
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.

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 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 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 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).

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

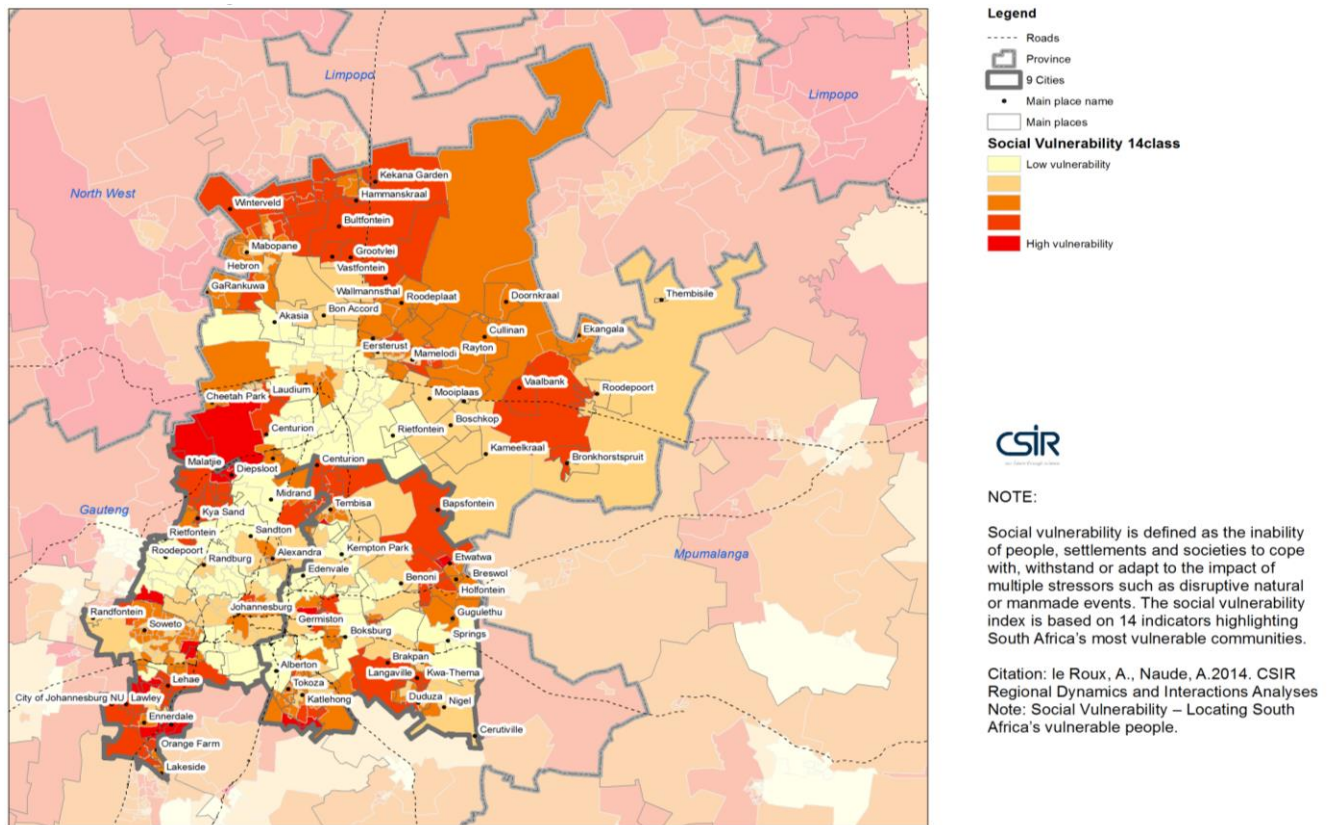


Figure 1: Social vulnerability in Tshwane, Johannesburg and Ekurhuleni

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,
- 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.

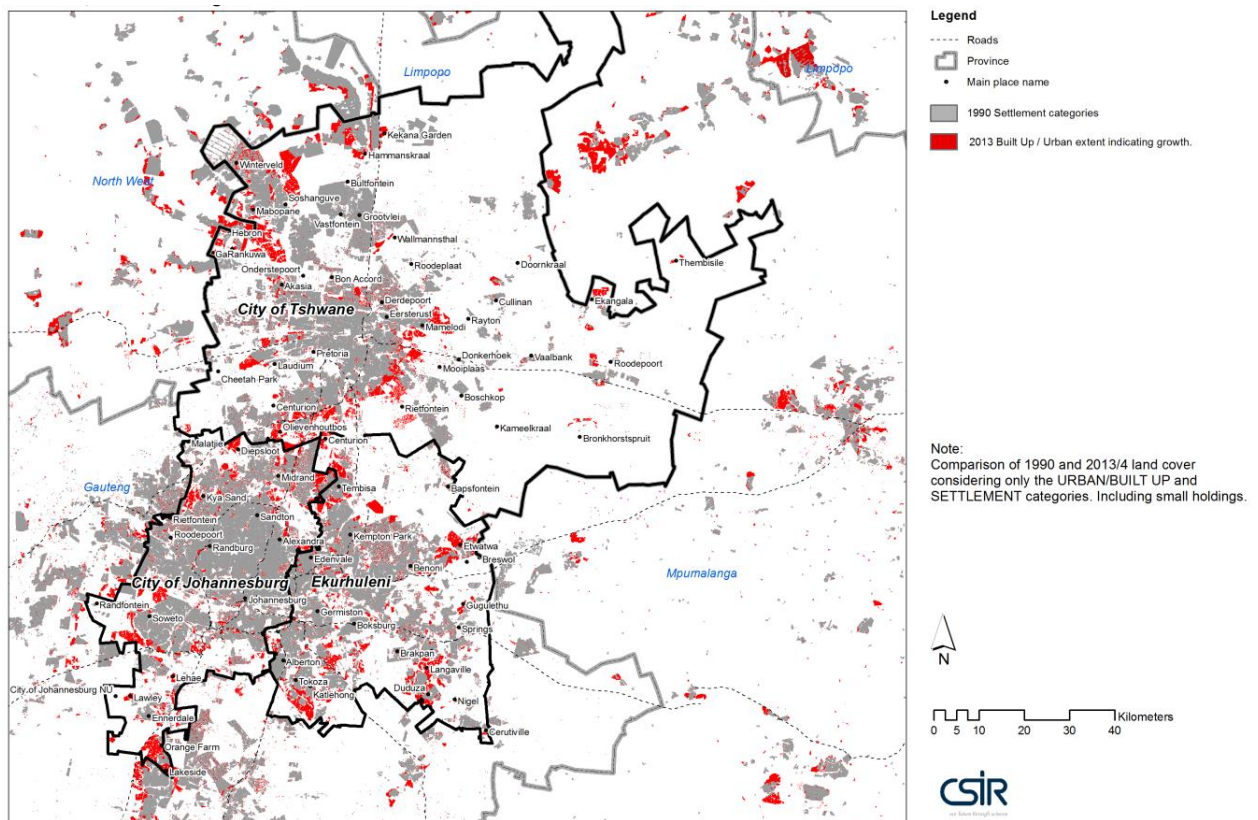


Figure 2: Change in built-up settlement footprint between 1990 and 2013 for Tshwane, Johannesburg and Ekurhuleni

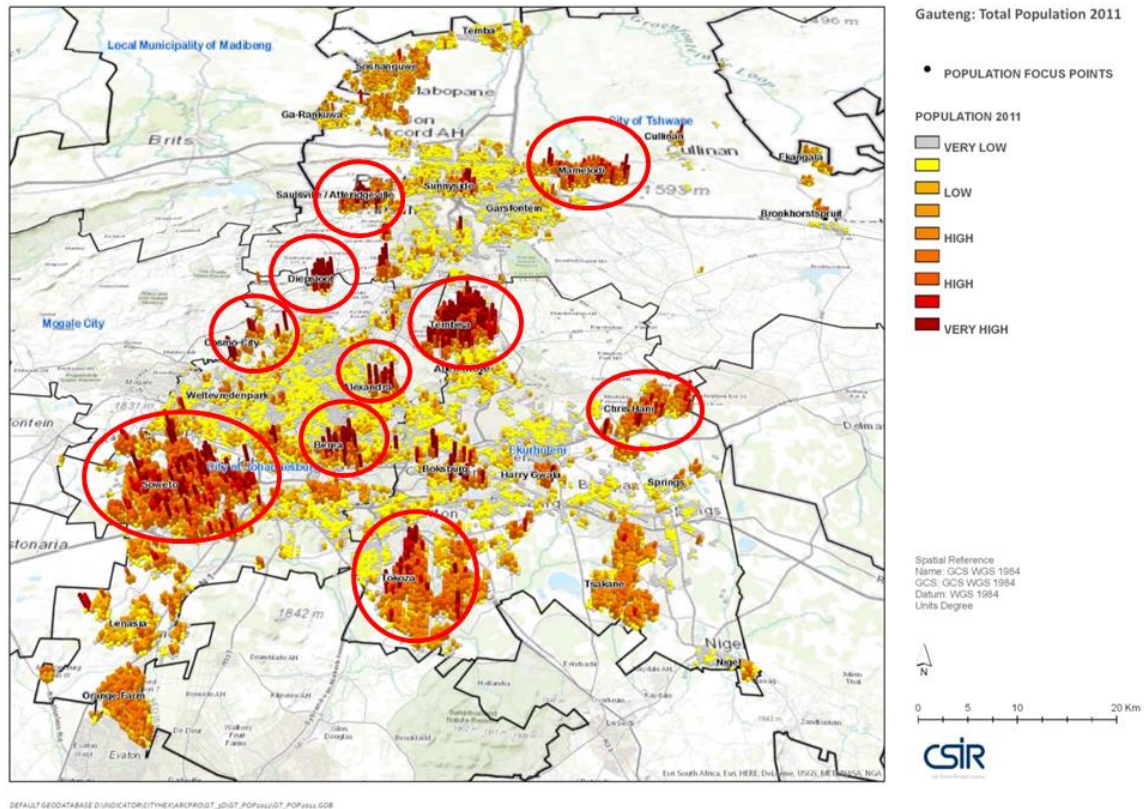


Figure 3: Current population concentrations in Tshwane, Johannesburg and Ekurhuleni

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.

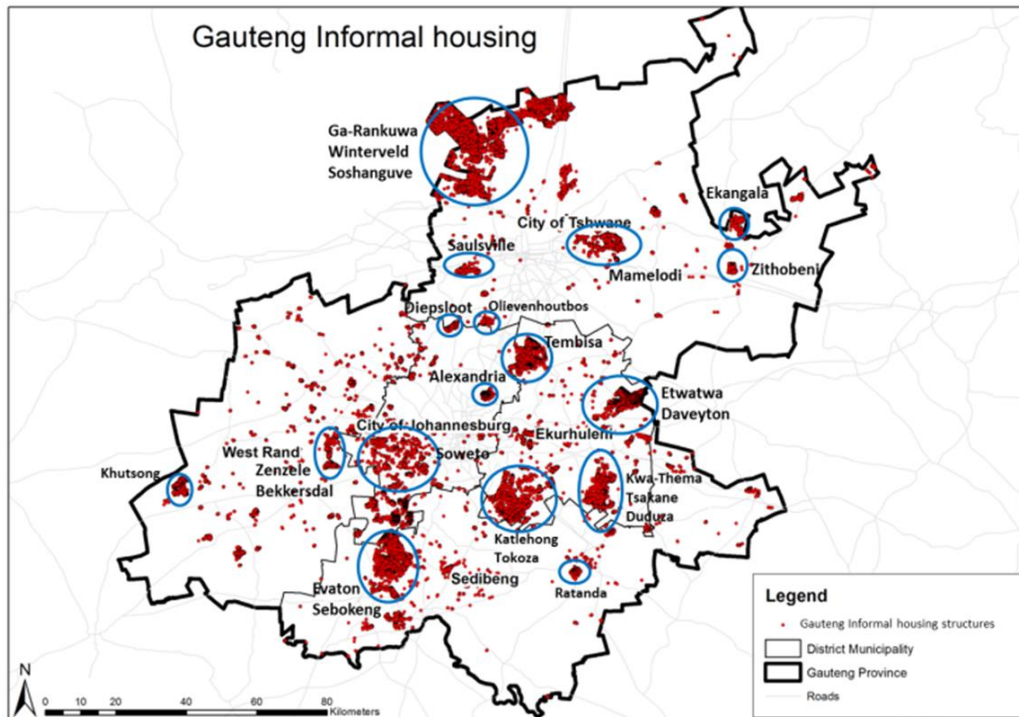


Figure 4: The number of informal structures in Gauteng (2015) (Using GTI 2015 data, Sebake et al 2015)

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.

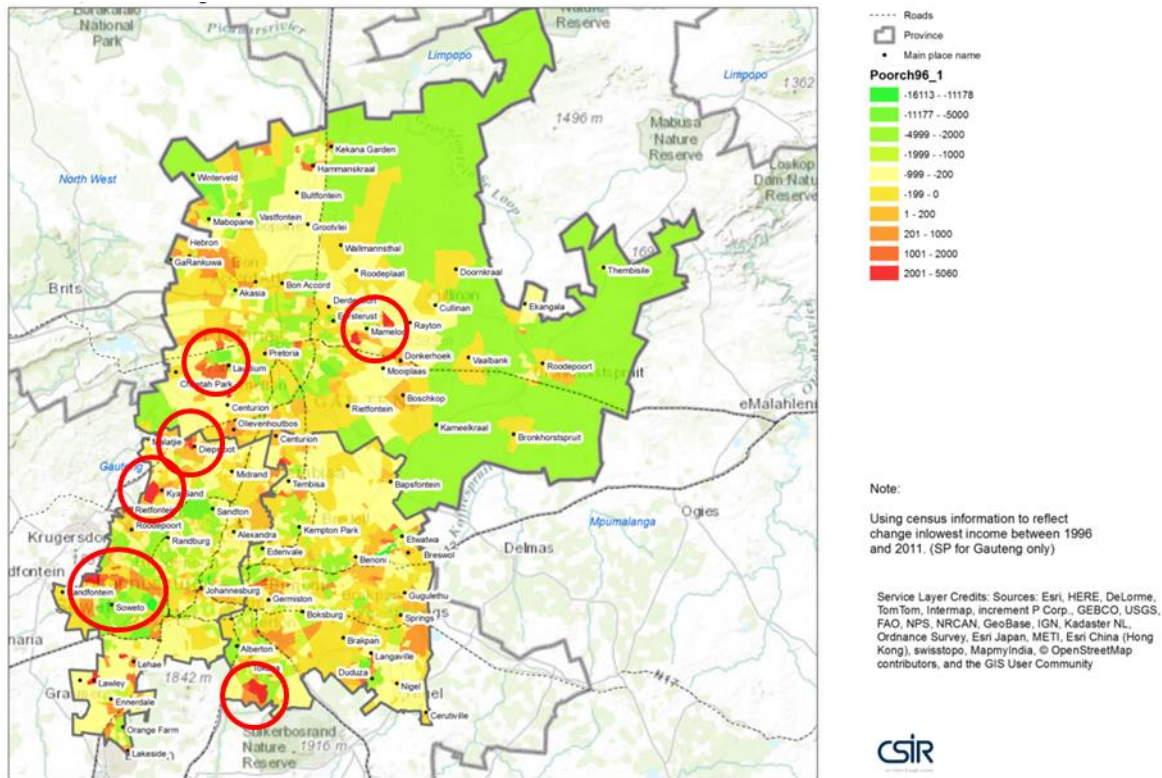


Figure 5: Change in numbers of lowest income group in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

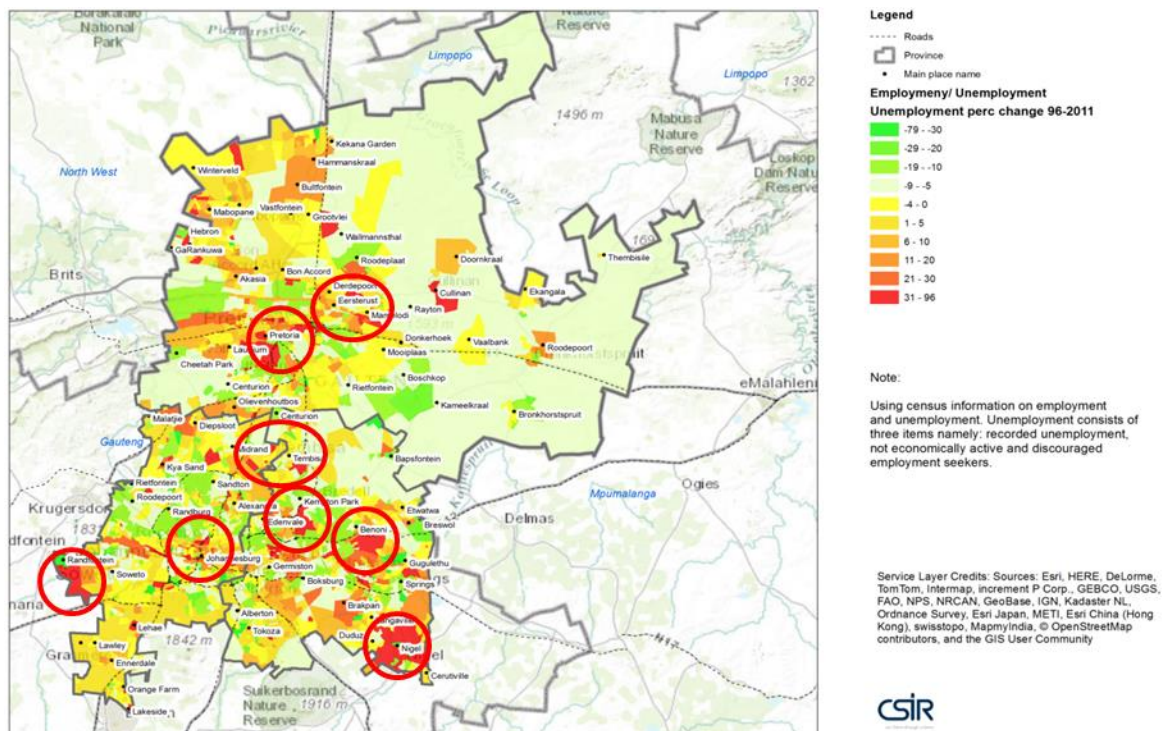


Figure 6: Change in percentage of unemployed in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

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).

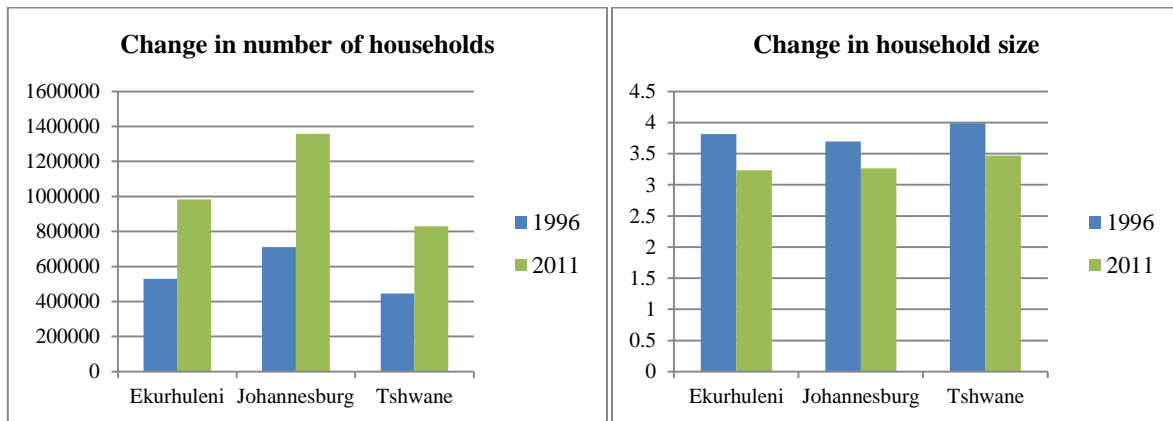


Figure 7: Change in number of households and size of households in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

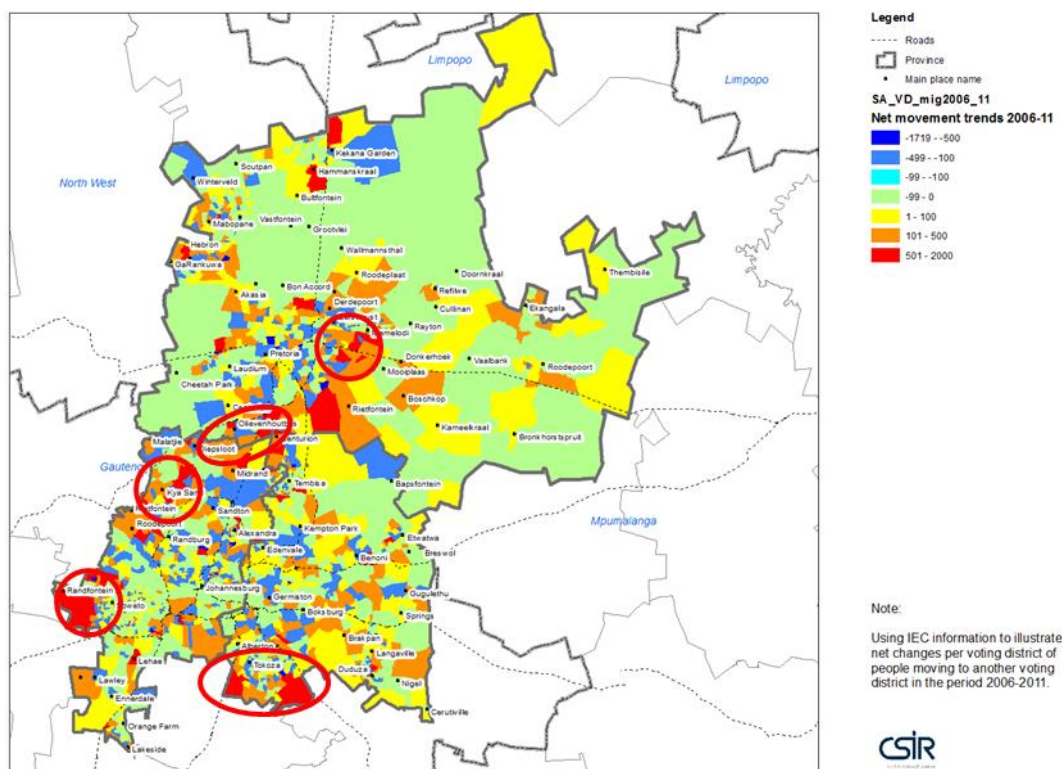


Figure 8: Population movement trends Tshwane, Johannesburg and Ekurhuleni between 2006 and 2011

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 places 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).

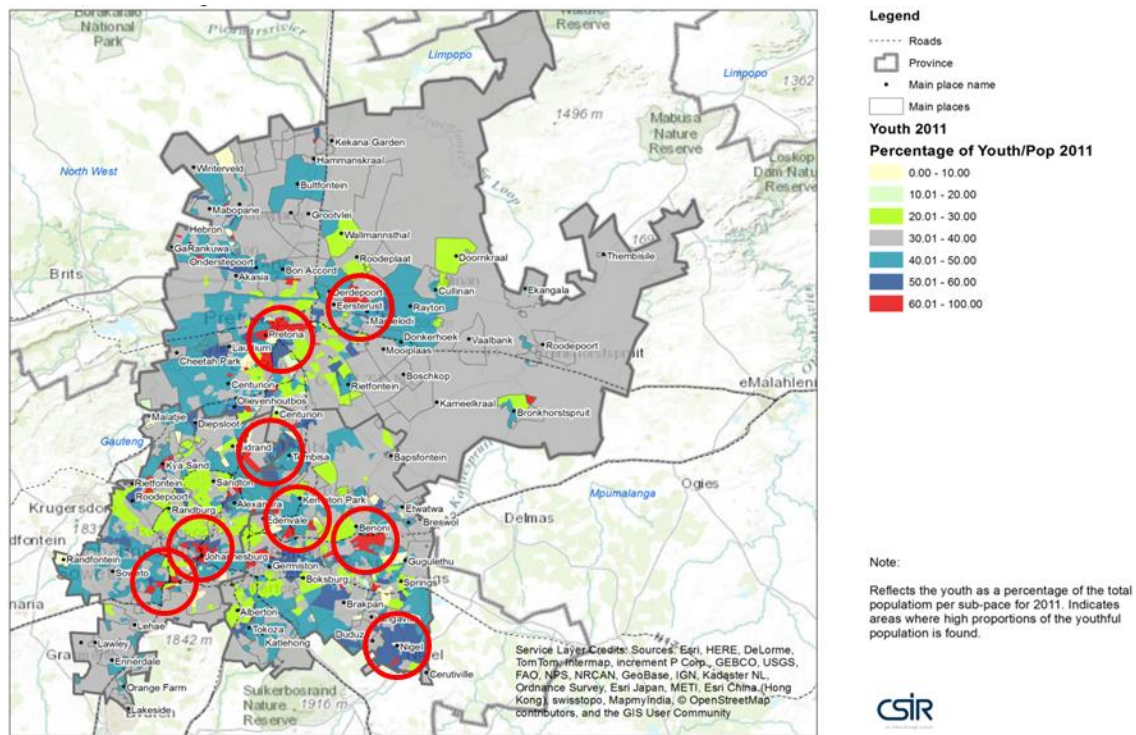


Figure 9: Percentage of population in the youth category (16 – 35 years) in Tshwane, Johannesburg and Ekurhuleni

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.

Figure 10 illustrates this change across the three cities per mesozone¹. 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.

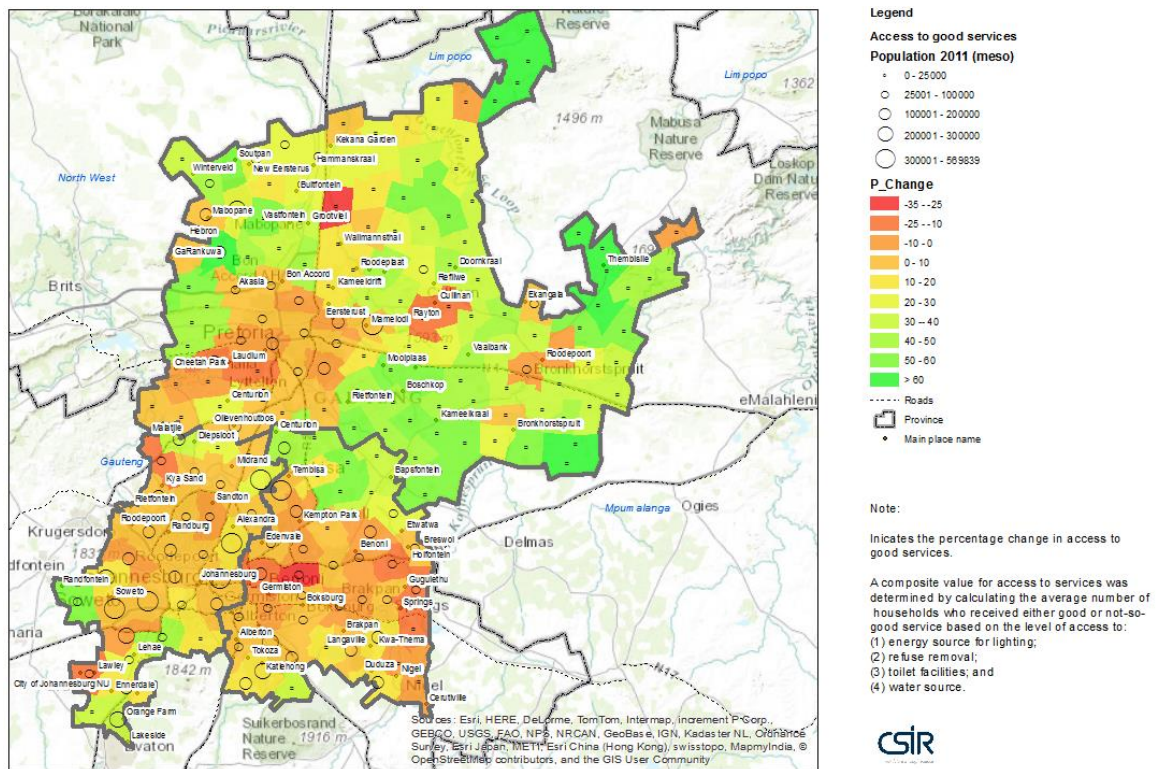


Figure 10: Parentage change in access to good services in Tshwane, Johannesburg and Ekurhuleni between 1996 and 2011

¹Based 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 50km² each. They coincide with important administrative and physiographic boundaries.

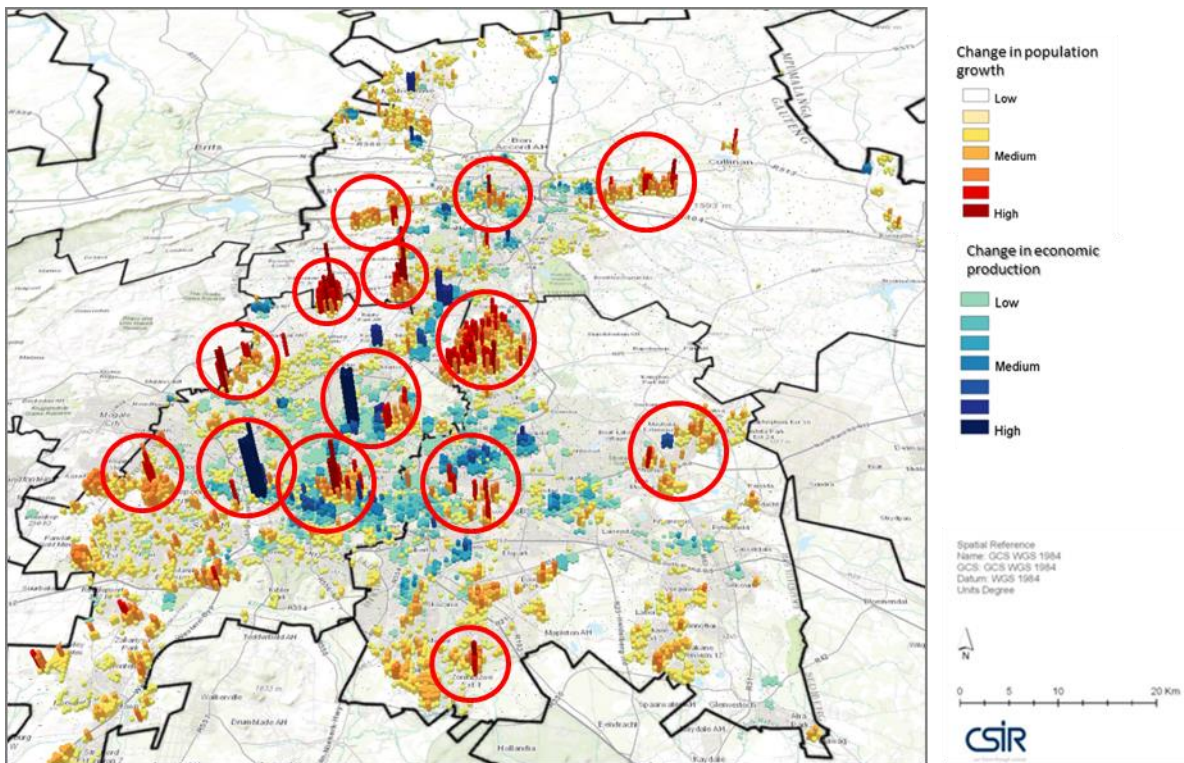


Figure 11: Combined economic production and population change between 1996 and 2011 for Tshwane, Johannesburg and Ekurhuleni

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.

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.

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