary studies and provides an ideal vision-led trajectory for the site. In conclusion, recommendations are proposed for Marlboro precinct and the greater surrounding area.

## **2. LITERATURE REVIEW**

Cities and neighbourhoods in South Africa have experienced large scale structural changes over time. This can be attributed to not only the end of the apartheid regime that governed the growth and structure of cities and places, but also in the post-1994 era, the expansion of freedom, movement and rights. As a result, many cities have experiences challenges by way of their overall development (Nassar, 2013). Cities have seen a growing trend of resource allocation and development focused primarily on the affluent sections of the community with impacts extending to the public realm (Nassar, 2013). Cities are hubs of opportunity for many and attract vast inward migration predominantly from rural areas with these migrants looking for a better quality of life (DED, 2011). South African cities will need to cater for a large increases in populations and like many developing countries will need to triple the built-up urban form by 2030 (Pieterse, 2011). The current boundaries of cities and development are expanding with urban sprawl being a major issue to contend with (Nassar, 2013). There must be some form of harmonious development in the growth of cities and practitioners must transform the cities in integrated sustainable ways if cities are to prosper (UN-Habitat, 2009). Nassar notes that the integration of sustainability is “the biggest challenge for cities and town nowadays” (Nassar, 2013: 339) but is vital for the growth of the sustainable green cities agenda. Part of this agenda is green urbanism and by extension, inclusive green urbanism.

Green urbanism is as Nassar refers to, a conceptual model (2013). This model aims for a zero-emission and zero-waste design that also promotes developments that are compact and energy efficient (Lehmann, 2010; Nassar, 2013). The movement towards sustainability and green urbanism is traced in Lehmann’s article, titled Green Urbanism: Formulating a Series of Holistic Principles, that provided a historical context going back as early as 1902 and providing Lehmann’s fifteen guiding principles for Green Urbanism. The principles provide a conceptual model/framework for a more integrated approach for local action to urban development and must be approached through holistic means (Lehmann, 2010). Green urbanism requires multidisciplinary collaboration to face the challenges of transforming communities, neighbourhoods or regions and the manner in which we think about the designing of urban developments (Lehmann, 2010). There is a large focus on the ‘How’, the manner in which practitioners will design, build, operate, maintain and recycle products (Nasser, 2013) and the principles must be applied and adapted to the context of the environment which we are working in (Lehmann, 2010). Ultimately, the principles need to be applied on smaller scales to be most effective (neighbourhoods) and with emphasis on brownfield development (Lehmann, 2010).

Urban planning has been slow to take on the green urbanism and the sustainability agenda but has made some good strides in recent years. The UN-Habitat’s report Planning Sustainable Cities: Global Report on Human Settlements 2009 notes that cities have come a long way and the sustainability agenda has tried and

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succeeded in achieving cities that are environmentally safe, economically productive and socially inclusive (UN-Habitat, 2009). Lehmann developed fifteen guiding principles of Green Urbanism that must be examined together and not individually as one to create sustainable urban developments or as he terms them, eco-estates (2010). The principles are fully explained in Lehmann's book 'The Principles of Green Urbanism. Transforming the City for Sustainability'. The principles are listed below with further explanations to follow:

- Climate and context
- Renewable energy for zero carbon emissions
- Zero-waste city
- Water
- Landscape, gardens and urban biodiversity
- Sustainable transport and good public space: compact and poly-centric cities
- Local and sustainable materials with less embodied energy
- Densities are retrofitting of existing districts
- Green buildings and districts, using passive design principles
- Liveability, healthy communities and mixed-use programs
- Local food and short supply
- Cultural heritages, identity and sense of place
- Urban governance, leadership and best practice
- Education, research and knowledge
- Strategies for cities in developing countries.

## **2.1 Unpacking the principles of Inclusive Green Urbanism**

This section unpacks and explains each of the fifteen principles of inclusive green urbanism and provides examples to illustrate them.

**Principle 1 - Climate and context:** Each development is a unique setting with its own history, culture, context, climate pros and cons. When addressing for principle 1, practitioners must find harmony with an understanding of the sites context (Lehmann, 2010). Climate conditions, context, the ecological footprint, complexities, history, economy, geography, culture, politics and environment must all be understood, analysed and planned for if a practitioner intends on having the site being a development that encompasses green urbanism (Lehmann, 2010).

**Principle 2 - Renewable energy for zero carbon emissions:** This can be achieved through energy efficiency by moving towards renewable power or natural gasses as a mixed energy fuel alternative, and through a reduction in fossil fuel usage such as coal and oil (Lehmann, 2010). Also part of this principle is the transformation of settlements or localities into energy producers and not consumers (Lehmann, 2010).

**Principle 3 - Zero-waste city:** Creating a closed loop eco-system that uses a sustainable waste management system of converting waste into energy (Lehmann, 2010). This requires the reduction, recycling, reusing and composting of waste for energy. All waste and material flows must be understood in order to achieve this principle (Lehmann, 2010).

**Principle 4 - Water:** Cities must reduce their water consumption and utilize better alternatives for efficient water usage, while achieving a high level of quality not only for consumption by humans, but for aquatic habitats (Lehmann, 2010). Water is not only a basic right but a resource that must be handled with care.

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Societies must start to value water more, and education can allow for better efficiency and collection (e.g.: rain water harvesting) (Lehmann, 2010).

Principle 5 - Landscape, gardens and urban biodiversity: Cities and developments need strong biodiversity characteristics, not only for beauty but as opportunities for leisure and recreation, natural lifecycle and health societies (Lehmann, 2010). Parks, public gardens, rooftop/agricultural gardens all lead not only to health cities but health society, a value of the surroundings and social cohesion.

Principle 6 - Sustainable transport and good public space: compact and poly-centric cities: Developing localities with a predominant focus on mass transit systems linking into well-established non-motorized transport options helps to create low impact transit systems that are accessible and easy for all (Lehmann, 2010). Alternative energy means and a reduction on private automotive dependencies is also important. The transit system should be well linked with the surroundings (mixed land-uses) and public space. Options for bike and car rental schemes assist in the reduction of individual car ownership and pollution (Lehmann, 2010).

Principle 7 - Local and sustainable materials with less embodied energy: There is a need to develop systems for consumption that rely on a shorter supply chain with access to material and technology within the locality (Lehmann, 2010). This is very similar to the concept of urban metabolism where consumption of resources is far more efficient and effective with lower to no outputs.

Principle 8 - Densities and retrofitting of existing districts: Strategic densification and infill developments centred on mixed land-use areas can lead to regeneration and better Transit Orientated Developments (TOD) (Lehmann, 2010). This relies on the agenda of compaction, better linking of people to economic opportunities (through green transit options) and reducing current buildings carbon footprints (Lehmann, 2010).

Principle 9 - Green buildings and districts, using passive design principles: Principle 9 requires a retrofitting of existing building stock and developing new buildings along a green agenda through lower energy consumption and emissions. Retrofitting and designing must be done in a manner that takes into account the basic functionality of nature as opportunities. A simple example of this would be to have buildings orientate north in the southern hemisphere to take advantage of the lighting and warmth of the sun, amongst other things (Lehmann, 2010).

Principle 10 - Liveability, healthy communities and mixed-use programs: Creating communities that are healthy, diverse and promote social sustainability and inclusion. This can be done through mixed land-use options that promote integration and cohesion (Lehmann, 2010).

Principle 11 - Local food and short supply: Food security and having food supplied within the locality is important (Lehmann, 2010). This can be done through urban farming and agriculture that generates products for the local community (Lehmann, 2010). The current dichotomy rural and urban lives, linkages and settings need to change to a more holistic and integrated approach (Lehmann, 2010).

Principle 12 - Cultural heritages, identity and sense of place: All spaces have a history, heritage and identity (Lehmann, 2010). As a result, people develop a bond and identity tied to the space they live and engage in. Spaces should be safer and healthier as well as just in order to promote individuals heritage. In addition, these spaces must be clean, health and free of pollution (Lehmann, 2010).

Principle 13 - Urban governance, leadership and best practice: The success of green urbanism also rests on good urban governance with just and secure governance systems (Lehmann, 2010). Leaders must provide for all citizens equally, through strong management and political support (Lehmann, 2010).

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Principle 14 - Education, research and knowledge: Training and educating people to be more sustainable is important to create sustainable spaces (Lehmann, 2010). Changing people's mindsets will change the manner in which they engage and interact with their environment (Lehmann, 2010). A more sustainably and conscience community is better equipped to make positive decisions about sustainability that will lead to greater environment sustainable (Lehmann, 2010).

Principle 15 - Strategies for cities in developing countries: The developed world functions vastly differently from the developing world with different challenges and context (Lehmann, 2010). Specific strategies for different cities in different parts of the world must be developed to take into account matters pertaining to, inter alia, urbanization and globalization (Lehmann, 2010). Approaches and funding mechanisms cannot be uniformly applied to all cities, and practitioners must look into different strategies for their city and spaces (Lehmann, 2010).

A dimension that has not been explicitly dealt with, but does underlie many of the principles of green urbanism is inclusivity. South Africa is a country that suffered with segregation and discrimination and as a result, the spatial and economic form of cities has reflected the negativity of apartheid (Swilling, 2014). Vital to the prosperity of green urbanism is the notion of inclusive urbanism that bridges the gaps between the segregated spatial form and societies in South Africa (Swilling, 2014).

### **3. OBJECTIVES /RESEARCH QUESTIONS**

The objective of this study was to firstly consolidate the status quo for the Marlboro Precinct by drawing on the previous preliminary studies conducted in the area and, secondly, to formulate a worst case scenario focused on 'business-as-usual' approaches and an alternative best case scenario with inclusive green urbanism as the outcome for the site.

Therefore, the main research question that we are attempting to answer is: What are the possible best and worst case scenarios for the Marlboro precinct?

### **4. APPROACH & METHODOLOGY**

This study took a qualitative research approach. The study is addressing the possible problem that could face Marlboro. Six preliminary studies were conducted by the students registered for a Masters of Architecture in Sustainable and Energy Efficient Cities for the course ARPL 7054 Energy for Sustainable Cities. The six studies looked into potential drivers of change that could impact on the Marlboro precinct. The six preliminary studies (drivers of change) focused on:

- Connectivity opportunities of the Gautrain routes (existing and proposed extensions);
- The proposed Modderfontein City development;
- The proposed Sandton-Alexandra pedestrian bridge;
- The Alexandra Urban Renewal Programme;
- Experiences and studies of the Rosebank and Sandton nodes drawing information from the City of Johannesburg's Integrated Development Plan (IDP), Spatial Development Framework (SDF), Regional Spatial Development Framework (RSDF), and associated precinct plans, as well as the Corridors of Freedom; and
- A study of the Marlboro Precinct looking into the IDP, SDF, RSDF and precinct plan.

Each preliminary study was conducted through a desktop analysis of available research and documents. This study summarised the six reports into four key sections namely, The Marlboro Precinct; The Alexandra

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Urban Renewal Programme; Linkage and Connectivity; and, Neighbouring Nodes. The preliminary studies provided knowledge of the area that was empirically analysed and the data interpreted to understand patterns or trends and draw up conclusions based on the patterns and discoveries (Hancock and Algozzine, 2006; Punch, 2009) that shed light on the possible scenarios. The initial scenario is the ‘business-as-usual’ approach which analyses the precinct and provides two trajectories. This will result in a specific outcome if planning in/for/around Marlboro continues as is (business-as-usual). The second scenario utilised the concepts of inclusive green urbanism that was dealt with in the literature review. Inclusive green urbanism provided the lens with which to structure the ideal vision for the site. Coupled with this, were small scale interventions proposed along the lines of the fifteen principles of green urbanism presented by Lehman (2010).

## **5. RESEARCH ANALYSIS & FINDINGS / RESULTS**

### **5.1 Consolidating the Status Quo**

The research was analysed into four sub-sections. The first sub-section deals with the Marlboro precinct providing the context and understanding of the immediate area of study. The second sub-section looks into the Alexandra Urban Renewal Programme, specifically the impact of the Alexandra Urban Renewal Programme on the Far East Bank Extension 7. The third sub-section delved into linkage and connectivity opportunities in the form of existing routes and proposed extensions of the Gautrain as well as the proposed Sandton-Alexandra pedestrian bridge. Finally, the last sub-section deals with four adjacent neighbouring mega-project/nodal developments that have/will have an impact on the Marlboro precinct.

#### **5.1.1 Sub-section 1: The Marlboro Precinct**

The anchor for the site is the Marlboro Gautrain station. The Gautrain station is situated alongside the N3 Eastern Bypass to the east. The residential area south of the site is the Far East Bank and to the north of the station is Marlboro Drive (M60). Further north of the station is a large parcel of land owned by the University of Witwatersrand known as Frankenwald Estate (Adams, 2015). The greater Marlboro residential area known as Marlboro Gardens is located to the west with the township of Alexandra to the south. Linboro Park is located to the west of the site.

Marlboro is located within the City of Johannesburg specifically in the north eastern quadrant demarcated Region E. The City of Johannesburg’s Integrated Development Plan calls for an increase in the quality of life for residents in Marlboro, with active efforts to incorporate the sustainability agenda into the area, have more job opportunities, make the space more inclusive and finally have better urban governance (City of Johannesburg, 2015). From a planning point of view, the Regional Spatial Development Framework calls for broader principles of spatial transformation and inclusion into the City. In addition greater densification and compaction is sought for the area, as well as public transport (City of Johannesburg, 2010).

#### **5.1.2 Sub-section 2: The Alexandra Urban Renewal Programme**

The Alexandra Renewal Project (ARP) was aimed at bettering the socio-economic profile of the township and providing much needed services to the 50 000 plus residents (Forster, 2015; Makhu, 2015). The National sphere of Government as part of their intention to address service delivery issues introduced a renewal programme. The Gauteng Department of Housing championed the ARP with the intention of elevating economic, social and spatial dilemmas along with addressing the large densities and lack of services (Forster, 2015; Makhu, 2015). Alexandra was envisaged to be an opportune place of living, working and playing. Forster (2015) and Makhu (2015) note much of the shortcomings of the project to it being a politically driven programme that ended up transforming into a housing delivery scheme.

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Alexandra is an ideally located space attracting many looking for opportunities in Johannesburg due to its proximity to Sandton City, Linboro Park and its transport linkages (Forster, 2015; Makhu, 2015). The township can be divided into three distinct areas (Forster, 2015; Makhu, 2015). The first is the most densely populated and informal area known as older Alexandra, with the poorest in the community. The second area is the East Bank that is home more middle-class population. The last area is the Far East Bank that consists of slightly more formal structures and units (Forster, 2015; Makhu, 2015).

The Alexandra community are seen as a strong force that at times becomes volatile (Forster, 2015; Makhu, 2015). The residents amongst others view the ARP as a failure that did not help the community. Service delivery, housing and education are still found to be lacking along with poor investment into the area, however, looking at statistics the ARP can be seen as a success (Forster, 2015; Makhu, 2015). The area is characterised by poorly constructed homes and shacks, a lack of services, public space and overcrowding. Ironically, the intention of the ARP was to bring in services (Forster, 2015; Makhu, 2015).

Forster (2015) and Makhu (2015) delved into the impact of the ARP on the Far East Bank with specific focus on Alexandra Extension 7. Extension 7 is located immediately to the south of the Gautrain station. As part of the ARP, there was critical need to address densification through structured formal means and the land, vacant at the time, was utilised for temporary relocation of residents that occupied informal shacks along the Jukskei River (Forster, 2015; Makhu, 2015). The temporary relocation project ended in 2003 with the land remaining vacant until 2006, when development of Extension 7 began (Forster, 2015; Makhu, 2015). The development consisted of Reconstruction and Development Programme (RDP) housing that resulted in densely packed units. Residents received title deeds without having to pay for their homes except for monthly municipal service contributions. The value of each unit is estimated at R100 000 each (Forster, 2015; Makhu, 2015).

Alexandra's 2008 xenophobic attacks can be traced back to contestation surrounding housing allocations. The ARP was ultimately relocated to the Johannesburg Development Agency (JDA) with little to no initiatives by the agency to take the Programme forward (Forster, 2015; Makhu, 2015).

### 5.1.3 Sub-section 3: Linkage and Connectivity

Marlboro has two major linkages allowing connectivity. The small (neighbourhood) scale linkage is provided by the proposed Sandton-Alexandra pedestrian bridge. The regional (Gauteng) scale linkage is provided by the Gautrain, both existing and proposed extensions.

The Gautrain was a R30 Billion project that aimed to act as a catalyst of change to bolster economic growth, jobs and development by linking Johannesburg and Pretoria (Puckiree, 2015). Coupled with the idea that there will be alleviation of motor congestion and environmental benefits, the Gautrain was envisaged as means for better quality of life (Puckiree, 2015). Gautrain is seen as a success by many, drawing international investment and some praise. A deeper look into Gautrain reveals a deepening segregation along mobility exclusion (Puckiree, 2015). Gautrain was intended to serve 100 000 people with less than half of that number being met. As a result, government is reallocating funding for infrastructure projects and allocations to municipalities into filling the shortfall of Gautrain (Puckiree, 2015). A reality of Gautrain is that it was never intended to service the wider population but targets the middle-to-higher income groups. The poorer communities that rely on public transport have no means of utilizing Gautrain (Puckiree, 2015). The residents of Marlboro and Alexandra cannot afford the Gautrain and the station which should have been a catalyst for social change serves as a reminder of what is out of reach to the community (Puckiree, 2015).

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In recent years the Government has seen the value of having an integrated transport plan as a means to create a more inclusive and sustainable transport network (Daras, 2015). The Gauteng Integrated Transport Master Plan 2025 (ITMP25) positions rail as the backbone of the network and proposes extensions to the current Gautrain routes with a feasibility study expected in 2016 (Daras, 2015). The new routes will be located in strategic areas to compliment population dynamics, economic patterns, growth and development (Daras, 2015). ITMP25 seeks to have a structured, compact and dense Gauteng City Region prided on Transit Orientated Development (TOD) for all (Daras, 2015).

The Alexandra-Sandton Bridge forms part of the City of Johannesburg's Corridors of Freedom (Moahloli, 2015). It is branded as "The Great Walk" linking Sandton, one of the richest areas in South Africa, with Alexandra home to some of the poorest people in the country (Moahloli, 2015). With the aim of combating the challenges faced by the apartheid planning legacy, coupled with the Non-Motorized Transport (NMT) Framework and the City's Complete Streets Initiative, a safer, easier corridor/ walkway is to be established (Moahloli, 2015). Approximately 10 000 people traverse 5.2km to get to Sandton from Alexandra on a daily basis (Moahloli, 2015). Having to cross the M1 has resulted in many fatalities. The walk across the bridge will be landscaped, street furniture provided, traffic and speeding calming measures, lighting and scenery all intended to make the walk more pleasurable and safer for pedestrians (Moahloli, 2015). The bridge is expected to be completed by 2017 (Moahloli, 2015).

#### 5.1.4 Sub-section 4: Neighbouring Nodes

There are three large nodal centres surrounding Marlboro that in turn will have large impacts on the site. These nodes are Linboro Park, Sandton and Rosebank, and Modderfontein City.

Linboro Park is located adjacent to Marlboro and the Gautrain station to the west. The land uses that make up Linboro are industrial developments, low density residential units, along with small business, commercial and retail (Bruni, 2015). Linboro's location in terms of the major M1 makes it an ideal location prime for redevelopment (Bruni, 2015). Joburg's IDP earmarked the area as a mixed use industry/ commercial/ residential/ business/ retail node. The RSDF in addition calls for large redevelopment of the township specifically with the intention of de-densifying Alexandra by allocating housing in Linboro. Overall, the township is seen by the City as a zone of opportunity (Bruni, 2015). Despite this, the area faces challenges from the community that is divided on the vision for the area (Bruni, 2015). Linboro has a lack of public transit options with residents having a heavy dependence on private cars. In addition, services are in a state of degradation as well (Bruni, 2015). Much of the land is zoned agricultural requiring a lengthy rezoning or township applications process to allow for appropriate development rights (Bruni, 2015). Linboro has a landfill that closed in 2006 after 27 years in operation. The landfill that decreases property value is property in close proximity to it (Bruni, 2015), yet it is seen as an opportunity for strategic redevelopment. Linboro has a vast untapped potential that if managed correctly will have positive spin-off effects for Alexandra (Bruni, 2015).

Rosebank and Sandton City are two of the more important nodes for the City of Johannesburg (Ansell, 2015). They are seen as leaders in development and investment with property values increasing on a constant basis and investment targeting these nodes (Ansell, 2015). Sandton is a node of Metropolitan importance home to the famous Sandton City Shopping Centre with retail and commercial activities, many office blocks and fairly high density residential development. Rosebank is a smaller scale node in comparison to Sandton (Ansell, 2015). Regardless, Rosebank is a vibrant mixed-use node home to the Rosebank shopping centre and a variety of hotels (Ansell, 2015). Both nodes are in close proximity to major road networks of regional and local importance, each has a Gautrain stations (in the case of Rosebank, this has rejuvenated the area) making them ideal spaces to invest in (Ansell, 2015). The City is looking into

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implementing BRT within Rosebank and Sandton with construction underway to run along Louis Botha connection to Katherine Street (Ansell, 2015). Rosebank and Sandton present ideal locations for major infill and development centered around TOD (Ansell, 2015).

Modderfontein is a new mixed land-use city being developed by Zendai, a Chinese company, within a very close proximity to Marlboro (Ismail, 2015). A new Gautrain station will be located in the city centre of Modderfontein City. The development is envisaged to rival that of London, Hong Kong and New York City with intentions to transform the predominantly vacant land into vibrant neighbourhoods with residential, commercial retail and industrial spaces that promote principles of live, work, play and growth (Ismail, 2015). It is vital that Modderfontein integrate well with the City of Johannesburg as it has the potential to impact the municipality both positively and negatively (Ismail, 2015). The City and developers agree on developing Modderfontein along the principles of compaction, TOD, integration into the wider Johannesburg region, job creation and poverty alleviation (Ismail, 2015). The location of the Gautrain station opens it up to regional linkages. Modderfontein has the potential to rival Sandton City and the development must ensure that it compliments all spaces with the City of Johannesburg and not fundamentally transform the economic, spatial and geographical profile of the province in a dangerous manner (Ismail, 2015).

## 5.2 Future Outcomes

Marlboro has the potential to develop along two trajectories. The first that will be understood is business-as-usual that looks at what could potential happen if Marlboro remains in the state it is in. The second scenario provides the desired future trajectory for Marlboro if inclusive green urbanism is applied.

### 5.2.1 Marlboro: If life remains the same (Business-as-Usual Trajectory)

Marlboro's future should be directed by the City of Johannesburg's governing policies namely, the Spatial Development Framework, Regional Spatial Development Framework for Region E and the Marlboro Urban Development Framework. Looking at the current state of the area there is misalignment between what should happen, and the current reality on the ground. Marlboro is defined predominantly by residential formal detached RDP dwelling units/ houses (Adams, 2015). Marlboro should incorporate lower income housing into the greater precinct, develop high densities, develop an "all-day all-night node", upgrade existing social facilities and develop additional appropriate social facilities, secure the open space system especially along the Jukskei River, develop a sustainable human settlement and lastly promote business/economic/job opportunities (City of Johannesburg, 2010). Principles developed for the Gautrain Station are compaction and increased densities with a range of housing typologies and options, user-friendly spaces, building a unique and distinctive community built around mixed land uses and TOD and shift away from private car options towards public and NMT alternatives (City of Johannesburg, 2010). Marlboro also faces sufficient strengths and opportunities as well as substantial weaknesses and threats that Marlboro faces (Adam, 2015). Therefore, if life continues as it, with planning for Marlboro continuing as usual, what will happen to the area? This can take two possible 'business-continues-as-usual' routes.

The first possibility is that, plot prices according to Forster (2015) & Makhu (2015) indicated that the cost of each semi-detached homes of approximately 36m<sup>2</sup> is about R100 000 each that includes the associated bulk infrastructure and secure foundation. If a developer intends on purchasing land to develop a very moderate 1000m<sup>2</sup>, they would need to quire 27 to 30 properties for R2 700 000 to R3 000 000 which is not financially feasible. Therefore, properties are very likely to remain in their current state.

The second route is dependent on the success of surrounding nodal developments such as Sandton City and Rosebank, Modderfontein City and Waterfall City. Marlboro is located in the centre of these developments

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that have the potential to change Gauteng's economic and spatial trajectory. What can occur is that a developer who is willing to pay exorbitant prices for the land comes in and redevelops the area. Through gentrification Marlboro and Alexandra can become spaces where current residents are excluded and driven out.

### 5.2.2 Desired Future Trajectory

Watson (2009) notes the impacts poor planning can have on communities especially the poor, and that a renovation of planning must occur to address challenges around urbanization, poverty and sustainability. Watson quotes Lovering's concept of planning as a means of "... protecting the needs of ordinary people rather than privileged minorities, the public rather than private interest, the future rather than the present" (Watson, 2009). Smaller scale inclusive green urbanism interventions should be proposed along the lines of the fifteen principles presented by Lehmann (2010). This will allow for specific projects/ programmes to be identified in line with green urbanism pillars that contribute to an overall more inclusive and green Marlboro. Couple this approach with five normative spatial planning principles proposed by the National Development Plan (NDP) that deals with spatial inclusivity and Marlboro can develop into a unique space with a firm identity catering for its current residents and integrated into the greater City of Johannesburg urban fabric (National Planning Commission, 2013).

## 6. RESEARCH CONTRIBUTION

This research contributes to a greater understanding of the Marlboro Gautrain station precinct and the possible futures the space and residents could be faced with. It provides a baseline of information that can be built upon. In addition, this research takes the concept of inclusive green urbanism and applies it to the site which is currently not very inclusive or green.

## 7. RESEARCH LIMITATIONS

This research was conducted primarily as part of the course Energy for Sustainable Cities. The section on consolidating the status quo draws on preliminary reports done by students. The time availability poses the biggest limitation to this research. Greater analysis could have been done given more time. The time constraints also impacted on the availability to collect a variety of sources of information. Lastly, the manner in which data is analysed and reported is a limitation. Cross-references and double checking of the data could not be done

## 8. DISCUSSION & CONCLUDING REMARKS

Marlboro presents a unique case when looking into its potential future. There are strengths and opportunities such as the Gautrain Station and its location in relation to neighbouring developments. Yet, the Marlboro Gautrain station precinct has not replicated the successes of Rosebank, Sandton and Hatfield. If the site is left to develop as it currently is, the future for the residents looks bleak. When incorporating Lehmann's (2010) 15 principles of green urbanism and the 5 NDP principles of spatial inclusivity (National Planning Commission, 2013), one can start to develop the Marlboro Gautrain station precinct and the greater area in a manner that promotes inclusive green urbanism. Green urbanism allows for small scale initiatives, programmes and projects that can actively work to achieve a better environment for the residents, actively work to overcome the apartheid legacy and contribute to the creation of Johannesburg as an inclusive, sustainable energy efficient city.

### Conference Proceedings:

## 9. REFERENCES

- Adam, A. 2015. Preliminary Report on Gautrain as a Change Catalyst from Marlboro and Far East Bank Ext 7: Marlboro Precinct. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Ansell, N. 2015. Preliminary Report: Rosebank and Sandton Nodes. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Bruni, J. 2015. Preliminary Report on Linbro Park. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- City of Johannesburg. 2010. Regional Spatial Development Framework: Region E. City of Johannesburg Department of Development Planning and Urban Management. Review of the Approved 2009/10 RSDF.
- City of Johannesburg. 2015. 2012/16 Integrated Development Plan “Turning Challenges into Opportunities” 2015/16 Review . City of Johannesburg Department. Review of the Approved 2012/16 IDP.
- Daras, G. 2015. Preliminary Report on the Connectivity Opportunities of the Proposed Gautrain Route Extensions to the Malboro Area. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- DED (Gauteng Department of Economic Development). 2011. Gauteng Spatial Development Framework. Gauteng Provincial Government, Johannesburg.
- Forster, C. 2015. The impact of the Alexandra Renewal Program on Far East Bank Ext 7. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Gautrain Management Agency. 2011. Milestones. Gautrain. INTERNET: <http://www.gautrain.co.za/about/about-gautrain/milestones/>, accessed May 9, 2016.
- Hancock, D.R. and Algozzine, B. 2006. Doing case study research: A practical guide for beginning researchers. Teachers College Press, New York.
- Ismail, T. 2015. Preliminary Report: The Modderfontein City development. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Lehman, S. 2010. Green urbanism: Formulating a series of holistic principles. SAPIENS, 3(2), 1-10.
- Lehmann, S. 2011. The 15 Principles of green urbanism. Next city: Inspiring better cities, February 16. INTERNET: <https://nextcity.org/daily/entry/the-15-principles-of-green-urbanism>, accessed 26 March 2016.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Makhu, O. 2015. Preliminary Report: Alexandra Renewal Project. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Moahloli, T. 2015. Inclusionary Green Urbanism Within the context of Developing Country Cities, Case Study: 'The Great Walk' - The Proposed Alexandra-Sandton Pedestrian Bridge. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Nassar, U. 2013. Principles of green urbanism: The absent value of Cairo, Egypt. *International Journal of Social Science and Humanity*, 3(4), 339-343.
- National Planning Commission. 2013. National Development Plan 2030. The Presidency, Republic of South Africa.
- Pieterse, E. 2011. Recasting urban sustainability in the south. *Development*, 54(3), 309-316.
- Punch, K. 2009. Introduction to research methods in education. Sage, Los Angeles.
- Purcell, M. (2014). Possible Worlds: Henri Lefebvre and the Right to the City. *Journal of Urban Affairs*, 36(1), pp. 141 - 154.
- Puckiree, S. 2015. Preliminary Report: Gautrain - The Existing Routes. Unpublished Report, Course ARPL 7054 Energy for Sustainable Cities, Master of Architecture in Sustainable and Energy Efficient Cities, University of the Witwatersrand, Johannesburg.
- Swilling, M. (2014). Contesting inclusive urbanism in a divided city: The limits to the neoliberalisation of Cape Town's energy system. *Urban Studies*, 51(15), 3180-3197.
- UN-Habitat (United Nations Human Settlements Programme). 2009. Bridging the green and brown agendas. In: UN-Habitat (ed.) *Planning sustainable cities: Global report on human settlements 2009*. London; Earthscan, 113-131.
- Watson, V. (2009). 'The planned city sweeps the poor away...': Urban planning and 21st century urbanization. *Progress in Planning*, 72, 151 - 193.

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# The Planning Profession in Motion: Lessons for South Africa's Planning Profession Act (2002) from International Experiences

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## Abstract

The profession of town and regional planners was often perceived as having been employed by successive pre-1994 governments as a tool to satisfy and entrench many land-based segregation measures. The enactment of the Planning Profession Act (PPA), Act 36 of 2002 is thus considered a landmark as this piece of legislation was considered as one of the most progressive post-1994 pieces of legislation enacted to deal with the perceived legitimacy crisis in the planning profession in South Africa. However, since its enactment, there have been significant developments with far-reaching impacts on the planning environment. Seminal work including the adoption of the “National Development Plan (NDP) in November 2011” and the enactment of the “Spatial Planning and Land Use Management Act (SPLUMA), Act 16 of 2013” have necessitated the need to review the PPA and update it accordingly. The role of the planning profession and professional planners in leading the realisation of the vision, mission and anticipated outcomes as espoused in the NDP and in the implementation of SPLUMA is critical. Like the “birth of professions” the planning profession continues to adapt to “new and changing roles” and this implies that the legislation governing the profession should support the continued maintenance of “high standards” of professional “conduct and integrity”. In addition, the “planning profession” must support the changes to the legislative environment that affects the profession at large. Further research and benchmarking directions are required on how other countries legislate their planning profession. While it is acknowledged that relatively sound research has been done in relation to other international planning institutions, however, more research is required to ensure the South African Planning profession remains globally competitive, innovative and relevant. Making use of extensive literature review and key informant interviews, this paper discusses major planning profession areas of discourse and makes suggestions on how to address the planning profession “sticky” points in the context of South Africa.

## Keywords

Planning profession, legislation, competitiveness, relevancy, transformation, South Africa

## 1. INTRODUCTION

Professionalism is a contested concept and, as such, it is a subject of discourses, continuous dialogue and engagement platforms. George Bernard Shaw described “professions as conspiracies against lay persons”. Others have “conceptualised” professionalism as “...an occupational strategy...concerned with the maintenance of superior remuneration and status...” (Parry and Parry, 1976, p. 79). A review of professions confirm that it is standard and common for one profession to seek to “establish monopoly over areas of expertise and employment” through instituting various job reservation clauses in the corresponding professional act. In addition, Elliott (1972, p. 14, 32) “coined the terms *status professions*” and *occupational professions*” to demarcate the “old” professions (such as medicine, law, the clergy &

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university teaching) and the “new” often welfare state related professions” (such as accountancy, engineering, town and regional planning, surveying, architecture, nursing, school teaching and social work). Camaño-Puig (2005, pp. 23-26) presents three levels of work. The least complex and primary form of work is labour. The second tier of work complexity is where crafts/occupations are located. The final and most complex level of work is occupied by professions. According to Freidson (1986, p. 24), “a profession is” “...an occupation that has performed successfully the transactions in the social market, achieving prestige and then achieving power and money...” Figure 1 below presents a graphical illustration of standard attributes of a profession.



Figure 1: Standard attributes of a profession  
(Source: DRDLR, 2015, p. 5)

As indicated in Figure 1, professionals over time have become an essential constituent of an important and complex work category since the nineteenth century. The importance of professions was further elevated by the fact that occupational groups have been actively engaged in mobilizing colleagues in various work occupations to seek and secure professional status enjoyed by the first professions, such as medicine and law. Figure 2 below presents major professional operational requirements and guidelines for ascription.

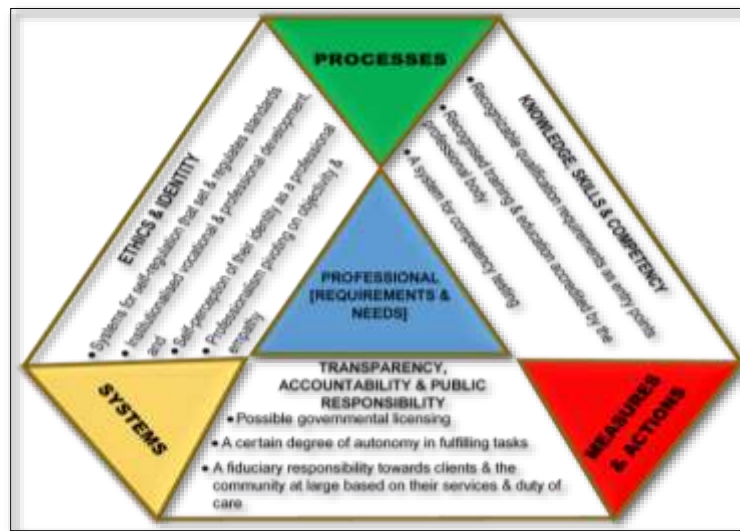


Figure 2: Professions generic membership requirements  
(Source: DRDLR, 2015, p. 6)

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“Professional work” is therefore “based on” specialist “knowledge” and skills. “The” execution of “professional” work takes a professional with specialized knowledge and skills acquired to deliver accordingly. This usually provides a reason and motivation for professional autonomy in disseminating professional knowledge, controlling, facilitating and regulating access to practice, and providing status, prestige and respectability to a profession. Professions are differentiated and distinguished from each other in terms of the unique specialist knowledge, set of competencies and skills that are at the centre of creating a market for its services. Additional characteristics of professional work are: predominance of non-routine tasks requiring professional “knowledge and practical apprenticeship”; “occupational” control “over” their professional “jurisdiction, and autonomy within” their professional jurisdiction; “legal and ethical responsibility for” their work, and acceptance by society of their worth and their norms and values.

## 2. LITERATURE REVIEW

Samuels, 1995, p. 102 asserts that educating planners is defined by the scope and space of planning in a country as well as the “degree of professionalisation of the practice of planning”. Accreditation and education recognition systems are attuned to comply and support the status and prestige “of the planning profession”. “The status of the planning profession” is amplified by “the” importance of the profession to the political economy of a state as well as the professional standing of the activity. Invariably, the town planning profession has “a long lineage” of over hundred years spanning the years when the profession surfaced and emerged in Britain, Germany and the USA. In its earliest form, the planning profession grew as part of the state’s attempts to cope up with the contradictions, tensions, struggles and crises unraveled consequent to developments in support and promotion of industrialisation and the ensuring mass urbanisation that followed suit (McLoughlinf, 1994, pp. 1111-1112). Although at first complex and multifaceted (for example, for Britain, see Foley, 1961, pp. 211-231) and dominated by bourgeois reformist notions, From responding to the emerging challenges of both industrialisation and urbanisation, the planning profession acquired some distinguishing characteristics which enabled (albeit though tainted with discourses) the separation of the town planning profession from other professions. Separation of the “town planning” from “the” rest “of the” professions “were based” on “the” following major issues, namely:

- A profession geared towards the production and making of spatial plans and in some instances carrying even architectonic overtones,
- A profession with the knowledge skills and competencies to engage in prescriptions for the future urban and rural regions
- All this was possible through the application and development of a robust set of policies, strategies, laws, and regulations on the production and reproduction of the built form(Samuels, 1995, pp. 102 -108).

Consequently, the planning profession required institutionalization “as a profession and a bureaucratic cadre” since formation (McLoughlinf, 1994, pp. 1112). This evolved in the form of a “qualifying association” (Millerson, 1964, p. 4). Over time, logically the “(British) Town Planning Institute was established” in 1914. This was a sequel to the offering of the “first-ever “town planning (civic design)” “courses” at “the University of Liverpool in 1909” (Cherry, 1980). As a result in the United Kingdom (UK), a “town planner has been recognised as a distinct professional with a protected title since 1914” (Samuels, 1995, p. 102). This is a situation which may be contrasted with other countries in which there is no protected profession of town planning. Therefore studies that reflect on the planning profession trajectory aimed at identifying inflexion points for intervention aimed at further strengthening the planning profession become a priority.

“With its roots in the professional practices of architecture, engineering and surveying, town planning (loosely defined as 'planning of our towns, cities and countryside') in the UK has emerged over the last century as a discipline and a profession in its own right, becoming by the 1970s increasingly influenced and subject to critique by the social and political sciences” (RTPI 2001, p.2). Taylor and Thole, 2015 p. 34 highlight that generally the town and country profession is a dynamic profession that requires professionals

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to keep abreast both global and local developments if the profession is to remain relevant and responsive to changing socio-economic challenges of the contemporary world. Such strategic intent is important as it ensures that professional planners are at the cutting edge of new technology, evolving innovative and creative practices that are central to transformation of the profession. Generally, literature confirms that both urban and rural areas throughout the world face significant and differentiated challenges in contemporary times. These are namely:

- Climate change adaptation for both urban and rural areas,
- Adjusting, adapting to a low carbon economy in which the restraint of private car use is a reality and not an option,
- Post-modern industrial spatial structuring and restructuring,
- Delivering spatial planning outcomes that are in sync with changing and dynamic community lifestyle expectations and ever-evolving trends,
- Central governments, local governments and international organisations that are faced with fiscal stress and limited options to play out budgets to meet ever-increasing expectations, and
- Challenges and issues of service delivery given the existence of aging infrastructure at all scales of spatial intervention units, either locally, nationally, regionally or internationally.

A considered view of the above highlighted challenges and issues makes one arrive at the conclusion that (re)solving the matters require planning intervention. However, a big questions that has been asked is the “extent (to which) existing” and “planned planning systems and the planning community are capable of providing the authority and leadership needed to broker effective intervention” (Hedgcock and Pidalà, 2014, pp. 538). Investigating the scope that the planning profession plays in contemporary times is therefore very important. This is one reason why, in a paper captioned, *“Reinventing Planning: Your Place and Mine – The Inquiry Report*, Warburton, 1999, p.32, asserted that, “the future of planning needs to be re-invented” to reflect and incorporate visions from multi-layered planning stakeholders reflecting “their dreams, aspirations, fears and perception of realities” for their future. Similar sentiments were echoed by the United Nations (UN) Habitat report in 2009 that recognized “the need for the” fundamental review of “urban and regional planning” profession. Such a review would be based on gauging and prescribing the strategic role that the planning profession should play in addressing issues in rapidly urbanizing and resource-constrained cities of developing countries (Watson, 2009, p.2260). Planning, “whether it is city or regional, urban, rural, or spatial planning, is a discipline with roots in a number of applied fields such as architecture, landscape architecture, civil engineering, and the social sciences” (e.g., Grant 1999). Any review of the professional planning professions needs to acknowledge and take cognisance of the history and evolution of town planning as both a discipline and profession if meaningful contributions have to be made.

The sum effect of the issues raised in the previous sentences is the build-up of expectations. These expectations revolve around the fact that planning education must not be stagnant, rigid, conservative and inflexible but should re-invent itself so that it is adaptable, flexible and adaptive to the “shifts in planning practice and professional demands” (Ward, 2011, pp. 67-68). Integrating issues such as “climate change, social polarisation or major economic and demographic transformations” in a context that is witnessing fundamental challenges to the planning profession has “implications for the profession and its education and training” regimes (PIA, 2008, p. 14). Empirical evidence abound that confirms that people “with planning qualifications are sought in other areas of commerce and public service” as these add value and increase performance capacity in those sectors. Budge, 2009, p. 8 asserts that “many people who were educated as planners often end up in other roles within a range of public and private sector organisations”. Steele, 2009, p. 189 further asserts that a new generation and breed of planners has emerged working in the neo-liberalised “spaces of contemporary governance”. “This new role” is defined as “one that transcends previously rigid or clearly defined sectoral positions to blend public, private and community responsibilities in novel and complex ways” (ibid). What has been termed a “state of flux” has strong resonates regarding the “need to equip new planners (and re-equip existing ones)” with a set of “knowledge”, skills “and”

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competencies “to respond and adapt to unfolding social, economic, physical, and environmental complexities” (Hedgcock 2002, p. 49). Generally, the underlying pedagogical concept in planning education is that “undergraduate degrees” need “to be more generalist in nature”, while “postgraduate programs” need to “provide increased focus on professional specialisation” (PIA, 2008, p. 14). A “review of selected courses taught at institutions in New Zealand, Hong Kong, the United Kingdom and the United States”, confirmed “that planning curricula remain oriented around some or all of the following subjects: planning processes or law, planning theory and history, design, urban economics, quantitative research methods, and an advanced study component” (PIA, 2008 p. 18). Overall, while “diversity of what planners study may be confusing for some people outside of the” planning “profession seeking to understand just what planners do”, this “is illustrative of the breadth”, depth and “diversity of knowledge”, skills “and” competencies “that a planner could reasonably be expected to possess” (Budge, 2009 p. 8).

Planning “education programmes as opposed to individual courses or modules on planning topics were first introduced at European universities at the beginning of the” 20th “century, in particular in the UK” (e.g., Batey, 1985, pp. 98-119), but also elsewhere (Frank and Mironowicz, 2009, pp. 5-8). “These early degrees were post-professional awards aimed at providing engineers, architects and surveyors with additional knowledge and skills in the (new) art of planning town extensions for rapidly expanding urban areas” (ibid). “In a review of the planning education provision in 12 countries, Rodriguez-Bachiller (1988) identified three basic models”. These are namely:

- “*Model one - design-oriented physical planning approach*: “This model perceives planning and the planning profession” as a “mere specialisation of an overarching (technical) field such as architecture, engineering or surveying” (ibid). “Education in planning therefore becomes an aspect of study programmes in these cognate” or “parent” disciplines “with a certain proportion of the curriculum dedicated to planning” (ibid).
- “*Model two - a knowledge-based social science model*: This “model conceives planning as an extension of another field including the social or management sciences. This approach leads to an education model at post-graduate or master level whereby students from different disciplines such as architecture, law, sociology, politics, geography, etc. are gaining a further, interdisciplinary education in planning” (see, e.g., Schuster, 1950).
- “*Model three - radical critique and advocacy model*: “A third model conceives planning as a distinct and separate discipline and field of study which warrants specially devised planning-focused curricula at both undergraduate and postgraduate level”.

“A recent study of present day planning education provision in Europe shows that considerable variations in planning education formats persist” (Swain and Tait 2007, p.243). “Overall, the provision seems to be diversifying and the three educational models increasingly exist in parallel in a single national context” (ibid). The “field’s applied nature has decisive implications for the educational provision, as does its multidisciplinary heritage” (Frank, 2006, p. 16). A critical reflection on the three models raises questions regarding the need for a clear distinction of planners from surveyors, architects and engineers. In addition, planning schools are required to craft their curricula in such a way that it is clear and shows the relationship with other disciplines. This implies the need for the planning profession to reflect on its professional achievements and educational structures. This soul searching exercise is important in facilitating the “demarcation” and justifying the planning profession discipline “as well as” contemplating “its position with respect to societal needs and ideas” (ibid). However, in practice, “various worlds of planning” have been observed to interact “with one another in contributing to the spirit of progressive planning in theory and practice”, i.e. “planning practice” “research is informed by teaching and practice”; planning education “teaching is informed by research and practice; and practice is informed by research and teaching” (Freestone 2004, pp 2-3). Indeed, planning education is changing from the “normal spaces (classroom) to the virtual spaces” i.e. (online teaching, Webinar, Twitter, Facebook, blogging, LinkedIn etc.) and the adoption of GIS and other new technologies (Olufemi and Jimoh, 2013, p.1)

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The “professionalization of planning was a twentieth-century project and has been central to establishing the distinctiveness and status of planning within the broader professional community” (Schön 1983, p.43). “This has not been easily achieved and has relied on building the identity of the evolving discipline, as well as the powers ascribed to planning, through legislative authority” (Hedgcock and Pidalà, 2014, p. 535). In “Australia, the early planning profession was dominated by kindred professionals such as architects, surveyors and engineers” (PIA, 2008, pp. 1-20). “However, over time, these practitioners were joined by graduates who saw themselves exclusively as planners. This growing quantum of exclusive planners gave the profession the critical mass and identity it needed to assert itself in debates concerning development” (Grant 1999, p. 7). “It also gave it a youthfulness that, initially, probably undermined its credibility but, in the longer term, gave the profession a reformist character that left the more traditional professions in its wake as governance structures changed radically in the 1970s and beyond” (Hedgcock and Pidalà, 2014, pp. 535 -536). Similar phases of professional development of planning are mirrored in South Africa albeit with local context influencing the content and subtle details on the structure of professionalisation in the country.

### 3. OBJECTIVES / “RESEARCH QUESTIONS”

The “purpose of this” paper “is to” achieve “the” following, namely:

1. Describe and discuss lessons for planning in South Africa as informed by international experience;
2. Explore ways to continuously “promote and protect the interests of the public in relation to planning”; and
3. Discuss ways and mechanisms through which the planning profession can be orchestrated to remain relevant to the dynamic and changing landscape of the South African planning landscape in particular and the global requirements in general.

Overall, the benchmarking results presented in this paper are expected to act as a mirror and departure point in informing possible planning professions’ thematic areas for amendment. The following research questions among others were used in achieving the objectives of the research, namely:

- Are the existing categories of membership enough or not given demand for *greater inclusion from the allied and cognate disciplines* of planning?
- Is the planning profession *education and training* system adequately provisioned for or not? Which *other professions are working in the planning sector and why? How can these realities be better managed by changes to the PPA?*
- What *steering mechanism* is necessary to assist in the transformation of the planning profession in South Africa and why?

### 4. APPROACH & METHODOLOGY

The paper is based on a literature desktop survey methodology. Relevant professional planning institutes websites and publications available on the internet were collected and analysed for trends. Key informant interviews (KII) complemented the findings and were used in interpreting the findings. The results are analysed through a thematic approach. Figure 3 below shows the purposive case studies that were drawn making use of panel expert inputs.



Figure 3: Selected Case Studies  
Source: Author’s own conceptualisation, 2016

## 5. RESEARCH ANALYSIS AND FINDINGS / RESULTS

### 5.1. Purpose of the Review of Planning Profession Act “in South Africa”

“A” review of “the planning landscape” in contemporary “South Africa” highlights “the” existence of “five main contextual factors that emphasize the present and future role, function and importance of the planning profession”. Figure 4, presents a graphical illustration of the headline planning issues in South Africa necessitating the review of the PPA. At the core of the review is the need to reverse and restructure the level of economic (and by extension spatial inequality and mismatches) in the country. In addition, given the “country’s level of consumption of fossil fuels” which is also “uniquely high in the world”, “there is need to re-invent planning” to address “the” carbon footprint “of the” spatially fragmented settlements in the country. StatsSA 2011 Census has revealed that South Africa is inexorably becoming a predominantly urban orientated society. This requires growing strategic skills and competencies by planning professionals to anticipate and plan better for rapid urbanisation while balancing this in terms of sustainable urban and rural development framework lever since “large parts of the country’s population” still “live in places” and by extension rural areas “with practically no economic potential. There are minimal prospects of this situation improving and indeed in many” respects “it is likely only to” worsen.



Figure 4: Headline planning issues in South Africa necessitating the review of the PPA  
(Source: DRDLR, 2015, p. 19)

Literature confirms that professional planners generally view the objective of a planning process as *to make decisions that guide change, growth and development*. The mechanism by which planners make decisions must therefore be continually assessed to ensure that it adequately engages stakeholders and beneficiary

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communities and provides for the fullest consideration of all interests. Thus, reviewing the Planning Profession Act (PPA) provides a window of opportunity to adjust the Act so that it continues to deliver against its set mandate, as well as to remain relevant, particularly given the many developments affecting the professional planning act since its enactment in 2002. Such a review also allows the planning profession to continue to strengthen its legitimacy, which it has been painstakingly building since the dawn of the democratic dispensation in 1994. Some of the most radical changes that are destined to heavily influence and even transform the planning profession, have taken place in the legislative and policy environments, with the “Spatial Planning and Land Use Planning Act (No. 16 of 2013)” and the “National Development Plan (2011)”, topping the bill. With regard to the legislative arena, the following initiatives, interventions and developments among others further illustrate the rationale for seeking to review the PPA, namely: Enactment of the “Spatial Planning and Land Use Management Act, Act 16 of 2013”; Development of accompanying “SPLUMA regulations”; “Development of *Competencies and Standards*” by SACPLAN covering aspects such as: “Development of a *Continuous Professional Development (CPD)* policy and procedure”, “Development of a *Recognition of Prior Learning (RPL)* policy and procedure”, “*Development of an Examination System(s)*” as part of the registration process of planners in terms of the “Planning Profession Act, 2002”; “Change of *Professional Designation* (as approved by The Council on its meeting of 12 November 2010)”, and “Interim Policy for *Facilitating Registration with Foreign Qualifications*”. In short, the exercise to review the administration of the Planning Profession Act, No 36 of 2002 (The “Review & amendment of the planning profession act (36/2002) and the development of a compliance and monitoring framework for the act”) is to support and complement the activities of DRDLR to provide and sustain capacity of SACPLAN to better implement, realise and manage the objectives of the “Planning Profession Act, No 36 of 2002” (the Act). There is the need to enhance the profile of the planning profession and restate its role in the South African economy, delineate it from related professions and market its relevance to both persons aspiring to enter into the profession and the general public.

## 5.2. Historical context to the evolution and “development of the planning profession” role “in South Africa”

The current professional planning challenges in land use management have a historical context in South Africa. The changing nature and shifts referred to above relate to transformation levers in terms of interaction of the planning profession and interface with industry and society (i.e. the public). The interaction was framed by political, social, economic, physical and environmental constraints and opportunities as guided and informed by existing planning policy and strategies. Figure 5 presents a historical review of the planning profession highlighting key milestones with implications for the identity and image of the planning profession in South Africa.

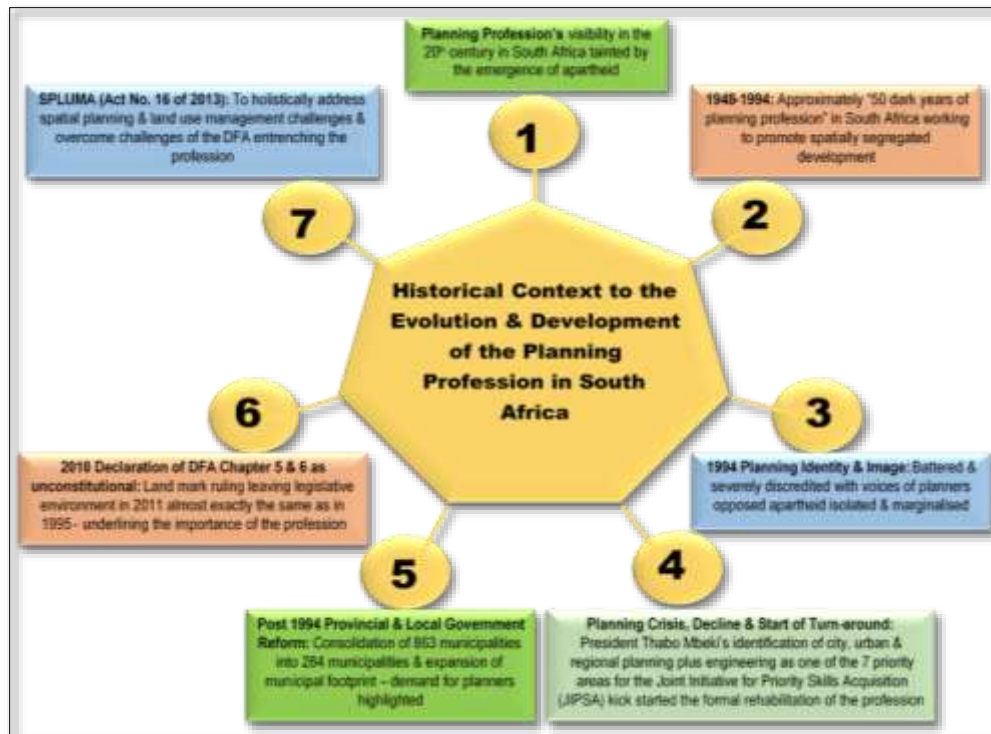


Figure 5: Historical context to the evolution and “development of the planning profession” role “in South Africa” (Source: DRDLR, 2015, p. 12)

Post-1994, South African municipalities have been assessed as constituting regions or at least mini-regions. In “addition, in the newly” established municipalities, “new systems, procedures and structures” had “to be established”, heralding a complete paradigm shift in government. This means that “planners face very different” but complex “challenges in municipalities” today. However, “the existing land use planning laws remained largely intact through this transition and the four Provincial Ordinances continued to apply in those areas that formerly were part of the four provinces and former homeland legislation remained applicable in those areas that had formed part of the homelands”. “The Development Facilitation Act (DFA) (67 of 1995) was introduced as post-apartheid legislation dealing with spatial planning and land use” but in 2010, the DFA’s key chapters – Chapter 5 and Chapter 6 – were declared unconstitutional, “leaving the legislative environment” in “2011 almost exactly the same as it was before 1995”<sup>42</sup>. What was made very evident in this ruling is that municipalities “have a key role to play in” spatial planning and land use management. They will therefore have an extensive and important role to play in the implementation of “SPLUMA (Act 16 of 2013)”. “Within the provincial sphere of government, most of the provinces are currently formulating Provincial Spatial Planning and Land Use Management Bills based on the guidance of SPLUMA that will impact on the role of planners both at provincial and within municipal spheres of government” (www.sacplan.org.za).

Changes and the transformation of local government systems post-1994 have resonance with the need to develop specific planning skills at certain levels, and by extension, creating new types of planning profession capacities at local government sphere. Thus, the shift in “local government policy and attitudes has serious implications for all aspects of planning, including the structuring and/or organization of departments, and the types of skills” and competencies “required of planners” (www.sacplan.org.za). Consequently, the evolving “role of the planner” in addressing planning matters and challenges in South

<sup>42</sup>In the case of *City of Johannesburg v Gauteng Development Tribunal* 2010 (6) SA 182 (CC) the Constitutional Court found that Chapters Five & Six of the DFA, the chapters that provide the ‘fast track’ development approval process via provincial development tribunals, are unconstitutional because they intrude on the power of local government to make decisions on land development applications (www.sacities.net).

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Africa presupposes that “the planner is obliged to have expert knowledge on the spatial impacts of different land use options, the principles of land economics and the diverse range of forces that influence communities and society” (ibid). “The planner” in South Africa is thus expected to play the following roles, namely:

- The planner is expected “to be capable of working at a range of scales and to appreciate the spatial consequences of human behaviour over time”.
- “It is particularly important for the planner to interpret his or her role in the mediation of competing spatial interests taking into account the following priorities: eradicating inequality ; promoting economic growth ; addressing issues of climate change ; ensuring efficient and environmentally sustainable human settlements ; including the marginalised and voiceless, and valuing human diversity” (ibid).
- Planners need “to” take cognisance of competing land uses and the development of land.

In the “mediation of interests described above, the planner can never be neutral, but must be able to provide an independent, professional view on what is the desired and preferred outcome in any process”. “A planner also has to work from a strong ethical base, a base that is strong enough to provide such an incumbent with the arguments and instruments needed to change the course of a proposed development, where necessary” (www.sacplan.org.za). To “achieve this now and in the future, a planner requires a certain set of skills” and competencies, “a knowledge base and a set of guidelines or code of behaviour/conduct”. It is in this “context that the competencies for each of these aspects need to be revisited and re-defined. Planners need to ‘reclaim’ their professional and ethical role in shaping South Africa’s spatial future by re-inventing planning” (ibid).

### 5.3. Legislative Milieu

The PPA was enacted almost 15 years ago with a view to transforming the planning profession. Although the transformation of the planning profession will remain a continuous goal of the PPA, other factors continue to influence the need to review sections of the act that either needs further enhancement, restructuring or reconsideration. Such areas include:

- Need to review the categories of registration
- Ensure that planning education remains relevant and dynamic
- Monitoring and compliance to the PPA by SACPLAN and DRDLR, and
- Ensuring that transformation of the planning sector continues unhindered.

Conversations and dialogue within and beyond the planning profession confirm that there is better time to legally legislate the reservation of Town and Regional Planning work for registered professionals under the Act. Part of the justification and concern stems from the observation that the planning profession has been lagging behind its counterpart professions such as Engineering, Surveyors and Architects in terms of job reservations among other issues. As an example, the practice whereby any layman can submit a land development application is just one case in point that should not continue unregulated. The Planning profession is therefore obligated to protect its profession taking a cue from other professions that also protect their kind “such as” Lawyers, “Accountants, Doctors” and Engineers just “to name a few examples” (www.prismjournal.org). “Planning and the planning profession may be defined as areas of expertise which involve the initiation and management of change in the built and natural environment across a spectrum of areas, ranging from urban to rural and delineated at different geographic scales (region, sub-region, city, town, village, neighbourhood), in order to further human development and environmental sustainability” (www.sacplan.org.za).

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In conducting the review mention was taken of the “existing legal and institutional context, comprising the: Planning Profession Act of 2002; Code of Conduct; Draft Regulations regarding identification of work for planners”; “Role of SACPLAN which is” enumerated in the “opening paragraphs of this paper”, and “Existing qualification” programs at the Planning Schools which are at different stages of accreditation and review (ibid). Overall, in the context of reviewing the PPA it was also essential *to revisit the “formulation of a definition of planning” (ibid)*. This took “the” form “of” using the “definition” as set out in the PPA (2002) as a starting and departure point.

### 5.3.1 “Constitution of the Republic of South Africa”

Since 1994, South Africa’s political, economic and social landscape has been undergoing rapid transition which, in turn, has put pressure on “spatial planning and land use systems” (www.sacities.net). Challenges have arisen in respect of developing the right capacities, correct mix of competencies and skills set to meet the changing planning professions demands and live up to the foundational principles of a just, fair and equitable society as envisaged by the country’s Constitution. It is encouraging to note though that among various progressive pieces of legislation, policies and strategies developed for the country, SPLUMA provides a spatial planning and land use management perspective to this constitutional imperative. A detailed review of the “Constitution of the Republic of South Africa” reveals that “there are various types of planning listed as legislative competencies” of the different (i.e. three) “spheres of government, e.g. municipal planning, provincial planning and regional planning and development” (www.dingley.co.za). The South African Constitution provides for “three *'distinctive, interdependent and interrelated' 'spheres'* of government. Schedules 4 and 5 of the Constitution, are *'regional planning and development', 'urban and rural development', 'provincial planning'* and *'municipal planning'*. Municipal Planning is a function assigned to municipalities in terms of section 156 of the Constitution of the Republic of South Africa read with Part B of Schedule 4 and in terms of which municipalities have both executive authority and a right to administer to the extent set out in Section 155” (ibid, www.umngeni.gov.za). Consequently, planning professions working in different spheres of government, sectors of the economy and spatial scales and sizes contribute to the state and non-state’s efforts and initiatives meant to enhance the discharge of different categories of planning.

### 5.3.2 Municipal Systems Act

“At the municipal sphere of government it is important to consider both the **geographical** nature of South African municipalities as they are constituted today, and the **legislative** and **policy environment** within which municipalities operate” (www.sacplan.org.za). “The Municipal Systems Act (MSA) sets out legislation that enables municipalities to uplift their communities by ensuring access to essential services. The Act defines the legal nature of a municipality as including the community and clarifies the executive and legislative powers of municipalities. It seeks to boost effective local government by establishing a framework for municipal planning, performance management and use of resources” (www.ossafrica.com). “The Act also ensures that municipalities put in place service tariffs and credit control policies that take the needs of the poor into account and it promotes the participation of local communities in local governance” (www.sacplan.org.za). MSA sets “out in Chapter 2, the requirement, amongst other, for newly elected municipal councils to prepare and adopt an integrated development plan (IDP) for their respective areas and to provide for annual revision thereof”. “The IDP is required in terms of the act to include a spatial development framework (SDF) which must include the provision of basic guidelines for a land use system for the municipality” (www.ruraldevelopment.gov.za).

“Planning within the municipal sphere of government therefore encompasses the concepts of both urban and regional planning given the expanded geographical extent and spatial contexts (alignment between municipalities) of the new local government structures and the inclusion of rural, urban and peri-urban areas into single administrative and planning entities” (ibid). “It involves not only the design and regulatory

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aspects of planning traditionally associated with statutory planning but also includes a broader perspective, incorporating long term strategic planning for municipalities as well as integrated development planning generally associated with regional development planning and spatial planning” (www.sacplan.org.za).

### 5.3.3 “Spatial Planning and Land Use Management”

“Spatial planning and land use management” are critical in shaping the urban and rural landscapes of the country. It is the basis of day-to-day administrative decision-making in municipalities. It is integral to many development processes that shape the built environment, be it in housing and human settlements, environment or transport. It is also responsible for the allocation of land use rights that play an important role in determining property value, impacting on revenue generation for towns and cities. “The objects of SPLUMA are to: *Provide for a uniform, effective and comprehensive system of spatial planning and land use management for the Republic; Ensure that the system of spatial planning and land use management promotes social and economic inclusion; Provide for development principles and norms and standards; Provide for the sustainable and efficient use of land; Provide for cooperative government and intergovernmental relations, and Redress the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems*” (www.maungaung.co.za). Table 1 presents core legislative framework documents reviewed as part of understanding better the place of the PPA (2002) in South Africa.

Table 1: Core legislative framework guiding Interface\*\*

Spatial planning	Transportation planning	Environmental management
“National Building Regulations and Building Standards Act 103 of 1977” “Town Planning and Township Ordinance, Ordinance 15 of 1986” “Land Use Ordinance (Cape of Good Hope), Ordinance 15 of 1985” “Removal of Restrictions Act 84 of 1967” “The Less Formal Township Establishment Act 113 of 1991” “The Physical Planning Act 88 of 1967 (Sections 6, 8 and 11)” “Development Facilitation Act 67 of 1995 (DFA)” “Constitution of the Republic of South Africa 108 of 1996” “Bill of Human Rights 1996” “Physical Planning Act 88 of 1967” “Municipal Structures Act 117 of 1998” “Restitution of Land Rights Act 22 of 1993” “Interim Protection of Informal Rights Act 76 of 1995” “Prevention of Illegal Eviction from Unlawful Occupation of Land Act 19 of 1998” “Reconstruction and Development Programme Act 79 of 1998” “Municipal Systems Act 32 of 2000” “Development Facilitation Act 67 of 1995 (DFA)” “Physical Planning Act 125 of 1991” “Less Formal Township Establishment Act 113 of 1991 (LEFTEA)” “Subdivision of Agricultural Land Act 70 of 1970 (SALA)” “Removal of Restrictions Act 84 of 1967” “Community Land Reform Act 28 of 1996 (CLARA)” “Housing Act 107 of 1997” “National Land Use Management Bill (Draft 2008)” “Local Government: Municipal Integrated Development Planning Regulations, 2001” “Spatial Planning and Land Use Management Act (SPLUMA) 16 of 2013” “R. 239 SPLUMA Regulations (23 March 2015)”	“Advertising on Roads and Ribbon Development Act 21 of 1940” “Fencing Act 31 of 1963” “National Land Transport Transition Act 22 of 2000” “Urban Transport Act 78 of 1977” “National Transport Interim Arrangements Act 45 of 1998” “Transport Appeal Tribunal Act 39 of 1998” “Cross Border Road Transport Act 4 of 1998” “Road Traffic Act 29 of 1989” “National Road Traffic Act 93 of 1996” “The South African National Roads Agency Limited and National Roads Act 7 of 1998” “National Land Transport Act 5 of 2009 and Regulations (R.1208, 2009)” “R. 877 National Land Transport Act 5 of 2009: National Land Transport Regulations on Contracting for Public Transport Services”	“Health Act 63 of 1977” “Water Act 54 of 1956” “National Water Act 36 of 1991” “Water Services Act 108 of 1997” “National Environmental Management Act 107 of 1998 (NEMA)” “National Environmental Management: Air Quality Act 39 of 2004” “National Environmental Management: Waste Act 59 of 2009” “National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA)” “National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA)” “National Heritage Resources Act 25 of 1999 (NHRA)” “Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA)” “World Heritage Convention Act 49 of 1999 Biodiversity Act 10 of 2004” “R.543: National Environmental Management Act 107 of 1998): Environmental Impact Assessment Regulations, 2010 (33306)” “R.544: Listing Notice 1: List of activities and competent authorities identified in terms of sections 24(2) and 24D (33306)” “R.545: Listing Notice 2: List of activities and competent authorities identified in terms of sections 24(2) and 24D (33306)” “R.546: Listing Notice 3: List of activities and competent authorities identified in terms of sections 24(2) and 24D (33306)” “R.547: Environmental Management Framework Regulations, 2010”

Key: \* Cross-cutting legislation \*\* Various by-laws exist within municipalities  
 Source: Schoeman, 2015, p. 47

From Table 1 we can deduce that SPLUMA together with policies from the transportation and environmental sector provides “clarity on the role” of municipal and provincial “spheres of government” in the planning system “and” municipalities now have a much wider scope of responsibilities in terms of SPLUMA.

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### 5.3 Review of International Planning Experience and Implications for South Africa

A review of international experience from similar planning professional institutes was conducted. The objective was to benchmark and identify areas requiring further strengthening in the South African planning profession act. Table 2 presents experiences from Canada. The planning systems are robust, adaptive and driven by a vision aimed at steering the planning profession forward.

Table 2: Planning Profession Experiences from Canada

Category	Lessons	Key areas and potential intervention areas
<b>General</b>	“Have a new Vision that is driving the re-invention of planning, including re-visiting the competency standards. Many similarities with South Africa as they want to be forward looking, improve professional standing of planners, improve standards & address international mobility of planners. Institute is not a creation of government but at arm’s length”. “Federation that strives for standardization across the provinces” (www.sacplan.org.za).	<ul style="list-style-type: none"> <li>• “New vision”</li> <li>• “Re-invention”</li> <li>• “New competency standards”</li> <li>• “Independent organization with no direct governmental influence”</li> </ul>
<b>Registration</b>	“It is clear, well set up & transparent. It has many requirements but the overall intention is to produce competent & ethical professional planners. It includes mentoring for a year, sponsored, & well documented learning experience for two years, successful completion of an ethics & professionalism course and then a professional examination once all the other requirements have been completed” (ibid).	<ul style="list-style-type: none"> <li>• Clear, simple &amp; transparent</li> <li>• An ethics &amp; professional examination as part of competency test</li> </ul>
<b>Accreditation</b>	“Have an external independent body that does accreditation on their behalf Have a clear, rigorous accreditation program based on principles, policies & procedures which are transparent. With reciprocal arrangements, USA and Australian learning sites that are accredited are also accredited in Canada-broadens scope & mobility for planners in Canada. Much faster route to professional registration through accredited learning sites-incentive to study at accredited institutions” (ibid).	<ul style="list-style-type: none"> <li>• “Consistent application”</li> <li>• “Transparent process”</li> <li>• “Streamlined process for foreigners”.</li> <li>• “Mobility for planners”</li> <li>• “Link to speedier professional registration”</li> </ul>

Sources: DRDLR, 2015, p. 50

From table 2 we can also deduce that mentoring for young planners is sponsored and a professional examination is a precondition for admittance into the professional planning category. Given the urge by up-coming planners to attain professional status, incentives for faster progression are provided regarding intensive learning sites at accredited institutions. Nevertheless, similarities with the planning profession in South Africa relate to the quest to maintain high professional standards, ethics and facilitate for mobility of planners beyond the country borders.

Table 3 presents a summary of the planning profession in United Kingdom. While a vision is used in shaping the planning profession, the innovation is that the vision is a strategic 10 year vision aimed at facilitating the re-invention of planning to keep it relevant to changing times. In addition, a clear system for registration based on the accreditation status of the education institution is linked to registration categories. If one studies at an accredited institution for a non-accredited program, then one can only attain Associate status as an example.

Table 3: Planning Profession Experiences from United Kingdom

Category	Lessons	Key areas and potential intervention areas
<b>“General”</b>	“Has had 10 years of New Vision – re-invented the Institute with new corporate image of “Making of place, mediation of space”. Been an evolutionary process since 2001 and 2004 introduced new education policy which is based on this. Hence initial education is focused on critical thinking about space and place as the basis for action. So, a process which is slowly rolling out to all aspects of planning” (www.sacplan.org.za).	<ul style="list-style-type: none"> <li>• “New Vision provides direction for reform of entire system”.</li> <li>• “Evolutionary reform”.</li> </ul>
<b>Accreditation</b>	“Introduced provisional accreditation that does not prejudice students in new programmes. Introduced partnership boards for institutions that regularly obtain accreditation as a streamlined way to monitor quality”. “Have a system of separating spatial planning & specialist requirements in the qualifications that are accredited – this is a complicated system but it does allow for a range of qualifications to be accredited”. “Regulations for both spatial planning and specializations are set out by the RTPI. Distinction between first (initial education) and second cycle (post-graduate) qualifications in line with international protocols. Study at an accredited institution affects registration and can only become an Associate if qualification is not recognized” (ibid).	<ul style="list-style-type: none"> <li>• “Provisional Accreditation”</li> <li>• “Partnership Boards”</li> <li>• “Specialist planning course”</li> <li>• “Distinct undergraduate”</li> <li>• “Post-graduate course”</li> <li>• “Links to professional Registration”</li> </ul>
<b>Registration</b>	“Recently introduced a Licentiate category-similar to the Candidate category in other countries. Licentiate enters a clear process of Assessment of Professional Competency (APC) to become a corporate member. Recognized technical members-similar to South Africa – where can have qualification or obtain membership through experience. Developing a route from Associate member (not accredited qualification) to becoming a corporate member (ibid)”.	<ul style="list-style-type: none"> <li>• “Licentiate Member first”</li> <li>• “Technical Planners”</li> <li>• “Links to accreditation”</li> </ul>
<b>Continuous Professional</b>	“Very strong commitment to the notion of CPD – been compulsory since 1992 and in legislation since 1997. Can lose professional status if do not comply. Points system and many categories of	<ul style="list-style-type: none"> <li>• “Mandatory CPD”</li> <li>• “Professional Development Plans”</li> </ul>

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<b>Development (CPD)</b>	CPD modes. Must have own professional development plan, covering 2 years. Emphasis on individual development. Labour intensive to implement and monitor (ibid)".
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Sources: DRDLR, 2015, p. 50

From table 3 we can deduce that in the United Kingdom the planning profession places heavy emphasis on the notion of CPD. This aspect has been compulsory since 1992 and one can lose professional status if one fails to comply. Although this requirement is labour intensive and has financial implications a number of routes exist to earn CPD points which make the requirement practical. Meanwhile table 4 presents planning experiences from the United States of America. A strong emphasis is placed regarding building the capacity and skills of the next generation of planners i.e. aspiring planners.

Table 4: Planning Profession Experiences from United States of America

Category	Lessons	Key areas and potential intervention areas
<b>"General"</b>	"The American Planning Association (APA) brings together thousands of people – practicing planners, citizens, elected officials – committed to making great communities happen. APA includes a professional institute for certified planners, 47 chapters, 20 divisions and special memberships for students (www.planning.org)".	<ul style="list-style-type: none"> <li>• "Governance structure include chapters, divisions, emerging professionals &amp; students"</li> </ul>
<b>"Planning Definition"</b>	APA defines planning as meaning housing choice. In addition, planning means safe communities and a better commute. Planning means communities of lasting value (ibid).	<ul style="list-style-type: none"> <li>• "Robust and innovative definition of planning"</li> </ul>
<b>"Training &amp; Capacity Building of Aspiring Planners"</b>	If one's academic program is not a full member of the Association of Collegiate Schools of Planning, one must be younger than 35 to join the Early Career Membership Program. APA has created partnerships with local commissions and boards that are working to create vital, sustainable communities. Planning board members have access to additional resources for local officials and dues are lower than practicing planners pay. This is part of planning capacity building, relevance and foothold approach strategy. In addition, APA welcomes professionals from outside USA to become part of a global planning community working for better cities & better lives. APA has members in more than 90 countries – including professional planners, engaged citizens, elected officials & scholars (ibid).	<ul style="list-style-type: none"> <li>• "APA's membership is open to everyone who is committed to applying the benefits of planning to create communities of lasting value".</li> <li>• "APA therefore welcomes individuals who work in allied professions, as well as interested citizens who want to help their communities".</li> </ul>
<b>"Use of IT"</b>	"Most divisions of APA spread their news and viewpoints through web-based discussions & publications. Divisions also assist APA's public policy program and educate other members through sessions at the annual National Planning Conference. APA's training offerings include the annual national planning conference, a popular series of convenient audio/web conferences and a semi-annual series of intensive, two-day, topical workshops" (www.planning.org).	<ul style="list-style-type: none"> <li>• "Annual National Planning Conference"</li> <li>• "Streaming Education is APA's new generation of online learning (including short course webinars) that brings training to your desktop, laptop, or conference room".</li> <li>• "Journal of the American Planning Association"</li> </ul>
<b>"Membership"</b>	"Different categories exist as typical in other Institutes"	<ul style="list-style-type: none"> <li>• "APA has unemployed rates for membership out of employment".</li> <li>• "Allied professionals and engaged citizens who join APA enjoy full benefits of membership".</li> </ul>

Source: DRDLR, 2015, p. 51

From table 4 we can deduce that the American Planning Institute utilise information technology in keeping its members and stakeholders engaged. Electronic work flow based on the website make engagements simple and friendly including offerings of audio/web conferences, workshops and or short training webinars/events. An annual planning conference is held and APA is the custodian of the "Journal of the American Planning Association" (www.acsp.org). In the context of South Africa, the budgetary implications for transitions to an IT based Council have to be factored in making a decision to digitize or not especially in the "short to medium term" (www.sacplan.org.za). Table 5 presents the experiences of the planning profession from Kenya. The membership categories are expanded to include visiting members for planning professions on short-term or contract /consulting employment in Kenya as an example.

Table 5: Planning Profession Experiences from Kenya

Category	Lessons	Key areas and potential intervention areas
<b>"General"</b>	"The aim of the institute is to enhance the art & science of sustainable local, regional, social, economic, environmental & national human & physical development planning & the theory & practice relating thereto" (www.kip.co.ke).	<ul style="list-style-type: none"> <li>• "Inclusive planning intent and remit"</li> </ul>
<b>"Membership"</b>	Membership categories include the following, namely: <ul style="list-style-type: none"> <li>• "Corporate Members"</li> <li>• "Honorary Members"</li> <li>• "Fellow Members"</li> <li>• "Graduate Members"</li> <li>• "Technician Members"</li> <li>• "Student Members"</li> <li>• "Visiting Members", and</li> </ul>	<ul style="list-style-type: none"> <li>• "Wide membership categories"</li> <li>• "A Honorary Member shall be a person whom the Council considers to be eligible by virtue of eminence in arts, science or literature; or by service rendered to the Institute; or by other outstanding and relevant attributes".</li> <li>• "A fellow member shall be a corporate member nominated by the council to the class of fellows,</li> </ul>

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Category	Lessons	Key areas and potential intervention areas
	<ul style="list-style-type: none"> <li>“Associate Members”.</li> </ul>	who has attained the age of 45 and has served as corporate member for a period of not less than 10 years”.
<b>Acquisition of Property</b>	“The Council has powers and modalities for acquiring or disposing of any immovable property in the interests of the Institute as well as to hire and/or lease, plots, land, buildings, rooms, or any other immovable property, and to pay rent thereof, etc” (ibid).	<ul style="list-style-type: none"> <li>“Provision and protocol regarding acquisition, disposal and maintenance of land &amp; property assets”</li> <li>“All property acquired by the Council shall be vested in the Trustees”</li> </ul>
<b>Code of Conduct</b>	<p>“A planner shall not knowingly undertake assignments, which are potentially destructive to the resident community and their environment”.</p> <p>“A planner shall not undertake work, which constitutes a clash of interests between his/her clients or potential clients. A planner shall not accept a brief which constitutes a clash between his/her interests &amp; those of his/her employer, client or potential client” (ibid)</p>	<ul style="list-style-type: none"> <li>“Examples of ways of strengthening existing code of conduct”.</li> </ul>

Source: DRDLR, 2015, p. 52

From table 5, we can also deduce that the code of conduct in Kenya is strict and strong. Instances of employers working in local government and submitting plans to same institutions for approval are not tolerated as an example. The need to publish and gazette or ‘name and shame’ planners who engage in malpractices as is the case in the Health or Legal sector is an option requiring keen investigation. At the same time, such interventions can be argued as policy matter issues for SACPLAN compliance rather than areas requiring regulation in the Act. A key question that requires a clear answer is the question of over-regulation or under-regulation in terms of codes of conduct. Table 6 presents planning profession experiences from India. There is recognition of “consultant professional planners” through a “work definition” (www.sacplan.org.za). The minimum passing mark for the professional planning examination is set at 55%.

Table 6: Planning Profession Experiences from India

Category	Lessons	Key areas and potential intervention areas
<b>“General”</b>	<p>The main objectives of the Institute of Town Planners, India are: To advance the study of town planning, civic design and kindred subjects and of the sciences and arts as applied to those subjects, and in particular to:</p> <ul style="list-style-type: none"> <li>“Promote planned, economic, scientific &amp; artistic development of towns, cities and rural areas”</li> <li>“Promote the general interests of those engaged in the practice in town &amp; country planning”</li> <li>“Foster the teaching of subjects related to town &amp; country planning &amp; assist in providing such teaching”</li> <li>“Device and impose the means for testing the qualifications of candidates for admission to membership of the Institute by examination”</li> <li>“Consider all questions affecting the practice of town and country planning and to initiate and watch over planning and to procure changes of, and amendments in, the law relating to or affecting town and country planning”</li> <li>“Hold conferences or meetings for the discussion of, and the exchange of views on matters affecting or relating to town and country planning, the reading of papers and the delivery of lectures”</li> <li>“Hold congress or exhibitions and to award medals, certificates, prizes or diplomas in connection herewith”</li> <li>“Form or acquire by purchase, donation, bequest or otherwise a library &amp; collection of maps, drawings, designs or other materials &amp; to maintain, extend and improve the same”, and</li> <li>“Ascertain and notify the law and practice relating to town &amp; country planning, and to compile, collect, revise, print and publish statistics, professional records, and periodicals relating to any of the objects of the Institute” (www.itpi.org.in).</li> </ul>	<ul style="list-style-type: none"> <li>“Recognition of specializations in planning, at post-graduate (masters) level”</li> <li>“Instituting a minimum requirement of a mark of 55% in the final examinations for competency”.</li> <li>“Recognition of consultant professional planners through work definition”.</li> <li>“A strong adherence to a code of conduct”.</li> <li>Establishment of receptacle for planning materials” (www.sacplan.org.za).</li> </ul>
<b>“Membership”</b>	“Memberships: The Institute has three categories of membership i.e. Corporate Members: Associates and Fellows, Honorary Fellows; and Retired Associates / Fellows” (www.itpi.org.in)	<ul style="list-style-type: none"> <li>“Categories almost similar to those in South Africa” (www.sacplan.org.za).</li> </ul>

Source: DRDLR, 2015, p. 52-53

From table 6 we can deduce that there is a category of retired associates and fellows , categories that do not exist in South Africa. The same goes for the category of Honorary Fellows and Fellows. These are some of the categories that the amendment of the PPA can consider incorporating into the existing categories. The critical question to be addressed in South Africa would be the need to differentiate professional registration categories from awards such as Honorary Fellow or Honorary Status. These should be distinguished from

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memberships categories such as Professional Planner and Fellow Planner as an example. The question of who qualifies to be a planner or not is central to the debate. One school of thought argues that anyone without a first degree in planning cannot be registered as a professional planner but requires another category. This argument is benchmarked against the engineering profession for example.

Table 7 presents planning profession experiences from Malaysia. It is clear that the Honorary membership is held at the pleasure of the Council which provides checks and balances on how Honorary members conduct themselves. At the same time the setting of a minimum age as well as minimum number of service as a registered planner prior to attaining Fellow status ensure that the category remains the highest and prestigious category that all planners aspire to attain. Exploring scope for incorporating similar requirements in the context of South Africa may be appropriate. However, this has to be placed in a context of the peculiar history of South African planning profession taking into account the transitional realities of planning from the apartheid era to the post-apartheid era.

Table 7: Planning Profession Experiences from Malaysia

Category	Lessons	Key areas and potential intervention areas
<i>General</i>	BTPM is a body corporate to promote and enhance all aspects related to town & country planning, as well as to regulate and monitor all planning practitioners in this country.	
<i>Membership categories</i>	The classes of members are: <ul style="list-style-type: none"> <li>• “Honorary Fellow”</li> <li>• “Fellow”</li> <li>• “Corporate”</li> <li>• “Graduate”</li> <li>• “Student”, and</li> <li>• “Associate”. (<a href="http://www.mip.org.my">www.mip.org.my</a>).</li> </ul>	<ul style="list-style-type: none"> <li>• “The Malaysian Institute of Planners has six (6) classes of membership under its constitution”.</li> <li>• “A Fellow should be at least 36 years of age and have been a member of the Pertubuhan for a period not less than 15 (fifteen) years”.</li> <li>• “Honorary membership held at the pleasure of Council” (<a href="http://www.mip.org.my">www.mip.org.my</a>).</li> </ul>
<i>“Examination”</i>	“In terms of undertaking the professional examination, the Schedule indicates that there are 2 sessions of courses & exams held in or about the month of April and September every year. Starting in 2006, all courses & exams will be held at MIP Secretariat office, Kelana Jaya”. (ibid)	<ul style="list-style-type: none"> <li>• Module examined include:</li> <li>• “Module 1: Planning Law”</li> <li>• “Module 2: Land Law and Procedure”</li> <li>• “Module 3: Planning Practice in Public and Private Sectors”</li> <li>• “Module 4: Planning Administration System in Malaysia and Town Planners Professional Ethics and Conduct”</li> <li>• “For each of the 4 Papers, candidate are required to answer 3 Questions within 2 hours, Question 1 - 40%, Question 2 - 30%, Question 3 - 30%. Total Mark = 100%. Passing Mark = 50%”. (ibid)</li> </ul>

Source: DRDLR, 2015, p. 53-54

From table 7 we can further deduce that the Malaysian Planning Institute is forthwith regarding the examination system. Dates for examination are clearly stated including the venue for the examination. The modules that aspiring professional planners have to write are clearly provided. The format of examination written here provides resonates for the likely examinations that South Africa can adopt should the route of professional examination be taken in terms of the PPA amendment. The examination route has the advantage of standardizing the quality of graduates who get professional registration instead of relying on the two year professional registration system that has its own inadequacies. Areas for discussion and possible incorporation regarding the development of examination guidelines in South Africa relate to accreditation of Examiners, accreditation of Examination Centres or even accrediting an institutions or setting up an independent body to run the examination process.

Table 8 presents the planning profession system in Zimbabwe. It is clear the Honorary status is reserved exclusively for non-planners. Planners who excel and get an upgraded status are conferred Fellow status. A clear procedure for Associate or Technician member to become a Corporate member exist.

Table 8: Planning Profession Experiences from Zimbabwe

Category	Lessons	Key areas & potential intervention areas
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<b>“General”</b>	The purpose of the “Institute is to advance the science and art of local, regional and national planning” for the benefit of the public (www.fellowscollege.org)	<ul style="list-style-type: none"> <li>• “No clear definition of planning is offered” (www.zirup.org)</li> </ul>
<b>“Membership Categories”</b>	Classes of membership shall be as follows: <ul style="list-style-type: none"> <li>• “Honorary members”</li> <li>• “Fellows”</li> <li>• “Members”</li> <li>• “Associates”</li> <li>• “Technicians”</li> <li>• “Graduates”, and</li> <li>• “Students”</li> </ul>	<ul style="list-style-type: none"> <li>• “Wide classes of membership”</li> <li>• “The status of Honorary Member is conferred only on non-members of the Institute”.</li> <li>• “An Associate or Technician with twenty years practical experience to the satisfaction of the Council before whom he/she would have to appear; &amp; shall have successfully completed such examination and/or other requirement as the Council may deem appropriate may be conferred Corporate membership status”</li> <li>• “An Associate shall have a recognized degree or equivalent qualification in allied discipline &amp; shall have been actively involved in planning in Zimbabwe for a minimum of two years &amp; shall be resident in Zimbabwe at the time of the application” (www.zirup.org).</li> </ul>
<b>“Council Governance”</b>	“The immediate past president who shall be an ex-officio member of the Council” (www.zirup.org)	<ul style="list-style-type: none"> <li>• “Governance continuity” (www.zirup.org)</li> </ul>
<b>“Code of Code”</b>	“Strong code of conduct” (ibid)	<ul style="list-style-type: none"> <li>• “Institute has a strong code of conduct aimed at maintaining high professional standards” (www.zirup.org).</li> </ul>

Source: DRDLR, 2015, p. 54

From table 8 we can see that one of the hallmarks of the planning profession in Zimbabwe is the existence of a strong code of conduct. This is understood given that the planning Acts in Zimbabwe are a reminiscent of the British strong development control and regulatory systems. Invariably, a running thread from all cases reviewed is that the planning profession cannot compromise or negotiate on professional conduct and ethics.

Table 9 presents planning profession experiences from Australia. It is important to realise that the planning profession in Australia has undergone waves of transformation since 2000.

Table 9: Planning Profession Experiences from Australia

Category	Lessons	Key areas & potential intervention areas
<b>General</b>	Has undergone significant change in the 2000s with new accreditation policy, new competencies approach and mandatory CPD (www.sacplan.org.za).	<ul style="list-style-type: none"> <li>• “Recent reforms to the professional planning system”</li> </ul>
<b>Definition of Planning</b>	PIA defines planning as “...process of making decisions to guide future action. The planning profession (which is also referred to as ‘urban planning’ or ‘town planning’) is specifically concerned with shaping cities, towns and regions by managing development, infrastructure & services...” (www.planning.org.au)	<ul style="list-style-type: none"> <li>• “Planners are professionals who specialize in developing strategies and designing the communities in which we live, work and play. Balancing the built and natural environment, community needs, cultural significance and economic sustainability, planners aim to improve our quality of life and create vibrant communities” (www.planning.org.au).</li> </ul>
<b>“Accreditation”</b>	“Introduced a new system in 2010. Based on achieving certain core and desirable capabilities, competencies, skills and knowledge and ethical standards during the course of study. It is not content directed but outcomes oriented. Have three categories of competencies within the skills and knowledge area. Generic capabilities and competencies: Core curriculum competencies and supporting knowledge areas. These are quite logical categories and provide a useful distinction between knowledge and skill needed. Study at accredited institutions provides a faster route to professional registration” (www.sacplan.org.za).	<ul style="list-style-type: none"> <li>• “New competencies system”</li> <li>• “Logical categories for competencies”</li> <li>• “Link to speedier professional registration” (www.sacplan.org.za).</li> </ul>
<b>“Professional Registration”</b>	“Have an emphasis on pathways to registration-linked accredited institutions & courses. Can become a professional planner without a recognized degree or any degree, based on assessment of work experience. Their approach to the certification of planners is relatively new and slightly different from other countries as it requires becoming a full member of the Institute first, then completing a compulsory professional practice (CPP) course (two years generally with identified course content), undertaking CPD to achieve 60 points in 2 year cycle documented and audited. So it is more streamlined & less onerous & could be applied in a capacity-constrained situation, like South Africa” (www.sacplan.org.za). “Australia has chapters for specialization. Each has registration requirements. Recognition of specialities in urban & regional planning, social planning, environmental planning, urban design, economic development, transport planning and planning law”.	<ul style="list-style-type: none"> <li>• “Flexible pathways to registration</li> <li>• “Links membership to other registration requirements”.</li> <li>• “Compulsory professional course must be passed”.</li> <li>• “Outsourced CPP course so independent and impartial Recognition of specialization in planning” (www.sacplan.org.za).</li> </ul>
<b>Continuing Professional Development</b>	“Mandatory CPP as in the Code of Professional Conduct, two year cycle and 60 points minimum in 2 of 5 categories, recorded and audited. Points vary per category”.	<ul style="list-style-type: none"> <li>• “Mandatory CPP and can lose professional status if not compliant” (www.sacplan.org.za).</li> </ul>
<b>Recognition of prior learning</b>	“Strong use of this as a route to professional registration”	

Source: DRDLR, 2015, p. 54-55

From table 9 it is also important to highlight that the planning professional registration categories in Australia include specialisation. This matter of specialisation is one area that the PPA should consider going

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into the future. While in the short term given the low planner to thousand headcount in South Africa, this may not work, however as the throughput and density of planner increase in future scope for legislating specialisation should be keenly investigated. Additionally, the Australian system has a clear recognition of prior learning system in place. This basically means one can become a planner without having a planning qualification but on the basis of relevant assessed planning evidence/work/portfolio. An important mark of the Australian system is the fact that accreditation of planning institutions is based on “a generic capabilities and competencies: core curriculum competencies & supporting knowledge areas” (www.planning.org.au). Already in South Africa, SACPLAN has developed these and is busy implementing them for accreditation in conjunction with planning Schools.

The question of job reservation is critical. It is argued that for example Engineers and architects will not allow a non-Engineer or Architect to parade or present one as such. The planning profession likewise should also be bold in terms of work reservation. However, a counter argument relates to shared competencies. One way out of this is to have licenses for special category of work although this has potential to create caveats for non-planners to do planning work. The introduction of the examination process as well as finalisation of the recognition to prior learning should hopefully take care of this difficult matter.

#### 5.4 Road to professionalization of the Planning Profession

It is critical to realise that professionalization is a process and not an event and is therefore iterative. This resonates in with the fact that current and future professionalization models have to be anchored in a theory of “*professional sustainability circles*” at least as of now. Figure 3 illustrates the “road to professionalization of the Planning Profession from 1960 (inception of the first formal education and training)” to 2015 with indications of movement towards maturity of the professionalization process. Professionalization in South Africa has consisted of the following (refer to Figure 6): “*Establishment Phase* (1960 to 1994); *Transition Phase* (1994 to 2002); *Formation Phase* (2003 to 2008); *Consolidation Phase* (2009 to 2012), and *Post 2012 Phase up to 2015*” (starting to show signs of the emergence of maturity towards complete professionalization of planning) (www.sacplan.org.za).

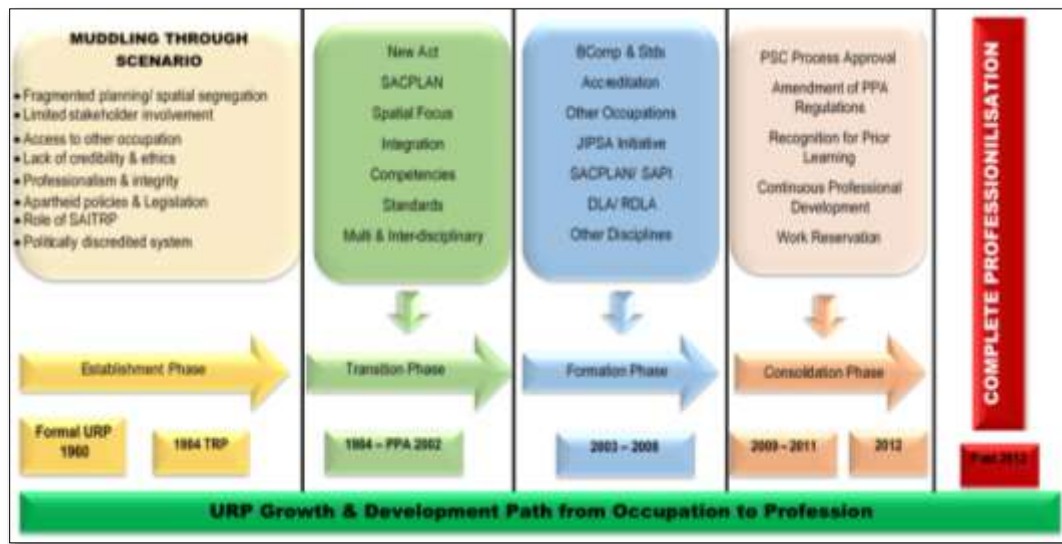


Figure 6: Road to professionalization of the planning profession (1960-2015)  
 (Source: Adopted from SACPLAN, 2014, p. ; DRDLR, 2015, p. 11

The poignant statement below aptly summarizes the importance and necessity of the professions act:

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“...The power of self-government granted to the professions has two essential aspects – the authority to license and the ability to discipline licensees. The licensing power is essentially the authority to decide who shall be permitted to earn their living by the pursuit of a particular calling. This means that professional organizations act as the gatekeepers to the professions in their assessment of the qualifications of prospective members. Once an individual becomes a member of a profession, the professional organization has the power to regulate the conduct of the licensee by establishing rules of practice and standards of conduct enforceable through the discipline process. The Supreme Court of Canada has concluded that it is difficult to overstate the importance in our society of the proper regulation of our learned professions. The primary purpose of the establishment of self-governing professions is the protection of the public. This is achieved by ensuring that only the qualified and the competent are permitted to practice and that members of the profession conform to appropriate standards of professional conduct...” (Casey, 1994: 1-3)

## 6. RESEARCH CONTRIBUTION

This paper has illustrated the international planning experience indicating the lessons for planning review that South Africa can learn from. The paper has started a debate regarding potential areas that require serious consideration in the context of the PPA amendment such as namely expanding the definition of planning, expanding the registration categorisation and including awards, exploring the scope for registration categorisation specialisations, strengthening accreditation requirements, levers and options for further tightening code of conduct, introduction of examination system as well as the CPD system. Some of these ideas will be useful in the on-going debate regarding revamping the PPA so that it is able to respond to the changing planning landscape requirements in South Africa as illustrated by the SPLUMA (2013), NDP (2011) and NIP (2012) for example. In terms of reviewing the PPA, table 10 presents a summary of areas recommendation for review.

Table 10: Summary of Lessons for Planning Profession in South Africa from International Experience

Country	Planning Profession Amendment Area of Focus																				
	Membership Categories						Awards		Specialisation <sup>43</sup>					Strategic Intelligence and Foresight		Capacity Building and Training				Use of IT	
	Professional	Technical	Candidate/Graduate	Student	Associate	Retired	Honorary	Fellow	Housing	Urban Design	Transportation	Social Planning	Spatial Planning	Strategic Vision	Strategic Plan	Mentorship	Aspiring Planners	Professionals	Planning Schools Accreditation	Use of IT	
AUS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
CAN	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
INDIA	x	x	x	x	x	x	x														
KENYA	x	x	x	x	x	x	x														
MAL	x	x	x	x	x	x	x														
SA																					
UK	x	x	x	x	x	x	x														
USA	x	x	x	x	x	x	x														
ZW	x	x	x	x	x	x	x														

Key: AUS = Australia; CAN = Canada; IND = India; KEN = Kenya; MAL = Malaysia; SA = South Africa; UK = United Kingdom; USA = United States of America ; ZW = Zimbabwe  
Source: Authors own conceptualization, 2016

From table 10 we can deduce that the PPA in South Africa requires amendments regarding the award category as this are missing. At the same time contentious issues such as associate members require deep debate and consensus with other professions that argue on the basis of shared competencies and skills such as surveyors and lawyers. Finding a clear way of differentiating the planning profession from other

<sup>43</sup> Just some examples

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disciplines therefore remain s prime. The area of specialisation is an area that future planning in South Africa needs to explore as currently this is not provided for. This could provide a caveat to integrate rather than isolate closely related professionals. While initiatives in the strategic vision are applauded these are however noted as not being enough and require full cycle implementation. The matter of IT given globalisation and the advent of technology requires a smart strategic migration plan into the future. Efforts in developing stronger mentorship systems are acknowledge but the need for speedier registration systems still requires further exploration.

Another major “contribution” of this paper “is the development of a planning” in motion “framework” of analysis in South Africa. This schema illustrates the main drivers and indicators that inform the transformation of the planning profession either positively or negatively. Appropriate and progressive interventions support the further promotion and development of the planning profession. However inappropriate, inadequate and compromised application and interventions in KPAs such as encapsulated by the individual, organisation and environmental factors will result in a ‘stifled’ professional planning profession.

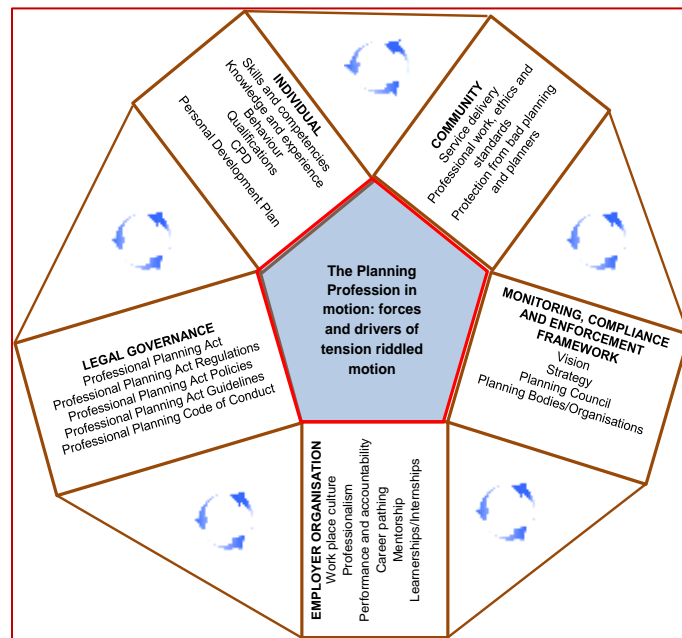


Figure 7: The planning profession in motion: framework of Analysis

From figure 7 we can deduce that each component of the framework constitute a system. Together this builds a “*system of systems*” that have chain effects and outcomes meaning that inadequate performance in one has the ‘*spiral effect*’ of arresting or reducing capacity in the other sections. However, through joined up governance, the synergies of complementarity ensure ‘*value addition*’ to the planning profession. Environmental factors such as globalisation, climate change and various socio-political conditions and cultures envelope the planning profession operating environment. This makes planning a complex exercise that requires “*smart spatial and non-spatial*” interventions aimed at making a difference and transforming planning.

## 7. RESEARCH LIMITATIONS

While the project on was wide ranging, this paper only focuses on one component which is the lessons that international experiences suggest for the amendment of the PPA. Further papers on the local professions

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benchmarking lessons for the PPA will be presented as separate papers. A paper on the full cycle analysis of the PPA amendment is being generated as a separate output. The paper based on a desktop benchmark can be further strengthened if study visits to selected countries can be undertaken.

## 8. DISCUSSION & CONCLUDING REMARKS

The geopolitics of the country continues to adapt and change with both domestic and international factors affecting the development of the country. The factors of globalisation and the fast rate of technology development continue to influence the planning environment and it is imperative for the planning profession to remain relevant within this context and to guide the development trajectory of the country.

There are a number of global conditions that “exert a strong influence on the ways” professionals operate in contemporary society ([www.prismjournal.org](http://www.prismjournal.org)). These forces are subject to change, which thereby changes the circumstances under which professionals work. Generally, the forces driving change in the professions are similar to those driving change in all other economic sectors. Recent research within the field of professionalism finds that the net results of global drivers of change are transformation of professional organisations (merging and blending), and “new patterns are emerging in the organization of professional work” (Alder, 2008). For example, there are more and more “formerly independent professionals working in large”, multi-disciplinary organisations. There is also less “protection of the” professionals than had been afforded by regulation and legislation “in the past”. A further, though debatable observation, is that the ethic of service amongst professionals is being “displaced by a commercial spirit” ([www.orgsci.journal.informs.org](http://www.orgsci.journal.informs.org)).

## 9. REFERENCES

- Abbott, A. 1988. *“The System of Professions: An Essay on the Division of Expert Labour”*, University of Chicago Press: Chicago
- Adler, P. S., Kwon, S-W. & Heckscher, C. 2008. *“Professional Work: The Emergence of Collaborative Community”*, *Organization Science*, Vol. 19, No. 2, March–April 2008, pp. 359–376
- Adler, P.S. 2008. *“Perspective--Professional Work: The Emergence of Collaborative Community”*, *Organization Science*, 03/01/2008
- American Psychological Association. 2008. *“Principles for the Recognition of Specialties in Professional Psychology”*, Joint Interim Committee for the Identification and Recognition of Specialties and Proficiencies
- Andrea I. Frank. 2006. *“Three Decades of Thought on Planning Education”*, *Journal of Planning Literature* 2006; 21; 15, DOI: 10.1177/0885412206288904, pp 15-64
- Barnett, R. 2000. *“Super-complexity and the curriculum”*. *Studies in Higher Education*. 25 (3), p. 255-265, 2000.
- Batey, P.W.J. 1985. *“Postgraduate Planning Education in Britain. Its Purpose, Content and Organisation”*. *Town Planning Review* 56 (4), p. 407-420, 1985.
- Bauman, Z. 1987. *“Legislators and Interpreters: On modernity, post-modernity and intellectuals”*. Cambridge: Polity Press and Oxford: Blackwell
- Beauregard, Robert A. n.d. *“Global Displacements and Ideological Shifts: Planning in Disequilibrium,”* unpublished manuscript.
- Bologna Declaration. 1999. Online
- Camano- Puig. 2005. *“Professionalisation of Nursing in England & Spain: A Comparative Study”*, Laurea Publications, Helsinki
- Canadian Institute of Planners. 2011. *“A Manual for the Guidance of the National Members Standards Committee & Affiliate Membership Committees* which was endorsed by the CIP Council meeting on 5 April 2011”. Canada

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- CBE. undated. “*Development of a policy position paper on the recognition of new professions in the Built Environment*”, Pretoria, South Africa
- Cherry G. 1980. “*Shaping an Urban World*” (Mansell, London)
- Cherry, G. 1996. “*Town Planning in Britain Since 1900*”. Oxford: Blackwell
- Commonwealth Association of Planners. 2011. “*Professional accreditation of planning programmes in the Commonwealth: A report to the Commonwealth Foundation*”, March 2011
- CSD: Committee on Spatial Development. 1999. “*ESDP: European Spatial Development*”
- Dave Hedgcock & Andrea Marçel Pidalà .2014. “Education, practice and professionalism: a comparative history of the development of urban and regional planning in Italy and Australia”, *Planning Perspectives*, 29:4, 527-542, DOI: 10.1080/02665433.2014.938100
- Davis, P. Naughton, J. & Rothwell, W.2004. “*New Roles & New Competencies for the Profession*”, TD, April 2004 pp 26 – 36
- Davoudi S, Pendlebury J. 2010. “Evolution of planning as an academic discipline”, *Town Planning Review*, n° 81(6), p. 613-644, Centenary Paper.
- Davoudi S. 2015. “Planning as practice of knowing, *Planning Theory*”, DOI:10.1177/1473095215575919.
- Department of Rural Development & Land Reform. 2015. “Position Paper/Issue paper on Review and Amendment of the Planning Profession Act (36 of 2002)”, Pretoria
- Department of Rural Development & Land Reform. Undated. “*Report To The Department Of Land Affairs On The Review Of The Planning Profession Act, No. 36 of 2002*”, Pretoria Prepared by Report by J & G Consultants to the Department of Land Affairs
- Diaw K.2002. “Planning Education in Sub-Saharan Africa: Responding to the Demands of a Changing Context”, *Planning Practice and Research*, 8/1/2002
- ECTP-CEU. 2013a. “ECTP-CEU Study on the Recognition of planning Qualifications in Europe. Stage I report”.
- Elliott, P. 1972. “*The Sociology of the Professions*”, London: MacMillan.
- Elliott, R. K. & Jacobson, P. D. 2002. “*The Evolution of the Knowledge Professional*”, *Accounting Horizons*, Vol. 16 No. 1, March 2002, pp. 69-80
- Falkenberg, A. D., Glamheden, H. A. Chong, L-C. & Agrawal, N. M. 2003. “*The Impact of Changing Professionalism on Multinational Companies in Emerging Economies - The Case of ABB India Ltd.*”, *Proceedings of the 9th Asia Pacific Management Conference*, 2003, pp 283-292
- Foley D J, .1961., “British town planning: one ideology or three?” *British Journal of Sociology* 11 211-231; reprinted 1973 in *A Reader in Planning Theory* Ed. A Faludi (Pergamon, Oxford) pp 69-93
- Forester, J. 1999. “*The Deliberative Practitioner*”. Cambridge, MA: MIT Press
- Frank, A.; Kurth, D. “Planning Education in Germany: Impact of the Bologna Agreement”. *DisP* 182 (3), p. 25-35, 2010.
- Frank, Kurthh, D.; Mironowicz, I. 2012. “Accreditation and quality assurance for professional degree programmes: comparing approaches in three European countries”. *Quality in Higher Education* 18(1), p. 75-95, 2012
- Frank. A. I. 2006. "Three Decades of Thought on Planning Education", *Journal of Planning*
- Freestone, R. 2004. “Triangulation of research, teaching and practice”, *Town Planning Review* 75(3), pp. i-iv.
- Freestone, R., Thompson, S. and Williams, P. 2006. “Student Experiences of Work-Based Learning in Planning Education”, *Journal of Planning Education and Research* 26(2): 237-249.
- Freestone, Robert. 2010. “Urban Nation; Australia’s Planning Heritage”. Melbourne: CSIRO Publishing, 2010
- Freidson, E. 1986. “*Professional Powers: A study of the institutionalization of formal knowledge*” Chicago: The University of Chicago Press
- Grant, M. 1999. “Planning as a Learned Profession”, paper prepared for the Royal Town Planning Institute (available from the RTPI, London)

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Hague C, Wakely P, Crespin J & Jasko C. 2006. *"Making Planning Work: A guide to approaches & skills"*, Rugby: Practical Action Publishing.
- Harrison, P. & Todes, A. 2001. *"The Changing nature of planning, planning education & planning students in South Africa"*, paper presented to the World Planning Schools' Congress, July, 2001
- Harrison, P. 2003. "Towards the international accreditation of education in planning". *Newsletter of the Commonwealth Association of Planners CAP News*, 9, p. 5-7, 2003.
- Healey, Patsy, and Robert Upton, eds. "Crossing Borders: International Exchange and Planning Practice".
- Healey, Patsy. "Making Better Places the Planning Project in the Twenty-First Century". Basingstoke: Hedgcock, D., and Andrea M. P. 2014. "Education, practice and professionalism: a comparative history of the development of urban and regional planning in Italy and Australia", *Planning Perspectives*, 2014.
- Hedgcock, D. 2002. "The Exercise of Influence Within the Local Planning System: Implications for Education", *Renewing Planning*, ANZAPS Conference 2002, Melbourne, 13-15 September, pp. 41-50
- Hobbs, P.1992. "The economic determinants of post-war British town planning", *Progress in Planning*, 1992
- James, C.T. 1994. *"The Regulation of Professions in Canada"*, Toronto, Carswell Thomson Professional Publishing, 1994, pp. 1-1 - 1-3.
- Jones, D.A. & Young, W. 2007. *"Turf Wars: Is Project Management a Profession?"*
- Krishnan A. 2009. "What are academic disciplines? Some observations on the disciplinarity vs. interdisciplinarity debate", Southampton, University of Southampton, ESRC National Centre for Research Methods Working paper Series 03/09, p. 8.
- Literature, 08/01/2006
- Livingston, Lawrence, Jr. 1980. "Confessions of a Planner," *Planning* 46, March: 30-33. London: Taylor and Francis, 2010.
- Lowman, Rodney L. 2012. "Coaching Ethics", *The Wiley- Blackwell Handbook of the Psychology of Coaching and Mentoring Passmore/The Wiley-Blackwell Handbook of the Psychology of Coaching and Mentoring*, 2012.
- Margo. H.1997. "Necessary but by no means sufficient ... a spatial political economy, town planning and the possibility of better cities: A commentary on Brian McLoughlin's last paper", *European Planning Studies*, 1997.
- McLoughlin J. B.1994. "Centre or periphery? Town planning and spatial political economy", *Environment and Planning A* 1994, volume 26, pages 1111-1122
- Meintjes, C. & Niemann-Struweg, I. 2009. *"The role of a professional body in professionalisation: The South African public relations case"*, Prism Vol. 6 No. 2, Online, Available: [http://praxis.massey.ac.nz/prism\\_on-line\\_journ.html](http://praxis.massey.ac.nz/prism_on-line_journ.html)
- Millerson G, .1964. *"The Qualifying Associations"* (Routledge and Kegan Paul, London)
- Mironowicz, I. 2009. *"Planning Education in Poland"*. Unpublished case study prepared for Global Report on Human Settlements, 2009.
- Muller, J. 2003. *"Thought & Action: A Personal and Partial History of the South African Planning Profession"*, QC Publications. Centrahil
- Myers D, Banerjee T. 2005. "Towards greater heights for planning: reconciling the differences between profession, practice and academic field", *Journal of the American Planning Association*, n<sup>o</sup> 71(2), p. 1-9.
- National Standards Body. *"Manual"*. 1999
- Ogus, A., .1994. *"Regulation: Legal Form & Economic Theory"*, Oxford, Oxford University Press
- Olufemi, Olusola and Jimoh, Usman Umar . 2013. "From Pedagogy to Paideia": Physical Planning Education in Nigeria", 49th ISOCARP Congress 2013
- Parry, N. & Parry, J. 1976. *"The Rise of the Medical Profession"*, London: Croom Helm.
- Peel, D.; Frank, A. 2008. "Internationalisation of Planning Education: Issues, Perceptions and Priorities for Action". *Town Planning Review* 79(1), p. 757-776, 2008.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Pendlebury, J. S. I. 2011. "Urban conservation and the shaping of the English city. (Centenary paper)(Report)", *Town Planning Review*, July-August 2011 Issue
- Petrie, P. & Reeves, D. 2005. "Women in the Planning Profession: Making the Built Environment Better", *Proceedings, When Women Gain, So Does the World*, IWPR's Eighth International Women's Policy Research Conference, June 2005
- Robinson, P. 2007. "Changing Patterns in the World of Work & their Relevance to the Caribbean", Third Annual Tourism Human Resource Conference, 27- 29 June 2007, Gosier, Guadeloupe
- Rodriquez-Bachiller, A. 1988. "Town Planning Education: an international survey". Aldershot:Avebury, 1988.
- RTPI .2001. "A New Vision for Planning. Delivering Sustainable Communities: An Agenda for Action". London: RTPI
- RTPI .2005. "Guide to the Assessment of Professional Competence (APC)". London: RTPI
- RTPI. 1991. "Guidance on initial professional education programmes in planning: content and performance criteria", London, RTPI.
- SACN .2011. "Provincial Land Use Legislative Reform: KwaZulu-Natal", KZN, South Africa
- SACPLAN .2011. "Academic Institutions & Qualifications data", Midrand, South Africa
- SACPLAN .2014a. "Consolidated Report on Competencies & Standards", Midrand, South Africa (September)
- SACPLAN .2014b. "Guidelines for Competencies & Standards for Curricula Development", Midrand, South Africa (December)
- SACPLAN .2014c. "Guidelines for the Registration of Planners", Midrand, South Africa
- SACPLAN .2015a. "Accreditation Criteria, Competencies & Standards Project Phase 2", January 2015 (Draft)
- SACPLAN .2015b. "Recognition of Prior Learning (RPL) Policy & Procedure, Competencies & Standards Project Phase 2", Final Draft 16 February, 2015
- SACPLAN .2015d. "Professional Examination System, Competencies & Standards Project Phase 2", Draft 16 February, 2015
- SACPLAN .2015e. "Qualifications in SAQA Format, Competencies & Standards Project Phase 2", Draft 18 February, 2015
- SACPLAN, .2015c. "Continuous Professional Development (CPD) Policy and Procedure, Competencies and Standards Project Phase 2", Final Draft 16 February, 2015
- Saidi F. E. .2005. "Developing a curriculum model for architectural education in a culturally changing South Africa", unpublished PhD thesis, University of Pretoria
- Samuels Ivor .1995. Planning education in Britain, pp 101-118
- SAQA .2000. "The National Qualifications Framework & Curriculum Development". An Overview. Pretoria
- SAQA .2010. "Progress Report: Scoping of the urban & regional planning qualifications' framework" 17 February 2010, (Draft 4) , Pretoria
- SAQA Update .2009. *Volume 12 No. 1*, August 2009. Pretoria
- Schoeman C. B. 2015. "The alignment between spatial planning, transportation planning and environmental management", *SSB/TRP/MDM 2015 (67)*, pp. 42-57
- Schön, D.A. 1987. "Educating the Reflective Practitioner: Towards a New Design for Teaching and Learning in the Professions". San Francisco: Jossey-Bass
- Schön, D.A. 1991., first edition 1983) "The Reflective Practitioner: How Professionals Think in Action". Aldershot: Arena
- Schuster, G. 1950. "Report of the Committee on the Qualifications of Planners" (Cmd8059), London: HMSO, 1950.
- Scott A J, .1980. "The Urban Land Nexus and the State" (Pion, London)
- Scott A J, Roweis S T, .1977., "Urban planning in theory and practice: a re-appraisal" *Environment and Planning A* 9 1097-1119

#### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Slade, Christine, Andrew Harwood, Claudia Baldwin, and Johanna Rosier. "Baseline survey of current experiential learning practice in Australian and New Zealand planning schools", *Australian Planner*, 2015.
- Steele, W. 2009. "Australian urban planners: Hybrid roles and professional dilemmas", *Urban Policy and Research*, 27(2), pp. 189-203.
- Swain, C. and Tait, M. 2007. "The Crisis of Trust in Planning", *Planning Theory and Practice* 8 (2): 229-247
- The Planning Institute of Australia (PIA). 2008. "*Planning Education Discussion Paper Prepared for the Planning Institute of Australia January 2008*", Nicole Gurran *Urban and Regional Planning Program; University of Sydney* Barbara Norman *Global Cities Institute; RMIT University;* Brendan Gleeson *Urban Research Program Griffith University*
- Thomas Kweku Taylor, Chikondi Banda Thole. 2015. "*Re-Thinking Town and Country Planning Practice in Zambia*", *Developing Country Studies*, ISSN 2224-607X (Paper) ISSN 2225-0565 (Online), Vol.5, No.10, 2015, 34-44
- Trevor Budge .2009. "Educating planners, educating for planning or planning education: The never-ending story", *Australian Planner*, 46:1, 8-13, DOI: 10.1080/07293682.2009.9995283
- UN Habitat .2009. "Planning Sustainable Cities: Global Report on Human Settlements". London: Earthscan.
- Warburton, D. 1999. "Re-Inventing Planning; The Inquiry Report, Town and Country Planning", November, pp.322-323.
- Ward J.2011. "Reflection in professional education: an investigation into the reflective capabilities of trainee town planners", *Reflecting education*, <http://reflectingeducation.net> , Vol 7, No. 1, May 2011, pp. 67-79
- Watson, V. 2009. "Seeing from the South: Refocusing Urban Planning on the Globe's Central Urban Issues", *Urban Studies*, October 2
- Watson, V. Comment on Peel, D. and Frank, A. (undated) *The internationalization of planning*
- Wendy Ovens & Associates CC .2007. "*Towards a JIPSA Business Plan for Strengthening Urban Planning Skills in South Africa: Assessment of Planning Skills in South Africa Phase 2: Determining Supply*" August 2007
- Wensing, E. 2007. "Some ideas for improving planner's understanding of Aboriginal and Torres Strait Islander Australians", unpublished internal draft for PIA in response to the Review of Planning Education, 8/8/07
- Wheeler, Michael .1994. Personal interview with Wendy Sarkissian. 30 April.
- [www.acsp.org](http://www.acsp.org)
- [www.campusheritage.ning.com](http://www.campusheritage.ning.com)
- [www.casw-acts.ca](http://www.casw-acts.ca)
- [www.cogta.gov.za](http://www.cogta.gov.za)
- [www.dingley.co.za](http://www.dingley.co.za)
- [www.fellowscollege.org](http://www.fellowscollege.org)
- [www.gautengleg.gov.za](http://www.gautengleg.gov.za)
- [www.itpi.org.in](http://www.itpi.org.in)
- [www.kip.co.ke](http://www.kip.co.ke)
- [www.mangaung.co.za](http://www.mangaung.co.za)
- [www.mip.org.my](http://www.mip.org.my)
- [www.orgsci.journal.informs.org](http://www.orgsci.journal.informs.org)
- [www.orgsci.journal.informs.org](http://www.orgsci.journal.informs.org)
- [www.ossafrika.com](http://www.ossafrika.com)
- [www.planning.org](http://www.planning.org)
- [www.planning.org](http://www.planning.org)
- [www.planning.org.au](http://www.planning.org.au)
- [www.prismjournal.org](http://www.prismjournal.org)

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[www.sacities.net](http://www.sacities.net)  
[www.sacplan.org.za](http://www.sacplan.org.za)  
[www.treasury.gov.za](http://www.treasury.gov.za)  
[www.umngeni.gov.za](http://www.umngeni.gov.za)  
[www.zirup.org](http://www.zirup.org)

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# Corridors as Place Making, Identity Creation and Space Branding Tools: Towards Guidelines for Vibrant and Sustainable Rural Development Corridors

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## Abstract

The need to enhance South Africa's economic vitality, the "quality of life for" its citizens "and" sustaining "the environment", is increasingly necessitating the generation of new development paradigms or revamping and strengthening existing ones ([www.mrhamilton.ca](http://www.mrhamilton.ca)). In this regard, and with respect to the transportation sector, solutions that focus on human beings are being preferred to those that largely emphasize the movement of motor vehicles – which have essentially been responsible, for example, for the incessant increase in congestion (impacting negatively on productivity and the cost of goods and services) despite significant investments in the construction of new roads and adding capacity to existing ones. In addition, motor vehicle-oriented solutions have spawned sprawling patterns of land use that tend to undermine and overtax the ability of Government to provide the infrastructure necessary to stimulate the country's economic growth and development. This has been associated with transportation planning that considers only the narrow context of projects, rather than broader development ecosystems – the inevitable result of approaching transportation planning and land use management as two separate processes. This is where the notion of corridor development becomes an attractive practical solution integrating land use management and transportation along an entire length of linkages and their associated nodes. A corridor can spatially be defined as a broad linear geographic band characterised by logical, existing, and forecasted travel patterns undergirded by "a combination of discrete, adjacent surface transportation networks" (e.g. highway, "arterial, rail") connecting major sources of trips (USDOT, 2009, [www.carecprogram.org](http://www.carecprogram.org)). A corridor is thus a multi-modal transportation network, knit together around various transport facilities as it links together places and nodes. Drawing from the outcomes of a study commissioned by the South African "Department of Rural Development and Land Reform", which investigated four corridor typologies that could be employed as instruments for spatial structuring in South Africa, this paper critically unpacks the rationale for rural corridor development, enumerates the various steps leading to the development of a rural corridor, and paraphrases the main strands of guidelines associated with the rural corridor typology. These guidelines indicate practical ways of giving effect to the development principles established in the "Spatial Planning and Land Use Management Act (2013)" ([www.gpwonline.co.za](http://www.gpwonline.co.za)).

## Keywords

Corridors, land use, transportation, spatial planning, place making, nodal and linkage development, rural development

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# 1. INTRODUCTION

## 1.1 Contextual Realities: Spatial Targeting and Rural Corridor Development

Spatial planning is a strategic public policy instrument for establishing a long-term framework for socio-economic and territorial development (Mashiri et al, 2013). It can provide a vision and common direction for different sectoral policies and achievement of synergies across different departments and spheres of government. Spatial planning can also help to promote investments, foster economic growth, and entrench social coherence while guiding policies for protecting the environment and promoting more efficient use of resources. Spatial planning thus provides a key platform for sustainable and equitable socio-economic and environmentally sound development. However, South Africa is characterized by a fragmented, unequal and incoherent spatial planning system that stifles economic development, and perpetuates the inherent inequalities that were wrought by the apartheid-based settlement regime. Nowhere is this more apparent than in rural South Africa where relatively developed rural areas stand in stark contrast to developing rural areas.

In developing rural areas, “rural poverty is closely associated with poor access to socio-economic opportunities. Access is a critical element in rural development because its existence or absence defines the opportunity that rural communities have to improve their socio-economic stations” (Mashiri et al, 1998, bonn-symposium.de). Programs to connect rural communities to basic socio-economic services (e.g. schools, clinics, welfare payments, employment opportunities and markets) have resulted in individual sector responses, which often generate disaggregated demand that entrench existing spatial patterns and fail to stimulate greater levels of activity, trade and development (Mashiri et al, 2012b). Given the scarcity of development funds in general and the backlogs in terms of transportation infrastructure and services requirements, spatial targeting of investments to tackle the identified major constraints often yields good value for money with regard to overall impact. The nodal and linkage development (NLD) concept – corridor development – provides a platform for spatial targeting not only to improve access to socio-economic opportunities, but also to stimulate and strengthen local economic circuits.

Drawing from the outcomes of a study commissioned by the South African “Department of Rural Development and Land Reform”, which investigated four corridor typologies that could be employed as instruments for spatial structuring in South Africa, this paper critically unpacks the rationale for rural corridor development, enumerates a process flow for the development of a rural corridor, and paraphrases the main strands of guidelines associated with the rural corridor typology.

## 1.2 Rationale for Rural Corridor Development

Developing rural Africa is “going through a process of economic and social restructuring, partly characterised by de-agrarianisation and diversification of livelihood strategies” (www.gov.za). These rural contexts are characterised by, firstly, a high degree of spatial-economic marginalisation and exclusion from the ‘economic mainstream’, manifested both at a macro scale (i.e. by long distances to major markets and service centres, uneconomical supply chain volumes and organisational barriers), and at a local or intra-district scale (i.e. by poor roads, low levels of access to motorised

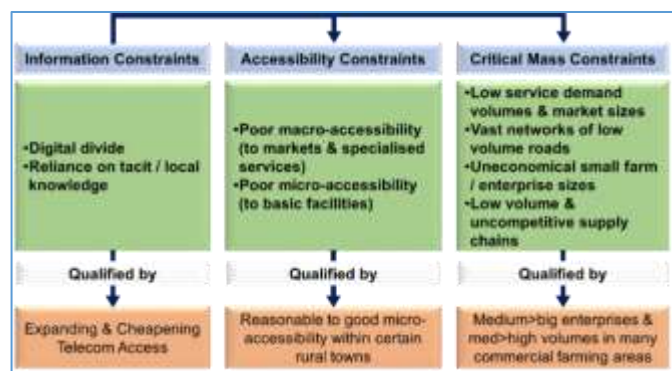


Figure 1: Main rural development constraints

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transport, and a lack of accessible collection or distribution points). Secondly, it is also underpinned by a “high proportion of emerging farmers and other enterprises” that are “currently operating at a sub-critical scale” (www.rfa.co.za). Finally, it is undergirded by a “fragile and limited economic base, typically consisting mainly of agriculture (subsistence and/or commercial), related extension, business support and processing services, tourism and related activities, with perhaps some forestry, mariculture, fishing and other more specialised forms of resource-based economic activity” (ibid). Necessarily, “poor people's livelihoods increasingly straddle rural and urban locations, and the significance of rural trade and agro-processing is growing. Accompanying this is an emerging transport service sector, connecting the rural trade centres or satellites to other higher order settlements (www.gov.za). In many cases however, transport links between the” rural “trade centres and the rural hinterland” remain “extremely unreliable, rendering access to services and emerging opportunities difficult, and thereby trapping communities in downward spiralling poverty” (ibid).

“Rural poverty is closely associated with poor access to socio-economic opportunities. Accessibility represents the real value of transport infrastructure and” services “as it encapsulates all the advantages of spatial interaction / exchange of goods, information”, know-how and experience (Mashiri et al, 1998, www.ecsecc.org). “Access is a critical element in rural development because its existence or absence defines the opportunity that rural communities have to improve their socio-economic stations. Key elements of accessibility” include the “extent” and “quality of infrastructure”, the extent “and condition of communications, facility (e.g. health, education, etc.) location relative to settlement patterns”, and “availability” and affordability “of transport services” (www.bonn-symposium.de). As illustrated in Figure 1, three main constraints are recognized, namely, information, accessibility and critical mass constraints. These constraints result in the inaccessibility and spatial-economic marginalization from the mainstream of rural communities trapping them in spiralling and intergenerational poverty. Given the scarcity of development funds and the backlogs in terms of transportation infrastructure and services requirements, spatial targeting of investments to tackle the identified major constraints often yields good value for money with regard to overall impact.

As alluded to above, corridor development is often considered as an appropriate spatial structuring intervention that effectively responds to the challenges enumerated above by, for example:

- Allowing the optimal utilization of resources and harnesses latent economic potential
- Improving rural-urban linkages
- Facilitating closer economic integration and balanced regional development
- Enhancing economic competitiveness and promoting regional trade and investment
- Promoting innovation and the development of high technology regions, and
- Enhancing efficiency in the delivery of services and contributing to the overall improved quality of life.

The nodal and linkage development (NLD) concept as encapsulated in corridor development provides a platform for spatial targeting not only to improve access to socio-economic opportunities, but also to stimulate and strengthen local economic circuits.

While corridors have been identified in the current crop of municipal spatial development frameworks in South Africa, not many rural municipalities have undertaken detailed investigations, planning and implementation of projects in designated corridors as a deliberate strategic instrument not only to structure the municipal space economy, but also to stimulate and rally socio-economic development endeavours.

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### 1.3 Aim of the Paper

The paper seeks to provide an approach and methodology for planning and implementing a rural development corridor.

### 1.4 Approach and Methodology

A mixed method approach incorporating literature reviews, individual discussions with selected domain experts, and workshops with a cross-section of stakeholders was employed to gather project information. Consultations were aimed, firstly, at obtaining a consolidated stakeholder view relating to the concept of corridors as a strategic instrument for socio-economic development and spatial transformation. These engagements also served to identify key strategic issues for in-depth investigation. Secondly, they were aimed at soliciting stakeholder inputs on the draft guideline document. Figure 2 illustrates the generic process that was followed to generate the Draft Guidelines. At the outset, it was important to undertake a scoping exercise to clearly delimit priority areas to headline the draft guidelines, including spelling out the purpose, the targets and intended outcomes and impact of the guidelines. Searching research questions were formulated to guide the conceptualisation, design and development of the guideline document.

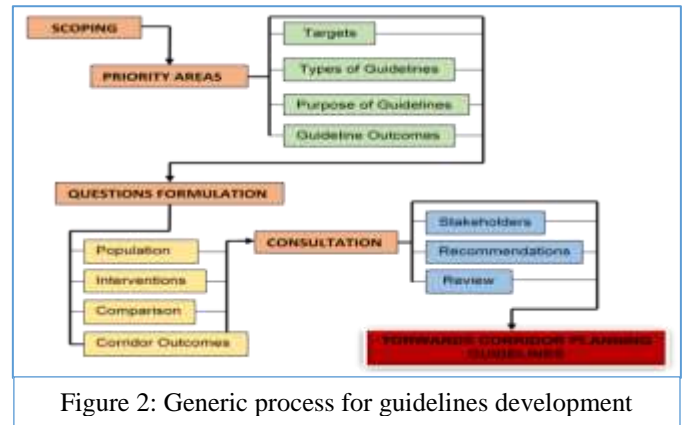


Figure 2: Generic process for guidelines development

## 2. LITERATURE REVIEW

### 2.1 Concept and Types of Corridors

Corridor development “has traditionally occurred along routes that connect areas of industry” (production) and “trade” (consumption) (www.sadc.int). The notion of corridors has thus evolved over time, from representing largely transport routes and expanding its scope to include wider economic and development perspectives. Corridors are not only complex as measured by their reach and scope, or the many types of stakeholders involved, they also evolve over time. Two main life cycles for a development corridor, which may alternate and sometimes overlap, namely, the development cycle, characterized by a concentration of investment in economic or transport infrastructure, and the operational efficiency cycle, marked by a focus on solving transport and logistics bottlenecks are immediately recognizable.

While a fundamental tenet of corridors is that of connection, there are many different conceptions of corridors (Chapucan et al, 2003). According to Priemus & Zonneveld (2003), three conceptions of corridors are evident – “as an infrastructure axis”, urbanisation axis, and “as an economic development axis” (Muller, 2010).

“As an infrastructure axis” (transportation, power, ICT), it can be defined as a bundle of infrastructure that links two or more, mostly (urban) points of economic activity (Rodrigues, 2004; Priemus & Zonneveld, 2003). Its primary focus is on economic efficiency rather than economic distribution and it ideally provides users with transport choices. A causal relationship is often drawn between major infrastructure axis and opportunities for economic development (Priemus, 2003). It stems from the view that “traffic and infrastructure are not only derived from an economic process, but also determines these processes” (Priemus, 2003, www.commodities.open.ac.uk). By extension, enhancing the level of economic activity along the corridor would also stimulate the economic performance of lagging regions (Priemus, 2003).

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As urbanisation and economic development axes (often referred to as a development corridor), the economic advantage of closely connected city regions include greater agglomeration economies (economies of scale in the larger nodes /economies of scope in the smaller hubs) (pooled resources, assets, facilities labour markets, etc.), higher propensity for economic innovation and growth (through business networks, exchange and knowledge, etc.) and generally increased competitiveness in polycentric forms of economic organisation (Priemus, 2003). Connectivity of centres along a corridor can in some meaningful way be viewed as a form of polycentricism. A development corridor is thus an integrated program associated with the crowding-in of investment on the back of typical transport and energy infrastructure networks, which are integrated with hinterland economic opportunities through nodes along the length of the corridor with a view to distributing national resources for shared prosperity. Such a corridor serves to spatially integrate lagging regions into the economic mainstream.

With significant resource development occurring in regional economic communities (REC) in Africa such as the “Southern African Development Community (SADC), corridors are growing in importance, as they enable other sectors to maximise their productivity” (www.sadc.int). SADC has followed the Spatial Development Initiative (SDI) model that registered some success in South Africa where the idea originated. “This model serves as an integrated planning tool for promoting development in regions that exhibit strong growth potential – it offers” a system “through which the public sector crafts conditions attractive to private investment and public-private partnerships” (ibid). “However, infrastructural bottlenecks along corridors – poor roads and bridges, confusing border logistics, and complex customs procedures – often hamper” corridor effectiveness (www.sadc.int). As a consequence, SDIs have “not been able to translate infrastructure development into” broad-based economic “growth that contributes” significantly “to” employment creation, “poverty reduction and” bridging the equality gap (www.fdi.net).

## 2.2 Nodal and Linkage Development Concept

The concept of corridors in developing rural areas is closely associated with the nodal and linkage development concept. In the context of rural South Africa, the developmental rationale for various aspects of coordinated nodal and linkage development (NLD) stem from work on “integrated approaches to rural accessibility and associated development problems” (Mashiri et al., 1994 and 1997; Naudé et al., 1998; Mashiri et al., 1998); economic justification for increased investment in transport and telecommunications (Stilwell & Atkinson, 1998) and on the developmental rationale of a rationalized rural service hierarchy (Robinson & Associates, 1998). Two sets of issues provided a compelling departure point:

- **Poverty, arrested economic development and related access issues:** The “inaccessibility and spatial-economic marginalization of deep rural areas from the economic mainstream” (www.ecprov.gov.za), and
- **“Spatial” dispersal “of” central place facilities:** Uncoordinated geographic dispersal of infrastructure investment, leading to high and unsustainable cost burdens.

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This body of work provided a platform for the focus on rural accessibility as the core theme, and on mutually complementary development of different forms of nodal and linkage infrastructure. The core thrusts, for example, of the Rural Transport Strategy for South Africa (2003; 2007) were crafted from these platforms. In addition, studies of the development rationale for increased investment in information and communication technologies (ICT), tele-centres, distance education and related infrastructure, most of which are focused on how to overcome ‘*the digital divide*’ and improve access to ‘*the information society*’ also influenced the development trajectory of the nodal and linkage thrust. As illustrated in Figures 3 and 4 below, conceptually and intuitively, a rural corridor is often a combination of a “hierarchy of nodes”, satellites and “linkages, with a surrounding hinterland”, and linked to major urban complexes (www.rwandatransport.net).

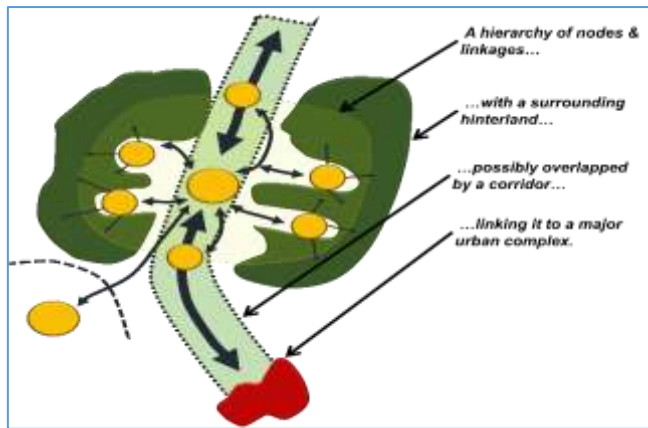


Figure 3: Conceptual understanding of a rural corridor

The space-economy of rural corridors is essentially characterised by the main transportation spine, activity nodes and the adjacent rural lands. Given that the spatial dispersal of central place facilities leads to high and unsustainable cost burdens, the concept thus advocates for the nodes to function as central places for their surrounding hinterland so that their existence is defined, in part, by their capacity to “carry out, at central accessible” places, “the tasks which the life of” the hinterland “creates” (ibid).

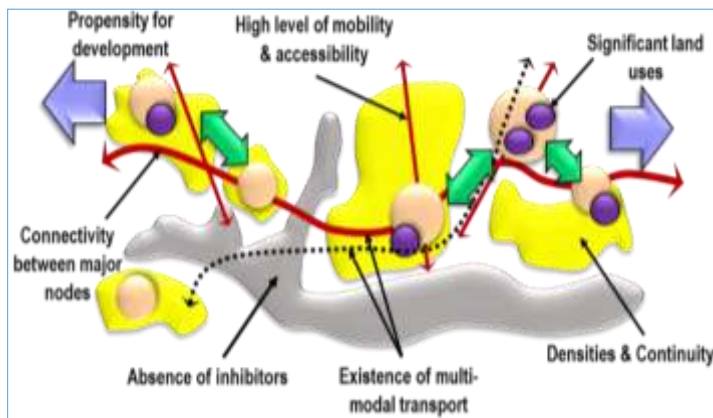


Figure 4: Concept for Corridor Development

The development of nodes as central places is also influenced by corridor activities. Nodes along the corridors largely “come into being to” undertake, “at central accessible” places, “the” activities which are generated by hinterland livelihood endeavours. “Overtime, they develop” and graduate “into mediators of” enlightenment and “local commerce with the outside – collecting and exporting local products, importing and distributing local goods and services, which the hinterland demands” (Mabogunje, 1980, ibid). In this regard, nodality (as encapsulated in the notion of nodes and their satellites) is identified as a behavioural act of man, not simply a geometric point or a circulation

intersect. For Carter (1981), a nodal location is that place where the individual has the greatest freedom to interact in behavioural terms. Such a definition, Carter (1981) continues to argue, involves population density and areal accessibility, as well as functional availability. He concludes that a spatial hierarchy is thus the specification of a nodal system.

The National Development Plan (2012) has underlined the importance and need of channeling “future settlement and economic development opportunities into” economic “activity corridors and nodes that” link the main growth centres in South Africa’s spatial economy (www.umtshezi.co.za). Corridor development “sets out the opportunities available and the choices to” consider “in order to lay” a firm “basis for aligning government spending, infrastructure, housing investment and economic development initiatives” (www.edumbe.gov.za).

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### 3. RESEARCH ANALYSIS & FINDINGS / RESULTS

#### 3.1 Towards Rural Corridor Development Guidelines: Corridor Vision and Intended Impact

“In order to ensure” that “the development of” corridors in rural areas gains traction for the long term, it is imperative to develop a vision that succinctly captures stakeholder aspirations in respect of their development trajectory. Necessarily, the visioning exercise needs to be an interactive process involving many stakeholders and driven and inspired by a collective understanding of the role and importance of corridors in rural development. The outcome of the visioning exercise should be a broader interpretation that conceives a much wider mandate for the corridor – from a simplistic understanding focusing on transportation infrastructure provision to a transformed and lived narrative of a sustainable development corridor – “a process that integrates” the “socio-economic, historic, scenic, cultural, land uses, and natural resource values of the communities” into a seamless and sustainable development taxonomy (refer to Figure 5) ([www.hcpme.org](http://www.hcpme.org)).



Figure 5: Rural corridor visioning

“a process that integrates” the “socio-economic, historic, scenic, cultural, land uses, and natural resource values of the communities” into a seamless and sustainable development taxonomy (refer to Figure 5) ([www.hcpme.org](http://www.hcpme.org)).

##### 3.1.1 Intended Outcomes and Impact

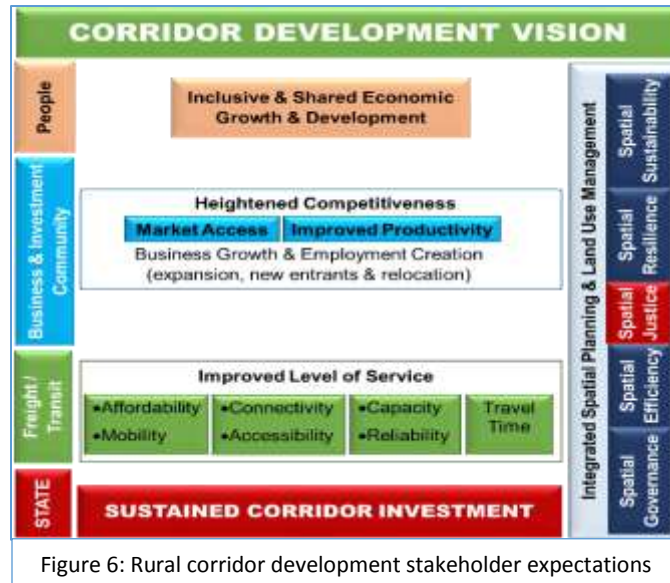
Once a vision has been set through an iterative consultative process, it would be important to unpack the intended outcomes of the corridor initiative over a designated time period as illustrated below, for example, by 2030 (NDP time horizon), the Corridor will have:

- Streamlined freight logistics & transit resulting in improved efficiencies & competitive costs underpinned by robust capacity elasticity
- “Evolved from a series of” relatively disconnected “individual” village “centres”, nodes & “towns to a” distinctive, “linked” & vibrant “set of” productive “communities that” draw “on a rich rural heritage” to define & shape “its” unique “character”(www.southernhighlandsbusiness.com).
- Stimulated a vibrant & diverse rural regional economy connected to the economic mainstream.
- Sustainably managed (recognised, exploited & protected) its environmental resources for the benefit of all
- Substantially transformed into an attractive high quality environment to work & live in built on its rural character & supporting “a diverse range of liveable communities with a strong sense of identity & of place” (ibid).
- Evolved to be more than just a conveyor belt for moving goods, people & Information, but also “a catalyst for the development of high quality, safe, environmentally sustainable & affordable transportation options, connecting key destination points, stimulating economic development” & revitalizing “and” breathing life into “the” whole region.

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- Transformed into a preferred destination for new investment & employment opportunities, supporting in the same vein, a growing population, services & amenities
- Constituent nodes that play a dynamic developmental role as innovation nuclei & development powerhouses – functioning as the inflection points for entering the mainstream economy by communities & local businesses, and
- Facilitate the emergence of a multifaceted pattern of land values allowing the spontaneous establishment & long-term growth of “large & small, formal & informal businesses” as they “find” space “within the” hierarchical polycentric settlement system, thus breaking down fragmentation & entrenching integration ([www.kzninvestor.co.za](http://www.kzninvestor.co.za)).

### 3.1.2 Assessing Progress on a Designated Rural Corridor

Quantifiable key performance indicators (KPIs) aligned with the intended outcomes and designed to measure the success or failure of corridor development initiatives are central to the achievement of this policy plank (refer to Figure 6 below). In this regard, monitoring and evaluation should decidedly be concerned with internal *operational efficiency criteria* (referring to the internal efficiency of the transport system), and external *development effectiveness criteria* (referring to the contribution of the corridor to wider development goals such as the stimulation of economic growth, impacting on poverty through employment creation and promoting more sustainable spatial development patterns). The KPIs need to be tracked on a regular basis to provide early warning signs of challenges that need to be addressed. Key to implementing KPIs is the ability to collect the requisite data which calls for the development of data collection systems and tools.

## 3.2 Unbundling the Conceptual Framework

The concept of corridors in developing rural areas is closely associated with the nodal and linkage development (NLD) concept which advocates for the polycentric development of rural areas, as well as “strengthening of the partnership between urban and rural areas” with a view “to” creating an inclusive “urban-rural relationship” (Contributions to Economics, 2016). As indicated elsewhere in this paper, NLD is essentially concerned with:

- Strengthening the role of *selected nodes and/or corridors* within the context of a polycentric service centre hierarchy through deliberate spatial and transportation planning and land use management
- Improving the *transport and communication linkages* at, and between different levels

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- Facilitating the development of *periodic services and interchanges*, e.g. the establishment of a circuit of periodic markets, and
- Fundamentally *re-organizing* the service centre hierarchy – e.g. in terms of an innovative set of hub-satellite and periodic service arrangements.

As illustrated in Figure 7 below, NLD is thus typically a combination of spatial planning, infrastructure development and enterprise development actions.



Figure 7: Range of nodal and linkage development actions and deliverables

One of the main constraints to rural development enumerated in Figure 3 above relates to critical mass largely because of the low density of demand – the inability to reach the required thresholds to ensure sustainability – even profitability. To circumvent this, corridor development in rural areas is conceived as and associated with at least three levels of hierarchical but mutually inclusive linkages, namely, macro- meso- and micro-level linkages (refer to Figure 8) – with each linkage providing functions commensurate with its specific level. These linkages are intended to widen the dragnet in such a way that economies of scale and/or economies of scope creep into the equation rendering transactions on the corridor sustainable. Thus the development of a settlement hierarchy that is intended not only to stimulate and focus the rural economy, but also to transform and reshape the inherited

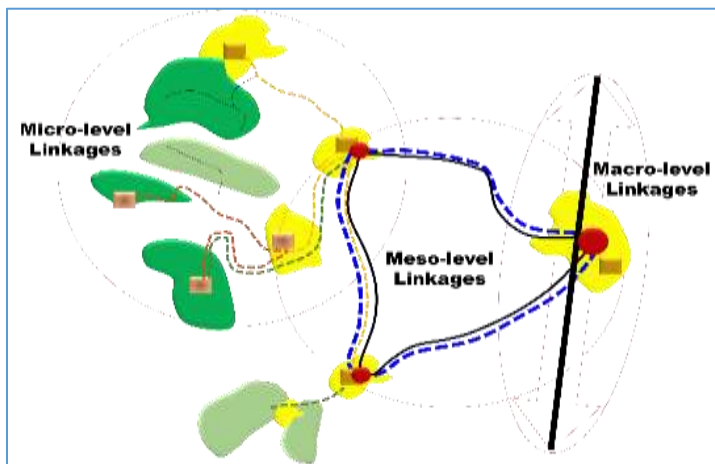


Figure 8: Mutually inclusive levels of linkages for meeting corridor thresholds

organisation of space, which has the effect of facilitating better communication, information dissemination, service delivery as well as saving on infrastructure costs is consistent with the explicitly developmental approach to development that has been assigned to local government authorities.

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Table 1 below enumerates practical examples of scale specific strategic service intervention options for the Corridor.

Table 1: Practical examples of scale specific strategic intervention options

Scale-specific strategic intervention options		
Scale	Scale-specific strategies	Cross-cutting strategies
1 <i>“Macro scale / long supply chains”</i>	<ul style="list-style-type: none"> <li>• “Inter-municipal corridor or cluster development strategies”</li> <li>• “Sub-regional branding &amp; marketing”</li> </ul>	<ul style="list-style-type: none"> <li>• “Telecommunications and general transaction support”</li> <li>• “Logistics brokering”</li> </ul>
2 <i>“Meso-scale / short supply chains”</i>	<ul style="list-style-type: none"> <li>• “Facilitation of short supply chains”</li> <li>• “Periodic markets”</li> <li>• “Customized strategies to address the specified LED opportunities &amp; constraints of different micro-regions”</li> </ul>	<ul style="list-style-type: none"> <li>• “HRD strategies to enhance the general skills base”</li> <li>• “Development of an interlinked hierarchy of “centre-type initiatives” (e.g. tele-centres, small business hives, tourist centres, craft centres, agro-hubs &amp; Thusong Service Centres” (<a href="http://www.sustranssa.co.za">www.sustranssa.co.za</a>)</li> </ul>
3 <i>“Micro scale / community based”</i>	<ul style="list-style-type: none"> <li>• “Community-based tourism”</li> <li>• “General livelihood support strategies”</li> <li>• “Promotion of a wider range of local mobility options (including non-motorized &amp; intermediate means of transport)”</li> </ul>	

Source: Authors own conceptualisation, 2016, [www.sustranssa.co.za](http://www.sustranssa.co.za)

### 3.3 Rural Corridor Identification and Prioritization

Corridor development in rural areas needs to be underpinned by “a comprehensive” development “planning process that” seeks “to” integrate the “socio-economic, historic, scenic, cultural, land uses, and natural resource values of” the various corridor “communities” – given that, once selected, such corridors would be marketed as and could become significant public, private and community investment destinations ([www.hpcme.org](http://www.hpcme.org)). And, investments of this nature especially that which relate to infrastructure provision, is generally lumpy and therefore cannot be transferred – corridor selection and prioritization constitute pivotal exercises. While, some municipalities have been identified through the medium of statutory processes such as Spatial Development Frameworks or Integrated Transport Plans, most of these prospective corridors have not been prioritized in terms of planning and budgeting.

A process flow for rapidly collecting planning data, identifying and prioritizing corridors as well as planning and implementation of rural development corridors in a municipality is chronicled in Figure 9.

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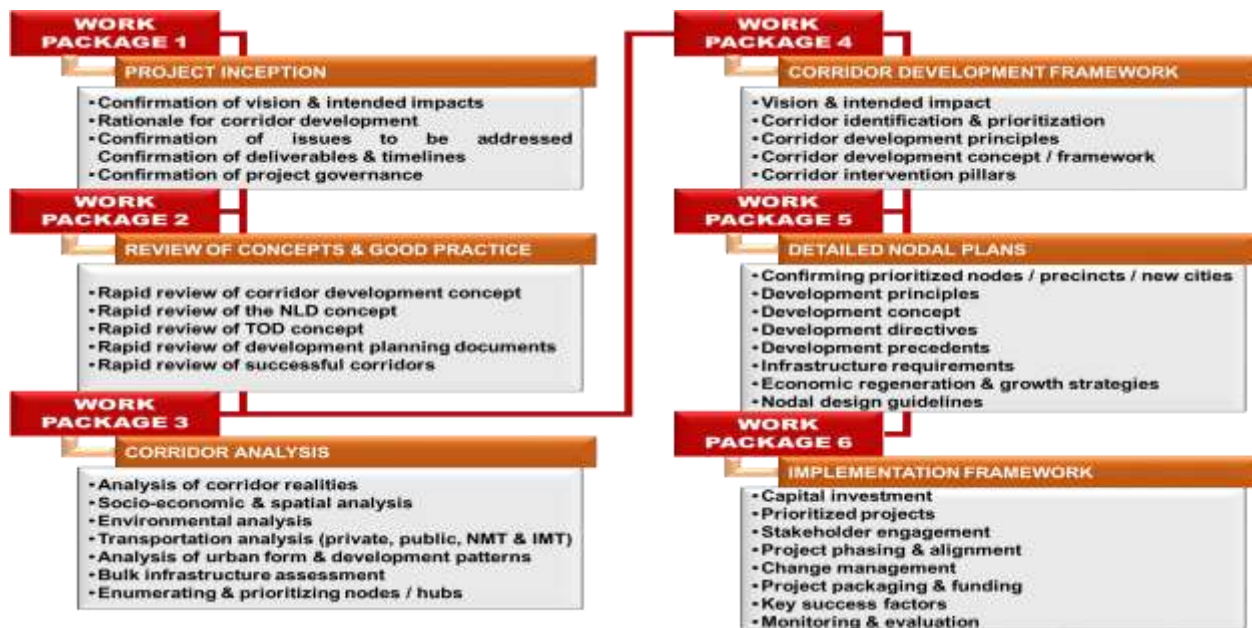


Figure 9: Rural corridor development process flow

**Data collection approach:** It is important to note here that corridor studies follow many of the transportation planning steps, including public involvement, albeit in a much more focused and targeted manner. “Corridor-level analysis encourages a more complete investigation of non-transportation issues, such as land use planning and zoning” (Dray et al., 2012). Corridor planning should thus typically occur after a long-range spatial and transportation plan has identified a geographic area and designated priority transportation routes with mobility challenges to consider for investment as development corridors.

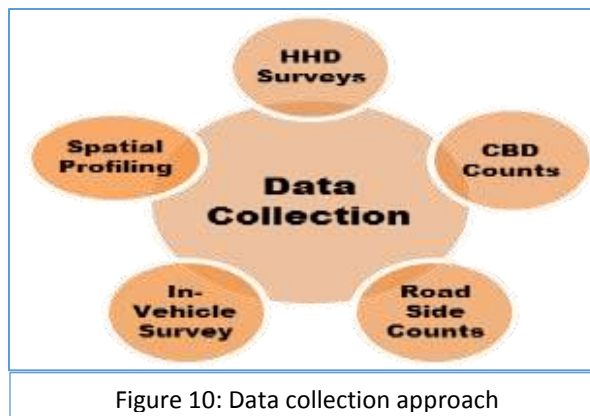


Figure 10: Data collection approach

A mixed method approach should be employed to assemble the requisite information (refer to Figure 10). The fieldwork should involve household surveys using a sample “selected to broadly represent diversity” in the municipality and “to capture rural and urban dimensions by carving out” the municipality “into rural typologies” – urban CBD counts, roadside counts (freight), in-vehicle survey on major public transport routes and spatially profiling the municipality. “Rapid rural appraisal methods” should be “employed to collect” other “socio-economic data” including “in-depth discussions with a selection of stakeholders” (developing in part, stakeholder maps and profiles) (www.transed2012.in). In addition, profiling the municipal spatial (settlement) hierarchy of nodes, satellites and linkages should also be undertaken together with accessibility mapping and economic profiling.

The results of this exercise could be used to identify and prioritize corridors for investment taking into consideration a balance between hierarchy (efficiency) and choice (diversity) in the distribution of and support for nodes and associated facilities, services and shops. A relatively simple approach for identifying and planning for the development of nodes and linkages is paraphrased below (refer to Figures 11-16).

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- At a district level, a 20km interval accessibility grid could be employed to identify optimal locations of nodes
- The maximum travelling distance to a district road, node and associated facilities would be in the region of 10km (taking into account the fact that district roads traverse mountains and rivers, connecting disparate communities and neighbouring municipalities).
- At a local municipal level, a 10km interval accessibility grid could be employed to identify optimal locations of nodes
- A maximum travelling distance of 5km to an access local road, node and associated facilities is envisaged, and
- This also allows for a comfortable distance using non-motorized transport modes such as walking and cycling.
- At a community level, a 5km interval accessibility grid could be employed to identify optimal locations for nodes
- In this regard, a maximum travelling distance of 2,5km to local community roads, nodes & associated facilities is envisaged.
- Community roads are not necessarily continuous, but connect remote rural places into the local and district movement system
- This also allows for a comfortable distance using non-motorized transport modes such as walking and cycling.

Applying this concept abstractly onto an existing baseline network of nodes and linkages in the King Sabata Dalindyebo municipality in the Eastern Cape produced intuitive results. It unravelled that massive gaps exist in the settlement hierarchy – it showed, for example, that the existing nodes fall short of the recommended baseline for number (and spatial distribution) of nodes. Thus, Mthatha (a regional node) inevitably fulfils the function of the ‘local’ nodes that do not exist leading to significant and incessant congestion in the Mthatha central business district.

By applying this approach, the settlement hierarchy can be improved by rationalizing the distribution of nodes, which also allows for prioritization of nodes and linkages for investment.

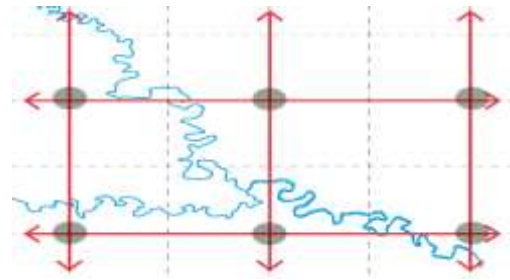


Figure 11: District level nodes and linkages

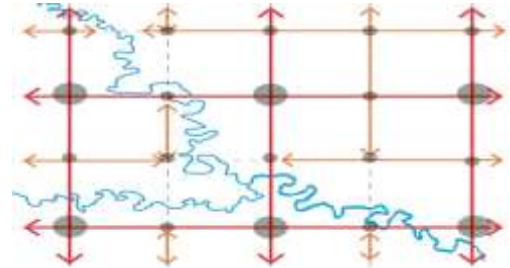


Figure 12: Local Level Nodes and Linkages

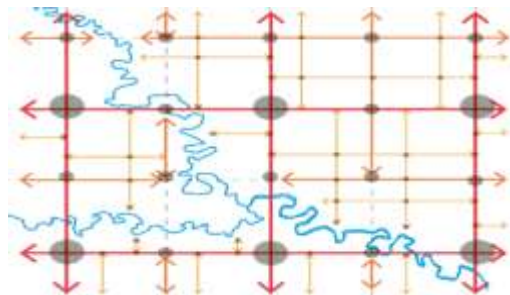


Figure 13: Community Nodes & Linkages

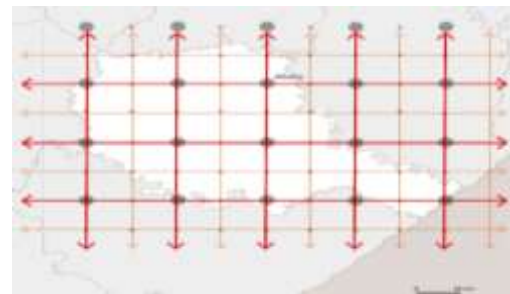


Figure 14: Application of Methodology in KSD

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Figure 15 & 16: Rationalized distribution of nodes in KSD

### 3.4 Rural Corridor Strategic Intervention Pillars

#### 3.4.1 Mapping the Strategic Intervention Pillars

As indicated in Figure 17, the strategic plan should be underpinned by at least eight intervention pillars, namely:

- Robust Institutional Framework
- Robust Stakeholder and Community Compact
- Innovative “Spatial Planning and Land Use Management”
- Improved Movement, Accessibility “and” Service Standards
- Sustained and Inclusive Corridor Economic Development
- Capacity Building “and” Skills Development
- Planned Environmental Resources
- Strategic Marketing, “and” Information and Communication Technologies as a cross-cutting theme.

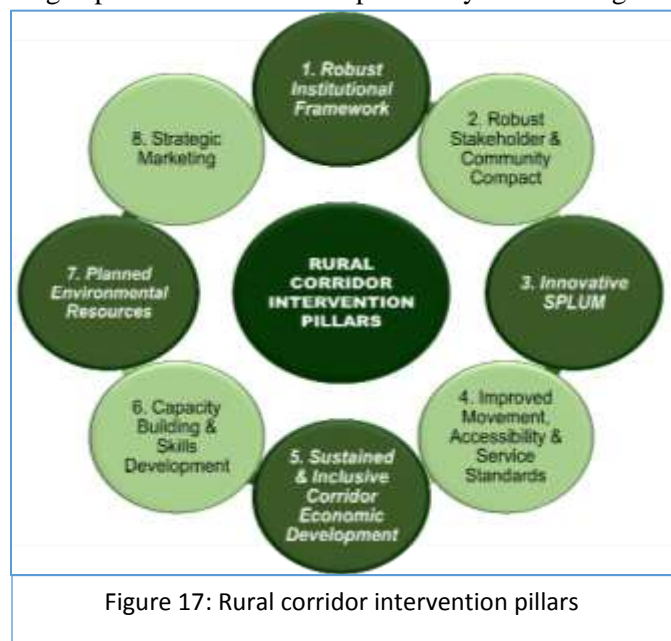


Figure 17: Rural corridor intervention pillars

#### 3.4.2 Rural Corridors Outcomes Delivery Institutional Architecture

**Governance and Institutional Architecture:** Because corridors are complex systems which are largely the function of decisions at different levels of the system by various role players pursuing mostly individual and often conflicting objectives, the need for a robust institutional framework around which individual and collective goals are mediated into a series of inter-related objectives to bring about local and regional economic development for the benefit of all cannot be over-emphasized. In this regard, it is imperative to craft an “institutional structure which is customer orientated and delivery” focused (www.mcli.co.za). The establishment of a robust and agile institution able, for example, to create conditions for rapid implementation, negotiate formal operating agreements with regulatory bodies, the private sector and other institutions, is crucial. The institutional architecture needs to be permanent, inclusive, agile and oriented towards action – marshalled by a political champion and supported by a strong secretariat (refer to Figure 18).

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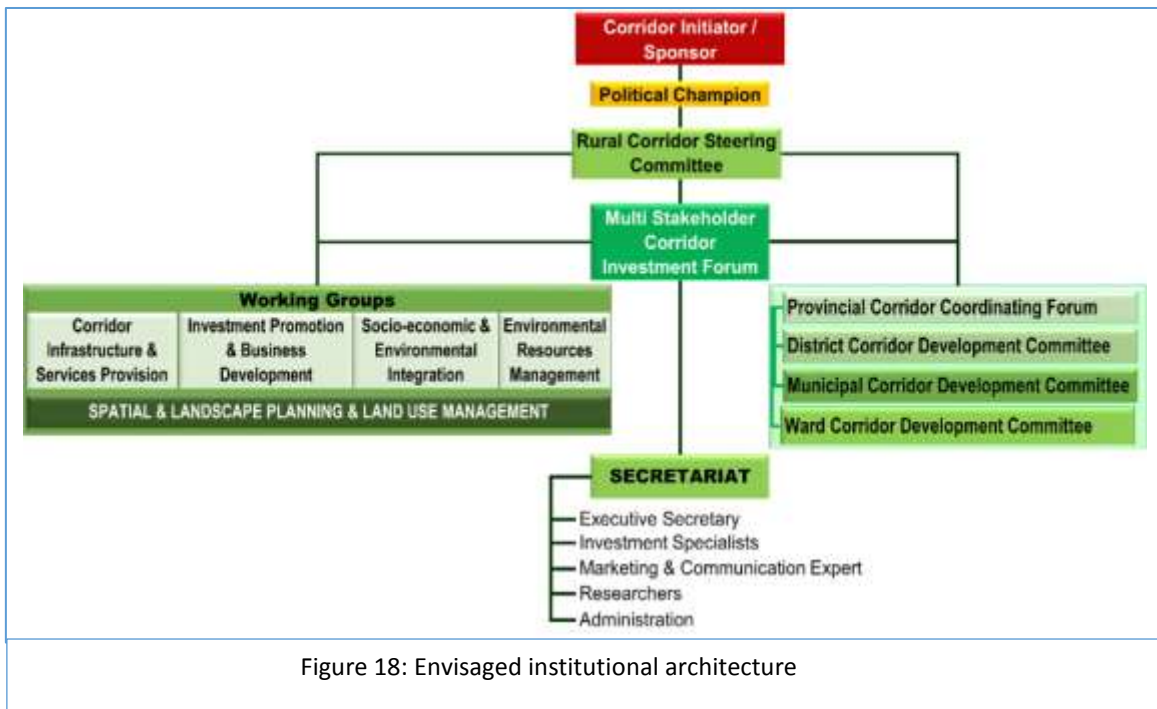


Figure 18: Envisaged institutional architecture

As indicated in Figure 18, the mandate and functions of the Corridor Steering Committee should, at a minimum, include developing corridor investment guidelines, identifying bankable projects and opportunities for business development, determining the approvals, authorisations, licences, permissions or exemptions required to implement projects on the Corridor, and developing a template/guidelines to ensure a regular, transparent, efficient and predictable process, and lastly, monitoring and evaluating progress.

Working groups should be established to assist in focusing the work of the Steering Committee, particularly given the general scarcity of funding, and the consequent need to ensure that the feasibility of the rural corridor projects are beyond reproach. Another sub-structure that constitutes the operational arm of the Steering Committee and around which Corridor activities revolve is the Corridor Secretariat. To enable the secretariat to successfully play its role, crucial appointments could include experts in *communication and marketing, investment experts and researchers*.

Lastly, a Multi-Stakeholder Corridor Investment Forum should be established to accommodate the voices of a cross-section of stakeholders. Such investment forums should seek to encourage “*impact investing* – an investment approach intentionally seeking to create both financial returns and positive social impact” ([www.gle.iipcollaborative.org](http://www.gle.iipcollaborative.org)).

It will be imperative, at least at the outset, for Government to set aside a budget to run the Corridor in the “short-to-medium term”. “It” is envisaged that “the” Corridor administration can gradually be weaned off Government funding, once the system has secured sustainable traction.

### 3.4.3 Cementing Relationships: Inclusive Corridor Compact

Rationale for a Corridor Compact: Realising the outcomes of the Corridor is heavily reliant upon the actions of a plurality of actors across different operationally independent policy sectors. Coordinating and integrating planning and implementation efforts necessarily demand a collaborative approach. Given the multiplicity of potential project implementers and beneficiary communities, it is often good practice to get such stakeholders to commit, first and foremost, to buying into and working together to seek to achieve the

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Vision for the Corridor through the Rural Corridor Development Framework. Secondly, it will be important to get stakeholders to commit to undertake what is expected of them in terms of an approved plan and implementation framework. Lastly, to consummate all these agreements, a rural corridor compact should then be signed to ensure that stakeholders are indeed accountable to one another, as well as to beneficiary communities in respect of their mutual commitments. Such a compact serves to strengthen the working relationship of the participating organizations. The signing of the compact provides the social legitimacy which makes it a lot easier to implement projects on the Corridor. Such compacts emanating from a shared understanding of the new approaches required to addressing readily acknowledged development challenges seen from the vantage point of the Corridor Vision, often become the glue that holds the stakeholders together through goodwill – as a compact suggests a decision freely reached (Mashiri et al, 2012b). An MOU should include, at a minimum, layers of agreements relating to in principle agreements on working together in terms of embarking on this collaborative planning process.

#### 1.4.1 Spatial and Landscape Planning and Land Use Management

**Rural Corridor Development Principles:** In determining the desired spatial planning outcomes for the Corridor, the “Spatial Planning and Land Use Management Act (SPLUMA, 2013)” should be regarded as “the” foundational document that provides the strategic legal framework for spatial planning principles that are consistent with precepts enunciated in the Constitution (1996). In this regard, five SPLUMA development principles succinctly captured in Figure 19 should be applied in the rural corridor development planning process.

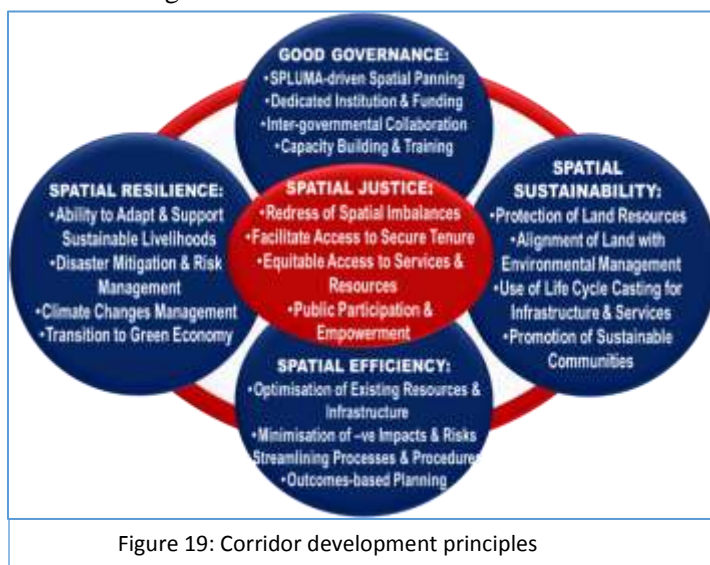


Figure 19: Corridor development principles

**Corridor Values:** In addition to the five principles enumerated above, it will be important to anchor the development of the corridor on agreed upon values (refer to Table 2).

**Table 2: Rural corridor development values**

Principle	Descriptive Interpretation
1 <b>Liveable communities</b>	Rural Corridors should proactively provide opportunities to develop innovative & unique human settlements that showcase liveable communities with the rural environment as an enduring backdrop
2 <b>Thriving corridor</b>	Rural Corridors needs to attract increasing levels of investment and broaden economic opportunities & build on local & other skills & experience to underpin “regionally based employment, whilst sustainably managing future socio-economic growth & development” ( <a href="http://www.southernhighlandsbusiness.com">www.southernhighlandsbusiness.com</a> )
3 <b>Affordable, convenient &amp; efficient access</b>	Rural Corridors should facilitate access to markets, employment, economic activity, healthcare, welfare, retail services & social activities
4 <b>Cohesion</b>	Rural Corridors needs to facilitate the development of a robust well-integrated structure, networks & communities – ranging from social networks to the hierarchy of roads & central places with a view to harnessing the resultant significant energy dividend for sustainable development
5 <b>Rural heritage &amp; character</b>	Rural Corridors should facilitate growth & development that builds on & takes cognizance of the Corridor’s rural heritage & identity – creating a unique & innovative morphology as well as a formidable & enduring brand.
6 <b>Clustering &amp; Network Development</b>	Rural Corridors should facilitate industrial and/or business clustering & networking linked to the creation of sustainable & vibrant economic nodes with a view, inter alia, to creating agglomeration economies that, in turn, are envisaged to attract a broader spectrum of business & other investment into the corridor.
7 <b>Sustainability</b>	Rural Corridors should seek to ensure that economic, social, political, institutional & environmental issues are taken into account in terms of planning & implementation of Corridor projects
8 <b>Integrated planning &amp; implementation</b>	By definition, nodal & linkage development (which beget corridors) is integrative, & so, besides the transport & communication sectors, a coordinated nodal & linkage development initiative would need to involve other sectors, which – from a spatial perspective – can be classified as <i>central place-based service providers</i> , further subdivided into the following clusters:

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		<ul style="list-style-type: none"> <li>• Postal services &amp; other logistical support services (its footprint &amp; range of services in rural areas needs to be widened e.g. providing a combination of freight &amp; passenger services)</li> <li>• Health, social service &amp; policing sectors</li> <li>• Education / human capital development sectors, and</li> <li>• Local economic development (LED) / small, micro, &amp; medium enterprises (SMMEs) / rural market development sectors.</li> </ul>
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Source: Authors own conceptualisation, 2016

**Key corridor considerations:** Table 3 enumerate some “of the” key “spatial planning and land use management” and human settlement considerations that should be taken into account in the corridor development process (www.gpwonline.co.za).

Table 3: Key considerations for planning

Integrated spatial planning & land use management	Human Settlements Issues
<ul style="list-style-type: none"> <li>• Ensure consistency with other policy &amp; strategic plans</li> <li>• “Maintain the rural character &amp; diversity of land values across rural areas”, whilst acknowledging “competing uses of rural land” (www.southernhighlandsbusiness.com).</li> <li>• Address the impact of peri-urban land uses (areas close to or on the edge of existing urban areas) on existing farming &amp; future urban development by providing certainty for long-term uses through appropriate land use zoning, subdivision controls &amp; the identification of long-term urban release areas</li> <li>• Ensure that new rural developments are not supported unless they are “part of an agreed structure plan” or local settlements “strategy” (www.southernhighlandsbusiness.com)..</li> <li>• “Limit development in places constrained by important primary industry resources” &amp; significant “scenic &amp; cultural landscapes” (www.southernhighlandsbusiness.com).</li> <li>• “Provide for the protection of extractive industries &amp; mineral resources through appropriate land use zonings &amp; planning controls that limit the potential for land use conflict in the buffer areas around these resources” (www.palerang.nsw.gov.au)</li> <li>• Prioritize major nodes as the focus for the majority of new developments</li> <li>• Preserve &amp; support the identified hierarchy of commercial centres for the rural areas</li> <li>• “Plan for the provision of infrastructure &amp; the sequencing of development” along rural corridors (www.southernhighlandsbusiness.com).</li> <li>• Generate a “clear vision of what role the private sector will play in the sustained provision of infrastructure &amp; as competing operators providing high-value differentiated services to customers” (www.mcli.co.za)</li> <li>• Recognize “the” significance “of” rural land uses, including the “socio-economic benefits of rural land use &amp; development” ((www.southernhighlandsbusiness.com).</li> <li>• Guard against &amp; minimize rural land fragmentation</li> <li>• Finalize land claims &amp; implement measures designed to minimize rural land use conflicts</li> <li>• “Facilitate the orderly &amp; economic use &amp; development of rural land for rural &amp; related purposes” (www.gazette.nsw.gov.au)</li> <li>• Provide flexibility &amp; standardised subdivision in rural zones to “allow land owners greater” chances “to achieve” corridor “development” objective “in the relevant zones” (ibid).</li> <li>• Consider, with consent, subdivision for the “purpose of primary production to create a lot of a size that is less than the minimum size otherwise permitted for that land” (ibid), and</li> <li>• Ensure human development, including skills, empowerment &amp; participation</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen key “nodes or activity” centres within the corridor “that will provide opportunities for the concentration of socio-economic activities” that support “the” viability of “the” corridor (www.joburg-archive.co.za)</li> <li>• Provide opportunities for affordable human settlements especially at the designated nodes to “provide local residents with a choice of residential location, housing typology and density” (ibid)</li> <li>• Set aside adequate land for in existing nodes to accommodate future needs for human settlements</li> <li>• “Additional development areas” should “only be considered if” justified by a “local settlement strategy that assesses the net” “socio-economic benefit of additional rural residential land against the loss of the potential development of the land for agricultural activities” (www1.goulburn.nsw.gov.au)</li> <li>• “Manage the location &amp; impacts of rural residential development” (www.southernhighlandsbusiness.com).</li> <li>• “Rural residential development should only be undertaken on the basis of an agreed municipal settlement strategy” (ibid)</li> <li>• “Housing not ancillary to agriculture &amp; rural residential development in rural areas should only be allowed where it is in accordance with an agreed plan” (ibid)</li> <li>• “Planning for rural residential land must be integrated with the supply of relevant bulk infrastructure &amp; transportation services” (ibid)</li> <li>• Ensure that planning for human settlements opportunities takes into consideration the natural &amp; physical constraints &amp; opportunities of the land</li> </ul>

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**Corridor Nodal Development: Entrenching Place-Making:** The nodal (urban) areas of the Corridor should be characterised by a broad range of land uses, including retail, office, housing, government uses, industrial, warehousing, hotel and catering facilities. It will be important to enhance the place and link roles of the linkage infrastructure by ensuring keener “integration with land uses, including future mix and density. This includes retaining or creating an amenity condition which is consistent with the market conditions necessary to make” such “land uses, viable”. It also implies “the creation of a street environment that supports a beneficial interaction between the street and adjacent buildings”. In addition, “the amenity of the land use edge should enhance the street environment and vice versa” (www.urbandesignforum.org.nz).

**Integrated Development Planning:** The principal coordinating mechanism for rural infrastructure and service delivery is the Integrated Development Planning (IDP) process, where a mandatory link between development priorities specified in the IDP – spatially referenced in the statutory Spatial Development Framework (SDF) – and the allocation of a municipal capital investment budget has been established. Proposed Corridor projects should thus be included in both the SDFs and IDPs of the municipalities in question. This process will be one among a number of integrative platforms that can be utilized by the Corridor development process.

**Strengthening inter-agency linkages and collaboration:** As already elaborated, the current capacity constraints of local government “tend to subvert coordinated and integrated development”. “The” corridor “must be seen as an opportunity for” entrenching “institutional pluralism”, i.e. “the distribution of development responsibility among” the public and “private sectors”, state-owned enterprises, organised labour, non-governmental and community-based organizations (www.ifrtd.org).

#### 3.4.4 Improved Movement, Accessibility and Service Standards

**Entrenching Integration through Improved Developmental Freight/ Logistics:** “It is generally acknowledged that rural” South Africa “has unrealised agricultural potential”, where commercial crops, animal husbandry and agro-forestry are prominent (Mashiri et al, 2012). It is also well understood that “most farming communities, especially small-scale commercial and subsistence farmers face considerable difficulties in marketing their products largely because of inadequate, unreliable and often unaffordable transport services, due in part to “un-trafficable” roads, as well as the low density of demand. This has had the effect of lowering productivity as the incentive to produce for the market is effectively truncated – which has meant that”:

- “High losses occur due to lower carrying capacities”
- “Opportunities to produce more profitable crops are not taken”
- “Integration of the largely disparate markets is hindered”
- “Accessibility to inputs, extension services, and information is often constrained”
- “Cost increases for both the producer and end-user”, and
- “Production for the market is truncated” (www.ecprov.gov.za).

“The” importance of developing “adequate transport and logistical arrangements to cater for the small farmer” and the small business with a view to “mainstreaming local economies, reducing” unnecessary income “leakages, improving the distribution of income and impacting directly on the livelihoods of the greater majority of rural people” cannot be over-emphasized. However, the “management of supply chains in rural areas” is notorious inefficient. “Enterprises are geographically removed from key ‘resources’ that are critical to business operation and growth, such as economic activity, markets, information, infrastructure and raw materials. A disjuncture therefore exists between producers and existing traditional distribution channels, which negatively impacts on the cost-efficiency with which businesses can potentially operate”. It “will” thus be imperative to seek to improve “freight for small scale farmers” and small businesses “showing linkages with anchor projects, rural markets and distribution points for agricultural products, storage and processing facilities, distribution points for inputs (extension, seed, fertilizers, etc.), and

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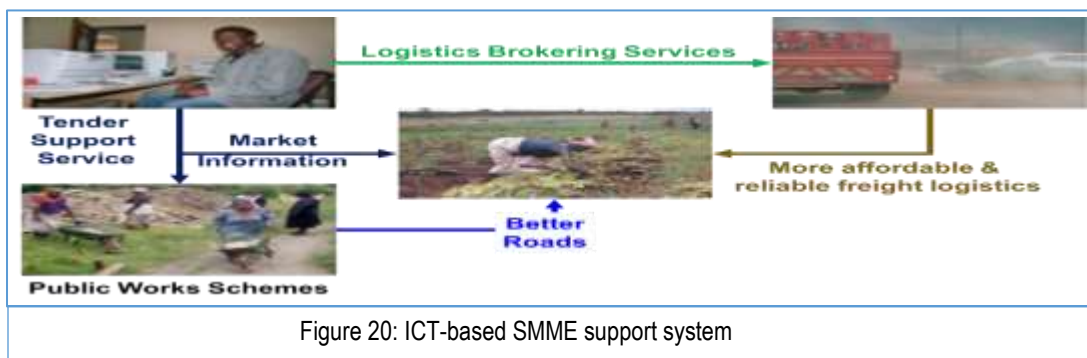
employing brokerage firms” to connect transport service providers and product owners (www.ecprov.gov.za).

The conventional response of “mainstream producers and distributors would typically be to develop highly synchronised, bulk-efficient supply chains, connected to large or medium-sized centres, supported by computerised market information. While this model economizes on inventory and handling costs, it consumes large amounts of transport and energy resources”. In addition, “labour-intensive small-scale producers and distributors are” marginalized “because of their inability to compete on the same terms”. Clearly this model is inappropriate for developing rural communities. Thus, “instead of the current static conception of how products and services should be distributed to spatially dispersed communities”, there is a “need to explore innovative and developmentally effective rural” freight and “logistics solutions”. These “solutions would need to adequately respond to and reconcile competing demands for accessing social facilities” and “transporting people”, and “accessing economic” opportunities and “transporting goods and services” (www.mailman.greennet.org.uk).

*Clearly there is a need to stimulate a greater volume of internal trade and associated economic opportunities in rural areas* Given that both the rural small enterprise and social delivery sectors have unsatisfied demands for logistical services, it is postulated that these demands can best be met in an integrated way. The achievement of sufficient economies of scale, i.e. achieving viable minimum thresholds to make the operations viable is circumvented by way of economies of scope, or through virtual agglomeration economies associated with integrated hub-satellite operations.

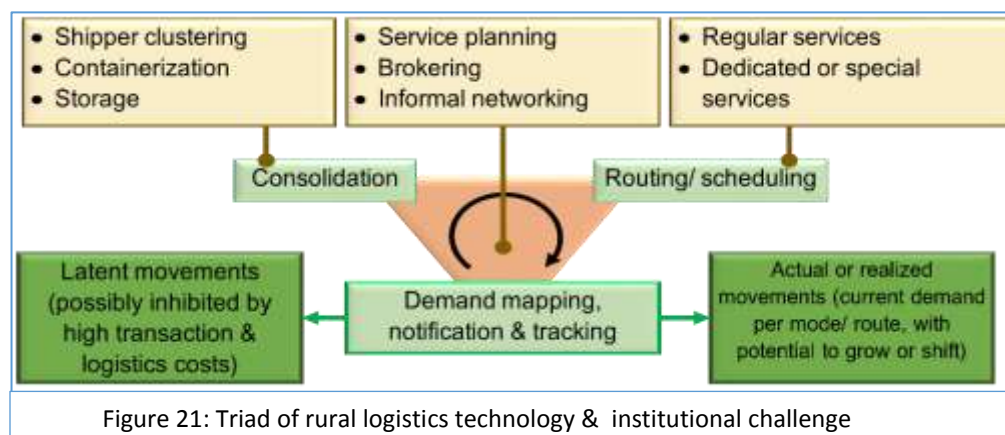
### 3.4.5 Leveraging ICT: Scope for intelligent rural logistics

Given the general problem of low-volume, uncoordinated supply chains in rural areas, many of the obvious interventions and associated technology challenges have to do with the consolidation and synchronization of small freight volumes, often involving many origins and destinations, as well as inter-modal transfers (e.g. from light delivery vehicles to larger trucks) (refer to Figure 20). Some of this often occurs through informal networking, but this typically involves only a few shippers, one transport mode, and usually only one destination (e.g. a fresh produce market). In such cases, the consolidation/ synchronization problem is fairly simple, and would not normally require the services of logistics brokers or the use of computer assisted scheduling and routing systems.



Such assistance could however be very useful when it is necessary to coordinate complex, many-to-many movements (i.e. involving many origins and destinations) and inter-modal transfers (refer to Figure 21 for an example).

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“Formally organised, ICT-supported brokering and service planning could also be very useful for the identification of latent movements (which are possibly not happening because of high transaction and logistics costs), and for the tracking of actual or realized movements” (Mashiri et al., 2005; Naude et al., 2006; Mashiri et al., 2006). As an illustration, Figure 21 above unpacks a *triad of logistics technology and institutional challenges as well as associated intervention options*.

Table 4: Key considerations for movement and accessibility

- Defined start and finish
- Limit inappropriate adjoining development & access points off rural corridors
- “Encourage the development of passenger interchanges in major regional nodes” along the corridor to facilitate access to commercial areas ([www.southernhighlandsbusiness.com](http://www.southernhighlandsbusiness.com))
- *Creating opportunities for new business to be visible and accessible to passing traffic*
- Encourage alternative forms of transport (intermediate & non-motorized transport modes & others).
- Develop strategies to identify future improvements to the capacity of roads and rail & bus services to cater for population growth & to identify infrastructure investment opportunities ([www.southernhighlandsbusiness.com](http://www.southernhighlandsbusiness.com)).
- Encourage public involvement & private sector participation to improve the provision of transportation infrastructure & services in general & community transport services in particular.
- Facilitate & encourage the development of *developmental rural freight logistics* along the corridor, a phenomenon, which describes a “combination of rural communications, freight & passenger transport & storage services aimed at”:
  - “Exploiting possible synergies with allied services”
  - “Effectively harnessing information & communication technologies”
  - “Leveraging any related innovations, in order to provide affordable & effective access to an expanding range of local as well as mainstream supply chains, business support services & markets”
  - “Building activity linkages that must form the basis of viable economic supply chains”, and
  - “Improving logistical coordination & other operational matters” ([www.mailman.greenet.org.uk](http://www.mailman.greenet.org.uk)).
- Recognise and protect the regional transport network through appropriate planning provisions ([www.southernhighlandsbusiness.com](http://www.southernhighlandsbusiness.com))
- Improve rural areas’ resources “comparative advantage by overcoming its severe infrastructure constraints through the establishment of network of cross-rural development corridors”
- Increase thresholds through “densification & the establishment of ancillary & feeder infrastructure to widen the corridor” catchment & beneficiary dragnet ([www.fdi.net](http://www.fdi.net)).

Source: Authors own conceptualisation, 2016

### 3.4.6 Sustained and Inclusive Rural Corridor Economic Development

With an average Gini-coefficient of just over 63 for the 2010-2014 period South Africa is considered one of the most unequal societies in the world, in part because of lack of integration of the economy. To foster this integration through trickle-down has not worked over the years and is unlikely to work in future, thus it is imperative to proactively and boldly intervene in major policy implementation areas especially those with a spatial and infrastructure development dimension such as Corridors as they have the potential to stimulate inclusive development. The economic advantage of corridor development include greater

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agglomeration economies (economies of scale in the larger nodes and/or economies of scope in the smaller hubs) resulting from pooled resources, assets, facilities and labour markets, as well as a higher propensity for economic innovation and growth (through business networks, exchange and knowledge, etc.) and generally increased competitiveness in polycentric forms of economic organisation (Priemus, 2003). Connectivity of centres along a corridor can, in some meaningful way, be viewed as a form of polycentricism. This has the effect of on-ramping the development efforts of rural nodes and their hinterlands onto the economic mainstream – ensuring that inclusive growth results in higher disposable incomes and thereby transforming consumption, production and reproduction patterns of communities along the Corridor including marginalized communities. “Some of the associated benefits of economic integration” through the NLD approach “include the following”:

- “Lower prices for distributors and consumers because of the increase in trade”
- “Balance of money spent from cheaper goods and services can be used to buy more products and services”
- “Wider selection of goods and services not previously available”
- “Market expansion, more investment into the region and greater diffusion of technology”, creating “more employment opportunities” or opportunities to earn higher incomes, and
- Economies of scale for the larger establishments and economies of scope for the smaller enterprises creating “productivity gains and thus greater national and global competitiveness” (www.kzninvestor.co.za).

Rural development corridors should thus be viewed as a deliberate process of crowding-in of investment on the back of typical transport and energy infrastructure networks, which are integrated with hinterland economic opportunities through nodes along the length of the corridor with a view to distributing national resources for shared prosperity. Table 5 below enumerates key economic considerations for RDCs.

Table 8: Key Economic Considerations in Rural Corridors

<ul style="list-style-type: none"> <li>• Promote economic &amp; activity diversity to strengthen “economic viability &amp; sustainability of” the area (www.joburg-archive.co.za)</li> <li>• Provide “efficient accessibility to employment &amp; investment opportunities” (ibid)</li> <li>• Promote &amp; stimulate investment in continuously multiplying business “opportunities” (ibid)</li> <li>• “Provide the basis &amp; support for long-term investment priorities” (ibid)</li> <li>• “Support the economic contribution of existing &amp; potential primary industries” (www.southernhighlandsbusiness.com).</li> <li>• Ensure “adequate supply of land to support economic growth &amp; human settlements” (ibid)</li> <li>• “Build the vitality &amp; capability of” nodes “within the corridors” so “they can provide employment opportunities for necessary service industries, as well as enabling the incubation of new industries &amp; businesses” (www1.goulburn.nsw.gov.au).</li> <li>• “Protect the agricultural sector of the region by measures including limiting uncontrolled fragmentation of rural lands through subdivision &amp; controlling the extent &amp; location of non-compatible land uses such as rural residential” development (ibid).</li> <li>• Strengthen corridor-based employment opportunities through the identification &amp; protection of major employment generators, including distributors/logistics clusters</li> <li>• Protect &amp; “zone land that is identified” through “local strategic planning as of significant agricultural value” given the importance of agriculture to food self-sufficiency &amp; poverty reduction (www.palerang.nsw.gov.au).</li> <li>• “Manage rural lands to accommodate &amp; protect the range of values that comprise rural lands being scenic, environmental &amp; economic” (www.southernhighlandsbusiness.com).</li> <li>• Provide business planning support &amp; access to capital for prospective rural investors</li> <li>• Provide opportunities for cooperative development to facilitate bulk purchasing of inputs &amp; strengthen the capital base for rural enterprises.</li> <li>• Provide operational, marketing, transaction and logistics support through a standardised quality of improved logistics activities for the purpose of improved costing and pricing in rural logistics.</li> </ul>
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- Promote and protect “opportunities for current & potential productive & sustainable economic activities in rural areas” ([www.gazette.nsw.gov.au](http://www.gazette.nsw.gov.au)).
- “Provide linkages to” & synchronise “private sector investment” in “project opportunities” especially “with” regard to “key infrastructure projects” ([www.fdi.net](http://www.fdi.net)).
- Promote “wider development potential” & generation of employment opportunities (by way of, for example, densification strategies & clustering) through infrastructure provision & anchor investments (ibid).

Source: Authors own conceptualization, 2016

### 3.4.7 Human Resources Development and Community Empowerment

**Capacity Development:** The human development approach, which is premised on the view that the key building block to sustainable socio-economic development revolves around building the capacities of and empowering affected people and their organisations (Mashiri et al, 2014), entails investing in, for example, a skills audit to understand requirements, setting aside and ring-fence a capacity building, and assisting in building and strengthening institutions including small enterprises and cooperatives. Through this approach, cognitive and physical capacities become more productive, resulting in more sustainable incomes for more people. It also allows labour to be footloose – multiplying choices for the Corridor communities. For the human development approach “therefore, leadership is decisive and learning is capital” ([www.gov.za](http://www.gov.za)).

**Community Mobilization and Empowerment:** Community empowerment “relates to the capacity of individuals and communities to actively transform themselves and their organisations with a view to managing the process of change in their everyday lives in their local context. This involves strengthening and building upon existing knowledge bases and capacities” ([www.ifrtd.org](http://www.ifrtd.org)). Key interventions could include raising awareness on the potential the Corridor represents, generating a focused range of activities around which communities could be mobilized to contribute to and integrating with the corridor agenda, and developing programs to empower Corridor communities including improving access to information and the required knowledge to make the right choices.

Because of the scarcity of resources, the value-for-money concept has increasingly been invoked, which demands as a departure point, the drawing on local knowledge, insights and inputs to the planning and implementation process. A consultative and participative approach incorporating galvanising beneficiary communities is thus a *sine qua non* in Corridor development projects. Thus strengthening community involvement entails the meaningful participation of beneficiary communities in the interests of accountability, equity, democracy and mutual growth, which in turn, tends to improve the chances of success of such projects.

### 3.4.8 Planned Environmental Resources

As illustrated in the Figure 22, the environmental resources of the corridor should be managed in such a way as to reap socio-economic dividends in terms of better energy security, less inequalities, sustained economic development and increased quality of life. In this regard, the RCDF should place “high value on” long-term “development options that make more sustainable use of land”, water “and” other “resources and” proactively “respond to risks associated with climate change” ([www.southernhighlandsbusiness.com](http://www.southernhighlandsbusiness.com)). The RCDF should thus be designed to both sustainably exploit and protect the Corridor environmental resources by, for example, undertaking an audit of these resources and developing a comprehensive plan that enhances land use / transport planning outcomes. In addition, enhancing accessibility through improved

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Figure 22: Climate-change and sustainable transport

connections between land uses and encouraging mixed land uses should be the defining elements of the Corridor.

Transport has emerged as one of the biggest polluters of the environment. Corridor solutions provide an option to move towards a low carbon transportation system. “Low carbon transportation systems not only support economic growth and development contributing to reducing poverty, but also reduce pressure on oil prices, which contribute to higher food prices. Clean transport reduces the impact on climate change, mitigating the impact on food security (chronic and transitory), health (heat related illness and disease) and more broadly across many aspects of economic development” ([www.en.openei.org](http://www.en.openei.org)).

### 3.4.9 Strategic Marketing and Communication Framework

**Communications Strategy:** The linchpin to realising the potential of Rural Corridors lies in seeking to create an identity and sense of place for the Rural Corridor area with a view to generating interest from private and public sector investors as well as communities within and outside the Corridor. It is thus important to create and execute a communication strategy for the corridor. Ideally, the Secretariat could be the custodian and implementing agency of such a strategy including gathering, managing and disseminating information in such a way as to excite the investor community and ordinary folk alike. Such open communication and sustained stakeholder and community engagement needs to be informed by the Corridor Vision and the development framework that undergirds it. The Corridor is thus visualized not only as a transformative policy instrument to strengthen the competitiveness of the rural economy, but also, to bridge the divide between the mainstream economy and the ‘*second economy*’ represented by the rural hinterland through which the Corridor traverses and interacts. The stakeholder engagement process could involve the following iterative elements, namely, *public education and outreach, stakeholder and community consensus-building, stakeholder and community compacts and alignment.*

**Untrammelled service delivery – One-stop Information Centre:** This needs to be bolstered by the provision of a well-resourced one-stop information centre. Various platforms could be employed for engaging the public including an interactive website, social media, regular newsletters, brochures, media events, forums, meetings, workshops and maintaining high visibility at conferences – all of which could be orchestrated from the centre. The centre could also double up as a platform for showcasing tourism products of the Corridor and the opportunities existing in terms of investment. For these and other offerings, the watchword for the centre, which should ideally be under the aegis of the Secretariat, is peerless service, particularly in respect of the availability of information upon request by the public.

**Corridor Branding: Creating a Sense of Place/Identity:** One of the most effective ways of accessing and securing markets is by way of marketing high quality products and opportunities to potential investors and target markets through a recognizable brand. The Secretariat should lead efforts at creating **timeless branding** (a persistent, unique business and social identity that encompasses the personality and quality of the corridor) that investors, inhabitants and Corridor users proudly want to be associated with. Secondly, given that brands have been moving inexorably towards more simplified brand names and brand designs, rural corridors should have short, catchy names which bequeath the corridor character. The Secretariat should facilitate a process leading to the generation of an agreeable brand name. Alongside this effort, the

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Secretariat should also set in motion inclusive conversations leading to the development of a brand strategy.

**Corridor Visibility:** Signage should be provided at the gateway to the corridor, to announce the beginning of a unique experience for users, an opportunity for investors and a liveable environment for Corridor inhabitants. In addition, notice boards announcing nodes on the corridor and what these nodes are famous for could be erected. Variable signs could be generously employed to provide intelligence for Corridor users, for example, about infrastructure conditions. Truck stops should be clearly marked including symbols of their key offerings. Distances to the nearest truck or node should be marked.

**Corridor Investment Conferences:** It will be important for the Secretariat to plan for and execute successful investment conferences. This should be preceded by a thorough assessment of the opportunities in the corridor, including developing a clear strategy for business growth incorporating sector development strategies for example, for agro-industry, tourism and transport – which opportunities would then be converted into bankable projects – culminating in an investment atlas. This could be buttressed by corridor investment road shows – that seek to maximise opportunities to position the Corridor as a world class location for doing business – targeting prospective investors across the global village. It will also be important for the Secretariat to seek to empower participating local municipalities with the wherewithal to champion / market offerings within their jurisdiction.

**Corridor Development Incentives:** As indicated elsewhere, Corridor nodes are considered the interface between the mainstream economy and the second economy. Thus their role needs to be proactively strengthened through, for example, attracting focused investments. In this regard, in order to retain existing businesses as well as attract new entrants into the Corridor, it will be important to efficiently provide a battery of incentives ranging from fiscal incentives (tax holidays and grants) to the provision of adequate infrastructure, the impeccable adherence to good governance principles as well as enhancing the ease of doing business in the corridor. Such incentives will be tailor-made to suit the interests of prospective investors within the purview of the Corridor vision.

#### 3.4.10 Harnessing ICT for Sustainable Rural Development: Prospects for Bridging the Digital Divide

Mounting anecdotal evidence suggests that the disadvantages that result from isolation “severely limit the ability of” rural “residents to access basic services, social infrastructure and support, attain higher education”, access and compete in produce and other markets can be mitigated through access to rapid and inexpensive information and communication technologies (ICTs) (Mashiri & Msithini, 2014, Dray et al., 2012). Given the explosion in mobile phone ownership, coverage and usage (which is expected to continue even among those classified as chronically poor), as well as the continued extension of ICT networks in developing rural areas, there is an exceptional opportunity for rural municipalities to harness these developments in support of more coordinated and competitive rural supply chains (ibid). Rural corridors thus present opportunities to provide ICT infrastructure relatively cost-effectively along their spine and at the designated development nodes. As a cross-cutting theme across all intervention pillars, ICT should thus be considered as a serious development partner.

## 4. RESEARCH CONTRIBUTION

### 4.1 Rural Corridor Development Guidelines Summary

This Rural Corridor Development Guideline provides both strategic direction and operational guidance with regard to the development of sustainable development corridors in rural areas. This is accomplished through the medium of a Rural Corridor Development Framework framed by an overarching Vision (inspired by a polycentric/nodal and linkage development approach to development) and undergirded by eight strategic intervention pillars. These pillars find expression in and are supported by the Corridor Implementation Framework. The implementation framework is an amalgam of proposed policy positions,

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supported by intervention options, which are in turn, buttressed and made operational through detailed specific action items. Finally, a selection of projects (which seek to find a balance between focusing on investment for economic growth and investment in social redistributive measures to ensure development endeavours also reach poor households in the corridor) should be drawn complete with indicative costs – providing a platform for plan “implementation in the short-to-medium and long-term horizons” ([www.researchgate.net](http://www.researchgate.net)). Figure 23 summarizes the rural corridor development guideline.



Figure 23: Rural Corridor Development Guideline Summary

## 5. RESEARCH LIMITATIONS

While this study presents the application of rural corridor to promote integrated and sustainable rural development, the actual research project considered different corridor types such as urban corridors and sub-types. The other corridor types are pencilled to be stand-alone papers. While literature review was extensive and analysed various cases from all over the World, in proceeding with implementation of projects both benchmarking visits to local, regional and international areas would be important to ensure successful implementation of the concept. In addition, subjecting the corridor guidelines to a pilot and demonstration project is also essential in seeking to build fit for purpose solutions.

## 6. DISCUSSION & CONCLUDING REMARKS

In seeking to arrange the information and ideas in this paper into a coherent corpus of thought, a few strands of thought that filtered through revolved around the organizing ideas related to key success factors. The linchpin to realising the potential of Rural Corridors lies in seeking to create an identity and sense of place for Rural Corridor areas with a view to generating interest from private and public sector investors as well as communities within and outside the Corridor. It is thus important to develop and execute a robust strategic plan guided by a vision around which stakeholders can rally around. The Corridor should thus be visualized not only as a transformative policy instrument to strengthen the competitiveness of the rural regional economy, but also, to bridge the divide between the mainstream economy, as represented by the Corridor destinations and the ‘second economy’ as represented by the rural hinterland through which the Corridor traverses. In addition, in order for the Corridor Vision to fulfil its developmental mandate, it will be imperative to ensure adequate resource mobilization and stakeholder engagement, as well as the implementation of change management measures. Finally, a political champion is required to harness the energies encapsulated in the corridor vision to build enough momentum for the corridor to eventually run full steam with little impetus.

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## 7. REFERENCES

- Department of Environmental Affairs. 1998. “National Environment Management Act, Act No. 107 of 1998”. Pretoria, South Africa
- Department of Rural Development and Land Reform. 2013. “Spatial Planning & Land Use Management Act, Act No. 16 of 2013”. Pretoria, South Africa.
- Contributions to Economics.2016.
- Dray, Susan, Ann Light, rew Dearden, Vanessa Evers, Melissa Densmore, Divya Ramachandran, Matthew Kam, Gary Marsden, and Nithya Sambasivan. 2012. “Human– Computer Interaction for Development :Changing Human– Computer Interaction to Change the World”, Human Factors and Ergonomics, 2012.
- Mashiri M, Mokonyama M, Mpondo M, Chakwizira J & Mdunge D. 2014. “Utilising transport to revitalize rural towns: The case of Mthatha”, Proceedings of the 33rd Southern African Transport Conference (SATC 2014) 7 – 10 July 2014 Proceedings ISBN Number: 978-1-920017-61-3 Pretoria, South Africa pages 319 – 337
- Mashiri, M & Msithini, T. 2014. “Harrismith-De Beers Pass: Towards productive DFSG Corridor infrastructure investment”, Pretoria
- Mashiri, M. & Naude, A. 2006. “Hub-satellites & corridors: Improving access & service delivery”. CSIR Report, Pretoria.
- Mashiri, M. Mpondo B. Mokonyama, M. Chakwizira, J. Mdunge, D. & Goldman, A. 2012b. “KSD IRTP for sustainable Development: Planning & Delivering More Integrated, Intelligent & Sustainable Rural Access Systems”. DOT/ KSD/DBSA Report, Mthatha
- Mashiri, M. Naude, A & Nchabeleng, A. 2003. “Rural Transport Strategy for South Africa (2003; 2007)”. Department of Transport, Pretoria.
- Mashiri, M. Naudé, A. & Marrian, B. 2005. “Integration & transformation of rural service delivery: The role of management information & decision support systems”. ENVIRONMENT 2005: International Conference on Sustainable Transportation in Developing Countries – 29th January – 2nd February, 2005
- Mashiri, M.A.M. & Pienaar, P.A. 1994. “A transportation provision strategy for rural communities”. Annual Transportation Convention Research Forum, Vol. 4, Annual Transportation Convention. Pretoria
- Mashiri, M.A.M. 1997. “Improving mobility & accessibility for developing communities”. Contract Report CR-97/041, Pretoria: South African National Department of Transport.
- Mashiri, M.A.M., & Sarkar, A.K. 1998. “Towards a rural accessibility planning framework”. Proceedings of the Southern African Transport Conference, Pretoria.
- Mintek & RSDIP. 2006. “A Resource based African Development Strategy (RADS)”. Pretoria
- Muller, K. 2010. “Urban growth along motorways in Switzerland”, Landscape and Urban Planning, 2010, October 30
- National Planning Commission .2012. “National Development Plan”. Presidency, Pretoria
- Naude, A. Mashiri, M.A.M. & Sarkar, A. 1998. “Integrated approaches to rural accessibility & associated economic development problems”. Contract Report CR-98/052, Pretoria: South African Department of Transport.
- Peter Robinson & Associates.1998. “A Pilot Rural Service Centre Initiative for KwaZulu-Natal”. KZN Department of Local Government & Housing.
- Priemus, H. & Zonneveld, W. 2003. “What are corridors & what are the issues? Introduction to special issue: the governance of corridors”, Journal of Transport Geography 11 (2003) 167–177
- Safiri (2014) “Durban-Free State-Gauteng Development Corridor: Integrated Freight Logistics Plan-Draft Report”. Department on Transport. December 15, 2014, Johannesburg.
- South African National Assembly .1996. “Constitution of the Republic of South Africa”, Cape Town
- Stilwell, T. & Atkinson, D. 199). “The economic rationale & modalities for rural infrastructure development: Developmental local government in rural service delivery”. DBSA, Midrand.

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[www.carecprogram.org](http://www.carecprogram.org)  
[www.commodities.open.ac.uk](http://www.commodities.open.ac.uk)  
[www.ecprov.gov.za](http://www.ecprov.gov.za)  
[www.ecprov.gov.za](http://www.ecprov.gov.za)  
[www.ecsecc.org](http://www.ecsecc.org)  
[www.edumbe.gov.za](http://www.edumbe.gov.za)  
[www.fdi.net](http://www.fdi.net)  
[www.gazette.nsw.gov.au](http://www.gazette.nsw.gov.au)  
[www.gazette.nsw.gov.au](http://www.gazette.nsw.gov.au)  
[www.gle.iipcollaborative.org](http://www.gle.iipcollaborative.org)  
[www.gov.za](http://www.gov.za)  
[www.gov.za](http://www.gov.za)  
[www.gpwnline.co.za](http://www.gpwnline.co.za)  
[www.gpwnline.co.za](http://www.gpwnline.co.za)  
[www.hcpcme.org](http://www.hcpcme.org)  
[www.hcpcme.org](http://www.hcpcme.org)  
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[www.mrhilton.ca](http://www.mrhilton.ca)  
[www.palerang.nsw.gov.au](http://www.palerang.nsw.gov.au)  
[www.researchgate.net](http://www.researchgate.net)  
[www.rfa.co.za](http://www.rfa.co.za)  
[www.sadc.int](http://www.sadc.int)  
[www.southernhighlandsbusiness.com](http://www.southernhighlandsbusiness.com)  
[www.sustranssa.co.za](http://www.sustranssa.co.za)  
[www.transed2012.in](http://www.transed2012.in)  
[www.umtshezi.co.za](http://www.umtshezi.co.za)  
[www.urbandesignforum.org.nz](http://www.urbandesignforum.org.nz)  
[www1.goulburn.nsw.gov.au](http://www1.goulburn.nsw.gov.au)

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# Employing a Functional Region Approach to Promoting Inclusive and Sustainable Rural Development: The Case for Xhariep District Municipality, Free State Province

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## Abstract

The “Department of Rural Development and Land Reform (DRDLR)” is mandated by “the” Government “of” the Republic “of” South Africa to champion rural development programs in the country. To achieve this, the department is required to develop plans that will address the needs of people who live in extreme poverty and underdevelopment in rural South Africa. In September 2011, DRDLR initiated a program, which focuses mainly on the people living in 27 most impoverished districts in the country. The development of Rural Development Plans (RDPs) to assist in identifying development opportunities in these rural spaces to underpin their quest to achieve their full development potential was a core activity in this initiative. Xhariep District is among the districts identified as needing special attention and therefore to benefit from the development a RDP. Employing a case study methodology, this paper presents key tenets that informed the generation of robust functional regions in Xhariep as a precursor to developing forward-looking and inclusive Xhariep rural development interventions that undergird the plan. The paper is further intended to act as a departure point to facilitate deeper dialogue regarding alternative rural development pathways in the context of promoting diverse spatial planning identities and development dialects in South Africa. This is achieved through discussing firstly the headline rural development issues and challenges, opportunities and constraints relating to Xhariep District. Secondly, possible and alternative rural development strategies and actions for enhancing growth and development in Xhariep its immediate environments are presented. Lastly, the need to expand platforms for extensive discussion and dialogue around generating rural development paradigms and solutions dictated by contextual realities is considered paramount to generate plans fit for purpose.

## Keywords

Inclusive rural development, functional regions, poverty, underdevelopment, Xhariep

## 1. INTRODUCTION

“The Department of Rural Development and Land Reform (DRDLR)” is mandated by “the” President “of” the Republic of South Africa to champion rural development programs in the country. To achieve this, the department is required to develop plans that will address the needs of people who live in extreme poverty and who are subjected to underdevelopment in rural parts of South Africa.

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In September 2011, the DRDLR initiated a program, which focuses mainly on the people living in the 24 most impoverished districts in the country. Currently, the number of these priority Districts has been increased to 27. The Department deemed it necessary to initiate the process of development of Rural Development Plans (RDPs) that will assist in identifying development opportunities of these rural spaces to ensure that they achieve their full development potential. Xhariep rural development municipality was one of the areas where the program was implemented, the focus of this paper. Xhariep District is among the Districts identified as poor and needing special attention through an RDP.

Generally, spatial economic regions whether urban or rural can be classified into four broad categories. The classification is based on economic growth and development status. These are mainly:

- *Leading regions:* These are usually regions experiencing high urban growth and development patterns and trends. These regions are mainly associated with maximum exploitation and use of the advantages and benefits of globalisation and increased urbanisation,
- *New and emerging regions:* These are regions that exhibit signs of increased connectivity between places, thus suggesting that some ‘new regions’ are being created by improved connectivity that then shapes the flows and markets for economic activities such as labour and land markets, infrastructure platforms.
- *Lagging regions:* These are regions that are losing population and experiencing industrial restructuring, or rural regions that are experiencing emigration.
- *Political regions:* These are regions created on the backdrop of political reasons and considerations. These regions can be a province(s) which do not represent ‘natural’ or ‘functional’ geographies and are mainly exist for administrative purposes.

“In South Africa, National Development Plan (NDP)” refers to “the” national imperative of “eliminating poverty and reducing inequality by 2030” ([www.newsdeskmedia.com](http://www.newsdeskmedia.com); [www.harper-adams.ac.uk](http://www.harper-adams.ac.uk)). This is hoped “to be” achieved “in” collaboration with the implementation of key legislation and policies that support growth and development “principles of spatial justice; spatial sustainability; spatial resilience; spatial quality and spatial efficiency” (SPLUMA, 2013; [www.dejure.up.ac.za](http://www.dejure.up.ac.za)). The NDP further emphasises the need for the “development of a National Spatial Framework (NSF)” ([www.poa.gov.za](http://www.poa.gov.za).) A key motivation behind this is the need to address the “inherited spatial divisions” as “South Africa’s spatial structure perpetuates exclusion. Distorted growth patterns cannot be ignored as they worsen economic and logistical inefficiencies. Many places are not growing economically because of a lack of infrastructure, inadequate skills, poor innovation capacity and weak governance”. The NDP “indicates that locked-in potential of these areas could however be released through targeted investment in economic and social infrastructure” investment strategy (ibid). Infrastructure is emphasised as potentially playing a key role in linking lagging to leading regions reducing the economic distance and enhancing goods, labour and capital market opportunities. Through the Presidential Infrastructure Coordinating Council (PICC) Government of South Africa “adopted an Infrastructure Plan that is intended to transform the economic landscape of South Africa; create a significant number of new jobs; strengthen the delivery of basic services to the people of South Africa and support the integration of African economies” ([www.governmentdigest.co.za](http://www.governmentdigest.co.za).) Based on this work, 18 “Strategic Integrated Projects (SIPs) have been developed and approved to support economic development and address service delivery in the poorest provinces. Each SIP comprises a large number of specific infrastructure components and programmes” ([www.edd.gov.za](http://www.edd.gov.za).) It is envisaged that this spatial development initiative will provide a key analysis platform for the SIPS particularly with respect to SIP 6- Integrated Municipal Infrastructure; “SIP 11- Agri-logistics and Rural Infrastructure and SIP- 17 Regional Integration for African Cooperation and Development” ([www.imperiallogistics.co.za](http://www.imperiallogistics.co.za)).

Various growth and development initiatives and interventions being promoted in South Africa have resonated in suggesting the need to establish functional regional areas in the space economy. According to Feldman et al., (2005, p. 1-5), functional regions are regions that exhibit ‘economic catchment’ attributes

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which make them possess an economic spatial rationale that provides the necessary platform for facilitating spatial clustering, targeting and (re) configuration. This spatial (re) configuration is dependent on factors such as regional value chain analysis; market trends; transportation flow; journey-to-work data and corridor-node relationships. Optimised and appropriately defined functional economic regions as an example can act as platforms for engaging in better economic integration between rural and urban areas; deployment of improved cross-boundary infrastructure planning and making it easier to adopt effective sharing formulae regarding economic and non-economic assets to secure economies of scale.

## 2. LITERATURE REVIEW

### 2.1 Rural development planning: international practices, lessons and perspectives

#### 2.1.1 Emerging Trends in Rural Economies

Shifts and changes in the structure of rural economies are happening. The majority of these shifts and trends are “continuations of long-term trends, such as the move away from agriculture towards the service sector”, circular rural to urban migration, green agriculture etc. In contemporary times, “agricultural activity has become much more capital-intensive”, and in the process “shedding its workforce and, more recently, has refocused towards quality food products and environmental benefits. This has been accompanied by the growth of manufacturing and especially service employment in rural areas – sometimes referred to as the ‘New Rural Economy’ which also includes agri-parks” (Taylor, 2008, p. 4; [www.carnegieuktrust.org.uk](http://www.carnegieuktrust.org.uk)). “An increasingly important element of economic development strategy for many rural communities is making money from the appeal of landscapes, rural environments and local cultural heritage” what others terms “eco-tourism”. “Rural areas which have successfully employed such a strategy have been able to associate strong local identities with an external marketing image. However, not all rural areas are able to capitalise on this “new economy” and still face multiple struggles (Shucksmith, 2013, p. 1; *ibid*).

#### 2.1.2 The changing social composition of rural societies

Overall, internationally evidence exists that the “social composition of rural areas has been transformed in recent decades” abounds. This is explained “principally by selective migration, in particular counter-urbanisation and out-migration from rural areas. Some” rural “areas have benefited from counter-urbanisation (i.e. the reversal of the migration from rural to urban areas normally associated with economic and social development)”. However some “sparsely populated rural regions; still suffer from rural out-migration becoming lagging or depleted regions. “With rural out-migration” comes the risk of the demise of the skill and knowledge base (including the traditional rural skill base), loss of social and cultural capital in the community and a weakening of rural community ties to the land”. The implications of any type of rural condition need to be fully understood if proper responses are to be advanced. In addition, “rural areas exhibit growing inequality both between people and between places. Some of the areas which have become “booming and exclusive” rural regions and corridors are highly accessible rural areas, where incomes have risen most over the past decades, much faster than in sparse rural areas”. “There is” however “a deepening” divides “between accessible rural areas and more remote” and deep highly inaccessible rural areas ([www.carnegieuktrust.org.uk](http://www.carnegieuktrust.org.uk)).

### 4.2 Main development approaches

#### 2.2.1 “Top down” versus “bottom up”

The “*top-down “rural development”*” paradigm is based on “overcoming rural differences and distinctiveness through the promotion of universal technical skills and the modernisation of physical infrastructure”. “Urban centres” are viewed “as growth poles” that propel further “economic development

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of regions and countries”. “Rural localities” are “thought as distant” and disconnected “technically, economically and culturally from the main (urban) centres of activity. From this perspective, appropriate” rural development plan and “policy might subsidise the improvement of agricultural production, while encouraging labour and capital to leave” rural areas to more efficient “agglomerated” urban areas or “big containers” (Lowe et al., 1995, p. 47-53; [www.carnegieuktrust.org.uk](http://www.carnegieuktrust.org.uk)). Empirical evidence has however confirmed that the classic ‘top-down’ model of rural development is flawed. This is because the model “fails to recognise the considerable potential for growth in rural areas” and at “the” same time leaves behind or excludes rural areas from development (ibid). Taking this into consideration and given other realities, from “the late 1970s onwards”, rural development plans and “policy” started “to” shift in favour of “alternative ‘bottom-up’ (i.e. ‘driven from within’ or sometimes called endogenous) development model which mainly concerns the mobilisation of local resources and assets. “Bottom-up development”” departure point was to argue that the potential of local assets and resources should be exploited for enhanced growth and development outcomes in rural areas (Bryden et al., 2004; ibid).

### 2.2.2 “Networked’ rural development model

Starting the late 1990s, thinking of academics and policy makers firmed up to acknowledge that the that “social and economic development processes in any locality inevitably” includes “a mix of “bottom-up” and “top-down” forces. The local level necessarily interacts with places elsewhere, beyond the locality itself” especially given the reality of “globalisation” and “glocalisation” ([www.carnegieuktrust.org.uk](http://www.carnegieuktrust.org.uk)). Critical for rural development is leveraging “socio-economic development processes” so that “those institutions, actors and networks that have the capacity to link businesses, communities and institutions involved in governance at a variety of scales” can perform effective role and catalyse rural development efforts (ibid). “From this perspective, development should be re-oriented so as to use local assets (physical or human, tangible or intangible, within or outside) with the objective of retaining as much as possible of the resultant benefit within the area concerned” (Shucksmith, 2010). “In this way, rural areas are no longer seen as playing a passive, dependent role” in development, “but are able to generate innovative processes and shape future development” (Shucksmith, 2000). “Moreover, the lessons learned from “place-based action”” include the fact that rural areas are functional development zones where spatial targeting (i.e. to tap into territorial potential or off-set territorial and locational disadvantages) can be used to stimulate higher development and growth rates([www.carnegieuktrust.org.uk](http://www.carnegieuktrust.org.uk)). Consequently rural areas are active agents in informing, “and indeed” transforming, “policies and processes which operate more at higher levels”. In assessing the “network model to rural development” the OECD point out “that partnership and integration at the local scale are not in themselves” alone “sufficient” conditions to secure rural development. “Integration between actors at different levels (and especially between different levels of government) is also essential” complementary conditions that should be in place if sustainable rural development is to be realised (OECD, 2006; ibid).

### 2.2.3 The “big push model” of rural development

According to Paul Rosenstein-Rodan's the “big push model” is needed if rural development is to take place. This model states that there is a minimum level of resources that is required as input before significant rural development can be witnessed. Although this minimum rural resource investment is not enough to facilitate complete rural development this set of resources are necessary to ensure that future rural development will have a chance of success. This is likened to the process of an aircraft's take-off process. To launch a country into self-sustaining growth is a process that needs a critical initial speed to produce the launch. The scientist supports the theory by two theses, namely that isolated and small efforts cannot induce a sufficient impact on growth; and development can occur only after it has reached a minimum level of investment. However, mobilizing sufficient resources to cause the necessary shock continues to be the greatest difficulty that rural areas with development deficit cannot overcome by themselves. The criticism of this theory relates precisely to the fact that the resources needed to produce the “great shock” are of such high order of

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magnitude that relies on external help. In fact, a rural area or country that is able to mobilize the amount of necessary minimum resources to generate the pig push is not a poor rural area or country. A number of tools are available to facilitate the implementation and development of a rural development plans. One of the tools approaches and methodologies that can be adopted include the REED (Rural Economic and Enterprise Development) approach.

### 2.3 “Local economic development, integrated development plans and the REED Approach”

“Local economic development is about local people working together to achieve sustainable economic growth that brings economic benefits and quality of life improvements for all in the community” (World Bank, 2004; [www.nri.org](http://www.nri.org)). “It brings into focus the role of rural towns in fostering new opportunities for people, rather than simply as marketing hubs, which has tended to be the implicit assumption of many policy makers”. “This is important for promoting broad based economic growth, improving social welfare and promoting a more varied and vibrant local economy”. “Several broad intervention areas are identified in terms of local economic development initiatives for poverty alleviation” (World Bank (2001, 2004; [www.nri.org](http://www.nri.org))). “A refinement of local economic development is the REED approach, which aims at enterprise development, economic diversification and innovation of the rural economy, increasing its market orientation, and fostering value addition to rural products. The intensification of agriculture and the transformation of agricultural and natural resource products should in turn lead to increased rural non-farm employment, increased incomes and demand for both agricultural and non-farm products. Thus, a major objective of REED is to stimulate and enhance sectoral linkages between agriculture, agri-business and non-farm activities including service provision” (Davis, 2004, *ibid*). “A top-down, macro-level perspective has been shown to be largely ineffective in generating growth” (de Janvry and Sadoulet, 2003). “The REED approach also has a bottom-up dimension, mobilising local people to recognise and build on their strengths, enhancing their livelihoods and creating incomes in the process” ([www.nri.org](http://www.nri.org)). The REED approach places great emphasis on the role of *enterprise clustering for scale economics and economic linkages, which enable horizontal diversification*”. Normally, catchment areas rural towns supports the principle of clustering and economic linkages. This community based clustering and linkages approach is illustrated in “Figure 1”.

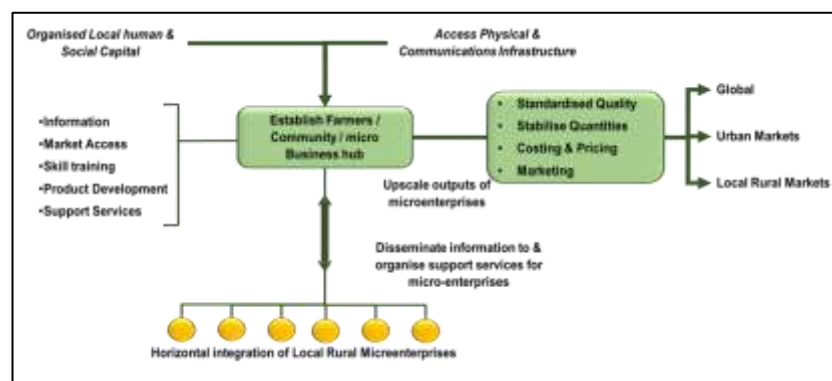


Figure 1: “Community based clustering dynamics and economic linkages”  
Source: Authors own conceptualization, 2016

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### 3. OBJECTIVES /RESEARCH QUESTIONS

The specific objectives of the XDRDP project (which are incidentally the objectives of this paper) included, but were not limited to the following:

- Create a living environment that offers improved quality of life for the district population residing in the district towns and the rural areas
- Encourage local resource sharing and the boosting of entrepreneurship and to facilitate employment creation
- Focus on the uniqueness of all the areas of Xhariep through the creation of destinations in all the regions; and
- Create an environment within which visitors to the district can interact with new and innovative technologies (sustainable living mechanisms and systems)

### 4. APPROACH & METHODOLOGY

The paper is based on a case study approach. Xhariep was identified by the DRDLR as a pilot rural district municipality in the “Free State” where a rural development plan had to be generated. This RDP would act as a reference and showcase of how RDP can be generated in similar rural areas in the “Free State province” and by extension “South Africa” in general (Moeletsi, 2014). Both “secondary data” and “primary data” sources “were collected” and analysed from “the” Free State province ([www.uir.unisa.ac.za](http://www.uir.unisa.ac.za)). Consultants with key informants and stakeholders in the Free State province complemented the secondary data. Information collected from both primary and secondary data sources was analysed making use of a thematic approach as well as GIS. These analytical methods made it possible to separate and identify key opportunities and challenges in the study area. At the same time, the findings of the study were peer reviewed by the Project Steering Committee as well as Workshops that were organised to share as well as elicit further input from stakeholders. The project approach was organised in terms of phases as illustrated in Figure 2.

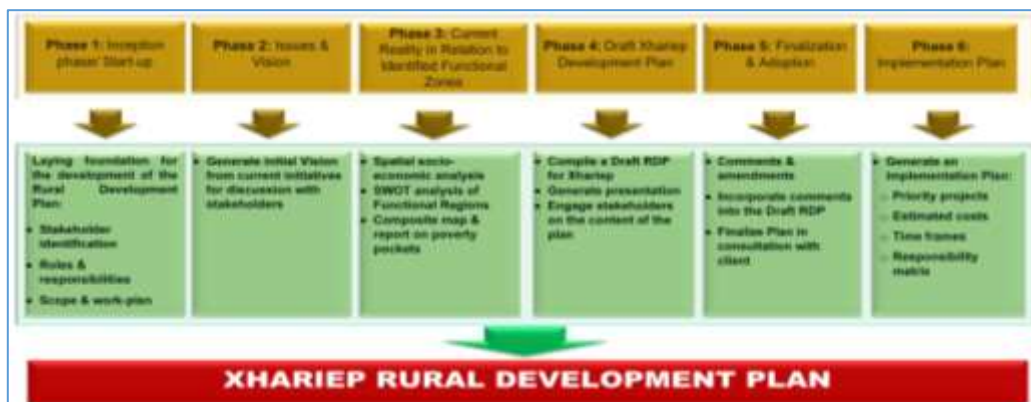


Figure 2: XDRDP Project Phases Approach  
Source: Authors own conceptualisation, 2016

### 5. RESEARCH ANALYSIS & FINDINGS / RESULTS

In crafting the Xhariep District Rural Development Plan (XDRDP), it was imperative to ensure that it is aligned with the various rural development policies and guiding documents.

#### 5.1 Socio-economic characteristics of Xhariep

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Xhariep District had a total population of 146 259 in 2011. Notable is the negative population growth rate of -1.07 for the District from 2001 to 2011. Kopanong had the highest rate of depopulation (-1.31). Most of the population – over 60% - is in the working age band of (15-64 years). Also the dependency ratio at between 54%-65% in the 4 municipal areas is quite high.

In the Free State, the educational profile from pre-1994 years has significantly improved. Functional literacy has increased from 64% in 1994 to approximately 80% in 2010. The Grade 12 pass rate has increased from 56% to 71% in 2010. Notwithstanding these improvements, only 23% of the Free State population have a Grade 12 qualification and only 8% a tertiary qualification. According to the 2011 Census, only 27.1% of the Free State population (aged 20+) matriculated, with only 9.5% continued further with tertiary education. Approximately 7.1% of the Free State adults have no

Health care facilities in Xhariep DM are mainly provided by clinics and mobile clinic services in the various LM areas. There are a total of 23 fixed clinics in the District and 18 weekly mobile clinics are offered in 3 municipalities with the exception of Naledi that has none.

In terms of the economic outlook, general unemployment rates vary from 22% to 31 % throughout the area. *Youth unemployment* is in every case per local municipality “higher than the average rate of unemployment in the District” ([www.ap.pef.czu.cz](http://www.ap.pef.czu.cz)). The existing situation can be explained in terms of limited opportunities for employment as well as the level of skill that is limited. 36% of the population do not receive an income, where 50% of the population works for an income of between R1-R3200 per month. This is indicative of a largely dependent population and that there exists some levels of poverty in the LM. The unemployment, income and poverty patterns in Xhariep reflect the general trends in Free State. Historically, Free State’s economic sector was essentially based on the agricultural and mining sector, contributing more than 50% to the province’s economy. In the period between 1997 and 2012, the Free State’s economy has experienced profound structural changes in the mining and agriculture sectors. In general terms, this is an indication of a maturing economy and a mirror of the basic trends currently visible throughout all of South Africa’s provinces, namely growth in financial industries, expansion of technological and information-based enterprises, increase of tourism, industries, etc.

The consequence of the above challenges has been changes in demographic patterns, especially pertaining to migration of people from rural areas. Unemployed population groups migrate from commercial farms and/or mining areas to the nearest urban areas and settlements. Furthermore, an increase has occurred in the number of unemployed people in the Free State migrating to neighbouring provinces such as Gauteng and Mpumalanga. This trend can also be associated with the increase in the “number of” households “living below the poverty line” ([www.nri.org](http://www.nri.org)). The high levels of poverty, low incomes and an increase in inequality in income distribution make “it difficult for many people to” have “access” to basic “services” (FSGDS, 2012; [www.jrf.org.uk](http://www.jrf.org.uk)). Unemployment levels range from 31.4% in Mohokare to 22.3% in Letsemeng. Figure 3 presents information on employment proximity in Xhariep district. Employment proximity is an analysis based on the Rand value of employment within a 20 min drive time from any employment centre. In the case of Xhariep it will refer to the urban concentrations where the likelihood of employment would be higher. Figure 3 presents the unemployment profile in Xhariep.

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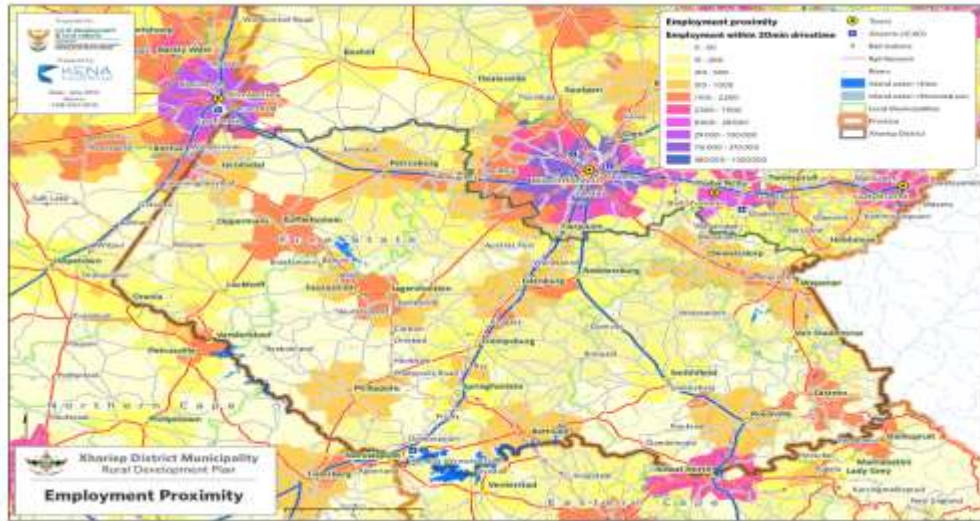


Figure 3: Employment proximity in Xhariep District  
Source: Xhariep RDP, 2015

Figure 3 indicates the following interesting trends. Three centres outside Xhariep provide employment. These are which are Bloemfontein, Kimberly and Aliwal North. There is a strong concentration of possible employment around Zastron and Sterkspruit in the east and Sterkspruit is situated in Eastern Cape. Areas of employment proximity within Xhariep are clustered around Koffiefontein, Fauresmith Jagersfontein and Edenburg area.

## 5.2 Spatial structuring elements

Xhariep “district municipality enjoys high levels of connectivity to other” Free State “districts, provinces within South Africa, as well as to airports and harbours”. “The” N1 road that links the “Gauteng Province with the” Western Cape “Province passes” Edenburg, Trompsburg “and” Springfontein “in the” central “part of the district” ([www.thabomofutsanyana.gov.za](http://www.thabomofutsanyana.gov.za)). “The” N6 “road” represents a major transport axis in the south-eastern part of the district “linking Bloemfontein with Aliwal North via Reddersburg, Smithfield and Rouxville” ([www.mohokare.gov.za](http://www.mohokare.gov.za)). The N8 “road”, constitutes “a major road-link” in “the” north-western section “of the district linking” Kimberley with Bloemfontein via Petrusburg, and ultimately with the Lesotho Kingdom. The “R26/R711/R712 primary roads” that “constitute major road on the eastern border” of the Free State Province originate in the south eastern part of the Xhariep district at Rouxville, linking the said town with Harrismith in Thabo Mofutsanyana District via Stadensrus, Wepener, “Hobhouse, Ladybrand, Clocolan, Ficksburg, Fouriesburg, Clarens and Phuthaditjhaba”. An airfield is located at Gariepdam town (ibid). “Railway connections within and to the outside of the district are established. In this regard, the interprovincial rail freight arterial line (diesel, single railway track) from” Noupoort to Springfontein, as well as Dreunberg to Springfontein (electric, single railway track) has reference. The main line from Springfontein to Bloemfontein via Trompsburg and Edenburg (“single track and diesel operated) is another major rail freight arterial line servicing the district”. Rail freight “branch lines located in the district” are Springfontein – Koffiefontein and Aliwal-North – Bloemfontein, the latter being located in the eastern most part of the district (ibid). Border posts at Zastron (Makhaleng), Wepener (Van Rooiensek) and Sephapis connect the district with the Kingdom of Lesotho. Figure 4 presents the major transportation structuring elements in Xhariep.

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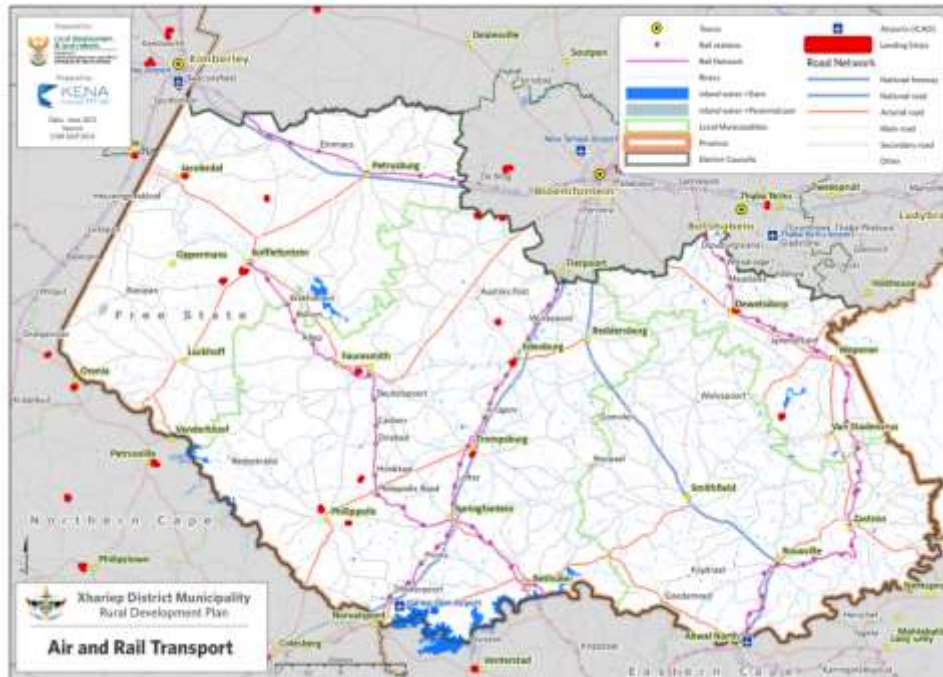


Figure 4: Transportation - air, rail and roads  
 Source: Xhariep RDP, 2015

### 5.2.1 Parks, sport, recreation and cemeteries

All urban areas have parks. However, these are poorly maintained due to a lack of funding and resources. Most of the parks in the previous disadvantaged communities have not been properly developed and therefore illegal occupation of these parks occurs. There are ample sport and recreation facilities in the district. However, the condition of these facilities is poor due to a lack of maintenance and vandalism. Some of these have been rented to clubs that charge community members a fee to utilise these facilities. This hampers poor communities to gain access to these services. A new regional sport complex was recently developed in Trompsburg.

### 5.2.2 Bulk infrastructure and basic services

“90% of households have access to piped water in Xhariep, significantly higher than South Africa (73%) and the Free State (83%). There has however been an across-the-board decline in this provision” ([www.aridareas.co.za](http://www.aridareas.co.za)). However, the number of households without access to water still remains a challenge. “Electricity provision is relatively higher than national and provincial levels. Currently 72% of households have access to the grid (for lighting). While Kopanong has shown improvement since 2001 (surpassing 80%), the level in Letsemeng is sharply down from nearly 75% in 1996 to 64% at present. The electrification backlog has expanded greatly in Letsemeng, from 3,200 to well over 5,000 between 2001 and 2007. Xhariep enjoys a high relative provision of sewerage, with nearly two-thirds of households receiving this basic service” (ibid). However, a total of over 8000 people still have no access to sewage. Proportionate to the number of people the level of service delivery in Naledi and Kopanong are better than that of Letsemeng and Mohokare. Furthermore, Mohokare still has a high number of bucket toilets in comparison to the other three where it is almost eradicated.

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### 5.2.3 Topography and Vegetation

Generally plains dominate in the west and lowlands with hills in the east. Per municipality the topography is described by Kruger, 1983. In Letsemeng, the topography is slightly irregular plains with scattered low hills and pans (>80% slopes below 5%) and lowlands with hills towards Xhariep River. In Kopanong the topography is composed of lowlands with hills (50-80% slopes below 5%). In Naledi, the topography is made up of lowlands with hills (50-80% slopes below 5%); irregular undulating lowlands with hills (50-80% slopes below 5%); slightly irregular undulating plains and occasional hills (>80 % slopes below 5%); while in Mohokare, the topography can be described as lowlands with hills (50-80% slopes below 5%); irregular undulating lowlands with hills (50-80% slopes below 5%); slightly irregular undulating plains and occasional hills (>80 % slopes below 5%).

The following vegetation types exist in Xhariep, namely:

- *Letsemeng*: The natural vegetation in this municipal area consists of the Acocks Veld Type 36 False Upper Karoo. In this area the veld type corresponds to the Vegmap vegetation unit NKu3 Northern Upper Karoo.
- *Kopanong*: The natural vegetation was mapped by Acocks as Veld Type 36 False Upper Karoo with small occurrences of Veld Type 50 Dry Cymbopogon-Themedra Veld. In this area these correspond largely to the Vegmap vegetation unit Gh3 Xhariep Karroid Grassland.
- *Naledi*: The Naledi municipal area largely coincides with the Acocks Veld Type 36 False Upper Karoo with smaller areas of Veld Type 50 Dry Cymbopogon-Themedra Veld in the west and Veld Type 48 Cymbopogon-Themedra Veld in the east. Roughly corresponding Vegmap vegetation units are the following: Veld Type 36: Gh2 Aliwal North Dry Grassland, Veld Type 50: Gh6 Central Free State Grassland and Veld Type 48: Gm3 Eastern Free State Clay Grassland.
- In the Mohokare municipal area the western plains consist of Acocks Veld Type 36 False Upper Karoo; Veld Type 50 Dry Cymbopogon-Themedra Veld is a component in the central areas. The Zastron area consists of Veld Type 48 Cymbopogon-Themedra Veld. More or less corresponding Vegmap units are: Veld Type 36 - Gh2 Aliwal North Dry Grassland, Veld Type 50 - Gh6 Central Free State Grassland and Veld Type 50 – Dry Cymbopogon-Themedra veld.

### 5.2.4 Water availability

Spatially the District largely coincides with two subareas of the Upper Orange Water Management Area, namely the Vanderkloof sub-area (Orange River catchment between the Caledon confluence and the Vaal River confluence) and the Riet/Modder sub-area (Catchment of the Riet River together with Modder tributary). Within these water management areas 558 million m<sup>3</sup> water is annually required for irrigation. About half of this applies to the Xhariep District (the planned new irrigation by emerging farmers is budgeted in), 152 million m<sup>3</sup> for urban use and 15 million m<sup>3</sup> for rural use. According to the Free State Province Water Master Plan of 2010 these water requirements will be met at least until 2025. In the longer term water availability within the District may be affected by (a) demands on water transferred out (3 584 million m<sup>3</sup> by 2025), (b) increased water use in the Mangaung metro area and (c) demands on the water from Lesotho Highlands Phase 2 by developments in Gauteng and Mpumalanga. As a result of increasing competition for water, irrigated agriculture in the district could increasingly face the following: strict compliance with registered water use rights; temporary nature of water use rights; the need and policies for equity and reform in water use (National Water Resource Strategy, 2013); water conservation and demand management and the dangers that may hold for salinization if leaching of salts is inadequate, and lastly deterioration of water quality.

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### 5.3 Agricultural regions in Xhariep

Xhariep District is characterised as a farming area, with sheep farming predominantly practiced within the central region and cattle and game farming in the western part. The eastern section has more of small scale subsistence farming as well as wheat and maize farming. The “Jacobsdal area produces crops such as grapes, wheat, potatoes, maize, vegetables, and peanuts and farm red meat and wool. The Luckhoff and Koffiefontein areas farm cattle, ostrich and sheep. The Oppermansgronds vineyards produce significant income for this small town” ([www.sabcoha.org](http://www.sabcoha.org)). Figure 5 indicates the farming activities in Xhariep district.

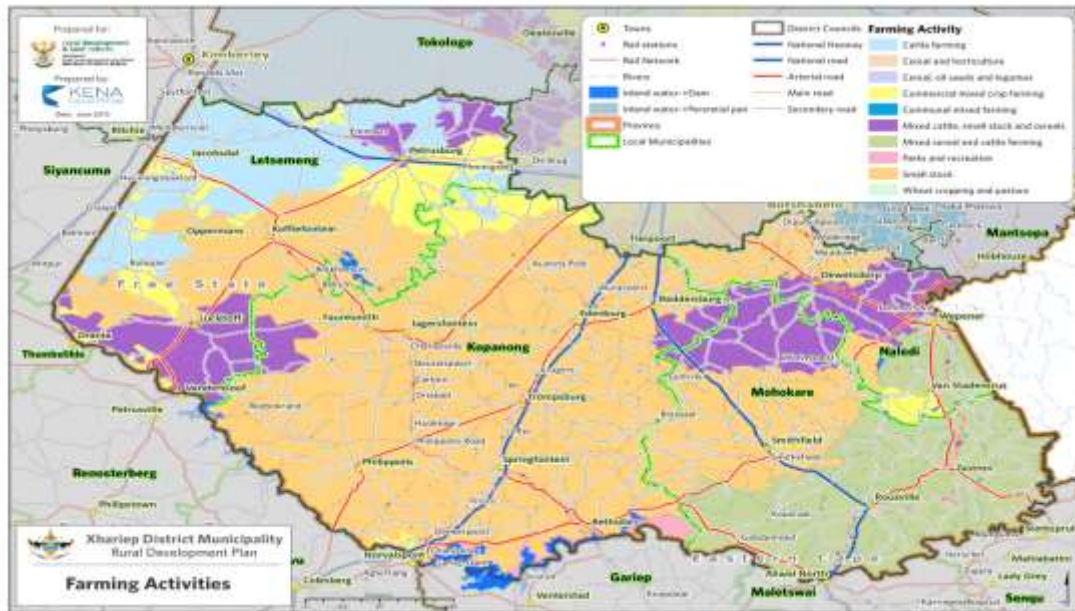


Figure 5: Farming activities in Xhariep district  
Source: Xhariep RDP, 2015

In Xhariep the magisterial Districts that are realising the highest GFI in relation to beef cattle production are illustrated in Figure 5. It is only Zastron district that recorded significant contributions towards the GFI by cattle production. Other areas that recorded are Dewetsdorp, Wepener and Petrusburg. These areas are located in the east of Xhariep district in the Mohokare and Naledi DM areas.

#### 5.3.1 Tourism

The “tourism sector is an important source of employment nationally, accounting for” approximately “7% of jobs in South Africa .The National Department of Tourism plans to increase the sector’s contribution to the national economy to R338 billion by 2015, of which R125 billion will be direct” (Free State Business , 2012; [www.freestatebusiness.co.za](http://www.freestatebusiness.co.za)). The Free State can be regarded as an agri-tourism destination: Agri-tourism which may be viewed as part of rural ecotourism and includes activities such as farm tours, farm bed and breakfast facilities, hunting, angling, hiking, tractor rides, farm markets, festivals, horse-riding, camping, etc. Figure 6 shows the major tourism zones and corridors in Xhariep District. Already, there exist a number of activities around which a more robust tourism sector can be built. Some of the attractions in Xhariep include: Fauresmith is the second oldest town in the Free State and hosts the *International Horse Endurance Race* every year in July. The race covers a distance of 205 km and runs over three days. Koffiefontein is home to unique artworks and murals painted by Italian prisoners of war of the Second World War. *Wepener*: Well-known hiking and mountaineering trails have been developed in Caledon

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Nature Reserve. “*Friendly N6 Route*: This route takes travellers through the scenic southern Free State and towns such as Smithfield and Rouxville, and on into the Eastern Cape Province” (ibid). It passes through open countryside where sheep, cattle and goats graze, Anglo-Boer War battle fields and off-the-beaten track villages and towns. *Lake Gariep*: This one of the biggest dams in the region and is host to the Gariep Water Festival. There also a game reserve at Lake Gariep. There is enormous opportunity to grow this resort to one of the major attractions not only in the District but the country.

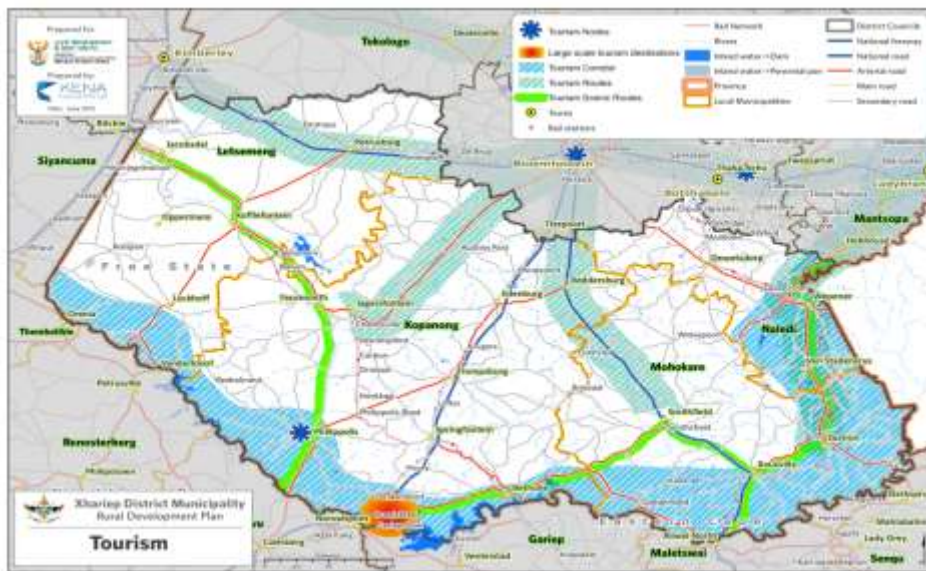


Figure 6: Tourism Nodes and activities in Xhariep  
Source: Xhariep RDP, 2015

### 5.3.2 Mining

The diamond “industry in the Free State” ignited after “the” founding “of” Jagersfontein where “the” some of the first diamonds in South Africa was found ([www.dbsa.org](http://www.dbsa.org)). The Jagersfontein Mine was developed by De Beers in 1870’s and produced some of the world’s largest diamonds. The Excelsior, a 995.2 carat stone was the largest in the world for 12 years after it was found in 1893. Today Jagersfontein is the oldest and largest open mine in the South Africa and also a major tourism attraction. In general however, the significance of mining to the district economy has been declining

### 5.3.3 Existing economic linkages

Economic linkage occurs where an economic sector provides the necessities of other sectors. In other words the sector produces a product or products that are needed for production or consumption in another sector or sectors. Figure 7 presents the Gross Value Addition (GVA) that occurs within the sectors of the Xhariep economy. This is a representation of the GVA of the following sectors, namely Agriculture and Forestry, Finance and Business, Manufacturing, Mining and Quarrying, Wholesale and Retail, Community and Social Services.

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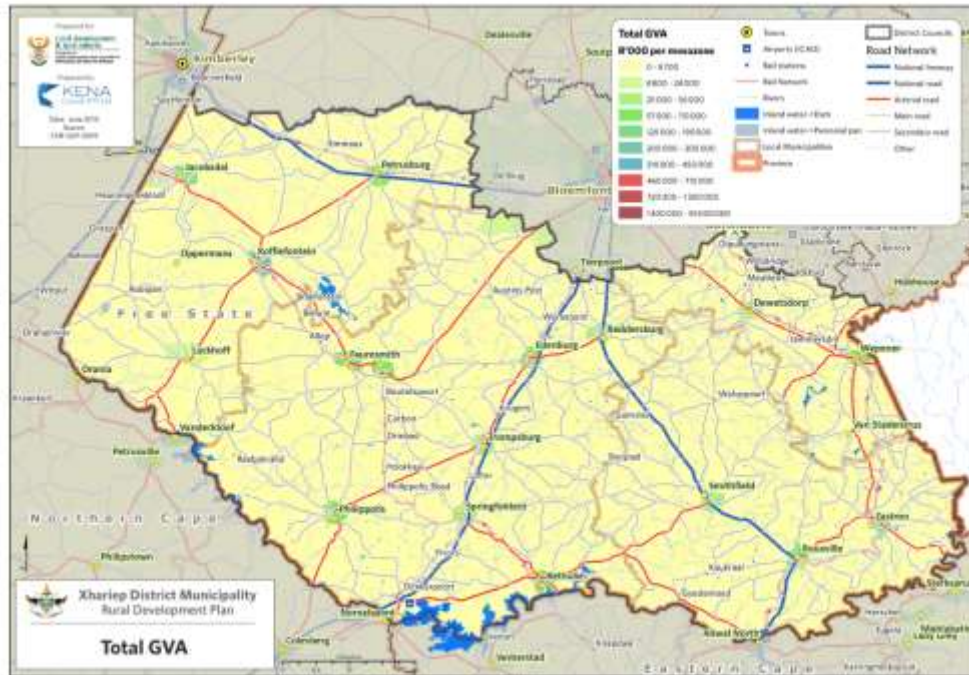


Figure 7: Total GVA per mesozone  
Source: Xhariep RDP, 2015

### 5.3.4 Vision for Sustainable Rural Development

Three different Vision statements were developed for Xhariep during the initial phases of the project. However, during the last public consultation process, the three Vision statements were presented to all the delegates and the following Vision Statement for Xhariep District Municipality was selected as the preferred one: ***“...By 2030, Xhariep will have a resilient and sustainable economy and thriving communities through embracing technological innovation...”***. The above Vision together with the objectives will drive the strategic intention of the district as encapsulated and fully enunciated in the District Rural Development Plan.

### 5.3.5 “Challenges faced by small towns” in Xhariep

“The” typical “challenges faced by the small towns” include the following:

- “The population of the farms (both farmers and farm workers) has decreased to such an extent that they exert little purchasing power in the small towns. Few commercial farms sell their products in the small towns –the main marketing channels are now located in bigger centres”.
- “Many government programmes do not penetrate rural areas. This includes initiatives such as the Apex Fund (SAMAF), Khula Enterprise Finance, the National Empowerment Fund (NEF), the Tourism Enterprise Programme (TEP), and even Small Enterprise Development Agency (SEDA) offices (DTI, 2005). Virtually the only programme that reaches local communities is SAB’s Kick-start programme, but this has increased the number of illegal alcohol outlets”.
- “Many key support providers (e.g. tax consultants, lawyers and even banks) are situated far away. For those companies trying to become formally registered, and operating within the law, access to such services becomes a major hurdle”.
- “Training is difficult to access. The Department of Labour (DoL) has stringent criteria about who can access training. It insists that aspirant trainees must already have a job. This disqualifies the many unemployed people who could benefit from training. Also, the DoL insists that a group of at

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least 20 people must be available to do a training course – which is often difficult in small towns, where the market could hardly keep a few people gainfully employed in any specific trade”.

- “Private capital is generally small in scale, and cannot undertake corporate social responsibility (CSR), which reduces the amount of money and technical support available for new start-up enterprises”.
- “The manufacturing base in small towns is typically limited, so that workers tend to have few opportunities for training and acquiring technical skills. People have limited experience in working in large organisations, and therefore lack an effective business network (CDE 2004, p. 55)”.
- “Few small towns have Chambers of Commerce. This makes it very difficult for municipalities to engage systematically with the local business sector. In addition, many black and coloured councillors have shown a steady disregard for local business interests, which further alienates government and business”.
- “Prematurely formalizing businesses, e.g. by means of business hives, has not been successful, and there are numerous cases of “white elephants” built with LED funding” ([www.uovs.ac.za](http://www.uovs.ac.za)).

However, despite these challenges opportunities in terms of strategies exist aimed at addressing these constraints. These range from government projects and activities aimed at supporting small to medium sized towns, SMMEs in the agriculture and tourism sector as an example (DTI, 2005, p. 39).

5.3.6 Branding of Xhariep: “Place branding (including **place marketing** and **place promotion**) is a new umbrella term encompassing **nation branding**, **region branding** and **city branding**”. “Place branding is the process of image communication to a target market”. “It is invariably related to the notion that places compete with other places for people, resources, and business; the global competition of cities”. “Place branding can even be considered as a “governance strategy for projecting images and managing perceptions about places” (Braun, Eshuis and Klijn, 2014, p. 64). “Place branding thus suggests that places, cities, regions or countries could be considered as brands, as long as perceived so”. “In this regard, many public administrations are implementing place-branding strategies”. “Therefore, contrary to the popular perception that destination-brand building is solely an exercise in communication, destination branding is, in reality, an exercise of identification, organisation and coordination of all the variables that have an impact on the destination image” ([www.en.wikipedia.org](http://www.en.wikipedia.org).)

### 5.3.7 Xhariep Rural Development Concept

The Xhariep Rural Development Plan concept is illustrated in Figure 9. The concept is assembled on the back of the three functional regions of Xhariep District, which indicates a specific interaction and mutual dependency. Elements of the Concept are highlighted in the following sections below per functional region.

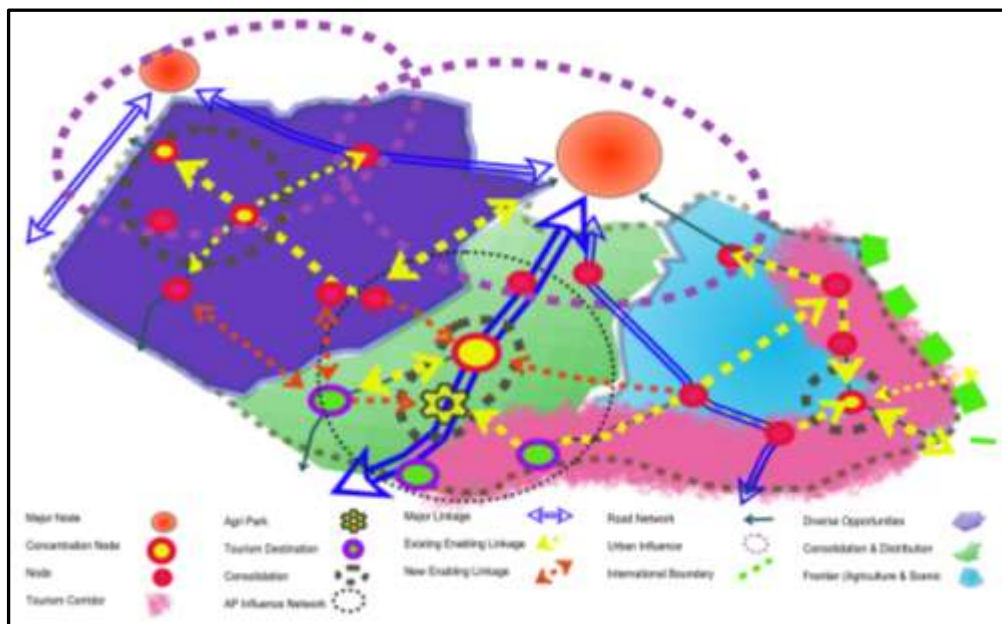


Figure 9: The conceptual Xhariep district rural development plan  
Source: Xhariep RDP, 2015

### 5.3.8 Region of Diverse Opportunities: Linkages

The existing enabling linkages in the study area include the following, namely:

- The most dominant linkage in the region is the N8 linking Kimberley and Bloemfontein. The link is situated in the most northern section of the region
- Lower order linkages from the N8 in the region are:
  - R 705 linking Jacobsdal with the N12
  - R48 linking Petrusburg (N8) with Koffiefontein and Luckhoff
  - R 704 linking Koffiefontein, Fauresmith and Jagersfontein to the N1
  - R706 direct link from Bloemfontein to Jagersfontein
- New enabling linkages
  - Upgraded linkage between Jagersfontein and Trompsburg
  - Upgraded linkage between Jagersfontein and Philippolis
  - Upgraded linkage between Luckhoff and Philippolis

### 5.3.9 Agriculture

In terms of agriculture, the following advantages exist, namely:

- *Expanded irrigation Scheme:* The region is characterised by an extended irrigation scheme, which is concentrated around Jacobsdal, Oppermansgronde, and include the proposed Bozrah project, which has the potential to unlock 2 000ha of potential irrigable land in the region.
- *Diversification of agricultural activities:* This is in terms of the commonage farmers (emerging farmers) require assistance to increase productivity and to develop into skilled farming units that can become meaningful role players in the Agri-park concept. The diversification of commercial agricultural activities in terms of the Agriculture Master Plan in terms of crop suitability. Dominant agricultural activities in the region include cattle farming, mixed cattle, small stock and cereal farming, small stock farming, pockets of irrigated land linked to commercial mixed crop farming.

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Land reform projects are located throughout the region where no concentration or economy of scale is evident. The existing farms need to be evaluated in terms of the agricultural potential and accordingly managed through the necessary interventions that will be created through the establishment of the Agri-park. The future allocation of the farms needs to be realigned with the agricultural master plan towards the creation of concentrated sustainable functional units. The establishment of game farms in the region. The functional region recorded 92 registered game farms for export in 2011. The significance of game farming in the region and district is a contributor to diversification and linkage to tourism. Establishment of farmer production support units and supporting infrastructure to crop suitability and expansion for instance cactus pear production and processing.

### 5.3.10 Tourism

Tourism in the region is marketed through the wine and diamond route with its origin at Jacobsdal through Jagersfontein with a link through Trompsburg to Philippolis

- Agro Tourism:
  - Jacobsdal – wine and table grapes (some product diversification took place), table grapes appears to be a suitable crop for the area surrounding Jacobsdal
  - Jacobsdal – processing and selling of agricultural produce to travelling tourist
  - Koffiefontein – linkage to agro processing of produce of Oppermansgronde
  - Luckhoff – destination area created with the diversity of agricultural activities and game farms in the area.
- Mining related Tourism
  - Jagersfontein – redundant mining infrastructure dated from the previous generation and architecture.
  - The tourism route from Bloemfontein to Jagersfontein provides for lower order overnight facilities in the form of guest farms.
- Game farming associated tourism
  - Game farm database
- Watercourses and Dams
  - Enabling opportunities along water courses and dams for tourism with adequate, functional and clean facilities
  - Kalkfontein dam, Riet River, Modder River and Vanderkloof dam and linkage with SANBI protected areas.

### 5.3.11 Mining

The mining sector in the region is concentrated in the Koffiefontein and Jagersfontein area. The impact of the mining sector is evident in the contribution to the GVA of the region. Future mine closure due to exploited resource remain a possible social problem which will have a significant social impact on the population. Strategies for intervention are required to implement transformation and possible utilisation of mining infrastructure.

### 5.3.12 Spatial Interventions

Spatial intervention and targeting can be developed making use of the following opportunities. Concentration of activities related to the agricultural and tourism sector in Jacobsdal and Koffiefontein. Land use management in terms of tourism accommodation facilities to be aligned towards enabling rather than prohibiting. A good guideline is the new regulations “in terms of National Environmental Management Act (NEMA)” for accommodation facilities where the threshold value is 15 persons. During the preparation

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of a land use scheme in terms of the “Spatial Planning and Land Use Management Act (SPLUMA)” the condonation of existing illegal uses can be considered within the required parameters of NEMA and Spatial Planning Guidelines encapsulated in the Municipal Spatial Development Framework (SDF).

#### **5.4 XRDP Spatial Perspective**

The “development of both the agriculture and tourism sectors should be understood” in terms of “regional dynamics” e.g. both these sectors have also linkages beyond the boundaries of Xhariep in terms of markets and exports. From a spatial perspective, the Xhariep district is envisaged as a structured matrix of interrelated land use regions, which are community-orientated and collectively support a dynamic district economy vested in an enabling and sustainable business environment. The envisaged matrix comprises the following: Productive agricultural regions pivoting around the core agricultural resources and the potential generated through the establishment of an Agri-park at Springfontein. “Agricultural-based operations should not only be production units aligned to sustainability principles but should support tourism by being places where visitors can stay or enjoy and be educated of the role of farming and sustainable food production” ([www.mogalecity.gov.za](http://www.mogalecity.gov.za)). Core tourism products that are well-marketed, and are easy to access throughout the entire Xhariep District. Sustainable human settlements developed in accordance with set priorities in terms of the Local Municipal mandate and Spatial Development Framework, and Primary and secondary economic development regions and nodes supported by sustainable and adequate bulk services and transportation corridors linking the district provincially, nationally and globally.

#### **5.5 Managing strategic development for transformation and intervention in Xhariep**

##### **5.5.1 Functional Regions**

Xhariep District exhibits some potential in term of its natural resource base that will allow implementation agencies to plan and manage development through transformation and intervention. To understand the areas where development through transformation and intervention can take place, Xhariep District was divided into three broad functional regions each with its significant and unique characteristics. It is important to note here that some similarities indeed occur throughout the regions. The delineation is not intended to exclude any activities from any region. Figure 10 indicates the delineated functional regions for Xhariep District. The functional regions delineated are as follows: Region of Diverse Opportunities; Consolidation and Distribution Region, and Frontier Region.



Figure 10: Functional regions in Xhariep District  
 Source: Xhariep RDP, 2015

The composite plan – Figure 11 indicates the following:

- Farming activities,
- Land reform projects,
- Kernel density of population earning less than R800 per month,
- Tourism routes and Tourism Corridors, and
- Transportation routes.

The development of the plan was based on the SPLUMA norms, standards and principles that have been fully enunciated in the development plan for transformation and intervention. This was necessary to ensure that the area specific attributes were matched with the natural resource base of each of the functional regions. Figure 11 presents the composite plan with functional regions.

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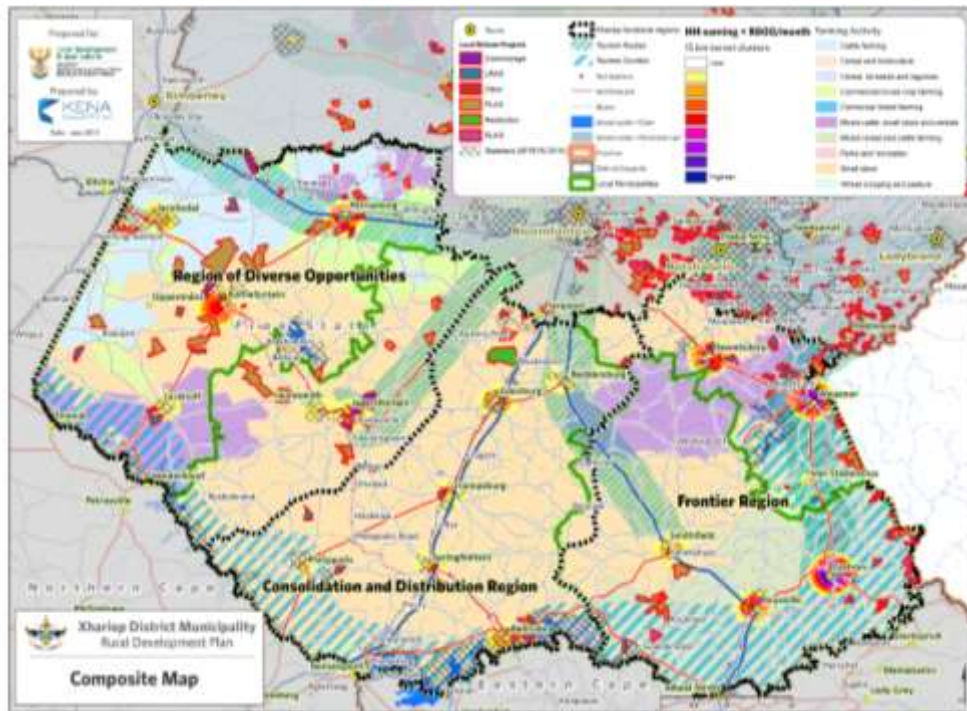


Figure 11: Composite plan with the functional regions

## 5.6 Strategy for Rural Development

Consequent to the composite plan on functional regions being generated, a strategy focusing on “three key developmental drivers” for the “area to promote economic growth, employment creation and poverty alleviation was developed”. “These drivers are however dependant on and need the support of certain enabling elements. As such, the development strategy for the area consists of the following components”:

- “Three **driver strategies** that focus on (1) tourism development, (2) agricultural and rural development and (3) supportive spatial interventions”
- “Five **enabler strategies** that are interwoven with, and in support of, the drivers. These are two physical enablers, based on”:
  - “Conservation and management of all natural resources”
  - “Continuous management and provision of appropriate infrastructure and services”.
  - “The physical development aspects are supported by three institutional **enabler strategies** that comprise”:
    - “An institutional driver”
    - “Community and skills development”, and
    - “Investment facilitation”.

“The enabler strategies are key to any development initiative in the district. The environment needs to be looked after and conserved. Appropriate and relevant supportive infrastructure is needed to create a situation where development can occur in a sustainable and integrated manner. Regional transport and movement of goods and people is a critical element influencing the development of the area. Xhariep with its sub-regions is located on important transport routes linking the district through the N1, N8, N6 and R702 / R26. Good inter- and intra-regional accessibility will help the area” to establish internal linkages of value addition and to export goods to other regions and markets ([www.mogalecity.gov.za](http://www.mogalecity.gov.za)). It is “also important to note” that the “urban” nodes act as service centres to the sub-regions and proposed functional regions, which consist of two agricultural regions and a tourism region in the east and south of the district (www.

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rimisp.org). Figure 12 below schematically illustrates the major components (as discussed above) of the Xhariep District Rural Development Strategy.



Figure 12: Xhariep district rural development strategy

### 5.6.1 Development Plan for transformation and intervention

The proposed development plan and **statements of intent** act as guides to future action and decision-making in terms of: Transformation and intervention; Growth management and spatial regeneration; Supporting eco-focused tourism; Promoting sustainable agricultural development at all levels; Conserving, exploiting and managing environmental resources, and Optimising existing and future enabling infrastructure. Figure 13 indicates the strategic scheme with specific policies to develop a suitable Plan to foster and link with value chains identified within each of the functional regions based on the resources and resource base. The main aim of the plan is to effect a sustainable use of the resource base within a struggling region due to droughts, high input cost and diminishing population growth. “This will permit a better assimilation of” the use of “technology and” innovative practices by smaller producers and role players in the local economy ([www.sept.uni-leipzig.de](http://www.sept.uni-leipzig.de)).

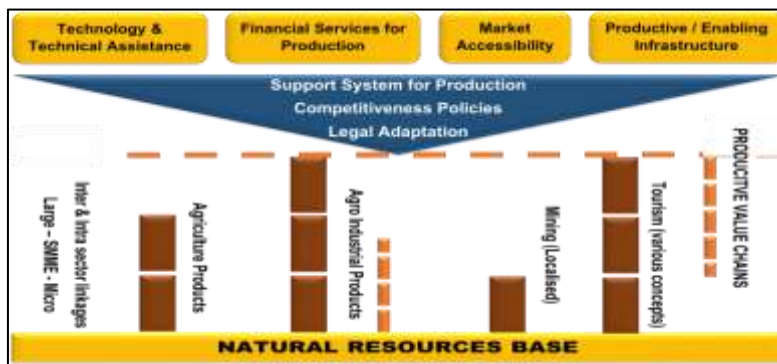


Figure 13: Development plan for transformation and intervention

Source: Xhariep RDP, 2015

The “process entails the development of production chains to enable inter- and intra- sector linkages” of “the” Xhariep District. The regions exhibits a specific level of inter dependency and self-containment in terms of its diverse resource base. The development of linkages / value chains requires a high and adequate level of institutional support with an enabling “environment to decrease” or limit “transaction costs and to” enable the “transfer” of “appropriate technology” to the local formal and informal economy of the district ([www.sept.uni-leipzig.de](http://www.sept.uni-leipzig.de)). In conjunction with the transfer of the appropriate technology, the required skill development or skill transfer needs to be facilitated at all levels – starting with the learners through the

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school education programme, the youth, through appropriate and focused youth development programmes, and the adults, at every possible linkage to the economic, which includes the agricultural and tourism sector.

Within Xhariep district, various value chains have been identified, where possible linkages can be established, which can potentially generate opportunities at various levels of the process or activities. “This will permit a better assimilation of technology and a better transfer of appropriate technology to the smaller producers” (ibid). “The” development plan for “transformation entails also a change in the sector patrons regarding the participation on” employment and generation of income (ibid). The “productive transformation will change this patron for example, enhancing the agro-industrial chains to increase the productivity of agriculture and the share of the agricultural sector in the” GVA (ibid). The established linkage between the agricultural sector and the tourism sector at various levels further contributes to the successful transformation and integration. “Productive transformation requires a clear policy to articulate actions of the central government and the actions of the municipalities at local level in order to facilitate the access to higher levels of capital, training, and better access to appropriate technology. Productive transformation needs also explicit policies not only to promote the capacities to generate and manage productive units in the towns and rural areas, but also to generate synergies through the implementation of production chain structures” (www.sept.uni-leipzig.de).

## **6. RESEARCH CONTRIBUTION**

The paper has made a contribution regarding how the functional approach can be used in facilitating rural development making use of the Xhariep rural development area as a laboratory. A concept and plan complete with implementation requirements has been developed and presented.

## **7. RESEARCH LIMITATIONS**

While the project itself is wide-ranging this paper has presented key aspects of the functional planning approach from a spatial planning perspective. The paper cannot evaluate the implementation of the concept as it has just been completed.

## **8. DISCUSSION & CONCLUDING REMARKS**

The Rural Development Plan is a mechanism that will help accelerate development in Xhariep District through integrated spatial, economic and social development interventions using a multi-sectoral approach, and anchored “on sustainable development principles”. The notion of integration “is” particularly important “to the plan” ([www.sustainabilityinstitute.net](http://www.sustainabilityinstitute.net)). Spatial and economic linkages between the rural areas of the district and the towns need to be strengthened. Planning for functional areas where strategic resources exist across municipal boundaries needs to be encouraged. Value chain development for various products in the district needs to be enhanced. Planned interventions need to exploit latest knowledge and technologies to ensure that Xhariep pursues a “green” path to development.

Xhariep District is among the Districts identified as poor and needing special attention through an RDP. The Xhariep Rural Development Plan (XRDP) provides a mechanism to accelerate development through integrated spatial, economic and social development interventions using multi-sectoral approaches that are anchored “on sustainable development principles”. The “notion” of integration “is” particularly important to “the” XRDP. Spatial and economic linkages between the rural areas of the district and the towns need to be strengthened. Planning for functional areas where strategic resources exist across municipal boundaries needs to be encouraged. Value chains for various products in the district need to be enhanced.

Planned interventions need to exploit the latest knowledge and technologies to ensure that Xhariep District pursues a “green” path to development. We propose that the Xhariep Rural Development Plan be anchored

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on a strong “*Xhariep brand*” that involves the use of green production processes, packaging and marketing tourism and agricultural products in a way that reflects the natural and organic uniqueness of the district. While the focus of small town development in the 1970s was on large-scale infrastructural projects to act as potential economic catalysts, the “new approach is to focus on developing local initiatives and resources for local development” (Pederson 1990, p. 90). It is also important to have differentiated approach to each town as “there are “*one size fits all*” solutions for small towns”. “Some towns have better markets, others have better non-agricultural growth opportunities” (e.g. tourism and human resources), and “others have better natural resources” ([www.uovs.ac.za](http://www.uovs.ac.za)).

## 9. REFERENCES

Barca. F. 2009. *An agenda for a reformed Cohesion Policy: a place-based approach to meeting EU challenges and expectation Independent report* prepared at the request of Danuta Hubner EU Commissioner for Regional Policy, 2009

Braun, Eshuis and Klijn. 2014. *The effectiveness of place brand communication*, Cities 41 (2014) 64–70

Brenner, N. 2004. *New State Space: Urban Governance and the Rescaling of Statehood*, Oxford University Press, Oxford, 2004.

Bryden JM and Hart JK. 2004. ‘*A New Approach to Rural Development in Europe: Germany, Greece, Scotland and Sweden*’, Mellen Studies in Geography 9, Lewiston NY: The Edwin Mellen Press 2004

Camagni, R. (Ed.) .1991. *Innovation Networks: Spatial Perspectives*, Belhaven Press, London, 1991

Camagni, R. 2009. *Territorial Capital and Regional Development*, in: Handbook of Regional Growth and Development Theories, Edward Elger Publishing, Cheltenham/Northampton, 118–132, 2009.

Capollo, R. and Nijkamp, P. (Eds.) .2009. *Handbook of Regional Growth and Development Theories*, Edward Elger Publishing, Cheltenham/ Northampton, 2009.

Castells, M. 1996. *The Rise of the Network Society*, U.S.: Blackwell Publishing, 1996.

Country Report. 2008. *Local Economic Development in South Africa*, March 2008, Claire Patterson, On behalf of the GTZ Strengthening Local Governance Programme’s LED component in South Africa

Crescenzi, Riccardo and Rodríguez-Pose, Andrés. 2011. *Reconciling top-down and bottom-up*

Davies B, Blackstock K, Brown K, Shannon P. 2004. *Challenges in creating local agri-environmental*

de Janvry, A and E Sadoulet .2004. “*Toward a territorial approach to rural development*”, Paper prepared for the Fourth Regional Thematic Forum in Latin America and the Caribbean, on Harvesting Opportunities:

Rural Development in the 21st century, Costa Rica, 19-21 October 2004.

Department of Rural Development and Land Reform (2014), *Development Potential in Urban Settlements in the Free State*, Second Draft 2014/02/28

Department of Trade and Industry (DTI) .2005. *Tourism sector development strategy*. Pretoria: Trade and Investment South Africa for DTI.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- DWA. 2013. *National Water Resource Strategy* (2013), Pretoria
- Evans, Hugh Emrys .2001. “*Regional Development through Rural-Urban Linkages: The PARUL Programme in Indonesia*”. In *New Regional Development Paradigms (NRDP): Volume 3: Decentralization, Governance, and the New Planning for Local-Level Development*, edited by Walter B. Stöhr, J. S. Edralin, and Devyani Mani. Greenwood Publishing Group. 2001.
- Feldman, O., Simmonds, D., Troll, N. & Tsang, F. 2005. *Creation of a system of functional areas for Francis Baard District Municipality Spatial Development Framework 2014-2019*
- Free State Province .2013. *Draft Provincial Growth and Development Strategy Free State Vision 2030*, Department of the Premier, May 2013
- Free State Province .2014. *Agricultural Master Plan, Natural Resource Audit Phase 1*, October 2014
- Free State Province .2014. *Agricultural Master Plan, Socio Economic Analysis and Assessment of institutional Environment*, October 2014
- Free State Province .2014. *Provincial Spatial Development Framework*, March 2014
- Free State Province .2014. *Rural Development Plan, Draft*, 2014/09/18
- Free State Province .2015. *Agricultural Master Plan, Natural Resource Audit Phase 2*, March 2015
- Free State Province. 2012. *Free State Business*, Bloemfontein
- Free State Provincial Government .n.d . *Rural Development Strategy*, Bloemfontein
- Free State Provincial Government .n.d. *Spatial Development Plan*, Bloemfontein
- Jacobs P, Aliber M, Hart T and O’Donovan M .2008. *Review of Rural development: 15 Year Review of Economic and Social Sector Programmes*, HRSC, Pretoria
- Joe Gqubi District Municipality .2011. *Draft Integrated Development Plan 2011/12*
- Junior R. Davis, Daniela Tavasci and Lochner Marais .2006. *Fostering Rural and Local Economic Development in the Free State of South Africa*, May 2006, Natural Resources Institute, University of Greenwich, UK
- Kopanong Municipality .2013. *Spatial Development Framework*, April 2013
- Lejweleputswa District Municipality .2013. *Integrated Development Plan 2013/14*
- Letsemeng Local Municipality .2014. *Final Integrated Development Plan*, 2014/15
- Lowe E. A. and Evans L. K. 1995. *Industrial ecology and industrial ecosystems*, Journal of Cleaner Production 3, 47 –53

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Lowe P, Murdoch J and Ward N. 1995. *'Networks in Rural Development: Beyond Exogenous and Endogenous Models'*, in *Beyond Modernisation*, eds Van der Ploeg, J D and Van Dijk C. 87-105, Assen,

The Netherlands: Van Gorcum 1995

Mangaung Metropolitan Municipality .2014. *Reviewed Integrated Development Plan 2014/2015*

Mantsopa Local Municipality .2014. *Integrated Development Plan 2014/2015*

Mark Shucksmith .2012. *Future Directions in Rural Development*, Carnegie United Kingdom Trust

McAreevey R and Swindal M .2012. *'Rural Governance: Participation, Power and Possibilities for Action' in Rural Transformations and Rural Policies in the US and UK*, ed Shucksmith M et al, Routledge 2012

Meletswai Municipality .2012. *Spatial Development Framework Review*, 2012

Miller M and Wallace J .2012., *Rural Development Networks – A Mapping Exercise*, Dunfermline: Carnegie UK Trust 2012

Moeletsi, M.E. 2011. "ENSO and implications on rainfall characteristics with reference to maize production in the Free State Province of South Africa", *Physics and Chemistry of the Earth*, 2011

Mohokare Municipality .2013. *Spatial Development Framework*, December 2013

Mohokare Municipality .2014. *Reviewed Integrated Development Plan*, 2014/2015

Naledi Municipality .2013. *Spatial Development Framework*, October 2013

NEMA .2008.

NIP .2012. *A Summary of the National Infrastructure Plan*, Presidency, Pretoria

NPC (National Planning Commission). 2012. *National Development Plan 2030: Our future – Make it work*. Pretoria: NDP, The Presidency

OECD .2005. *Place-Based Policies for Rural Development*, Crete, Greece (Case study), Working

OECD .2006. *The New Rural Paradigm: Governance and Policy*, Paris: OECD 2006

OECD .2006a. *"Reinventing Rural Policy"*, Policy Brief, OECD Observer, October, Paris.

OECD .2006b., *Entrepreneurship in the Districts Uckermark in Brandenburg, and Parchim in*

Olivier JJN, C Van Zyl and C Williams .2010. *Rural Development Within The Context of Development, Sustainability and Rural Issues – Some Constitutional, Policy and Implementation Perspectives*, PER / PELJ 2010(13)1 101 / 23

Pedersen, P.O. 1990. *"The role of small rural towns in development"*, in J. Barker (ed), *Small Town Africa: Studies in Rural-Urban Interaction*, The Scandinavian Institute of African Studies, Uppsala.

SACN .2014. *Integrated Urban Development Framework*, September 2014, Braamfontein, Johannesburg

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Shucksmith .2013. *Future directions in rural development* – available at: [www.carnegieuktrust.org.uk/publications/2012](http://www.carnegieuktrust.org.uk/publications/2012) accessed 10 January 2016

Shucksmith M .2000., '*Endogenous development, social capital and social inclusion: perspectives from LEADER in the UK*', Sociologia Ruralis, 40 (2), 208-218, 2000

Shucksmith M .2010., '*Dis-integrated Rural Development: neo-endogenous rural development, planning and place-shaping in diffused power contexts*', Sociologia Ruralis, 50, 1-15, 2010

Shucksmith M, Thomson K and Roberts D .2005. *CAP and the Regions: the Territorial Impact of the Common Agricultural Policy*, Wallingford, Connecticut, USA:CAB International 2005

Shucksmith, M., .2000. *Exclusive Countryside: Social inclusion and regeneration in rural*

Shucksmith, M., Thomson, K.J., and Roberts, D. 2005. *CAP and the Regions: The Territorial*

SPLUMA .2013.

StatsSA .2011. *Census (2011) South Africa*, Pretoria

Taylor M .2008., *Living Working Countryside: The Taylor Review of Rural Economy and Affordable Housing*, London: Department for Communities and Local Government 2008

Thabo Mofutsanyana District Municipality .2012. *Final Integrated Development Plan 2012-2016*

Tokoloko Local Municipality .2015. *Integrated Development Plan 2015/16*

World Bank .2004. '*2004 Annual Review of Development Effectiveness - The Bank's*

World Bank UDD .2001. *Local Economic Development – quick reference guide*. Washington,

[www.rimisp.org](http://www.rimisp.org)

[www.ap.pef.czu.cz](http://www.ap.pef.czu.cz)

[www.aridareas.co.za](http://www.aridareas.co.za)

[www.carnegieuktrust.org.uk](http://www.carnegieuktrust.org.uk)

[www.dbsa.org](http://www.dbsa.org)

[www.dejure.up.ac.za](http://www.dejure.up.ac.za)

[www.edd.gov.za](http://www.edd.gov.za)

[www.freestatebusiness.co.za](http://www.freestatebusiness.co.za)

[www.governmentdigest.co.za](http://www.governmentdigest.co.za)

[www.harper-adams.ac.uk](http://www.harper-adams.ac.uk)

[www.jrf.org.uk](http://www.jrf.org.uk)

[www.mogalecity.gov.za](http://www.mogalecity.gov.za)

[www.newsdeskmedia.com](http://www.newsdeskmedia.com)

[www.nri.org](http://www.nri.org)

[www.nri.org](http://www.nri.org)

[www.poa.gov.za](http://www.poa.gov.za)

[www.sabcoha.org](http://www.sabcoha.org)

[www.sept.uni-leipzig.de](http://www.sept.uni-leipzig.de)

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[www.sustainabilityinstitute.net](http://www.sustainabilityinstitute.net)

[www.thabomofutsanyana.gov.za](http://www.thabomofutsanyana.gov.za)

[www.uir.unisa.ac.za](http://www.uir.unisa.ac.za)

[www.uovs.ac.za](http://www.uovs.ac.za)

Xhariep District Municipality .2012. *Integrated Waste Management Plan* Xhariep District Municipality, 2012

Xhariep District Municipality .2013. *Economic Development Strategy 2013/14*, March 2013

Xhariep District Municipality .2013. IDP 2012/13

Xhariep District Municipality .2013. *Integrated Development Plan 2014/15*

Xhariep District Municipality .2013. *Spatial Development Framework 2012/13*, March 2013

**Conference Proceedings:**

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# **A Critical Evaluation of the Challenges and Opportunities Inherent in the Evaluation of Spatial Development Framework: A Case of Outer West SDP, eThekweni Municipality**

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## **Abstract**

The urban spatial policies and legislations developed in post-apartheid South Africa has been strongly focused mainly on restructuring the apartheid city through the promotion and implementation of integrated development planning policies and concepts. The continued fragmentation and spatial segregation that characterise South African cities has featured extensively in the literature, but there still remain a lot of unanswered questions that confront planners on daily basis. The eThekweni Municipality has produced and adopted a strategic approach by adopting a package of plans as part of the spatial restructuring process and in accordance with Municipal Systems Act (MSA) 2000 that stipulates that every municipality should adopt an Integrated Development Plan (IDP), Spatial Development Framework (SDF) and Scheme to strategically guide spatial development and land use management within the respective municipality. The Municipality is divided into four cohesive and functional areas (North, South, Central and Outer West), with each area developed with a Spatial Development Plan providing a greater level of detail than the municipal SDF and guide the nature and intensity of development that can potentially be sustained on the land. The philosophy of the Outer West SDP, first adopted in 2005 and reviewed annually, is to ensure that the carrying capacity of land and natural systems ought not to be exceeded as a result of development and together with the Consolidated Outer West Town Planning Scheme (2000) provide guidance and direct development and land use regulations in the area. The municipal SDF delineated the urban services edge that encourages urban development densification and infilling within designated areas and discourages urban sprawl that cannot be afforded by the city. The Outer West Region is located outside of this edge. Despite the existence of spatial development policy guidelines and land use management tools and contrary to the city's urban edge concept, the Outer West Region in particular the Western Suburbs, have been subjected to unprecedented development pressures during the past ten years that has resulted in ad-hoc development trends and limitation in service and infrastructure provision for the area. The research seeks to establish the factors that led to the resultant uncoordinated development trend in the case of the Western Suburbs despite the existence of the Outer West SDP.

## **Key Words**

IDP, Town Planning Schemes, Development Controls, Spatial Planning Legislation and Policy.

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## 1. INTRODUCTION AND BACKGROUND

The eThekweni Municipal area is divided into four cohesive and functional areas by virtue of the geophysical features of the municipality and the associated settlement patterns and linkages that have developed in response to these. The first division that is apparent is at the metropolitan level where the UMngeni River, the UMlaas River and the Kloof Ridge dissect the municipal area into four sub metro areas (i.e. central, north, west, and south). (eThekweni Municipality, IDP, 2009).

Each of the four regions has a Spatial Development Plan completed for the entire region. The Spatial Development Plans (SDPs) cover the municipal area at a greater level of detail than the SDF. These SDPs provide guidance as to the nature and intensity of development that can potentially be sustained on the land. The philosophy is that the carrying capacity of land and natural systems ought not to be exceeded as a result of development. (eThekweni Municipality, IDP, 2009).

The Outer West Municipal Planning region stretches 30km east to west from near the base of Fields Hill, to Cato Ridge and 40km from beyond Inanda Dam on the UMngeni River in the north to beyond the UMlaas River in the south. The area accounts for 34% of land in the metropolitan area and is only home to 16.5% (577 500 people) (Census update 2006) of the metropolitan population of 3,500,000 (Census 2007). The Outer West is a vital component of the eThekweni Municipality's Durban Metropolitan Open Space System (DMOSS) and contains 50% of the total system (Urban Exploration, 2005).

Six functional districts or local areas have been identified, within the broader Outer West, which are separated from one another by major topographical features and major barriers such as river valleys and main roads. These districts identified in the OW each have their own character and opportunities for development and need to be planned and managed accordingly (Urban Exploration, 2005). The Western Suburbs are located in the eastern corner of the Outer West and are home to 16% of the Outer West population on 12% of the land mass (Urban Exploration, 2005).



Figure 1: eThekweni Metropolitan Area:

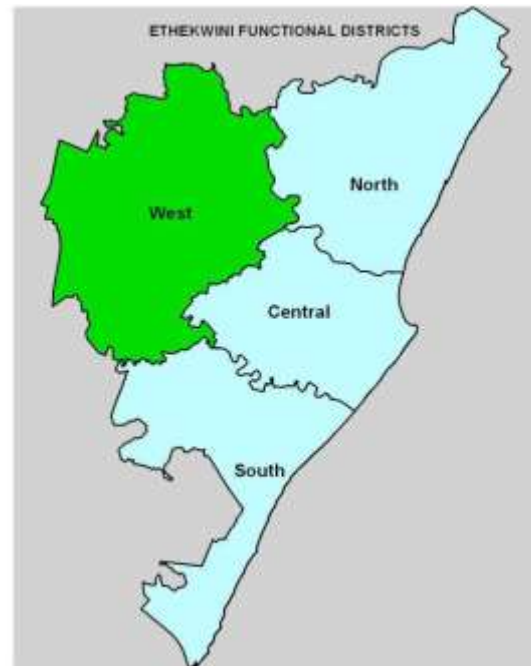


Figure 2: Outer West Local Planning Areas  
Source: OWSDP

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The Western Suburbs is the main suburban developed area of the Outer West and area affected by the uncoordinated development trend and associated constraints and hence the interest and decision for it being chosen as the case study area.

## 2. PROBLEM STATEMENT AND OBJECTIVES OF RESEARCH

Urban spatial policy and legislation developed in post-apartheid South Africa has been strongly focused on restructuring the apartheid city through the promotion and implementation of integrated development planning policies and concepts. The current state in South Africa, however, is that there is still fragmentation and separation in South African cities, despite the aim of integration (Dewar, 2000).



The eThekweni Municipality has produced and adopted a package of plans as part of the spatial restructuring process and in accordance with the Municipal Systems Act (MSA) of 2000 that stipulated that every municipality shall prepare and adopt an Integrated Development Plan (IDP) as a strategic development management tool that shall be spatially translated through the Spatial Development Framework (SDF) and implemented through the Scheme. (Refer to Diagram 1: eThekweni Package of Plans)

Diagram 1: eThekweni Package of Plans: Source eThekweni IDP

The eThekweni Long Term Development Framework (LTDF) stipulates the long term vision and key challenges facing the municipality, while the Integrated Development Plan (IDP) is a medium term strategic development tool for the municipality outlining strategies and programmes on how to achieve the vision. The Spatial Development Framework (SDF) is the point of integration of strategic municipal spatial strategies in the arena of economics, transport, environment and society. (eThekweni Municipality, IDP,2009).

The first draft Outer West Spatial Development Plan adopted in 2005 by the Municipality provides the strategic assessment and spatial development guidelines for the broader Outer West region, in line with the vision and development principles of the Municipal IDP. The Consolidated Outer West Town Planning Scheme, on the other hand, is the land use management tool for the Outer West Region that provides zoning and development control regulations at a site specific level (Urban Exploration, 2005). The Outer West Spatial Development Plan directs and provides guidance to the Consolidated Outer West Town Planning Scheme (COWTPS) of 2000 in the form of a spatial policy which stimulates growth and give citizens, landowners and developers a sense of security and confidence, and thereby allowing Council to make decisions that are in the public interest.

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The Outer West Area is located outside the urban edge as outlined by the eThekweni Municipality's SDF (eThekweni Municipality, IDP, 2009). The urban edge encourages urban development densification and infilling within designated areas and discourages urban sprawl that cannot be afforded by the city. Contrary to the city's urban edge concept, the Outer West Area, in particular the Western Suburbs has been subjected to intense development pressures during the past fifteen years, which has resulted into ad hoc and uncoordinated development.

The ensuing development trend that has prevailed within the Western Suburbs during the past fifteen years despite the existence of the adopted Outer West Spatial Development Plan of 2005, and reviewed in 2010, has led to the need to initiate the research study with the aim of identifying the factors that may have led to the uncoordinated development trends within the Western Suburbs.

The main objective of this research is to identify factors that may explain why uncoordinated development prevails within the Western Suburbs despite the existence of the Outer West Spatial Development Plan.

**The sub objectives** of the research enquiry will be:

- To identify the key drivers of development within the Western Suburbs, and
- To assess whether there were policy and legislation synergies and linkages that affected the implementation of the OWSDP.

### **3. REVIEW OF OTHER LITERATURES AND GAPS**

The literature review will be mainly framed around pragmatic spatial planning concepts, approaches and paradigms intended at promoting spatial integrated development and the evaluation of their implementation. This will provide the framework for developing the methodological criteria for evaluating the implementation of the Outer West SDP that may have led to unprecedented development within the Western Suburbs.

The real planning objective in the sense of spatial development planning is concerned with the set of decisions and actions that are being coordinated by means of a plan. Planning policy statement fulfills its purpose through its spatial intentions and is in this sense performing if and only if that statement plays a tangible role in the choices of actors to whom it is addressed (Smith, 1992). The maker of the spatial plan should always consider that spatial plans are about people and their 'implementation' can be seen as a process of social interaction between makers of a plan and the groups whom it addresses (Healey, 1999).

The first generation of implementation analysts discovered the problem of policy implementation as the uncertain relationship between policies and implemented programs and sketched its broad parameters (McLaughlin, 1987). The second generation began to unpack implementation processes and to zero in on relations between policy and practice (McLaughlin, 1987). Together, these examinations generate a number of important lessons for policy, practice, and analysis; for example: policy cannot always mandate what matters to outcomes at the local level; individual incentives and beliefs are central to local responses; effective implementation requires a strategic balance of pressure and support; policy directed change ultimately is a problem of the smallest unit. These lessons frame the conceptual and instrumental challenge for a third generation of implementation analysts-integrating the macro world of policy makers with the micro world of individual implementers (McLaughlin, 1987).

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Research into the performance and effectiveness of strategic planning as a notion needs to be considered based on the ‘decision-centred view of planning’ in that the plans are to help decision makers in making sense of their situations.

Evaluation of the plan therefore needs to be couched in terms of its ability to provide decision makers with detailed guidance for good spatial decisions to be undertaken. For the evaluation to be rigorous there must be criteria that will be used as a benchmark for the effective and ineffective plan (Healey, 1994). A similar methodology will be adopted in the evaluation of the implementation of the Outer West SDP by the researcher. It is therefore imperative that the research critically evaluates the plan as an end product to assess its performance and its implementation based on set criteria to determine its effectiveness and ineffectiveness as well as factors that explain its inability to guide development within the Outer West.

#### 4. THEORETICAL FRAMEWORK AND CONCEPTS

Theoretical framework will be based on the existing theories, concepts and approaches of development relevant to the research. These include:

**Theory of Urban Spatial Structure-** Urban structure is the arrangement of land use in urban areas. Urban structure can also refer to the urban spatial structure, which concerns the arrangement of public and private space in cities and the degree of connectivity and accessibility. Three models are described in this section:

- **Concentric Zone Theory**-A theory of patterns of urban land use developed by Robert Ezra Park, Ernest W. Burgess, and R. D. McKenzie in the mid-1920s. The theory divides the city into a series of concentric rings characterized by different land uses: prototypically a central business district (CBD), surrounded by a zone dominated by wholesaling and trucking, then a transitional low-income and light-manufacturing zone, a working-class and immigrant residential zone, an upper-class residential zone, and finally, a zone of commuters (Burgess ,1924).
- **Sector Theory**- also known as the Hoyt model, is a model of urban land use proposed in 1939 by economist Homer Hoyt. It is a modification of the concentric zone model of city development. Hoyt theorized that cities tended to grow in wedge-shaped patterns or sectors emanating from the central business district and centered on major transportation routes. Higher levels of access meant higher land values, thus, many commercial functions would remain in the CBD but manufacturing functions would develop in a wedge surrounding transportation routes. Residential functions would grow in wedge-shaped patterns with a sector of low-income housing bordering manufacturing/industrial sectors while sectors of middle and high income households were located furthest away from these functions (Hoyt, 1939).
- **Multi-nuclei**- Geographers C.D. Harris and E. L. Ullman developed the multiple nuclei model in 1945. According to this model, a city contains more than one center around which activities revolve. Some activities are attracted to particular nodes while others try to avoid them. Incompatible land use activities will avoid clustering in the same area, explaining why heavy industry and high-income housing rarely exist in the same neighbourhood (Harris and Ullman 1945).

The abovementioned theories of urban spatial structure are relevant in the eThekweni municipality context as the municipality was founded on a concentric zone model and was later modified into sector theory concept and now have multi centers in the form of various nodes as promoted by the SDF.

**-Coordination Theory-** is defined as a body of principles mainly concerned about how the activities of separate actors can be synchronized for the benefit of all concerned. A test of the generality of a concept or principle is whether it can apply to more than one kind of actor. The Integrated Development Plan is the

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focus of the South Africa's post-apartheid municipal planning system and is also now regarded as a key instrument in an evolving framework of intergovernmental planning and coordination (Harrison, 2003). The eThekweni IDP is centralized around the promotion of coordinated and sustainable development within the municipality.

**-Urban Sprawl-** According to Chin (2002:3) in terms of form, urban sprawl is generally measured against the ideal type of the 'compact city'. Thus any deviation from this compact city in the form of suburban growth, ribbon development, leap-frogging and scattered development may all be regarded as urban sprawl. In terms of land use, sprawl is associated with spatial segregation of land uses, and with extensive mono-functional use of land. In terms of impacts the approach is based on the accessibility among related land uses in terms of density, the notion of low density is used.

**- Compact City Model-** The alternative to suburban sprawl is the 'compact city model' (Todes, 2006). This model differs greatly from conventional urban development, by focusing on urban intensification, creating limits to urban growth, encouraging mixed use development, and placing a greater focus on the role of public transportation and quality urban design. The need for sustainable cities is currently based on the notion of compaction and integration for spatial restructuring as a response to ad-hoc development effects associated with urban sprawl. Cities have adopted the compact city model and use the urban edge concept to discourage urban sprawl (Todes, 2006).

**-Urban Edge Concept-** The purpose of the urban edge is to contain urban growth by densification and infilling thereby encouraging the promotion of public transport and discouraging urban sprawl. At a municipal level, the urban edge is enforced through the Integrated Development Plans (IDPs) as the principal strategic planning instrument and their spatial translated component Spatial Development Framework (SDF), as a legal requirement of the Municipal Systems Act (MSA) (Act 32 of 2000). The eThekweni Municipality's SDF has defined and outlined the urban edge that encourages urban development within designated areas and discourages urban sprawl (eThekweni Municipality, IDP, 2009).

The research into performance of the Outer West SDP will be used as a benchmark to determine its effectiveness. For the evaluation to be rigorous there must be criteria that will be used as a benchmark for the effective and ineffective plan (Healey, 1994). The limitations of this study are based on the fact that most of the technical planners (key research informants) that worked within the Development Planning department and involved with the preparation and implementation of the plan have either resigned or moved to other sector departments within the municipality.

## **5. METHODOLOGY AND DATA COLLECTION STRATEGY**

Secondary data sources in the form of existing documents, reports and application registers were consulted in answering the study's main question, sub questions, as well as aid the objectives of this research. An audit of the development applications for the last ten years, using the applications registers, was used to identify development trends and policy alignment issues between the OWSDP and other policies that facilitate development within the Western Suburbs (*Refer to Annexure 1: Application Audit Schedule*). The land development audit will include all medium density, rezoning and DFA applications lodged with the municipality between 1999 and 2009. The audit was mainly used to identify issues related to compliance and alignment between development proposals approved by the municipality with the Spatial Development Plan intentions for the Western Suburbs.

A sample survey involving identified key stakeholders as respondents to the drafted questionnaire was conducted (*Refer to Annexure 2: Questionnaire*). The interview technique was also employed as part of the research (*Refer to Annexure 3: Interview Schedules*). Structured interviews using the prompt sheets consisting of closed ended questions was conducted with prominent municipal officials from key sector

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departments and developers as subject participants who have been involved in the formation and execution of the plan and the development of the Outer Western Suburbs (*Refer to Annexure 3: Interview Schedules*). The structure of the interview was kept similar with all the participants and was conducted by appointment and consent with participants at their convenience during weekdays. Each interview will lasted for about thirty (30) minutes Participants were allowed, through discussion on the planning topics and past/present experiences, an opportunity to reflect and ascertaining their perceptions about the area and to give in-depth answers to specific questions.

## **6. RESULTS AND FINDINGS**

The initial process of primary data analysis involved the preparation of data and recording the findings in data summary sheets. Data analysis of the closed ended questionnaires were undertaken through the coding of questions and using the descriptive statistical method using simple graphic analysis in the form of tabulation, bar chart and pie charts as a way of providing the general overview of the results. Data collected was also analysed thematically, the themes derived from the conceptual material explored under the conceptual framework of this study. The evaluation of the implementation of the OWSDP was mainly based on primary data analysis and the assessment of secondary literature against set criteria to determine whether the plan was effective or ineffective (Refer to Annexure 4: Evaluation criteria).

The survey indicated that most participants worked in eThekweni at the time of the adoption of the OWSDP and were aware of what the core components of a good spatial plan are. In this regard about 90% of the participants agreed that the OWSDP is a good spatial plan that clearly articulates the visions and intentions of the broader Integrated Development Plan (IDP) and the Spatial Development Framework (SDF) by outlining the role of the area and sets out the strategy and approach for development in the Outer West Region. They also agreed that the OWSDP gives direction for both public and private investment to occur and highlighted phased development as part of the broader implementation strategy/plan and thereby affirming with the evaluation criteria checklist that the OWSDP was indeed an effective spatial development plan. The demand for more development was identified as the factor used to pressure development in the Outer West especially in the Western Suburbs. The Development Facilitation Act (DFA) 1995) was identified as the most used policy between the period 1995-2015 to achieve development in the Outer West based on the fact that one of the policy's objective was to fast track the development process and timeframes and thereby offering developers a window of opportunity to override the Outer West Town Planning Scheme and OWSDP provisions. This fact was further strengthened by the audit of rezoning and medium density development applications that were approved by the municipality or tribunals during the past ten years which revealed that indeed about 70% of these applications were approved by the DFA tribunal and only about 30% of these application were approved by the municipality in accordance with the OW Town Planning Scheme and OWSDP. About 80% of the participants felt that the development that happened in the Western Suburbs in the past ten years did not occur in a harmonious manner as a result of uncoordinated and ad-hoc development.

The findings proved without doubt that despite the existence of an effective spatial plan (OWSDP) and scheme uncoordinated and ad hoc developments happened in the Outer West mainly through developers overriding the provisions of these plans and lodging their applications with the DFA tribunal.

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Given the fact that the spatial plan is concerned with the well-being of both human beings and objects, it can be subjected to analysis and interpretation by human agents in terms of its effectiveness and conformity, however, cautiousness should be applied in determining the ineffectiveness of the plan based on the above fact. In the case of the OWSDP it is clear that the existence and effectiveness of the plan did not result in coordinated development in the Western Suburbs mainly due to individual's interpretation of the fact that the DFA offers them a better opportunity for their development applications to be approved within record time.

## 7. RECOMMENDATION AND CONCLUSIONS

The use of the criteria avoids the notion of free interpretation of the spatial plan. In order for a spatial plan to be effective and deliver on their spatial intentions and outcomes it must 'have teeth' (Raludi, 2002). In this regard the existence of the effective spatial development plan in the Outer West did not provide the developers enough confidence that their applications and intentions can be achieved by using the plan as an application channel for approval of their plans by the local municipality instead they chose to trust a provincial government led tribunal to approve their applications. The decision of choosing the provincial led tribunal over the local municipality plans is also a reflection of the developers' confidence on the tribunal making a decision on record time and calls for vigilance on the local municipality to ensure that development applications are approved within record time. The role of municipal planning is a competence of the local government in terms of Schedule 4 B of the Constitution of the Republic of South Africa of 1996 and likewise the local municipality should be prepared to their communities/ developers with the required confidence in their capability to effectively meet their developmental needs. Likewise in the case of the OWSDP, the plan still has the potential to effectively guide the developments in the Outer West and ensure that coordinated and ultimately sustainable development is achieved in the region going forward.

## 8. REFERENCES

- Rampersad M. S., (2008). *The impacts of gated communities on urban sprawl and travelling patterns*. Master's Thesis. University of KwaZulu Natal: Durban.
- Burgess E.W. (1924)"The growth of the city: an introduction to a research project" Publications of the American Sociological Society, 18:85-97
- Carruthers, J. and Ulfarsson G. (2002) Fragmentation and sprawl: evidence from interregional analysis, *Growth and Change*, 33(3), pp. 312-340.
- Chin, N., (2002) *Unearthing the roots of Urban Sprawl: A critical analysis of form, function and methodology*. Paper 47, Centre for advanced Spatial Analysis, University College of London, <http://eprints.ucl.ac.uk/archive/00000249/01/paper47.pdf> , accessed 24 February 2010.
- Cooke, P. (1983) *Theories of planning and spatial development*, Wiltshire.
- Dewar, David (2000) The relevance of compact city approach: the management of urban growth in South African cities, in Jenks, M. and Burgess, R, (eds), *Compact Cities: Sustainable Urban Forms for Developing Countries*, Spon Press, London.
- Dieleman, F., Wegener, M. (2004) Compact City and Urban Sprawl. *Built Environment*, 30 (5) pp. 308-323.
- Downs, A. (1999) *Some Realities About sprawl and Urban Decline*. *Housing Policy Debate*. Fannie Mae Foundation, 10 (4), pp. 955-974.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

eThekwini Municipality (2004a) *Outer West Development Framework*. eThekwini online, [http://www.durban.gov.za/outer west development framework/ethekwinionline.htm](http://www.durban.gov.za/outer%20west%20development%20framework/ethekwinionline.htm) , accessed 22 February 2010.

eThekwini Municipality (2004b) *Outer West Development Framework. Agreement with Developers*. eThekwini online, [http://www.durban.gov.za/outer west development framework: agreement with developers /ethekwinionline.htm](http://www.durban.gov.za/outer%20west%20development%20framework%3A%20agreement%20with%20developers/ethekwinionline.htm) , accessed 22 February 2010.

eThekwini Municipality (2005) *Outer West Development Fears Unfounded-Sutcliffe*. eThekwini online, [http://www.durban.gov.za/outer west development fears unfounded/ethekwinionline.htm](http://www.durban.gov.za/outer%20west%20development%20fears%20unfounded/ethekwinionline.htm) , accessed 22 February 2010.

eThekwini Municipality (2009) *Integrated Development Plan: Review 2009/10*, eThekwini online, [http://www.durban.gov.za/strategic documents/ethekwinionline.htm](http://www.durban.gov.za/strategic%20documents/ethekwinionline.htm) , accessed 22 February 2010.

Landman, K. (2003) *A National Survey of Gated Communities in South Africa*. CSIR, Butek, Butek Report Number BOU/I 257, Pretoria.

Harris C D and Ullman E L (1945), "The nature of cities" *Annals of the American Academy of Political and Social Science* 242: 7-17

Harrison, P. (2003) *Towards integrated inter-governmental planning in South Africa: The IDP as a building block*. Report prepared for DPLG and Municipal Demarcation Board.

Harrison, P, Alison Todes and Vanessa Watson (2008) *Planning and Transformation*, Routledge, USA.

Healey, P. (1994) *The revival of spatial planning in Europe*, London Press.

Healey, P. (2004) *The treatment of space and place in new strategic spatial planning in Europe*, *International Journal of Urban and Regional Research*, 28 (1):45-67.

Hoyt H (1939): "The structure and growth of residential neighborhoods in American cities" Washington DC; Federal Housing Administration

McLaughlin, M. W. (1987) *Learning from Experience: Lessons from Policy Implementation Educational Evaluation and Policy Analysis*, Vol. 9, No. 2, pp. 171-178, American Educational Research Association  
Stable URL: <http://www.jstor.org/stable/1163728> Accessed: 26/05/2010 15:40.

Raludi, A (2002) *The revival of Spatial Planning in Europe*, London Press.

Roger Zetter and Rodney White (2002) *Planning in Cities: Sustainability and Growth in the Developing World*, ITDG, Britain.

Statistics SA, (2007) *National Household Survey*, South Africa.

Smith, D. M. (1992) *Apartheid City and Beyond: Urbanization and Social Change in South Africa*, Routledge.

Todes, A. (2006) *Urban Spatial Policy* cited in Pillay, U., Tomlison, R. and du Toit, J. (eds), *Democracy and delivery, Urban Policy in South Africa*, pp. 50-74. Cape Town, HSRC Press, [www.hsrcpress.ac.za](http://www.hsrcpress.ac.za) , downloaded on 22 February 2010.

Urban Explorations (2005) *Spatial Development Planning: Outer West*. eThekwini Municipality, Development Planning Unit.

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# **Sustainable Urban Infrastructure and Service Delivery Assessment of City-Regions of South Africa: A Study of Cape Town and Gauteng City-Region**

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## **Abstract**

South Africa inherits number of complex issues through apartheid legacy in areas of infrastructure, service delivery, governance and administration, racial segregation and disparities in areas of social, economic and financial realms of cities, towns and city-regions. South Africa's rapid growth in urban areas has prompted challenges of innovative approaches to sustainable development; urbanization as a result of rapid growth is accompanied by challenges which include increasing poverty where millions of people currently live in slums without service delivery, access to basic services such as clean water, electricity, sanitation and health facilities. The city-regions are associated beyond the realms of mere economic, social, physical and political dynamic realities. Some of the key issues constituting city-regions are deeply associated with inadequate capital, labour, quality of living having relationship and impact on national to local contexts. The city-regions encompass scattered and sparsely populated urban settlements areas which is largely shaped by outgrowth of peripheral metropolitan areas. The literature points to varied views or understanding about city-region, according to Couch: 2009, the city-region is defined as "where the city's economic, social and cultural footprint exceeds that of its administrative boundary".

The paper evaluates the significance of city-regions in the context of regional planning and development and assess sustainable urban infrastructure and service delivery in city regions of South Africa through developing a framework applicable at city-region. The assessment of urban infrastructure and service delivery is compared for water & sanitation, roads, storm water, solid waste and electricity. This research follows a qualitative approach based on descriptive and explorative approach to study city-regions identified in terms of their performances with regards to urban infrastructure and service delivery. The paper concludes that South African cities need to plan for the unprecedented growth which has negative impacts on city-regions to fall short of their full economic potential with regards to their performances. Much has improved over the years however, there is still a huge backlog that needs to be addressed, in terms of accessibility, affordability, efficiency, quality, transparency and good governance to urban infrastructure and service delivery.

## **Keywords**

Sustainable Urban Infrastructure, Service Delivery Assessment, City-Region, Cape Town, Gauteng

## **1. INTRODUCTION/BACKGROUND STUDY**

South Africa with the estimated size area of 1,219,09km<sup>2</sup> is experiencing and has continually experienced rapid growth urbanization, were United Nations estimates that by 2030, approximately 71.3% of South Africa's population will live in urban areas, accounting to nearly 80% by 2050 (UN Habitat, 2011). The urban population in South Africa is said to be growing larger and younger, as individuals and households are more into the 'inner-core' cities where jobs and opportunities are created and household incomes are

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higher. The urban areas are witnessing growth rate consistently higher than the population growth rate. Urban areas covering 1.5% of South Africa's surface area, approximately 61% of an estimated amount of 49 million South Africans live in urban areas (MacGregor et al, 2011). The metropolitan areas are experiencing highest influx rates which is followed by secondary cities at the expense of rural areas. The urbanization is accompanied by challenges such as increasing poverty where according to Mel (2008) approximately millions of people currently live in slums without access to basic services such as clean water, electricity, and sanitation and health facilities. The urban poor are disposed to hunger diseases, crime and disaster and lack of voice in local government. This triggers a need for urban areas in South African cities to plan for this unprecedented growth which has negative impacts on cities to fall short of their full economic potential and exacerbate poverty in already vulnerable cities in South Africa.

From the content above it then becomes impossible for one to even conceive a city without these services as people only tend to think about these urban infrastructure services when they stop working. Therefore it can be deduced that without these urban infrastructure services being pumped regularly through infrastructural arteries of cities through sustainable service delivery, city life as we know it would be completely unviable. Therefore, in light of the provision of sustainable urban infrastructure and service delivery in South African cities services such as sanitation, electricity, and waste removal categorised under urban infrastructure, residents of the republic of South Africa are still not satisfied. This is reflected as averagely unsatisfactory as per resident's response according to (Richards et al, 2007).

Having stated the above South African government has recognised infrastructure as being essential for economic growth as it permits economic expansions and allows marginalised households and communities to take advantage of new opportunities. It is also indicated that sustainable infrastructure approaches are starting to be adopted by South Africa's cities and city-regions. However, there is no national level policy for sustainable urban infrastructure, as the 2012 National Infrastructure Plan focused mainly on national economic and social issues, largely overlooking the crucial role played by urban infrastructure in an increasingly urbanised South Africa. As a result given the magnitude of South Africa's economic, social and environmental challenges and concentration of these issues, it is imperative that a national strategy be formulated to guide urban infrastructure investments and service delivery to ensure tax revenues are spent efficiently and effectively in the interest of current and future generation. Therefore, having determined the commitment to provide infrastructure since 1994, it has been evident that progress has been achieved in terms of capital investment with a resulting reduction in service backlogs and the provision of sustainable urban infrastructure inherited pre 1994. Some of the critical service delivery "backlogs" still remain and cannot be neglected (World Bank, 2009). Based on the exhausted content above, it is therefore seen as relevant to assess urban infrastructure and service delivery of city-regions of South Africa which will be further narrowed down to the focus study which will cover Cape Town and Gauteng City-regions.

## **2. LITERATURE REVIEW**

### **2.1 Urban Infrastructure and Service delivery in International context**

All over the world, throughout human history, urban development has to a large extent been spontaneous. Under the influence of global and regional factors, cities undergo transformation processes that do not easily lend themselves to rigid planning or direction (MacKinnon, 2012).

Urbanization is a major change taking place globally which is characterized by multitude of factors and complex issues like migration patterns, demographic changes, economic and industrial impacts and among other issues (Kumana, 2009). Research studies have mainly pointed urbanization due to rural to urban migration. The literature reveals that some of the regions like Asia is growing by almost three times faster than Latin America's (Khalo, 2002). The urban growth is mostly taking place in secondary or intermediate cities, which are thus becoming centres of regional hubs attracting migrations and influencing large populations.

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Therefore as cities have expanded, infrastructure needs and gaps also expand globally and with the results of the aforementioned, it has been recognized that services in urban areas are not meeting the basic needs of urban residents in terms of satisfaction, more especially the urban poor or those fortunate in our midst. According to Marvin, (1994), the cities are fundamentally dependent on wide range of highly developed sustainable urban infrastructure which leads to the development of modern cities.

In effect, the cities are dependent on various efficient and effective systems such as transportation systems, water and waste system, telecommunication, and other forms of infrastructure support networks. The interplay of these support activities and services are largely responsible for the sustainability. It is extremely important how the management and development of cities and city-regions is achieved and regulated through the principles of cost, quality, accessibility, availability and reliability of various support networks, services and use of technologies over the space.

From the content above, it is evident that city regions are the enablers of what they call regional change (Parkinson, 2004). However, it is felt that regions are very large to handle several issues like economic competitiveness and administration. As from the competitive and sustainability points of view, a city-region formation becomes critical for the development of an urban area in terms of economic and social reality (Isaacson, 1996).

## **2.2 Definitions of the term City-region**

Therefore, although city-regions are regarded as an functional region having economic and social essence, it may require further ways to define the term precisely in terms of physical or political realms. Addressing the question of how the term city-region might be defined, a recent report for the UK's office of the Deputy Prime Minister quoted the following potential definitions "the term city-region refers to a strategic and political level of administration and policy making, extending beyond the administrative boundaries of single urban local government authorities to include urban hinterlands" (Tewdwr & McNeil, 2003; Marvin et al., 2006). However, according to Davoudi, (2003), "the concept of city-region covers not only the commuting hinterland of the city but also the whole area that is economically, socially and culturally dominated by the city". From a spatial perspective, the global city-regions are characterised by dense polarized masses of capital, labour and associated social lives which are linked with complex intensifying and far-flung extra-national relationships. Due to such complexity, it often leads to an outgrowth of large metropolitan areas which attracts / adds up the isolated or clusters of urban settlements the surrounding hinterlands. There are several wide range of definitions, interpretations and views of what exactly a city-region is, the common among them being that city-region exists where the city's economic, social and cultural footprint exceeds that of its administrative boundary (Crouch, 2009).

## **2.3 Urban Infrastructure & service delivery in the context of city-regions in South Africa**

According to Dewar (1991) "spatial form and structure of cities and city-regions play a crucial role in the role of urban economies and in the long term financial soundness of city-governments. This also has a significant influence on the welfare of urban residents, patterns of human interaction, social inclusion and efficient use of resources in a city, particularly in energy for mobility and distribution of services". The cities continue to attract migrations and are characterised by spatial concentration of jobs, people and opportunities. However in this regard, cities and or city-regions need to improve their performance to optimize the potential for growth, productivity and innovation. Hence, as a result of urban growth and backlog in service delivery, quality of life is thus threatened in South African cities. Cities and city-regions in South Africa are seen as socially exclusive with the poor living and inadequate levels of services which enables accessibility of opportunities that city-regions have to offer to its inhabitants.

Therefore the idealistic preconception of how infrastructure and service delivery is managed all goes back to the fact that South African cities have city government which have the mandate, capacity and funds to do the job in addressing challenges of urban infrastructure and service delivery. However, in reality cities

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and city-regions may be the spaces where infrastructure is concentrated, but this idealistic image of how it all works is found to be very far from the true situation (Ashley, 2009).

As a result of reviewing the current state of infrastructure and service delivery the city-regions in South Africa such as the Gauteng city-region and Cape-Town city-region have made a determined commitment to infrastructure provision since the year 1994 and as evident in some of the literature reviewed, this has been achieved in terms of capital investment with a resulting reduction in service backlogs inherited from the apartheid regime. From the content above, this paper aims to develop a comprehensive analysis and understanding of sustainability in the context of urban infrastructure and service delivery in South African city-regions in order to determine what the leverage points are in moving towards sustainability. This will therefore be tackled through assessing city-regions and understanding the key determinant of where they are performing and not performing in terms of urban infrastructure and delivery of services in these respective city-regions of South Africa focused in this paper.

The rapid urbanization experienced in South African city-regions is evident and to be driven by the pursuit of employment and a better life, which is often, found lacking in rural areas as reviewed. This is inclusive of access to better facilities, high standards of living and perceptions of increased opportunities. However, the consequent influx of population is happening at a faster rate than the delivery of services and infrastructure. Therefore as a result, the available infrastructure is overburdened, creating tenuous living conditions for people who find themselves unable to secure affordable livelihoods which results in South Africa increasingly becoming home to expanding poor populations. Approximately 58% of the country's population is witnessed to be living in urban areas. The figures from the last census in the year 2011 suggested that the process of urbanization is increasing and it has been witnessed by the 20% increase in Gauteng city-region's population.

Gauteng city-region is one of the fastest growing city-regions in the country of South Africa. The functional city-region is largely coterminous with the administrative borders of the Gauteng Province, which was created in 1994. Within the Gauteng city-region the population has grown rapidly as a result of in-migration followed by the Western Cape. The population increased by 3.2 million residents between the years 1995 to 2009, at a rate of 2.6% annually as compared to the national rate of 0.6%. The rapid urbanization has reinforced spatial segregation instituted under apartheid. With the rapid urbanization, Gauteng city-region is not only the most urbanized as reviewed but also the wealthiest province in South Africa. Gauteng accounts for 34% of the national GDP and as compared to the other 90 OECD metro-regions, Gauteng city-region ranks 14 in terms of contribution to the national GDP. Gauteng city-region is also South Africa's engine of growth.

Cape Town city region on one hand is acknowledged as a world class city, being one of the most strikingly beautiful placed in the world as noted in National Geographic in its recent survey which identified Cape Town. Cape Town city-region with a population size of approximately 3.7 million according to consensus 2011, is divided into demographics of different racial groups which include 35% of Africans, 44% of coloureds and 20% of whites, remaining being racial groups from other countries. The city of Cape Town has the highest net in-migration in South Africa which reflects a spectrum of high to high income levels. Therefore as a result of migration to Cape Town has resulted in pressures on services and infrastructure whilst the infrastructure status of the city reflects backlogs in major maintenance and massive bulk infrastructure and transport required.

### **3. OBJECTIVES / RESEARCH QUESTIONS**

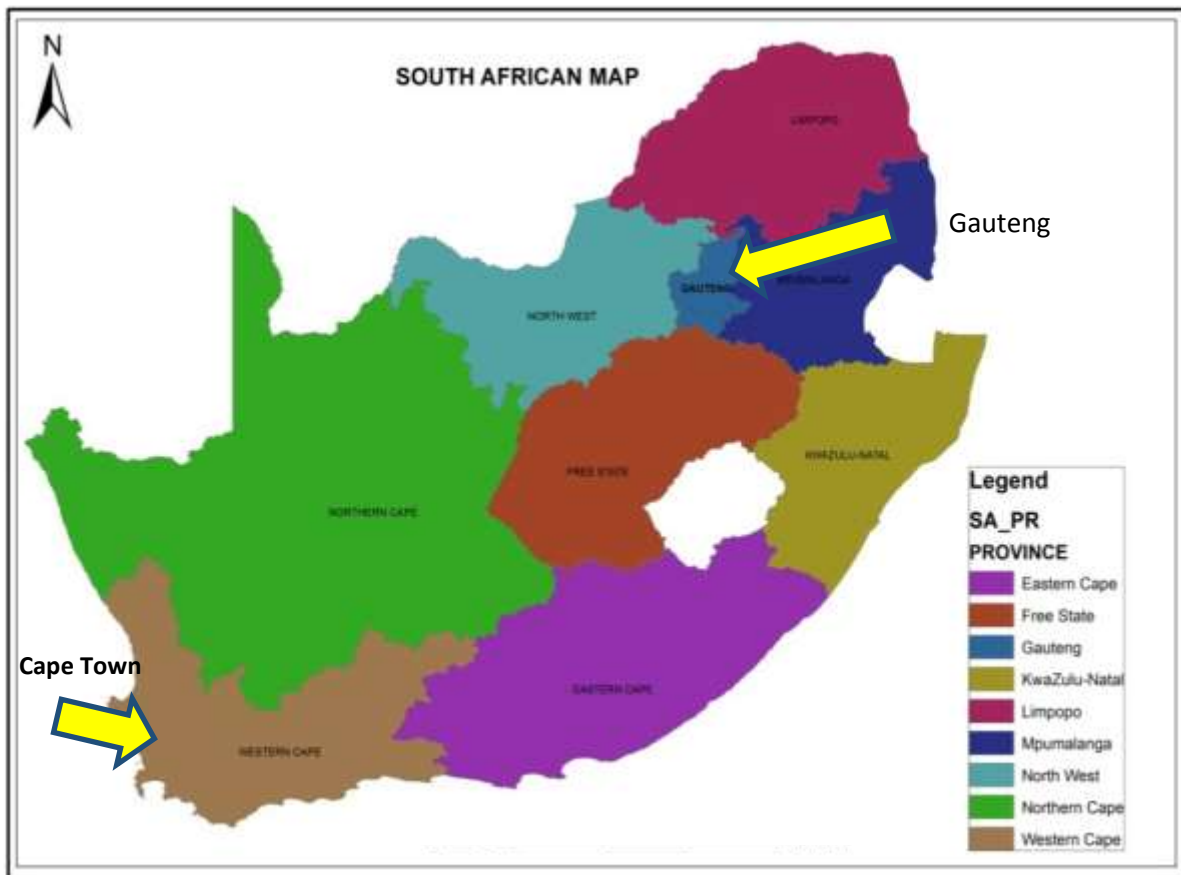
The research aimed to assess the performance of sustainable urban infrastructure and service delivery of City-Regions of South Africa focusing on Cape Town City-Region and Gauteng City-Region.

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#### 4. APPROACH & METHODOLOGY

This research followed a descriptive and exploratory qualitative approach to study and assess the existing systems of city-regions based on key determinants, driver and elements of respective city-regions. The research aimed at assessing the performances of respective city-regions the Western Cape (Cape Town City-Region) and Gauteng (Johannesburg City-Region) with regards to sustainable infrastructure development and services delivery. It aimed at assessing the status quo of the performances of the respective City-Regions. The data collected was in form of meta-analysis of existing literature and desktop research findings. The data analysis was used to compare the performances of these respective city-regions and determine which city-region is performing and which city-region is not performing in terms of sustainable urban infrastructure and service delivery.



#### 5. RESEARCH ANALYSIS AND FINDINGS

##### 5.1 Performance of Gauteng's and Cape Town's City-Region Urban Infrastructure and Service Delivery

According to McLennan & Munslow (2009) "Gauteng is the smallest, most densely populated and yet most economically significant of all South Africa's nine provinces post apartheid which faced an integrated set of pressures to eradicate and improve poverty, facilitate economic growth and compete globally, while simultaneously meeting demands of newly-enfranchised citizenry for equity, redress and the redistribution of resources. Massive backlogs and racially-based inequities from the apartheid era presented multiple

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dilemmas and predicaments for Gauteng city-region, as it attempted to roll out effective and accessible services to citizens and residents”. Accordingly, one of the most important milestones along the road of transformation relates to Gauteng’s history of service delivery in the context of political, economic and social development needs. Thus based on the data analyzed from 1995 to 2010, statistics indicated increased progress towards the provision of basic services for Gauteng inhabitants. Gauteng city-regions reflect steady progress towards the achievement of basic services and urban infrastructure such as access to water, electricity, refuse removal and sanitation.

### 5.1.2 Water and Sanitation

Gauteng is characterized by severe water scarcity in various areas / regions and largely depends on neighbouring country Lesotho for provision of water resources and supply. This is largely on account of the fact that the country has limited surplus water resources and is affected by frequent droughts. The accessibility of water and Sanitation is a contentious issue within the city region of Cape Town more especially in major towns. The availability and accessibility is linked to bulk infrastructure issues. Overall number of households with access to piped water inside their dwelling units has increased from 84% in 2011 to 87% in the year 2011 whilst many households within the Cape Town city region do not have access to water-borne sanitation.

### 5.1.3 Solid Waste

Gauteng City-Region produces around 5.7 million tons of waste on an annual basis accounting to around 42% of the total waste produced in South Africa (GDARD, 2011). It has been observed that only 89% of households are covered / serviced and services to poor communities remain largely unaddressed / weakest (Census 2011). The sector is mainly challenged by rapid cost increase in managing various waste management landfill sites which is affected by inadequate enforcement of national, provincial and municipal laws and regulation relating to waste. Whilst currently in Cape Town city region 100% of formal households receive weekly refuse collection, as it is described as a basic service level according to the IWM policy. To the known informal settlements of 230 100 of households receive weekly integrated door to door refuse collection and areas cleaning services. New dwelling households in informal and formal settlements receive a temporary emergency service until the standard basic service is implemented. However, servicing individual backyards is still rather a challenge that still needs to be addressed.

### 5.1.4 Roads and Stormwater

Gauteng city-region has a relatively high percentage of road accessibility which enables movement to various destinations which is through the National, provincial and local roads. Households within the city-region have access to road networks although some are deteriorated, more especially within townships. The maintenance of roads is increasing in backlog due to insufficient funding support or mechanisms for development and maintenance of old and new roads. There are more tarred and upgraded road networks as opposed to gravel roads. This is an advantage with regards to storm water drainage system accessibility. However, due to continuous growth of migration Gauteng city region’s storm water management is rather relatively inadequate in certain areas and this is with regards to informal areas more especially. Cape Town city region’s storm water management comprises of an extensive network of underground pipes and surface features. Development of waste water systems are being developed and improved in some parts of Cape Town city region and attention to the management of storm water is required. Therefore as developments and improvements are proceeding Cape Town city region storm water reticulation has also grown in response to the expansion of the urban footprint.

On the basis of roads, there is overcrowding on public transport and access to facilities which in many cases are inferior and substandard. This as a result triggers deteriorating road networks which increases the scale

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problem. The general growth of private vehicles ultimately means road networks are capacity strained, taking into cognisance that Cape Town city region is essentially road based as its economy is based on fast and reliable delivery of goods.

#### 5.1.5 Electricity

Accessibility of electricity has quite improved in both city regions although within the city region of Cape Town it has hindered on economic problems however, most population in Cape Town has access to electricity. Gauteng city region has already improved in households accessing electricity with 83% of households have access to electricity. As such Gauteng city region never encountered many problems with regards to electricity services to its inhabitants, instead only a small population had a problem with access to electricity.

Therefore, on the basis of the above, the assessment analysis of Gauteng and Cape Town city region show challenges encountered within their respective city regions as a result their performances is different at different sectors. This is due to their different demographics, densities, spatial analysis, land use activities, economies and the atmosphere therefore, urban infrastructure and service delivery performs differently in this regard. Therefore, with both city regions much has been with their challenges as both city regions are performing well in some sectors while different in other sectors as well as not performing well in same sector or in different sectors. Therefore, access to the least minimum infrastructure services and delivery of services is one of the essential criteria for defining welfare. As evident these city regions are both routing to improving and ensuring that sustainability is incorporated and implemented in urban infrastructure and service delivery in order to promote sustainability through addressing backlogs that still remain with applicable policy frameworks.

Moreover, the assessment of frameworks established to measure the performance of Cape Town and Gauteng city regions with regards to sustainable urban infrastructure and services delivery include the National Urban Policy, Urban sustainable Delivery Assessment, Regulatory Framework and Institutions, the NDP, IPAP, New Growth Path and other several national initiatives have however, assisted in addressing some of the urban infrastructure and service delivery challenges encountered in city regions. Therefore, on the basis of past literature, literature has revealed that despite the establishments of these frameworks to guide and pursue sustainable urban infrastructure and service delivery, these still a quite number of stubborn service delivery and governance problems that have been identified within municipalities over the past number of years however, it is still evident to date.

These huge backlogs still remain as within these assessment framework initiatives due to poor communication and accountability relationships with communities, lack of transparency, problems with administrative interfaces, corruption, poor financial management, violent service delivery protests, intra and inter political party issues negatively affecting governance and mandate to deliver services as well insufficient municipal capacity due to lack of skills.

## 6. RESEARCH CONTRIBUTION

The research highlights that City-Regions features diverse complexities which develop over a period of time. The regions represent disparities which are often linked to spatial forms, service delivery and infrastructure assets. The study highlights that regions require a multipronged approach to address complexities in terms of infrastructure and service delivery issues which has critical linkages in terms of accessibility, affordability, efficiency, quality, transparency and good governance.

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## **7. RESEARCH LIMITATION**

The research was exploratory in nature and limited to desk research with comparative analysis of two City-Regions much focussed on limited / shortlisted areas of infrastructure and service delivery. The study was limited to meta-analysis and did not account detailed assessments based on some of the spatial principles and units of measurements to arrive at some correlations. The further scope involves comprehensive assessment using field based evidence on structured performance tools and frameworks being used by the city level / areas comprising the city-region.

## **8. CONCLUSION AND RECOMMENDATIONS**

The problem guiding this paper was to assess the performance of South Africa's city-region respectively, the assessment of performance of Gauteng and Cape Town city-region urban infrastructure and service delivery in terms of where they performing and not performing and the impacts they have on people's lives and livelihood in ensuring sustainability and quality of life is provided to the inhabitants of South Africa through sustainable urban infrastructure an service delivery. Having articulated the above content and in having to conclude this paper it is imperative to note that city regions are complex urban systems that developed overtime. The day to day activities of city regions tend to move faster than government policy as reflected through the analysis carried out. There are millions of daily human, social and economic transactions that take place in a city region, which as a result have an effect on the means of life of its inhabitants. Therefore the greatest challenges evolving within city regions of Gauteng and Cape Town inclusive of other South African city regions have been noted to being the severe inequality in access to basic services across different demographic segments of population. Much has improved over the years however, there is still a huge backlog that needs to be addressed, in terms of accessibility, affordability, efficiency, quality, transparency and good governance to urban infrastructure and service delivery.

Therefore, in addressing the above challenges identified and in order to improve the absorptive capacity of the municipalities within Cape Town and Gauteng City region, municipal authorities should have the resources to provide the infrastructure and services required to handle immigration within these city regions and ensure that residents are adequately accommodated. This will enable city regions to perform well and to their fullest capacity. Past literatures have revealed that city regions of South Africa or rather South Africa as a whole does have resources however, the challenge is the distribution of resources, mismanagement of funding and corruption which enables city regions to perform in respective fields they are currently lacking or lagging behind. Therefore, a concise policy on minimum standards needs to be formulated and implemented. Where possible, the monitoring and evaluation of these standards should be incorporated into local government responsibilities. The effective flow of funds and line functions from central to local government needs to be facilitated in order to ensure the delivery of services to the public at large (those in need) . Moreover, an institutional framework within which the delivery of services takes should be transformed and a clear distition needs to be made which has already emergd in practice.

This is between the mechanism by which the delivery of demand, this is in terms of market-driven services (have access to and can afford) in this instance private sector should undertake delivery in an equitable and effective manner within policy and regulatory framework. Whilst the mechanism to deliver services that meets basic needs, services that are public good the public sector needs to ensure delivery through government institutional framework. Therefore, in this regard it is important to note that government alone will not succeed as a result integration of public and private sector is vital. It is therefore, important to note that city-regions of South Africa features diverse socio economic. Therefore, this paper has taken a holistic approach by looking at South Africa as a whole inclusive of its city-regions in assessing the performance of respective city-regions of the study. Therefore, having assessed these city-regions through performance analysis lessons could be learned and strong performance could be achieved to establish a baseline of sustainability within city-regions of South Africa.

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## 9. REFERENCES

- Schneider, M. & Park, K. (1989). Metropolitan Countries as Service Agents: *The Still Forgotten Governments*. Vol (49)4, 345-352.
- Amin, A. & Graham, S. (1997). *The Ordinary City, Transactions of the Institute of British Geographers*. Vol (22)6.411–429.
- Bremner, L. (2000). *Reinventing the Johannesburg Inner City*. Vol (17), 185–193.
- Brenner, N. (1998). Global Johannesburg Ties, Global States: *Global City Formation and State Territorial Restructuring in Contemporary Europe*. Review of International Political Economy. Vol (5)3, 1–37.
- MacKinnon D (2012). Beyond Strategic Coupling: *Reassessing the Firm-Region Nexus in Global Production Networks*. Journal of Economic Geography 12(1): 227–245.
- Dewar, D. & Bogaardt, R. (1991). *South African cities: A Manifesto for Change. Urban Problems Research Unit*. University of Cape Town.
- Crouch C, Schroder, M & Voelzkow, H. (2009). *Regional and Sectoral Varieties of Capitalism*. Economy and Society. 38(4): 654–678.
- Parnell, S. & Robinson, J. (2005). Development and Urban Policy: *Johannesburg's City Development Strategy*. Urban Studies, Vol (43)2, 337–355.
- Hanival, S & Maia, J. (2008). An overview of the performance of the South African Economy since 1994: Paper commissioned by the Presidency as input to 15 year South African Review Process. South Africa.
- Kennedy, C.A, Ramaswami, A, Carney, S & Dhakal, S, (2009). Greenhouse gas emission baselines for global cities and metropolitan regions. World Bank. Available at: <http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1256566800920/6505269-1268260567624/KennedyComm.pdf>
- Zimmerman, R. (2009). *Making Infrastructure Competitive in an Urban World*. Academy of Social Science. Vol 9(3), 226-231.

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# **Guiding the Metropolitan Budgeting Process through the Capital Investment Framework: Taking a Data Driven Approach to Transform the Future City Scape of the Ekurhuleni Metropolitan Municipality**

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## **Abstract**

The capital investment framework must be understood as a key component of a Metropolitan Spatial Development Framework as required in terms of Section 21(n) of the Spatial Planning and Land Use Management Act, 2013, and Section 4(e) of the Municipal Planning and Performance Management Regulations, 2001 as promulgated in terms of the Municipal Systems Act. The CIF as a component of the MSDF is geared towards strategically and spatially guiding, aligning and co-ordinating municipal capital expenditure across all sectors to achieve targeted spatial transformation of the urban environment; and make allowance for balanced spending of the municipal budget so as to also promote economic growth and meet the infrastructure needs of the Ekurhuleni Metropolitan Municipality (EMM) residents. National Policies in the case of the National Development Plan, 2030 Vision and the National Spatial Development Perspective, 2006 have outlined the need for metros to start targeting investment into strategically identified spatial areas with the spin off effect of shifting past spatial, social and economic equalities. The following three principles as extracted from the National Spatial Planning Development Perspective starts to emphasize the importance of the Capital Investment Framework as an instrument in achieving: • “Rapid economic growth that is sustainable and inclusive”; • “basic services to all citizens (e.g. water, energy, health and educational facilities)”; • “government spending on fixed investment that is focused on specifically identified localities of economic growth and/or economic potential in order to gear up privatesector investment, to stimulate economic activities and to create long term employment opportunities”. • “Investment into infrastructure that should primarily support localities that will become major growth nodes in South Africa”. (National Spatial Planning Development Perspective, 2006). The National Development Plan: 2030 Vision in addition to focusing investment into specific areas also outlines milestones pertaining to economic growth as demonstrated by the following key objectives: • Increase employment from 13 million in 2010 to 24 million in 2030. • Gross Domestic Product (GDP) should increase by 2.7 times in real terms, requiring average annual GDP growth of 5.4 percent over the period. • GDP per capita should increase from about from about R50 000 per person in 2010 to R110 000 per person in 2030 in constant prices. (National Development Plan). The aforementioned key objectives extracted from the National Development Plan further accentuates the importance of the CIF as a key instrument in not only achieving positive spatial transformation, but also catering for infrastructure investment, drawing investment potential and promoting economic growth. In the case study of the Ekurhuleni Metropolitan Municipality the approach taken in the future direction and implementation of the CIF is based around utilizing socio – economic and market demand related data outputs as an evidence led approach to informing the metros future expenditure requirements, investment opportunities, and future economic growth potential and restraints as boasting an impact on the Metros spatial strategy over the long term. The case study will outline the questions that the CIF seeks to answer through the data outputs and how the data starts to formulate a strategic and spatial directive for the EMM.

## **Keywords**

Capital Investment Framework (CIF), Capital Prioritization Model (CPM), Geographic Priority Areas (GPAs), Space Economy, Targeted Investment, Economic Growth. Budget

## **1. INTRODUCTION**

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In achieving spatial transformation the Municipal Systems Act (MSA) requires the adoption and inclusion of a spatial development framework (SDF) into the Integrated Development Plan (IDP) of a municipality which should reflect and echo the municipalities developmental imperatives of the municipality; and whereby responding programmes established to realise the spatial strategy and aligning developmental objectives are reflected in the municipality's financial plan (MSA, 2000). This is the assumed ideology that the IDP, SDF and financial plan of a municipality should be perfectly aligned in reflecting a unison of aligned strategy and co-ordinated funding that should materialise in space. The NDP in its 2030 vision for South Africa however acknowledges that many municipalities are “grappling to develop credible IDPs“(NDP 2030: 274), which in part has contributed to the “weak capabilities of spatial governance to date”(NDP 2030: 274). In contributing to weak spatial planning that has poorly responded to addressing spatial inequalities and achieving impactful spatial transformation with the spin off effect of promoting economic growth underlies “disparities in Funding” and “a lack of understanding amongst planners as to how economic and market forces impact on development outcomes”(NDP 2030: 275). The NDP goes onto indicate that to this end “many municipalities are ready to adopt new instruments in reshaping space”(NDP 2030: 274). This will require a “sharpening of instruments”(NDP 2030: 286) which will require adopting “bolder measures in reconfiguring the urban form” and linking spatial strategy to instruments of implementation”(NDP 2030: 286).

The Capital Investment Framework has been identified as an instrument that strengthen spatial transformation of the urban form at the local level. “The Capital Investment Framework (CIF) has been identified as a required component of the SDF in Section 4(e) of the MSA Municipal Planning and Performance Management Regulations, 2001. The CIF also fulfills the function of a Capital Expenditure Framework (CEF) as required in terms of Section 21(n) of the Spatial Planning and Land Use Management Act, 2013 (SPLUMA, 2013). In addition, the CIF also informs the Capital Expenditure Programme (CEP) as referred to by National Treasury”(Ekurhuleni Metropolitan Municipality, Built Environment Performance Plan 2015/16).

The CIF has been identified as a crucial instrument in achieving spatial transformation as the CIF proposes to bridge the gap between the SDF, IDP and financial plan in that the function of the CIF is to “spatially and strategically guide, align and co-ordinate municipal capital expenditure across all sectors that will make provision for balanced spending of the municipal budget so as to promote economic growth and meet the infrastructure and services needs of the Ekurhuleni Metropolitan Municipality (EMM) residents”(Ekurhuleni Metropolitan Municipality, Built Environment Performance Plan 2015/16: 52).

In understanding the function of the CIF in terms of influencing positive spatial transformation the research will assess the Ekurhuleni Metropolitan Municipality's (EMM) CIF. This will include outlining the key implementation tools of the CIF and identifying how the EMM proposes to utilize economic and infrastructure data outcomes derived studies specifically conducted for the EMM CIF as a means to strengthen the CIF tools in the implementation of these tools to guide the budget process in transforming the future of the Metros city scape.

The EMM CIF lends itself as a solid case study for investigation as part of the research in that the EMM CIF comprises of developed tools that propose to align and impact on the Metros budget process and provide a spatial rational to the budget. The alignment of the EMM CIF with the budget process therefore strives to promote programmes and projects on the budget and in the IDP that meet the spatial strategy of the Metro. The key tools identified in the implementation of the CIF include geographic priority areas and a capital prioritization model. The EMM CIF in the application of these tools also takes into considerations

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principles and shortcomings for spatial planning as identified within the NDP and National Spatial Development Perspective in strengthening spatial strategy through achieving targeted investment into identified priority areas, building into planning an understanding of economic and market forces, and moving away from past diffused funding patterns (NDP 2030 and NSDP, 2006).

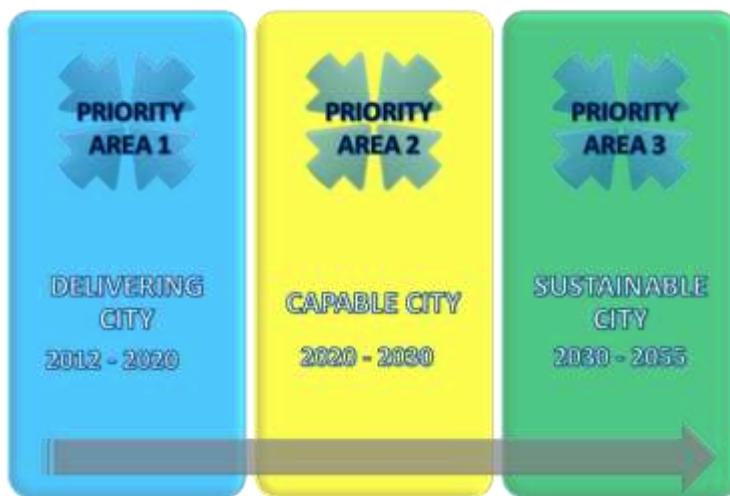
### 1.1 Geographic Priority Areas

“The Capital Investment Framework is geared towards focusing capital budgeting for the Ekurhuleni Metro into strategically identified geographic priority areas in accordance with the MSDF in order to achieve spatial transformation over the medium and long term, and take into consideration new spatial trends” (BEPP 2015/16).

The identified focus areas for targeted investment are termed geographic priority areas (GPAs) in the EMM CIF. The GPAs are derived out of the spatial structuring elements (SSE) of the MSDF, namely “densification areas, the geography of Ekurhuleni income, major housing projects, IRPTN Corridor, rail stations, primary & secondary nodes, industrial areas, major investment and strategic projects” (BEPP 2015/16: 53).

The CIF has extended the spatial planning strategy and prioritisation in accordance with the Growth and Development Strategy (GDS) that has an implementation horizon projected for 2055. There are three geographic priority areas as illustrated in Figure 1 and Map 1 and that reflect implementation priority in accordance with the growth trajectory of the GDS.

Figure 1: Geographic Priority Areas alignment to the GDS

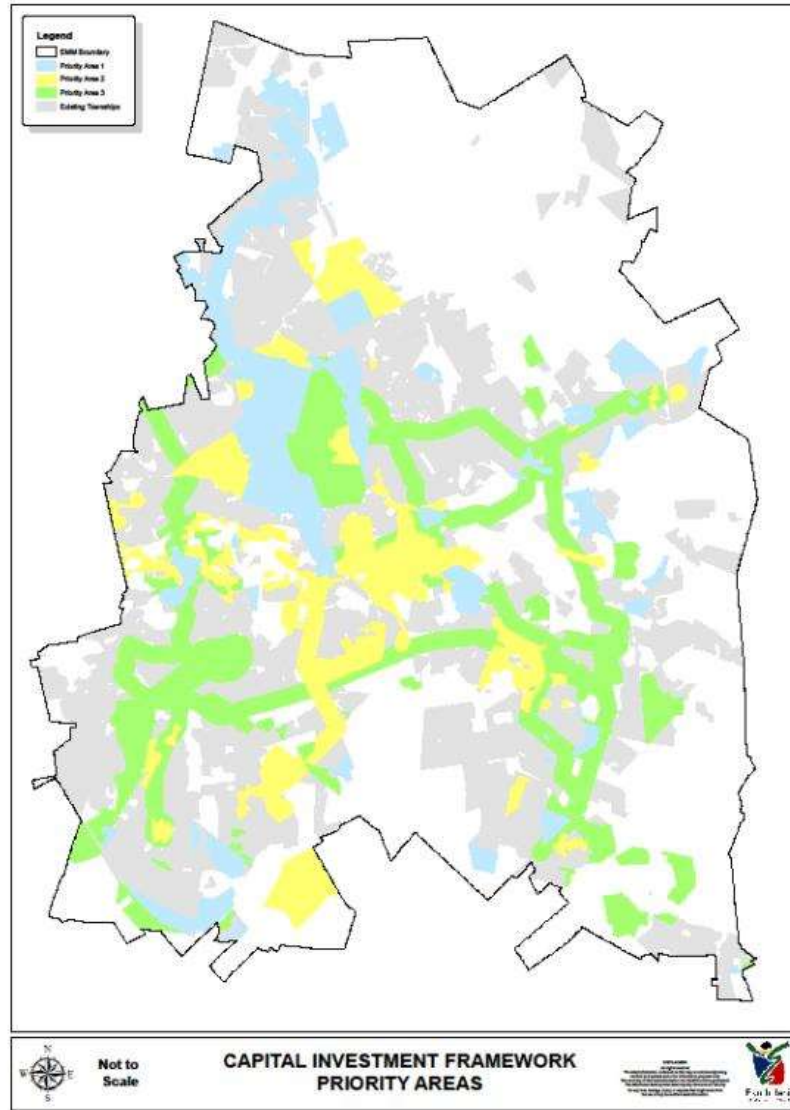


(BEPP 2015/16: 54)

“The Capital Investment Framework utilizes the geographic priority areas as a tool to strategically guide and align capital spending into the Ekurhuleni Metro in order to yield greater results in achieving spatial transformation as outlined within the MSDF” (BEPP 2015/16: 54).

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Map 1: CIF Priority Areas



BEPP 2015/16: 61

## 1.2 Capital Investment Framework: Capital Prioritisation Model

“The capital prioritization model is an instrument utilized in the implementation of the CIF in alignment with the annual budget process set out by the EMM Finance Department in order to strategically prioritize the multi-year capital budget. The CPM as illustrated in **Figure 2** strives to align and incorporate project management, IDP needs analysis, and the SDBIP into the prioritization process, incorporates the geographic priority areas in providing for a spatial rationalization of the budget, establishes a set process for implementation as aligned to the budget process, and guide and familiarize departments with the capital project prioritization process and requirements” (BEPP 2015/16: 96).

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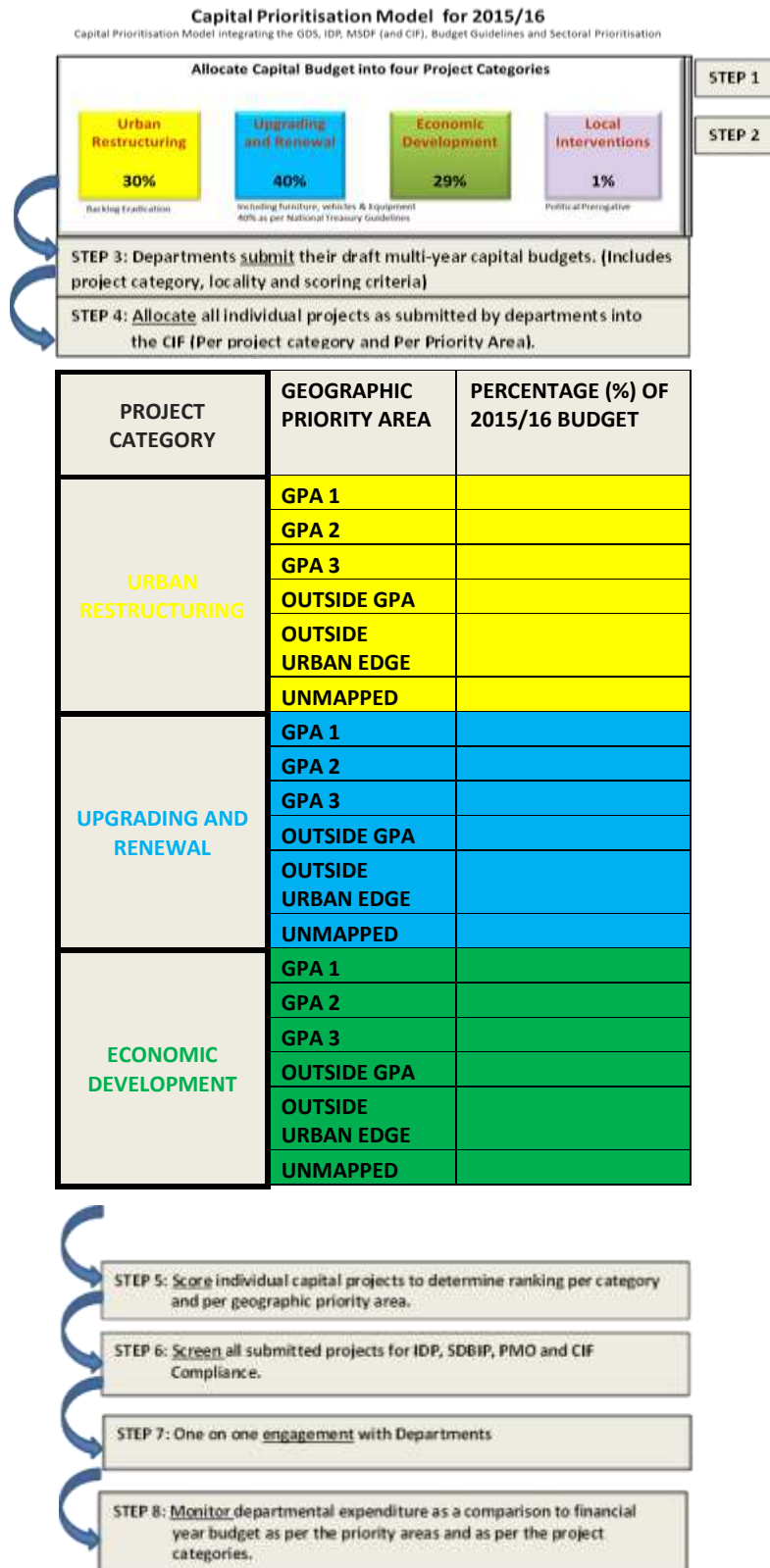
Steps 1 and 2 of the capital prioritization model are important for noting as part of the research in that steps 1 and 2 of the model indicate that aside from the allocation of funds into the GPAs there is a further distinction of funds between various types of infrastructure programmes. Step 1 identifies three types of project categories, whilst step 2 stipulates the proposed budget percentage allocations per project category. The three project categories have been identified as urban restructuring projects (projects that address historical infrastructure backlogs), Upgrading and renewal projects (projects that contribute to either the maintenance or extension of capacity for existing infrastructure), and economic development projects (income generating projects). The CIF proposes that the budget percentage allocation of funding should be increased in order for the EMM to generate revenue and promote development for increased investment. (BEPP 2015/16)

In order to support the theory of increased public sector investment into economic growth projects the CIF will need to make use of economic modelling data to either support or disprove this approach.

### **1.3 CIF Studies**

In strengthening the CIF to better inform and guide the budget process in achieving positive spatial transformation the CIF has derived economic and infrastructure modelling studies as was undertaken by consultants Demacon Market Studies for the EMM. The data outcomes from the studies are aimed at informing the future directive of the CIFs GPAs and capital prioritization models project category budget percentage allocations. The data outcomes form the crux of the research in identifying how taking a data driven approach to transforming the future city scape of the EMM will strengthen the implementation and impact of the CIF on the budget process. The studies include determination of level service and land take up modelling, and GDP and backlog eradication modelling as based against the GPAs and CPM.

Figure 2: Capital Prioritisation Model – Steps 1 to 8



BEPP 2015/16: 98

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## 2. LITERATURE REVIEW

### 2.1 Legislation

The review of legislation that informs the CIF includes both legislation that directly impacts and legislation that indirectly impacts on the CIF. The Capital Investment Framework is therefore a legislative requirement in terms of the Municipal Systems Act (MSA), Municipal Planning and Performance Management Regulations, 2001; and the Spatial Planning and Land Use Management Act (SPLUMA), 2013. Legislation that has been included into the literature review include the Municipal Finance Management Act, 2003 (MFMA) and the Division of Revenue Act, 2015 (DORA) as boasting a secondary impact on the CIF.

The MSA, 2001 in terms of Section 26(e) requires a municipalities Integrated Development Plan include a Spatial Development Framework and a Financial Plan in terms of Section 26(h) (MSA, 2000)). It is within the MSA Municipal Planning and Performance Management Regulations, 2001 that the content of the Spatial Planning Framework is outlined to include in a “CIF for the municipality’s development programmes” as stipulated under Section 4(e) of the MSA regulations (MSA, 2000).

The MSA regulations whilst specifying the requirement for a capital investment framework as part of the SDF does not provide comprehensive detail into the nature, function, and core components of a CIF. This leaves the development and implementation of the CIF open to interpretation that will impact on the extent to which a CIF functions and is implemented within the various metropolitan municipalities. The limited detailing of a CIF in the MSA regulations beyond the formulation of the CIF to inform and guide a municipalities development programmes requires that the MSA regulations be read and understood in conjunction with correlating legislation.

SPLUMA, 2013 is legislation that has been developed especially for planning with the purpose of strengthening planning, providing set standards, norms and outline development principles for the planning field. Section 21 of SPLUMA provides further detail into the contents of metropolitan spatial development framework. Section 21(n) specifies the inclusion of a capital expenditure programme that must be reflected spatially. In further identifying the potential role of the CIF as a component of the MSDF in achieving spatial transformation Sections 21(d), (g), (h) and (m) of SPLUMA needs to be taken into consideration. Section 21(d) requires that the MSDF reflect both “current and future structuring and restructuring elements of the spatial form” this includes identifying “where the public and private sector will invest.....this must be prioritized and facilitated”. Section 21(g) stipulates that the MSDF must include economic estimates to reflect economic activities and employment trends. Section 21(h) calls for the inclusion of current and future services to be reflected spatially. Section 21(m) requires that the MSDF be able to reflect sector plans and their alignment spatially. In the case of the EMM CIF bridging the gap between the MSDF, IDP and budget to achieve positive spatial transformation the CIF extends its role to incorporate the requirements specified within Sections 21(d), (g), (h) and (m) of SPLUMA. The spatial reflection of future spatial structuring and restructuring elements, public and private sector investment, provision of services, and economic estimates solicits that necessary economic and infrastructure demand modelling be conducted; and where data findings are reflected spatially to inform the CIF as a key component of the MSDF. (SPLUMA, 2013)

The DORA 2015 in itself does not make specific mention of a CIF, but is included as part of the literature review given that the legislation guides grant funding division and allocation; and through the Built Environment Plan requires grant funded projects be mapped against the metros identified integration zones. For the Ekurhuleni CIF the required integration zones in terms of Section 14(2) of the DORA takes the form of geographic priority areas. (DORA, 2015)

The literature review also takes into account the Municipal Finance Management Act in that the legislation guides municipal budgeting. Whilst, it must be noted that the MFMA does not provide a direct function or prerequisite for the CIF it does play a crucial role in informing the alignment of the CIF with the municipal

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budget by stipulating the budgeting procedure and requirements which is essential to the successful implementation of the CIF in impacting on the multi-year capital budget. (MFMA, 2003)

## **2.2 Ekurhuleni Policy and Strategy**

In understanding the role of the CIF in guiding the Metros budgeting process it is important to firstly understand how the CIF relates to the IDP, MTREF, MSDF, Built Environment Performance Plan (BEPP), and the Growth and Development Strategy in the context of the EMM (MSA, 2000). The MSA ties the relation between the IDP, Financial Plan, MSDF and the CIF in specifying the content of the IDP to include a financial plan and spatial development Framework. The MSA Municipal Planning and Performance Management Regulations start to link the CIF as part of the required content for inclusion to the spatial development framework (MSA Regulations, 2001). Ideally the Metros developmental objectives should be reflective of the Metros spatial strategy, which in turn should be translated into projects and programmes reflected on the MTREF. The current role of the EMM CIF is geared towards bridging the GAP between the Metros developmental objectives as informed by the Growth and Development Strategy and the Metros spatial strategy and multi-year capital budget. The CIF strive to promote and strengthen alignment and co-ordinated planning between programmes, spatial strategy and funding.

The literature review of the MTREF is of significance to the report in gauging past funding and expenditure trends when compared to the CIF's suggested budget allocation percentages as divided between economic growth, urban restructuring and upgrading and renewal projects. Past expenditure trends on projects versus the suggested budget directive set out in the CIF as placed against the economic studies should start to formulate an idea as to whether past expenditure trends were yielding significant spatial transformation and economic growth for the Metro; or if the suggested budget allocation identified per project category within the CIF will provide the Metro with a greater return on investment when funding is targeted in the right spaces and on the right programmes.

The MSDF provides detail into spatial structuring elements that have been utilized to determine the geographic priority areas for focused investment.

The CIF/BEPP annual Report 2015/16 provide detail into the function and purpose of the CIF and outlines the geographic priority areas and capital prioritization model utilized as the key tools in guiding the budget process to achieve spatial transformation. It must be noted that the CIF has been strategically incorporated as part of the Built Environment Performance Plan given the BEPPs legislative significance and reporting on grant funding and programme expenditure for the Metro to National Treasury on an annual basis. The BEPP is also approved with the IDP and budget annually, which starts to strengthen the CIFs function to improve and strengthen the alignment between the IDP, MSDF and Budget.

## **2.3 National Policy**

The National Spatial Development Perspective (NSDP) is incorporated as part of the literature review of the study in playing a key role in providing normative principles and approach in the “reconfiguration of the apartheid spatial form through the identification of spatial priorities to address the delivery of basic services and alleviate inequalities and poverty as an imperative of the South African Constitution” (NSDP Executive Summary, 2006: Pp. 2). Whilst, the NSDP does not make specific mention of a capital investment framework or programme as a key tool to be utilized in the process of transforming the planning and budgeting approach of government to achieve spatial transformation it does provide normative principles that speak to focusing investment in space to achieve economic growth and address past socio-economic and spatial disparities.

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The principles set out in the NSDP need to be taken into consideration when developing and implementing the EMMs CIF as part of strengthening the MSDF. The principles in summary speak to achieving rapid economic growth, the provision of basic services to the community, focusing fixed investment into economic growth points, and promoting infrastructure investment into these economic nodes and potential economic growth points. Imperative to this is avoiding the so called “watering – can” (NSDP, 2006: Pp. 3) approach when it comes to investment and planning, whereby programmes and investment is dispersed and not focused. The NSDP therefore argues that dispersed programmes and funding has not managed to achieve successful holistic and comprehensive spatial transformation and economic growth (NSDP, 2006). The National Development Plan (NDP) affirms this shortfall in that South Africa as a Country is still plagued by spatial inequalities and a lagging economy (NDP 2030). The suggested turn around in approach is to work towards focused investment that needs to be reflected in policy, strategy and in the budget.

What stands out clearly from the NSDP is that focused investment should occur in economic growth nodes and identified new potential economic growth areas. International case studies identified within the NSDP have revealed that the largest proportion of GDP comes from specific localities. The identification of solid and prime existing economic growth areas and new emerging economic growth areas requires taking a data driven approach in identify these priority areas, and where investment and planning initiatives will yield the greatest long term benefits for the metro in terms of positive spatial transformation and return on investment to achieve greater GDP contribution. Increased economic growth in the right spaces boasts numerous benefits in the form of increased revenue generation, increased investor confidence, urban reform, infrastructure development and employment generation. The NSDP approach is therefore to conduct “rigorous analysis of the space economy with the view to focus government interventions to ensure maximum and sustainable impact.” (NSDP, 2006: Pp. 4).

The National Development Plan provides essential insight for the CIF in that the plan outlines both challenges faced by South Africa and the actions to be taken. Some of the challenges identified within the NDP include poor infrastructure planning and investment that has resulted in infrastructure being under-maintained and faces inadequate capacity to meet the development demands and the pressures of urbanization. Further challenges include slow growth, high levels of unemployment and an economy that is resource intensive and consumption driven. Adding to the challenge is the spatial divide that still staggers inclusive development. It is clear within the NDP that the challenges are interrelated. For instance high unemployment rates is attributed to slow economic growth which is subject to levels of infrastructure, efficient and affordable transport networks, planning and funding strategies. (NDP 2030)

Some of the overarching targets and critical actions set out within the NDP include establishing new spatial norms and standards, achieving public infrastructure investment of 10% of the GDP, increasing access to employment opportunities, improving public transport, and achieving “economic growth that exceeds 5% a year on average and is more than twice the present rate of GDP per capita by 2030” (NDP 2030: Pp. 110). In creating an atmosphere for economic growth higher investments into infrastructure is required to make allowance for more efficient and competitive infrastructure, which is essential to development; and whereby increased public sector investment will start to crowd in private investment (NDP 2030: Pp. 39 - 41). The rate of economic growth set out in the NDP is premised on achieving an additional 11 million jobs for South Africa by 2030 (NDP 2013: Pp. 34).

The review of the NDP and NSDP as part of strengthening the CIF in providing directive to the implementation of the MSDF and budget process provides significance through assisting in the identification of revised spatial and budgetary strategy, and the types of data inputs and outcomes the CIF should incorporate into the decision making process.

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## 2.4 Studies

The EMM appointed consultants Demacon Market Studies to conduct Economic modelling studies in relation to the Capital Investment Framework. The studies were intended to inform the CIF with regard to economic growth, level of service, land take up, and backlog eradication forecasts and findings as a means to strengthen the spatial directive of the CIF in guiding the municipal budget to achieve rational spatial transformation. The studies were therefore premised against the CIF's geographic priority areas and Capital Prioritization Model. The data findings from these studies form the crux of the report in identifying how the economic, level of service, and land take up data is and can be utilized to strengthen the CIF in its application to achieve spatial transformation through guiding and better informing the EMM budget process.

Data outcomes from the following studies conducted for the EMM CIF will be assessed as part of the report findings:

- Modelling backlog eradication and economic growth scenarios for the CoE against the Capital Prioritisation Model (CPM) percentage categories and the CoE capital budget to give an indication on an applicable split between economic development and urban restructuring.
- Modelling scenarios on the estimated GDP contribution from the EMM.
- The estimated job creation levels in the EMM.
- Identification of optimum public and private economic development projects.
- Model level of services (social and engineering) required within each geographic priority area.
- Modelling projected spending required per geographic priority area based on level of service to be delivered.
- Modelling scenarios on projected residential and economic growth within the EMM in relation to future space required to accommodate the aforementioned growth.

Data findings from the aforementioned studies will be assessed in understanding how the data and modelling forecasts can start to provide an evidence based approach in the implementation of the CIF's geographic priority areas and the capital prioritization model as the key tools utilized by the CIF to inform the spatial directive and application of the municipal MTREF.

## 4. OBJECTIVE/RESEARCH QUESTION

The objective of the research is to identify how economic and infrastructure services data will start to inform the EMMs Capital Investment Framework in achieving positive spatial transformation for the future by directing the metros budgeting process?

Research Question:

*How can economic and level of services data findings start to better inform the EMMs Capital Investment Framework in order to redirect the Metros budgeting process as a means to achieve positive and meaningful spatial transformation?*

Sub-questions:

- *How does understanding current, and modelling GDP and employment trends contribute towards informing the CIF and budget process to achieve spatial transformation for the Metro?*
- *How does understanding current, and modelling level of services for both physical and social infrastructure contribute towards informing the CIF and budget process to achieve spatial transformation for the Metro?*

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- *How does understanding land take up rates for the future contribute towards informing the CIF and budget process to achieve spatial transformation for the Metro?*

## 5. APPROACH AND METHODOLOGY

The research approach and methodology will make use of both qualitative and quantitative research.

In the qualitative approach the research will look into literature that pertains to relative planning and financial legislation, national and local policy and strategies. The literature methodology will include an examination of legislative requirements and influence on the CIF as identified in the MSA, 2000, the MSA Municipal Planning and Performance Management Regulations, 2001, the Spatial Planning and Land Use Management Act, 2013, the Division of Revenue Act, 2015, and the Municipal Finance Management Act, 2003.

The research methodology as part of the qualitative approach will also include a look at national policy and strategy to identify the desired funding, planning and strategic growth path that municipalities should strive towards. National policy and strategy that will be included as part of the research includes the NDP and NSDP.

The EMM has been identified as the case study for the research based on the fact that the Metro has a developed CIF that has been implemented as part of the MSDF since 2011 and applied to informing the budget process since 2012 (BEPP 2015/16). The EMM has also been identified as providing for a comprehensive case study in that both qualitative and quantitative information is available in order to deem the case study viable for the research. Qualitative input at the local level of the EMM includes local policy strategy derived for the EMM. This includes a look at the EMM IDP, GDS, MTREF, MSDF and BEPP/CIF 2015/16 report. The local policy and strategy will not only provide insight to the Metros developmental objectives, and funding and expenditure trends as posed against the CIF. The inclusion of economic and infrastructure studies have been conducted for the EMM CIF provides for both a qualitative and quantitative input into the research. The aforementioned studies will provide qualitative data that the research will be able to assess and utilize in the determination of the data can start to strengthen the directive of the CIF in guiding the budget process to promote impactful spatial transformation that not only meets legislative requirements, but also starts to realize the national vision in reducing past inequalities.

## 6. RESEARCH ANALYSIS AND FINDINGS

### 5.1 Economic and Backlog Modelling

The EMM appointed Consultants Demacon Market Studies to conduct financial and projection modelling studies against the CIF and CPM with the objective of providing an evidence based approach to informing the direction of the CIF in identifying where funding should be targeted spatially to not only achieve spatial transformation in the right areas, but to also effect a spin off for economic growth. The theory is that an increase in GDP for the Metro will create employment opportunities and yield greater revenue return. Increased funding stream for the Metro should result in additional investment potential to address spatial and socio-economic inequalities. The findings first look into the EMMs current investment allocation and if this is geared towards achieving economic growth for the EMM. The research goes onto identify spatially where development will be most prevalent in the future. This will assist the EMM CIF in identifying future priority areas for infrastructure investment that can yield investment potential for the EMM.

Table 1 provides a summary of the current socio – economic status of the EMM. “The EMM has experienced positive **economic growth** over the past 15 years with an average growth rate of 3.7%. This is higher than the national growth rate of 3.2% over the corresponding period. The growth in the region can be attributed to the strengthening of the manufacturing sector and other tertiary sectors (trade, transport and

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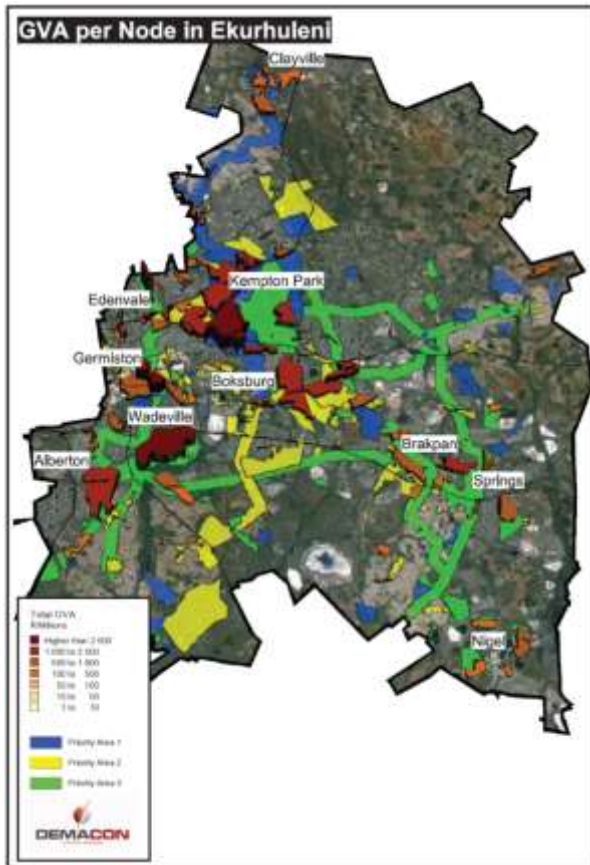
communication services and social & government services). It is therefore evident that economic activity within the EMM is mainly concentrated in the 9 towns of the metro as the dominate GVA generating spaces reflected in Map 2” (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 218).

Table 1: EMM Socio-Economic Summary

Variable	Market Characteristics
Size of the Economy (2011)	✓ EMM contributes 24.8% towards economy of the Gauteng Province
Economic Growth Performance – Time Period 1996 – 2011	✓ Growth in the EMM economy has averaged 3.7% per annum since 1996
Dominant Economic Contributions (2011)	<ul style="list-style-type: none"> <li>✓ Manufacturing – 27.6%</li> <li>✓ Finance and Business Services – 21.5%</li> <li>✓ Trade – 14.7%</li> <li>✓ General Government – 13.5%</li> </ul>
Percentage (%) of Employment to Gauteng	✓ EMM contributes 24.5% to the total employment within the district
Employment Sectoral Distribution (Dominant Sectors)	<ul style="list-style-type: none"> <li>✓ Trade – 21.4%</li> <li>✓ Finance and Business Services – 21.0%</li> <li>✓ Manufacturing – 18.0%</li> </ul>
Employment Growth	<ul style="list-style-type: none"> <li>✓ Long term period (1996 – 2011) = 2.1%</li> <li>✓ Short to medium term (2006 – 2011) = 0.5%</li> </ul>

(BEPP 2015/16: 7)

Map 2: GVA Generation per EMM Node



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In the determination of the ideal investment allocation in the context of the EMM to achieve optimum economic growth the modelling utilises data inputs from the current economic growth, population growth and labour absorption in the context of the EMM. (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015).

The key data inputs are summarised as follows:

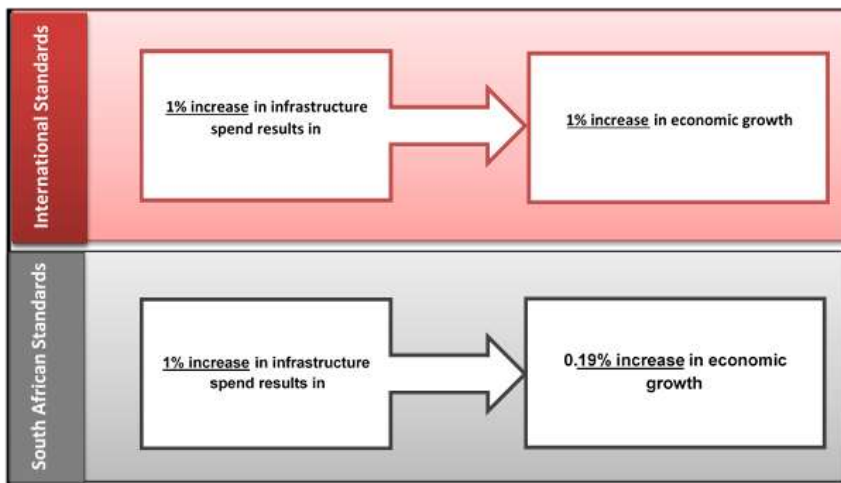
- At an average economic growth rate of **3.7%**, the EMM's economy creates, on average, **16 132** employment opportunities *per annum*.
- On the other hand, the economically active population increased by **35,163** *per annum*.
- This leaves a net **oversupply of labour** of **19,032** people *per annum* – not able to find work in the local, mainstream economy.
- Thus the EMM's economic growth needs to increase in order to absorb the entire economically active population within the Metro. Economic growth rate should ideally reach **8.1%** in order to absorb the economically active population of **35 163** people.

(BEPP 2015/16: 112).

International case studies taken from top performing economic countries has rendered that increased investment into infrastructure results into increased economic growth. “Therefore a ratio between infrastructure investment and economic growth should be determined in order to calculate the additional infrastructure investment needed within the EMM economy to facilitate an 8.1% economic growth”.

“Certain international studies on developing economies suggest there is a (simple) direct, positive **1 : 1** ratio between infrastructure spend and economic growth. Research on the SA economy suggests a more modest (and realistic) ratio of **1 : 0.19** between infrastructure spend and economic growth” (**Figure 3**). (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 206).

Figure 3: Ratios between Infrastructure Spend and Economic Growth, 2014



Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 206

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“Based on the above ratio of **1 : 0.19**, an increase of 23% in infrastructure spend is required in order to create the additional economic growth within the EMM of 4.4% per annum in order to reach the ideal 8.1% needed to absorb the economically active population within the EMM” (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 206). However it should be noted that to reach the ideal 8.1% economic growth, the increase in investment infrastructure will need to be applied strategically, i.e. the majority of the infrastructure investment will need be allocated to infrastructure (particularly bulk infrastructure) in high priority economic zones. Map 2 reflective of the top GVA areas for the Metro will form the basis for the identification of the top economic growth areas for future infrastructure investment. An increase of 4.4% in economic growth in real terms is illustrated in **Table 2**. The table illustrates the average actual GVA increase per annum (R4.4 billion) generated within the EMM based on the current 3.7% economic growth. However, in order to generate an economic growth rate of 8.1% per annum, the average increase in GVA per annum should amount to R5.2 billion (based on the additional 4.4% required in economic growth). Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 207)

Table 2: Private Capital Investment Required per Annum, Constant 2014 Prices

EMM Gross value Added at Basic Prices	
GVA Average Growth per annum at 3.7% (2001-2011)	R4,391,320,170
GVA Average Growth per annum at 8.1% (2001-2011) - Ideal growth	R9,623,682,004
Difference between current growth and Ideal growth (GVA)	R5,232,361,834
<b>TOTAL CAPITAL INVESTMENT NEEDED FOR IDEAL GROWTH (GDP)</b>	<b>R5,403,791,789</b>

*Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 207)*

“Based on principles of budgeting and leveraging as discussed in the preceding paragraphs it is important that the capital investment of R5.4 billion occur within high priority economic localities/ high economic commercial nodes compared to lower impact areas” (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 207).

**Based on the data outcomes from the Demacon study the EMM needs to increase its total current budget by 23% per annum in order to achieve a sustained 8.1% economic growth in the economy that is able to meet the demand for labour.** (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 207) In strengthening the CIF, the modelling outcomes from the Demacon studies for ideal economic growth and investment into infrastructure needs to be based against the capital prioritization models project categories. The modelling strives to inform the ideal capital budget allocation that the CIF in alignment with the budget process should strive for in making funding available for infrastructure projects that will promote economic growth for the EMM. “**Table 3** illustrates the 23% increase on the current EMM’s multi-year capital budget. However it should be noted that 80% of the 23% increase of total capital budget should occur within the economic development category” (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 210). *The figures reflected were taken from the 2014/15 multi-year draft budget before final approval of the budget; therefore figures should not be construed as the actual budgeted amounts within the EMM MTREF.*

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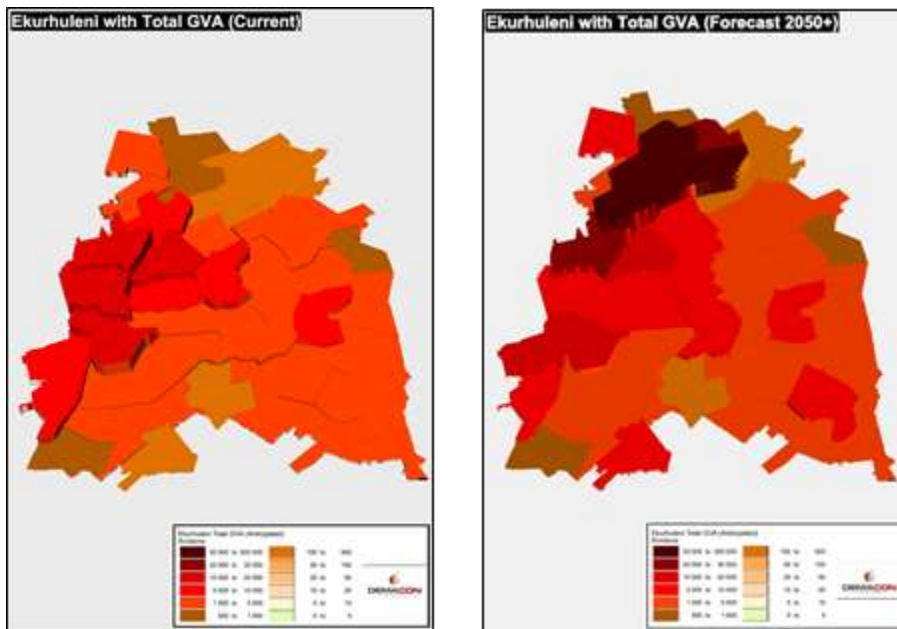
Table 3: Increased Infrastructure Spend Required for a Sustained 8.1% Economic Growth

CIF Budget	2014/15	2015/16	2016/17
<b>Total EMM Current Capital Budget</b>	R3,119,798,979	R3,368,826,121	R4,252,041,688
<b>23% Increase on Total Capital Budget</b>	R 717,553,765	R 774,830,008	R 977,969,588
<b>80% of Total Increase on Capital Budget (Increase in Economic Development)</b>	R 574,043,012	R 619,864,006	R 782,375,671

(Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015: 210)

The 80% budget allocation for economic development projects of the total overall 23% budget increase is anticipated over the long term to drive the EMM towards realising an ideal 8.1% growth rate for the Metro. In summary the modelling reflects that the EMM budget needs to increase funding into economic development projects and that the 29% budget allocation identified within the CIF as the ideal targeted budget allocation for economic development projects needs to not only be implemented to realise economic growth, but should be marginally increased if the desired 8.1% economic growth rate for the Metro is to be achieved. The findings correspond with the target set out in the NDP for economic growth in excess of 5% to be reached (NDP 2030). Importantly the proposed increase spend on economic development projects needs to occur within existing economic nodes and newly identified nodes that pose significant economic growth potential suggested by the NSDP (NSDP, 2006). It is therefore important for the EMM to take into cognisance market forces (see map 3 for identified private sector investment for the EMM). Map 3 reflects current and 2050 forecast private sector market driven investment into the EMM. Dominant GVA contribution is anticipated around the Aerotropolis and along the R21 corridor. The EMM needs to support and grow its economic nodes and corridors by investing into infrastructure in these area.

Map 3: Private Sector Investment for the EMM – Total GVA growth from present to a 2050 Forecast



(BEPP 2015/16: 93)

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## 5.2 Land Demand in Priority Areas

The market forces/private sector investor boasts a large impact on future land take up rates and infrastructure costs for the Metro in supporting economic developments and nodes. In strengthening the CIF the modelling needs to be posed against the CIF Geographic Priority Areas. “The GPAs span on average 26.9% of the total extent of the Ekurhuleni Metropolitan Municipality. These Priority Areas are largely configured around built-up areas and along mobility corridors. As such there are space and infrastructure realities to be considered”:

- “Existing infrastructure has **limited capacity** to sustain new development and will require future upgrades.”
- “Some infrastructure is situated underground, which will limit expansion possibilities.”
- “Not only is developable land extremely limited in these Priority Areas – existing social infrastructure will not be able to cope with excessive densification (over and above the land demand for additional residential and commercial expansion), additional land will be required to facilitate concomitant growth in social infrastructure”

(Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Task 5: Level of Service and Land Take Up Modelling (Demacon Market Studies), 2015:77)

“The Priority Areas can at best absorb 10% - 15% of future spatial growth requirements. This means that 80% of future development will take place outside these Priority Areas and will entail the development of new growth areas that will facilitate extensive private sector investment for the EMM” (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015:).

The subsequent future long term associated cost estimate for Internal Services for each respective region in relation to the CIF priority areas is summarised in Table 4.

Table 4 reflects that the greatest demand for infrastructure looking to 2040 will exist outside of the geographic priority areas as this is where the greatest proportion of land availability is, and where current private sector investment is taking place that is anticipated to expand beyond the current boundaries of the CIF geographic priorities. The findings yield that the CIF priority areas whilst needing to invest in current nodes (existing CBDs, Corridors, industrial areas, office parks) needs to also take into account market forces in the shape of private sector investment in the development of new and emerging economic growth points beyond the current boundaries of the CIF geographic priority areas. Furthermore, intensified public sector investment into economic development infrastructure in the right spaces can yield an increase in the EMMs economic growth rate.

South Africa has a distinctly different growth dynamic, which requires an equally unique and location appropriate approach to future growth. As opposed to singular dimensional strategies centred around densification and infill development, a vital consideration to relieve pressure on existing infrastructure (including the transportation networks network) is required. This requires greater investment into infrastructure and particularly income generating infrastructure. (Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015:85)

**Infrastructure investment** not only **unlocks disproportionately larger private sector investment**, it furthermore makes allowance for the expansion of rateable assets and increases the value real estate assets.

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Table 4: Ekurhuleni Internal Services Cost Estimate, 2040

	Internal Services in Priority Areas	Internal Services outside Priority Areas	Total Internal Services
<b>Water</b>			
Region A	353 205 000	235 470 000	588 675 000
Region B	36 487 050	693 253 950	729 741 000
Region C	25 253 940	395 645 060	420 899 000
Region D	63 195 000	189 585 000	252 780 000
Region E	43 798 200	394 183 800	437 982 000
Region F	142 915 650	809 855 350	952 771 000
<b>Total</b>	<b>664 854 840</b>	<b>2 717 993 160</b>	<b>3 382 848 000</b>
<b>SEWER</b>			
Region A	402 577 800	268 385 200	670 963 000
Region B	44 128 050	838 432 950	882 561 000
Region C	30 587 220	479 199 780	509 787 000
Region D	73 916 250	221 748 750	295 665 000
Region E	52 817 900	475 361 100	528 179 000
Region F	157 545 750	892 759 250	1 050 305 000
<b>Total</b>	<b>761 572 970</b>	<b>3 175 887 030</b>	<b>3 937 460 000</b>
<b>ELECTRICITY</b>			
Region A	1 484 724 000	989 816 000	2 474 540 000
Region B	156 172 050	2 967 260 950	3 123 441 000
Region C	110 718 540	1 734 590 460	1 845 309 000
Region D	272 270 500	816 811 500	1 089 082 000
Region E	191 309 000	1 721 781 000	1 913 090 000
Region F	601 498 050	3 408 488 950	4 009 987 000
<b>Total</b>	<b>2 816 692 140</b>	<b>11 638 758 860</b>	<b>14 455 449 000</b>
<b>ROADS &amp; STORMWATER</b>			
Region A	1 302 012 600	868 008 400	2 170 021 000
Region B	149 233 550	2 835 437 450	2 984 671 000
Region C	90 461 940	1 417 237 060	1 507 699 000
Region D	227 345 500	682 036 500	909 382 000
Region E	159 286 300	1 433 576 700	1 592 863 000
Region F	477 790 650	2 707 480 350	3 185 271 000
<b>Total</b>	<b>2 406 130 540</b>	<b>9 943 776 460</b>	<b>12 349 907 000</b>

(Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015:79)

## 7. RESEARCH CONTRIBUTION

- Provides evidence based research to better inform and strengthen support for spatial planning strategy.
- Strengthens spatial planning policy by linking spatial planning strategy to the budget process.
- Bridging the gap between the MSDP, IDP and Budget.
- Improved understanding of the Metro's space economy.
- Ability to identify spatially where the Metro is generating income versus where the Metro is facing infrastructure backlogs.
- Understanding where the private sector is investing spatially and how this is impacting on the Metro economically.
- Improved and aligned sector planning and budgeting.

## 8. RESEARCH LIMITATIONS

The research is limited to quantitative information and desktop research and therefore lacks qualitative input in the form of interviews with EMM departmental staff. The quantitative information whilst providing an evidence based approach to decision making and strategy for the CIF falls short in terms of incorporating the departmental planners and budget drivers input in providing a comprehensive understanding into the

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shortfalls experienced in the planning and budgeting process based on personal experience and how this impacts on the CIF. Shortfalls in the administrative process of planning and budgeting can vary between departments, and boasts an impact on the CIF beyond the economic data findings.

Application of the spatial data to the CIF specified geographic priority areas is limited in that the economic modelling studies conducted for the Metro utilize mesozones for the spatial representation of the economic data. The application of the spatial data reflected at the mesozone level does not conform directly to the boundaries of the CIF geographic priority areas. This poses a limitation in determining accurate results and figures for the geographic priority areas that do not follow the same spatial area and extent of the mesozones.

The data subject to analysis is based on existing studies that have been conducted specifically for the EMM CIF. It is acknowledged that socio-economic data is not stagnant and therefore continually changing. The data findings assessed as part of this research are therefore deemed accurate based on the data sourced at the time that the studies were being conducted.

It must be noted that the purpose of the research is not to prove or defend the accuracy of the data inputs and or outcomes, as the purpose of the research is to identify and assess how the data and modelling forecasts can be utilized to start giving the CIF and budget process better directive in achieving positive, impactful and rationalised spatial transformation.

## **9. CONCLUDING REMARKS**

In taking a data driven approach to strengthening the Capital Investment Framework in guiding the budgeting process of the EMM to achieve in transforming the future City Scape of the Metro the research has outlined the purpose of the CIF as a legislative requirements and identified gaps, shortfalls, and set out in the NDP and the NSDP that the CIF needs to take into account when guiding the municipal budget in achieving spatial transformation.

The CIF has been identified as a key component of the MSDF in bridging the gap between the spatial strategy, the IDP and financial plan of the Metro. The EMM CIF makes use of the CPM and GPA in guiding the municipal budget by providing a spatial rationale to the budget in promoting focused investment into targeted areas that can also yield economic growth for the Metro.

In strengthening the CIFs influence on the multi-year capital budget the research looked into how economic, land take up and infrastructure modelling data outcomes could be utilized to give future directive to the CIF geographic priority areas and CPM project categories. The economic and backlog modelling data revealed a necessity for the EMM multi-year capital budget to maintain and even move towards increasing funding beyond the identified 29% allocation proposed within the CIF for economic development projects in order to meet optimum economic growth of 8.1% that would absorb labour demand and promote revenue generation for the EMM.

Beyond increased investment into economic development infrastructure, infrastructure and land take up rates premised on market trends and private sector investment rendered a need to increased spend on infrastructure not only within the priority areas, but more predominantly outside of the priority areas looking at a 2040 forecast of land take up and infrastructure costs. The priority areas identified in the CIF include current economic nodes, but is limited in terms of future expansion due to limited land availability. Land availability is greatest outside of the priority areas and

Where private sector investment is anticipated to expand into the development of new economic nodes.

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The CIF needs to guide the municipal budget to promoting increased funding into projects that promote economic development and are deemed as income generating to achieve optimum economic growth for the Metro. In terms of insuring that the Metro is investing into the right spaces to achieve positive future spatial transformation the CIF needs to take cognizance of market forces. Limited space in the priority areas will result in an eventual shift of greater funding outside of the current boundaries of the CIF priority areas to an expansion of the priority areas to accommodate large private sector development as potential emerging economic growth points. This said the CIF will still need to prioritize funding over the long term in sustaining the established economic nodes. What is evident in taking a data driven approach to the CIF in promoting spatial transformation is that the tools of the CIF cannot remain stagnant and need to adapt over time in order to take into account the impact of economic trends, market forces and National objectives on the future spatial form of the Metro.

## **10. REFERENCES**

Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 1 and 2: Backlog and Economic Growth Modelling (Demacon Market Studies), 2015.

Ekurhuleni Metro, Financial and projection modelling EMM Capital Investment Framework: Tasks 5: Level of services and Land Take Up (Demacon Market Studies), 2015.

Ekurhuleni Metropolitan Municipality: Built Environment Performance Plan 2015/16.

Ekurhuleni Metropolitan Municipality: Metropolitan Spatial Development Framework 2011.

Department of the Presidency - Republic of South Africa: National Planning Commission. National Development Plan 2030: Our Future - Make it Work. The Idea & Craft Collective Print & Binding: Sherino Printers.

Department of the Presidency - Republic of South Africa: National Spatial Development Perspective, 2006. Published by: The Presidency, RSA. First Print March 2007

Republic of South Africa, Division of Revenue Act 2015, Act 1 of 2015. Government Gazette 1 June 2015.

Republic of South Africa, Local Government: Municipal Systems Act, Act 32 of 2000. Government Gazette 20 November 2000.

Republic of South Africa, Department of Provincial and Local Government: Municipal Planning and Performance Management Regulations, 2001. Government Gazette 24 August 2001.

Republic of South Africa, Local Government: Municipal Finance Management Act, Act 56 of 2003.

### **Conference Proceedings:**

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# A Critical Evaluation of the National Informal Settlement Upgrade Programme in Townships: A Case of Ivory Park in the North of the City of Johannesburg

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## Abstract

There is evidence that the approaches to addressing the complex issues of informal settlements in South Africa has been proven to be ineffective. There is also a mounting consciousness that promises to housing and other development is made merely to garner political support ahead elections because there is limited delivery against these promises. In the face of the increasing pressure and community dissatisfaction, it is critical that well informed decisions are made in respect of addressing the issue of informal settlements. Hence, the shift away from predominance of policies have been designed to eliminate informal settlement growth by influx control and forced removal, to the present widespread acceptance of informal settlement upgrading as a component of housing policy in most developing countries. Despite the increase in the number of housing delivery that the state has provided for South Africans in need of housing, there is still a rapid demand for more houses. This demand has put a strain on the government in terms of keeping up with the rapid growth. Hence, settlement upgrading is mostly appreciated as the necessary mechanism to integrate the fragmented housing sector. However, a key shortcoming of settlement upgrading has been that most initiatives have been projectbased approaches that only benefit a few neighborhoods or a minority of city residents. To have an appreciable impact, upgrading must go to scale. To assist in formulating upgrading approaches that can reach greater numbers of urban dwellers, this research investigation distills what are considered the “best practices” in upgrading that can lead to scale impacts and improve housing products. This is a literature review and the conclusion points to the need for inter-sectoral collaboration in the programme management of informal settlement upgrade.

## Keywords

Informal Settlements, Upgrading, Policy Shifts, Inter-Sectoral Collaboration and Scale Delivery

## 1. INTRODUCTION

Informal settlements continue to be eyesore across the major cities in South Africa and in other developing nations (Tshikotshi, 2009). These settlements are usually found at the periphery of a city/urban area where land is cheap and neglected. Inhabitants of these informal settlements live in non-serviced areas that lack clean running water, adequate housing, health facilities and sanitation. Due to this, occupants occupying those informal structures are often exposed to illnesses and diseases. South African government since 1994 has made great strides to dealing with complex issues of informal settlements and developing mitigation measures. However, the demand was and still is outstripping the supply and with the various policies and programmes developed to address the sprouting of the informal settlements, it is evident that the approaches

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that have been developed and introduced have been proven ineffective and this is solely (but not only), based on the number of city residents that are still found living in poverty.

## **2. BACKGROUND OF THE STUDY: IVORY PARK**

Ivory Park is an informal settlement township which signifies the previous political order let down providing adequate services for poorer sections of the South African society. Initially, the township was established for the black high incomers. However, the Transvaal Provincial Administration used the area as a transit camp for unlawful residents, providing 'temporary service', awaiting their removal to alternative piece of land. The township was established in 1997 accommodating the homeless and migrants coming into the City. Most residents of Ivory Park are said to be immigrants from Zimbabwe and Mozambique and migrants from Limpopo province. Unable to obtain state subsidized housing, these populations have taken residence in either informal (shack) settlements or back-yard dwellings, rented out by the original homeowners to supplement their income. The landscape of Ivory Park is now densely settled, having expanded onto open land and house yards. In this township, the street is central to people lives, providing space for recreation, conducting business, social interaction and connecting the community to itself and the wider City. Ivory Park is place where poverty has both a historical and contemporary face and where people from different walks of life jostle for survival and livelihood opportunities.

## **3. BRIEF LITERATURE REVIEW**

### **3.1 Defining Informal Settlements**

Informal settlements are complex-specific, which is why there has been difficulty in defining them. An expanding number of literature have proposed various definitions of informal settlement, however the most widely used and applicable definition of informal settlements however, is that suggested by the UN Habitat Programme (1996), which is, "residential areas where a group of which housing units have been built on land to which the inhabitants have no legal claim, or which they occupy illegally; and/or unplanned settlements and areas where housing is not in compliance with present planning and building regulations." The National Housing Code (2009) concluded based on the variety of definitions that the concept of informal settlements is an extensive one with characteristics such as illegality and informality; inappropriate locations; restricted private and public sector investment; poverty and vulnerability and social stress. Informal settlements are also known to be complex, diverse and varied. Therefore, a number of scholars have recognized different types of informal settlements such as the backyard shacks and outbuildings, free standing settlements and peri-urban squatting.

### **3.2 Informal Settlement on an International and National Level**

Barry and Ruther (2005) perceive informal settlements as "a major challenge not only to the managers but also to the planners of developing nations and failure to intervene in a manner that improves residents' quality of life may lead to social and political unrest". Van Hansen (2000) stated that increasing proportion of urban dwellers in developing countries live in informal circumstances/settlements that exist outside of the governmental regulatory structures and Massey (2013) referred to this rate of urbanization as exponential. This was proved by the increase in population from 1.2 billion to 2.1 billion between the year 1985 and 2003 in developing countries (Tannerfeldt & Ljung, 2006). According to Shenya (2007), between seventy and ninety five percent of all the new housing that has been built in developing nations in the last 30 to 40 years has been in informal settlements. Whereas Pieterse (2009) predicted that the urban population in Africa will surpass 750 million by 2030 while currently and according to the United Nation Statistics, 100 million of the world's population live in informal settlement structures.

In Brazil, the urban areas are characterized by informal settlements (or Favelas as Brazilians would refer to them) which are visible evidence of political-economic system that fails to adequately serve the urban populations (Huchzermeyer, 2002). Social exclusion and spatial segregation in Brazil is due the rapid influx

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of population and urbanization in the country. Despite the 80% of the populations living in urban areas according to Huchzermeyer (2002), a vast majority of it lives in very precarious materials, environmental and social conditions. “This is as a result of the lack of affordable and an adequate housing condition which has brought about proliferation of irregular and illegal forms of land use and development” (Brussels, 2001). According to Fernandes (200a) and Fernandes&Rolnik (1998), this results from the combination of three main factors, that is: “the absence of a comprehensive official housing policy at all governmental levels, within the broad conditions of context of restricted legal-political conditions of state action to control urban development; the concentrated and privatized land structure formed throughout five centuries; and lastly the unfavourable dynamics of the highly speculative urban land market, which has produced an average of 40% vacant serviced areas in the main cities.”

In India Mumbai, an estimated 155 million slum dwellers reside in the country of India (UN-Habitat, 2003). However, when India conducted its own projections through census of India, it was found that the number of slum dweller was exaggerated by 105 million because according to census, 54 million slum dwellers were found to reside in India. This gap could significantly have an impact on the budget and resources required in order to upgrade and develop the policies and programmes as currently urban planners rely on these estimations in order to identify household beneficiaries as well as to budget for the slum intervention programs such as the “Environmental Improvement of Urban Slums Program” and the “National Slum Development Program” (Patel et al., 2013). Mathur (2009) states “that it is well known that inadequate targeting is one of the main reasons for failing to make the expected impact of slum policies”. Therefore, it is evident that the statistics estimations are a crucial part in the eradication of slums and policy making processes (Patel et al., 2013).

### **3.3 South Africa’s Experience of Sprouting Informal Settlement**

According to Misselhorn (2009), close to a half of South Africa’s population lives in urban areas, with a quarter of these urban dwellers residing in informal settlements. Despite the difficulty of determining the actual number of informal settlement backlog, an estimated number of 1.5 million households reside in these areas. However, the DoH (2009a) notes the growth of the housing backlog at about 2.2 million units and states that it is increasing. Census (2011) found that the number of households living in South Africa has increased between 2001 and 2011 that is from 11,205,705 to 14,450,161. Simultaneously the total population of the country showed an increased between 2001 and 2011 from 44,819,777 to 51,770,560. Census (2011) also noted the increase of households growing faster than the individual population and the decline of the household sizes. On households in the country, census concluded that 19% of the households were comprised of one person living alone in 2001 and increase of 27% in 2011.

Informal settlements were also affected by the census results where according to Census (2011) and Housing Development Agency (2013) the number of households found in informal settlements were delegated either by the type of dwelling and EA which has stabilized across the whole country. See the figure below.

In Johannesburg development has been essentially shaped by the informal settlements which despite the displacement by formal development continue to reemerge elsewhere. Johannesburg’s informal settlements are mostly concentrated in the periphery of the city, in the western periphery, from Ivory Park in the north east past Diepsloot, in the northwest, down to Orange Farm in the far south.

### **3.4 Approaches to Informal Settlement Upgrade**

According to Abbott (2001), there is no clear concise definition of informal settlement upgrade hence there are a variety of interventions that can be applied. However, Huchzermeyer (2006) stresses the importance of different informal settlements unique growth and their diverse conditions.

#### **3.4.1 International Informal Settlement Upgrade**

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The British colonialism in the nineteenth century were the first to see informal settlements as key urban problems, and “clearance” or “eradication” in the 1970s was central to the methodology of governments right up until the late 1970s (Maylam& Edwards 1996).A number of scholars however, opposed the eradication approach to informal settlement management and view the settlements as part of the solution within the challenge of housing provision (Turner 1968; 1977). Some of the scholars included Turner (1967) and Abrams (1966) who were the first to promote the ‘self-help’ housing (mentioned on the approaches to IS) and the need for autonomy within settlements. Turner (1967) and Turner &Fitcher (1972) insisted on retreating from marginalizing the poor.

Turner and Abrams self-help approach influenced the housing planning through to the 1970s and 1980s. Therefore, it is important to understand the perspectives on housing that the literature provides and the approaches to eradication of settlements that have existed within different schools of thought. According to Ley (2009), informal settlements were recognized as part of the city and led to project-orientated upgrading and (Ntema& Marais 2010; 2013) included the provision of housing through state provided structures, housing subsidies and self-help housing projects.

Informal settlements upgrade gained its momentum in the 1980s and this was due to the rapid influx of the level of poverty which Ley (2009) saw as a process and not a physical condition. This issue was due to lack of income and unemployment which gave rise to a new magic bullet, the in-situ upgrading. This was a way of maintaining social ties, avoiding relocation and protecting social capital. According to Gilbert (2007), the state was to act as an enabler and maximum community self-management was sought and it was the strategy to help alleviate poverty and undertake a comprehensive approach.

The 1999 the World Bank and UN-Habitat ‘Cities without Slums’ initiative revived the historically loaded and dangerous word ‘slum’ in the vocabulary of informal settlement work (Huchzermeyer&Karam 2006; Gilbert 2007). The use of the word ‘slum’ threatened to renew many of the misgivings about the poor that years of research had managed to dispel. It was used to attract funding and incite a sense of urgency among politicians and practitioners (Gilbert 2007). The campaign name also gave the impression that cities are able to (and should) strive to eradicate informal settlements in their jurisdiction. This ‘call to action’ by the World Bank and UN has been adopted in varying (and sometimes) dangerous ways. In an effort to eradicate ‘slums’, a number of cities have taken it upon themselves to demolish informal settlements without making allowances for those who call these settings home.

### 3.4.2 Informal Settlement Upgrade in Africa

In Africa, a marked increase in informal settlement during the 1950s and 1960s meant that African cities reacted with increased regulation, administration and enforcement (Payne 1989).During this time informal settlements were seen purely as areas of poverty, illegality, crime and disease and were a direct offence to the modernist direction that African governments were aiming for. African governments sought adequately developed and planned cities with formal neighbourhoods and areas for commercial investment and revenue collection. This came with stringent planning regulations, by-laws and policy to protect formalization and dampen growth and urban in-migration (Kubale, Palmer & Patton 1988). It included policy and practice that led to the demolition of informal settlements in an attempt to provide formalized housing.

The cities of the sub-Saharan Africa experienced an increased, sustained rate of urban growth over the last several decades and Africa was recorded the fastest urbanizing continent in the world. Africa also has the highest proportion of urban dwellers living in shack/informal settlements.

In Kenya Nairobi, the government implemented slum clearance policies as well as campaigns to discourage urbanization (Macharia 1992 & Alder 1995). Simultaneously, a number of governments endeavored to provide new housing accommodation through state-built often high-rise housing, planned, designed and financed by national housing corporations (Okpala, 1986; Stren, 1990 &Macoloo, 1994).They were expensive, often poorly build and scarce (Cohen 2001; Ogu&Ogbuozobe 2001). Political interference also

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became an impediment to the allocation of available housing units. Houses were distributed to upper income, elite groups or to those aligned with a particular political party (Temple & Temple 1980).

However, in the 1970s a shift in attitudes towards informal settlements began to occur. Instead of being perceived as eyesore, health hazard, or havens for criminals, the self-built structures of informal settlements were recognized as essentially proactive, intelligent responses to a situation of acute housing scarcity. Planners began to recognize informal settlement residents as industrious self-builders who needed only limited assistance from the state mainly in the form of secure tenure and basic urban services in order to improve their circumstances themselves. The elimination of informal settlements has, however, still taken place recently in parts of South Africa (particularly Johannesburg) and Zimbabwe (Harare) (Pithouse 2009).

### 3.4.3 Informal Settlement Upgrade in South Africa

South Africa's approach to informal settlement upgrading and righting the damaging legacy of apartheid has given South Africa a notable place in formalization and upgrading literature (Huchzermeyer 2006). An expanding number of literatures have presented only positive/success of the programmes and failed to state the negatives/failures thus not representing the full picture. Several studies in South Africa alone have been undertaken in an attempt to obtain solutions for the current housing phenomenon. Several scholars have looked and undertaken different methods to try developways to upgrade informal settlements. Scholars from across the country have looked at a variety of ways to improve informal settlement conditions for example, Mzimela, (2009) looked at whether land subdivision is an effective method of upgrading informal settlements (Mzimela, 2009 cited from Ngonyama, 2012; 16).

The persistence of informal settlements in South Africa, and their continued growth despite extensive government subsidized housing delivery since 1994, has increasingly received national attention (Huchzermeyer 2002). The South African government had been utilizing the Reconstruction and Development Programme as a key housing element until 2004 when the Breaking New Ground Plan was introduced. The BNG Plan encourages the private sector to return to the housing subsidy market as they had shifted away due to low profit margins.

The upgrade of informal settlement has been an important change in the policy of housing. It is an approach that facilitates for more participatory, flexible and integrative developments. The answer to informal settlement has been mainly informed by the national and provincial housing policies and programmes. The UISP and the BNG have indicated a significant shift of policies in respect of the advance to informal settlement and their upgrading. Hence, a great deal of the work on the upgrading of informal settlements has prioritized either the techniques or practices allied with informal settlements or on the linked legislation and policy (Huchzermeyer & Karam 2006).

## 4. APPROACH & METHODOLOGY

The main approach of this research is quantitative data, however, qualitative data also plays a part in the research therefore the methods used for this data collection were mixed. It is based primarily on narrative information obtained from respondents through interviews, questionnaires, and direct observation of Ivory Park. Reason and Rowan (2004) have argued that the core element of a qualitative research approach is to connect meanings to the experiences of respondents and their lives. The report draws on statistical and other written evidence such as the Statistic South Africa, government policies and the increasing informal settlement and housing research literature on South Africa.

### 4.1 Data Collection Methods

This section highlights the data collected within the sample size. The data collected here was regarded as the link between the literature and the findings and analysis.

#### 4.1.1 Primary Data Collection

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The information carried out here includes observation, questionnaires and face-to-face interview with the residents of Ivory Park. In the case of questionnaires, face-to-face interviews were conducted with officials. Responses were recorded in the form of writing down and the questionnaires were mostly closed questions. Efforts were made to ensure all questionnaires were administered by the researcher to avoid later collection of questionnaires. In terms of personal interviews, this was carried out with the residents of Ivory Park and officials. The scenario reduced the time taken to conduct such interviews and filling the questionnaires as the questions were filed within a specified time frame particularly residents who are unemployed and always available during the week. Ivory Park was also visited in the evening to give the employed an opportunity to be interviewed and complete their questionnaires.

#### 4.1.2 Secondary Data Collection

The secondary data collection will be collected through the expanding literature review, already existing information (desktop).

### 5. RESEARCH FINDINGS

#### Section A

##### 5.1 Demographics

Based on the sample number selected in order to conduct the data collection, 54 % of the respondents were male and 46% of them were females. This information proved the 2011 census which was conducted and concluded that Ivory Park was male dominated. In terms of the age group, the survey found that persons aged between 25-30 both female and male dominated the area with, 74% females and 52% accounted to male. With regards to the ethnicity, black race dominated the area. In terms of the employment rate, a great number of the township residents are unemployed. During this survey, there was a need for weekend data collection in order to interview and conduct a percentage of workers which came out very little compared to the unemployed.

#### Section B

##### 5.2 Main Analysis

The main purpose of the section is to answer the core objectives provided by the research study. In order to accomplish this, questionnaires that were relevant to the objectives and research questions were formulated. Ivory Park is a very big township therefore it is divided into different extensions. In order to achieve these results in this section, an area, Extension 6 in Ivory Park was selected as the study to conduct and gather information that would answer the core objectives of the research and critically evaluate the purpose of the research with the assistance of the respondents who are currently residing in the area and understand the area better.

##### 5.2.1 Accessibility of services

Access to services is one of the most important aspects of life as life is not possible without services such as water, sewerage systems, electricity etc. The government of South Africa has made an effort in providing basic services to its citizens and to some extent this has been successful. However, in areas such as Ivory Park where informal settlements reside there is still a lack of adequate services for the residences living there. One of the purposes of this data collection was to investigate the level of services available in Ivory Park, whether or not they are delivered in an adequate way and are available and accessible to everyone.

##### a. Accessibility to Water

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According to the respondents, residents of Ivory Park have access to water however, it is not adequate/clean and this is based on the number of sicknesses and diseases that arise in the area from drinking water straight out of the taps. Some respondents were okay with the accessibility of water however, expressed their views also with regards how it stops running when there is a long queue waiting to get some water in their buckets. Some residents blame children for waiting the water, especially on hot days. “Children play around with water like it is a shower than later when we go get water to cook, there is no water available. Had each household had access to steps this wouldn’t have been taking place or a problem” expressed on of the residents.

b. Accessibility to Electricity

Residents of Ivory Park have access to electricity however during winter time the township experiences a number of load shedding. One of the residents said that “during cold winters our electricity usually gets cut off then we spend our winter in the dark using candles as a source of light at night. These candles are not very safe as a number of houses burn down due to candle incidents and this burning of settlements compromises the other neighboring one. Therefore, it is not safe and the government needs to do something about it.”

c. Accessibility to Adequate Sewerage Systems

According to CoJ (2015), the City spent about R 495 million between July 2006 and December 2009 in order to upgrade the sewer infrastructure and the expansion programme on bulk waste water and sewer networks that was due to the increase demand for sanitation services. The program was rolled in 19 suburbs and Ivory Park was one of the beneficiaries. However, the residents of Ivory Park were furious when the interview got to the adequate sewerage system question and pointed out to a sewage pipe that had been overflowing for weeks now and the municipality promising to come fix it. One of the respondents said “our sewerage pipes would give the whole area problems and it would take the municipality forever to come and fix them, until then we live in areas that are unhealthy and smell. Do they not care about our wellbeing?”

d. Accessibility to Garbage Disposals

According to the respondents of Ivory Park, the garbage disposal and collections are very bad and the areas are flooded with garbage in any open space and there are hardly any collections taking place which means that the garbage gets blown by the wind all over the place. This according to the respondents is not healthy and dirty, it is eyesore to the residents of the townships.

e. Road Infrastructure

During the site survey for the data collection, the first thing one notice when entering the area is that the road is all gravel. The main road to the area is tarred but as soon as you enter the area that is, extension 6, it is all gravel from the entrance to the end of it. Respondents complained about transportation and expressed that it could be one of the reasons development hardly takes place in the area. Road infrastructure is important.

## 5.2.2 Amenities

The respondents of Ivory Park all agreed that they had amenities in the area however it was not all in good conditions. Five of the respondents complained about the clinic in the area that it was not hygienic and clean and it was in no good conditions. They expressed and advised that it be upgraded and fixed because a number of residents in Ivory Park use that clinic as it is closer than the ones outside the area. Some of the respondents expressed their view with regards to schools that schools also are in no good conditions and that their children come back with torn uniforms and blame the desks and classroom sits. Some of the respondents complained about the churches being far and shops being far. However, in these amenities

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available in the area regard, they all agreed that there is access to them even though it is not in good quality and that they appreciate they have it.

## **Section C**

This section enters deeper into the core objectives of the research to actually find out and evaluate the performance of the National Informal Settlement Upgrading Programme, to assess it based on the data collected and interviews conducted in order to achieve the objectives set for the research study. The analysis of data in this section provides the answers to the questions that were posed in the beginning of the research. The attempt of this section is to conclude from the information gathered during data collection whether or not the residents of Ivory Park are prioritized and considered in the development of South Africa and whether or not the programmes and plans that the South Africa government adopts includes and benefits the residents of Ivory Park

### **5.3 Housing Beneficiaries and Housing Delivery**

Despite the great strides the government has made in providing RDP houses for the residents of Ivory Park, a large number of the residents are still living in informal dwellings with poor delivery of services. During data collection, a number of RDP beneficiaries were found to be very low and this was due to quite a number of reasons given by the respondents. The respondents feel that the government has neglected the area. Some respondents said that they were non beneficiaries because they have not applied for RDP houses and their reason was that they do not even believe that the government would take their applications into consideration, especially because some of the residents are foreign residents (is this some form of discrimination?). The RDP housing beneficiaries complained about the quality of houses the government has provided for them.

When the councilor of the area was asked why there were still a high number of residents in the area that still does not have access to housing, he expressed that there is a long list of people waiting to receive RDP housing from government, he mentioned that the budget was limited and there are poor quality materials for development. He also expressed that governments' reason for slow delivery of RDP houses could also be due to the population explosion that takes place in the area and the government struggles to keep up with the increasing population. The councilor said that the difficulty of the community having access to housing is also due to their lack of knowledge on how to apply and he expressed that there are many meetings that take place in the area that assists the community in that regard but the community barely participates or attends the meetings.

The government's attempt to improve the quality of household life for the poor by committing to providing sustainable human settlements has not been entirely true to the residents of Ivory Park. According to the respondents the government still needs to improve the quality of delivery and increase its pace. The respondents also feel that the government's goal does not include Ivory Park as not much work or effort has been put in developing Extension 6 and most of other extensions in the area. They do not deny the housing delivery and the developments that do take place in the area however they feel that it is in a very slow pace.

The DoH prioritized in upgrading well located informal settlements, and providing proper services and land tenure to 500 000 household by 2014. Unfortunately, due to the lack of development that has been taking place in Ivory Park, expressed that they did not benefit from that and like it has always been they feel they were and are neglected by government when it comes to projects of delivery and upgrading. Judging based on the site survey, the conditions of the Ivory Park residents is not good and healthy.

According to Zitha, Ivory Park is overcrowded and unfledged, comprising scores of households occupied by indigent and unemployed youngsters and adults, all integrated by geography and circumstances and living in majority groups. The area is battling to cope with the rapid urbanization and in-migration, with housing overlapping on pavements and corrugated iron shacks erected in most back yards, pushing up

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against brand-new houses. Zitha adds that, additional houses are being built at the City, provincial and national government. However, not everyone in Ivory Park qualifies for free or subsidized housing.

Zitha explained that development in terms of service provision and housing provision has changed over the years. He mentioned that people who used to live in Ivory Park and left due to poor service are returning back and claiming their old stands. This results in the rapid population growth in the area and confusion. He also noted the uncontrollable issues of renting out backyard shacks with residents telling you this is the only way they can make ends meet.

During a site survey by the City's DoH in the informal settlement of Ivory Park, the housing director, Paulo Ntsoa in the Region A, discussed challenges in the area that is, provision of housing in the area is difficult due to the availability of land because most of the available land is privately owned land. The director also highlighted that the housing delivery is slowed by the unavailability of title deeds. The other challenges that the DoH came across were RDP houses that were already developing cracks before the completion of it and in other areas they found RDP foundations that have been left incomplete for years with owners beginning to complain about the lack of delivery by the department.

One of the mayoral committee for housing members, Strike Ralegoma expressed his view on the rate of housing delivery, he believed that housing delivery needed to be speeded up and said that the slow pace could've contributed to the xenophobic attacks which were prompted by the lack of resources. Ralegoma feels that a great amount of work still needs to be done in order to obtain decent houses for the community of Ivory Park.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

The National Informal Settlement Upgrading Programme based on the data collected/findings is not very effective and efficient in the community of Ivory Park and that this is due to a number of factors such as mass urbanization, unavailability of title deeds, most of the land in the township is privately owned and residents do not qualify to be free housing beneficiaries.

Based on the challenges that were previously identified resulting in the poor performance of the National Informal Settlement Upgrading Programme in the community of Ivory Park, mitigation measures need to be taken into consideration. Ivory Park respondents during the data collection process expressed their concern with regards to the government's poor performance in quality delivery of housing and services. The community blamed the lack of involvement and inclusion during the plan, project and programme formulation and decision making. The officials also expressed their concerns and provided reasons as to why the National Informal Settlement Programme is not very active in the community of Ivory Park; this information was also obtained from previous interviews with government officials and previous study.

One of the most important issues that need to be prioritized in Ivory Park is public participation. Public participation is a very essential factor that encourages and promotes it, which can better handle conflict between stakeholders. Promoting participation in Ivory Park can improve the democratic and service accountability; it can enhance social cohesion and enable government policies and programmes to be relevant to the community. The active participation can be effective and provide the residents an opportunity to develop skills and networks needed to address social exclusion and criminality. Furthermore, public participation can promote sustainability and promote a sense of belonging and the right to the city for the community.

Transparency is also very important, government needs to be transparent to the public about the plans, policies, programmes and projects that will be taking place in the area of Ivory Park. This can provide an opportunity for openness of the government in terms of how they operate and what, why and where development is taking place.

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An improvement of adequate housing and service delivery needs to be fostered. The government and the Department of Housing need to see to it that the delivery of free housing and services is done in a fair manner, that is, people who have been on the waiting list for long be prioritized rather than delivering houses to people to recent or late applicants.

Government need to buy the privately owned land in Ivory Park in order to provide more houses for the residents of Ivory Park. Houses to be built can be developed vertically, that is, double storey or triple storey allowing for more space for more houses. Government needs to provide good quality of housing, services and infrastructure in order to avoid the cracks on the walls of the housing one of the residents complained about and also in order to avoid the constant over flooding of sewerage from the sewage systems. Good quality avoids constant maintenance and unexpected problems that arises from the services that government is currently delivery to the community of Ivory Park.

The government needs to prioritize and equally focus on the poorest of the poor. Inequality is still a deeply rooted issue that South Africa is facing. In the eyes of the poor, government is developing for the rich and they are not considered. This results in violence and protests that government needs to retract from. Therefore, in order for such to happen, a bottom up approach needs to be implemented. The residents of Ivory Park need to have the right to the city, they need to have the sense of belonging and the confidence in their government. For this to take place the government must prove to the community that they are doing their level best and actually do their level best in delivering services and housing to the community.

## 7. REFERENCES

Angignu, N. & Huchzermeyer, M. (2009). *Towards urban inclusion: Planact's response to the phenomenon of informal settlements*. Johannesburg: Planact.

Angotti, T. (2006). Apocalyptic anti-urbanism: Mike Davis and his planet of slums. *International Journal of Urban and Regional Research* 30(4): 961-967.

Cohen, M. (2001). Urban assistance and the material world: learning by doing at the World Bank. *Environment and Urbanization* 13(1): 37-60.

Davis, M. (2006). *Planet of slums*. London: Verso.

Gilbert, A. (2007). The return of the slum: does language matter? *International Journal of Urban and Regional Research* 31(4): 697-713.

Huchzermeyer, M. (2006). The new instrument for upgrading informal settlements in South Africa: contributions and constraints. In Huchzermeyer M & Karam A (eds) *Informal settlements. A perpetual challenge?* Cape Town: University of Cape Town Press.

Huchzermeyer, M. (2008). Slum upgrading in Nairobi within the housing and basic services market: a housing rights concern. *Journal of Asian and African Studies* 43(1).

Huchzermeyer, M. (2009). The struggle for *in situ* upgrading of informal settlements: a reflection on cases in Gauteng. *Development Southern Africa* 26(1): 59-74.

Huchzermeyer, M. (2011). *Cities with 'slums': from informal settlement eradication to a right to the city in Africa*. Cape Town: UCT Press.

Huchzermeyer, M., Baumann, T.& Mohamed. S,(2004). *Background Report 3: Informal Settlement practice in South Africa's metropolitan cities*. Pretoria: The Department of Housing.

Huchzermeyer, M. & Karam, A.(2006). The continuing challenge of informal settlements: an introduction. In Huchzermeyer M & Karam A (eds) *Informal Settlements: A perpetual challenge*. UCT Press: Cape Town.

### Conference Proceedings:

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

Huchzermeyer, M. & Karam, A. (eds) (2006). *Informal settlements. A perpetual challenge?* Cape Town: University of Cape Town Press.

Kerlinger, F., & Lee, H. B. (2000). *Foundations of behavioral research*. New York: Harcourt.

Kubale, A., Palmer, E. & Patton, C.(1988). Evolution of third world shelter policies. In Patton C (ed) *Spontaneous shelter: international perspectives and prospects*. Philadelphia: Temple University Press.

Ley, A. (2009). Housing as governance: interfaces between local government and civic society organisations in Cape Town, South Africa. PhD thesis. Berlin: Universität Berlin, Von der Fakultät VI – Planen Bauen Umwelt der Technischen.

Macharia, K. (1992). Slum clearance and the informal economy in Nairobi. *The Journal of Modern African Studies* 30(2): 221-236.

Macooloo, G. (1994). The changing nature of financing low-income housing development in Kenya. *Housing Studies* 9(2): 281-299.

Misselhorn, M. (2008). Position paper on informal settlement upgrading. Part of a strategy for the second economy. Office of the South African Presidency. Cape Town: Urban LandMark.

Naidoo, N., Chidley, C. & McNamara, A. (2008). The implementation of hygiene education programmes in informal settlements, developing communities: water supply and sanitation. The Water Research Commission (WRC), WRC Report No 1656/1/08.

National Department of Human Settlements (2009). National Housing Code 2009.

National Department of Human Settlements (2010). National Housing Policy and Subsidy Programmes. Prepared for the National Department of Human Settlements - Chief Directorate Policy Development.

Patel, K. (2013). A successful slum upgrade in Durban: A case of formal change and informal continuity. *Journal of Habitat International* 40: 211-217.

Payne, G. (1989). *Informal housing and land subdivisions in Third World cities: a review of the literature*. Oxford: The Centre for Development and Environmental Planning.

Pieterse, E. (2009). Post-Apartheid Geographies in South Africa: Why are urban divides so persistent? Paper presented at the Interdisciplinary debates on development and cultures: Cities in development – spaces, conflicts and agency, Leuven University.

Rajasekar, S. Philominathan, P. & Chinnathambi, V. (2013). *Research Methodology*. School of physics, Bharathidasan University, Tiruchirapalli, Tamilnadu, India.

SACN (South African Cities Network) (2006). *State of the Cities 2006*. Johannesburg: South African Cities Network.

Srinivas, H. (1991). Defining Squatter Settlements. Available from: <http://www.gdrc.org/uem/define-squatter.html>. [Accessed 03 March 2014].

Tannerfeldt, G. & Ljung, P. (2006). *More Urban Less Poor*. London: Earthscan.

Tshikotshi, V. (2009). The challenges of eradicating informal settlements in South Africa by 2014. The case of Seraleng sustainable human settlement, Rustenburg local municipality, North West Province. Master's thesis. Johannesburg: University of the Witwatersrand, Faculty of Engineering and Built Environment.

#### **Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
4-6 July, 2016, Sandton Convention Centre, Johannesburg, South Africa | ISBN: 978-0-620-69628-9

- Turner, J. (1967). Barriers and channels for housing development in modernizing countries. *Journal of the American Institute of Planners* 33(3): 167-181.
- Turner, J. (1968). Housing priorities, settlement patterns, and urban development in modernizing countries. *Journal of the American Institute of Planners* 34(6): 354-363.
- Turner, J. & Fichter, R. (eds) (1972). *Freedom to build: dweller control of the housing process*. New York: Macmillan Company.
- Turner, J. (1977). *Housing by people: Towards autonomy in building environments*. New York: Pantheon Books.
- UN-Habitat (1996). *Indicators of sustainable development. Framework and methodologies*. New York: United Nations.
- UN-Habitat (2003). *The challenge of slums: global report on human settlements*. Nairobi: United Nations Human Settlement Programme (UN-Habitat).
- UN-Habitat (2006). Urban governance. Paper delivered at AMCHUD, Durban.
- United Nations Development Programme. (2013). Local Service Delivery: Challenges of Local Service Delivery and Opportunities for Local Development. Available at: [http://www.undp.org/content/undp/en/home/ourwork/capacitybuilding/focus\\_areas/focus\\_area\\_details4/ppsd/local-service-delivery/](http://www.undp.org/content/undp/en/home/ourwork/capacitybuilding/focus_areas/focus_area_details4/ppsd/local-service-delivery/) [Accessed 25 March 2014].
- Watson, V. (2002). *Change and continuity in spatial planning: metropolitan planning in Cape Town under political transition*. London: Routledge.
- Watson, V. (2003). Conflicting rationalities: implications for planning theory and ethics. *Planning Theory and Practice* 4(4): 395-408.
- Watson, V. (2007). Engaging with difference: understanding the limits of multiculturalism in planning in the South African context. In Murray N, Shepard N & Hall M (eds) *Desire lines: space, memory and identity in the post-apartheid City*. London: Routledge.
- Watson, V. (2009). Seeing from the south: refocusing urban planning on the globe's central urban issues. *Urban Studies* 46(11): 2259-2275.

**Conference Proceedings:**

7<sup>th</sup> Planning Africa Conference 2016 – Making Sense of the Future: Disruption and Reinvention  
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**Zenzile Mbinza** is a development planner who has worked in the public and private sector. His experience ranges from land use management, the formulation of Spatial Development Frameworks, the reviewing and formulation of Integrated Development Plans. He also has vast experience in settlement rehabilitation and upgrading. Currently, he works in the academic space. There, his research interests include place-branding (the subject of his PhD), the disambiguation of township spaces, place-making, strategic spatial planning, understanding and responding to the informal economy, metropolitan planning, and regional economic analysis.

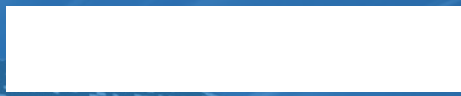
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