

Water governance challenges for rural water supply:

A case study of two local municipalities in South Africa

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Declaration of originality

This is to certify that the work is entirely my own and not of any person, unless explicitly acknowledged (including citations of published and unpublished sources). The work has not previously been submitted in any form to the University of Pretoria or any other institution for assessment or for any purpose.

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**Title: Water governance challenges for rural water supply:
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ABSTRACT

In South Africa water is regarded as constitutional right and government has therefore put measures in place to ensure that everyone has access to at least a basic level of water service. In terms of the Millennium Development Goals (MDGs) of achieving universal access to clean water, South Africa has already made considerable progress. However, recent reports have showed that a large portion of the population, such as those living in informal settlements, are still stuck at the bottom of the 'water ladder' with only rudimentary water services and no progressive realisation of water related rights. These shortcomings are mainly due to poor water governance systems that have been put in place. Water governance systems have had a critical role in enabling or hindering the process of water service provision in the country. In South Africa, water governance strategies include pro-poor policies, government funding, incorporating local leadership in decision making etc. These strategies have been in place to assist the process of delivering services and ensuring the delivery of services, especially to low income households who cannot afford to pay for such services. In spite of all these processes, challenges still exist. In this study it is suggested that the current water governance systems are failing to adequately address the water needs of rural communities. Issues such as poverty, water resources challenges and lack of capacity and skills at municipalities create problems which leave rural communities with no alternative but to rely on unsafe water sources for their water needs.

This study will use two local municipalities selected from two different provinces in South Africa, mainly Nkomazi, in Mpumalanga and Makhado, in the Limpopo. These municipalities will be used in case studies to explore a number of challenges that exist in local municipalities in terms of providing water services to rural communities. The approach is mainly a qualitative one and will also seek to identify the common issues that arise from the two municipalities as well as highlight the consequent impacts of these on water supply in the selected communities.

Keywords: Municipalities, water service institutions, rural water supply, water services, free basic water, water governance, service backlogs

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List of Acronyms

CALS	–	Centre for Applied Legal Studies
CMA	-	Catchment Management Area
COGTA	–	Cooperative Governance & Traditional Affairs
DM	–	District Municipality
DWA	–	Department of Water Affairs
DWAF	-	Department of Water Affairs and Forestry
DPLG	-	Department of Local and Provincial Government
ES	–	Equitable Share
FBW	–	Free Basic Water
FBS	–	Free Basic Services
FBSan	–	Free Basic Sanitation
IRC	–	International Research Council
IDP	-	Integrated Development Plan
LM	–	Local Municipality
MDG	-	Millennium Development Goals
MIG	–	Municipal Infrastructure Grant
MSIG	-	Municipal Systems Improvement Grant
NGO	-	Non Government Organisation
OECD	–	Organisation for Economic Cooperation and Development
RWSN	–	Rural Water Supply Network
RDP	-	Reconstruction Development Programme
WSDP	–	Water Services Development Plan
WSA	–	Water Service Authority
WMA	-	Water Management Area
WSP	–	Water Service Provider

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Definition of Terms

<i>Above RDP</i>	Household have access to `in-house` or `in-yard` water supply connections
<i>At RDP</i>	The infrastructure necessary to supply 25 litres of potable water per person per day supplied within 200 metres of a household and with a minimum flow of 10 litres per minute (in the case of communal water points) or 6 000 litres of potable water supplied per formal connection per month (in the case of yard or house connections).
<i>Below RDP</i>	Household have access to infrastructure but at a below RDP standard e.g. Standpipe > 200m
<i>No infrastructure</i>	Household have no access to any infrastructure i.e. those people that still drink unsafe water from a dam, spring, river or receives water from vending (e.g. trucking) projects.
<i>Backlog</i>	No reticulation; Public standpipes below RDP standard, i.e. more than 200 meters from the dwelling;

Poor Classification

<i>Poor Household</i>	A household who has a total income of less than R800 p/m
<i>Poor Population</i>	Total number of people that live in poor households

Source: Department of Water Affairs (DWA), 2011, *Water services National information systems*, [Online] Available: <http://www.dwa.gov.za/>

CHAPTER 1

INTRODUCTION

1.1 Water service delivery for the rural poor

In most African countries, water provision is mostly carried out by governments through public institutions. This function is often financed through government funding, taxes and relies mainly on external donors where available (Dovi, 2007). Dovi (2007) further points out that most water institutions are not run on a for-profit basis, as a result communities are either not paying for services or tariffs are minimal for piped connections. Consequently, those in towns have house connections and those in some rural communities get water from public standpipes, mostly for free. However, a number of studies have shown that due to a number of different reasons, some publicly run water systems exclude millions of people, mostly in rural settings, leaving these areas without access to water services (Berkowitz, 2009, Tissington et al, 2008 and Smith, 2008).

The Rural Water Supply Network (RWSN) (2009), points out that, in a number of developing countries there has been considerable investment made towards trying to improve on the problems with rural water supply. Unfortunately progress in the implementation of projects and policies has been significantly slow. Consequently, rural water supply coverage significantly lags behind that of urban water supply. It is further estimated that there are still at least 1.1 billion people across the world, who do not have access to safe drinking water, and that many of these people live in rural areas and are among the poorest and most vulnerable in society (World Bank, 2008). For most rural dwellers around the world, collecting sufficient and safe drinking water is a major challenge. Water collection means communities have to walk for hours to collect water from unhealthy water sources since there are no officially provided services, and in cases where they are able to access such services, these are often inadequate in terms of levels and quality (Velleman, 2009). In most developing countries such failures have been attributed to insufficient numbers of skilled personnel and ineffective institutions. In other cases water service institutions specifically blame water service failures on a complete lack of skilled personnel, a lack of funds and a lack of ability of poor people to pay for water services (Berkowitz, 2009). For Dovi (2007, p.7) these challenges are not merely due to insufficient funding but rather “acquiring the technical know-how to use the resources most effectively and the institutions capable of managing them properly”. Another problem which has recently emerged is the issue of declining water resources due to climate change. According to Dayem and Odeh, 2010, water policies and management paradigms in most developing countries can no longer be sustained in an era

of water scarcity exacerbated by climate change. Water service institutions are not well equipped to deal with this reality as a result less focus is put on understanding climate change within water service institutions. Consequently the crisis in the water sector has remained because of lack of institutions that can effectively deal with the new realities of water resource scarcity.

In terms of the Millennium Development Goals (MDGs), African leaders have declared their commitment to achieving universal access to clean water, and to cut in half by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. According to reports, South Africa has made considerable progress in this regard. Thus in 2004 it was reported that about 88% of the population had access to clean water (Dovi, 2007). However, recent reports have confirmed that in 2008 about 5 million people still needed adequate supplies of water and about 15 million people lacked basic sanitation (Smith, 2009). It is also acknowledged that those mostly affected by water shortages are those living in rural communities. Consequently, a large portion of the population living in informal settlements are still stuck at the bottom of the 'water ladder' with only rudimentary water services and no progressive realisation of water related rights (Tissington et al, 2008).

In its effort to address the challenges with regards to access to water, the South African government introduced the free basic water policy (FBW) in the late 2000. This was mainly to ensure that those who cannot afford to pay for water services, especially the rural poor, are not excluded from such services (Muller, 2002). The South African government further entrusted local municipalities with the provision of water services to all communities within their areas of jurisdiction. While in some areas such systems have worked, in other areas the situation has been totally different, and this system has proved to be totally inadequate (Berkowitz, 2009).

The aim of this study is to highlight and explore the number of challenges that hinder the process of water service provision in two municipalities, Nkomazi and Makhado, specifically looking at challenges they face in facilitating the provision of water services to rural communities they are servicing. The study also seeks to investigate whether the current institutions in place are working effectively and whether the municipalities selected are able to provide water services as per constitutional mandate.

1.2 Water service provision: South African context

1.2.1 Water service function and the role players

In South Africa water is regarded as a human right, and it is acknowledged that having access to clean water is the first step in reducing poverty and improving the standards of living, especially in poor communities. In facilitating this process, the South African government has put measures in place to eliminate water backlogs through extending water services and improving levels of service, especially to rural communities who cannot always afford to pay for such services (Tissington et al, 2008).

In terms of South Africa's water service provision a diverse group of actors are involved in facilitating this process. The two main actors are; the National Department of Water Affairs (DWA) and the local government institutions. DWA, the overall policy maker and regulator, is responsible for overseeing the activities of all water sector institutions and is responsible for national/international resource planning and allocation. The local government institutions in the form of local/district municipalities (LM/DM) are tasked with facilitating the provision of water services to communities. In terms of government support, all communities, even those who cannot afford to pay, can have water required for basic needs.

A diagram of the structure of water service provision in South Africa is shown in figure 1:

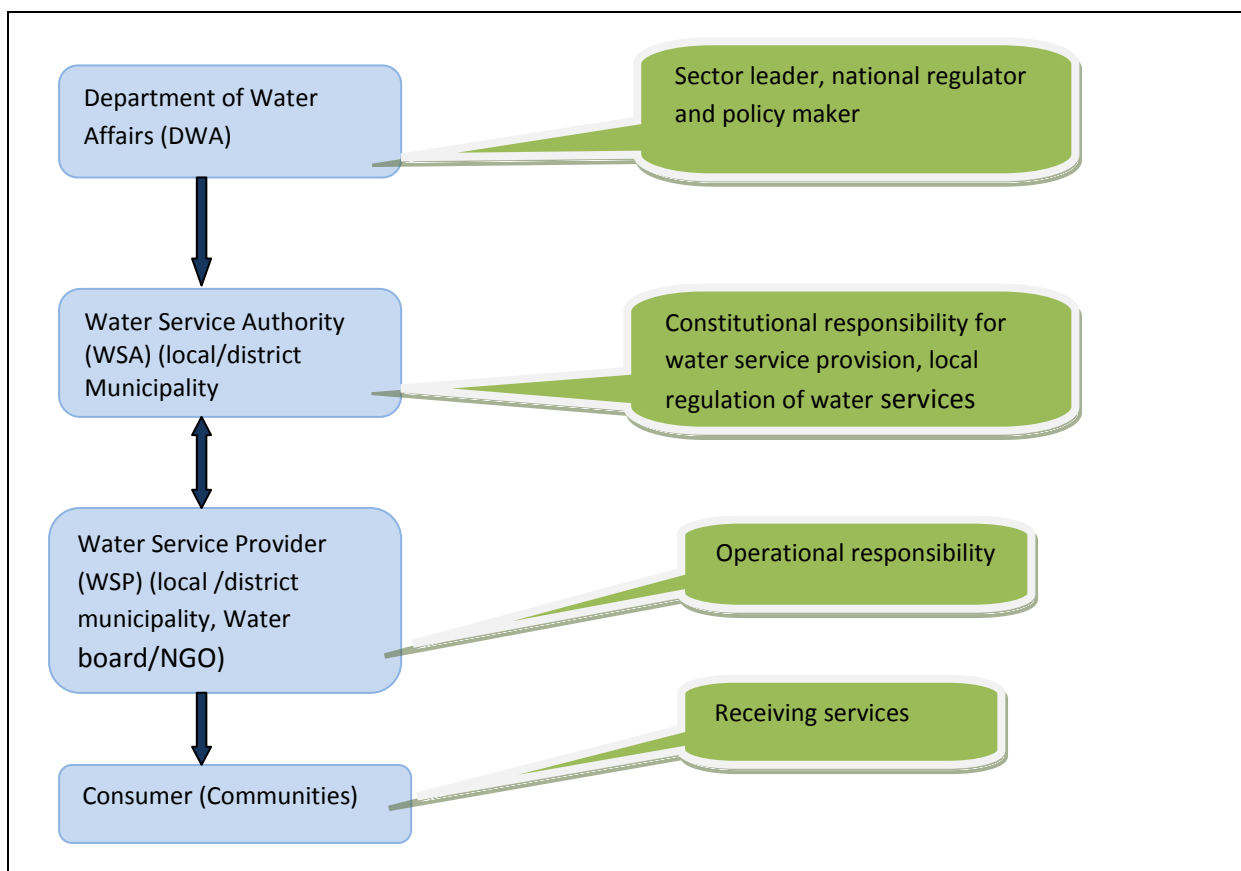


Figure 1: Institutional arrangements for water service provision in South Africa (Source: Department of Water Affairs and Forestry(DWAF), 2003)

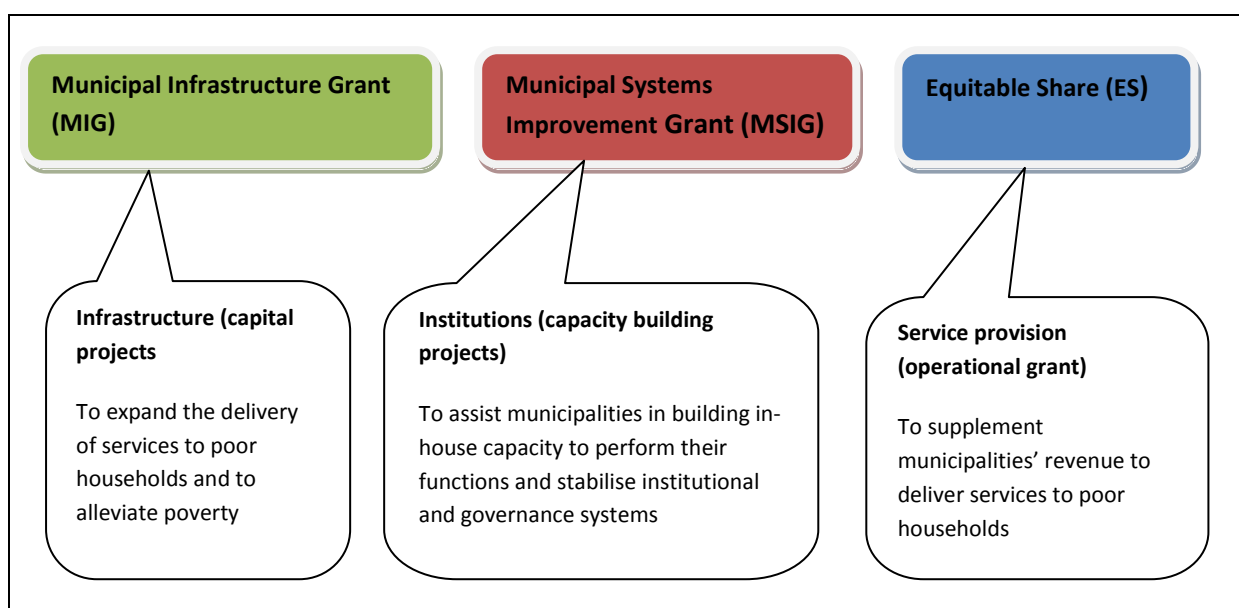
In terms of figure 1, district and local municipalities are considered to be the important institutions for a community's water service function. This function includes "implementing local by-laws, monitoring drinking water quality and setting tariffs (amongst others)" (DWA, 2003). According to DWA (2003) Water Services Authorities (WSAs) (the municipalities) have to maintain a register of water services infrastructure assets and put in place a system to manage these assets in terms of a maintenance and a rehabilitation plan. This plan must also be based on the principle of preventative maintenance and must be part of the Water Services Development Plan (WSDP) which they are obligated to put in place as WSAs.

In terms of legislation, the LM/DM appointed as WSA can choose to undertake the role of a Water Service Provider (WSP) or choose to contract this out to another institution (Van Der Linde and Feris, 2010). In addition, where the LM/DM is not a WSA, it may be appointed to be a WSP by the WSA, especially with regards to the provision of bulk services. When performing the functions of a WSP, a WSA is expected to manage and account separately for those functions (Van Der Linde and Feris, 2010).

While the operational function is undertaken by the WSP, the institution that actually provides the service, it is required by law that there must always be a contract between the WSA and the WSP¹.

1.2.2 Government support mechanisms

In facilitating the process of water services, water service institutions receive capital funds from government on an annual basis. These grants are defined in the figure 2;



¹ Chapter 4, Water Services Act 108 of 1997

Figure 2: Grants allocated to local government on an annual basis (Source: Department of Provincial and Local Government, 2007)

According to the Department of Provincial and Local Government (DPLG) (2007) “municipalities must spend funds on the provision of infrastructure necessary to supply 25 litres of potable water per person per day”. This water must be supplied within 200 metres of a household and have a minimum flow of 10 litres per minute (in the case of communal water points), or 6 000 litres (l) of potable water supplied per formal connection per month (in the case of yard or house connections); or to upgrade and build new infrastructure up to a basic level of service in existing formal settlements (DPLG, 2007). These mechanisms are in place to ensure that municipalities are able to perform their mandated functions of providing basic services sustainably.

1.2.3 Legal Framework

Some of the most important pieces of legislation in South Africa’s water sector are summarised as follows;

1.2.3.1 The Constitution

In South Africa water is a constitutional right thus the DWA as sector leader has to ensure that local government institutions are able to provide water services in a sustainable manner. It is stated in the Bill of Rights, chapter two of the Constitution of the Republic of South Africa, that everyone has the right, amongst other rights, to have access to sufficient food and water and social security². Section 152 further indicates that it is the responsibility of local government to ensure the provision of services to communities in a sustainable manner; to promote social and economic development; and to encourage the involvement of communities and community organisations in the matters of local government. Section 154 (1) of the Constitution directs the national and provincial governments to support and strengthen the capacity of municipalities to perform their functions.

1.2.3.2 Water Services Act

The Water Services Act 108 of 1997, entitles everyone to a basic water supply and basic sanitation, and “every water service institution must take reasonable measures to realise these rights”. In terms of this act, the DM (or authorised LM) is the WSA within its area of jurisdiction. Section 5 of the Act further states that “if the water services provided by a water services institution are unable to meet the requirements of all its existing consumers, it must give preference to the provision of basic water supply and basic sanitation to them”³.

² Section 27 Act 108 of 1996

³ Section 5 Water Services Act 108 of 1997

1.2.3.3 The Free Basic Water Policy

The Free Basic Water (FBW) policy was introduced in the late 2000 as part of the government strategy to alleviate poverty in South Africa. The main purpose of the policy was to ensure that poor households who cannot afford to pay for services can at least have access to the basic level of water services for free.

In terms of the FBW policy, a 'basic' level of water supply is defined as 25 litres per person per day, which is a level sufficient to promote healthy living. This amounts to about 6 000l per household per month for a household of 8 people (Smith and Green, 2005). However, according to DWA (2002) local authorities should still have some discretion over this amount. "In some areas they may choose to provide a greater amount, while in other areas only a smaller amount may be possible" (DWA 2002, p.8). It is indicated for example that, "in some remote areas with scattered settlements, high water costs, and water stressed areas it is often not feasible to provide 6 000l of water", as a result some local authorities may not be able to provide the stated amount.

1.2.4 South Africa's rural communities

In total, it is estimated that about 39.7% of South Africa's people reside in rural areas, which amounts to roughly 20 million people (World Bank, 2008). In terms of DWA (2011) statistics 46.9% of the national population is considered as poor. Furthermore, it is estimated that out of the remaining nine million people who still lack access to water supply in 2005, 64% lived in rural settlements (UNESCO and UN Water, 2006)

In terms of socio economic conditions, Herselman (2003) highlights that "many of South Africa's rural areas exist below subsistence levels and remain impoverished because they have no access to basic infrastructure essential for economic growth and development" (Herselman, 2003 p.1). These areas are characterised by poverty, lack of arable land, social pressures and healthcare concerns all which are exacerbated by poor water supply.

The major source of water for these communities is groundwater. According to UNESCO (2006) "74% of South African rural communities are dependent entirely on groundwater, while another 14% is depended partially on it. However the challenge is that in most cases poor sanitation can contaminate available water sources putting many rural dwellers at risk of disease through their lack of access to clean water.

1.3 Problem Statement

In South Africa municipalities play a critical role in the delivery of services to all communities within their areas of jurisdiction. However, reports indicate there have been a number of challenges with this arrangement, and as a result most rural communities do not receive services as expected (Smith, 2009). Reports further indicate that many local municipalities serving rural communities have difficulties in addressing past backlogs and addressing the needs of the poor, thus there are still many people, who still have to rely on rivers, springs and fountains for their water supply and buckets as a form of sanitation (Berkowits, 2009). The DWA (2010) statistics also estimates that about 21.3% of the population in rural areas are without access to water within Reconstruction and Development Programme (RDP) standards.

Furthermore, according to Tissington et al (2008, p.2) in South Africa, “Free Basic Services (FBS), mainly, Free Basic Water (FBW) and Free Basic Sanitation (FBSan), are provided in an ad hoc manner by municipalities”, and these are mostly not complying with national standards. It is further highlighted that some municipalities do not supply FBS at all and some supply only the minimum FBW amount without any FBSan. This is a problem which often leaves rural communities with no other alternatives but to rely on unsafe and unreliable water sources for their domestic water use, which often leads to serious health implications.

It is further acknowledged that, for most South African metropolitan areas and large cities, the lack of access to water by communities is not a problem at all, these municipalities are doing well on these issues, in fact, better than most cities than elsewhere on the continent (Berkowits, 2009). According to the Organisation for Economic Co-operation and Development (OECD) (2003), this is a common problem in most developing countries, where it is often reported that piped water supplies serve richer neighbourhoods on a priority basis, while poorer areas are underserved or unserved.

According to the department of Cooperative Governance and Traditional Affairs (COGTA) (2009, p.29) one of the main causes of rural water supply problems in South Africa may be due to the fact that “the 2007 Assignment framework, for the assignment of powers and functions, and many other governance arrangements, did not take into account the significant capacity constraints of the different municipalities”. A different argument by Cameron (2010, p.113) is that “local government is inherently inefficient and poor financial management is the primary reasons for financial problems”. Cameron (2010) further points out that the “tax base of local government maybe too small for it to fulfil its constitutional

mandate of service provision and development functions”. In terms of the COGTA report (2009, p.29) the current ‘one-size-fits-all’ governance framework has contributed to what may be defined as “levels of municipal non-viability, both financially and in respect to functional performance, socio-economic vulnerability and an inability to manage infrastructure development and investment”. Thus most of the rural municipalities are struggling with backlogs and cannot provide services sustainably.

Due to the challenges mentioned, the rural population (about 20 million people or 41% of the total population), suffer the consequence of poor service delivery and will remain impoverished until such issues are addressed (UNESCO, 2006). The effects of poor water supply mean people have to endure disease from consuming water from unsafe sources, spend time and energy collecting water from water sources located further from their homes, etc. All of these problems exacerbate the poverty trap in communities (Abrams, 2001).

1.4 Significance of the Study

A number of recent studies on the issue of the measurement of service delivery in South Africa, highlight that a lot of effort has been put on improving service delivery and living conditions especially in poor households, and that more and more households have benefited from government services. However, in spite of the fact that delivery has been pro-poor, other reports also highlight that significant backlogs still exist among poor households, especially with respect to housing, sanitation and piped water. This study will therefore build on the evidence that is out there and will seek to disprove or prove some of these findings. Furthermore, while there has been a lot of reforms and re-institutionalisation in governance intended to improve the condition of poor service delivery especially for rural communities, according to Franks and Cleaver (2007)

There is little understanding of how water governance systems impact on the lives of individual citizens, and little effort to differentiate the impact on the lives of poor people, yet this is of particular importance in the context of the MDGs and the emphasis on the eradication of poverty (Franks and Cleaver, 2007)

It is essential that such studies are regularly conducted to keep track on progress, and to understand whether there are improvements (in terms of the impact of water governance reforms) on the people intended.

1.5 Defining the research question

It is acknowledged that most rural communities in South Africa are characterised by high poverty rate, unemployment, no service infrastructure and bad terrain, thus providing services to these communities is a challenge. Municipalities as water services institutions have been entrusted with ensuring access to water services to communities within their jurisdiction, including those who cannot afford to pay for such services.

The study then seeks to answer the following question;

What are the challenges municipalities are facing in facilitating water services to rural communities, and what is the impact of these challenges on the rural communities they are servicing.

1.6 Study Objectives

The study has the following objectives;

- To highlight the systems and processes that influence the delivery of water services within the Inkomazi and Makhado municipalities.
- To identify gaps and/challenges with the current systems and processes
- To highlight the impact that these (systems and processes) have on the rural water supply

1.7 Limitations of the Study

The sampling method/s used increased elements of bias in that, most of the information collected is based on discussions with municipal personnel and community members that were available at the time of the study.

1.8 Organisation of the report

This report is organised as follows;

Chapter 1 provides an introduction into the issues associated with the delivery of water services in rural communities in developing countries including South Africa. The chapter also provides a brief background of the South Africa's water sector in terms of the important role players, the legal framework and government support mechanisms that are in place. The chapter also gives an overview of the problem statement in terms of this study, the definition of the research questions, objectives of the study, the significance of the study and some of the limitations with this study.

Chapter 2 is a detailed overview of the literature into water governance factors that influence the delivery of water services. The chapter discusses the different aspects of governance that influence the provision of water services including the challenges associated with water service delivery in developing countries and specifically to rural communities. The chapter also highlights the impact that these challenges may have on the delivery of water services to rural communities. Finally, the chapter gives examples of methods used towards making governance to work for rural water supply

Chapter 3 provides an approach used, and describes the different methods that were used to collect and analyse data.

Chapter 4 introduces the two local municipalities, Nkomazi and Makhado Local Municipalities (LMs) that were used in case studies. The chapter also provides a brief background of each municipality, in terms of demographics, water resources and some of the water supply situation

Chapter 5 presents the study findings and discussion of themes.

Chapter 6 provides some concluding remarks as well as recommendations.

CHAPTER 2

LITERATURE REVIEW: FACTORS OF WATER GOVERNANCE

2.1 Water governance concept

The concept of water governance is defined in a number of ways, according to Tortajada (2010) governance is a broad concept which operates at many levels. For Tropp (2007, p.21) "Governance addresses linkages and processes between and within organisations and social groups involved in decision-making, both horizontally across sectors and between urban and rural areas, and vertically from local to international". Tropp (2007) further points out that, governance is not limited to government" but also includes the private sector and civil society. Water governance also refers to "a broad range of political, social, environmental, economic and administrative systems that are in place in order to regulate the development and management of water resources and the provision of water services at different levels of society (Gomez and Ravnborg, 2011, Jimenez and Foguet, 2010)).

According to Franks and Cleaver (2007), the reference to levels of society implies a special recognition that outcomes of governance may have different impacts on different levels of society, for example that the poor might require special treatment in order for the governance systems to work.

From these definitions, it is clear that water governance mainly addresses questions like, "Who is making decisions on the right to water and its benefits? Who is making decisions about who gets what water, when and how? What voices are heard in influencing decision-making? And on what political and scientific basis are decisions made?" (Troop, 2007,p. 20). Plummer and Slaymaker (2007, p.1) also point out that "good governance is about engaging civil society and establishing a functioning social contract between the government and its citizens to bring about effective basic services". Ultimately, it is about the progressive achievement of agreed rights to water whereby, participation, accountability and transparency are a prerequisite (Tortajada, 2010).

In a number of countries there have been a lot of efforts to reform national water policies as well as the associated legal and administrative frameworks to improve water governance (Gomez and Ranborg, 2011). Such efforts have sought to improve the state of service provision and to ensure that governance systems remain relevant to the people. Some of these reforms have been part of the broader governance reform agendas such as

decentralizations and public participation. A number of studies however highlight that, due to a number of reasons, these reforms have worked in some countries and not worked in others (Bardhan and Mookherjee, 2006, Faguet, 2002, Dickovick, 2005).

In a number of developing countries studies highlight dysfunctional sector policies and institutions as well as insufficient investment in water services as poor governance systems that have all contributed to failures in water service delivery (Dovi, 2007). Thus Plummer and Slaymaker (2007, p.1) point out that “there is a direct correlation between the countries most lacking in water services and those with poor governance”.

It is therefore essential that future efforts to improve levels of access to water services, put major emphasis on addressing the crisis of governance in water services. Biswas & Tortajada (2010,) however, also emphasize that for governance systems to be relevant each country must formulate its own strategy based on its “special conditions, requirements expectations and capabilities”. Furthermore, *cities should not blindly copy any so-called ‘best’ governance practice promoted by the various international institutions, without adopting them very carefully and appropriately to suit their own specific conditions and requirements...*(Biswas and Tortajada, 2010, p.137)

Water governance systems should not be applied uniformly for all towns and cities. Strategies should be based on the institution’s characteristic, requirements and capabilities in order for them to be able to meet the needs of the people being governed. Water governance strategies must be based on detailed and careful assessment of their relevance within the specific country, city or town concerned (Biswas & Tortajada, 2010).

The elements of good governance are summarised in figure 3;

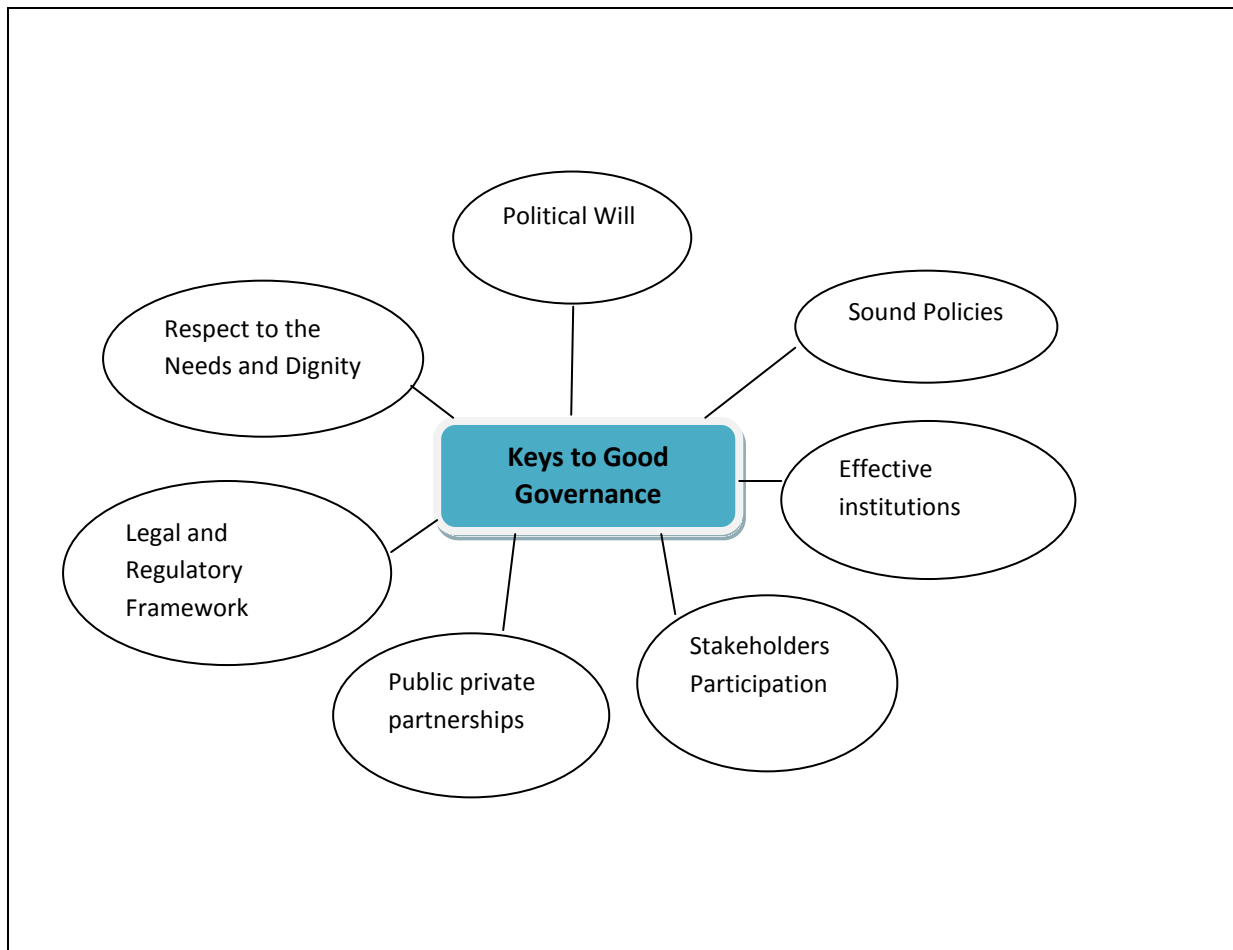


Figure 3: The enabling environment for good governance (Source: Dayem and Odeh, 2010)

2.2 Politics

In most countries water is governed by the state. State governance is the substance of politics in this perspective. According to Mollinga (2008, p.11) “governance, good or bad, is associated with ideas like accountability, transparency and legitimacy”, all which have political dimensions. In terms of water service provision, good water governance requires the ability and authority of leaders, governments and public organisations to make decisions to be able to get water services to the people through effective policies and sound implementation practices. This includes addressing issues such as decentralisation, civil service reform, effective public administration and participatory planning and contracting out delivery of services to private providers and non government organisations (NGOs) (Plummer and Slaymaker, 2007, Barbhan and Mookherjee, 2006).

Mollinga (2008, p. 13) further points out that, the problems of water governance have partly been due to the fact that “global politics’ domain ideas like water privatization and water sector restructuring, have been very differentially translated in the policies of developing and

transitional countries". Consequently, in many developing countries the governance of the water sector as a whole is in a state of "confusion and dysfunction with little responsiveness or accountability to citizens" (Plummer & Slaymaker, 2007). Furthermore, for many developing countries water governance has emerged as a conflictive political issue leading to major protests and the rise of influential social movements. It is further highlighted that water problems are rarely caused by technical or physical challenges, but these are rather due to the social and political challenges that exist within the individual areas (Jimenez and Perez-Foguet, 2010).

Troop (2007) further argues that, while governance is partly a political issue, the new forms of governance in the water sector have provided the possibility for politics to be viewed as part of the solution and not just the problem. In this way leaders can be held accountable to citizens in terms of provision of services. According to Bardhan and Mookherjee (2006), in many developing countries governments have used a number of initiatives to increase accountability of service providers by creating and providing a platform for citizens to have a say in the way in which resources are managed and delivered. In terms of Mollinga (2008), the challenge however is that many decision-makers and managers within the water sector currently are not prepared to deal with the new forms of governance issues, such as "conflict mediation, mobilisation of communities, partnership formation, managing processes of stakeholder dialogue and participation" (Molinga, 2008). As a result the water sector has largely been technology rather than water-supply-driven", which has led to the decline in service level standards (Troop, 2007). This challenge has compelled water institutions to put more focus on infrastructure development and less on delivering the actual service, which is water.

Due to the stated reasons, it is often reported that conflicts over urban water services have received more attention, while rural water issues have been an important but "under examined contributor to processes by which water governance is being re-institutionalized" (Perreault, 2008, p. 834). Consequently, governance systems are changing but with little or no improvement for the rural water supply problems.

2.3 Institutional arrangements

A number of studies reveal that over the past two decades, the practice of water governance had moved away from state-centric decision-making towards more inclusive and pluralistic ways of decision-making (Rogers & Hall (2003) quoted from Tropp, 2007). This has led to the development of institutions including public and private partnerships, decentralisation

and devolution of decision-making, to mention but a few. The state departments, the local government itself, a community based organisation (CBO), a large or small private entity, a utility, a water board, a state owned water company, an NGO, or a combination of these, are some of the institutions that have been tasked with providing services to the people. These institutions play a critical role in ensuring that water services are delivered effectively and have to work together cooperatively to ensure that water services are provided in a sustainable manner.

According to Kramm and Wirkus (2010, p. 7) institutional arrangements are to do with shaping social interactions and the way a resource is accessed and used. Institutional arrangements are further described as follows;

“the rules of the game”, they are humanly devised constraints that structure political, economic and social interaction and enable a more secure and orderly interaction.. They are exercised through organizations, which can be public (the legal system, bureaucratic authorities, political parties, etc.) or private (Kramm and Wirkus, 2010)

Seetharam (2007) further describes institutions as having two dimensions—the policies, and the persons who are responsible for implementing them. The distribution of roles and responsibilities between public, private and community sectors are important institutions in water management and are a key governance issue. In terms of providing water and sanitation services, governments have to lay down policies and establish institutions systems for management and delivery of these services (Dunn, 2010).

Thus in terms of good governance, institutions have to be well empowered to perform their designated functions. Plummer & Slaymaker (2007) further point out that in order to achieve good governance, institutions responsible for water services should be empowered to manage, implement, maintain and monitor water services, and should also be made to understand how decentralisation of water services can be made to work. This includes strengthening leadership and having clear separation of roles and responsibilities (*Plummer and Slaymaker*).

Ultimately, good governance and sound institutions play a huge role in the promotion of accountability. It enables citizens, civil society organisations and the private sector to be able scrutinise leaders, public institutions and governments and hold them accountable for their actions. Seetheram (2007) further points out that, good governance requires the changing of attitudes and behaviour to ensure that the water sector institutions actually deliver to their

citizens what they say they will deliver. Furthermore, for the IWRM to be successful, all stakeholders should become meaningfully involved, including marginalised and resource-poor groups. This requires everyone including the actual people that require a service to have a say in the way water services provision is conducted (Plummer and Slaymaker, 2007).

2.4 Water service provision challenges in developing countries

Previous findings indicate that while access to public water supplies is no longer a serious concern in most countries, (especially in urban areas), with at least 75% of the population (and often as high as 90%) already being served, the situation is a complete opposite in some developing countries (OECD, 2003). Reports show that the inequity in water services between different groups has been attributed to a number of issues mainly;

“The absence of a coherent policy, the absence of an institutional framework which establishes clear responsibilities, and the overlapping of institutional boundaries , the exclusion of many areas of great need, a lack of political legitimacy and will, failure to make resources available where they are most needed and the low level of economic activity in vulnerable areas” (Folifac, undated)

In each and every country, the role of water services is undertaken by a range of entities depending upon a country's policy and legislative framework. These can be either public, private, mixed or cooperative. In terms of these water service entities, studies show that water service delivery around the world has been met with a lot of challenges (Cleaver et al, 2005, Dayem and Odeh, 2010). Dunn (2010) points out that in most middle and low-income countries, the publicly-owned and managed water providers are usually very inefficient as a result of political interference. This has led to a lack of capacity and low labour productivity. Other studies highlight that low capacity of the service delivery institutions is not only because of lack of finances but it is also partly because of poor management of the responsible institution and very poor work culture and motivation of those in these institutions (WaterAid, 2009, Dovi, 2007). In particular, the capacities of the institutions and accountability when it comes to serving the poor are very low. According to Dayem and Odeh (2010) due to a number of reasons, the water sector in most Arab countries is characterised by “vast disparities in socioeconomic needs, access to financing, institutional arrangements, regulatory frameworks, stakeholders' participation, private sector involvement, trans-boundary challenges and water stress levels”. Furthermore the water scarcity problems have created even more complications for water governance.

Seetharam (2009) highlights that the problem of service gaps between rural and urban areas can arise from a number of issues, such as; the availability of water service infrastructure or insufficient water resources. In addition to that a historical lack of sustained investment in maintenance of infrastructure has been documented as a serious concern in most developing countries, and this has in many cases been the responsibility of the municipal authorities.

In the case of Tanzania, a study by Jimenez and Perez-Foguet (2010) also highlight the problem that there are still huge inequalities in water services delivery, when comparing rural and urban and trends with different regions. In this study the problems highlighted include low quality of the delivered service, low sustainability of service as well as the lack of pro-poor targeting. The study further blames these problems on the processes of funds allocation, in that it primarily focuses on the development of infrastructure and gives low priority to capacity building and post project support. According to Elhiraika (2007), “inflexible transfer systems that are rarely well defined often constrain the ability of local governments to plan and to efficiently deliver basic services”. As a result, due to these financial pressures municipalities tend to focus more on cost recovery rather than delivering the services. Another challenge pointed out is that water service institutions tend to allocate projects based on a combination of need, demands and political influence. Such problems often mean that only bigger villages that are more influential and better connected get services, and this further perpetuates inequalities (Jimenez and Perez-Foguet, 2010).

The problems stated earlier are common in many developing countries (Dovi, 2007). For example in the case of South Africa, Stanton (2009) highlights that the challenges that face municipalities are not simply one of local administrative and financial incompetence, many of the problems are systemic and procedural. According to Elhiraika (2007) while the government grants do take account of inequalities in terms of indicators such as poverty levels, land area and others, and poor provinces receive a higher share, the richer provinces receive an even greater share of other type of transfers. For Cameron (2010) the “infrastructural backlogs due to apartheid spatial planning was mainly too great to be left primarily to local government to sort” (Cameron, 2010).

Studies further point out that the other challenge is that “policies, norms and standards are often set at national level without prior consultation with regards to their budgetary implications” (Cameron, 2010). According to Nel (2001), government policy, while it encourages service delivery, does not provide clear guidelines on how to undertake and

operationalise strategies, thus there is a gap between policy and implementation. This clearly shows a lack of coordination between the responsible institutions.

In addition, decision on how public funds are applied is often a function of political process. Consequently, investments in water services (especially rural areas) may not always be given high priority (Nel, 2001, Franks and Cleaver, 2007)). Studies further highlight that in some cases, there is also a risk that staff are appointed mainly on political grounds rather than based on their professional credentials and these risks are particularly high in developing countries (Dunn 2010). Furthermore, where corporative or municipal authorities apply, regulation may not always exist in the formal sense. As a result there are problems of accountability of the institutions engaged in service delivery, both in terms of making capital expenditures and operating and maintaining the facilities (Mollinga, 2008). The WaterAid (2009) report emphasises that this lack of accountability has diminished the local governments' credibility as a provider of the service and has also undermined the capacity of governments to provide such services sustainably.

2.5 Water governance and Climate change

According to Osinde-Alabaster (2009), climate change is emerging as a powerful driver of inequalities between and within countries, and this has become critically evident in water and sanitation since the most accessible water sources are being exhausted. Studies highlight that not only will climate change affect the function and operation of existing water infrastructure and institutions but additionally, current frameworks may not be robust enough to cope with climate change impacts (Hill, 2010). Effective water governance is seen as essential to building adaptive capacity in communities to manage future climatic uncertainty and stress.

Groundwater is the most important source of water for rural communities and it is affected by climate change (Gurdack et al, 2009). Even without climate change, groundwater sustainability is increasingly becoming a major challenge because groundwater is widely distributed resource that is affected by local users and contamination. Furthermore, decreased rainfall and increasing temperatures may reduce the amount of recharge to the groundwater basins and the volume of water available for allocation (Boyce, 2010). It is important to recognise that it is through the governance approaches and mechanisms that are in place that the effects of climate change can be addressed (Miranda et al, 2011). Water governance approaches should promote collaborative institutional arrangements, not only to secure political agreement around climate change but also to establish forms of

governance that could encourage collective tasks oriented to secure the resilience of communities towards the effects of climate change (Hurlbert and Diaz, 2011)

2.6 Rural water supply challenges

In terms of the challenges faced by rural communities, water supply is one of critical importance. The World Bank (2010) estimates that today almost a billion people in the world lack access to a safe water supply, the majority of which live in rural areas. Recent statistics also confirm that about 70% of the world's poor live in rural areas, thus for the World Bank a focus on rural water supply, sanitation, and hygiene is needed if the MDGs are to be met.

Studies confirm that in many rural communities, it has been estimated that only two out of three installed hand pumps are working at any given time. Thousands of people, who once benefited from a safe drinking water supply, now walk past broken handpumps or taps and on to their traditional, dirty water sources. For most water authorities the issue of how to safeguard investments and make them permanent has not been adequately addressed. Furthermore in most of these areas, the issue of how to support water users after construction of new infrastructure and who should pay for the long-term costs of operation and maintenance are considered to be '*somebody else's problem*', and this is often of little concern to the organisations funding the new infrastructure (RWSN, 2009). In these communities water infrastructure is thus left with none to maintain it. The main concern in this regard is that too little attention is paid to how communities are likely to deal with the "real-life complexities of a water supply system". Furthermore, it is highlighted that "because of the mixture of policy inconsistencies, technical shortcomings and political influence only a small proportion of funds is in most cases able to reach the under-served areas" and provide a services that it was intended for (Jimenez and Perez-Foguet, 2010).

Nel (2001) points out that the overriding challenge in most rural communities is inequality and poverty. These challenges need to be addressed urgently before service delivery can improve. Studies show that, in many developing countries, water service institutions serving low income households are regarded as facing the most severe basic service delivery problems because they are predominantly located in underdeveloped and poor rural areas (Berkowitz, 2009, Cleaver et al, 2005). People in these communities cannot afford to pay for services, thus, providing services is expensive.

Due these shortcomings water service providers suffer from considerable constraints on their capacity to govern water, especially when they are locked into spatial disadvantage and

resource poverty. The lack of productive natural resources, low levels of rainfall, streamflow or groundwater also constrain the ability of water service providers to provide water services sustainably (Cleaver et al 2005). Recognition of the all the limits of this function is therefore essential to understanding what kind of governance arrangements are likely to succeed for the poor.

According to the World Bank (2004) in a number of countries a lot has been done in order to speed up water service delivery process in rural communities. This includes decentralizing management to the lowest appropriate level, coupled with close community involvement in planning, financing, implementation and operations, and these have been said to provide a solid foundation for sustainable services. In terms of this approach, a number of problems have been found. According to Smith and Green (2005) one of the main concerns for service delivery is that decentralisation of water services to local governments came at a time when service delivery challenges were the greatest, and during this time, “municipalities are expected to do more with less and do better with what they have” (Smith and Green, 2005), and this is often not enough. Another shortcomings highlighted by Dickovick (2005) is that decentralisation, for most countries including South Africa and Senegal came with a lot of reliance on central government for revenue, which means that provincial leaders could not build up independent tax bases. Such processes mean that the “urban areas continue to predominate in tax collections while rural areas continue to be underserved and under-resourced”. Furthermore, Nel (2001) points out that due to these arrangements, there often is not sufficient funding for provinces to exercise their constitutional responsibility of monitoring and providing support to local governments.

On the other hand, Hirsch et al. (2005), argues that decentralisation is a better solution since it emphasises community-based management and attempts to transfer ownership and management responsibilities to the water user level. Thus, this approach has promising results in terms of meeting millennium development goals in rural water supply and sanitation and in promoting more participatory approaches to managing catchments. However he points out that when the decentralised rural water supply or catchment management is implemented in societal contexts where bureaucratic management is the norm is, this has potential to discourage participatory water governance (Hirsch et al, undated).

Another approach, in terms of addressing the rural water supply has been to implement rural Water Supply Schemes (WSS) within a broad development context so as to allow institutions to respond to and support a range of community needs in a cost-effective and holistic

manner. A typical pattern with this approach has been that the water systems are often constructed with government grants, but after a few years of operation, there is lack of maintenance due to the absence of financial means to repair basic components as a result these systems are eventually rendered inoperable (Cleaver and Franks, 2007).

One other approach to this challenge, was to integrate sanitation and hygiene measures into rural WSS projects to ensure that health benefits from increasing water supply coverage are realized. Finally, “addressing post-construction sustainability to ensure that institutions, funds, and expertise are available to keep rural water supply systems viable and functional” (World Bank, 2004). It is clear that, while all these systems have been in place, challenges still remain. The RWSN (2009, p.2) points out that not only has progress been slow in implementing the processes mentioned, but, “many of the constructed services have not been sustainable”.

All the above problems are challenges that water governance structures have to address. It is quite clear that a lot of work has been done in number of countries to address the problems of rural water supply. And clearly these are either not working or are not sustainable, either way more work is needed. All rural communities have their specific needs and challenges which need to be carefully assessed and well understood before water governance strategies can be developed. This will ensure that such strategies are relevant and can address the problems raised.

2.6 Impacts of poor water services

Access to safe water supply and sanitation services improves public health conditions and is key to reducing poverty (Abrams, 2001). The lack of access to safe water places the poor at risk of waterborne diseases, such as infectious diarrhoea (Abrams, 2001, Jimenez and Perez-Fouget, 2010). It is estimated that in 2002 about 1.7 million deaths worldwide were attributed to unsafe water, sanitation, and hygiene, mainly through diarrhoea (World Bank, 2004). The World Health Organization estimates that each year, about six billion working days are lost globally due to unsafe water and sanitation (USAID, 2007).

Furthermore, studies indicate that the lack of piped water specifically, directly affects economic productivity and exacerbates conditions of poverty especially for the already marginalised rural communities (Cleaver et al, 2009). Furthermore this challenge means women and children have to walk long distances to fetch water for their needs. The task

often put women and children at risk of being attacked or raped. Such problems exacerbate the conditions of HIV/AIDs and contribute to poor health and poverty.

2.7 Towards improving governance for the rural poor

In terms of the challenges highlighted, it is clear that there is no one size fits all solution to the rural water supply problem, however a number of options can be explored and adapted to the specific needs and conditions of the specific area (Hirsch et al, undated, Cleaver and Franks, 2005). Weaknesses in water governance compel governments to constantly introduce reforms to create flexible but effective water management mechanisms. This includes reforming the water sector policies, modernising legal frameworks and building capacities to improve water management and services (Dayem and Odeh, 2010).

According to Jimenez and Perez-Foguet (2010), achieving universal access require changes in the water sector. These include but not limited to; further changes in national policies, plans to move from an infrastructure to a service approach, redefining the allocation of responsibilities for the management of water services, strengthening the role of local governments to effectively monitor and regulate services and provide effective technical support. Finally, plans should be based o real needs so that the poor and small communities are not excluded from service delivery (Jimenez and Perez-Foguet, 2010).

Some examples of good governance specifically aimed at addressing the rural water problems are highlighted as follows;

2.7.1 Targeting the poor

Studies highlight that in some countries free basic services aimed at addressing the needs of the poor as well as the funds allocated to providing these services end up servicing richer or better off neighbourhoods who should be paying for such services (Jimenez and Perez Foguet, 2010). Thus it is important that the targeting approaches are appropriate and can guarantee access to poor households.

A targeting approach used in Chile involved screening households using socio-economic classification system based on an interview in the house (Serra, 2000). In South Africa, the poor is defined in terms of income, and this is currently defined as R1100 per household (DWA, 2002). Municipalities have to register these households and hence provide services for free. Another example, in Columbia, the subsidy is based on geographical classification based on the guideline developed by central government. In this way all dwellings are classified into six economic groups largely based on neighbourhood characteristics.

Households in the lowest three groups receive a subsidy. While these approaches may seem to be effective, Jimenez and Perez-Foguet 2010, highlight that there are a number of errors in terms of inclusion of people that are not deserving of these subsidies. Consequently subsidies end up servicing villages that are “better connected and or more influential”, leaving out villages that are less organised or have worse connections (Jimenez and Perez-Foguet, 2010). It is therefore important that such approaches are constantly updated and monitored to ensure that they continue and are indeed benefiting the people intended.

2.7.2 Financial management capacity building

Hirsch et al (undated) highlights one of the options or solution to village water supply in one of the villages in Vanuatu involves encouraging innovative governance arrangements with a strong emphasis on financial management capacity building at community level. In this way NGOs can be used to communicate with and train local community groups in culturally appropriate ways.

Hirsch et al (undated) further highlights the importance of stimulating advocacy initiatives for improved water and sanitation services, with a strong emphasis on capacity-building of CBOs, e.g. by trainings on rooted advocacy, as well as training of Local Government Institutions (LGIs). This also includes training on different issues like leadership, management and negotiation skills to enhance their capacity to identify, manage and mobilize resources effectively on their own. Such instruments are considered to enhance the accountability and transparency of operations both in the public and private sectors and, as such, they should be encouraged both within the institutions and also towards the public (Tortajada, 2010).

2.7.3 Community and or stakeholder participation

According to Franks and Cleaver (2007) one of the main challenges in water management are due to the fact that in most cases the socially marginalised groups, such as indigenous people, and religious and ethnic minorities, are often excluded from formal decision making processes. As such, their interests and the particular values they place in water can be ignored or undermined by majority interests. The involvement of communities at catchment management level can ensure that communities are aware of the water problems within the catchment and can become sensitive users of water resources.

Furthermore, it should be recognised that the policy challenges outlined above cannot be resolved by the public sector alone. Civil society, the private sector, and government should work together to contribute to improved water management and better delivery of water and sanitation (Seetharam, 2010)

2.7.4 Clear roles and responsibilities

The issue highlighted by Dayem and Odeh, (2010) is that the responsibility for managing water and water services is often dispersed across multiple institutions, which rarely communicate or coordinate among themselves, in this way decision-making processes takes a “top-down direction with absent or ineffective stakeholders’ participation”. In addressing this problem, it is important to develop institutional arrangements involving the public and private sector, and communities which are well equipped with the right technical, economic and legal tools that will enable them to function effectively (Dayem amd Odeh, 2010).

One of the solutions adopted by the Egyptian government on the problems of non compliance has been mainly to separate the water service provision function from the regulation function. In this way the independent authority can monitor the water service providers on a monthly basis against specific performance indicators (Dayem and Odeh, 2010). This will ensure that institutions understand their specific roles and responsibilities and thus, can be held responsible for non compliance.

CHAPTER 3

METHODOLOGY USED

3.1 Introduction

The study used a qualitative approach to study two municipalities, one in Mpumalanga and one in Limpopo.

According to Mack et al, 2005 a qualitative study approach is a method that seeks to provide information about the “human” side of an issue – that is, the often contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals. Furthermore it seeks to understand a given research problem or topic from the perspectives of the local population it involves.

Marlow and Boone (2005), further highlight that the qualitative approach involves collecting data that involve non-numerical examination of phenomena using words instead of numbers. For the purpose of this research municipal officials, ward councillors as well as individual community members were used to address the research questions.

3.1.1 Research design

The study used two municipalities in case studies. This is mainly a form of qualitative descriptive research. The intent of a case study design is to look intensely at an individual or small participant pool, drawing conclusions only about that participant or group and only in that specific context (Becker et al, 2005)

In this study, the municipalities selected and used were mainly;

- Nkomazi Local Municipality (Nkomazi LM) in the Ehlanzeni district municipality in Mpumalanga and,
- Makhado Local Municipality (Makhado LM) in the Vhembe district municipality in Limpopo

The two municipalities were identified through a desktop study (see appendix 3) conducted prior to commencement of the study and these were also verified through interactions with their district municipalities as the municipalities which serve the largest rural population, and have areas which are most vulnerable to water challenges.

3.1.2 Sampling

Purposive sampling was used in this study. This sampling method is also known as judgemental, selective or subjective sampling. When using this technique, selection of participants involved in the study was based on the researcher's judgement. That is, the researcher selected informants with a specific purpose in mind (Neuman, 2003). This sampling technique is suitable for this study in that a researcher has a choice to select a sample that will provide the information sought. Thus the researcher is able to identify a particular class sample so as to obtain in-depth information related to the study (Neuman, 2003). Palys (2009) further points out that the way that you sample has to be tied to your objectives. However, the sample studied is not necessarily representative of the population studied. This sampling method was also suitable for this study in that it allowed the researcher to sample a small number of participants who will be able to address specific questions related to the study. However, one limitation with this method is that judgement lies solely with the researcher, which may increase elements of bias.

3.1.3 Ethical considerations

The researcher complied with professional ethics when conducting this study. In terms of qualitative research, researchers need to respect the participants and the sites for research. The following ethical issues were considered;

- Informed consent

Informed consent was gained from the participants by means of a verbal agreement. The researcher informed the participants about the study, its goals, the procedure to be followed and the rights of the participants. She also highlighted the extent to which the participants' information would be kept confidential. The researcher also obtained permission to conduct the study from the management of the Nkomazi and Makhado Municipalities

- Confidentiality and Anonymity

Participants were assured by the researcher that all the information obtained from them was to be kept in strict confidence and that their names would not appear on the research report.

3.2 Qualitative research tools used

3.2.1 Desktop study

A preliminary desktop study was conducted to collect background information on the two municipalities. Statistics on population, backlogs and water service levels were collected from the relevant Integrated Development Plans (IDPs), WSDPs, DWA website as well as Statistics South Africa (Stats SA) community surveys (See appendix 3).

3.2.2 Focus group discussions

According to Byers and Wilcox (1991, p 65) a focus group may be defined as a group of interacting individuals having some common interest or characteristics, brought together by a moderator, who uses the group and its interaction as a way to gain information about a specific or focused issue. This method allowed the researcher to bring together a small number of subjects to discuss the topic of interest. The group size is kept deliberately small, so that its members do not feel intimidated but can express opinions freely (Mack et al , 2005).

Checklists were used to facilitate discussions during meetings with the respective local municipalities' officials, to understand the water governance systems as well as to get their 'views' on the challenges that are currently affecting service delivery in their municipalities. These discussions included municipal officials and councillors for the different villages.

Focus group meeting were also held at the selected communities with the water committee and representatives of the different structures within the community, mainly, the water committee representatives, the home based cares, civil society, tribal, etc. These structures were organised with the assistance of the ward councillor from the specific communities. These discussions also included representatives from the tribal authority. The two communities visited were selected from the list of villages provided by the municipality. The villages selected were therefore, Thambonkulu village within Nkomazi LM, as well as Zama-Zama village within Makhado LM.



Figure 4 : One of the focus groups held at the Makhado Local Municipality offices

3.2.3 Informal interviews

Interviews used the same method as a focus group discussion, but subjects were interviewed individually. According to Berry (1999) informal interviews are the least structured of all interviews. The wording of the questions and topics to be discussed are not predetermined, but often occur spontaneously. These interviews are usually more like a conversation among acquaintances. In this way the researcher is not necessarily directing the topic for discussion but is following up on points raised by another person during the natural flow of conversation (De Walt and de Walt, 2002)

An informal interview guide was prepared and used to conduct interviews at the community level. Members of the community that were met during field visits to the village were asked questions with regards to the water issues in the community. Only community members that were available at the time of the visit were interviewed.

The interview guide was also used to conduct informal interviews separately with the councillors of the selected communities within the relevant municipalities. This was mainly to get their views on the issues of concern in the villages in terms of accessing water and the challenges that communities are facing with regards to water.

3.2.4 Physical Observations

The study also employed a checklist to conduct physical observation of the condition of water services infrastructure that had been installed by the respective municipalities in the selected villages. The researcher, with the help of the councillor or community member went around conducting visual assessment of the water infrastructure including alternative water sources that the community was using for domestic purposes. This infrastructure included boreholes, communal standpipes, reservoirs and jojo tanks. Alternative water sources included streams, wells, fountains and springs.



Figure 5 : A photo of a handpump taken during physical observations of water infrastructure at the Thambonkulu village

3.3 Analysis

3.3.1 Thematic Content Analysis

A Thematic Content Analysis (TCA) method was used to analyse data collected for this study. Anderson (2007), highlights that this analysis is a descriptive presentation of qualitative data used to portrays the thematic content of interview transcripts (or other texts) by identifying common themes in the texts provided for analysis.

Anderson (2007), further points out that, this method is the most foundational of qualitative analytic procedures and in some way informs all qualitative methods. In conducting a TCA, this method allowed the researcher to be able to group and distil from the texts a list of common themes in order to give expression to the communality of voices across participants. Furthermore, reasonable attempt is made to employ names for themes from the actual words of participants and to group themes in manner that directly reflects the texts as a whole. Interpretation of the meaning of the identified themes is kept to a minimum until in the discussion part of the report.

3.4 Rationale for study area selection

The main intention of the study was to focus on the most rural municipalities in the two provinces, Limpopo and Mpumalanga. Thus a desktop study (see appendices) was conducted to identify district municipalities that house the largest rural population and have areas vulnerable to water challenges. This narrowed the focus to Ehlanzeni and Vhembe Districts. From then a further desktop study was used to identify municipalities with the

largest rural population and high poverty rates. From this study Nkomazi and Makhado were identified. Preliminary visits to the two districts were also undertaken, where Nkomazi and Makhado were also identified as areas vulnerable to water challenges, in terms of the topography and location and have areas currently having problems accessing municipal services.

CHAPTER 4

INTRODUCING THE CASE STUDY AREAS

4.1 Introduction

The two local municipalities considered for this study was mainly; Nkomazi and Makhado Local municipalities. The location of the two municipalities is shown in the figures below;

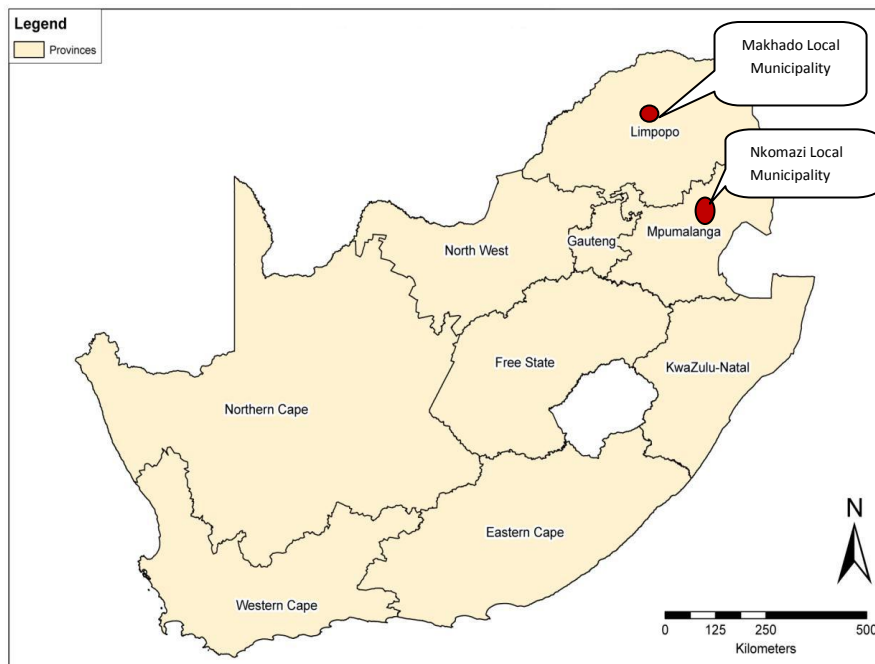


Figure 6 : Map showing the location of Nkomazi and Makhado municipalities in South Africa
(Source: Adapted from Stanton, 2009)

4.2 Characteristics of the study area: Nkomazi LM

4.2.1 Location of Nkomazi LM

The Nkomazi LM is one of the five municipalities in the Ehlanzeni District. It is located in the eastern part of the Ehlanzeni District Municipality of the Mpumalanga Province. It is 3240.42 km² in extent, which is 4.07% and 23% of the Mpumalanga Province and Ehlanzeni District Municipality (EDM) land mass respectively (Nkomazi LM, 2011). The Municipality is bounded by Mozambique to the east, Swaziland to the south, Kruger National Park to the north, Umjindi Local Municipality to the south west and Mbombela Local Municipality from the northwest to west (See figure 2).

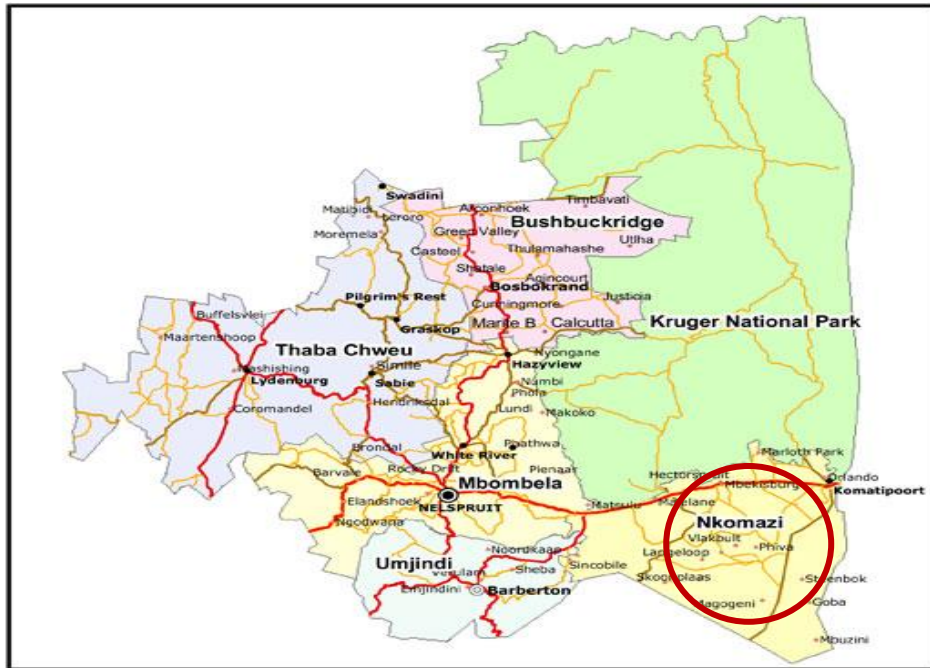


Figure 7 : Location of Nkomazi Municipality within Ehlanzeni District in Mpumalanga Province
 (Source: Ehlanzeni DM IDP, 2010)

The population of the Nkomazi LM is estimated at about 354,391 (22.1% of the district) people (DWA, 2011) with the number of households estimated at 79,853 with an average household size of about 5.62 people. According to the EDM (2010) Nkomazi has the largest number of poor household (95%) in the district, which means it houses the highest rural population in Ehlanzeni district.

There are 8 Tribal Authorities and 43 villages (Nkomazi LM, 2011). Towns within Nkomazi LM include Malalane, Komatipoort, Hectorspruit, Marloth Park, Kamhlushwa and Kamaqhekeza, and these are the areas where the municipality is collecting some revenue for its services. The majority are rural communities receiving services for free (Nkomazi IDP, 2010).

4.2.2 Settlement types

Nkomazi local Municipality is predominantly rural, the urban structure contains only about 7.3% of the population of Nkomazi, 89.8% are villages (DWA, 2010). The types of settlements found in the municipality are provided in a figure below:

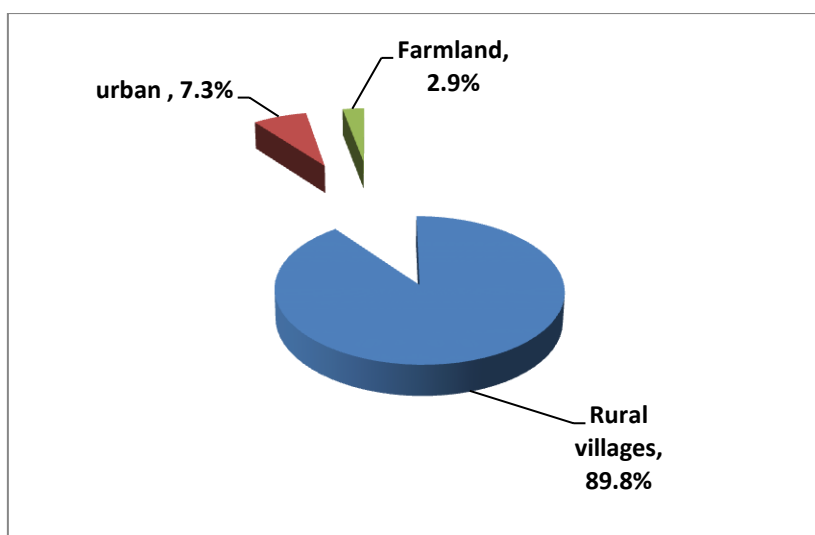


Figure 8: Settlement patterns for the Nkomazi Local municipality (Source: Nkomazi IDP, 2010 - 2011)

4.2.3 Water services

According to Stats SA (2007) water in Nkomazi LM is accessed as follows;

Table 1: Methods of accessing water at Nkomazi Local Municipality (Source: Stats SA,2007)

Source	Percentage
Pipe Water (inside the dwelling)	14.9
Pipe Water (inside the yard)	44.4
Pipe Water from access point outside the yard	31.4
Borehole	1.8
Spring	-
Rainwater Tank	1.2
Dam/Pool/Stagnant	0.2
River/Stream	4.2
Water Vendor	0.7
Other	1.2

4.2.4 Water resources

Nkomazi LM falls within the Nkomati Catchment management area (CMA). The CMA consists of three major catchments and two minor catchments. The major catchments are the Komati, Crocodile and Sabie-Sand catchments, and the minor catchments are the Nwaswitsontso and Nwanedzi catchments (see figure 9).

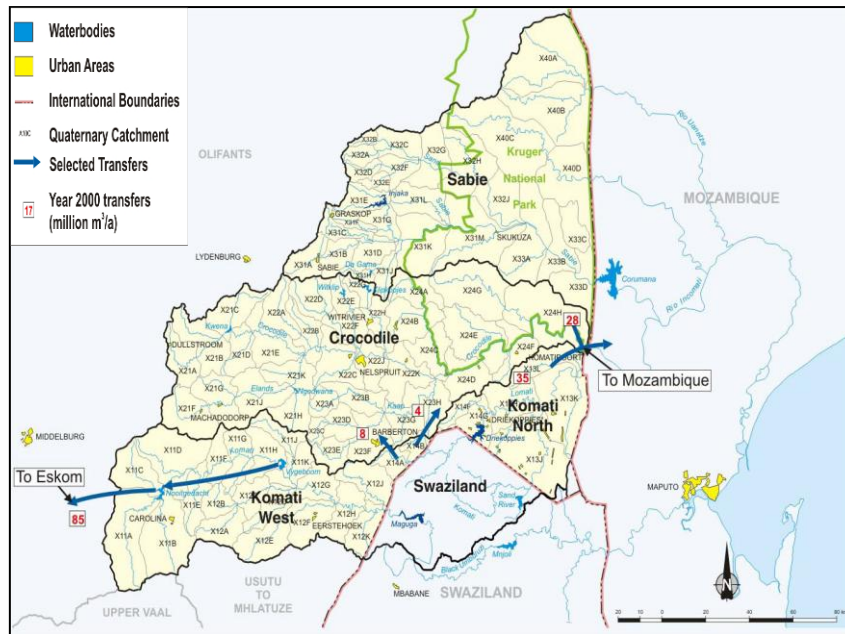


Figure 9: Inkomati water management area (Source: DWAF, 2004)

The general climate of the basin varies from a warm to hot and humid climate in the Lowveld, to a cooler and dry climate in the Highveld (DWAF, 2004). The entire basin falls within the summer rainfall region with a mean annual precipitation varying from over 1 200 mm/a along the eastern escarpment to as little as 400 mm/a in the east. The area of Nkomazi specifically receives about 700mm of rainfall per year. The monthly mean rainfall for the area is shown in figure 9.

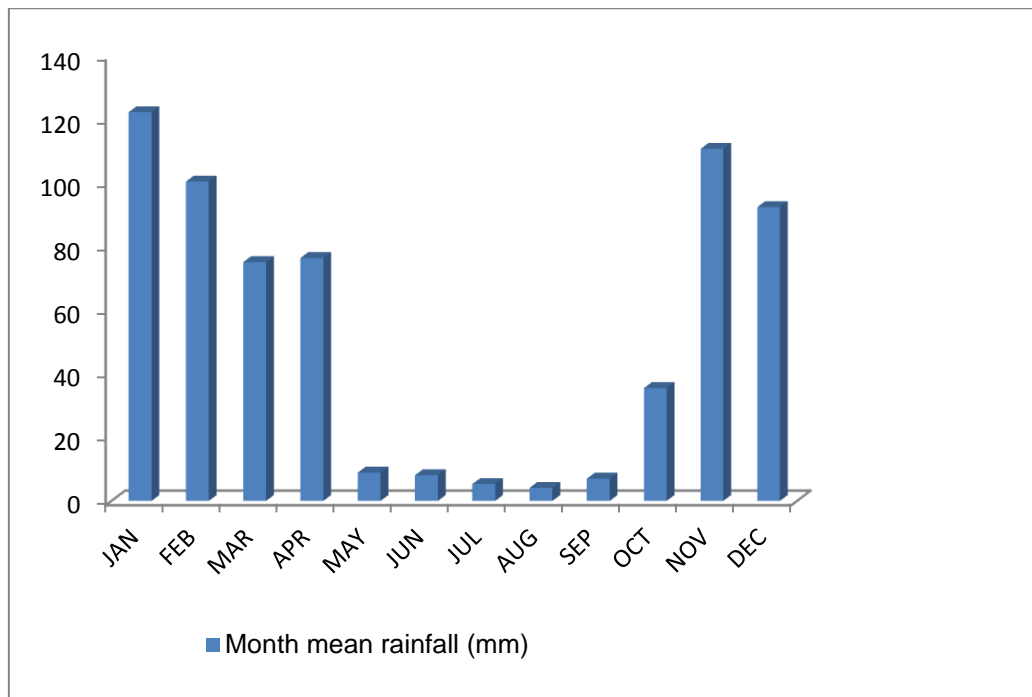


Figure 10: Monthly mean rainfall(mm) for the Nkomazi area

Groundwater mean annual recharge varies from 100 to 150 mm in the higher rainfall elevated areas along the western boundary and in the south of the WMA to 10 to 20 mm in its low rainfall easternmost portion (DWAf, 2004). Groundwater quality in the WMA also deteriorates from west to east over the area, following the average annual rainfall. The greater portion of the area is underlain by crystalline igneous and metamorphic rocks of the granite and gneiss type, the groundwater is of good to moderate quality. (Award, 2004)

4.2.4 Location of the selected community: Thambonkulu village

Thambonkulu is one of almost 50 villages serviced by the Nkomazi LM within the Mlambo Tribal authority. It is located a few kilometres away from Samora Machel National heritage site next to the Mananga boader post and five minutes away from the Swaziland border.

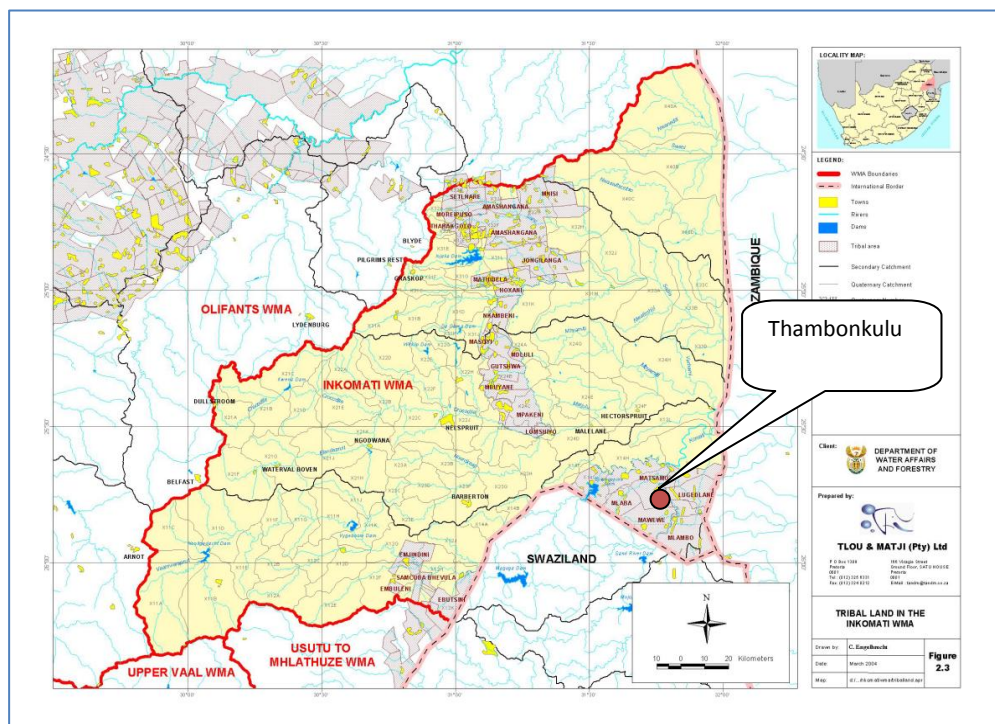


Figure 11: Location of Thambonkulu village in Nkomazi (Source: Nkomazi IDP (2010/11))

According to the municipality the population in the village is made of about 2832 people. (Nkomazi IDP, 2010). It is also located in one of the driest regions in the province.

4.3 Characteristics of the study area: Makhado LM

4.3.1 Location of Makhado LM

Makhado LM is one of the four municipalities in the Vhembe district in the Limpopo Province. The main administrative office is situated in Louis Trichardt town about 100km from the Zimbabwean border along the N1 Route. According to the DWA statistics (2011) the total population of Makhado is estimated at 576 990 (almost 42% of Vhembe district) with about 115 398 households, second highest population after the Thulamela municipality. The location of the Makhado is shown in the figure 10;



Figure 12 : Location of Makhado LM within the Vhembe District in Limpopo Province (Source: Makhado Municipality, 2005)

The area of jurisdiction comprises more than 16 000 km² and the municipality is made up of about 279 villages, and four formal towns mainly, Louis Trichardt (also called Makhado), Vleifontein, Vuwani and Dzanani. Most of the Makhado region can be classified as rural with small-scale agriculture and subsistence farming (Makhado LM, 2010).

4.3.2 Settlement types

The majority of the population live in the rural areas which make about 89% of the population of Makhado, leaving only about 11.4% to make up the urban population (DWA, 2011). These areas fall within seventeen traditional leaderships, with Headmen and Indunas, including the Venda & Shangaan Kings as part of leadership (Makhado LM, 2010). The settlement pattern is shown in the figure below;

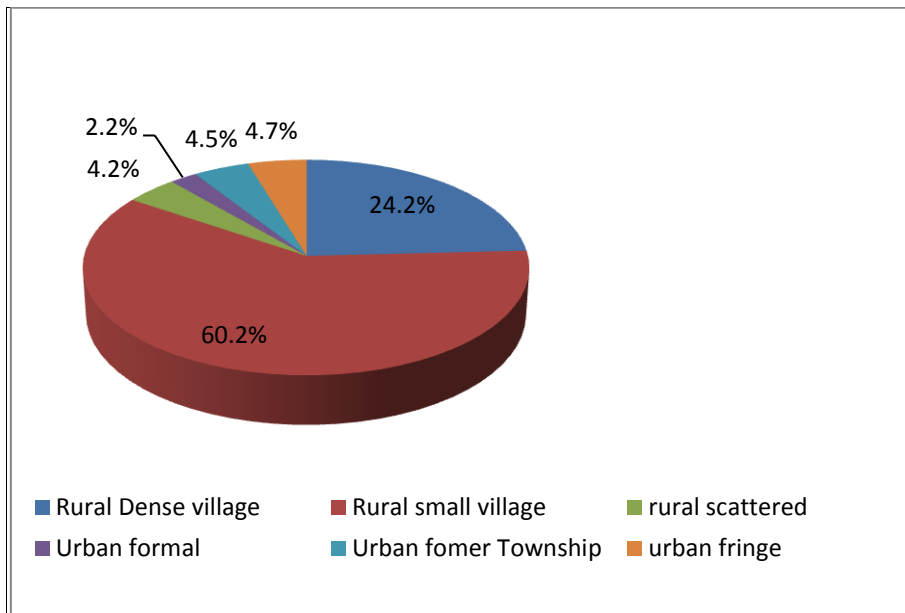


Figure 13: Settlement Patterns at the Makhado Municipality (Source: Makhado LM, 2010)

4.3.3 Water Services

According to the Vhembe IDP, Makhado LM is listed amongst the second most vulnerable with regards to water. The table shows that the majority (57.2%) of the water in Makhado is from communal standpipes, only 13.2% is inside the dwelling and 22.5 is from taps within the yard.

Table 2: Methods of accessing water in Makhado LM (Source: Stats SA, 2008)

Source	Percentage
Pipe Water (inside the dwelling)	13.2
Pipe Water (inside the yard)	22.5
Pipe Water from access point outside the yard	57.2
Borehole	4.0
Spring	1.0
Rainwater Tank	0.2
Dam/Pool/Stagnant	1.3
River/Stream	0.3
Water Vendor	0.1
Other	0.2

4.3.4 Water resources

The Makhdo area falls within the Luvuvhu /Letaba Water Management Area (WMA). The main rivers in the WMA are the Luvuvhu, Shingwedzi and Letaba rivers (DWA, 2004).

There is a general lack of surface water resources in the area. As a result, groundwater is used quite extensively (DWA, 2004). Most importantly groundwater plays an important role in the water supply of rural communities. For this reason it is estimated that approximately 850 Mm³/year of groundwater is withdrawn for providing domestic and irrigation water alone to rural communities within this area and around Limpopo as a whole. Furthermore the rural communities of this region are located on or near marginal aquifers with potential yields of 2 l/s (FAO 2004). In terms of quality, this is relatively poor due to high salinity. Overall the potential yields of boreholes in these areas is relatively low, limiting the extent to which groundwater can be used for large scale water supply (DWA, 2004).

In terms of the rainfall pattern, most of the rainfall falls in the summer months between October and March, and very little falls within the winter season. Due to the topography, this varies from well over 1 000 mm/a to less than 300 mm/a. The rainfall pattern for the Makhado area is shown on the figure 13.

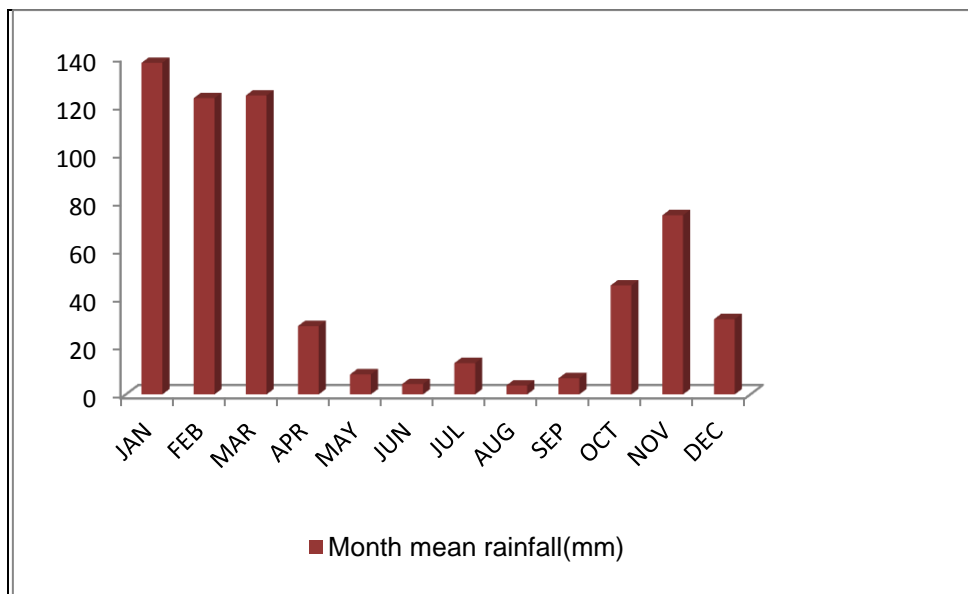


Figure 13: Total average monthly rainfall for the Makhado area

4.3.5 Location of the selected community: Zama-Zama village

Zama-Zama village is located about 25km away from the town of Elim within Makhado LM in the Limpopo Province. It is a small village of about 386 people with about 80 households. The village falls under Mashamba tribal Authority and is defined as one of the deep rural villages with serious challenges in accessing municipal services (Makhado LM, 2010). The

location of the area is shown in the figure 14.

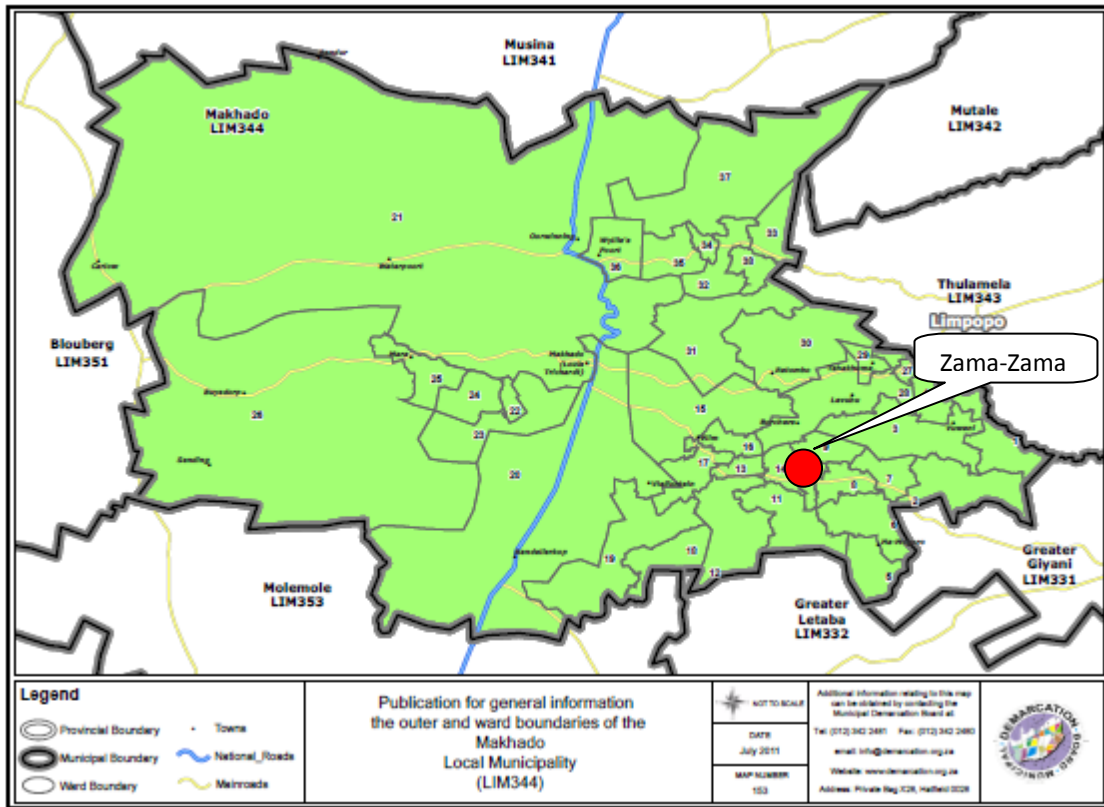


Figure 14: Location of Zama- Zama village within Makhado

CHAPTER 5

STUDY FINDINGS AND DISCUSSION

5.1 Study participants

5.1.1 Focus group participants

The study used focus groups to collect data. In total four different discussions were held, one for each municipality and one for each community. Discussions were held at Nkomazi, Thambonkulu community, Makhado and Zama Zama community. These discussions were held at the municipal offices and in the community halls of the relevant areas. The number of people who participated in these discussions are shown in table 3.

Table 3: Focus group participants

Local Municipality		Gender representation		Total number of participants
		Male	Female	
Nkomazi LM	Participants from the LM	8	4	12
	Participants from the community	5	8	13
Makhado LM	Participants from the LM	6	5	11
	Participants from the community	8	6	14
Total focus group participants				50

5.1.2 Informal Interview participants

Informal interviews were only held at the community level. Participants were picked up randomly during the physical observation walks to the water infrastructure and water sources in the village. Participants were met and requested to be asked a few questions regarding water services in the village. An informal interview guide was prepared prior to this process and was used to interview participants. The number and gender of participants in each village is shown in table 4.

Table 4: Informal interview participants

Local Municipality/community	Gender representation		Total participants
	Male	Female	
Nkomazi LM – Thambonkulu community	4	5	9
Makhado LM- Zama-Zama community	3	6	9
Total informal interview participants			18

5.2 Findings: Systems and processes for water service provision within Nkomazi LM

5.2.1 Structures for water service provision within the LM

The Nkomazi Local Municipality (LM) is the authorised WSA and WSP responsible for serving all the villages within Nkomazi. It is made up of several villages that are under the control of traditional Authorities. In terms of Chapter 7 Section 155 of the Constitution of the Republic of South Africa, Act 108 of 1996, the Nkomazi LM falls within the Category B4⁴ municipalities.

During focus groups it was also confirmed that the LM is fulfilling the role of both a WSA and WSP with no separation of powers. Thus it is responsible for both regulation of water services and implementation of water projects. Water services fall under technical services which also includes electricity, roads infrastructure, refuse removal and other technical services.

In terms of the political environment, according to the LM, traditional leaders are also highly involved in the affairs of the municipality and assist in facilitating service delivery to communities. The LM also works very closely with the ward committees and councillors of the individual villages to facilitate service provision to communities. Councillors are currently the voice of the people as they have to constantly communicate with the LM in terms of the challenges in the village.

⁴ Local municipalities which are mainly rural, with communal tenure and with, at most, one or two small towns in their area. These municipalities are considered to be very vulnerable both from a revenue generation and from institutional development perspective. They are located in economically depressed areas and have difficulty in attracting and retaining skilled managers, professionals, and technicians. (COGTA, 2009)

During these discussions it was pointed out that the LM does not have a significant relationship with the Nkomati catchment management area (CMA), they do however attend meeting or forums once or twice a month when invited. However they do not have a significant role in those forums. Thus, in some cases they cannot attend forums due to time constraints.

In terms of the water services personnel, the LM consists of Water services manager (Chief Water and Sanitation), water quality officer and the 5 operations and maintenance officers (one for urban areas and four for rural areas).

The structure of water services within Nkomazi LM was provided as shown in figure 14;

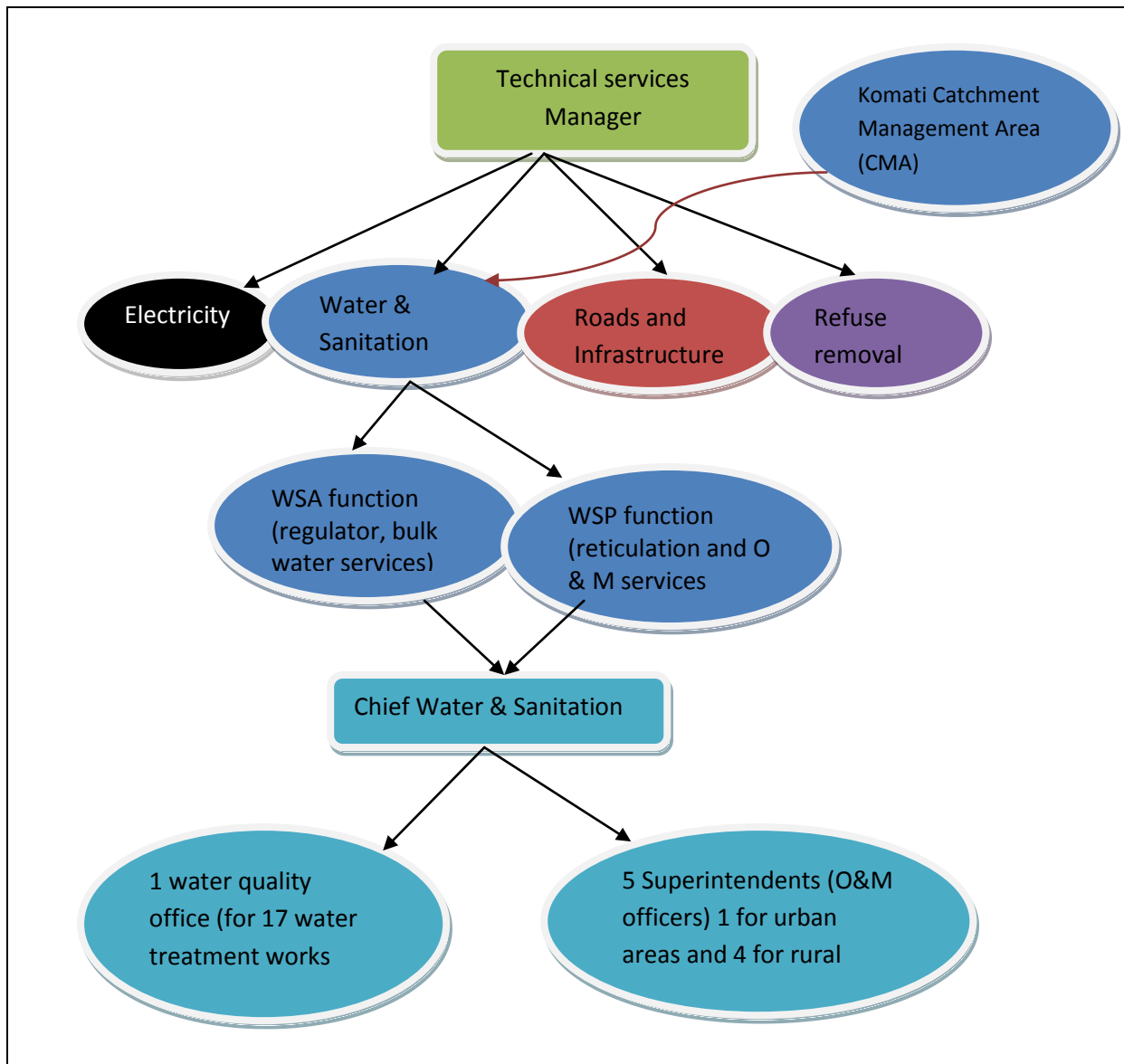


Figure 15: Water services structure within Nkomazi Local Municipality (obtained from the LM)

Discussions also highlighted that there is a shortage in the number of personnel working in the water service section, as a result water service provision is a major challenge. During the time of the study; only one person was responsible for overseeing the water quality (for 17 water treatment works) thus the LM indicated that water quality matters could not be addressed efficiently. It was also indicated that due to insufficient skills, there was at that time no preventive maintenance in place, and operation and maintenance issues could not be properly addressed. On the issue of O&M the following was raised;

“Currently there is only one water quality officer in the municipality responsible for 19 purification plants, and when there are technical problems these are reported to her, but sometimes because of time they cannot always be attended to on time, the problems are

delegated to the superintendents, but mostly sorting out these problems takes longer”(participant)

5.2.2 Water resources and infrastructure

In terms of water resources, the study established that Nkomazi is also a water stressed area. The main water sources in Nkomazi are the Crocodile, Mlumati and Nkomati rivers, as well as the Driekoppies and Mbuzini dams. Mlumati and Nkomati rivers are the main water sources serving the rural areas. The meeting with the LM established that some dams eg. Mbuzini Dam dry out and are dependent on rain water, which means that water is a challenge during the dry season. Rainfall in the area is also highly variable and not sufficient to provide for community’s water needs. Rainfall data obtained from the South African Weather Service also shows a downward trend in the rainfall of the area. Figure shows that there is a substantial decrease in the rainfall pattern from 1353mm in 2000 to 630mm in 2011(See figure 16).

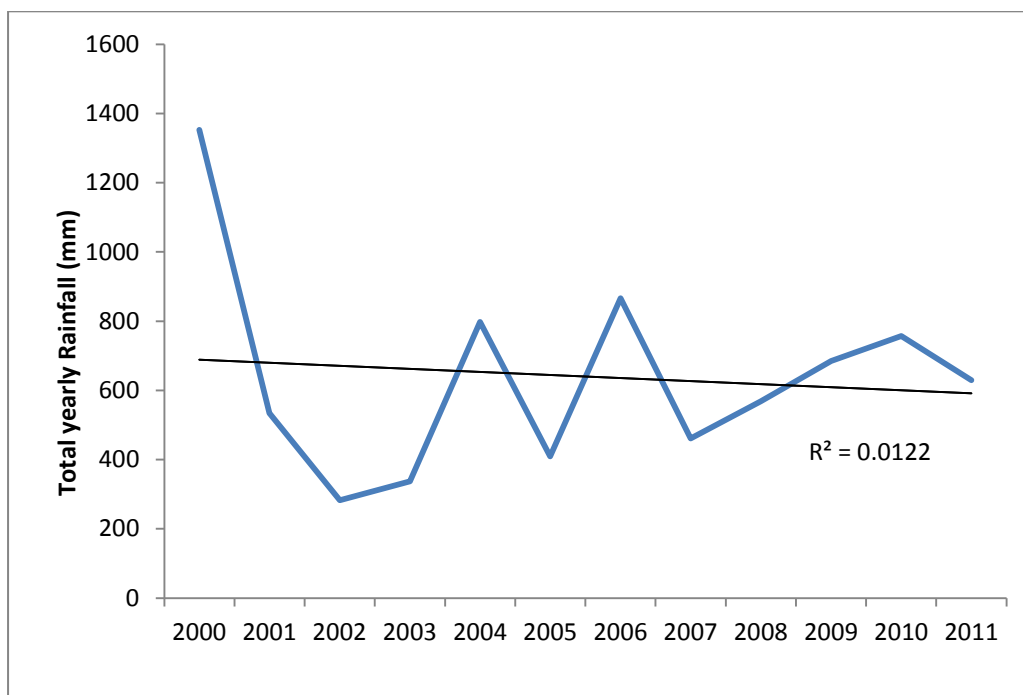


Figure 16: Total annual rainfall for Nkomazi area for the period of 200-2011 (South African Weather Service)

In response to the question of what are some other challenges within the municipality, the following was highlighted;

“Most of our communities do not have water resources, so whilst there is infrastructure in terms of reservoirs and taps, the municipality still has to make plans to draw water from sources located kilometres away from the actual villages” (participant).

In most villages groundwater is the major source of water, thus, water is mainly received from boreholes, and reticulates to communal standpipes without any prior treatment. The study also estimated that about 80% of the villages within Nkomazi use VIP toilets and these have a potential of contaminating groundwater sources. It was indicated that in some areas groundwater is sufficient while in others it is completely dry. Ultimately, groundwater is the main source of water within Nkomazi communities.

The study also established that in terms of water services infrastructure in most villages communal stands had been installed however it was pointed out that in most cases (about thrice a week), depending on the village, water is unavailable. Water purification plants as well as reservoirs are in place, however these often have technical problems, and reservoirs are often empty due to insufficient water. During this period the LM sometimes deploys water tankers to supply water to communities, but mostly communities have to rely on alternative sources such as rivers or springs; others have to buy water from those who own private boreholes. It was also highlighted that due to water problems in the areas, there had been a number of cases of cholera reported in the past two years.

5.2.3 Rural water supply process

In terms of the rural water supply, the meeting with the LM established that more than 90% of the population within the LM is living in rural areas. The LM is currently providing services to almost 50 villages at no cost.

According to the LM the majority of the population is unemployed, and those employed are unable to earn a proper living due to their low income. Furthermore it was noted that most of its rural communities reside in outlying areas where poverty is high and infrastructure is limited. For some of these rural areas it is geologically not feasible to provide free services. According to the municipality this poses a serious challenge for service delivery since the LM does not have sufficient income.

In terms of the FBW policy, the LM does not keep a register of its indigent households since most of its rural communities are regarded as poor and do not pay for services. In terms of

its targeting approach, all its rural communities are regarded as poor or indigent⁵. Thus all its rural communities are provided with free basic water where possible.

In terms of government funding, the LM indicated that it receives the MIG as well as the ESG from government as support towards its functions, however this was insufficient. The municipality currently does not receive any external funds thus it was also pointed out that sometimes implementing water projects on time is a challenge due to insufficient skills and funds.

5.2.4 Water services in Thambonkulu village

Through physical observations and focus group discussions conducted with the assistance of community members, it was noted that there was no reliable surface water resources in the area and communities confirmed that the rainfall is highly seasonal. Thus the municipality has to find alternative means of servicing the community during the dry season. It was however pointed out that rainfall is another very important source of water in the area. During a rainy period households collect water through gutters in houses and this water is normally stored in big drums so that it can be available for a number of days.

It was also noted that, the municipal/reticulated water is drawn from Mbuzini dam (which dries up during the winter season). This water goes through a purification plant in Mbuzini, then stored in reservoirs and reticulates to communal standpipes. There are no household connections or yard taps in the village (except for illegal connections in some households).

Informal interviews with the community established that while communal standpipes have been installed; the community does not receive reticulated water on a daily basis. Water from the standpipes is only available once or twice in three weeks. According to the purification plant operators, water takes about three to four days to fill the reservoirs, and once full, it is only available for about four to five hours so reservoirs are often left empty and remain that way for days. The operator also confirmed that water from the dam is highly turbid thus the purification filters are often clogged or broken, and it normally takes months for the municipality to come and rectify the situation. In many cases the community do not receive reticulated water for three to four months when the plant has technical problems.

⁵ Households that cannot afford to pay for basic services or have a monthly income of less than R1600 (DPLG, 2005)

In terms of the municipality, there are plans in place (in the IDP) to address water shortages, this was highlighted in focus groups;

“We have plans in our IDP to address the water challenges in the Tsambonkulu, however these will be in place in 2014, in the meantime we are aware that the community is struggling, that’s why we deploy water tankers to assist communities” (participant). He further added;

We will be constructing a bulk pipeline to draw water from the Komati river, and we will also construct a bigger reservoir so as to cater for Thambonkulu and the nearby communities”

During the village visits there were two boreholes which had been installed and equipped with handpumps (see photo in figure 17). However these were not operational and according to community members the situation had been that way for more than 12months and the municipality was aware of the situation. It was pointed out that;

“The municipality have tried to fix these pumps but were unable to fix them, as you can see these are old pumps so it difficult to replace some of the parts “(community member)

Furthermore, there was a further 8 boreholes that had been recently dug but these had not been equipped. Community members also indicated that there had been a number of NGO’s that have tried to assist the community by digging boreholes, but groundwater was not enough and boreholes had mostly dried out. The community member further added to this issue by saying;

“We see people here all the time digging boreholes to assist us with water, but at the end of the day there is no water from those boreholes, we still have to go down and get water from the well” (community member)

Water infrastructure in the village was recorded as follows;

Table 5 : The existing water infrastructure recorded during field visits in Thambonkulu village

Water Infrastructure	Location (DMS)	Description(Type, capacity) etc	Dist nearest house
Reservoir	S 25°56,466 E 031°54,333 Elevation 485m	<ul style="list-style-type: none"> • Steel, about 100 000l • In use 	-/+800m
Borehole 1 with Handpump	S: 25° 56. 537 E: 031° 53.998 Elevation: 419m	<ul style="list-style-type: none"> • Borehole equipped with handpump • Not in use. Pump broken 	20-50m
Borehole 2 with Handpump	S: 25° 56. 270 E: 031° 53.928 Elevation: 398m	<ul style="list-style-type: none"> • Borehole equipped with handpump • Not used, pump broken 	50m
Borehole 3 (electric) (agriculture)	S: 25° 57. 404 E: 031° 53.861 Elevation: 385m	<ul style="list-style-type: none"> • Electric pump installed by Dept of Agriculture • Not used, no water, pump not working 	200m
Borehole 4	S: 25° 57. 204 E: 031° 53.689 Elevation: 385m	<ul style="list-style-type: none"> • Initially installed by LM, Handpump has been removed and used in private household 	100m
Borehole 5	S: 25° 57. 163 E: 031° 53.477 Elevation: 371m	<ul style="list-style-type: none"> • Test borehole • Never used, not equipped 	800m
Borehole 6	S: 25° 57. 154 E: 031° 53.471 Elevation: 377m	<ul style="list-style-type: none"> • Test borehole • Never used, not equipped 	800m
Borehole 7 with handpump (agriculture)	S: 25° 58. 161 E: 031° 53.690 Elevation: 356m	<ul style="list-style-type: none"> • Borehole equipped with handpump. Installed by Dept of agriculture for livestock, • Not used currently there is not water 	2-3 km
Borehole 8 & 9	S25°56,550 E 031° 54,063 Elevation 420m	<ul style="list-style-type: none"> • Two boreholes drilled in one yard, never equipped and not used 	5m
Borehole 9	S 25°59,163 E 031°53,914 Elevation 337m	<ul style="list-style-type: none"> • No pump, Not equipped 	4km
Borehole 10	S25°58,152 E 031°53,620 Elevation 349m	<ul style="list-style-type: none"> • No pump, Not equipped 	500m
Dam(agriculture)	S 25°58157 E 31°53584 Elevation- 348m	<ul style="list-style-type: none"> • Constructed by Dept of Agriculture, fed by rainwater • Livestock, sometimes used by the community for domestic purposes drinking 	4-5km
Well or fountain	S: 25° 56. 973 E: 031° 53.617 Elevation: 386m	<ul style="list-style-type: none"> • Water from underground, with rudimentary protection (brick wall protection), water not clean • Used for all domestic purposes 	800m
Other: 10 JoJo Tanks and 3 communal standpipes	No water coming out		

In terms of O & M for infrastructure installed, it was indicated that this was not done on a regular basis as a result boreholes remain broken for a long time before they get fixed. When asked about the problems with the handpumps; one of the responses was as follows; *“All the handpumps have been not operational for more than a year, and the LM is aware of this because they had been told, they did come to check them but they were unable to fix them. (vice Herdmen).*



Figure 17: A photo of a communal standpipe (left photo) which has not been working for a almost three weeks, and a handpump(right photo) which has not been working for about 12months in Thambonkulu village

During the time when reticulated water is unavailable, the community relies on water from the fountain/well. Community members confirmed this is their most reliable source of water. This water is used for all domestic purposes including cooking and drinking, and it is consumed without any prior treatment. When asked whether they treat the water before drinking, the response was;

“Sometimes when it is very dirty we boil it but most of the time we drink it as is” (Community member)

It was also indicated that this water from a fountain/well is available almost throughout the year but the other challenge is that it is also shared with livestock. Households collect water from this source two to three times almost every day of the week. When asked about problems with that water, one of the responses was as follows;

Most of the time when it has not rained for a long time, all the communities come here, so this water gets finished and then we have to wait for almost three to four hours for the water to fill up, and we wait because we don't have any other alternative”(Community member)

The councillor from the village also indicated that because of water challenges, a number of cholera cases have been reported in the area. See photo of the well used in figure 18.



Figure 18: A photo of a fountain which is used for drinking, cooking and cleaning, a wall has been constructed to protect from livestock

There were also about ten Jojo tanks installed by the municipality along the road to cover the whole village, and these are used to fill the water from the tankering truck (when available). However it was indicated that the truck had not come to the village for almost six months. The community was also relying a lot on rainwater during rainy days.

5.3 Systems and processes of water service provision within Makhado LM

5.3.1 Structures for water service provision within Makhado LM

The Municipality is currently a WSP (albeit not officially) serving about 5 formal towns namely, (Makhado) Louis Trichardt, Elim, Vleifontein, Vuwani and Dzanani with about 279 villages. The LM is responsible for water reticulation and operation and maintenance (O & M) of infrastructure that supplies water directly to the communities. Vhembe district municipality (VDM) who is the WSA in the area, provides bulk water supply and operation and maintenance (O & M) to some of the villages within Makhado LM.

In terms of the water service function the meeting highlighted that Makhado LM is a (WSP) contracted by VDM but had not signed a service level agreement with the WSA, the VDM. The LM further indicated it was then not receiving a grant to fulfil this function.

It was also indicated that officially the District Municipality (DM), VDM was still taking on both functions as WSA and WSP, so they also still do some O &M in villages,

however it was only conducted on ad hoc manner. Furthermore it was indicated that there were problems with this arrangement because,

“People come to us to complain about water problems but we can’t always help them, and this has created a bad relationship with the community” (participant)

In terms of the current water service situation; the following was highlighted;

“We have established a water services section, however most of the positions have not been filled, we have the O&M office with superintendents who are also responsible for other technical services as well, and also the assistant manager, who was deployed by DWA, he is currently responsible for overseeing all the issues with regards to water services” (participant)

The proposed structure for services provision was therefore provided as follows;

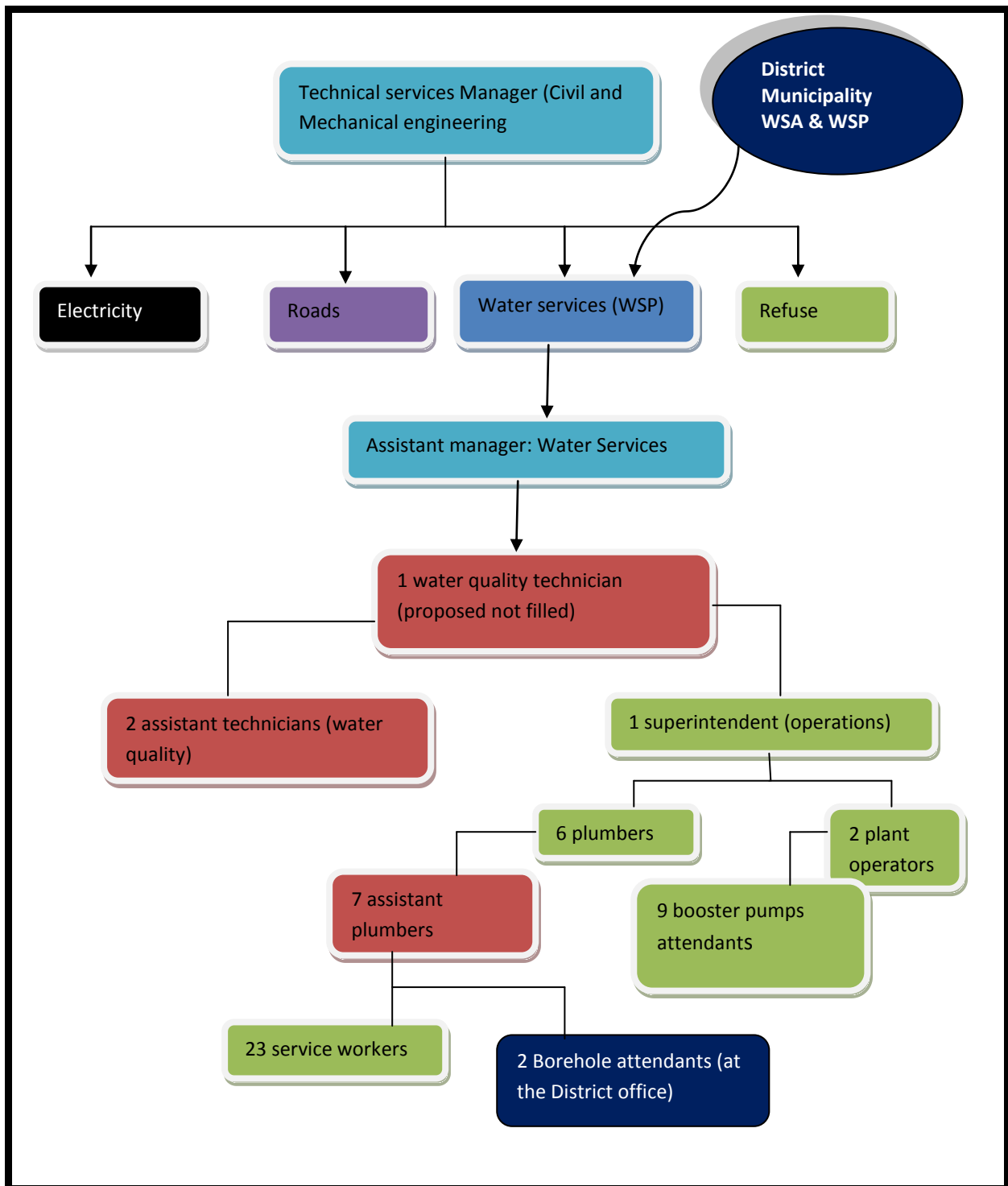


Figure 19 : Water service structure for Makhado Local Municipality, all positions in red are just proposals and not yet filled or approved by the district (obtained from the LM)

5.3.2 Water resources and infrastructure

In terms of water resources, the Makhado LM consists of dams, groundwater as well as springs and fountains. The list of the sources is provided in the IDP as the Albasin Dam,

boreholes, Nzhelele Dam, Mutshedzi Dam, and various other groundwater sources which include springs and fountains.

It was also indicated in the meeting that the Middle Letaba dam used to be one of the main sources that was used to supply water to some of the villages, however this dam is drying out, as a result there is no reliable surface water sources for villages at the moment. There were no perennial streams or rivers that communities could rely on, as a result these communities are struggling with regards to water. In terms of the rainfall, it was highlighted that not enough rainfall is received in the area for communities. Rainfall data for the area shows a decline in the annual rainfall from 1513mm in 2000 to 845mm in 2011. See figure 20.

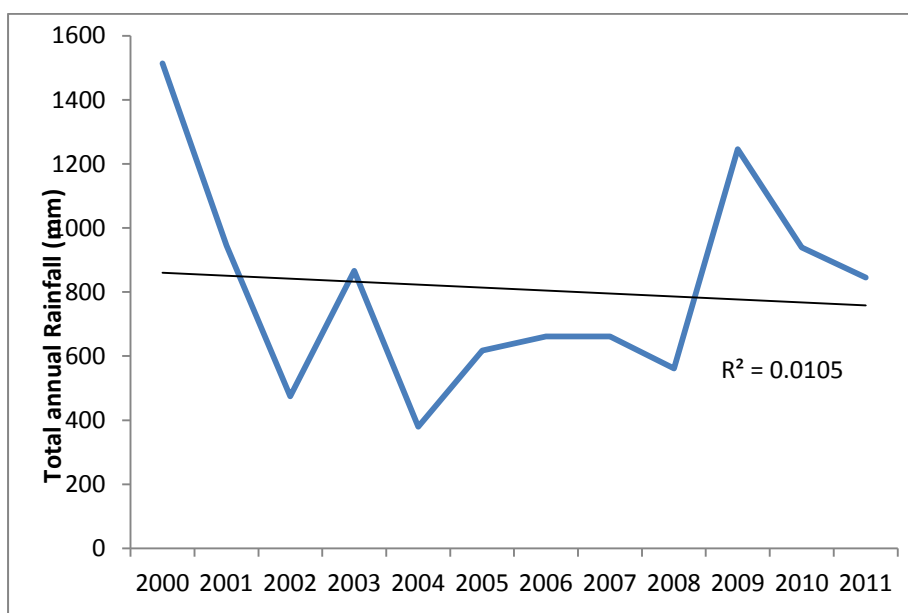


Figure 20: Total annual rainfall for Makhado area for the period between 2000-2011

During the LM focus groups it was highlighted that;

“While most of our rural villages are served with communal taps, these are in most cases dry since they are dependent on boreholes which dry out” (participant).

The main source of water in the villages is groundwater accessed through boreholes. Discussions further established that all water service infrastructures that had been installed belonged to the VDM but the LM was responsible for maintaining it. Communities in Makhado LM access water through; boreholes, water tankers, communal standpipes and yard taps. Water tankers are mainly supplied in areas where there is no source of water (e.g. boreholes have dried up). However it was highlighted that this arrangement was very costly and sometimes was not possible. The LM indicated that the solution to water problems

within the LM requires the LM to have sufficient funds to draw water from the Nandoni Dam which is many kilometres away, and this task is expensive.

5.3.3 Rural water supply process

Focus group meetings with the LM established that most of the Makhado LM is classified as rural with small-scale agriculture and subsistence farming. Thus it was also highlighted that the socio-economic conditions of people in the area are also relatively poor when compared to those in surrounding areas.

The municipality indicated that they do receive government support, however the allocation for water was still received by the WSA, and these will be transferred as soon as there was a service level; agreement in place.

It was indicated that;

“the fact that we have not yet signed a service level agreement means we are not yet receiving funds for this function” (participant).

When asked as to how O&M is currently conducted in villages, this was the response;

“Currently we collect some revenue in urban areas and we use some of that revenue to conduct O&M in villages” (participant).

Furthermore since most of its population reside in low income households, mean that those communities do not pay for services. Due to the highlighted reasons, O & M especially for the rural communities can only be conducted on an ad hoc basis; in some cases VDM addresses such problems, thus the process can take a long time.

5.3.3 Water services in the Zama-Zama village

Through discussions with community structures, it was established that groundwater was the main source of water. However, it was noted that all the boreholes were not working at the time. The main water infrastructure in the village was two boreholes. These were equipped with handpumps. However it was indicated that the water from boreholes if available, was reticulated without any treatment. It was noted that the main form of sanitation in the village were mainly VIP toilets thus there was a possibility of contamination of groundwater, which meant the community was vulnerable to water-borne diseases.

During focus groups it highlighted that water tankers had not come in the area for two months and the people were seriously struggling with water. It was also pointed out that

while there are boreholes in the area, most of them might have been poorly constructed and that might be one of the reasons why they sometimes dry out quicker.

During the time of the study there was also one newly constructed borehole which had been installed by Vhembe district municipality; however it was not operational yet. According to the community, this borehole had been there for the past five months but was not yet operational, and the LM had not communicated about this.

Since the village was then not receiving any reticulated water, they opted to use water from a well/springs. During the field visit, it was noted that Zama-Zama was then using a well as their source of water. The villagers indicated that they drank that water directly from the source with no prior treatment. For the community this was such an important source that they had made measures to protect the well with a drum to protect it from contamination by livestock. One community member had also been tasked to clean the area around the well (to protect from contamination), about twice a week.

The study however noted that the drum that was used to secure the well had accumulated algae and rust and the community used this water without cleaning it. This had potential to pose serious health risk to the people within the community.



Figure 21: A photo of a well which is used for drinking, cooking and cleaning at Zama Zama Village

Existing water sources and infrastructure in the village were recorded as follows;

Table 6: Water sources and infrastructure recorded during field visits in Zama-Zama village

Water source/infrastructure	Location	Description	Distance from nearest house
Borehole 1	S 23°12.971 E 30°06.529 Elevation: 2251 ft	<ul style="list-style-type: none"> • Not equipped, was a test borehole • not in use 	200m
Borehole 2	S 23°13.062 E 30°06.262 Elevation: 2288 ft	<ul style="list-style-type: none"> • Handpump removed for maintenance • Not in use 	80m
Borehole 3	S 23°13.203 E 30°06.628 Elevation: 2210 ft	<ul style="list-style-type: none"> • Electric with concrete house • Not in use yet 	500m
Reservoir (agriculture)	Not recorded	<ul style="list-style-type: none"> • Concrete with cracks • Previously used for livestock, no water, not used 	500m
Well or fountain	S 23°12.980 E 30°05.813 Elevation: 2119 ft	<ul style="list-style-type: none"> • Well has been protected with a drum • Water used for domestic purpose 	200-300m

In addition to drinking contaminated water, this water from the well was insufficient for the entire community. Thus people have to wait for several hours for the water to fill up in the drum so they can collect it. Furthermore, this water source was located about three to four kilometres from the furthest house. Community members interviewed pointed out that all households have walk to collect water since there was no other alternative. Furthermore, since it was located in the bushes, they were cases of robbery that were reported. Furthermore there was fear that women in the village could be raped or attacked.

5.4 Challenges with regards to water in Thambonkulu and Zama Zama village (Informal interviews)

Table 7: Participants responses on whether the community receives reticulated water on a daily basis

Local Municipality/community		Does the community receive reticulated water everyday		
		Yes	No	Don't know
Nkomazi LM Thambonkulu village	Participant # 1		<input checked="" type="checkbox"/>	
	Participant #2		<input checked="" type="checkbox"/>	
	Participant #3		<input checked="" type="checkbox"/>	
	Participant #4		<input checked="" type="checkbox"/>	
	Participant #5			<input checked="" type="checkbox"/>
	Participant #6		<input checked="" type="checkbox"/>	
	Participant # 7			<input checked="" type="checkbox"/>
	Participant #8		<input checked="" type="checkbox"/>	
	Participant #9		<input checked="" type="checkbox"/>	
Makhado LM – Zama Zama village	Participant #10		<input checked="" type="checkbox"/>	
	Participant #11		<input checked="" type="checkbox"/>	
	Participant #12		<input checked="" type="checkbox"/>	
	Participant #13		<input checked="" type="checkbox"/>	
	Participant # 14		<input checked="" type="checkbox"/>	
	Participant #15		<input checked="" type="checkbox"/>	
	Participant #16		<input checked="" type="checkbox"/>	
	Participant #17		<input checked="" type="checkbox"/>	
	Participant #18		<input checked="" type="checkbox"/>	

In terms of table 7, when asked a question on whether they receive reticulated water on a daily basis, out of the 9 people interviewed in Thambonkulu, only two responded they did not know, and seven of them responded that they do not receive reticulated water on a daily basis. In Zama Zama all the nine participants responded that they do not receive reticulated water on daily basis.

Participants were also asked to identify the methods that they use to access water for their households. From these responses, 7 out of 9 in Thambonkulu indicated they use springs/wells to collect water while 8 out of 9 in Zama Zama were using springs/wells.

Boreholes and communal taps were the other methods participants used to collect water (see figure 22).

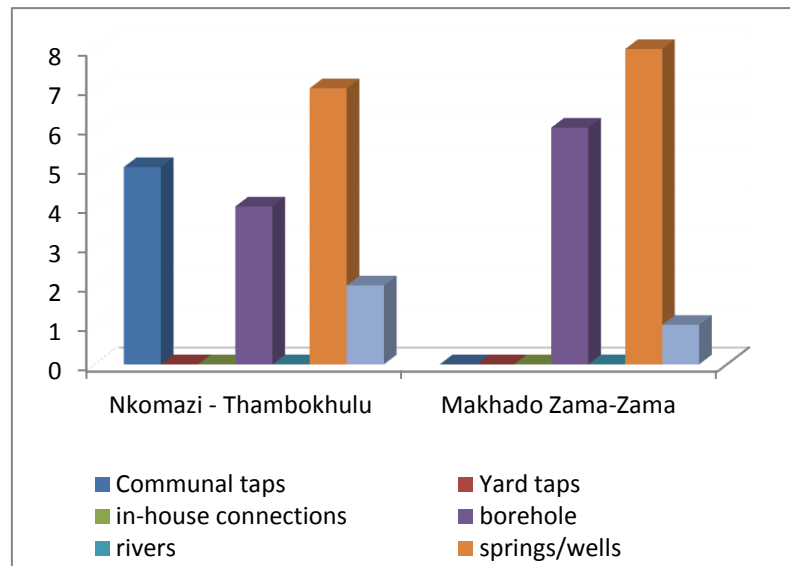


Figure 22 : Participant’s responses on the methods of accessing water in the community

Participants were asked to list the number of challenges (if any) they had in accessing water for their households. 9 out of 9 participants in both villages pointed out the problem of insufficient water and broken taps/ boreholes as the most challenge towards accessing water in their areas (see figure 23).

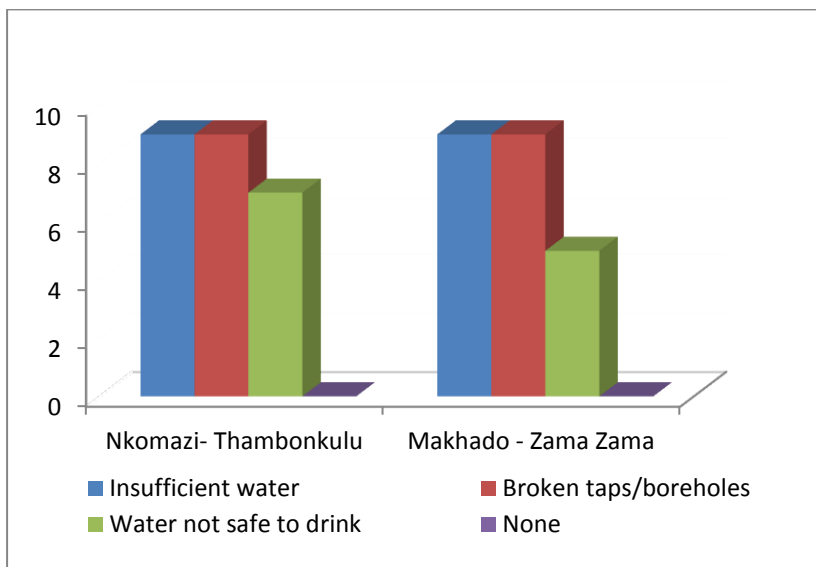


Figure 23: Participant's responses on the challenges the community faces with regards to water

When asked whether there had been problems of disease due to contaminated water in their household or in the community, 6 out of 9 in Thambokhulu responded with yes, 2 responded

with no, and 1 responded with don't know while only 3 out of 9 in Zama Zama responded with yes, 4 said no and 2 did not know.

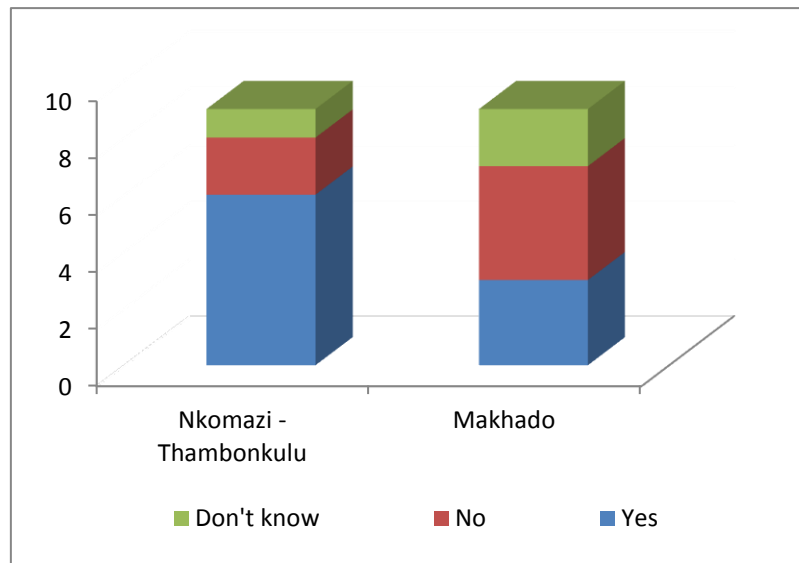


Figure 24 : Participant's responses on whether the household/community has had problems of disease due to unsafe water

In terms of figure 25, participants were asked to provide their own assessment of the state of water services in their respective villages. 4 respondents said the state of water services in Thambonkulu was bad, while 5 said it was very bad. In Zama zama 7 thought it was very bad and 2 thought it was bad.

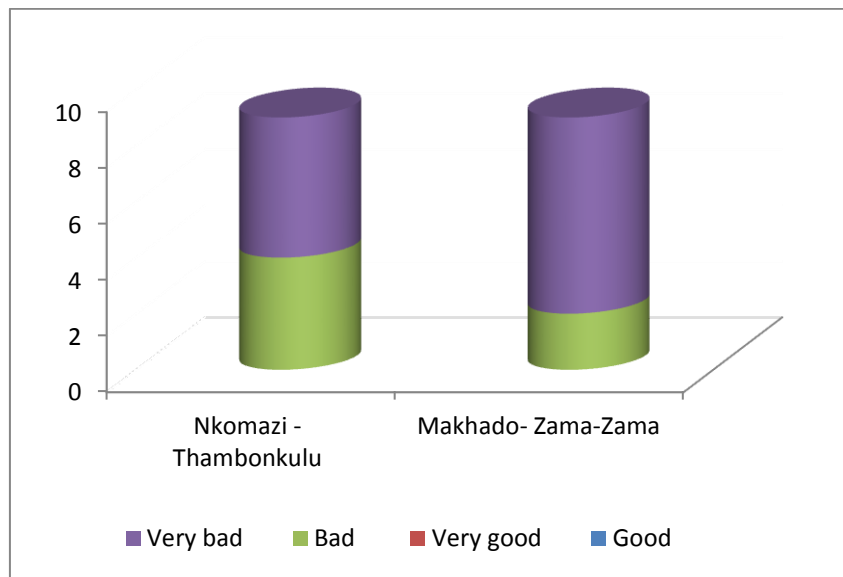


Figure 25 : Participant's responses with regards to the state of water services in the community

5.5 Emerging issues, themes and discussion

In terms of this study, both municipalities have problems that affect the delivery of services to communities. Nkomazi LM (as WSA and WSP), as well as Makhado (as WSP, albeit not officially) both face the common challenges in their individual roles of providing services to rural communities. The common issues that came of the study were as follows;

5.5.1 Problems with institutional arrangements within the LM

One of the main challenges that emerged from this study is that there is a problems with the main structures that are in place within the LM.

Nkomazi LM has functions of both WSA and WSP. The LM has a combined technical services department running all services, including the functions of both the WSA and WSP (figure15). This has potential to pose a challenge for service delivery since there is no clear separation of roles and responsibilities of the WSA and WSP within the LM. These functions are run as one. In terms of legislation, municipalities performing both functions of WSA and WSP are mandated by the Water Services Act to account for these functions separately⁶, and this is so that in the long run municipalities can be able to identify and understand the full range of costs associated with water services. This is also so that the water service function can be conducted efficiently and sustainably, however it is obviously not so in this municipality. Cardone and Fonseca (2003) argue that;

unless all of the costs related to providing and maintaining a service (technical, human resource, institutional) are identified, organized, and covered in a coherent manner with sources of funds, a system cannot be considered to be sustainable". (Cardone and Fonseca, 2003)

According to Smith, 2008, the water services failures in South Africa are mainly due to inefficient institutions and this situation is often times due to the fact that the majority of the municipalities in South Africa are both WSAs and WSPs, with no separation of powers as a result cannot efficiently perform their functions due to lack of skills and capacity (Smith, 2008).

⁶ Section 20 (1) Water Services Act 108 of 1997

One other concern which came out of the focus group discussions was that there is no significant relationship between the Nkomazi LM and the Nkomati CMA. Again, this has potential to cause problems. In terms of IWRM, water resources should be managed holistically which means all stakeholders should be involved and consulted in the management of water resources. Studies further highlighted that; “water resource planning and management should consider multiple uses in a river basin with an objective of achieving economic social and environmental sustainability, and should involve both coordination with other areas and levels of government, and with stakeholders in an open decision making process” (Mcdonnell, 2008. p 132). In this way all parties involved in the provision of services are well informed of challenges and decisions with regards to their catchment.

In terms of Makhado LM, the Makhado LM is a WSP but with no service level agreement in place. As a result it is not yet receiving a budget to provide services. In the meanwhile communities believe they have to blame the LM for lack of water services in their communities. From the focus group discussion in Makhado LM, this was raised;

“People come to us to complain about water problems but we can’t always help them, and this has created a bad relationship with the community” (participant)

The main challenge in this situation is that agreements were made verbally and there is no contract in place, thus while the community is blaming the LM for its problems, the VDM actually is to blame since it has failed to officialise all the processes. In terms of roles and responsibilities it is unclear as to “who does what” and who should be held accountable for lack of services.

De Visser (2002) highlights the following issues;

Uncertainty, continuous adjustments and temporary arrangements with regard to service delivery responsibilities can only but complicate effective and sustainable service delivery. Each time adjustments are made, municipalities face administrative and financial consequences...

Ultimately, continuous reorganisation and restructuring, means *“their administrative power and authority remain unclear”* (De Visser, 2002, p. 223). All these processes have negative implications for service delivery.

According to Folifac (2007), the absence of an institutional framework, which establishes clear responsibilities, and the overlapping of institutional boundaries causes a problem for service delivery as it means that no one is held accountable for non-compliance.

Furthermore during the focus group discussion, the case of poor communication between the Makhado LM (as the WSP) and the Vhembe DM (as WSA) was noted. It arose from this meeting that the LM was not aware of some of the new infrastructure that had been installed by the VDM (WSA), and yet they were expected to conduct O&M once the infrastructure was operational. The community needed confirmation from the LM as to when infrastructure will be operational and they could not get this from the LM, and this was creating tension between the community and the LM.

The LM is being regarded as being closest to the community, however was not aware of some of the water related issues that are happening in their community hence they could not be able to address some of the questions regarding water services in the community. Such challenges have also contributed towards the “continuation of uncertainty, duplication, undue administrative cost in service delivery, as well as a general lack of coordination” between the responsible institutions (Stanton, 2009).

5.5.2 Insufficient funding

One of the main issues of concern that emerged from this study was that of insufficient government funding. The issue of insufficient funding plus having to provide services for free poses a serious challenge for municipalities. In terms of the Nkomazi municipality, one of the challenges is that the municipal infrastructure grant and equitable share funding allocations are insufficient. This problem means that municipalities are unable to eradicate backlogs as expected. The fact that local governments have to operate under financial constraints means that services provided to communities come at the expense of other services valued by these communities (Barbhan and Mookherjee, 2006).

According to Elhiriaka (2007) problems with funding are also due to the fact that local governments in South Africa have “very little room to maneuver in terms of the link between the sources of revenue and expenditure allocations”. As a result, they are less responsive to the preferences of the local people and they are less accountable to them. Furthermore, in terms of Elhiriaka (2007), the equitable share system does not take into account the issue of inequalities in terms of indicators such as poverty levels, land area and others, as a result poorer provinces receive a higher share. However, richer provinces receive an even greater share of other types of transfers, thus are able to address service delivery problems as

required. The point raised by Jimenez and Perez-Foguet (2010) is the problem of central government funding. It is highlighted that for most developing countries central government funding is more focused on infrastructure development rather than capacity building and post project support. As a result infrastructure is installed but not maintained. Cameron (2010) further pointed out that the infrastructural backlogs that came out of the apartheid spatial planning was too great to be left primarily to local government to address

According to Folifac (2007) the “national water policies and national water services are at extremes due to lack of political commitment in moving resources in the right direction, giving rise to what is herein referred to as a gap between policies and services”. This means that policies are in place, but implementation lags behind due to insufficient resources.

The challenge is that the governance systems are allocated uniformly to municipalities without proper specific investigations into the issues within the municipality itself as result they do not meet the needs of the people in terms of all the costs associated with service provision.

5.5.3 Lack of regulation

The lack of regulation within municipalities is one of the issues that came out of the study. In terms of Nkomazi LM being both a WSP and WSA, the question of regulation arises, “who regulates who?” in this arrangement. The answer from the structure in figure 15, is not clear. There is one manager responsible for both functions of WSA and WSP in the whole of Nkomazi area. This means that the regulation function is lacking. Consequently poor service delivery goes unpunished.

Furthermore, Makhado LM is currently acting as the WSP as delegated by the VDM (who is the WSA), however the Makhado LM does not fully understand its ultimate responsibility with regards to service delivery. VDM is the local regulator of water services in the area and yet services are not provided accordingly. This also shows the regulation part of this service is lacking. As per the Water Services Act the main duty of water service providers is to provide water services in accordance with the Constitution, the Water Services Act and the by-laws of the water services authority, and in terms of any specific conditions set by the water services authority in a contract⁷. However there is no contract yet. A lack of compliance is noted in terms of this Act.

⁷ Section 4 (1-2) Water Services Act 108 of 1997

5.5.4 Capacity and Skills

Another component which affects the performance for both municipalities is the availability and shortage of the required skills. Both municipalities, Makhado and Nkomazi LM are located in economically depressed areas and have difficulty in attracting and retaining the required skilled managers, professionals, and technicians. As a result some of the important tasks are left out.

According to the COGTA (2009), the lack of experienced senior managers in key posts for planning and infrastructure especially for the spatially vulnerable areas, affects its financial management capability and this ultimately will pose significant challenges for service delivery.

In the case of Makhado LM, since the service level agreement between the WSP and WSA was not in place yet, this meant the LM could not appoint sufficient personnel to provide water services efficiently, since the VDM still has financial resources that should be allocated to this function. In the focus group discussion, this was raised;

“We have established a water services section, however most of the positions have not been filled yet, but once all the processes have been finalised we will be in a position to fill these post’ (participant)

According to Plummer & Slaymaker (2007, p.13)

good governance requires appropriate human and financial resources for activity related to water supply, effective institutions performing delineated roles, improved information and management systems and political will backed by the necessary rules (be they regulations or informal norms) for service delivery.

For example, for institutions to effectively deal with shortages of water resources and services, water governance systems must be appropriate. The institutions in place must be appropriate, capacity and skills adequate, the political will to support such institutions, as well as revenue, must be sufficient to be able to address such challenges.

5.5.5 Water resource challenges

One of the common challenges that affect the delivery of services by municipalities are mainly those of lack of water resources. In both of the municipalities it was established that most of its villages are located in water stressed areas. Thus the provision of free basic

water to these areas was a challenge. In both areas it was pointed out that water tankers are the mostly used method of providing water to communities due to the problems of lack of water resources. In Nkomazi LM it was further indicated that;

In order to address the challenge of water scarcity in communities we sometimes have to rely on water tankers, where we contract water tankers to deliver water to communities, sometimes once or twice a week. However the challenge with this arrangement is that its too costly and sometimes may not be possible. (Participant)

According to Elhiriaka (2007), the issues of lack of water resources are often overlooked as a result the costs of drawing water from sources which are found almost 50km away are often not included in grants. Consequently the municipality will install infrastructure which is often not utilised due to the fact that there is no water to feed into them. Furthermore in addition to the lack of surface water in these two communities, there is not sufficient rainfall for these communities, which further exacerbates the challenge of accessing water. As highlighted by Boyce (2010), reductions in rainfall may reduce the amount of recharge to groundwater and hence the volume of water available. In the same light demands for water might increase due to changes in climate. Proper water governance strategies require water institutions to be able to water allocation plans that are flexible enough to adapt to the changing climatic conditions while still ensuring the long term sustainability of water resources

According to the Dayem and Odeh (2010. p174) the “treatment of water as a free good, and bureaucratic allocation and management are now inconsistent with the requirements and challenges of the new ‘era’ of water scarcity”. It is therefore important that the new forms of governance create institutions that can adequately address the “new realities of water resource scarcity. (Seetharam, 2007).

5.5.6 Impacts of poor water governance in the selected villages

The two selected villages though managed by two different municipalities, are facing the same challenges with regards to water. In both of these communities there are no reliable sources of water thus they have to rely on unsafe water sources for their survival. In both communities the infrastructure is available but it is either broken or there are no water sources to feed into them as a result they are not operational and people do not receive reticulated water on a daily basis (see table 7). According to Miranda et al. (2011), where public provision fails to reach the poor provides an opportunity for private vendors to step in, selling drinking water to the poor at prices that can be 10times higher than what richer households pay, this exacerbates the poverty conditions in rural communities.

In terms of the implementation of the FBW policy, it is obvious that the two villages are currently not receiving this benefit. Studies highlight that the main challenge with the task of rolling free services is that, for many of these municipalities there is no capacity to undertake such a task and the whole process is too costly and the financial burden is too high since this increases the overall operating expenditures, but without additional revenue collection (Stanton, 2009). In Nkomazi, while they receive government funding, they highlighted that this was insufficient. Thus, DWA Statistics estimates that only about 1.4% of the population in Nkomazi is currently receiving free basic water and 40% is currently receiving water of below RDP standard (DWA, 2010).

Communities within these municipalities have no alternatives but to walk long distances to collect water from sources that are not safe and have the potential to cause diseases (see figure 22 and 23). During the informal interviews all the people interviewed responded that they do not receive reticulated water every day (see table 7). This shows a serious violation of people's rights to sufficient water. Nnadozie (2011) highlights, that in terms of the South African law, "basic water supply must be sufficient, safe, accessible and affordable", and it must also be provided continuously and "must be of stipulated minimum rate of flow and quality". These communities still do not enjoy these rights, and the sphere of government next to them is unable to change the situation, furthermore cannot be held accountable for this situation. Consequently people in these communities are vulnerable to water-borne diseases. This implies that the local and national policies and strategies aimed at ensuring the basic service requirement and rights of poor communities have failed to fulfil its obligations.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Concluding remarks

The study used focus group discussions with the relevant LMs and the selected communities, as well informal interviews with individual community members in those communities. What came out of this study was that, while the process or the institutions responsible for the provision of water services within the two municipalities are different, (in that one has functions of both WSA and WSP while the other has only the function of WSP), the challenges that are experienced in the two municipalities are common, as a result their respective villages also suffer the same consequences.

In terms of this study, the problems at municipalities and the impact of these shortcomings has been summarised as follows;

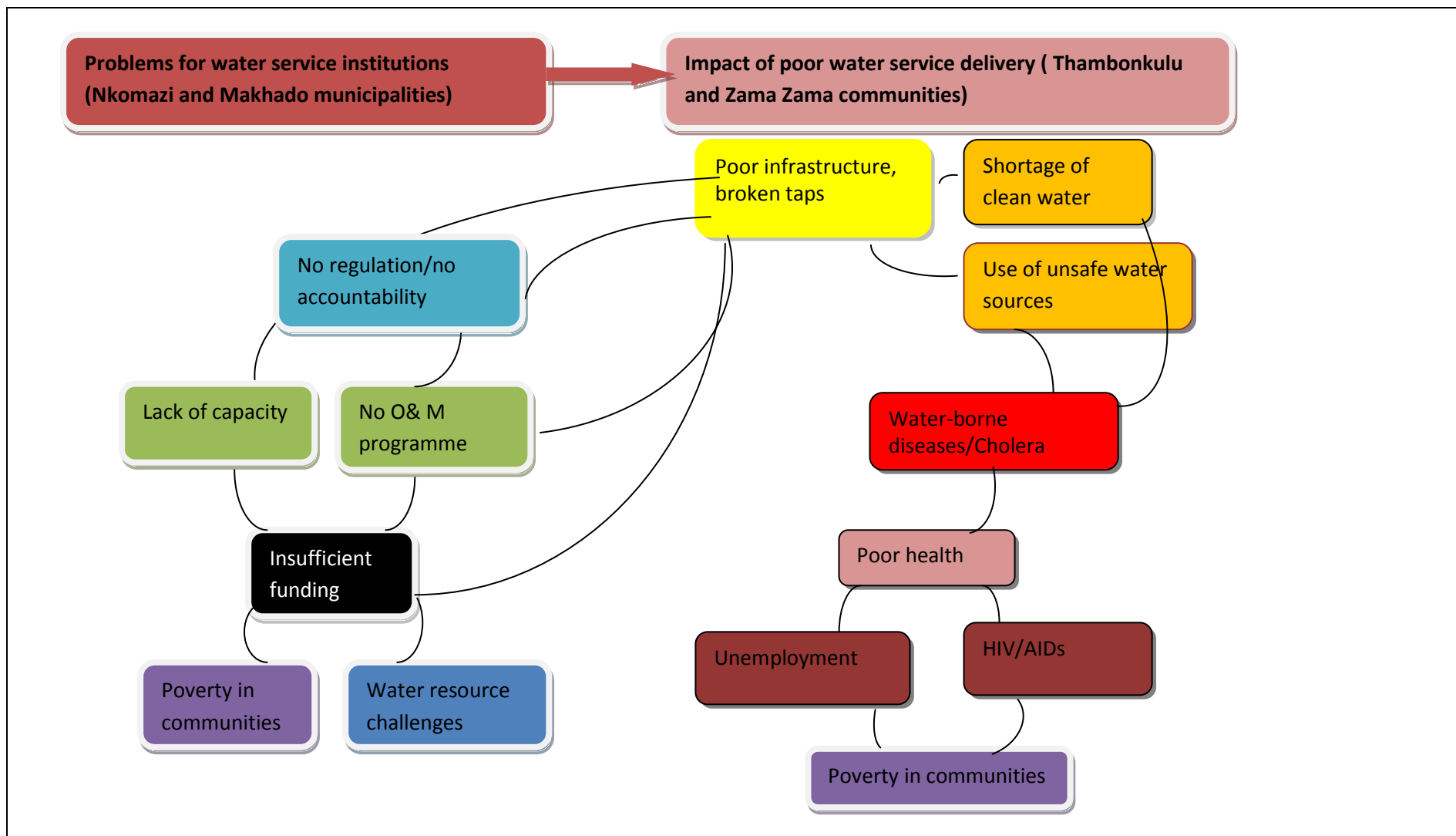


Figure 26: Challenges for water governance and impacts for the rural water supply

In terms of figure, the problems that influence the delivery of services in Nkomazi and Makhado municipalities include (left side of figure); lack of regulation, lack of capacity and skills, insufficient funding, poverty in communities and lack of water resources. For communities in Thambonkulu and Zama Zama, the challenges include (right side); broken taps or standpipes, lack of clean water, use of unsafe water sources. This further contributes to diseases which exacerbates poverty and HIV/AIDs.

The study then concludes by saying that, while a lot has been done to assist small rural municipalities in their role of providing water services to communities, challenges still exist. It is clear that the ‘one size fits all’ system of governance does not work and leaves municipalities in vulnerable areas without means to improve their service level and unable to address backlogs. The study also shows that policy and regulation especially relevant to small municipalities remain inadequate, thus have a potential of influencing the sustainability of service delivery. Government support mechanisms such as the FBW policy, as well as the LGES, the MIG and the MSF are inadequate, since municipalities still have to address problems of lack of water resources and high poverty. People in rural communities still have to go fetch water from sources which are not safe and have potential to cause diseases. Most of the problems such as, lack of capacity skills and poor infrastructure are emanating from insufficient funding, and these are further perpetuated by the fact that the most important part of service delivery, mainly regulation, is neglected. Due to this fact there is no one to be held accountable for lack of services. The study thus shows that, a lot more still needs to be done by government (as a national regulator and policy maker), to improve this situation and to ensure that municipalities (as the spheres of government closest to the people), are able to provide services as per constitutional mandate.

6.2 Recommendations

In terms of the above conclusions, it is important that municipalities located in economically depressed areas are treated differently. In fact, the characteristic of each individual municipality should be studied carefully and the governance systems should apply on a case-by case basis. To be more specific, policy should put more emphasis on initiatives that improve the capabilities of small municipalities so that the very objectives of growth and development can be met. This will ensure that governance systems are relevant and do not leave out poverty stricken communities.

In terms of recommendations for further studies, it is recommended that further studies pay particular focus into the monitoring and evaluation processes that are in place at both national and provincial level. It is well acknowledged that there are such processes in place but not much knowledge on what the actual follow up processes are. For example, all municipalities are obligated to produce integrated development plans (IDP) for their areas, which are done. But are these feasible or sustainable, how are these monitored. Funds are allocated on an annual basis, but how is the spending of such funds monitored, is it only based on installing infrastructure or the actual number of people that received a service. These processes need to be properly investigated to be able to understand the actual problems on the ground and to be able to come up with appropriate solutions.

In light of the new realities of water resource scarcity due to climate change, the challenge is to create 'climate-prepared' municipalities that understand their vulnerability to climate change so as to be able to create strategies to deal and adapt to challenges of water resources problems.

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APPENDICES

1) Checklists/ focus group discussion guide

1.1 Meetings with LM

**INTERVIEW SCHEDULE FOR FOCUS GROUP DISCUSSIONS
(Local municipality)**

Date: _____ **Name of interviewer:** _____

**Name of Local
Municipality:** _____

Number of respondents in the group _____

M		F	
----------	--	----------	--

1. Community water services within LM

Please take note not to provide the options to participants, only mark off what they mention.

1.1 What is the role of the LM in community water supply?

LM is responsible for providing water services to the community

LM is responsible for O&M

Lm responsible for all planning and implementation of water projects

Other (discuss)

.....

.....

.....

.....

.....

1.2 What is the relationship of the LM with the catchment management agency (CMA)?

Discuss

.....

.....

.....

1.3 What is the role of local leadership in community water supply

Discuss.....

.....

.....

.....

1.4 Are there challenges in terms of this arrangement?

Discuss

.....
.....
.....

2. Human and financial resources within the LM, and O&M implications

2.1 How many people work in the water service department, and what are the challenges?

Discuss

.....
.....
.....

2.2 What are the sources of funding or income in terms of community water supply?

Government funding external income other

Discuss.....
.....
.....

2.3. Is this able to cover the cost of service provision?

Yes No, if no why no

Discuss.....
.....
.....

2.4 What are the implications for O&M in terms of community water supply?

Discuss

.....
.....
.....

3. Community water supply issues

3.1 How many villages/community is the LM servicing?

(Obtain a list of all the villages served by the LM)

Discuss

.....
.....

3.2 Is the LM able to provide services as required?

Yes No if no, why not

Discuss

.....
.....
.....
.....

3.3 Which villages have the most challenges in terms of water supply?

Discuss

.....
.....
.....

3.4 How is the LM currently addressing those challenges?

Discuss

.....
.....
.....

3.5 Does the LM provide reticulated water to communities?

yes No if No why not

Discuss

.....
.....

3.6 What are the main water resources or sources within the LM

Rivers Dams Groundwater/boreholes Springs/fountains/wells

Other (Discuss)

.....
.....

3.7 Are these sufficient?

Yes No (if no explain)

Discuss.....

.....
.....
.....

3.8 How do communities access water (Water infrastructure installed by the LM)

In-house connections Yard taps Communal taps Boreholes reservoirs Other

Discuss.....

.....
.....
.....

4. Provision of Free Basic Water (FBW)

4.1 Does the LM provide FBW to communities

Yes No

Key personnel interviewed (List)	Position/ Function in LM	Contact Number	Email address

**INTERVIEW SCHEDULE FOR FOCUS GROUP DISCUSSIONS
(Community)**

Date: _____ Name of interviewer: _____

Name of Local Municipality: _____

Number of respondents in the group _____

M		F	
---	--	---	--

1. Water service institutions in the community

Please take note not to provide the options to the interviewees, only mark off what they mention.

1.1	<p>What is the role of the local leadership in community water supply</p> <p>Discuss the role of councilors.....</p> <p>.....Discuss the role of tribal authority.....</p> <p>.....</p>
1.2	<p>How is the is the relationship between the LM and local leadership</p> <p>Discuss</p>
1.3	<p>Are there challenges in terms of this arrangement?</p>

Discuss

.....
.....
.....

2. Water services in the community

2.1 Does the community receive reticulated water, if yes, describe how?

Discuss (issues and challenges related to reticulated water).....

.....
.....
.....
.....
.....
.....
.....

2.2 In case of challenges, how are these addressed by the municipality

Discuss.....

.....
.....
.....

2.3 Besides reticulated water what are the other water re(sources) of water in the community

Q Rivers Q Springs Q other

Discuss.....

.....
.....
.....
.....

2.4 Which of these sources are used for drinking? And are they safe?

Q Yes Q No, if no why no

Discuss.....
.....
.....
.....
.....

2.5 Which water infrastructure is in the community?

Q Communal taps Q Yard Taps Q Reservoirs Q Boreholes Q handpumps Q
Other

Discuss
.....
.....
.....
.....

2.6 Are these working properly, if not why not?

.....
.....
.....
.....

2.7 How is the state of water services in this community

Q Good Q Bad Q Other (explain)

.....
.....
.....
.....

3.1 has there been records of water-borne diseases in the community, if yes , when? And is this still a challenge

Discuss

.....

Participant (List)	Position/ structure	Contact Number

1.2 Physical Observations of water infrastructure

VILLAGE WATER SOURCES/ INFRASTRUCTURE OBSERVATION FORM CHECKLIST

Date: _____ Name of interviewer: _____

Name of Local Municipality and village/community: _____

1. Water sources and infrastructure used in the village

1.1 Is infrastructure working properly?

Note the conditions of the tinfastructure, is it RDP standards (located within 200m etc.) is there water coming out, is it safe to drink, make a note below.

Household connection (if any)

Notes:

Yard Taps

Notes:

Communal taps/standpipes

--

--

Reservoirs/water tanks(type of tanks used), storage capacity

--

Boreholes(type of pump used)

--

Springs(current uses)

--

Rivers

--

Other(s) explain

Conclusions

2) Informal interview guide with the villages

INFORMAL INTERVIEW CHECKLIST (COMMUNITY INTERVIEWS)

Date: _____ Name of interviewer: _____

Name of Local Municipality/village/community: _____

M		F	
----------	--	----------	--

Village details

Name of the village	
Tribal Authority/ward councillor <i>(Contact person and protocol to be followed)</i>	
Settlement type eg, % rural, urban, formal or informal etc	
Estimated Population <i>(obtain from LM)</i>	
Estimated number of Households <i>(Check if village map is available)</i>	

1. Water service institutions within the community

Please take note not to provide the options to the interviewees, only mark off what they mention.

1.1 To whom does the community report water problems

Herdmen councilor other

Discuss.....

.....

.....

1.2 Are there challenges in terms of this arrangement?

Yes (if yes what are the challenges) No

Discuss

.....
.....
.....

2. Water sources and infrastructure

2.1 Does the community receive water everyday

Yes No (if no why not)

Discuss

.....
.....
.....
.....

2.2 How does the community access water on a daily basis

through communal taps from yard taps from in-house connection
 from borehole equipped with handpump from a spring/well from rivers other

Discuss

.....
.....
.....

2.2 Are there challenges with the above source/s or infrastructure?

Yes No

2.3. What are the main challenges with regards to accessing water in the community

insufficient water broken taps/handpumps water is not safe to drink

Discuss.....

.....

--

Person interviewed (List)	Role in community	Contact Number

3) Desktop study findings

Selection of the study area

This report presents findings of desktop study that was conducted prior to the commencement of the water governance study. This desktop study was mainly conducted to be able to identify a suitable area for the study. The intention of the study was to focus on the areas with the largest rural population mainly on the Mpumalanga and Limpopo provinces. Thus the study started by looking at districts within the two provinces. From these one municipality in each municipality was identified for the study. Findings of the study were obtained as follows;

1. EHLANZENI DISTRICT

Background

Ehlanzeni District Municipality is situated in Mpumalanga Province and is bordered by Mozambique and Swaziland. The municipal head office is located in Mbombela which is the capital of the province. The majority of its people speak SiSwati. The Municipal Area (km²) is estimated at about 27 895.47 km². Ehlanzeni district municipality is where the highest number of people reside with an estimated population of 1 526 236 (EDM IDP 2009/10), which is about 42% of the population of the province compared to Gert Sibande (24%) and Nkangala districts (34%) respectively. These figures are shown in figure 1 below;

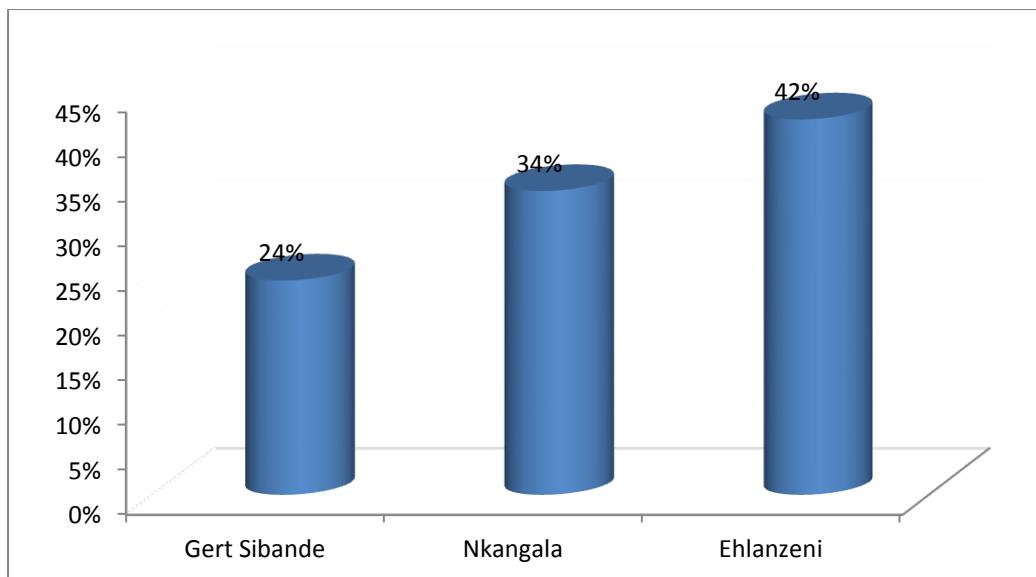


Figure 1: Population in Mpumalanga province per district Municipality(Stats SA 2007)

Furthermore, DWAE statistics estimates that almost 20% of the population of Ehlanzeni is poor, which is again the highest in the Mpumalanga province. This is the population which cannot pay for its services and thus rely on the municipality for its water services.

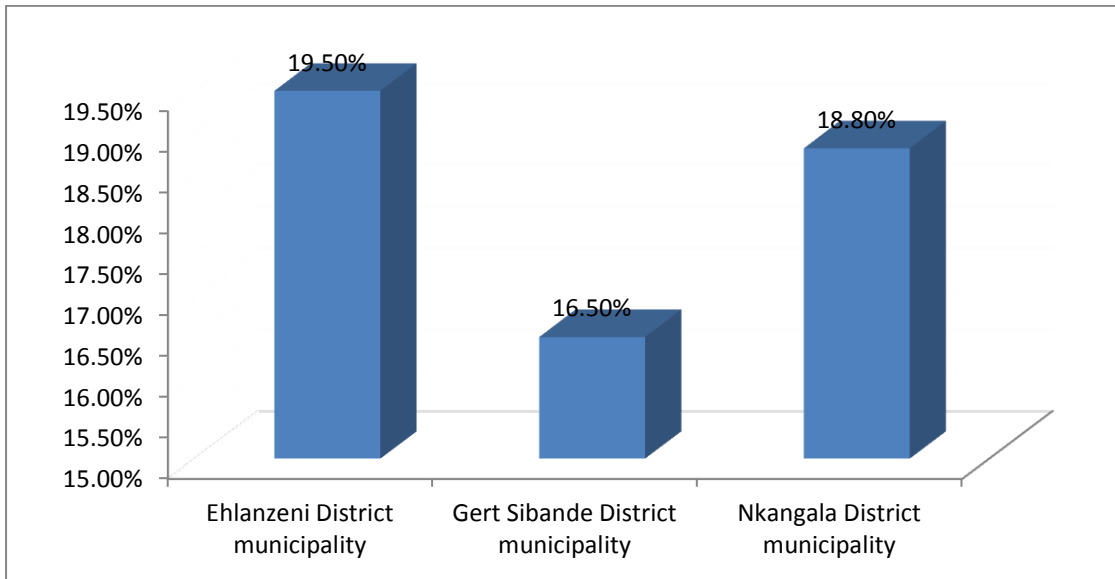


Figure 2: Poor population in each District (DWAE, 2011)

Ehlanzeni consist of 5 local municipalities, namely Mbombela, Bushbuckridge, Thaba Chweu, Umjindi and Nkomazi Local Municipality. According to the EDM IDP (2009/10) Mbombela local Municipality is where the greatest number (34,5%) of people live followed by Bushbuckridge (33,4%) and Nkomazi (22,1%) respectively.



Figure 3: EDM local municipalities

Table 8 : Population per municipality within Ehlanzeni

Local Municipality	Area	Population	% Population of EDM
Thaba Chweu	5 719.06	87,547	5.7%
Mbombela	3 411.75	527,203	34.5%
Bushbuckridge	2 589.59	509,964	33.4%
Umjindi	1 745.38	60,478	3.9%
Nkomazi	3 240.37	338,096	22.1%
District Management	11 189.32	2,949	0.2%

In addition, the local municipalities with the highest number of people residing in rural communities are mainly Nkomazi (96%), Bushbuckridge (84%) and Umjindi Local municipality with about 72%). These communities are mostly hard to reach areas with bad terrain and often suffer the effects of poor service delivery from their respective municipalities as a result poverty remains a major challenge in these communities. According DWA statistics the large number of poor household is found in Nkomazi (95%), Bushbuckridge (84%), Umjindi, (72%) , Mbombela (58%) and finally Thaba chweu(54%), these are shown on the table below;

Table 9 : Rural households per municipality in Ehlanzeni

LM	% Poor households	% rural	% urban
Nkomazi	95%	96%	4%
Mbombela	58%	37.6%	62.3%
Umjindi	72%	75%	25%

		48%	51.7%
Thaba Chweu	54%		
Bushbuckridge	84%	87.7%	12.3%

Water service institutions

The EDM is not a water service authority (WSA), but plays a supporting role to all the 5 local municipalities who in terms of the current legislation had been declared WSAs. The role of the DM in terms of water services is mainly to assist the LM with bulk supply. Furthermore in addition to the role of WSA's the LM's currently also have the role of a WSP to communities within their area of jurisdiction.

Water Access

A range of technologies exist within the DM. According to the Stats SA, in the Mpumalanga province, Ehlanzeni is the District will the lowest percentage of protected water sources. 3.4% of the water is extracted from boreholes, 82.8% is piped water and 13.45 is from unprotected sources, such as rivers, springs, rainwater, dams and others.(Refer to figure)

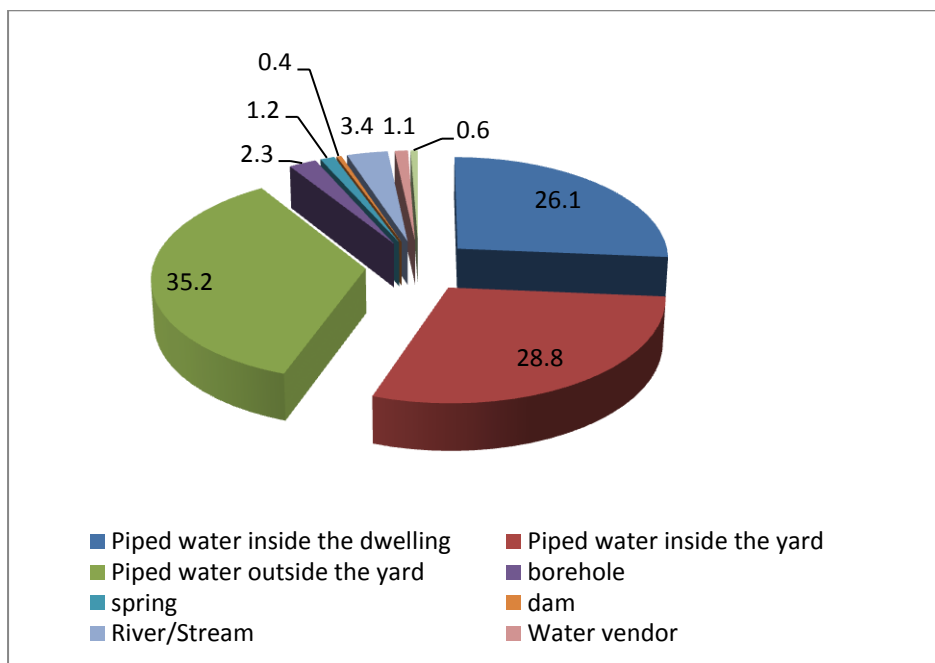


Figure 4 :Methods of accessing water in Ehlanzeni

Water services backlog

Ehlanzeni has the largest water backlog of 71% compared to Nkangala (16%) and Gert Sibande (13%) in the province. According to the EDM IDP, at least two out of every three households do not have access to clean, piped water (EDM, 2009/10). In total almost 20% of the EDM population receives water services below RDP standards (see table). Lack of bulk and reticulation infrastructure in It was noted during the interviews that there seems to be a lot of infrastructure available however most of it is not operational, as a result large proportion of the district does not have full access to potable water. The most dominant alternative method of collecting water in most rural communities is rainwater harvesting.

Currently the District is not a water service authority, all the local municipality take on the role of both the water service authority and provider as a result a lot of challenges exist. With regards to water services backlogs, Bushbuckridge (51%), Nkomazi (22%) and Mbombela (21%) Local municipality have high proportions (Ehlanzeni District Municipality, 2009/10).

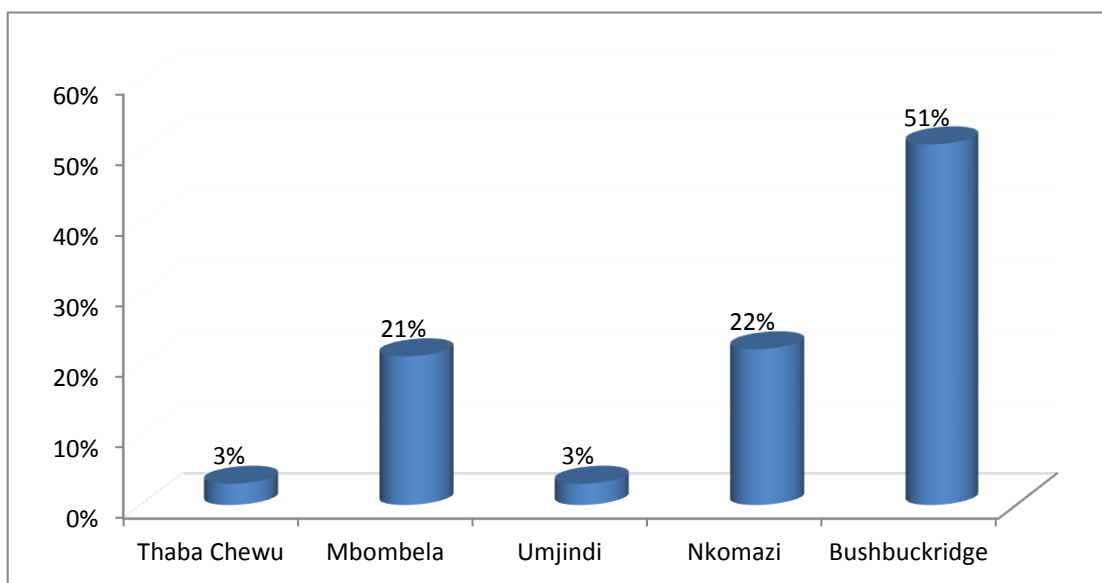


Figure 5 : Water service backlogs

Table 10 : Water service status in each municipality (EDM IDP, 2009/10)

Local Municipality	Free basic water	Total Piped water (%)	Water Service Backlogs	% below RDP water services
Mbombela Local Municipality	68.5%	86.5%	21%	17.10%

Nkomazi Local Municipality	1.4%	86.4%	22%	40%
Thaba Chweu Local Municipality	34.9%	94.3%	3%	4%
Umjindi Local Municipality	48.5%	85.9%	3%	16%
Bushbuckridge	21%	73.9	51%	-

The DM is subject to cholera and typhoid risks due to the poor and limited sanitation systems in the most rural areas. Furthermore many parts of the area groundwater is distributed without any prior treatment.

Settlement types

The large proportion of Ehlanzeni population reside in rural communities with both formal (85.6%) and informal settlement (7%)(Stats SA, 2001). According to the IDP, the average household size in EDM is about 3 to 5 people. About 29.2% of the population reside in urban areas and about 70.8% reside in rural areas (EDM WSDP, 2010). According to DWAE, 61% of the population is poor (earning less than R800 per month) with Bushbuckridge having the highest poverty rate of nearly 80% (79.8%)

2. VHEMBE DISTRICT MUNICIPALITY

Vhembe District municipality is located at the North-western tip of South Africa in the Limpopo Province. It is bordered by Zimbabwe to the north and Botswana to the northwest. Internally, in South Africa, the district is bordered by the Mopani District to the South-East and the Capricorn District to the Southwest (Figure 1). There are four Local Municipalities (LMs) in Vhembe DM, namely Musina, Mutale, Thulamela and Makhado (Vhembe District Municipality IDP, 2009/10). Of these, Thulamela has the greatest proportion of the population followed by Makhado.

The District covers **21 407 square km** of land and in and according to DWAF Stats (2011) population has increased and is standing at **1.388 427 million** people and the district

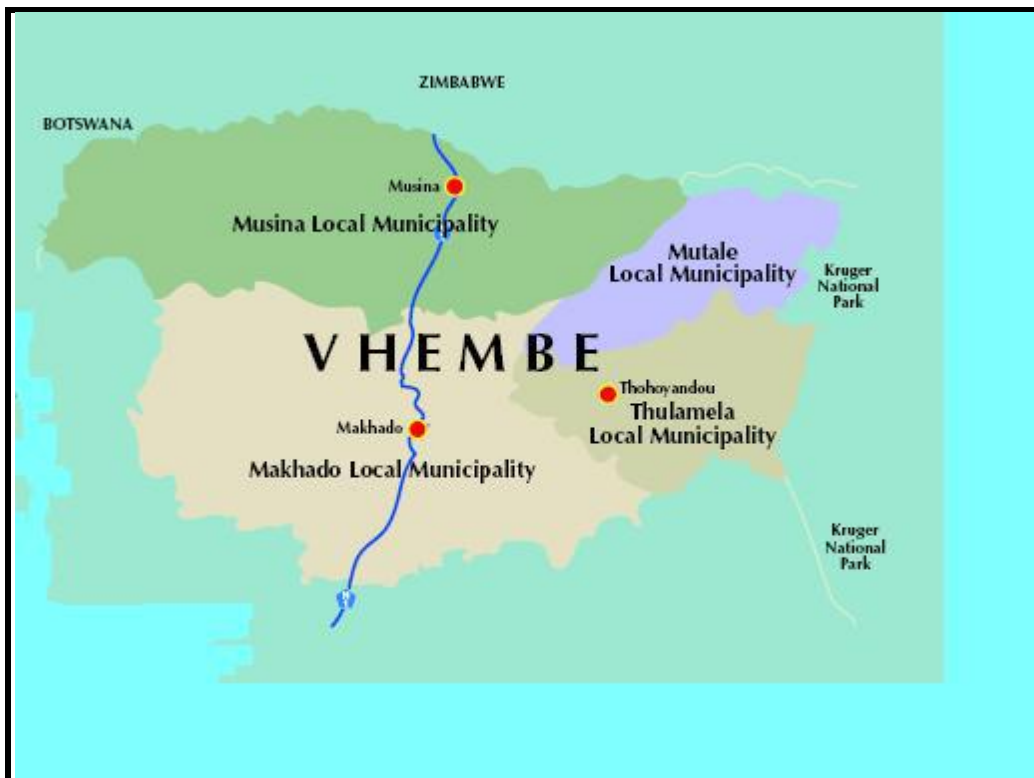


Figure 6: Location of Vhembe district Municipality

settlement patterns +- 772 whilst the number of households is 269 547.

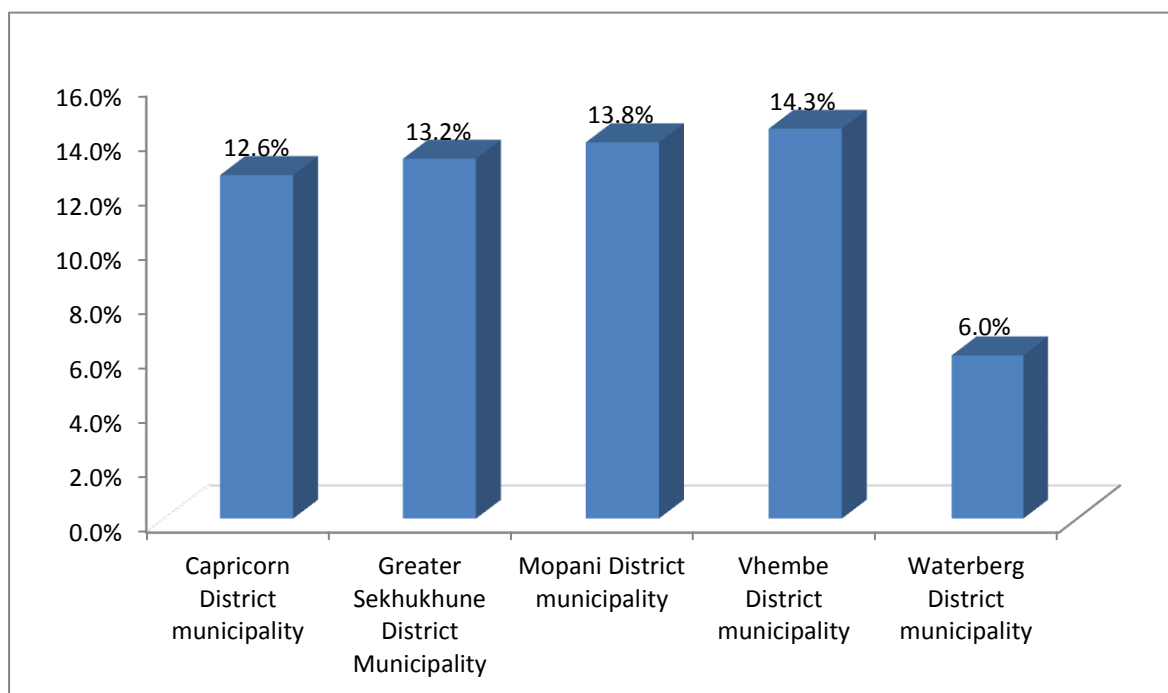


Figure 7: Poor Population per district Municipality (DWAE statistics, 2011)

Table 11 : Population per LM (DWA, 2011)

LM Name	Population	% Population	Below RDP Water Population	Below RDP population	No Service
Makhado Local Municipality	576,990	41.8%	125,719	21%	6,426
Musina Local Municipality	48,628	3.5%	4,353	8.90%	0
Mutale Local Municipality	107,078	7.7%	25,788	24%	2,967
Thulamela Local Municipality	647,594	47%	155,552	24%	9,713
WSA total	1,380,290	100%	311,412	22.50%	19,106

According to community Survey 2007, the number of households in Thulamela is 137 852, Makhado is 114 060, Musina 14 2003 and Mutale 21 075

Water and Sanitation Provision

The District still faces huge infrastructural backlogs on basic services: Water – 53% and sanitation – 73%. The District has 22 regional and functional schemes, 1 172 operational supplementary boreholes, 14 water treatment works, 5 sewage works, 9 ponds and 183 dry, collapsed and vandalized boreholes. Approximately 1001/c/d purified bulk water is being distributed to communities.

In terms of water provision, the infrastructure backlog to RDP street taps is 53% (approximately 729 136 people). 527 communities (85.9%) experience operation and maintenance problems and poor infrastructure conditions. Only 51 communities have adequate water infrastructure.

Water service backlogs

The State of Local Government Report (COGTA, 2009) identifies two of its four local municipalities Thulamela and Mutale amongst the 57 most vulnerable in the country. Makhado LM is listed amongst the second most vulnerable with regards to water

Table 12: Water service status per municipality in Vhembe district

LM Name	Below RDP Water Population	Below RDP population (%)	No Service
Makhado Local Municipality	125,719	21%	6,426
Musina Local Municipality	4,353	8.90%	0
Mutale Local Municipality	25,788	24%	2,967
Thulamela Local Municipality	155,552	24%	9,713
WSA total	311,412	22.50%	19,106

Table 13 : Settlements in Vhembe (Vhembe WSDP, 2010)

Number of People	1418,810
Total Number of settlements	809
Total Number of People Urban	214,941
Total Number of People rural	1,203,869
Total Number of Settlements urban	28
Total Number of settlements rural	781

According to the WSDP 2010, about 85% of the population in Vhembe resides in rural areas and only about 15% resides in urban communities.

Table 14 : Rural vs urban settlement

LM Name	% rural	% urban
Makhado Local Municipality	88.6%	11.4%
Musina Local Municipality	6.4%	93.5%
Mutale Local Municipality	100	0
Thulamela Local Municipality	80.7%	19.2%

Institutional arrangements for water service provision

According to the IDP, The District Municipality of Vhembe is a Category C Municipality as determined in terms of section 4 of the Act and was established in the year 2000 in terms of Local Government Municipal Structures Act No. 117 of 1998. Thus Vhembe district is the official WSA in the district. The four local municipalities within Vhembe are all currently appointed as water service providers of the areas within their areas of jurisdiction.

SUMMARY OF THE 2 DMS

SETTLEMENTS

DISTRICT MUNICIPALITY	% RURAL	% URBAN
EHLANZENI	70.8%	29.2%
VHEMBE	85%	15%

WATER SERVICES

DISTRICT MUNICIPALITY	WATER FUNCTION	WATER SUPPLY BACKLOG(DWAE, 2011)	TOTAL PIPED WATER
EHLANZENI	NONE	44.72%	90.1%
VHEMBE	WSA	31.79%	92.0%

FREE BASIC WATER(POPULATION SUPPLIED WITH 6KL OF WATER PER MONTH)

DISTRICT MUNICIPALITY	POOR POPULATION	POOR POPULATION SERVED	%PP SERVED
EHLANZENI	621,325	498,851	80%
VHEMBE	772,681	738681	95.6%

LOCAL MUNICIPALITY WITH THE HIGHEST RURAL POPULATION IN EACH DISTRICT

DISTRICT MUNICIPALITY	LOCAL MUNICIPALITY	RURAL (%)	URBAN (%)
EHLANZENI	NKOMAZI	96	4
VHEMBE	MAKHADO	88.6	11.4

4) Summary of Focus group discussions (municipalities)

Issue of discussion		Nkomazi LM outcome	Makhado LM outcomes
The role of LM in Water service provision		In terms of Chapter 7 Section 155 of the Constitution of the Republic of South Africa, Act 108 of 1996, the LM falls within the Category B4 ⁸ municipalities. The LM is the authorised WSA and WSP responsible for serving all the villages within Nkomazi. The LM is responsible for both regulation of water services and implementation of water services and projects.	The LM is currently a WSP (albeit not officially). The LM has not signed a service level agreement with Vhembe district Municipality (current WSA). The LM is responsible for water reticulation and operation and maintenance (O & M) of infrastructure that supplies water directly to the communities. VDM who is the WSA in the area, provides bulk water supply and operation and maintenance (O & M) to some of the villages within Makhado LM and other areas.
Relationship with the Catchment management agency (CMA)		There is no significant relationship with the Komati catchment management area (CMA). LM officials attend meeting or forums once or twice a month when invited. However they do not have a significant role in those forums. In some cases they cannot attend such forums due to time constraints.	Currently there is no significant relationship with the CMA since the LM is not yet officially a WSP in the area
LM's resources in water services (Human resources and finances)	Human Resources	The water services section within the LM consists of Water services manager (Chief Water and Sanitation), water quality officer and the 5 operations and maintenance officers (one for urban areas and four for rural areas). (see figure 13)	A water services section has been established, however most of the positions have not been filled, There is an O&M office with superintendents who are also responsible for other technical services (roads, electricity, refuse removal etc) as well, the assistant manager, is currently responsible for overseeing all the issues with regards to water services
	Financial resources	The LM receives the MIG as well as the LGES from government as support towards its functions, however this was insufficient. The municipality currently does not receive any external funds	The municipality indicated that they do receive government support, however the allocation for water services was still received by the WSA, and these will be transferred as soon as there was a service level agreement in place.

⁸ These municipalities are considered to be very vulnerable both from a revenue generation and from institutional development perspective. They are located in economically depressed areas and have difficulty in attracting and retaining skilled managers, professionals, and technicians (COGTA, 2009).

O&M issues	O& M is only conducted on ad hoc basis due to problems of insufficient personnel and funds	O & M especially for the rural communities can only be conducted on an ad hoc basis at the moment. Currently the revenue collected from urban areas is used to conduct O&M in villages. In some cases VDM addresses such problems. In other cases the process can take a long time.	
Water services to villages	The LM is servicing almost 50 villages. More than 90% of the population within the LM is living in rural areas. In these areas poverty is high and infrastructure is limited. The LM provides services to these communities at no cost.	Most of its population reside in low income households, and they receive services for free. The LM also provides services to urban areas.	
The role of local leadership in water service function	Traditional leaders are highly involved in the affairs of the municipality and assist in facilitating service delivery to communities. Ward councillors also form part of this structure and are the voice of the people as they have to constantly communicate with the LM in terms of the challenges in the village.	Tribal authorities and ward councillors assist in facilitating water services in the community.	
Availability of water resources to serve communities	Nkomazi is a water stressed area. The main water sources/rivers are the Crocodile, Mlumati and Nkomati rivers, as well as the Driekoppies and Mbuzini dams. Mlumati and Nkomati rivers are the main water sources serving the rural areas. Some dams eg. Mbuzini Dam dry out and are dependent on rain water, which means that water is a challenge during the dry season. Groundwater is the major source of water for villages.	The Makhado LM consists of dams, groundwater as well as springs and fountains. Other sources include Albasin Dam, boreholes, Nzhelele Dam, Mutshedzi Dam, and various other groundwater sources which include springs and fountains.	
Availability of water infrastructure to serve communities	Water is mainly received from boreholes, and reticulates to communal standpipes without any prior treatment. Infrastructure such as communal taps and reservoirs are also in place.	Communities in Makhado LM access water through; boreholes, water tankers, communal standpipes and yard taps. Water tankers are mainly supplied in areas where there is no source of	

		water (e.g. boreholes have dried up).
Challenges with the above (water resources and infrastructure)	Dams dry out during dry season, which means communities cannot always receive reticulated water. In other cases there are technical problems with purification plants which may take longer to address. Groundwater is sometimes not safe to drink.	Most rural areas are located further from surface water resources. Providing reticulated is not always feasible. Boreholes are also drying out and sometimes groundwater has been contaminated by VIP toilets
Alternative options if available	In order to address the challenge of water scarcity in communities the LM alternatively contracts out water tankers to deliver water to communities. The challenge with this arrangement is that, it is too costly and sometimes may not be possible	The LM alternatively contracts out water tankers to deliver water to communities. However this arrangement is too costly and sometimes may not be possible
Provision of Free Basic Water (FBW)	In terms of the FBW policy, the LM does not keep a register of its indigent households since most of its rural communities are regarded as poor and cannot pay for services. In terms of its targeting approach, all its rural communities are regarded as poor or indigent ⁹ . Thus all its rural communities are provided with free basic water where possible.	Currently the VDM is responsible for providing Free basic water to communities
Plans to improve the current situation (if any)	Most of the villages have been incorporated in the IDP, however implementation processes might take longer. Implementing water projects on time is a challenge due to insufficient skills and funds.	Plans to improve the current water situation in communities can only be incorporated into the IDP once an agreement has been signed with the WSA and funds are being received for this function

⁹ Households that cannot afford to pay for basic services or have a monthly income of less than R1600 (DPLG, 2005)

5) Focus group discussion outcome in the selected communities

Issue of discussion	Thambonkulu community (Nkomazi)	Zama-Zama community (Makhado)
<i>Role of local leadership in water services in the community</i>	Local leadership, both tribal authority and ward play a significant role and work very closely in assisting the municipality. All water problems are reported to the councillor, who then reports this to the municipality. There were no problems noted with this arrangement.	Both the tribal and the ward councillors are an important part of service in the village. Service problems are reported to the councillors who then reports this to the municipality
<i>Water resources and sources</i>	A dam constructed by the Dept of Agriculture is used for livestock. Mbuzini Dam is the source of reticulated water. Groundwater is also used when available. Rainfall is highly seasonal. The most reliable source of water in the village is a well. Water from the well is currently used for all domestic purposes including drinking without any treatment	There are no surface water sources in the community. Groundwater was the main source of water. There is no reticulation in the community. The community uses a well as their main source of water.
<i>Challenges</i>	Reticulated water is only available to the community once in three weeks because water from the dam is not enough for the whole community. The water is pumped to the reservoir, but once its filled it is only available for about four to five hours then it is finished. Water from the well is not enough and is not safe to drink	There was potential for contamination of groundwater since the main type of sanitation is VIP toilets. The water from the well was also not enough and not safe to drink. People had to walk almost two to three kilometres to access water from this source
<i>Water infrastructure in the community</i>	Reticulated water is stored in reservoirs and reticulates to communal standpipes (see figure 15). There are no household connections or yard taps in the village (except for illegal connections in some households). There are also two hand pumps which are currently no operational. There is also a number of boreholes dug but not equipped. There are also 20 jojo tanks, 10 were provided to households with disabled members, and 10 are installed along the road. These are to store water from a tankering truck which comes once a week	There are boreholes equipped with handpumps. Other boreholes had been dug but not equipped. There was a new borehole with a pump house but these were not in operation yet. This had been there for almost six months. The community was not informed of when it will be operational

Challenges	Water from the standpipes is only available once or twice in three weeks. Reservoirs are often left empty and remain that way for days. Water from the dam is highly turbid thus the purification filters are often clogged or broken, and it normally takes months for the municipality to come and rectify the situation. The community do not receive reticulated water for three to four months when the plant has technical problems. Boreholes are dry and the handpumps are broken	All the handpumps were broken and there was no other source of water except for the well (see figure 18)
Records of water-borne disease in the community	There have been a number of sickness in the community because of consuming unsafe water, years 2008-2009 was the years of cholera (these records could not be obtained since there is no clinic in Thambonkulu	People have been sick in the village but it was not clear if this was due to consuming unsafe water. This could not be verified since there was no clinic in the village
Recommendations to water problems by the community	Groundwater is available in the area. The recommended solution will be for the municipality to draw water from Nkomati river which is about 15 to 20 km away. Otherwise contracting water tankers to provide water daily will help the community.	The community recommended that more boreholes be dug since the groundwater potential of the area was good.