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TOPIC

CHALLENGES OF LOCAL GOVERNMENT'S WATER AND SANITATION PROVISION: A CASE STUDY OF AMAJUBA DISTRICT MUNICIPALITY

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DECLARATION

I, Ruth Namalambo Muyunda (student number: 2014164749), declare that the work in this mini dissertation is my own. It is submitted in fulfilment of the requirement of the Masters degree in governance and political transformation at the University of the Free State. The mini dissertation has not been previously submitted to any other institution for either examination or degree purposes.

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RN Muyunda

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- The Amajuba municipality for opening their doors for me. I salute you.
- The community members of Ndlamlenze and Luthulunye. The warmth you gave me was awesome.
- Above all, the Almighty God for being by my side all the way and continually giving the strength, courage and ability to complete this degree.

DEDICATION

I would like to dedicate this achievement to my dear husband and our four children, Loma, Linda, Lwiimbo and Lwiito, who have been my inspiration, a shoulder to lean on and my source of strength in moments of discouragement. May the Good Lord add many more blessings throughout their lives in the many more years ahead.

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ABSTRACT

The South African constitution introduced democratic development reforms that mandated local government certain responsibilities, among others being water and sanitation services. However, many challenges have been encountered by local governments and service providers and that hindered effective and sufficient provision of services, particularly in rural remote areas. The study was conducted against the backdrop of the white paper on local government requirement on provision of quality services to communities in a sustainable manner. Therefore an investigation on challenges local governments encounter in the water supply and sanitation provision, was conducted. The main focus of the study was on provision of water and sanitation by Amajuba District municipality to Ndlamlenze and Luthulunye communities within the eMandlangeni municipality.

The study utilised qualitative approach to interpret the challenges the Amajuba District municipality encountered in water supply and sanitation provision in the two communities under study and also to derive the perceptions and expectations of the communities in Municipal services. A case study design was used and interviews with open ended and closed questions, and observation and document analysis were utilised to collect the required data necessary for the research problem. The sampling approach employed in this study was purposeful sampling. Data was analysed manually and Microsoft Office Excel 2007 was used for drawing graphs. The research settings were the Amajuba District Municipality and two communities in ward 1 within the eMadlangeni Local Municipality. The Engineering Department, water sector section and two communities, Ndlamlenze and Luthulunye in ward 1 were sampled conveniently for data sources.

The conclusion of the research revealed that the municipality has done everything possible within their means, but challenges such as remoteness of the two communities, poor roads and terrain, vandalisms of infrastructure, drought and lack of sufficient funds, have affected the development expected in the two communities. The two communities mainly depend on streams and springs as sources of water for both humans and animals. Some households have built temporary, make-shift

toilets, while other households still depend on the bush and thickets for relieving themselves.

The recommendations provided in the last chapter focus on suggesting the possible ways in which the Amajuba District Municipality may solve the challenges that hinder the required standard provision of water supply and sanitation provision to meet customer satisfaction. The recommendations include among others: building a municipality sub-station close to the two communities; making a recommendation to the Department of Rural development and land reforms to relocate the community members; visiting the communities regularly to educate and attend to their problems. The recommendations also include some of the measures that the community members should apply to meet their expectations. The recommendations include among others: taking responsibility of the services provided; appreciating the services provided; building stronger toilet structures and making decisions to relocate to better areas.

The researcher hopes that through this research, the district municipality will find even better ways of providing quality services in water and sanitation and that the two communities will likewise respond positively.

Key words: Municipality, water supply, sanitation, local government, community.

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AIDS	Acquired Immune Deficiency Syndrome
ATUSA	Service management committee in Peru
DWAF	Department of water affairs and forestry
HIV	Human Immunodeficiency Virus
IDP	Integrated development plan
JASS	Service management committee in Peru
Kl	Kilo litre
MM	Metropolitan Milanese
PPP	Public private partnership
RDP	Reconstruction Development plan
SEDAPAL	Servicio deaqua potable alcantarillado de Lima
SUNNAS	National supretendant of sanitation
UNDESA	United Nations department of economic and social affairs
UN	United Nations
UNICEF	United Nations Children Fund
USAID	United States Urgency International Development
UTW	Uthukela water
WASH	Water, sanitation and hygiene
WATSAN	Water and sanitation
WHO	World health organization

WRC Water Research Commission

ZINWA Zimbabwe national water authority

CHAPTER 1

INTRODUCTION AND OVERVIEW

1.1 BACKGROUND TO RESEARCH PROBLEM

The provision of water and sanitation services to households is a critical function throughout the world. Prior to 1994, the apartheid government's community needs and services were prioritized on racial basis. After independence, the government introduced policies and laws whose focus was to provide services to everyone irrespective of race (South African Constitution, 1996, Chapter 2, Section 27).

Water and sanitation in South Africa have been one of the many areas that are characterized by both achievements and challenges. After 1994, South Africa's newly elected government struggled to clear the backlog in water and sanitation supply, which had been created as a result of civil war and the apartheid system of governance. Since then, the country has made some improvement with regard to water supply and sanitation.

In terms of Section 11 of the Water Services Act of 1997, The Water Service Authority has a duty to all customers and potential customers to provide affordable access to water services within the area of jurisdiction. Everyone can have affordable access to water in some form, since no human being can live without water, but the concern is not whether they have access, but it is whether the water supplies and sources are safe, sufficient, readily available 24 hours per day, convenient, piped or close by within 200m and have the price that people can afford. Similarly with sanitation, it is not about sanitation provision, but whether the provision is of good quality and convenient to all household members. Questions such as: is sanitation affordable and hygienic? Does it eliminate contact with human excreta and other waste water? (UN water 2013:1; UNDESA 2015: 1) affirms that "the human right to safe drinking water and sanitation is derived from the right to an adequate standard of living and inextricably related to the right to the highest attainable standard of physical and mental health, as well as the right to life and human dignity". This statement creates no doubt in the human mind that the right to water and sanitation is undisputable, but justifiable and enforceable.

South Africa is one of the few countries in the world that enshrines the basic right to sufficient water, as stated in the constitution that “everyone has the right to have access to water” (water commission report, 2000:7), however much remains to be seen, particularly in rural areas to fulfil the right.

The current researcher believes that poor water and sanitation provision could be amongst major causes of death, poor school attendance, disease and malnutrition. Generally, this results in low productivity and consequently poverty.

Safe water is imperative for development and public health. According to WASH report (2015), inadequate sanitation and water increase the incident of diarrheal diseases and 88% of the deaths are due to diarrhoea and other water and sanitation related diseases. The UN News Centre (2016) reported that 70 million people lack piped water in their places of residence and 2.5 million people worldwide live without access to proper toilets. This clearly indicates that good water and sanitation will promote healthy people who can work productively and fully contribute to the country’s economy.

According to Bailey (2003, WRC Report No 925/1/03 ii), in South Africa alone, 25% of the people do not have access to an adequate supply of portable water, while 50% lacked basic sanitation. USAID (2013: 3) highlights that 40% of the world’s population have no decent toilets, resulting in open defecation which ultimately contaminates food and water and claiming up to 2.5 billion cases of diarrhoea and 1.5 million deaths among children worldwide.

While most of the water used by members of the community is polluted at source, a huge proportion is contaminated during storage. An improvement in the proximity to a source of water is seen by Barley as reducing contamination related to storage. The provision and availability of clean water and sanitation to all South Africans is indispensable to the success of the government. (Dunker RDP, 2002. WRC Report no 880/1/0) 0 p.4)

Improving access to sanitation is a critical step towards reducing the impact of diseases such as diarrhoea, Schitosomiasis (bilharzias) and trachoma (eye problems). It also helps create physical environments that enhance safety, dignity

and self esteem. In Africa, about 1, 5 million children under the age of five years die each year as a result of diarrhoea diseases.

Pollution which may be contributed by poor sanitary systems, in the form of poorly constructed toilets and poor drain system, may cause fatal ailments like diarrhoea, dysentery and malaria. WHO (2014) attests that poor access to safe water and adequate sanitation are a threat to human health in developing countries.

USAID (2013: 4) believes that access to safe drinking water and basic sanitation are two of the key indicators of Human well-being. In 2003, the DWAF published a strategy framework for water services entitled “Water is life; Sanitation is dignity’’. The DWAF maintains that water as a human right is essential to maintain life, development and the environment.

In the outskirts of eMadlangeni Local Municipality are rural settlements housed in self constructed structures. These communities are under developed and form the biggest part of the municipality. They go without certain levels of comfort and little public services to secure needs, such as safe water supply water and hygienic sanitation provision.

The tables below show a summary of the distribution of households by wards and how water and sanitation services are provided (eMadlangeni Local Municipality IDP, 2014: 75-78)

Table 1: Distribution of households by ward

Ward number	Number of households	Percentage of total
1	1706	27%
2	1448	23%
3	1682	27%
4	1416	23%
Total	**6252**	**100%**

The information in table 1 above shows that, in terms of number of households, wards 1 and 3 are the largest wards, each carrying 27% of all households in eMadlangeni municipality. Wards 2 and 4 are equal and have 23%of households each. There are 6252 households altogether. It might be interesting to know the pattern of water and sanitary distribution across the municipality. Table 2 below gives the distribution of piped water by ward.

Table 2: Distribution of piped water by ward

Ward number	Number without piped water	Percentage of total
1	1191	46%
2	24	1%
3	768	30%
4	599	23%
Total	**2581**	**100%**

The table above shows that 2581 households (41%) of the total number of households do not have access to tapped water. Of the two thousand five hundred and eighty one households without tapped water access, 46% are from ward 1 while half that amount or 23% are from ward 4. Only 1% of 2581 households without tapped water are from ward 2. The data shows that there is a huge discrepancy in the distribution of tapped water among the wards.

eMadlangeni municipality gets its water from a variety of sources as shown in table 3.

Table 3: Sources of water available to the households

Water source	**Number of households using the source**	**percentage**
Piped water	2657	51%
Borehole	711	13, 6%
Spring	345	6,6%
Dam/Pool	276	5%
River/ Stream	982	19%
Water vendor	40	0,8%
Rain water tank	141	3%
Other	57	1%
Total	**5 209**	**100%**

According to the table above, 51% out of 5209 households counted, have access to piped water. The remaining 49% use water from other sources, mainly rivers/steams (19%). Besides water, sanitary facilities are a key to healthy living. The table below gives types of sanitary facilities and the wards which use them.

Table 4: Access to toilet facilities by ward

Ward	Flush toilets	Pit toilets	Bucket toilet	None	Percentage with no toilets
1	138	454	25	588	62%
2	1369	55	1	18	2%
3	412	756	4	170	18%
4	191	887	5	180	18%
Total	**2110**	**2152**	**35**	**956**	**100%**

Table 4 above, shows that of the 956 households who have no access to any of the three available sanitary facilities, 588 or 62% come from ward 1 and 170 and 180 (about 18%) for each, are from wards 3 and 4 respectively.

It is interesting to note the striking relationship between access to tapped water and access to a given sanitation facility. As access to water increases, use of a sanitation facility increases. This might be attributed to the fact that some of the sanitation facilities, like flush toilets use water. It is for this reason that the researcher decided to conduct a research to investigate the challenges the Amajuba district in charge of water supply and sanitation provision is encountering with special attention to Ward 1.

1.2 PROBLEM STATEMENT

The South African government developed and adopted one of the most democratic constitutions in the world. Chapters 2, subsection 7(1) of the South African constitution, states that all people have to be treated with dignity and equality. Furthermore, the constitution identified healthcare facilities, food and water as some of the basic rights of South Africans (South Africa, 1996). However, the effective provision of clean safe water in Amajuba District Municipality is a big challenge. The picture portrayed by table 2 above seems to sharply contradict the provisions of the bill of rights. Seemingly, ward 2 residents enjoy the rights more than ward 1

residents and to a larger extent, wards 3 and 4. Piped water for most households seems to remain a pipe dream.

It is also hard to believe that, according to the table 4 on page 5, there are families who still hide behind the bushes for a toilet. Table 4 shows that there are 956 households without any form of sanitation facility. The majority of these households are from ward 1 (62%) and the minority (1%) are from ward 2. This lack of sanitation facilities, besides being a threat to health, is undignified and reduces self esteem (Duncker 2002, WRC report no 819/1/100:10), South African constitution, 1996, chapter 2: ss7 (1).

The Amajuba District Municipality is aware of the pressing need to provide basic water supply in the rural areas (wards 1 and 4), (eMadlangeni IDP review, and 2014/2015:76). It is also aware of the lack of sanitation facilities (Final eMadlangeni IDP review, 2014/2015:79). One wonders what it is that is standing in the way of a municipality, supported by a democratic constitution, to adequately provide water and sanitation facilities to needy wards. The current researcher intends to clearly delineate the problem and make recommendations.

In terms of manageability the research questions have been divided into the following sections:

- How can water and sanitation provision be improved on community level / municipal?
- What has been the impact of poor and water and sanitation provision in the rural communities?
- What is the main hindrance in the provision of clean water and good sanitation in rural areas?
- What has the local government done to improve the situation?
- What have community members done to ensure that what the local government has provided, is well managed and maintained?

1.3 RESEARCH AIM AND OBJECTIVES

The main aim of this study is to investigate governance, resource and other constraints affecting the provision of safe water and sanitation facilities in eMadlangeni.

The study will pursue the following specific research objectives:

- To compare water and sanitation governance practice across selected countries, including South Africa.
- To determine the community's perception and expectations about the provision of water and sanitation by Amajuba District municipality
- To determine the strategies utilized by Amajuba District Municipality in providing residents with water and sanitation

Significance of the study

The researcher hopes that the findings of the study will provide ways of improving water and sanitation provision in the areas where provision is poor. The findings will also improve the operational systems within the local municipality to enhance water and sanitation provision.

1.4 THEORETICAL AND CONCEPTUAL FRAMEWORK

Act 108 of 1996, section 24 and 27 of the bill of human rights in the constitution, grant specific rights to access to sufficient water, an environment not harmful to health and well being and the protection of the environmental degradation.

Algotsson & Murombo (2009: 2) clarify that the right to basic sanitation is not an explicit constitutional right. However, the right to sanitation could be derived from the right to clean environment, read together with the right of access to clean water.

The Water services act108 of 1997 aim at the following:

- Providing for the rights of access to basic water supply and basic sanitation.
- Providing for the setting of National standards for tariffs.
- Providing for water services development plans.

- Providing a regulatory framework for water service institutions and water service intermediaries.
- Providing for the establishment and disestablishment of water boards and water services committees and their powers and duties.
- Providing for the monitoring of water services and intervention by the minister or by the relevant province.
- Providing for the financial assistance to water services institutions.

According to the Republic of South Africa (1998: 3), the national government acting through the minister, must ensure that water is protected, used, developed, conserved, managed and controlled in a sustained and equitable manner, for the benefit of all persons and in accordance with its constitutional mandate.

The Republic of South Africa (1996: 153) states that "a municipality must structure and manage its administration, budgeting and planning process to give priority to the basic needs of the community and to provide the social and economic development in the community".

The researcher therefore believes that it is the duty of the local municipality to ensure that the needs of the community members are provided for satisfactorily.

Definition of concepts terms

Local government: Local government is a form of government which in a majority of contexts exists as the lowest tiers of administration in a given state. Tonwe (2011: 69) defines local government as an entity concerned with the governance of a specific local area, constituting a political subdivision of a nation, state or other major political units.

For the purpose of this study, the term local government will refer to eMadlangeni municipality governance in water and sanitation.

Municipality: A municipality is usually an urban administrative division having corporate status and usually powers of self-government or jurisdiction. The term municipality is also used to mean the eMadlangeni local municipality governing,

ruling body of a municipality. A municipality is a general-purpose administrative subdivision, as opposed to a special purpose district (Municipality definitions.net 2015).

In this study, municipality will refer to Amajuba District municipality and eMandlangeni Local Municipality.

Water provision: The ability to supply good quality water at a minimal fee or free of charge and ensuring its accessibility to all when required.

In this study, water provision refers to one of the basic needs that the municipality must provide to the community.

Sanitation: sanitation is the hygienic means of promoting health through the prevention of human contact with the hazards of wastes, as well as the treatment and proper disposal of sewage. According to WHO (2014), sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. In this study, the term Sanitation will refer to the eMadlangeni municipality sanitation provision.

1.5 RESEARCH DESIGN

Research design is a set of guidelines and research instructions to be followed in addressing the research problem (Mouton, 2001: 107). It specifies the methods and procedures for acquiring the information needed in the research. It is the overall operational pattern or frame of the project that stimulates what information is to be collected from which source and by what procedure.

A research design considers data collection methods, sampling methods and data analysis as the heart of planning. To achieve the objectives of the study, a specific research methodology need to be focused on. This will enable the research to be done in a professional, reliable and verifiable manner.

The researcher will utilize a qualitative research. The qualitative research employs inductive multi-methods which emphasize an interpretive approach that will be useful to interpret the challenges the Amajuba District Municipality is encountering in the provision of water and sanitation (Hisse-Biber & Leavy, 2011: 233). The researcher

will study things in their own setting attempting to make sense of things in terms of how the people interpret them. The researcher is expected to facilitate the whole process by encouraging and motivating the people to open up and tell their stories. The method investigates the why and how of decision making, not just where and when. The method also aims at gaining a deep understanding of a specific organization or event, rather than surface description of a large sample of population (Leedy & Ormrod, 2009). Qualitative research deals with phenomenon that is difficult or impossible to quantify mathematically, such as beliefs, meanings, attributes and symbols. The researcher intends to gather detailed information on how members of the eMadlangeni rural community obtain water for their domestic chores. For the above to be possible, the researcher needs to interact with respondents often. Maree (2014: 51) defines qualitative research as a research methodology that is concerned with understanding the processes and the social and cultural contexts which underlie various behavioural patterns and is mostly concerned with exploring the “why” questions of research. She further (2014: 55) argues that the research acknowledges an interactive relationship between the researcher and participants and their own experiences and how they have constructed reality, based on those experiences. According to Mouton and Marais (2011: 204), a qualitative research strategy is inductive in that the researcher attempts to understand the situation without imposing pre-existing expectations on the setting. For quality implementation, the researcher will have to know how the people interact, obtain information that is relevant to various attitudinal, situational and environmental factors in the setting of the people being investigated.

Within the qualitative framework, a case study will be employed. A case study can be defined as a careful study of some social unit that attempts to determine what factors had added to its success or failure. According to Feagin *et a*l., (1991: 2), "a case study is an in depth, multi- faceted investigation using qualitative methods of a single social phenomenon.” Maree (2014: 75) attests that a case study can be used to describe a unit analysis (e.g. a case study of a particular organization) or to describe a research method. Leedy and Ormrod (2009: 137) states that “a case study may especially be suitable for learning more about an individual or program changes, perhaps as a result of certain circumstances”. Yin (2003) as cited by Baxter and Jack

(2008: 544-555) argue that a researcher can use a case study when the study is focused on answering the how and why questions; when the researcher does not want to manipulate the behaviour of the people in the study; when the researcher believes contextual conditions should be covered due to relevance to study and when boundaries between phenomenon and the context are not clear.

For a successful study, the researcher will study a variety of literature reviews for the purpose of finding out what previous research established about the topic. Resources such as journals, newspapers and policy documents will be used. In addition collaborative consultations of participants will also be done to assist the researcher in focusing on the questions and getting more knowledge on the topic

The researcher chose this method because it is flexible in that it adjusts to the setting. Concepts and data collection tools and data collection methods can be adjusted as the researcher progresses as it uses a multiple of methods to collect data (MacMillan and Schumacher, 1999: 345-346). In this method, fewer assumptions are placed on the object being studied, thus making it great for exploratory research. The participants are also able to provide data in their own words and in their own way.

In this case study, the researcher will attempt to understand how the provision of water and sanitation by the local municipality is managed, the source of water in the community, specifically Ndlamlenze and Luthulunye; its adequacy and community satisfaction and what the community thinks should be done to improve water and sanitation provision. The researcher will carry out the study by conducting an unstructured interview where the participants and the researcher will work together to arrive at the heart of the matter. The researcher's role will be to listen closely and take notes as the participants describe their experiences related to the phenomenon.

The researcher agrees with the above authors, as their definition Qualitative study is relevant because the methods are based on understanding how people interact within their social environment. The method also will allow the researcher to make links between the abstract and the concrete. The researcher will be the instrument through which the data will be collected.

The researcher also agrees with the author on the definitions of case study because the research will carry out interviews, review documents and make observations to gather the required data. This will help the researcher to come to a deeper understanding of the dynamics of the situation.

The researcher will visit the Amajuba District Municipality Water and Sanitation Section. The researcher will inform the Head of that Department the purpose of the visit, using the letter of introduction. The Head will then contact the other relevant people and inform them of the researcher's purpose of the visit, whereafter the researcher and the group will then decide on the dates to meet individual members of the group.

Guidelines

The following will be guidelines:

- The role of the municipality provision of water and sanitation
- Sources of water and how safety is ensured
- Methods of distributing water to the four municipal wards
- Challenges that the municipality is facing in the distribution of water in rural areas
- How to improve the situation
- Types of toilets being used in the wards
- Strategies that have been put in place to improve the sanitation and water provision.

The researcher will also ask for any documents pertaining to the process of water and sanitation provision and also minutes for the previous meeting concerning the same.

The researcher will phone the Amajuba District to make an appointment to meet the municipality manager with the aim of getting permission to conduct research within the Municipality and two settlements within ward 1 in Utrecht. When the permission

is granted, the researcher will make arrangements to visit ward 1 of eMadlangeni municipality. The researcher will visit the Amakhosi of ward 1, specifically Ndlamlenze and Luthulunye and request them to identify people within their ward who will work hand in hand with the researcher. Dates will be set on which the researcher will conduct interviews. Photographs will be taken and different people will be interviewed to get their views on the situation and what they think are the contributing factors to not receiving expected water and sanitation services from the municipality. The researcher will also find out what the community thinks could be the best solution to the existing problems.

During this period, the researcher will also record details about the context surrounding the case which will include information about the physical environment and any historical, economic and social factors that have bearing on the situation. The main focus will be:

a) Community's views on provision of water and sanitation

b) Community's expectations on water and sanitation provision from the municipality

c) What the community can do to assist the local municipality maintain water supply and sanitation

d) Any problems encountered due to methods of water supply and sanitation provision

e) The impact of water and sanitation of provision in the community.

Before the researcher embarks on the research, the researcher will obtain permission from the relevant stake holders, such as the municipality Manager, Chiefs/Indunas and Councillors of the research area, in order to ensure successful research.

1.5.1 Study area

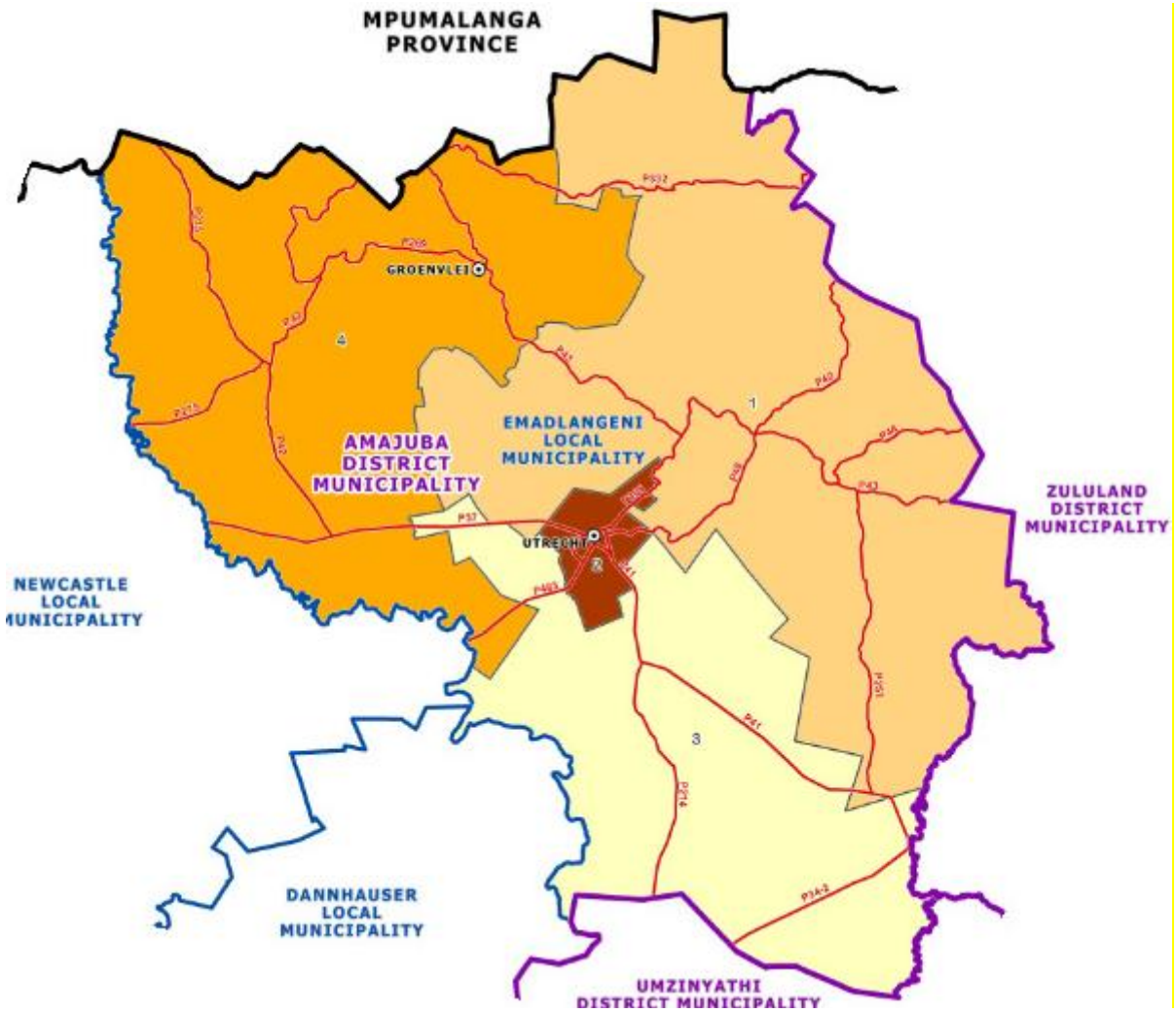
The researcher will conduct the study in the province of KwaZulu Natal in Amajuba District located in Madadeni. The Amajuba District Municipality is located in the north western corner of KwaZulu Natal and comprises of three local municipalities of Newcastle, Utrecht and Dannhauser. The Amajuba District Municipality is 6,910km^2

in size, with Emadlageni occupying the largest area of 3,539km$^{2;}$ Newcastle is 1855km^2 and Dannhauser is 1516km^2. The District is linked to its surrounds by the N11 which is the alternative route to Johannesburg from Durban. The area of study is within the eMadlangeni municipality in Utrecht and Amajuba District Municipality is in charge of the water supply and sanitation provision. Utrecht is a town within a game park. It has a population of about of about 34 442 of which 26% live in the Urban Town of Utrecht, Berouw, Waterval and Kingstown. The Municipality is surrounded by Newcastle east (52km), 68km west of Vryheid, South west of Dundee and North east from Volksrust. It consists of a vast rural area when compared to other Municipalities in South Africa. Provision of water and sanitation is considered below the expectations. It is responsible of all other municipal services except for water and sanitation which is taken care of by the Amajuba municipality. According to the Amajuba District Municipality IDP review (2014/2015), more than 60% of the households per electoral ward have no access to piped water and more than 13% of households per electoral ward have no access to the toilets. The poor provision of water and sanitation mostly affect households in the outskirts of Utrecht Town. Balele dam is the main source of water and mainly carters for households within the Town and nearby households.

People in these areas struggle to get water into their homes. They have to walk long distances to fetch water which they either carry on their heads or push in wheel barrows. Their main sources of water are springs in the mountains or streams. Water, especially from the rivers is unsafe to drink. In areas where there is no natural water source, water is supplied by tankers. These tankers are only supplied to areas within the vicinity of town. Some of challenges experienced by these people in remote areas are that in some areas, people share water with cattle and sheep during drought season. There are areas with no toilet infrastructure at all. In some places, there are makeshift toilets which are very unhealthy and could collapse at any time.

Proper provision of water and sanitation is the responsibility of the local government, hence the municipality should ensure that all people receive adequate water supply.

Figure 1: Map showing the location of eMadlangeni Local Municipality, the Amajuba District Municipality and the four wards



Source: eMadlangeni local municipality IDP

eMadlangeni municipality is divided into 4 wards. Of the 4 wards, ward 1 has been identified as the most neglected ward as far as water and sanitation provision is concerned (eMandlangeni IDP review, 2014/2015: 9-12). The researcher is going to study 2 areas in ward 1, namely Dlamlenze and Luthilunye settlements. The settlements are victims of the native land act of 1913 and native trust Act 1936, where African people lost the right to own land except in small designated areas. The two settlements emerged from African people who lived on white farms and

worked as domestic servants and farm workers. These communities are found on the three northern Amajuba district farms namely Mooiplaats, Strydfontein and Rondehoek, covering an area of 3 348 hectares (Mafa, 2014: 1). The people living in the two areas are unemployed. Their nearest shopping center is Utrecht town about 60km away. Ndlamlenze has about 208 household, while Luthulunye has close to 100 households. The Amajuba District municipality is the mandated authority in respect of water and sanitation for these household and many others in the ward 1 (Amajuba District IDP, 2014/2015: 75).

1.5.2 Sampling

Sampling refers to the process used to select a portion of population as a set of respondents who will be part of the survey for study (Maree, 2014: 79; Barbie & Mouton, 2001: 173-191). The researcher will use purposeful or judgmental sampling. He further describes it as a method that is used in special situations where sampling is done with a specific purpose in mind. According to Black (1999) as cited by Maree (2014:301), purposeful sampling involves the researcher hand-picking the participants based on the exact characteristics in order to develop a sample that is large enough, yet possesses the required traits.

This type of sampling is appropriate because the researcher will target groups in the study and these are the service providers and the service recipients. The researcher will interview the municipal administrators to uncover the challenges that they encounter in the provision of water and sanitation and the researcher will also interview community members who experience the impact of inadequate provision of water and sanitation from the municipality.

For quality information, the researcher will choose the following as informants:

Municipality officials

- The person in charge of administration
- The person in charge of physical operations in the distribution of water.
- The person responsible for sanitation infrastructures

- The person responsible for general maintenance
- The person in charge of finance.

Community members

The target groups in the community will be both genders, irrespective of age as they **are all in need of good supply of water and hygienic toilet facilities.**

1.5.3 Data collection

Dey (1993) as cited by Henning (2004: 128), states that collecting data involves selecting data, the techniques of data collection and the transcription through note taking and tape recordings. The researcher will utilize a multi-method data collection plan, in which interviews, document analysis and observation will be employed. The engagement of multi methods will facilitate triangulation of research as findings will be cross checked and verified and thus ensuring their reliability and validity.

Documents: Documents relating to the research topic will be obtained from university libraries, online academic and research sites and official documents from the municipality. These documents will be analyzed and used in literature review and final findings.

Observation: In this method, the researcher will seek to gain orientation of the total setting and dynamics of the water and sanitation provision by the municipality. The researcher will also spend a few hours at a time observing water sources and sanitation facilities that are currently used by the community. Notes will be written down and photos taken which will save as a reminder for important information during data analysis.

Interviews: Data from interviews will be collected from a face to face setting, using an oral questions and answers format which will either employ the same question in a systematic way for all participants and respondents or allow respondents to talk about issues in less directed but discursive manner (Payne & Payne, 2004: 129). The researcher will conduct interviews using unstructured questions. Unstructured questions will be used for the following reasons:

- It allows interviewees to express their deep feelings and opinions about the existing situation.
- It will help the researcher to understand what it feels like to be in the situation of the community
- It will enable the researcher to understand the underlying reasons and motivation to the problem.

Telephone interview: Some officials, as well as community members, will be interviewed telephonically in cases where the interviewer will need additional information and when the interviewee was absent at the time of interviews.

The researcher will take notes as well as record the participant's responses using a recording system so that it will be easy to retrieve information and organize information during data analysis.

1.5.4 Data analysis

Data analysis is a process of data reduction which involves focusing, simplifying and transforming data; the data is displayed, for example by organizing data in tables, tarry sheets and summary statements; and finally, conclusions which include verifications and decisions are drawn from and confirmed by the data (Berg, 2001: 1). Data analysis will take place in two ways. Firstly, data will be analyzed throughout a data collection process as the researcher will constantly reflect on impressions, relationships and connections while collecting data. Secondly, the researcher will type texts from interviews and observational notes into word processing documents. The researcher will then group the information to different segments or units of meaning and code them. The information will then be analyzed manually, thus taking apart words, sentences and paragraphs which are an important act in the research project.

1.6 ETHICAL CONSIDERATIONS

According to Macmillan and Schumacher (1999: 117), research ethics are focused on what is morally proper and improper when engaged with the participants or when accessing archival data. The researcher will have to be honest and open with the participants about all aspects of the study. The researcher will be responsible for protecting the rights and welfare of the participants in the study.

It is also the responsibility of the researcher to ensure that ethical clarification begins when the interview plan has been finalized. The researcher will consider the following ethical issues:

Informed consent and participation: The researcher will present the participant with a letter of consent in which the research process will be described. The participant will also be informed that participation is voluntary and that the participant may withdraw at any time.

Protection from harm: The researcher has the potential to harm respondents psychologically. To prevent this harm, respondents will be asked potentially sensitive questions in a panel interview rather than facing individuals. Life style questions will be asked indirectly so that respondents feel that the researcher is not infringing in their personal lives. For example, rather than asking a respondent to tell the water source he/she uses, the researcher would ask the respondents to say which source is most accessible. Leedy and Ormrod (2010: 101) state that the researcher should ensure that participants are not exposed to any undue physical or psychological harm. During the research, the researcher will strive to be honest, respectful and sympathize with the participants. It will be the researcher's responsibility to look for subtle dangers and guard against them.

Anonymity and confidentiality: The researcher will have to ensure that the participant's information and responses remain anonymous and confidential in order to protect their interests and identity. According to Burns (2000) as cited by Maree (2014: 307), both the researcher and participant must have a clear understanding regarding the confidentiality of the results and findings of the study. The right of research participants to remain anonymous and the information they supply to be

kept confidential will be explained to them. Anonymity will be assured by asking respondents not to supply their names or any information that make them identifiable. The use of telephonic interviews will also be instrumental as the respondent won't see the researcher face to face. In terms of confidentiality, information gathered will not be shared for any purpose other than the agreed.

Privacy: Any study involving human beings should respect participant's right to privacy (Leedy and Ormrod, 2010: 102).The researcher will assure the participants that none of their responses will be presented in a manner that others become aware of how a particular participant responded or behaved. To maintain privacy, the researcher will not use the participant's names on the response sheets, but instead use numbers.

1.7 RESEARCH LAYOUT

The mini dissertation will be divided into chapters which will be arranged as follows:

Chapter 1 – Introduction

This section provided an introduction of the background of the research. The chapter outlined the problem which was captured in the problem statement. The chapter also defined the research aims and objectives of the study, as well as the theoretical and conceptual framework. The chapter further outlined the research design in which the study area, sampling, data collection, data analysis and ethical considerations were outlined.

Chapter 2 - Literature Review

This chapter will provide a review of literature in relation to the study. The researcher will compare municipality local governance in water and sanitation in selected countries including South Africa. The review will also consider the strategies that have been used by some counties in an attempt to solve challenges pertaining to water supply and sanitation provision. Finally, community expectations, perceptions and the strategies the communities employed to curb the water and sanitation challenges, will be discussed.

Chapter 3- Research design

The researcher will describe the research design to be utilized. The chapter will also provide information about methods for data collection to be used to draw both primary and secondary data**.** Finally, target population, sampling, field operations and data processing methods will be discussed.

Chapter 4 - Presentations of findings, conclusion and recommendations

The chapter presents the findings from the research under the themes created by the researcher based on the research questions.

Chapter 5 – Conclusion and recommendations

The chapter gives the review of the study and presents the conclusion and recommendations based on the findings and the main objectives of the study. The summary of chapters, contributions of study and the future research opportunities are also discussed.

CHAPTER TWO

WATER AND SANITATION PROVISION IN THE CONTEXT OF LOCAL GOVERNMENT SYSTEMS

2.1 INTRODUCTION

In chapter 1, the researcher attempted to highlight the water and sanitation challenges facing the eMadlangeni local municipality in the Amajuba District and formulated a problem statement on which the research was to be based. In this chapter, the researcher will give a brief definition of developmental local government and then review literature on water and sanitation administration practices by other countries and municipalities, specifically, reviews on water and sanitation governance practice across selected countries, including South Africa. Challenges that countries or municipalities face as they attempt to provide water and sanitation, will be highlighted and where necessary compared. Furthermore, community perceptions and expectations and also the importance of strategic planning will be explored.

2.2 DEVELOPMENTAL LOCAL GOVERNMENT

White paper on local government (1998, section b.1: 1) identifies a developmental local government as a "local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs to improve the quality of their lives; maximizing social development and economic growth; integrating and coordinating; democratizing development, empowering and redistributing; leading and learning". Nyalunga (2006: 1) defines local government as "political units or instrumentalities constituted by law which are substantial control over local affairs and likewise have the power to tax."

Developmental local government discusses the central responsibility of the local government to work together with the local communities to find sustainable ways to meet their needs and to improve the quality of their lives. It also discusses the characteristics of developmental local government, sets out a series of developmental outcomes and process several tools to assist municipalities to become more developmental (White paper on Local government, 1998). According

to this policy, it is the responsibility of the local government to play a developmental role in ensuring that municipalities are provided with support to enable them to utilize the options and tools put forward in the white paper.

2.3 COMPARISON OF WATER AND SANITATION ADMINISTRATION PRACTICES

2.3.1 Water and sanitation sector structure

Different countries and perhaps municipalities have different water and sanitation sector structures. In Peru, a country divided into 24 departments and subdivided into 196 provinces, the distribution of the supplier enterprises is conditioned to its geopolitical division (Aragon and Bonifaz, 2013: 8). In Zimbabwe, water and sanitation responsibilities are divided between the central level government and the local authorities. Plummer and Nhemachema (2001: 8), state that the key institutions at the central level are the Ministry of Local Government and National Housing and the Ministry of Water Resources. In South Africa, the water sanitation responsibilities are divided between the National government, provincial government and the local government (Department of Water Affairs & Forestry, 1994: 9-11)

2.3.2 Responsibilities of local government in water and sanitation provision sector

According to Plummer and Nhemachema (2001: 11), it is the responsibility of the Zimbabwean local government to ensure that delivery of water and sanitation services, including bulk water supply and distribution, are supplied to all households. To promote health to all, sewage services, including removal and treatment are rendered to all households. DWAF (1994: 9, 10, 11) also agrees with Plummer and Nhemachema that the local government makes provision for access for all persons residing within the area of jurisdiction to water and sanitation. The federal Republic of Nigeria (2000: 5) states that “local government authorities are responsible for provision of rural water and sanitation facilities in their areas”. Other responsibilities include formulation of by laws on specific matters, including water and sewerage; setting of tariffs for the purpose of maintenance and operations; taking charge of building, contacting, operation and maintenance of infrastructure (Plummer and Nhemechema, 2001: 11). It is also the responsibility of the local government to

ensure that services and amenities are rendered in an environmentally sustainable manner and is financially and physically practicable (DWAF, 2011: 9 -11)

2.4 MAIN ACTORS IN WATER AND SANITATION PROVISION

In the supply of water and sanitation provision, there are usually a number of stakeholders. In this section, the researcher is going to compare main actors in water and sanitation provision in three countries: Peru, Zimbabwe and South Africa.

According to Aragon and Bonifaz (2013: 9), the Peruvian water and sanitation sector has six ministries with water and sanitation responsibilities at various levels, namely, the ministry of health, which is in charge of the basic management office; the ministry of agriculture which umbrellas the natural resources institute; the ministry of housing, construction and sanitation, which works with the national sanitation office; council of ministers of Peru in charge of the National Superintendent of sanitation (SUNASS); ministry of economy and finance in charge of the national public management office. The ministry of health regulates the quality of drinking water and waste water via the basic sanitation management office. The council of ministers of Peru regulates and monitors the quality of services, rates and investment of urban supplier enterprises. The ministry of housing, construction and sanitation, in cooperation with the sanitation office, determines policies and promotes development. It also regulates the design of standards and technical specifications for portable water systems and drainage. Municipalities grant the right of operation to snoopier enterprises through the creation of municipal owned enterprises. The authors also argue that municipality's mayors, in order to get the approval of voters, try to please them by maintaining current water and sanitation services tariffs, thereby negatively impacting the supplier enterprises' financial sustainability. As far as water and sanitation organization is concerned, Africa seems to be equally geared (Aragon and Bonifaz, 2013: 9-29).

In Zimbabwe, a country north of South Africa, the overall authority is vested with the Minister of Rural Resources and Water Development (Plummer and Nhemachena, 2001: 10). The minister's function is to ensure equitable and efficient allocation of available water resources. In 1998, the Zimbabwe National Water Authority Act was enacted to establish and provide for the functions of the semi autonomous

Zimbabwe National Water Authority (Plummer and Nhemachena, 2001: 10). The authors identified four functions of ZINWA as follows:

- Advising the minister on the formulation of national policies and standards (including policy on water quality, bulk water supply)
- Fixing charges for the sale of raw water subject to the minister's approval
- Managing and planning equitable national water resources
- Encouraging and assisting local authorities in the discharge of their duties with regards to the development and management of water resources in areas under their jurisdiction and in the provision of portable water and disposal of waste water (Plummer and Nhemachema, 2001: 10)

South Africa on the other hand has an institutional framework divided into central government, provincial, local government, the national advisory council, the private sector, the nongovernmental organizations and international cooperation (Department of Water Affairs & Forestry, 1994: 9).

2.4.1 The role of the South African central government

The Department of Water Affairs & Forestry (1994: 9) divides the role of the central government in the water sector into two distinct areas:

- Managing the nation's water resources in the public interest and
- Ensuring all citizens have access to adequate water and sanitation services.

As far as the provision of water and sanitation services is concerned, central government has a less direct role. The role, according to DWAF (1994: 10), is to comply with the constitutional obligation to ensure that every South African has an environment which is not detrimental to his or her health or well being and the equality provision in the constitution. The central government establishes national policy guidelines, national water and sanitation development strategy, formulation of criteria for state subsidies, minimum services, standards and monitor and regulates entities like industries (DWAF, 1994: 10).

2.4.2 The role of the South African provincial governments

According to the water supply and sanitation policy White paper of the Department of Water Affairs & Forestry (1994: 10), provinces are responsible for local government matters. This means that, like local governments, they are responsible for making provision for access by all persons residing within the area of jurisdiction to water, sanitation and other services.

2.4.3 The role of the South African local government

As already stated and in line with the provisions of the constitution, local government is charged with the responsibility to make provision for access by all persons residing within the area of jurisdiction to water, sanitation and other services and amenities are rendered in an environmentally sustainable matter and are financially and physically practicable.

2.4.4 The role of the South African national water advisory council

As reported in the White Paper (South Africa 1994: 11), an advisory council, with members' part of whom both come from communities which are not served and who understand the difficulties of sustainable development in South Africa

2.5 WATER AND SANITATION POLICIES

In the report to the Research commission, it was suggested that lack of sustainability in the sanitation projects implemented from 1994 - 2003 could well be a result of lack of common understanding and interpretation of the national sanitation policy by municipalities and other stakeholders (Mjoli, 2010: iii). In the current section, the research will report on water and or sanitation policies of other countries and relate them to South African policies.

2.5.1 Peru's policy summary

1. The general public has access to sanitation service under adequate conditions of quality and price by means of providers of efficient, government regulated services, based on coherent and environmentally sustainable sector development policies.

2. Contribute to expanding coverage and improving the quality of safe water, sewerage, waste water treatment and excreta disposal services by implementing strategies to include modernizing management of the sanitation subsector, thereby increasing service sustainability, improving service quality, achieving the financial viability of service providers and increasing access to services.

3. Rates must cover costs in order to eliminate dependency on the central government.

4. Subsidies must focus on the poorest population groups.

5. Investment subsidies must be linked to efficiency in service provision. In urban areas, emphasis will be on improving management, including the concept of financial viability (Edwards, Davis & Bellido, 2004: 23-24)

2.5.2 Kenya's policy

The Kenyan National Policy on water resources management and development policies were promulgated in an effort to enhance the efficiency, accessibility and sustainability of water and sanitation services. The policy sought to deal with the problems confronting water and sanitation services. The Kenya National Policy identified the problems which had constrained the development of the water sector which included:

1. Shortage of funds for development, operation and maintenance of water supplies and management of water resources;
2. Over-centralization of decision making;
3. Fragmentation of water resource management responsibilities;
4. Lack of proper inter-linkages with other water related sectors.

The National Policy established four specific principles that would guide efforts to address the above problems. These are:

a) The sustainable, rational and economical allocation of water resources;

b) The supply of sufficient quantities of water of good quality while ensuring safe disposal of waste water and environmental protection;

c) The establishment of an efficient and effective institutional framework and

d) The development of a sound and sustainable financing system for effective water resources management, water supply and sanitation development.

The Kenyan National Policy on water resources management and development (the water policy), at institutional level, sought to integrate and decentralize water resources management levels (including national, basin, sub-basin/catchment levels) and setting up and or strengthening appropriate institutions, clearly defining the role of each and how they relate to each other (Akech, 2007: 17). The Water Policy indicated that the role of government would be redefined with emphasis on regulatory and enabling functions as opposed to direct service provision. It further called for the introduction of affluent discharge levies. Finally, the Kenyan Water Policy states that the Government will encourage the full participation of the communities and the private sector by creating an enabling environment for all actors to operate effectively and efficiently (Akech, 2007: 17)

2.5.3. Namibian water and sanitation policy

The constitution of Namibia advocates equity as a fundamental principle to ensure equal opportunities which are enjoyed by all Namibians (Ministry of Agriculture, Water & Forestry, 2008: 3). Namibia's policy has four components:

1. Essential water supply and sanitation services should become available to all Namibians, and should be acceptable and accessible at a cost which is affordable to the country as a whole.

2. This equitable improvement of water and sanitation services should be achieved by the combined efforts of the government and the beneficiaries, based on community involvement and participation, the acceptance of the mutual responsibility and by outsourcing services where necessary and appropriate, under the control and supervision of government.

3. Communities should have the right, with due regard for environmental needs and the resources and information available, to determine which water and sanitation solutions and service levels are acceptable to them within the boundaries of the national guidelines. Beneficiaries should contribute towards the cost of the water and sanitation services they desire at increasing rates for standards of living, exceeding the levels required for providing basic needs.

4. Environmentally sustainable development and efficient utilization of the water resources of the country and environmentally sustainable development of sanitation services ,should be pursued in addressing the various needs and should be strongly supported by information campaigns and continuous eduational interventions at all levels (Ministry of Agriculture, Water & Forestry, 2008: 3).

2.5.4 Zimbabwe water policy

Munemo and Tom (2015: 62), report that the Zimbabwe National Water Policy came into force in 2013 with an overall aim to improve the security and availability of the security and availability of water to all multipurpose users. The Zimbabwe National Water Policy's objectives are based on:

- Harnessing
- Conserving
- Protecting and
- Managing water for multipurpose use, the principle, in principle, considers water as a social and economic resource and should be of high quality, accessible and affordable. The intended beneficiaries are domestic and industrial consumers in Zimbabwe (Munemo and Tom 2015: 63)

2.5.5 South African water policy

According to the white paper (1994: 14), the department of Water Affairs and Forestry is to ensure that all South Africans can have access to basic and water supply and sanitation services within seven years or less. Basic means that they

have the minimum needed to ensure that they are healthy and are to be applied in publicly funded schemes. Higher standards will attract costs which will not be met by the government's programmes.

The compiled policy principles encompass universal human rights which take into consideration race, age, gender and culture. The policy principles are as follows:

- Development should be community focused; local structures should be involved in making decisions and take responsibility to follow up on progress even though they are aided by the state.
- Basic services are a human right; this does not mean that services should be demanded at the expense of others but await allocation from government or state.
- Proper planning, allocation of funds and prioritizing for adequate service delivery for all.
- Proper allocation of national resources for equal distribution of resources among all regions in a country.
- Enhancing the economic value of water, through the provision of sanitation services; one should keep in consideration the scarcity of water and consider that in the planning and development stage for long term sustainability.
- To ensure sustainability the user has to be charged a fee for services rendered.
- Water and sanitation development should be integrated with other departments as it does not work in isolation.
- Protect the environment throughout the developmental processes.

Policy principles are created to assist in decision making when implementing development processes to provide the best possible service while minimizing costs. The key focus of policy principles is to provide developmental services as per demand available and ensure that all citizens of the country have access to proper water and sanitation within a limited time frame.

For water and sanitation provision, the guidelines that should be taken into consideration are:

- The amount of water to be provided to each individual daily amounting to 25 liters per day.
- The distance that an individual has to travel to obtain services shouldn't be more than 200 meters to a water source.
- Availability of water and water pressure.
- Take into consideration that supplied services will be available over a long term period.
- The qualities of the water provided should be approved by the health department and only contain the minimal required chemicals.
- Implemented systems should be flexible enough to be able to be upgraded at a later stage.
- Buckets should never be considered as adequate toilets from either a health perspective or in terms of community acceptability.
- The local authority will be responsible for the implementation management of sanitation services.
- Individuals and households should be committed if the health and sanitation programme has to succeed.

The UN Millennium Development Goals, developed in September 2000, aim among other targets, to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation by the year 2015 (Moe and Rheingans, 2006: 41). In line with the goals, the countries whose whole policies were reviewed above came up with their national policies on the targets. The Peruvian, Namibian, Kenyan, South African and Zimbabwean policies, all promise equitable improvements of water and sanitation services (Edwards, Davis & Bellido, 2004: 23 -24); Ministry of Agriculture, Water & Forestry (2008: 3); Akech (2007: 17); White Paper(1994) and Munemo and Tom (2015: 63).

Interestingly, it is common that despite the glossy policies, issues of water and sanitation continue to bedevil countries. Moe and Rheingans (2006: 41) asserted that lack of access to improved drinking water is still a serious problem in Asia and that in Sub-Sahara Africa, only 36% of the population has accessed to basic sanitation. The researchers demonstrate how difficult from a programme and financial stand point it is to meet millennium development goal number seven on

water and sanitation (Moe and Rheingans, 2006: 41). Edwards, Davis & Bellido (2004:23) reported nine problems that Peru's National Sanitation Policies failed to address.

The city of Cape Town Water and Sanitation Service standard, preliminary Draft 2 (2008: 15) identifies five challenges affecting South Africa in promoting sustainable, affordable and efficient service delivery:

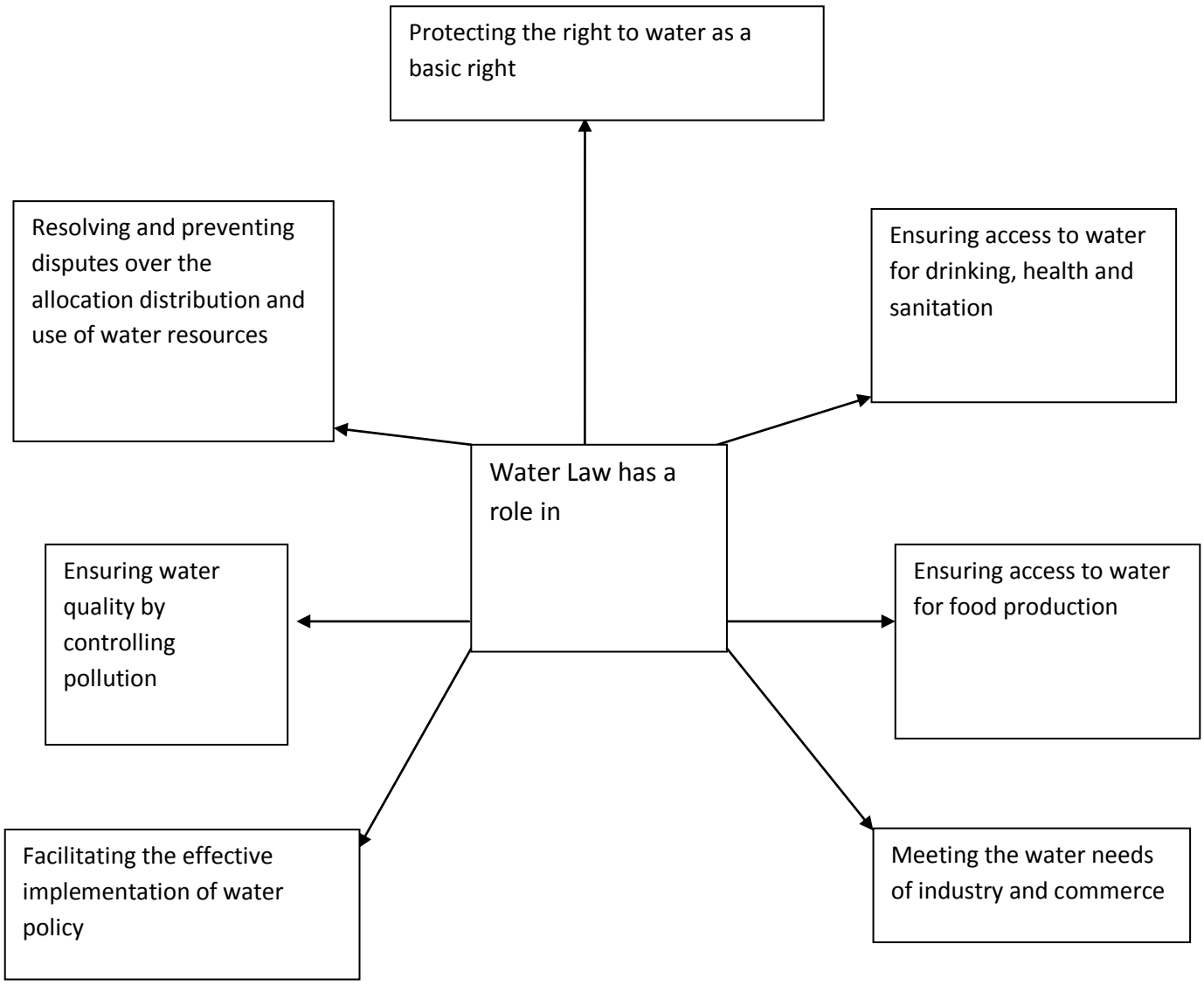
- Promoting the water service development planning process within the framework of the integrated development plan.
- Developing an appropriate regulatory framework that ensures the effective, efficient, and equitable and sustainable provision of at least basic sanitation services to all people living in South Africa, and cost-effective, reliable services to businesses and institutions.
- Finalizing of the institutional framework including the allocation of powers and functions between district municipalities and local municipalities.
- Rationalizing the financial framework in order to support sustainable service provision.
- Managing the transition of local government as the service provider and DWARF to become the supporter and regulator.

2.6 LAWS RELATING TO WATER AND SANITATION ROLES

Roles

Adhikary (2005: 2), identifies seven roles that water law plays. The seven roles are displayed in the figure below:

Figure 2.6.1. Seven roles of water laws



In the absence of the laws, important decisions and policies might not be implemented. The researcher is of the view that laws force performance or prohibits negative action, as well as guide individuals and entities. Adhikary (2005: 3), argues that the provision by the universal declaration of human rights 1948, that everyone has the right to life by implication meant that everyone had a right to water since there cannot be life without water. The UN committee on economic, social and cultural rights clarifies the nature of this right by stating that each person must be ensured to have access to sufficient, safe, accessible and affordable water for personal and domestic uses (Kiefer, *et at.,* 2008: 8). This explains why some policies like the South African Policy on water has the detail it has (South Africa, 1994: 14).

As signatory countries to the Millennium Development Goals (MDGs) strive to meet the goals and to implement various elements of their water and sanitation policies, they enacted legislation to support this cause (Adhikary, 2005: 4).

In 1992, a statement acknowledging the basic right of all human beings to have access to clean water and sanitation at an affordable price was adopted at the international Conference on water and environment (Adhikary, 2005: 4). Countries subscribing to this and related statements are bound to uphold the provisions by enacting National Legislation to bring them into effect (Adhikary, 2005: 4). The aim of this section is to explore national laws related to water and sanitation.

2.6.1 Laws related to water and sanitation

Different countries maintain different laws related to water and sanitation, however, intensive analysis reveal that most water and sanitation laws, has similar purposes and goals. The researcher has grouped these laws into three categories:

Provision and management

According to Kenya water Act 2002, Zimbabwe water act 1976, amended in 2000, and South Africa white paper on basic household, water laws ensure the provision, regulation, control, management and utilization of water and water resources.

Empowering local municipalities

Local municipalities are empowered in controlling water use activities at local government level according to the Zimbabwe national water act 1998, as cited in Mtisi (2011: 8). A similar purpose is mentioned in Peru's law number 23853, which aims at establishing responsibility for monitoring and provision of water and sanitation provision of local government. Kenya water act 2002, provides for decentralization of powers from national to regional and local government level. The South African water services Act 108 of 1997 assists municipalities to undertake their role as water services authorities and look at the interests of the consumer. The Act also governs how a municipality may return affluent and other waste water back to the water resources.

Giving advice on policy formulation

The Zimbabwean national authority Act 1998, advises ministers and boards on policy formulation and standards, thus establishing the legal framework for governing the structure and operation of the sanitation subsector and optimizing the provision of sanitation services. The South African national water Act 36 of 1998, legislates the way in which the water resource is protected, used, developed, conserved, managed and controlled.

2.7 GLOBAL CHALLENGES ON WATER AND SANITATION PROVISION

According to USAID (2013: 1), lives of many people can be changed by a safe drinking water supply; sanitation for health; management of water resources and improvement of water productivity. The challenges generally encountered by most countries include population, increased urbanization, watershed and environmental degradation, natural disasters, conflict, climate change and weak water governance (USAID, 2013: 3).

Un millennium Project as cited by Christine and Richard (2006: 43-45) stated that UNICEF and WHO estimate that 1.1 billion people lack access to improved water supplies and 2.6 billion people lack adequate basic sanitation. However in the new report by USAID (2013: 3), approximately 783 million people do not have access to safe drinking water and 2.5 billion lack access to improved sanitation. Christine and

Richard (2006: 43-45) further identify five major challenges to providing safe water sanitation on global basis and these are:

- Contamination of water and distribution system: The rising of standard of living and aging of infrastructure have made water distribution vulnerable to intrusion and contamination which may cause outbreak of water borne diseases. In the report by Crawn and Calderon (2001: 294) water borne outbreaks were associated with distribution system deficiencies due to age.
- Middle income and developing countries where maintenance of distributing systems are inadequate are seriously facing water quality in the distribution system.
- Water scarcity and the potential for water reuse and conservation.

Water is mostly essential for drinking, hygiene and food production. Hygiene challenges are noticeable where people have to walk long distances to fetch water, as the water collected does not meet the individual need for the day. USAID (2013: 3) attests that lack of access to safe water and sanitation is not only burdensome to women and girls who spend many hours of the day seeking water, but also put their safety at risk.

Good crop harvest depends of fresh water, therefore scarcity of water will threaten agricultural reproduction, human health and political stability in many parts of the world (Christine and Richard, 2006: 43-45). Due to scarcity of water, the United States and other countries have developed the great interest in portable and non-portable water re-use. The water is highly treated and used for irrigation and landscaping. It is also used to supplement surface and ground water sources which are used as drinking water supplies. Two ways of conserving water that are effective are:

- The use of low flush, dual flush and vacuum flush toilets instead of conventional flush toilets which account for 20-40% per capita water use in industrialized countries.
- Water collecting system for toilets flushing and landscaping in arid and semi-arid regions using native plants with low water according to Christine and Richard (2006: 43-45).

2.7.1 Challenges faced by South African municipalities in water and sanitation provision

South African municipalities are facing a number of challenges in the provision of services in local communities, according to the white paper on local government (1998). These challenges are: skewed settlement patterns, which are functionally insufficient and costly; extreme concentrations of taxable economic resources in formerly white areas which demand redistribution between and within local areas; huge backlogs in service infrastructure in historically underdeveloped areas which require municipal expenditure for in excess of the revenue currently available within the local government system; creating viable municipal institution for dense rural settlements close to the borders of former home lands areas which have large population with minimal access to services and little or no economy base; great partial separations and disparities believe towns and townships and urban sprawl which increase service provision and transport costs enormously; creating municipal institutions which recognize the linkages between urban and rural settlements; entrenched modes of decision making; administration and delivery inherited from the municipalities.

Thokozani (2009: 52-65) reported that there was an increase in the access to basic and higher levels of water supply at the beginning of 2005. 15 million people had access to water and 8.2 million had access to at least basic sanitation. The challenge still existed as 9 million people had no access to portable water within 200m of their homes and the figure was even higher for sanitation.

Constitutional requirements to ensure effective, equitable and sustainable delivery of a water supply to all have been another challenge, however, in an attempt to address the challenges, approaches such as the introduction of public-private partnerships have been used.

The three key stake holders in water supply and sanitation, namely the governments, the private sector and the municipalities, require a participatory approach to strengthen collaboration among themselves. Improved sustainable water supply

demands the need for financial viability of a service provider. Insufficient resource allocation from the public sector has been the main hindrance to the expansion of water services. The other challenges are discussed below:

2.7.1.1 Insufficient funds

According to Barry and Monhla (1999: 1), South Africa still has development challenges although the reconstruction and development programme (RDP) indicates some improvements in service delivery. However, enormous backlogs in basic services and higher levels of services to which people aspire, still exist. The contributing factor to this challenge is the struggle for most municipalities to raise sufficient funds to meet their capital expenditure needs.

2.7.1.2 Climate changes

Climate changes in South Africa have affected water and sanitation service delivery. Pophiwa and Simelani as cited by Chipo and Rick (2013: 168) state that “insufficient human and financial resources, liability to adopt technologically and politically driven climate change related to programmes, are some of the challenges faced by municipalities”. The climate change has caused drought in the country, thus leading to insufficient water which ultimately contribute to poor sanitation.

2.7.1.3 Implementation of governance policies

According to Marlene and Doreen (2010: 43) most municipalities are facing the challenge of the necessary capacity to implement government polices even where resources are available. As a result of this, delivery of services are not effective and individuals, households and communities are not assisted as per expectation.

Botes *et al*., (2007) in their research on service delivery, state that a series of local protests (also commonly referred to as service related protests) erupted in a number of municipalities in South Africa during 2004 and 2005. They further say that the reasons were systematic reasons, such as policy and practices of national and

provincial government; weak intergovernmental relations; unfunded mandates; inefficient municipal governance; inadequate municipal management; problems in respect of the proper functioning of local government and poor service delivery by municipalities.

2.8 TARRIF STRUCTURES

Tariff means fees or charges set by the council in respect of any function or service provided by the council with the aim of recovering the cost of reproduction (Midvaal Local Municipality, 2015: 3). According to Aragon and Bonifaz (2013: 6), the tariffs must cover the costs of providing the services to ensure financial sustainability of the enterprises along time and that the tariffs should allow users to get a sustained consumption of water and sanitation services. White paper (South Africa 1994: 21), further states that, “a sound policy is essential if user contributions to the cost of service provision and operation are to be collected in a rational and systematic way.”

Tariff system practices may differ from one local government or from one country to the other, though similarities may be noticed in certain circumstances. In this section, the researcher will explore and compare tariff structures as practiced in Peru, South Africa, Namibia and Zimbabwe.

2.8.1 The tariff scheme in Peru

Peru’s ratification process is complex. In this process, two types of consumers are considered i.e.: the residential consumers which include domestic and social consumers and the non-residential consumers which include commercial industries and public consumers. A system known as the block tariff is used and this system is based on the consumption level of the users (Aragon and Bonifaz, 2013: 13). The block is aimed at helping consumers that have the lowest level of consumption of water and sanitation services. The basis for determining tariff rates is as follows:

- In the first stage: the rate defined for the first block of domestic consumers can only be greater than the corresponding rate of the social category. The domestic category in this case is households and the social category is the social public programs, churches, etc.

- In the second stage, the rate for the first block of domestic consumers must be equal to the corresponding rate of the social category, and less to those applied to any other rate defined for other user categories.

2.8.2 Determination of tariff structure

The water and sanitation supplier enterprises first determine the average rate that should apply to the consumer of their services and then, taking into account its particular consumers' structure, defines their structure (Aragon and Bonifaz, 2013: 14).

2.8.3 Financial tariff funding

Non-residential consumers and domestic users that belong to the highest block of consumers subsidize the first block of domestic consumers.

It is also important to note that the Peru's tariff scheme seeks to focus the cross subsidy on those users who do not have enough purchasing power.

2.8.4 Tariff structure in South Africa

According to the White paper (South Africa, 1994: 21), the policy of the department of Water Affairs and Forestry is that "all consumers of portable water must contribute to the cost of their water supplies." It further states that "a social tariff covering only the operating expense will be charged in poor communities that cannot afford to pay both construction and operation costs." Water billing in South Africa has different dimensions. Most municipal councils use a two tier billing system for water. Municipal councils make use of the term kl (kilolitre where 1kl = 1000 litres). Water consumers are billed for the water that they consume or use. Consumers are also billed for the water that they discharge into the sewer system after it has been used. Most municipalities work on the assumption that 75% of the water used by a household is discharged into the sewer system. Water is billed on a sliding scale. Thus the more the customer use water, the higher the rate to be paid. Tariff costs are charged in the following ways:

- As a fixed monthly levy

- Per volume of water received or
- Direct payment by the community towards operation, fuelling and maintenance of the water supply.

In some areas the water has been supplied free of charge while in other areas, the poor have effectively been subsidizing the rich through inequitable tariff systems. It is also in the policy that the consumers must pay in order to contribute to the operating and maintenance costs. In cases where communities fail to do so, the government must cover the expenses.

2.8.5 Tariff structure in Namibia

Water is scarce in Namibia and hence the tariff structure is revolved around water conservation and how to reduce water wastage and this resulted in:

- Application of block tariffs for industrial, business, institutional and residential consumers,
- Differentiated tariffs for non domestic users such as business, industry and institutional users,
- Provision for transparent cross subsidies between users.

To meet the above considerations, in the urban areas, a fixed low rate is charged for a minimum lifeline volume of water, conditioned to increase the rate when consumption increased. The mining, industrial and commercial enterprises are charged for water usage to recover full financial and economic and capital cost. To ensure compliance with the national tariff policy determined by the minister responsible for water and sanitation and also that adjustment in tariffs or tariff structures are warranted and justified, the tariffs are revised by the water regulator.

According to the Ministry of Agriculture, Water & Forestry (2008: 10) for those who cannot not afford to pay after the revision of tariffs, assistance should be given from a social security vote, in a transparent manner. Basing on the argument that “Essential water supply and sanitation services should become available to all Namibians, (Ministry of Agriculture, Water & Forestry (2008: 10), temporary

termination of water supply to an entire authority or proclaimed settlement by a bulk supply service should not be used to enforce cost or debt recovery'' (Ministry of Agriculture, Water & Forestry, 2008: 10). Instead control measures such as trickle flow valves are used on individual residential and institutional offenders.

In the rural areas, a fixed low price for provision maintenance and monitoring of ecological sanitation, dry sanitation and small water borne recycling system has been set. Recovery for capital costs for different entities related to sanitation is obtained from the setting of the plots or from stand rentals. The waste water tariff is approved by the water regulator as determined by the minister responsible for water and sanitation.

2.8.6 Tariff structure in Zimbabwe

Zimbabwean Tariff structure caters for three categories namely: Domestic, Industrial and Commercial. All water and sanitation users pay a fixed charge depending on the category (Plummer and Nhemachema, 2001: 18), meaning that the ability to pay mostly depends on the user's financial viability. The tariff also includes a standing charge to cover fixed costs of the service (Plummer and Nhemachema, 2001: 10).

From the information above, in South Africa all consumers must pay as per policy. However, poor communities receive favourable considerations as they are only required to pay for operation and maintenance expenses. Moreover depending on the government's judgment, communities identified as very poor are exempted from paying and the government covers the expenses. Resulting from this provision, people who are capable of contributing towards rates have vacated their areas of residence to join poor areas so they too can enjoy free benefits. This act has affected the governments' operational and maintenance costs. Unlike South Africa, the Namibian government has divided the tariff system into two groups: one to cater for people in the urban areas and the other to cater for people residing in rural areas. In urban areas, the rate is increased when consumption has increased for domestic users. The mining, industrial and commercial enterprises are charged to recover full financial and capital costs. For those who cannot pay, assistance is given from a social security vote. In rural areas, a fixed low rate has been set and capital recovery is obtained from plot and stand rentals. In short, the tariff system in Namibia allows

for availability of water to all citizens. In Zimbabwe, all residents must pay for the services regardless of their status. In this regard, the system has disadvantaged the poor in the sense that, despite the low cost, affording regular monthly payments is a nightmare. In Peru, the tariffs are based on the consumption level of the users. Tariff structure is determined by the average rate calculated per block and the highest block subsidizes the lowest block. From the information above, the researcher is of the view that the tariff systems of the countries mentioned, except for Zimbabwe which does not exempt any category from paying, are similar as they all aim at allowing for availability and access of water to all citizens.

2.9 PUBLIC- PRIVATE PARTICIPATION IN WATER AND SANITATION

Reasons for the rise of PPPs: Traditionally, the provision of water and sanitation was thought to be the province of the government (Akech, 2007: 3).The government was thought to be the best institution to manage the provision of public goods. The experience of countries, especially Africa proved that the government was not the best entity for these services. Bayliss, cited in Akech, (2007: 3), identified eight problems affecting government run water systems. They are:

- High leakage levels
- Aging
- Poorly maintained infrastructure
- Weak billing
- Revenue collection mechanism
- Uneconomic tariff structure
- Heavy financial losses

The eight deficiencies above have influenced the interest in private sector participation in the management of water and sanitation (Akech, 2007: 3). A general upward growth in the number of countries with Public-Private Partnerships is noticeable. According to Saghir (2006: 12), the number grew from sixteen countries in 2000, to fifty-five in 2005. Over the same period, ten countries which had water

Public-Private Partnerships (PPP), reverted to public management (Saghir, 2000: 12). The current researcher reviewed the operations of Public – Private Partnerships for selected countries.

2.9.1 Public –Private Partnerships in Peru

4 Peru, a South American country with 196 provinces and 1832 districts, has 50 supplier enterprises serving 311 districts (Aragon and Bonifaz, 2013: 8). Of the 50 supplier enterprises, 48 are public and municipal owned. The remaining two, SEDAPAL and ATUSA are private companies (Aragon and Bonifaz, 2013: 9). The directors of the municipally owned companies are named by the mayors of the served municipalities. Public supplier enterprises once formed, must be enrolled in the register of the regulatory agency (Aragon and Bonifaz, 2013: 10). The registration makes it mandatory for the enterprise to uphold quantity and quality standards of water and sanitation service and to set service tariffs according to the regulatory agency prices (Aragon and Bonifaz, 2013: 11).

The operational challenges encountered by the enterprises was for the most part due to the need to report to several principals who had different and often divergent goals (Aragon and Bonifaz, 2013: 10)

2.9.2 Public –Private Partnership in Zimbabwe

In Zimbabwe, the move towards the engagement of private entities in the management of municipal water and sanitation took place in 1996 as part of the programme for economic and structural adjustment (Plummer and Nchemachema, 2007: 7). Rather than giving for full fledged privatization of water and sanitation services, the government encouraged municipalities to consider commercialization and contracting out services. Following a study on commercialization, the national government agreed on three approaches to implementation:

- A fast track approach through which local authorities continue at their own pace deciding on what to implement and how.

- A central coordinated approach to establish a task force set up by the ministry which centrally co-ordinates the work of local authorities and is particularly focused on more complex functions.

- The regulatory framework for private sector participation in the delivery of water and sanitation in Zimbabwe, at least in the early 2000's, was neither unfavourable nor enabling (Plummer and Nchemachema, 2001: 8).

2.9.3 Public–Private Partnership in Kenya

In Kenya, as in Zimbabwe, commercialization or corporatization was followed (Plummer and Nhemachena, 2001: 7, Akech, 2007: 12). Teo (2000) as cited in Akech (2007: 12), states that corporatization seek to increase organizational flexibility and financial viability of a specific service by giving it an existence, separate from the government.

2.9.4 Public-Private Partnership in South Africa

The White Paper (South Africa, 1994: 12), states that, for the Reconstruction and Development Programme to achieve its objectives, all sectors of the country's society will have to partner with the government. The private sector in South Africa could contribute in the following five ways:

- Capital investment
- Operation and maintenance
- Training and capacity building
- Organization development
- Financial and commercial services

One of the partnerships formed in South Africa after the Apartheid era in 1994, was uThukela water (pty). Following a regional water study commissioned by 15 local municipalities and two regional service councils, the rationale for the creation of multi-jurisdictional partnership was converted into a goal (Bright *et al*., 2008: 10). The researchers found the following problems as among push factors towards forming uThukela water (pty):

- Highly fragmented and uneven set of service arrangements,
- Inability of the fragmented system to respond to massive backlogs and inequalities in service provision,
- The district concerned: Winterton, Bergiville, Ladysmith/Ezakheni, Newcastle/ Madadeni, Dundee and Greytown, were clustered around the Tugela river catchment (Bright *et al.*, 2008: 10). It must be noted that today the participant municipalities have been reduced to three. They are Umzinyathi, Newcastle and Amajuba,
- The needs to establish a water board similar to the Umgeni water board.

The researchers found further problems which are:

- Skills shortages
- Fragmentation which did not allow for economies of scale (Bright *et al.*, 2008: 11).

Some of the conclusions they made are that most rural people did not have access to water services at the required RDP levels and only an average of 15 liters of portable water was available with the following average walking distances to water points:

- 0 to 200m - 16%
- 201 to 400 - 19%
- 401 to 600 - 19%
- 601 to 800 - 11%
- 801 to 1000 – 08%
- Above 1000 – 20%

The researchers gave a detailed analysis of the state of service delivery which was used to justify the formation of a jointly owned private partnership (Bright *et al.,* 2008: 11-13).

Bright *et al.,* (2008: 19-22) observed that UTW continued to struggle to demonstrate consistent and significant performance improvement. The organization is facing governance issues which threaten its future existence (Bright *et al*., 2008: 23). Bright *et al.,* (2008: 25) is of the view that too much was placed on the establishment of the services provider, but the capacity of the authorities to oversee establishment or regulate agreements was not sufficiently developed. Government legislative process was seen as inflexible with regard to managing and implementing hybrid partnership arrangements.

In conclusion, public – private partnership arrangements have the potential to reduce cost of service delivery by creating economies of scale. Furthermore, private organizations are likely to be more efficient than government entities like municipalities. However, from the experiences of Peru, supplier enterprises may end up being accountable to several principles to their demise (Aragon and Bonifaz, 2013: 10). The Zimbabwean case on the other hand, shows that in the absence of enabling institutional arrangements, private sector organizations may face impediments as they endeavour to effectively render services. The South African example, typified by uThukhela Water (pty)Ltd, shows that the same problems which existed before its formation, prevailed after it was in operation. This was mainly because the company was rushed into being, before steps could be taken.

2.10 COMMUNITY PARTICIPATION IN WATER AND SANITATION IN DIFFERENT COUNTRIES

The researcher believes that community involvement is essential for the implementation of progammes and projects in any given community, as it will encourage community, as well as individual sense of ownership. As a result, the rate of vandalism and theft in communities will reduce. Community involvement in water and sanitation implies that the users of the water supply, hygiene and sanitation services, participate to project a cycle by assuming a responsibility, exerting an authority and a control over the setting up of the services (Tandia, 2006: 1).

Naidoo (2011: 1) encourages that local government should strengthen customer participation in service related processes. He further argues that customer dissatisfaction would be transformed into satisfaction before becoming a formal claim

if they are properly and adequately serviced by prompt responses to their queries and concerns.

Abrahams (1996) as cited by Carter, Tyrrel & Howsam (1999: 10) states that "Conventional wisdom is that without community participation, there is little likelihood of sustainability being realized. According to Tandia (2006: 1), community participation is essential for the implementation of programmes and projects and also a fundamental condition to attract projects and programmes". The author further states that community involvement is considered "as a method capable of solving problems of maintenance of water services that some of the countries meet like inadequate access to water, inadequate maintenance and lack of public funds".

2.10.1 Community participation in Peru

In Peru, community members choose community representatives to be in the services management committee commonly known as the JASS organization. The purpose of this committee is to manage, operate and maintain water and sanitation services of one or more rural population (Aragon and BonifazI; 2013: 11). A group of consumers also form part of the water and sanitation sector. Involving potential consumers accommodates different skills, interests and ideas that, if well utilized, will help in developing rural areas.

2.10.2 Community involvement in Milan

In Milan, there is no existing specific framework for a transparent user participation in water and sanitation services, but in 1912, MM launched an internet website which aimed at increasing and facilitating user's participation (Reghizzi, 2013: 49). The website opened doors to every community member who was interested and willing to get involved in community participation.

2.10.3 Community involvement in South Africa

The constitution of South Africa (1996 chapter 7: section 151(e)) enshrines the principle of public participation in all spheres of government, as it stated "Obliges municipalities to encourage the involvement of the communities and community organizations in local government".

According to Roefs and Atkinson (2010: 43), one of the Hallmarks of the concept of developmental local government is that the local government needs to work with local citizens and partners. De Visser (2009: 18) further attests that the involvement of communities in municipal affairs is not only a key objective of local government, but also one of the main reasons for South Africa's choice of developmental local government. The white paper on local government (1998: section 3.3) has identified four levels required for active participation from citizens, as follows:

- Participation is required as citizens who express, via different stakeholder associations, their views before and after policy development process in order to ensure that policies reflect community preferences as far as possible.
- Participation as consumers and end users who expect value for money, affordable services and courteous and responsive service.
- Participation as organized partners involved in the mobilization of resources for development via for-profit, business, on governmental organizations and community based institutions.
- Participating as voters who ensure maximum democratic accountability of the elected political leadership for the policies they are empowered to promote.

Though the researcher has not found adequate literature on this topic, the researcher believes that the information collected testifies that, for the municipalities and communities to reap abundant benefits from the services rendered by municipalities, community members need to be fully involved in decision making, actual hands-on in running projects, supervision and providing feedbacks to municipalities on new community developments. Without community involvement, no sense of ownership and responsibility will exist among community members and this will result in mismanagement and careless handling of equipment and property.

2.11 COMMUNITY PERCEPTIONS AND EXPECTATIONS IN WATER AND SANITATION PROVISION

Lewis (1983) as cited in Parasuram *et al*., (1991: 39), states that it is imperative that before any services are provided, customer's expectations should be put into

consideration. According to the South African constitution, the mandate of a municipality is to ensure service deliveries through satisfying citizens' basic needs. Therefore understanding of the customer's expectations and perceptions is vital for any service organization's success (Moletsane, Deklerk & Bevan- Dye, 2014: 281).

In the research done by Moletsane (2012: 106) a questionnaire was used as a research instrument in the collection of data. The demographical information, customer's experience of service quality and service delivery and statements relating to customers' perceptions were used as a method of collecting data. A lirket scale of strongly agree, agree, neither agree or disagree and strongly disagree, with a rating of 1-5, was used. For statistical analysis, reliability, validity, factor descriptive and T-Test were used. A convenience sample of 400 residents was done. From this sample, 367 questionnaires were received back meaning there was a 92% response rate. The research concluded that the community had a negative perception of the quality of service delivered by the municipality and that in all the quality dimensions, customer expectations differed from customer perceptions with regard to service quality delivered by the municipality.

In another study by Munhurrum, Lukea-Bhiwajee & Naidoo (2010: 43), SERVQUAL instrument was used to measure the quality of customer service in order to demonstrate the gap between the customers' expectations and expectations. The research instruments and methodologies used are the same as used by Moletsane. The sample size of 250 was targeted and 202 questionnaires were used for data, thus giving 81% response. To analyze data, the researchers used the statistical packages for the social sciences, version 14.0 descriptive analysis was used to measure respondents' expectations and perception score, paired t-test was carried out to test the significance between the two means of expectations and perceptions and finally a gap analysis was performed to compare customers' expectations with their perceptions of service delivery.

2.12 STRATEGIC PLANNING

It goes without saying that where challenges exist, strategic plans must be set and employed to curb the situation. As stated earlier, many municipalities have

encountered numerous challenges in water supply and sanitation provision and therefore have strategic plans to alleviate these challenges.

According to Pirtea, Nicolescu & Botoc (2009: 953), strategic planning is a method a company and its individuals work units use, to define their goals and objectives. As a way of moving forward, strategic planning becomes an essential tool for guiding and evaluating, day to day decisions. An effective strategy should allow for flexibility so that the direction of the organization can be adapted by changing circumstances. Adaptation of direction will make it possible for the organization to achieve the determined goals and objectives (Mbaabu, 2014: 1).

Water and sanitation departments in most, if not all municipalities, have developed strategic plans with the aim of improving their water and sanitation services to satisfy customer's expectations, as well as to create good stake holder relationship. In this section, the researcher will discuss strategic plans in general that have been implemented in three different countries, namely, South Africa, India and Rwanda.

The Department of water affairs in South Africa (2011: 39-40) identified areas that posed challenges in water supply and sanitation as sustainable and equitable water resource management; balance and water supply and demand; water efficiency; management of water resources and water use efficiency.

2.12.1 Strategies

To promote sustainable and equitable water resource management, the department revised the pricing strategy; created water for growth and development framework; amended water related issues; revised the national water strategy; developed climate change strategy; developed institutional realignment frame; developed re-use and desalination strategies and finally established the independent water economic regulators.

To ensure balance of water supply and demand, the department reconciled water requirements against available water resources and identified the number of significant river systems, meeting ecological water requirements.

To improve water use efficiency, the number of significant river systems meeting ecological targets for key sectors were identified.

To improve the management of the water resources, operation rules for systems to regulate water availability and management of drought risks were established; information on resources providing water were monitored and finally, water management systems were established.

In India, the department of drinking water and sanitation have experienced the following challenges: providing high levels of water service with sustainable sources and systems that provide good quality water to a growing population; deteriorating of source sustainability resulting from over extraction of underground water due to large irrigation demands; water contamination of Arsenic, fluoride and bacteriological contamination due to lack of sanitation which kills hundreds of children every year; poor operation and maintenance resulting in deterioration in the quality of water services; emerging climate change; poor inter-sector coordination; poor professional support to general public and inadequate source of water in terms of quantity and quality in rural villages are a big challenge in water supply and sanitation in India rural (Wankade, Balakrishnan & Vishnu, 2014: 13-20).

The department considered the following strategies to combat the above challenges: Enable participatory planning and implementation of schemes and source sustainability, which include conjunctive use of rain water, ground water and surface water; provision of bulk water supply as needed at village, district and state levels.

To manage water quantity, a water safety plan has been implemented at village level to prevent contamination before it happens. The quality of water is monitored and tested. Water from contaminated sources is treated with cost effective appropriate technologies. Legal, institutional and regulatory measures are enforced to make water standards mandatory and enforceable in a phase manner.

For sustainable service delivery, operations and maintenance measures have been implemented at village level to ensure skill and finances for operation and maintenance, replacement, expansion and modernization; states are incentivized to

take measures for decentralizing functions, funds and functionalities using a management index.

To strengthen decentralized governance, institutional roles and responsibilities to support water security planning and implementation have been enforced; development programmes have been converged and water security plans have been put in place.

To build professional capacity, training to capacitate new roles and responsibilities has been introduced; technical support has been given; outsourcing for hand pump mechanics and piped water supply operators has been considered (Department of drinking water and sanitation, 2011: 7-12)

In Rwanda, the water and sanitation strategic plan mainly considered the following:

Regional integration: Rwanda shares water resources with neighbouring countries, hence strategies must be established to deal with shared resources.

Capacity building: the sector faces an ever growing challenge of meeting the demand of a rapidly growing population.

Gender and family: equal participation of men and women is lacking.

Environmental, climate and disaster management: Climate change has a significant effect on the environment and subsequently on the quality and availability of water resources.

Disability and social inclusion: water services should be improved for people with disabilities and these people must be involved in water and sanitation decisions that affect them.

HIV/AIDS and non-communicable diseases: the department intends to use projects and community programs to contribute to the prevention of HIV/AIDS and non-communicable diseases.

In an attempt to solve the above challenges within the period 2013/2014 - 2017/18, the department identified the following strategies: establishment of water resources; a master plan for each district; construction of new water supply systems in rural

areas that fully meet national demand; capacity building for districts to plan, design and manage Watsan infrastructure; rehabilitation of existing non functional water systems; construction of new water supply systems in urban areas that fully meet national demand; annual advocacy and sanitation campaigns on sanitation and hygiene behaviour at community and institutional level; improved sanitation facilities in schools, health centres and all other places; collective off sight sanitation models for rural and urban areas to be developed; sensitization campaigns for communities to construct rain water harvesting and management facilities to be developed; integrated solid waste management systems to be disseminated and implemented 100% by private sector; capacity building programmes for Watsan sector to be developed and implemented 100%; capacity building to manage water and sanitation infrastructure, resources and systems to have been completed and finally training of 800 technicians and 235 senior professionals (ministry of infrastructure, water and sanitation sector, 2013 : 20-25).

2.13 CONCLUSION

Various topics pertaining to water supply and sanitation provision have been discussed in this chapter. According to the literature review, different government systems in different countries have developed different structures to ensure access to quality water supply and hygienic sanitation to all citizens in their countries. Policies and laws have been drafted, private sectors have been employed, and service users have also been involved, all with one main objective of ensuring accessibility to good quality water supply and hygienic sanitation. Despite all these efforts, government's water and sanitation sectors have encountered numerous challenges. Short and long term strategic plans have been set to help solve existing challenges but in most situations, very little have been achieved. Most people, especially those living in rural areas, are still exposed to poor quality water from rivers. Health problems related to contaminated water and poor sanitation facilities still prevail. Form the researcher's point of view, service providers and service users still have a lot to do in order to achieve the intended aims, objectives and goals in the provision of good quality water accessibility and hygienic sanitation by all citizens in given countries.

CHAPTER 3

RESEARCH DESIGN

3.1 INTRODUCTION

According to McMillan and Schumacher (2009: 20), a research design describes the procedures for conducting the study, which includes how the research is set up, what happens to the subjects and what methods of data collection are used. The key features to be used in a research design are methodology, collection and assignment of samples, collection and analysis of data, along with procedures and instruments to be used.

The purpose of this chapter is to outline the conditions for collecting and analyzing data in a manner that will combine relevance to the research purpose ultimately, accomplishing the goals of the research project. The aim will be to align the pursuit of the research goal with the practical consideration and limitations of the project (Mouton and Marais, 2011: 32).

In the sections below, the researcher will discuss the research design, study areas, sampling, and methods for data collection in detail. The researcher will further discuss the sampling techniques, followed by data analysis and limitations of the study. Finally, the researcher will conclude the chapter.

3.2 RESEARCH DESIGN

This study utilized a qualitative approach. More specifically, a case study design was used. A case study is an empirical inquiry which investigates a contemporary phenomenon within a real life context when the boundaries between the phenomenon and the context are not clearly evident and in which multiple sources are used (Yin, 2011: 4). The sources of data collection may include interviews, documents, and structured surveys. The researcher used a case study to explore the challenges the Amajuba district municipality is currently encountering in the provision of water supply and sanitation, and also to determine the impact of water supply and sanitation provision, has on the communities under study. Leedy and Ormrod (2010: 35) identify the qualitative method as a method that focuses on a phenomenon that

occur in a natural setting and that these phenomenon are studied in all their complexity. Green (1999: 46-47), attests that by stating that “many qualitative studies focus on behavior in its natural or everyday context and consider how family, community and cultural factors impact beliefs and behavior.” Fossey *et al.,* (2002: 717-732) consider qualitative research as aiming to address concerns with developing an understanding of the meaning and experience of the dimensions of human lives and social worlds. Wagner, Kawulich & Garner (2012: 126) argue that the qualitative method is not only concerned with understanding the concerns of the involved, but also creates a coherent story “as it seen through the eyes of those who are part of the story” which gives a clear picture of their experiences and actions in the situation.

In the choice of the research approach, the researcher considered the research questions and assessed them as to whether they would assist in discovering new insights into the topic; explain or seek to understand the reason why the water and sanitation situation is the way it is in the two communities in ward 1; explore processes and systems that will be best understood through interaction with those involved in the process and to describe the lived experiences of participants in the given situation (Wagner *et al.,* 2012: 125). Having considered the above principles, the researcher opted to use the qualitative method as a main preference to use in the study.

The commonly used qualitative methods for data collection include interviews, observations and document analysis. The researcher opted to use in-depth interviews, focus group interviews, telephone interviews, observations and document analysis. By using these methods, the researcher aimed at drawing meanings that could explain the phenomenon from the target groups that is: the municipality, water and sanitation department sector and the affected communities. The information and meanings extracted from the data collected, were formulated into valuable findings. The researcher also used an interview questionnaire to collect data using structured interviews.

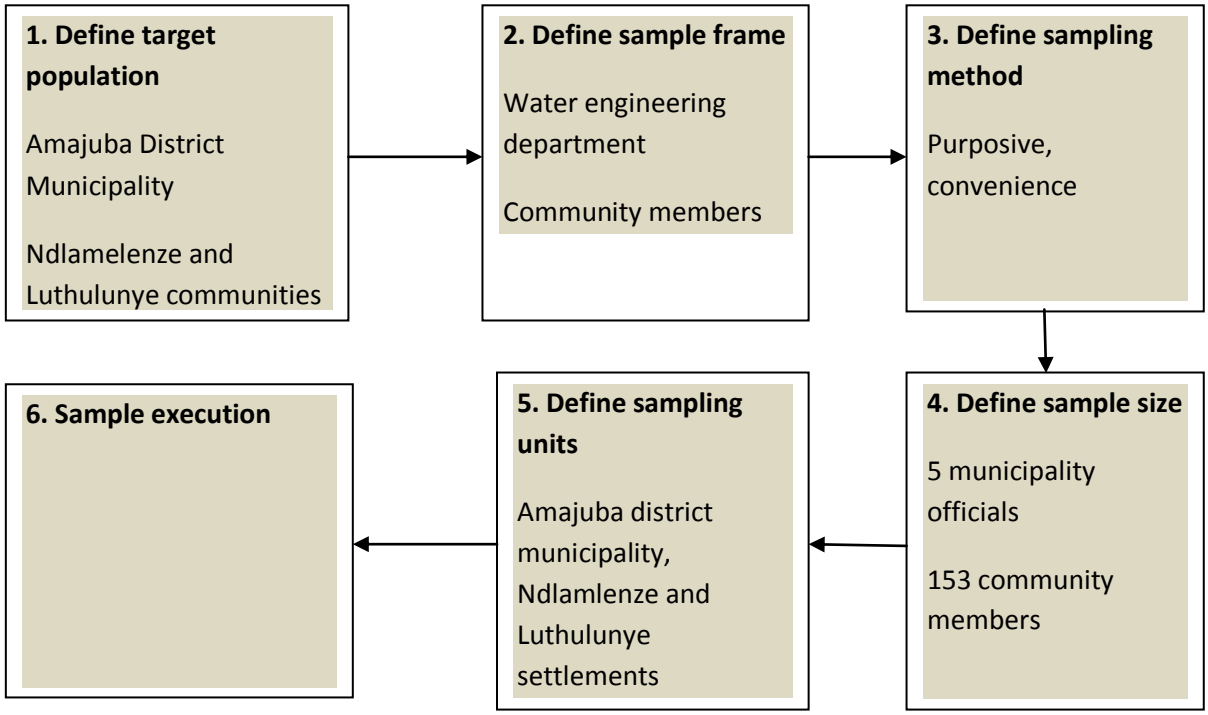
3.3 STUDY AREAS

The researcher considered three areas for the study. First was the Amajuba district municipality which is responsible for water supply and sanitation provision in ward one within the Emadlangeni Local Municipality. The second area was Ndlamlenze settlement which is a rural area in ward 1 within Emadlangeni municipality. The third one is Luthulunye, a rural area also within the Emadlangeni municipality. The general welfare of these two settlements is hampered by poverty and poor water supply and unhygienic sanitation (Emadlangeni Local Municipality, 2014: 77).

3.4 SAMPLING

Sampling is the process of selecting units from a population of interest so that by studying the sample, the researcher may generalize the results back to the population from which they were chosen. The selected units could be people or organizations. A sample can be defined as a segment of the population selected for investigation (Bryman and Bell, 2003: 182). Malhotra (2010: 214) further defines a sample size as the number of elements to be included in the study. McMillan and Schumacher (2010: 140) emphasize the significance of a sample and states that “the nature of the sample is critical in determining statistical significance in interpreting the meaning of the results and in generalizing the conclusions”. A sample could also be defined a subset of a population selected for measurement, observation or questioning to provide statistical information about the population. Maree (2014: 79) confirms sampling as process used to select a portion of the population for study. According to Maree (2014: 79) “Sampling refers to the process used to select a portion of the population for study”.

Figure 3.4.1 Steps in the sample design



The researcher identified the target population relevant to this study as the Amajuba municipality staff working in the Engineering department, water and sanitation sector. Inclusive in this population were the administrators and general workers. This population was targeted because of their knowledge and experience in the operations in water and sanitation sector. The other population was the ward 1 residents of Ndlamlenze and Luthilunye. The choice of the target group was made such that all the distinctive aspects about water supply and sanitation challenges would be extracted. The target populations were interviewed on the following categories:

3.4.2 Target population

Category	Group	Number of people
1	Amajuba District Municipality	5
2	Ndlamlenze committee members	12
3	Ndlamlenze community members	12
4	Luthulunye community members	12
5	Ndlamlenze and Luthulunye for questionnaires	129

From the researcher's point of view, the choice of the target group was capable of providing all the necessary information to provide the best answers to the research problem.

In the selection of the sample, it is imperative that the unit of analysis for sampling is that which can shed optimal light on the issue that is being investigated (Henning, 2013: 71). The main objective of sampling is to find people who will travel with the researcher on the journey to discovering meaningful knowledge and useful data that would best address the research questions.

Considering the topic under investigation, the researcher opted to use people within the water and sanitation department in the Amajuba district municipality as the unit of analysis for sampling. The selection of Amajuba municipality officials was very important to the researcher to gain knowledge on the problems, experiences and challenges they encounter in the provision of water and sanitation, especially to the two communities conversant with water and sanitation issues. The researcher also

considered using the community headmen of the two communities as they are the overseers' responsible for communicating problems and concerns of the community members to the municipality through counsellors. Ordinary members, including young girls and women, who experienced and lived the effects of water supply and sanitation provision, were also considered as samples.

The researcher used the convenience sampling to select samples at Ndlamlenze and Luthulunye. Hardon, Hodgin & Fresle (2004:58) define convenience sampling as "a method in which for convenience sake the study units that happen to be available at the time of data collection are selected in the sample."The researcher identified groups of people that were most involved and affected. In the sample, the researcher targeted all ages and categorized them as; younger than 20, 20-29, 30-39, 40-49, 50-59 and 60 and above. This sampling method applied to the respondents to the questionnaire.

3.4.3 Methods and techniques

Henning (2013: 50) argued that interviews are becoming common and a way of life in the modern society and that they consider the individual's perspective in the wellbeing of the society. The researcher conducted the 5 interviews as stated in section 3.4.2. The researcher secured an appointment for all interview sessions based on the convenient time proposed.

Wagner *et al.,* (2012: 62) argue that ethical considerations are the bases of security of the researcher. This implied that the participants were to be well taken care of, both physically and emotionally. The researcher's main concern in relation to the interviews, included understanding of the culture of the Amajuba district municipality and the two communities under study; confidentiality, implying the researcher knew the identities of the participants but could not tell; anonymity, meaning the researcher didn't have to know the identity of the participants; informed consent, meaning the participant had the right to agree or disagree to be part of the interview process; avoidance of potential harm to participants in their participation in the research study.

Of the mentioned interview categories, two categories were particular in following their culture for entrance to the field. In addition, the researcher maintained contact

with the Amajuba district municipality, Ndlamlenze and Luthulunye, in order to get key informants who explained complex information and also to introduce the researcher to potential participants (Wagner *et al.,* 2012: 71)

For the purpose of ensuring the greatest benefit from the research, all interview sessions started by giving a brief introduction to the researcher and the purpose for conducting the research. Having being introduced, the researcher took lead of the process (Henning, 2013: 66). A guide to the interview session was presented. In order to create a free atmosphere and to allow participants and respondents to share their best knowledge and insights about the phenomenon, the researcher sought permission in each research session to record the proceedings on the template prepared and also to use a recording device. Details of the interview were written into interview notes to capture the essence of the interview sessions.

According to Wagner *et al*., (2012: 126), qualitative research is recommended for its rich and deep explorations and descriptions of data, which comes as result of the involvement of the researcher being a research instrument in data collection, analysis and interpretation. The researcher actively engaged the participants in question and answer sessions, asking open ended questions and recorded the answers on the template prepared for the purpose. The aim for this process was to evoke community experiences on water and sanitation provision and also the challenges encountered by the municipality in water supply and sanitation provision to the two communities.

According to the researcher's point of view, different people within the social setting constructed different views about the phenomenon; people in Luthulunye and Ndlamlenze had different views which were relevant to the research problem. To draw relevant data, the researcher explored and interpreted the reality of poor water supply and sanitation provision and this helped in the construction of new knowledge.

The researcher conducted a municipal and community study, using interviews which included open ended, structured, focus and telephone. Interviews served to establish primary data. They also served to provide in-depth, face to face conversations between researcher and participants. This process assisted in the provision of

detailed material for both qualitative and quantitative analysis on water supply and sanitation provision in Ndlamlenze and Luthulunye.

3.4.4 Sampling approach

Sampling approaches such as theoretical, snowball, convenience, theoretical and purposive, all have one denominator of taking a journey with the researcher to find answers to the research questions. In this study, the researcher opted for purposive sampling. According to Maree (2014: 79), it is essential that rich information to answer research questions should be obtained from the selected sample. Leedy and Ormrod (2010: 147) support this statement when they state that “purposive sampling is about the researcher selecting those individuals or objects that will yield the most information about the topic under investigation”. In other words purposive sampling will only include participants who represent a broad range of perspectives, but also people who have experienced the effect and impact of the existing problem.

3.4.5 Field operations

The research was conducted over a period of three months. To accommodate both work and studies, the researcher planned a schedule that would not conflict much with work requirements and as a result, interviews and observations were conducted during weekends, school holidays and one school day. Telephone interviews were mainly conducted in the evenings.

Before the researcher embarked on any research procedures, the municipal manager for Amajuba municipality was contacted for the purpose of seeking and obtaining permission in writing to conduct the study. Upon obtaining the permission, the researcher was introduced to the Amajuba municipality’s engineering, water and sanitation sector for the purpose of familiarization. The chairperson of the team then appointed a person who would introduce the researcher to the chiefs/headmen of Ndlamlenze and Luthulunye communities, in order to get permission to conduct research in these two communities. Having obtained permission from both Amajuba municipality and chiefs for Ndlamlenze and Luthulunye, interviewing procedures commenced. Having obtained permission, the researcher made arrangements with the gate keeper of the municipality as to when to conduct the research. Face to face,

as well as telephone interviews were conducted. The researcher made use of note taking as well as recording (voice recording).

Appointments for interviews were organized for both the Engineering department and the committee members for ward one. Arrangements with the help of the gate keeper were made to conduct interviews with five people in the water and sanitation sector. At that time, none of the members were present due to their busy schedule. Other arrangements were made that allowed the evaluator to interview two of the five. Arrangements were made to interview the other three telephonically. To conduct interviews and observations in the two rural communities, the researcher was introduced to the headmen of the two communities first and thereafter arrangements were made between the researcher and the headmen to agree on the dates of the interviews. Ethical consideration was of paramount concern for the researcher, therefore the researcher informed the participants that their identities will be safeguarded by the researcher, not having to know any of the participant's identities and keeping whatever information received from them confidential (Wagner *et al.,* 2012: 70).

In the introductory part of the interview sessions, the researcher was introduced and the purpose for conducting such an interview was explained. To ensure maximum participation by the potential participants, the interview questions were interpreted in the local language (Isizulu). Instructions on how to carry out the whole process were given and the estimated time for completion was also estimated.

A relaxed and welcoming atmosphere was created by providing a guide on how to go about the interview procedures. This enabled the respondents to feel free to share their best insights about the phenomenon. Before commencing the interview, the researcher sought permission to record proceedings, using a prepared record sheet and a voice recording device. The researcher also developed rapport with the interviewees and won their trust. The interviewees gave the interrogator their informed consent, meaning that they agreed to participate without being forced and that they were fully informed about the purpose, duration, methods and potential uses of the research (Wagner *et al*., 2012: 64). The interviewer did not play judge but listened carefully and understood the perceptions of the interviewees. The

interviewer was also careful to observe the non-verbal communication of participants, which suggested particular emotions attached to the answer.

To collect data using the structured interview, the researcher, with the assistance of two trained field workers, interviewed each respondent and recorded the answers on the check list. This procedure took a maximum of one month. After collecting data, the researcher thanked the participants for their involvement and positive response. This was done in order to maintain and preserve the ongoing goodwill for future researchers.

3.4.6 Sample plan execution

The researcher used the operation procedure stated in the above paragraph to execute the sample plan.

In order to carry out the research, permission was obtained from the Amajuba District municipal manager in writing. This permission allowed the researcher to carry out research on the municipality grounds. Further permission was obtained from the ward one chiefs to conduct research in this ward. Having obtained permission, the researcher made arrangements with the gate keeper of the municipality as to when to conduct the research. Face to face, as well as telephone interviews, were conducted. The researcher made use of note taking, as well as recording (voice recording). Questionnaires were used throughout the entire research period and the targeted areas were schools and selected homes. The researcher explained the purpose of the study and questionnaire instructions. The participants and respondents were also assured that their responses would be anonymous.

The final data collected was then analyzed using the following steps:

- Arranging specific facts in logical order (coding).
- Identifying categories to help cluster the data into meaningful groups.
- Examining specific documents, occurrences and other bits of data for specific meanings.
- Scrutinizing data for themes and patterns.

- Synthesizing and generalizing.

The above data was presented in form of tables.

3.5 DATA COLLECTION

The researcher trained three people as field workers to assist in collecting data. They were all male. These field workers underwent two days of training by the researcher. The purpose of the research in general was explained and guidance was given on how to carry out the research. After the training the assistants and the researcher visited Ndlamlenze and Luthulunye to familiarize themselves with the area. Thereafter they commenced the field work which lasted several days, taking about 10- 15 minutes per person and 45-60 minutes for focus interviews. Among the challenges experienced was the distance between households. Households are very far apart from each other and this demanded a lot of walking, leaving the field workers very exhausted. Some households had no people at the time of the visit and that compelled the field workers to interview people that were conveniently available.

The types of data required for the study were as follows: Challenges that the Amajuba district municipality are encountering in water provision and sanitation in ward one, with special reference to Ndlamlenze and Luthulunye; data identifying the strategies implemented by the municipality to alleviate the water and sanitation situation; demographical data; community expectations and perceptions on water and sanitation provision from the Amajuba municipality; the state of water supply and sanitation in ward one and the impact it has on the residents and the water sources and types of toilets in use.

Four groups were selected for the study, i.e. the officials in the Engineering Department at the Amajuba District Municipality in Madadeni, some residents in ward 1, specifically the Ndlamlenze and Luthilunye committee members and some community members. The reasons for selecting these groups are that:

1. The Engineering Department at the Amajuba Municipality which is in charge of water and sanitation services for eMadlangeni Municipality.

2. Ward one, according to eMadlangeni Local Municipality IDP (2014: 77) is the biggest and most deprived ward in the eMadlangeni Municipality.

For the researcher to carry out the research, permission was obtained from the Municipal Manager of the Amajuba District, thereafter, interviews with the Engineering Department of the Amajuba District and eMadlangeni representatives were conducted. The researcher then spent a day and a half in each settlement to observe the way of living in connection with water and sanitation and thereafter conducted interviews with the ward committees which comprised the headmen and committee members. Individual community members were also interviewed. Questionnaires were hand-delivered and interviewers asked the interview questions and recorded the responses on spaces provided on the interview schedule.

According to Leedy and Ormrod (2010: 141), the process of data collection requires that the researcher not only "listens closely as the participants describe their everyday experiences," but also be "alert for meaningful cues in participants' expressions, questions and occasional sidewalks." For this reason, the researcher applied listening and understanding skills to draw meaning from the phenomenon and as such, formed the main instrument for data collection. In addition, the following data collection method were used:

3.5.1 Interviews

An interview is one of the tools used to collect data for the study. According to Maree (2014: 87), an interview is a two way conversation in which the interviewer asks the participant questions to collect data and to learn the ideas, beliefs, views, opinions and behaviours of the participant. Wagner *et al.,* (2012: 133) further added that the conversation is not only two way, but also a purposive interactive, aiming at obtaining as much data as possible to help the researcher see the world in the eyes of the participant. Henning (2013: 152) attests that interview data brings to the interviewers' attention to what individuals think, feel, do and what they have to say about a given topic.

Lancaster (2005: 133) views the basic interview as one of the most important techniques for collection data. Asking and getting answers is regarded and

acknowledged as being one of the most effective methods of collecting data in the social sciences. Flick (2006: 160) adds that the purpose of interview “is to reveal existing knowledge in a way that can be expressed in the form of answers and so become accessible to interpretation”. According to the Merriam (1998: 71), the inquirer intends “to obtain a special kind of information” and investigates for himself what is going on in the respondents mind, therefore qualifying what Flick states above: the researcher utilized a focus, individual, as well as telephone interviews.

According to Henning (2013: 53), the researcher’s role in the interview is to encourage the respondent to speak freely, at the same time maintaining trust and empathy while also controlling the process.

The main questions for the interview sessions were prepared well in advance to cover the most important part of the research problem. All questions were open ended to allow and encourage the participants to be free to share all the knowledge they had concerning their experiences. The research questions were translated into six questions for the Amajuba district municipality members and another six questions for Ndlamlenze and Luthulunye communities. To facilitate easy communication and understanding, the interview questions were translated into the local language.

The aim and objectives of the research, the methods of collection data and analysis, were considered when preparing the interview questions. The researcher formulated an interview template which assisted in recording all the information that was shared by the interviewees. In addition to recording, a voice recorder was used for accuracy purposes. During the interviews, the researcher listened attentively to understand what the interviewee had to say. This made it possible for the researcher to add more questions, relevant to the research question.

The researcher opted to use in-depth, focus group and telephone interviews. In-depth interviews involve conducting intensive interviewing with a small number of respondents to explore their ideas, program or situation and in-depth aims at capturing rich descriptive data about people’s behaviour, attitudes and perceptions. To carry out in-depth interviews, the researcher had to create rapport with the interviewees. Body language was also used to add a high level of understanding to

the answers and more listening than talking was done. The interview was guided by a discussion guide. The researcher used in-depth interviews at Luthulunye and Ndlamlenze communities, because the households are scattered and it wasn't possible to arrange for a central location to hold this activity. It was also applied at the Amajuba municipality, because participants could not meet at the appointed time, due to differences in their individual appointment schedules

A focus group is a group discussion on a particular topic organized for research purposes (Gill *et al*., 2008: 293). The researcher conducted a focus group interview in Ndlamlenze community. The headmen of the sub communities were at the court on the agreed day of the interviews. The discussion was directed to the maximum of twelve people for the purpose of collecting in-depth qualitative data about the headmen's perception, attitudes and experiences on water and sanitation provision from the Amajuba municipality. To create an atmosphere of being at ease on the part of the participants so they could actively participate, the researcher started with a broad and less structured set of questions. After the participants felt at ease and were free to participate interactively, more structured questions were introduced which allowed the participants to focus on the heart of the research question (Maree, 2014: 91).

Wagner *et al.,* (2012: 100) argue that the telephone interview is not only less time consuming, but also accords many people with a greater degree of anonymity and also allows for a large geographical coverage. However, disadvantages such as sample biasness, phone timing and a higher degree of participants' refusal to cooperate with telephone interviews, have been identified (Wagner *et al.,* 2012: 100). Such interviews enable the interviewer to perform the interviews quickly, to reach respondents across long distances and to acquire a high response rate. According to Barbie and Mouton (2001: 257), telephone interviews allow for greater control over data collection and that personal safety of the interviewer can be ensured. The researcher utilized telephone interviews with the Amajuba District Municipalities' participants who could not make it for the in-depth interviews.

3.5.2 Observation

Observation process allows the researcher to record behavioural patterns of participants without questioning or communicating with them (Maree, 2014: 83). Observation provides the researcher with ways to check non-verbal expressions of feelings and how much time was spent in the activity of fetching water from different sources and also time spent walking to and from toilet facilities.

The researcher's aim was to observe the communities' water sources and the impact such sources had on the community members. The observations for both communities were made over a period of two days. The researcher got into the situation, but focused mainly on the patterns of water sources and how community members access these sources.

Since the research was about the challenges the municipality is encountering in water and sanitation provision in Ward 1, specifically Ndlamlenze and Luthilunye, the researcher mainly observed how the community members behaved in the situation they were in, as to whether they accepted the situation; were they happy; were they sad or just did not care. The researcher also observed the sources of water, the state of the toilets and the impact of such sources and toilets on health and community development.

The researcher used two main of methods in collecting data: i.e. recording sheets and checklists. The recording sheets and check lists included preset questions and responses. Anecdotal records were also used. Maree, (2014: 85) describes anecdotal records as short descriptions of actions that have been observed.

Unlike recording sheets and check lists, field notes were open ended narrative data that the researcher either wrote or voice recorded. The researcher also took pictures of toilets and water sources used in the community.

According to Flick (2006: 219) Observation "is an attempt to observe events as they naturally occur". Johnson and Turner (2003: 314) believe that observation enables the researcher to combine it with questionnaires and interviews to collect "relatively objective first hand information". Merriam (1998: 17) further believes that observation is a kind of data triangulation that "substantiates the findings". Maree (2014: 83)

argues that the observation process is silent and the observer is only involved in recording patterns, objects and occurrences in the absence of questioning or communication.

McMillan and Schumacher (1999: 30) further state that “by observing naturally behaviour over many hours or days, the researcher hopes to obtain a rich understanding of the phenomenon being studied. The nature of observation is comprehensive in the sense that it is continuous and open to whatever may be significant. It also allows collection of a more complete set of data to reflect the importance and effect of the context”.

Maree (2014: 85), identifies four types of observations as follows: a complete observer looks at a situation from a distance; an observer as participant gets into the situation but does not become part of the situation; a participant as observer is part of the research process and a complete participant gets immersed into the situation to an extent that he cannot be recognized as an observer. However, the goal of all types of observation is to carry out the “process of recording the behavioural patterns of participants, objects and occurrences, without necessarily questioning or communicating with them”. In this study, the researcher got into the situation, but never got involved in the dynamics of the community setting, thus adopting the observer as participant method. Maree (2014: 85) describes observers as participants in a situation, but they do not become part of the situation but mainly focus on the given role as an observer in the situation.

Mouton and Marais (2011: 162) describe observation “as that process by means of which researchers establish a link between reality and their theoretical assumptions”. The researcher wanted to link the reality of water and sanitation situation in the two settlements and the provision of water and sanitation services by the Amajuba district municipality.

3.5.3 Development of observation as a tool

According to Maree (2014: 84), it is essential to ensure that the purpose and focus of the observation is defined and that this focus should be linked to the research questions.

The seven steps identified by McMillan and Schumacher (1999: 350) include selection of site; identification of the first role; gaining entry to the site; conducting initial observation while building rapport and familiarity with the setting; revising the role and getting involved in intense observation; and finally exiting the field.

The researcher negotiated the process of accessing the sites suitable for the research problem by obtaining permission from the Amajuba municipality manager. Upon receiving permission, the researcher identified possible sites and mapped the field by establishing rapport with the residents at the research. The researcher thrived to maintain trust and confidentiality of the participants through the entire observation period. Wagner et al., (2012: 153) attest that the researcher's acceptance and the community's perception determine the success of the observation. The researcher conducted the extensive observations while taking notes. After exiting the field, the researcher recorded not only that which was seen and heard, but also reflections of what occurred (McMillan and Schumacher, 1999: 350 -351).

3.5.4 Document analysis

Maree (2014: 84) maintains that the use of documents as a data gathering method considers written communication that would serve the purpose on the phenomenon under investigation. In this type of analysis, the researcher systematically examines the contents of a particular material for the purpose of identifying patterns, themes or biases.

The researcher collected some documents that were critical to the study during and after the interviews, for the purpose conducting document analysis in order to extract secondary data. The researcher mainly analyzed the Amajuba district municipality's Integrated development plan; the master plan water supply document and the Back to basics approach document, focusing mainly on water and sanitation.

3.5.5 Questionnaire

The researcher also used the survey approach to collect the relevant data in Ndlamlenze and Luthulunye. A survey is defined as "collecting sample information using interviews or questionnaires (McMillan and Schumacher, 1999: 235).

According to Malhotra (2010: 335), a questionnaire consists of questions that a respondent uses and therefore making it an instrument to gather data about variables of interest in the study. Questionnaires are used to convert the data provided by respondents directly into information (Tuckman, 1994: 320). Van Rensburg (1994: 504) is of the view that the questionnaire is a set of questions dealing with a specific topic or related group of topics given to a selected group of individuals for the purpose of gathering information on a problem under consideration. However Wagner *et al*., (2012: 102) argue that the answers given by the respondents are recorded by the interviewer. The set of questions or scale measurements are integrated in a systematic instrument referred to as the format of the measuring instrument (Hair, Bush & Ortinau, 2003: 450). The format as well as the wording of the questions, can determine the response rate from the respondents. Questions written simply and clearly may minimize misinterpretations of the questions. According to Block and Block (2005: 157),"The questionnaire should be designed in such a way that it eliminates ambiguity, biasness, technical language and prejudice. In this case, the researcher used a structured interview. Structured interviews are face to face and the respondents are asked a set of questions that have a predetermined structure, questioned in the same order and using the same wording (Wagner *et al.,* 2012: 102). The researcher used this method to collect data of water sources and toilet systems in Ndlamlenze and Luthulunye communities. Each respondent was presented with the same questions, asked in the same order and the interviewer recorded the answers given by the interviewee. To allow for easy communication and full participation, the questionnaire was translated into Zulu. It was also pre-tested and a number of errors and misinterpretations were detected and corrected.

3.5.5.1 Questionnaire Items

One of the aims of the study was to identify the state and conditions of water sources and toilets in the two communities. Therefore to obtain classification information in relation to this aim, demographic information were collected on a selected few to provide an idea of what the conditions were like. According to Pallant (2010: 53) information pertaining to socio-economic and demographic descriptors referred to as

classification information and in studies involving human participants, relevant background information is essential in understanding the results of the final study.

3.5.5.2 Questionnaire Development

In determining the development of the questionnaire, the following steps were followed:

Determined which information was being sought:

- Chose the question type and method of administration.
- Determined the general question content needed to obtain the desired information.
- Determined the form of response.
- Chose the exact question wording.
- Arranged the questions in an effective sequence.
- Tested the questionnaire and revised it as needed.

3.5.5.3 Determining measuring scale

Cooper and Schindler (2003: 250) define a measurement scale as “a procedure for assigning numbers or symbols to a property of objects in order to import some of the characteristics of the numbers to the properties in question”. According to Malhotra (2010: 354) scaling is an extension of measurement and involves creating a continuation upon which measured objects are located.

A scale is a type of composite measure that is composed of several items that have a logical and empirical structure among them. According to Leedy and Ormrod (2010: 189) “a rating scale is more useful when behaviour, attitude or other phenomenon of interest needs to be evaluated on a continuum of “inadequate to excellent”, “never to always”, “strongly disapprove to strongly approve.”

Since the study utilizes the qualitative approach, the researcher used a dichotomous scale which used yes and no in answering the questions.

3.5.5.4 Sequence of questions

When sequencing the questions, special care was taken as order of sequence could affect the response. Therefore, the researcher distributed half the questionnaire with one order and the other half with another order. In addition, the researcher considered the page layout by not allowing the questions to flip to the next pages; the font was big enough to be easily read. The paper stock was of good quality to project the image that the questionnaire was important enough to warrant the respondent's time.

When considering the length of the questionnaire, the researcher considered the type of respondents answering the questions and formulated the questions that were short and easy to respond to, thus attracting higher response rates.

3.5.5.5 Pre-testing the questionnaire

Once the questionnaire is completed, it is imperative that it be tested, evaluated and refined. According to Barbie and Mouton (2001: 244), no matter how carefully a data collecting instrument is designed, it will never be free from error. Therefore pre-testing is necessary to ensure that the purpose of the questionnaire will be meaningful and perform the functions designed for it, in the survey. It will also check for glitches in wording of questions, lack of clarity and anything else that will impede the instruments' ability to collect data in an economical and systematic fashion. This will ensure validity and reliable results. According to Wiid and Diggines (2009: 181), the questionnaire should be tested on a small sample of respondents representing the group under investigation. Therefore the pre-testing should be done systematically with potential respondents and using the same method employed to administer the final questionnaire.

To ensure validity and content reliability, the researcher requested one experienced researcher to evaluate the questionnaire and comment on the appearance and content. Obvious mistakes were corrected, and then three members of the community who did not form part of the pilot or pretesting group, were approached and requested to read through the questionnaire. Of the three respondents, one was English speaking and used English as his first language and the other two were not

English speaking and English was their second language. The manner in which the questionnaire was presented was the same as it would be presented in the final questionnaire. The aim/objective of administering the questionnaire in this manner was to test the comprehensive skill. The question the researcher wanted to be answered was: did the First Language and the English Second Language respondents understand the questions in the same manner as in accordance with the multilingual context of the South African environments? The response obtained from the above helped the researcher in refining the questionnaire by restricting and simplifying the language. The researcher further conducted a pilot testing to detect weaknesses in design and instrumentation and also to determine the reliability of the instrument. A non-probability judgment sample was drawn to test the reliability of the questionnaire and the sample included 10 residents of Luthulunye who did not form part of the sampling frame.

3.6 DATA ANALYSIS

Data processing is essential to ensure that all necessary information has been collected and that unnecessary data that will never be used is not collected (Hardon *et al.,* (2004: 64). The researcher's plan for data processing closely linked to the study objectives and research questions. Therefore data processing involved how the researcher presented the captured data, the analysis thereof and formation of conclusions. According to Creswell (1998) as cited in Leedy and Ormrod (2010: 140), analysis can effectively be done by organizing, perusing, classifying and synthesizing data.

In this study, logical steps were taken in processing data. In the first step, the researcher cut and sorted the data by identifying and grouping it into different sets and characteristics and labelled it accordingly. Digital data was transcribed. Following this step, the researcher got to know the data by reading it over and over again. Data was then coded. Maree (2014: 105) defines coding as "marking the segments of data with symbols, descriptive words or unique identifying words." She further indentifies coding as a process involving careful reading, locating information with meaning and finally coding them. In this process the researcher used different highlighters to locate information and alphabets to code them. In the questionnaire,

questions were classified into section A and B. Section A was about the demographical data of respondents and section B on households with/without water/ toilets, and sources of water. The researcher used numbers to code the data.

Completion of coding led to the next process of establishing categories. This involved combining related codes into themes or categories and assigning a label or an identifying name. Categorized data was then presented in the form of tables. The analyzed data assisted the researcher in developing themes to be used as headings in the following chapter.

3.7 LIMITATIONS OF THE STUDY

The nature of the study accommodated a limited number of people who worked in the water and sanitation sector at the Amajuba municipality. As a result it was very difficult to find them during appointments and this prolonged the interview period. For the two communities involved in the study, the researcher could not reach most households due to distance, poor roads and scattered households. The researcher also found the exercise to be very expensive as travelling costs were very high. Language presented another limitation as the researcher wasn't fluent in the local dialect. Appointment of a translator, who also was one of the assistants in conducting interviews and in converting responses into English, alleviated the problem.

3.8 CONCLUSION

This chapter dealt with the research methods that were used by the researcher to collect relevant data. The researcher also looked at the research approach in which the method of research and the design were discussed. The researcher further discussed data collection and instruments that were used in the collection of data. In addition, sampling methods and field operations were highlighted. Finally data analysis processes and limitations of the study were discussed.

CHAPTER 4

PRESENTATIONS OF FINDINGS

4.1 INTRODUCTION

In the previous chapter, the researcher discussed the research design and the different methods used for collecting data. Data analysis and its process which helped in the formulation of themes for this chapter, were also discussed.

The purpose of this chapter is to present the findings of the study. The themes formulated from the primary data collected through observation, interviews, questionnaires and secondary data through document analysis, were presented as findings. The themes were divided into three sections. Themes in section 1 were demographical information on the gender of respondents, their ages, location and the number of years they have resided in their respective location. This section also included the information on the availability of water and sanitation provision to the households, represented by the respondents. Themes in section 2 were based on the findings at the Amajuba District Municipality while themes in section 3 were based on finding at Luthulunye and Ndlamlenze settlements. Section 2's themes include main challenges in water supply and sanitation; previous municipal efforts to improve water supply and sanitation provision; municipal expectations from community members; strategies to improve water supply and sanitation provision. The themes in section 3 include findings from observations; general water and sanitation conditions; community measures to improve water supply and hygienic sanitation; community expectation and perceptions on water supply and sanitation; the impact of poor water supply and sanitation and finally, the community's future plans to improve water supply and sanitation provision.

4.2 DEMOGRAPHICAL INFORMATION

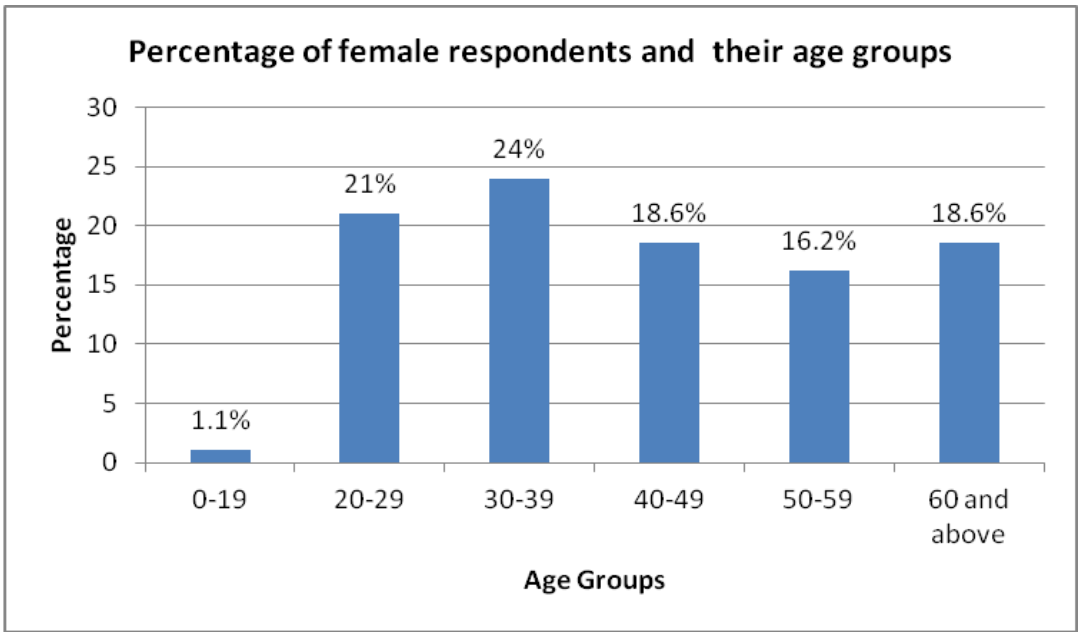
The information regarding the demography of the respondents was sought by the researcher to find out the number and gender of the respondents, their ages, the community they belonged to and the number of years they had lived in the given community. The researcher interviewed one member per household only where it was convenient to do so. The questionnaire required data on availability of water

supply as per IDP standards, as well as per South African Constitution (chapter 7:ss 152 (a, b), which imposed developmental duties on municipalities with service delivery communities in a sustainable manner, water and sanitation inclusive. The answers were intended to provide data on the number of respondents who had access to a water pump/tap within 200m from the house; respondents who had access to a pump/tap more than 200m from the house and households that used other sources other pumps/taps. Sanitation data was also collected based on the number of respondents who used what type of toilets e.g. municipal, self constructed buckets, flushable and/or other alternatives.

The researcher interviewed forty-three community members from different households in Ndlamlenze and eighty six community members from different households in Luthulunye, giving a total of one hundred and twenty- nine.

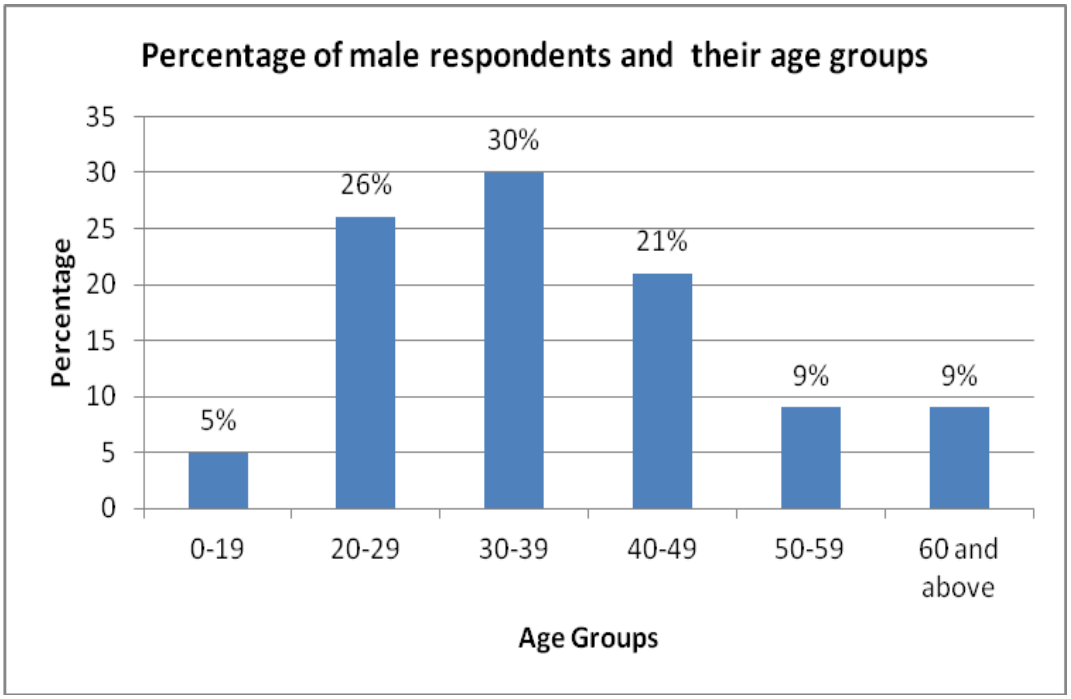
The following figures reveal the findings discussed above.

Figure 4.1



The figure above gives information on the percentages of the responents. Ages between zero and ninteen was made up of 1.1%; 21% consisted of people with ages twenty to twenty-nine; ages thirty to thirty-nine had the highest percentage of 24%; forty to forty-nine, as well as sixty and above, contributed 18.6% and finally ages fifty to fifty- nine scored 16.2%.

Figure 4. 2



The findings also reveal that of the forty-three males, 5% were boys between the ages of zero and nineteen and 19, 26% included ages twenty to twenty-nine, 30% were young men thirty to thirty-nine years, ages between forty and forty-nine years made up 21% of the respondents, 9% for ages fifty to fifty-nine and old folks sixty years and above.

From the information in the two figures above, 66.7% of the total number of respondents who participated in the interview were female and 33.3% were male.

From the data collected to identify how long the female respondents had resided the given communities, it was revealed that 2.3% had been living in the community for zero to five years; 10.4 % had lived for six to ten years; 16.1% had lived for between eleven and twenty years; 23.2% had lived for about twenty-one to thirty years and finally ages thirty-one and above had lived the longest and constituted 48%. For the male respondents, 2% had lived between zero and five years; 9% had lived for between six and ten years; 20% constituted the ages eleven to twenty and twenty-one to thirty years and the biggest number of years comprised 49%.

From the above figures, it is evident the largest number consists of respondents who had lived in the communities longer than thirty-one years.

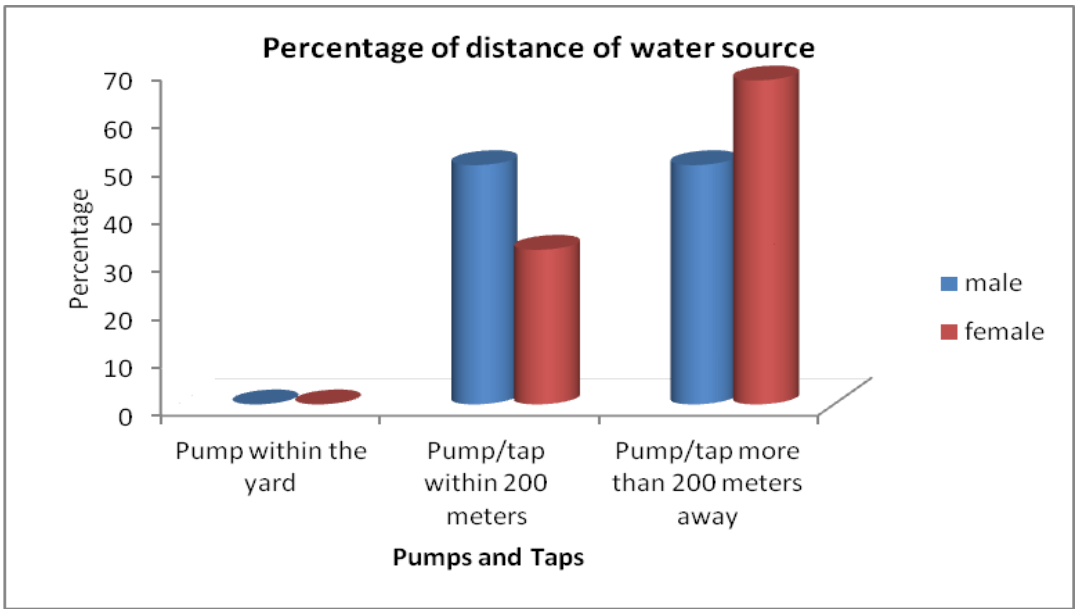
To further understand the water supply and sanitation provision, the researcher administered a questionnaire where respondents indicated with a “yes” or “no” response. The findings were recorded separately in the two communities.

4.2.1 Luthulunye

Water

In Luthulunye, eighty-six community members comprising sixty-two females and twenty-four males were interviewed. The figures that follow will present the findings on water and sanitation.

Figure 4.3

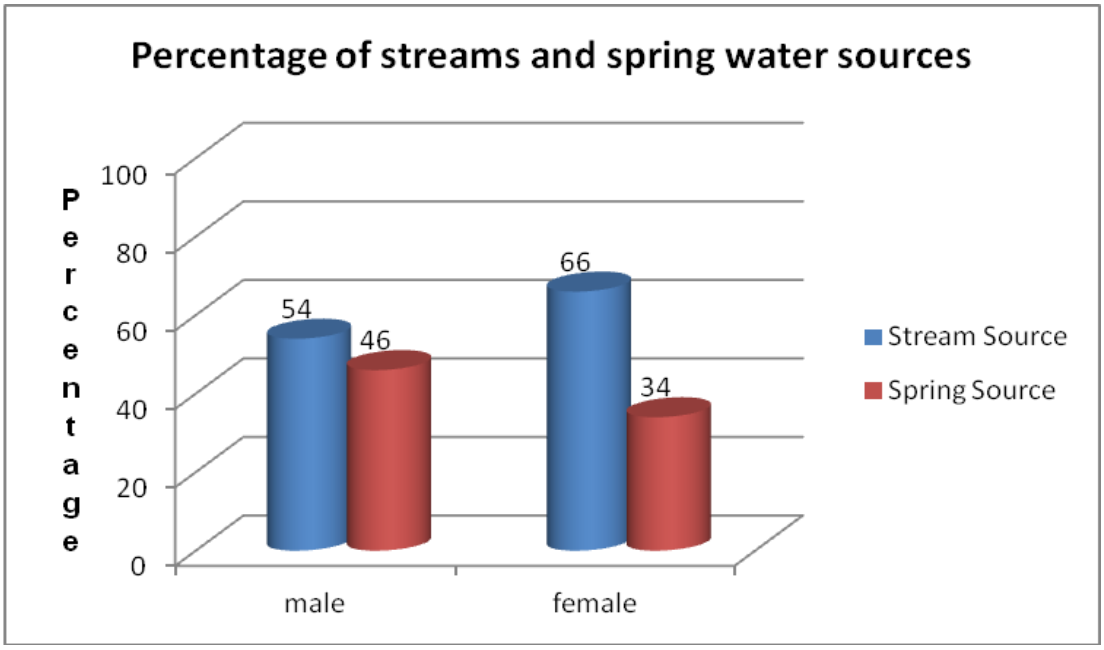


The figures above indicate that no single household has a tap/pump within the yard, which clearly is in line with the RDP condition which does not consider full yard connections, but considers standard or stand pipes every 200 meters. 37.2% of the represented households have access to a pump within 200 meters as per RDP standard. 62.8% indicated that they have access to pumps, but these pumps are more than 200 meters away. It is also important to note that at the time of the interviews, most of these pumps were not functional and according to some of the respondents dry pumps meant no pumps at all.

According to a record not tabulated, eighteen female and seven male (20% of the respondents) had access to working pumps at the time the interviews were conducted. Obviously, these were households that were close to the hand pump.

The figure below indicates the number of respondents that used other sources of water other than communal pumps, but also used the pumps when water was available.

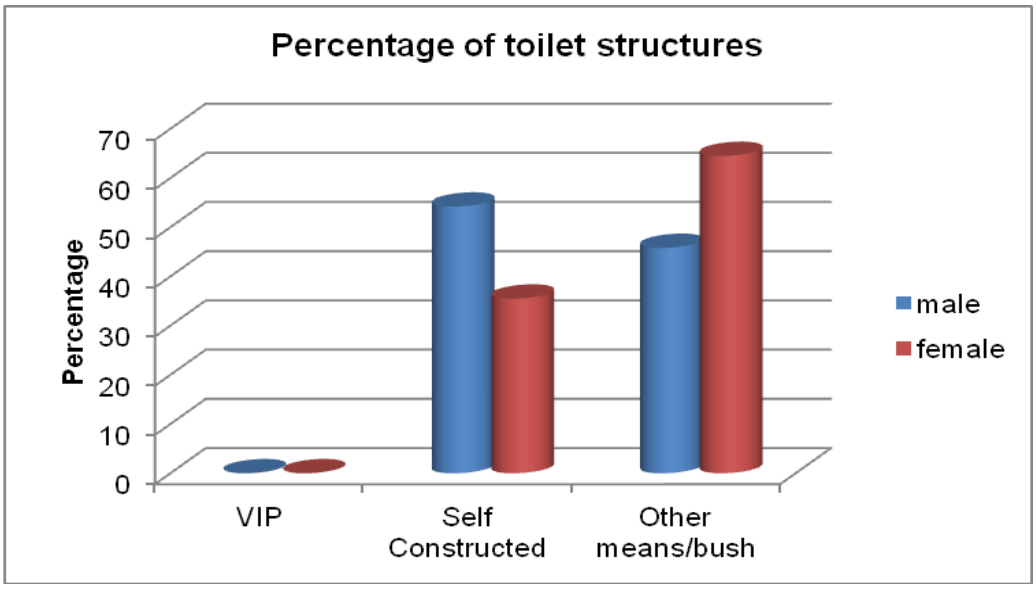
Figure 4.4



According to the figure above, from the total number of one hundred and five people who use either streams or springs, fifteen of the men (54%) use streams as their source of water, while thirteen (46%) draw their water from the springs. Fifty-one female (66%) have their water source from the stream and twenty- six (34 %) derive their water from the spring. Note that the total number that indicated using it is one hundred and five. This clearly indicates that some people made use of both sources.

The figure below show the types of toilets the residents use in Luthulunye.

Figure 4.5



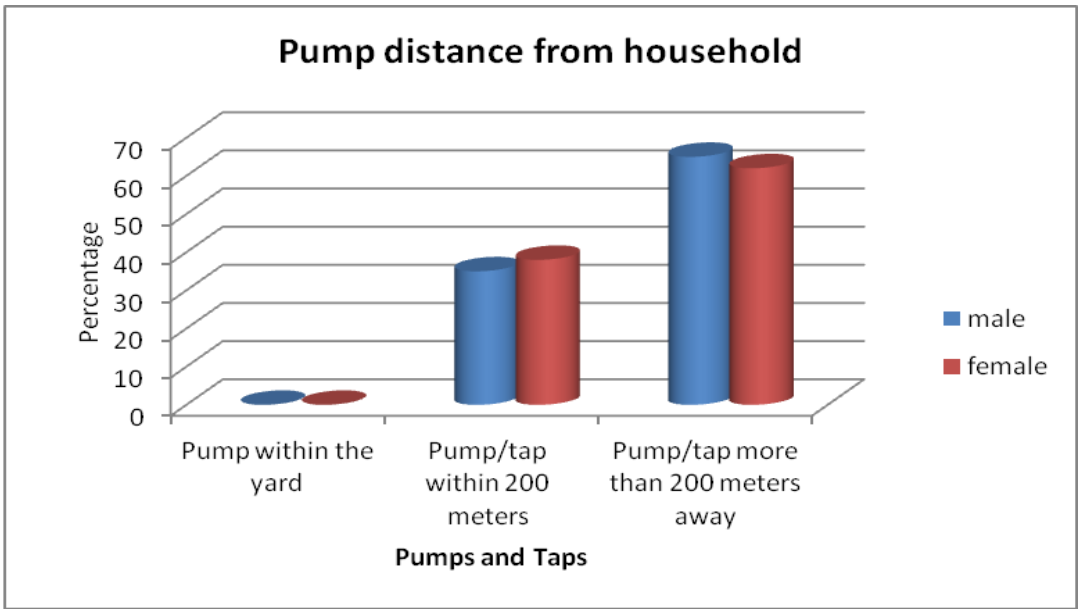
From the information above, it is evident that none of the respondent's households had a municipal toilet. 54.2% of male respondents had toilet structures and only 35.5% of the female respondents indicated to have toilet structures. 45.8% of the male respondents and 64.5% of the female respondents had no structures, implying that the nearby bushes were the only alternative to serve as the purpose of toilets.

4.2.2 Ndlamleze

Water

The respondents of Ndlamlenze consisted of twenty-six females and seventeen males. The distance of pumps of households stood as indicated in the figure below

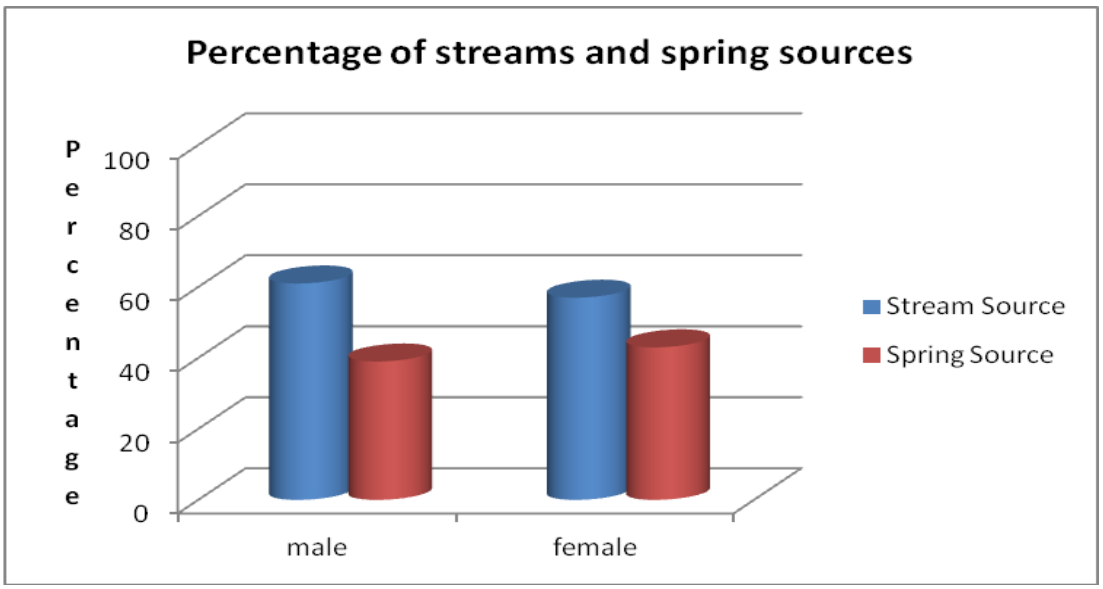
Figure 4. 6



Like Luthulunye, not even a single household has a pump/tap within the yard. 35% of males and 38% females have access to a pump within 200m from the house, while 65% males and 62% females do not have access to a water pump within 200m from their homes. From the total number of respondents, 37% have access to communal pumps within 200 meters from their households. 63% do not have access to pumps within 200 meters.

The alternative source of water in Ndlamlenze is mainly steams and springs. The figure below shows the number of respondents drawing water from springs and streams.

Figure 4.7



The figure above reveals that 61% of the male respondents use streams as their source of water while 39% use the springs. Of the female respondents, 57% draw their water from the streams and 43% use springs as their source. From the total number interviewed, 58.7% use streams, while 41.3% use springs as their source of water.

Toilets

Data revealed that all households in Ndlamlenze have self-built toilet structures and bucket toilets are not in existence at all and therefore open spaces or bushes are not used as toilets.

4.3 MUNICIPAL CHALLENGES TO WATER SUPPLY AND SANITATION PROVISION TO NDLAMLENZE AND LUTHULUNYE

One of the key challenges is the service delivery and specifically in the water and sanitation provision. The municipality identified water and sanitation services as a major barrier to economic development and improved quality of life (Amajuba District Municipality IDP, 2013/2014: 11). The Municipality further admits that they have limited experience in connecting approved strategies and plans to budgets with line departments. To address water and sanitation challenges, the municipality would ensure access to basic water and sanitation provision to community members within

Amajuba district as a whole; promote public participation through stake holder mobilisation and implement Batho Pele principles which consider putting the people first. The findings below revealed specific challenges encountered by the Municipality in the provision of water and sanitation. The findings also reveal the contributing factors to the challenges and the intentions to curb the situation.

According to the data collected, the municipality identified a number of challenges that prohibit effective operations in the water supply and sanitation provision. The challenges include the following:

4.3.1 Distance between properties

The distance between the sources of service delivery in Luthulunye and Ndlamlenze settlements is vast and this makes it almost impossible for the service providers to reach them and provide appropriate services, especially water supply and sanitation provision. As a result these two communities are denied benefits enjoyed by other communities within the municipality. The master plan water supply (2011: 1-7) confirms that supplying services to scattered settlements whose household density is less than two per square kilometre, such as the two communities under study, would be prohibitively expensive.

4.3.2 Remoteness and terrain of the settlements

The nature of the area the settlements are located in, is almost inaccessible, making it very difficult for the municipality to render services as per requirement. The areas are mountainous. Some parts of the roads are rough and rocky while others are smooth and very slippery during the rainy season and only vans and trucks can use these roads. White Paper on local government (1998) further confirms that rural settlements close to boarders of former homeland areas increase service provision and transport costs enormously.

4.3.3 Acceptance of VIP

Due to upbringing and lack of exposure, the community members seem to be more comfortable using the bush for defecation rather than using the VIP.

4.3.4 Vandalism

In the past, the municipality drilled boreholes, installed water pumps, windmills and jojo tanks with the aim of improving water supply, but all these efforts were reduced to nothing through vandalism from selfish community members who did not appreciate the efforts of the municipality, but instead left other community members desperate.

4.3.5 Lack of sufficient awareness of essence of water and sanitation

The community members have not been educated on security measures to implement, in order to care and maintain the systems the municipality have installed and as a result, security measures such as locking valve chambers, assigning security men to guard vulnerable premises, etc. have not been observed and practiced.

4.3.6 Limited budget

There are a number of other wards that need to be serviced apart from the two under study. The budget allocation for all these other wards and ward 1 does not seem to suffice, as a result the municipality has not been able to hire sufficient water tankers to distribute water to all areas and especially remote areas such as Luthulunye and Ndlamlenze. The results of this study concurs with Barry and Monhla (1999: 1) who stated that most municipalities have experienced enormous backlogs in basic services and higher levels of services, as they struggle to raise sufficient funds to meet their capital expenditure needs. Govender (2014: 15), in his findings, also attests that most municipalities lack funding for provisions of services, repair and maintenance of infrastructure.

4.4 CONTRIBUTING FACTORS

4.4.1 Ignorance

The main contributing factor in vandalism is that the community members, especially children, are not educated enough to appreciate and value the efforts the municipality is making for the good of the community. As a result vandalising is done for self satisfaction and sometimes for fun. Naidoo (2011: 1) and Tandia (2006: 1)

are both of the view that training and encouraging community participation will equip members with skills and knowledge, ultimately solving the ignorance problem.

4.4.2 Drought

For many years, the two settlements have depended on springs and rivers for optimal supply of water. Some springs were tested for quality and found reliable, especially in Ndlamlenze. In their study, Chipo and Rick (2013: 168) highlighted that climate change has caused drought leading to insufficient water, thus creating a negative impact on sanitation and this has become a big challenge to most municipalities. With the current drought situation, the supply of water from springs has reduced, posing a huge challenge to the municipality.

4.4.3 Poor roads

As mentioned earlier on, the condition of roads is very poor. Sending water tankers would hit heavily on truck maintenance and lots of accidents would occur, especially during the wet season when the roads are very slippery.

4.4.4 Ancestral beliefs

The deep roots in the belief of ancestors have compelled some community members to rather choose to suffer to give homage to their ancestors than vacate these areas to more accessible locations where they would receive attention like other wards in the district.

4.5 EFFORTS MADE TO IMPROVE WATER SUPPLY AND SANITATION PROVISION

Proper and effective water supply and sanitation provision to all wards has always been the desire of the Amajuba District Municipality. In an attempt to improve water supply and sanitation provision, the municipality appointed service provider specialists in water and sanitation and consulting engineers to look at the best or optimal water and sanitation options for all communities, including Ndlamlenze and Luthulunye. The municipality also employed black balance service providers to undertake the water and sanitation development plan for the district municipality. In addition, the municipality engaged the use of back to basics approach to address

community needs. The desire of the Amajuba District Municipality is in line with the charge that local government should be responsible for providing access to water and sanitation by all persons within their jurisdiction (South African Constitution, 1996 section 152: 87)

4.6 MUNICIPAL EXPECTATIONS FROM THE COMMUNITY

As much as it is the responsibility of the Amajuba municipality to provide water and sanitation to local municipalities and the municipality is dedicated to provide the service, the service recipients should take responsibility of the services provided. As advanced by the Kenyan policy. According to Akechi (2007: 17), Namibian water and sanitation policy, Ministry of Agriculture, Water and forestry (2008:30) and South African policy, White paper (1994:14), the improvement of water and sanitation should be achieved by combining efforts of the government and the beneficiaries through involvement and participation of community members. The Municipality therefore expects the two communities to take ownership of the water and sanitation facilities. Tandia (2006: 1) is of the view that community involvement implies that the users of water supply and sanitation services play an important role in taking responsibility, excising authority and taking control over the setting of the services. It is through sense of ownership that the community members will learn to care for the facilities minimizing theft, vandalism, illegal connections and jojo breaking. In addition the municipality expects the community members to get involved in all aspects of planning of water and sanitation systems and all decision making that pertains to water and sanitation.

4.7 STRATEGIES TO IMPROVE WATER SUPPLY AND SANITATION PROVISION

To ensure better water and sanitation provision, the Amajuba district municipality intends to provide operation and maintenance teams that will always be on standby to attend to any breakdowns encountered in any of their wards, including Ndlamlenze and Luthulunye. The ADM always intends to involve the institutional support department officials in bringing water and sanitation awareness to the communities and also to promote public relations. This strategy is in line with one of the South African policy principles which states that water and sanitation

development should not work in isolation, but be integrated with other departments (white paper, 1994: 14).

4.8 OBSERVATION FINDINGS IN LUTHULUNYE

The researcher observed that all households in Luthulunye have no toilet structures erected at the moment. Holes of old rusted iron sheets exist where stood, the now defunct, toilet. Few households had newly dug pits and in the process of being developed into toilets.

As for water supply, the researcher only saw only one pump in the whole community (picture 7). It was functional, but with limited water supply. Only those who pumped water early in the morning before sunrise, had water for the day. However, rising early to go to the water pump didn't guarantee a bucket of water as water would finish while someone's container was in the queue. The ones who benefit most from the water supplying pump are households close to the pump. Those living further away have to rise much earlier to be first at the pump if they were to get any water at all. The researcher also observed three jojo tanks with a combined capacity of 15 000 litres. At the time of observation, there wasn't a single drop of water. According to back to basics (2014 and 2016), access within 200 meters with a flow rate of 10 litres per minute was rated between 61%-90% in 2014 and the same rating was given in 2016, implying that most households within the Amajuba district municipality receive adequate supply of water and that the remaining 10% includes Ndlamlenze and Luthulunye.

Mode of fetching water

The common method of fetching water is 20 litre containers which girls and women carry on their heads, young men and older men push these containers on wheelbarrows. Only in very few fortunate isolated cases are vans used to carry a load of 20 litre containers.

4.9 OBSERVATION FINDINGS IN NDLAMLENZE

Observations from a distance revealed two attractively erected jojo tanks each next to a windmill. But having gone near, the researcher observed that the tanks were

empty and the windmills vandalised. Though rotating at the push of the wind, they pumped nothing as the rods into the borehole were missing. Ndlamlenze, unlike Luthulunye, has a blessing of springs and perennial streams. Hence the source of water for any given household is determined by what is closest, a river or spring.

Aside from the two main sources mentioned above, Ndlamlenze had three hand pumps working, three additional boreholes dug, but not completed to make them functional. The functioning boreholes didn't yield enough water for families dependent on them. What aggravated the water situation of Ndlamlenze was that they had to draw water from the three pumps for their animals as well.

A few families had communal taps at the time of the research. These taps were meant to be supplied with water from the dysfunctional tanks mentioned above. Since tanks have been empty, the taps have correspondently not run for the same reason and length of time. The researcher noted that all households depended on springs and rivers for their water supply. The installation of taps to households stalled long ago and for this reason there were families who had no taps at the time of the research.

Mode of fetching water

Mothers and girls carry buckets and 20 litre containers on their heads while boys and men push containers in wheelbarrows. They don't have to rise early to go queue for water as there is always water whenever they need it, though not adequate throughout the year.

Toilets

From the toilet observations, the researcher noted that Ndlamlenze had self constructed toilets per household. The structures were mostly made of mud bricks and roofed with iron sheets. Every one of the toilets checked was in a very poor state of construction, unhygienic and shallow. Some had walls that had cracks with indications that they would collapse at any time. Despite the presence of toilets, the researcher noted that some community members used the bush close by to relieve themselves. This result is contrary to the views of both Department of Water Affairs (1994: 9, 10, 11) and the Federal Republic of Nigeria (2000: 5) who stated that the

local government authorities are responsible for the provision of access of water and sanitation facilities in their areas of jurisdiction.

Visiting the only school in the community to assess the toilets, the researcher noted that one block of toilets had completely collapsed (picture 2). The useful ones were not enough to cater for 421 learners. Cleaning these toilets was a hassle due to insufficient water. According to Govender (2014: 37), similar occasions make girls to quit school as they are not accommodated particularly during their menstrual cycle. Obviously the municipality was not responsible for the provision of toilets but the research was on sanitation.

From the observations above, the researcher concluded that the whole Ndlamlenze community has no municipal toilets. The toilets community members build for their households are very temporal in nature (refer to picture 1 and 6). Each coming summer pronounces disaster on the toilets. Clay/mud bricks saturate with water rendering the structure weak and unsafe to use. The roofing didn't have the best of the materials available (refer to pictures 1 and 6). Community members are too poor to afford them so they use rusted iron sheets which leak.

4 .10 CHALLENGES DUE TO POOR WATER SUPPLY AND SANITATION

The Luthulunye and Ndlamlenze households who depend on the hand pumps for water faced the challenge of supplying themselves and their animals with water. The sources do not yield adequate water. For the families who depended on the steams and springs, the challenge they faced was dirty water as livestock drink from the same sources as well.

Ndlamlenze households, whose water sources are springs and streams, complained of water contamination (refer to picture 4 and 5). During the rainy season faeces from the bushes where people relieve themselves get washed down into the nearby streams. Unless boiled, drinking water caused diarrhoea in some people who drank the water raw.

The school in Ndlamlenze shares in the community woes. At the time of the research the school had set backs regarding water availability. The two 5000 litres capacity tanks were almost empty as they were affected by the drought since they collect rain

water. For this reason prefects had to collect water from the spring nearby in buckets. The 20lt bucket per class wasn't enough meaning prefects had to make several trips to the spring per day, especially during summer. This implied that valuable learning time was lost while fetching water. The school has no taps or water sources supplied by the municipality. Learners carry their own drinking water from home, but not all do on daily basis. Meal time supplied by the school found them with dirty hands and none would choose to miss a meal because of unwashed hands. The study on water and sanitation conducted on the eight provinces in South Africa, concur with the present finding that learners didn't have water to drink during school time, had no water to wash their hands and that the toilets were so filthy that they could not sit when using the facility (Govender, 2014: 57)

In his observation, Bradleys (1977: 3-17) concluded that many water-borne diseases are caused by inadequate qualities of water available for washing hands, thus concurring with the findings at this school.

Household members fetching water from water from pumps and fountains have to queue on a daily basis. This process is time wasting as much household chores would be done by mothers and girls who sit waiting for their turn to fill in their containers. The scarcity of water in water in Ndlamlenze, as the researcher discovered, meant limited washing of clothes, blankets, nappies, kitchen utensils and bathing. Bathing was especially bad for girls and mothers who need more water during their menstrual periods. Much as some households would love to have a vegetable garden, only one was found in Ndlamlenze. This finding also agrees with Bradley's (1977: 3-7) where he observed that scarcity of water threatened agricultural reproduction.

For households fetching water from the streams, the challenge was contamination. Cattle urine and dung was a common smell coming from the stream water. Dead animals within the channels decomposed and contaminated the flowing water. People washed clothes, blankets and bathed in the streams, making the water unsafe for drinking. Yet the community had no alternative. For them it was a norm for living.

The self made or do it yourself toilets in both Ndlamlenze and Luthulunye had similar challenges. The holes were shallow, especially where the ground was rocky; digging wasn't an easy job for the builder. The toilet floors made and supported by wattle logs were a danger as termites attack them. At the time of the research, weak floors, shallow holes, uncovered holes and weak mud walls were identified as major challenges (refer to picture 3)

Another challenge revealed during the research that ran similar in both communities was a behavioural problem. At night, regardless of availability of temporal toilets, people urinate and defecate on the edges of the household's yard. The most affected by this behavioural pattern of relieving self are families with more children or teenagers who were afraid of walking in the dark to go to the toilet. This coupled with fear of snakes hibernating on the toilet floor along the path as well.

4.11 TIME FRAME OF PROBLEM EXISTENCE

The water problem for both Ndlamlenze and Luthulunye has existed for as long as people settled in the areas. In reference, figure 1, older folks indicated having lived with the water and sanitation challenges for more than 30 years. Drought years, as reported by the older folks were the most difficult times as they adversely affected the quantity and quality of water available to communities. The period at which the research was conducted was no drought exception. Some springs had dried up and stream flow drastically reduced.

Despite the efforts made by the municipality, the water and sanitation situation had not changed for the better for the two communities. For many years, residents have seen no improvements to their water and sanitation huddles. The only time any relief was ever experienced was when the windmills worked and pipes were not yet vandalised. Streams were much better off before the introduction of wattle plantations by commercial white farmers, as wattle trees deplete ground water causing springs to yield less or go extinct. Streams too suffered from reduced water flow.

The water and sanitation problem in Ndlamlenze and Luthulunye had been in existence for years. For the older folks who had a taste of two regimes, the pre 1994

white led government, followed by the post 1994 black led government, mourned of none doing anything for them. The provision of water and sanitation services still remained a hazy distant dream 22 years into the democratic era.

4.12 COMMUNITY MEASURES TO IMPROVE WATER AND SANITATION

The communities had through the counsellor, written several letters to the municipality requesting some officials to come and see for themselves the challenges that the two communities experienced in water and sanitation. In 2013, responding to the community's plea of Luthulunye, two jojo tanks were supplied, but never functioned, as they were not connected to any water source. The counsellor had knowledge of these tanks, but nothing was done about them. The Luthulunye committee persisted in making several requests through the counsellor regarding their water and sanitation plight, but nothing materialised. This behaviour from the authorities contradicts with the identification of the developmental local government by the White paper on local government (section b.1: 1), which expects the developmental local government to commit itself to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs to improve the quality of their lives.

Consequent requests through the counsellors, made the municipality to drill boreholes, two for Luthulunye and six for Ndlamlenze. Of the two in Luthulunye, only one was working, supplying a meagre quantity of water. Of the six in Ndlamlenze there too only one was working, supplying a few household in the proximity. Following the woes for years without any tangible solutions, the Luthulunye community requested the Department of the Land Affairs to relocate them. It is a request they awaited for a response, up to the time of the research.

The school, through its SGB, made requests to the department of Education to address the water and sanitation situation. The department responded by sending surveyors and no other action or follow up was made thereafter.

During the interview both communities were of the view of writing letters through their counsellors requesting to know if at any time in 22 years there has been a

budget allocated to them and if any, they requested to know how the money has been used. If this failed, they intended to request permission to protest against the municipality for lack of service and concern for both communities. The only way to prevent local protests, which could be caused among other reasons by inefficient municipal governance and poor service delivery, is to provide good governance and sound service delivery to communities (Botes *et al.,* 2007: 7)

4.13 COMMUNITY EXPECTATIONS

The municipality made some water tests from springs in Ndlamlenze only, many years ago and no tests have been made in Luthulunye. No subsequent tests have been carried out as expected to happen by the communities. Both communities would appreciate to have the Municipality visit them just to listen to their problems. According to both community members, the municipality officials only visit unexpectedly and uninvited when it is near election time to campaign for votes. Thereafter they disappear for another five years. Goodfellow and Titeca (2012: 264) found that rather than finding efficient ways of improving and maintaining water services, local authorities view and utilise rural water supplies as vote banks. With the availability of water, people's lives would have improved by having garden projects. It was also uncalled for that they should buy cabbage or spinach from Utrecht town almost forty kilometres away. The two communities believed that if the Municipality was always in touch with them, much would have been accomplished.

On the water supply which is the greater of their need, the communities expected the municipality to check the working state of the hand pumps and windmills, do repairs or train a team of residents to do occasional maintenance on pumps and windmills. During drought season they expected the municipality to distribute water to households using tankers like they do in other communities within their jurisdiction.

Both communities expected the municipality to involve residents in community projects such as in water piping from springs to households, securing open sources of water from domesticated animals and general maintenance of water and sanitation facilities. Govender (2014: 18) is of the view that, to some extent, solutions to problems at local level can be solved by incorporating community participation.

Both communities expect the municipality to construct VIP toilets that will provide safety, security and hygiene to the community members.

The two communities expected to be updated on budget reports as to how much was ear-marked for provision of services in the aforesaid communities. According to Govender (2014: 18), is it imperative that budgets are transparent and easily accessible to allow for community monitoring. They expected to know what projects the municipality would embark on and tentatively when that would be. But as it is, they remain without any updates, and they classified themselves as an insignificant and forgotten people within the Amajuba Municipality. In agreeing with the above concerns, Botes, *et al.,* (2007: 53) are of the view that effective communication from time to time can help community members to gain insight of projects undertaken by municipalities and feel confident and accountable, enabling them to facilitate effective interventions in cases of delivery breakdowns.

Luthulunye and Ndlamlenze communities, as bonafide citizens, expected to have these services that others have been provided with.

4.14 COMMUNITY PERCEPTIONS

The two communities were of the perceptions that the municipality was not doing its best. Projects were initiated but not carried to completion. For any projects completed, there was no plan of sustaining them for the continued usefulness to the communities. The projects themselves are not evenly distributed to cater for all.

Of the pumps installed in both communities, few households benefited. For others, because of distance, they were not serviced by the pump functioning at the time of the research, hence its presence was as good as not being there at all. The community of Luthulunye perceived the water problem as fairly addressed if pumps were put at an even radius with overlapping distances served by each pump. Collectively outlined, the communities' perceptions were:

- The municipality was not consistent with service provision as required
- The municipality was short of fulfilling their promises. In the study conducted by Botes *et al.,* (2007: 44), the respondents expressed a similar concern

where unfulfilled promises by counsellors posed a big problem that hindered progress in the community.

- For the greater part of the five year term, the municipality was dormant only to be seen being active near election time.
- The municipality was rated as having failed to provide for the communities.
- The municipality cared less about sustained maintenance of projects it initiated to benefit the communities.
- The municipality was slow and inactive hence no meaningful development or progress was made.
- The municipality was not interested in communities' interest for a better life
- For what little the Municipality made an effort to give, the communities were grateful though. It was painfully admitted that the selfish element of the community, especially Ndlamlenze, vandalized the windmill water project. It was also regretted as retrogressive to development.
- The municipality didn't educate community members on how to use and maintain hand pumps, and the wind pipe network. This should have been part of the package for the project. Limited capacity building in form of training and sensitization, inadequate support and maintenance of the water source is being ignored in most municipalities and this has been the concern in communities in rural areas (Mugunya, 2013: 202).
- The municipality did not educate community members on how to develop and keep springs in a healthy, sustained manner of use.

4.15 COMMUNITY INVOLVEMENT

Residents in both communities were willing to work hand in hand to improve the water and sanitation provision in the area. They were willing to promote security, to provide services to ensure longevity and durability, as long as the municipality showed co-operation. The following were what the communities pledged to do as a way of getting involved if the situation of water and sanitation were to be improved:

- The community would take good care of the facility by repairing the water infrastructure, reporting vandalism and ensure that culprits face the law provided the municipality was willing to work with them.

- If any form of rates / tariffs were to be introduced to maintain the water provision and sanitation, the communities would be willing to pay the dues as long as the rates would be affordable.
- If the sources of water were fenced, they would maintain the fences by ensuring that they are not vandalized and animals have no access to pollute the water.
- The communities would make water saving precautions by watering their gardens with laundry rinsing water.
- The school in Ndlamlenze would workshop learners on how to use water infrastructure, toilets and keep them in a usable state. Taps would be locked at certain times within a given day to avoid wastage by learners.
- The school would extend its influence on the community by educating residents on cleanliness of toilets and maintenance of water sources.

4.16 THE NEGATIVE EFFECTS ON POOR WATER SUPPLY AND SANITATION

Ndlamlenze and Luthulunye, just like any other community facing water supply and sanitation problems, have been affected in a variety of ways. Some of the effects are as follows:

4.16.1 Subsistence farming

The two communities depend on Utrecht town for the shopping of everything including perishables. Due to insufficient water, community members are unable to grow their own vegetables which could be consumed fresh from the garden containing all essential nutrients. Scarcity of water threatens agricultural reproduction (USAID, 2013: 3-4).

4.16.2 Contamination

As discussed earlier, sometimes animals die in streams and decompose; decaying leaves, twigs and feces are washed down from higher grounds to the streams and contaminate stagnant water. As a result, children and older folks suffer poor health. According to WHO (2016) report, 1.8 billion people use a source of water that is contaminated with feces.

4.16.3 Time factor

Direct human consequences of poor and non-existent water and sanitation infrastructure, are that members of the community, usually women and children spend lots of their time and energy fetching water from sources. In addition, children's health is affected as a result of injury that may be direct due to hauling heavy containers of water over long distances.

4.16.4 Hygiene

Since water is hauled from long distances, it is certain that children don't get sufficient amount of water to maintain adequate standards of cleanliness and hygiene. Unicef (2016: 1) testifies that survival and development of children depend on clean water, basic toilets and good hygiene practices. This mostly affects young women and girls during menstruation. If not controlled, poor water supply and sanitation could easily lead to school drop-out of adolescents. Since the toilets are not enough to cater for the learners in the school, learners. especially boys, end up urinating outside in the open.

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4.16.5 Life threatening

Since water is only available in the early hours of the morning and late hours of the evening, girls and women are at the risk of getting raped or even being murdered to and from the water sources. The risk is also there when going to the bush to relieve oneself. Risking one's life is not only caused by the water problem, but also by the types of toilets the community members use. Some of the toilets, as seen by the researcher, are roofed with loose rusted iron sheets which can be easily be blown away and harm anything in its way, including human beings. Other toilets have holes in walls and are without doors allowing for snakes and other small animals to hide inside, making toilets unsafe to be used at night. Muddy bricks absorb water during the rainy season making it easy for them to collapse at any time.

4.16.6 Privacy

Poor sanitation deprives the community members' ability to lead dignified lives as privacy is lacking. According to Okonkwo (2010: 2), safe water and good sanitation greatly contribute to the enhancement of human dignity.

4.16.7 Social life

Some members of the community are not actively involved in the community's social activities as they are occupied with water hauling which leaves them too exhausted to get involved in any other activities. Contrary to the finding, in his study, Okonkwo (2010: 2) emphasizes that good water and sanitation frees people hampered by the burden and drudgery of fetching water and thus providing them with more time to get engaged in other activities.

4.16.8 Pollution

Open defecation and urination, decomposed leaves and animals, all produce bad odours which pollutes water and the air. One of the roles that water law plays, as indentified by Adhikary (2005: 2), is to ensure water quality by controlling pollution. One of the consequences of polluted water is diseases such as diarrhoea and foul air infested with germs.

4.17 CONCLUSION

The findings from observations, interviews and document analysis were thematically packaged and dealt with general challenges, strategies, municipal and community perceptions and expectations in water supply and sanitation provision. The formalization of themes was guided by the research questions provided in chapter 1. The methods used in data collection elicited rich and relevant primary data as per researcher's anticipation. The presented findings managed to draw a variety of challenges both the municipality and the Ndlamlenze and Luthulunye communities are facing, in relation to water supply and sanitation provision. The following chapter will provide a summary of previous chapters and a general overview of the study against the literature review. Finally, conclusions and recommendations will be discussed.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

It is the responsibility of the South African municipalities to improve the welfare of local communities as stipulated in the 1996 constitution that “all spheres of government are responsible for ensuring the delivery of basic services to all South Africans”. However, 20 years into democracy, municipalities are still facing a huge challenge in fulfilling their roles as mandated by the constitution. Access to basic services, especially in water and sanitation, is still a huge problem in most rural areas in South Africa. As important role players, municipalities are expected by law to find innovative ways and methods to actively involve community members in all their affairs.

In this study, challenges that the Amajuba District Municipality is encountering in the provision of water and sanitation in Ndlamlenze and Luthulunye communities, within its jurisdiction, were explored. Challenges that these communities face due to lack of sufficient and poor quality water supply and unhygienic sanitation were also investigated and the findings were presented in chapter 4.

5.2 SUMMARY OF CHAPTERS

Based on the input of all the previous chapters in this study, challenges faced by the Amajuba District Municipality in water supply and sanitation provision and also challenges experienced by the recipients, were discussed and presented.

The purpose of this study was to determine what the challenges were and to give recommendations that will help overcome these challenges. The study utilised municipal and community data to identify the challenges.

The objectives of the study were stated as follows:

- To compare water and sanitation governance practice across selected countries including South Africa.

- To determine the community's perceptions and expectations about the provision of water and sanitation by the Amajuba District Municipality.
- To determine the strategies utilised by the Amajuba District Municipality in providing residents with water and sanitation.

In accordance with the specified objectives of the study, chapter two addressed all three objectives which described water and sanitation provision in the context of local government systems. This was a literature review which focused on description on developmental local government.

In objective one, the study described comparisons of water and sanitation administrative practices in a few selected countries, including South Africa. The study identified water and sanitation sector structures and the responsibilities of local government in water and sanitation sector (section 2.3). Main actors in water and sanitation, with focus on the role of South African central, provincial and local government, were also discussed in section 2.4. Section 2.5 described water and sanitation policies in selected countries namely: Peru, Kenya, Namibia and Zimbabwe. This section was followed by identifying laws related to water and sanitation in section 2.6. In this section, the researcher summarised and illustrated the seven roles the law plays into a mind map (figure1).

According to the literature review, most municipalities worldwide are facing lots of challenges. Section 2.7 discusses the global challenges on water and sanitation in general and specific challenges in South Africa. The study further looked at the tariff structure in a few selected countries, including South Africa (section 2.8). Public-private partnerships in water and sanitation practices in Peru, Zimbabwe, Kenya and South Africa, were discussed in section 2.9. Finally, the study discussed community involvement/participation in different countries in section 2.10.

In objective two, the study discussed how different researchers conducted their studies and what their findings were (section 2.11). Section 2.12 discussed objective three which was to determine the strategies utilised generally in some countries to improve the provision of water supply and sanitation.

Chapter three outlined the research design of the study (section 3.2); an overview of study areas in section 3.3; the sampling procedure; data collection process, methods and analysis (section 3.6) and finally the limitations of the study.

Chapter four reported the empirical findings of the study. The findings indicated the challenges the Amajuba District Municipality is encountering in water supply and sanitation provision in Ndlamlenze and Luthulunye communities. The findings also revealed the contributing factors to the challenges faced and the efforts that the municipality has made to improve the water and sanitation services in the two communities. The findings further revealed what the expectations of the municipality are from the communities and what the communities are expecting from the municipality to enhance the quality of the services provided.

From the observations and interviews conducted in the two communities, the findings revealed the challenges that the two communities are facing due to inadequate water supply and poor sanitation facilities; community' perceptions and expectations on water and sanitation services from the municipality; measures that the communities undertook to improve the situation; community involvement and finally the negative effects of poor water supply and sanitation provision.

Chapter five, as a concluding chapter, provides an overview or summary of the research conducted in chapters one to four. Recommendations are provided on how the municipality can improve on water supply and sanitation provision. Recommendations are also given on how the two communities can work in partnership with the Amajuba District Municipality to improve the water and sanitation situation in their area, particularly Ndlamlenze and Luthulunye.

5.3 CONTRIBUTIONS TO THE STUDY

As per requirement of the constitutional law, the local government should take responsibility to develop entrepreneurial skills, to be more oriented, to provide quality service and to value and respect their clients. Quality service provision, especially in water (water is life) supply and sanitation provision, is highly valued by service recipients. Unfortunately, quality service in water and sanitation is one of the common challenges faced by most municipalities.

Municipalities need to find effective ways of improving their skills in management of infrastructure and in educating the service recipients to enhance quality and sustainability in the provision of water and sanitation. Being aware of the community's needs and problems is not enough. Rather municipalities must make every effort possible to solve these problems and meet their needs.

The findings of this study are important in the realisation and understanding of the struggles and challenges some municipalities go through in their attempts to provide water and sanitation services, especially in remote and rural areas. The study also brings to the public realisation that amidst the numerous challenges the municipalities are faced with, they are earnestly putting their best efforts forward in attempting to meet the requirements of the law. The findings also bring to light the negative effects of poor water and sanitation that prevents community members to be as productive as they should be, thereby hindering community development. Also exposed in the findings are the ill behavioural acts that community members practice, for example vandalism mainly due to ignorance. Identifying the challenges of both the Amajuba District Municipality and the two communities will allow the municipal management in water and sanitation sector and the two communities studied, to act according to the knowledge gained. The knowledge gained will facilitate more informed prioritisation, better and improved strategies, improved value for money, more need for participation and involvement, higher appreciation for water and sanitation facilities and finally better water and sanitation services.

5.4 RECOMMENDATIONS

The following recommendations were based on the literature review, together with the findings from data collected from Amajuba District Municipality and Ndlamlenze and Luthulunye communities.

The following were the thematic headings under which the recommendations and conclusion were presented: Municipal challenges to water supply and sanitation provision; contributing factors to these challenges; efforts made to improve the situation; Municipal expectations from the community; strategies to improve water supply and sanitation; community challenges to water and sanitation.

5.4.1 Municipal challenges to water supply and sanitation

The study reveals a number of challenges that hinder effective delivery of water and sanitation provision. Among these challenges are the vastness of the distance between the water and sanitation service provider and the service recipients; the terrain of the settlements; poor roads; limited funds; non acceptance of VIP; lack of sufficient awareness of water and sanitation; ancestral beliefs, drought and vandalism. These challenges have negatively affected the quality of the provision of services.

The researcher recommends that the municipality build a substation or municipal structure close to the two communities which would allow the municipality to have easy access to the communities and be in position to attend to their needs at the right time. Such a structure would also cut down on travelling expenses; it would be easier to monitor the infrastructure; grievances would be attended to in good time; project monitoring would be effective and finally, community involvement would be managed in an effective manner. It would also be suggested that the Municipality**,** if possible, recommends to the Department of Rural Development and Land Reform to relocate the two and other communities in the same situation, to places where it would easier for the municipality to supply the required services. In this way, the two communities will also benefit from the services other communities are benefiting. For the poor roads which make travelling almost impossible during the rainy season, it is recommended that the Amajuba municipality water and sanitation section rehearse with the department of transport to come up with solutions as to how the rural roads could be maintained, especially during the wet season**.**

Limited funds have hindered development in these two communities. As a result, the municipality could not maintain the infrastructure; projects have been started and left incomplete and tankers could not be provided to deliver water during severe shortages of water. There is not a single VIP toilet and people cannot be employed to assist the municipality in carrying out services. The comprehensive monitoring and evaluation tool for 2015 and 2016 reveal that the funds allocated to the municipality were utilized efficiently as it was rated 90%-100% (back to basics, 2016: 1). This indicates that the two communities received their portion but it wasn't enough. In

order to obtain enough funds the municipality must revisit the budget plan and adjust the distribution to provide more where the need is dire. The municipality should also apply their entrepreneurial skills as per legislation requirement to meet the financial demand. Volunteers from the communities can also be requested to voluntarily perform certain services such as maintenance of property, security guards and many others on behalf of the municipality to cut down on expenses. In addition, there is dire need for government to evaluate current funding.

The non acceptance of VIP is due to ignorance and lack of exposure. It is highly recommended that the municipality should conduct health awareness campaigns where the community members will be educated on health and hygiene principles. Once these principles have been planted in the minds of the new generation, as the older folks diminish, the younger generation will value and accept the VIP kind of toilets.

One of the biggest challenges that has crippled the municipality is lack of sufficient awareness coupled with ignorance in the significance of water and sanitation. The community members are very irresponsible as they failed to care for the infrastructure due to negligence and ignorance. To control this condition, the municipality should set up forums for public participation which the affected communities and other interested parties should attend and freely voice their opinions. The absence of these forums as indicated above, left the community members feeling excluded, disempowered and powerless to effect change. The counsellors, together with the ward committee members, should meet at appointed times to discuss issues pertaining to water and sanitation and identify problems, find possible solutions, solve problems that can be solved at community level and refer complicated issues only to the municipality for assistance. In other words, the local community must be innovative and take responsibility for minor issues.

The researcher is of the opinion that despite the fact that some members of the community have accepted the water and sanitation situation and are comfortable, it is high time they parted with their ancestral beliefs and relocate to areas where, like other communities, they too can enjoy the benefits of municipal provisions such as electricity, quality water and hygienic toilets. As much as it is up to the individual

community members to relocate to better areas, the municipality can encourage them to do so by conducting campaigns to educate them on the benefits of living in an area where they would receive the benefits other communities are enjoying from the municipality.

Drought is a natural phenomenon and has been experienced for some time now and was severe at the time of research to the extent that most of the existing boreholes had dried up. Those that contained water could only supply the communities in the early and late hours of the day. It is recommended that the municipality supply jojo tanks per household to crop the water during the rainy season. This water should be reserved for use when the boreholes, springs and streams dry up after the rainy season.

As mentioned above, one of the challenges of the municipality is insufficient finances. Where there is vandalism, finances will never be enough. Unless members of the community are trained to value the little they have, they will never be satisfied with the efforts the municipality is putting into their welfare. Vandalism proves that ignorance reigns in these communities hence the need for the municipality to educate and train members the significance of being responsible and the value of having a spirit of ownership of every project initiated by the municipality. Vandalism cripples development. Intensive education campaigns should be undertaken by the Municipality. The municipality can also teach and train the community member's skills that will enable them to take care of property with minimum municipal supervision. Finally it is be recommended that strict measures decided upon by the community, should be taken on any victim found in the act of vandalising any property connected to water and sanitation.

5.4.2 Efforts made to improve water and sanitation

In section 4.4 the Municipality involved three initiatives i.e. the service provider specialists and consulting engineers, black balance service providers, and the use of back to basics approach to address community needs. From the interview results in Ndlamlenze and Luthulunye, nothing was mentioned about the three initiatives. The water and sanitation provision was in a desperate situation. The municipality should make strict follow-ups to all activities done by the service provider specialists and the

black balance specialists. If there are any suggestions from the service providers, the municipality should ensure that they adhere and act accordingly.

5.4.3 Strategies to improve water supply and sanitation

In section 2.4.6, the municipality suggested strategies to improve water supply and sanitation by providing operation and maintenance teams to attend to any problem needing their attention. It also intended to promote public relations. To meet the strategies proposed by the municipality, the municipality should ensure that it recruits an adequate number of qualified staff which will include engineers, operators, maintenance personnel and accountants**.** Then operation and management teams should be provided in which some local community members should be co-opted so that they may acquire the necessary skills, knowledge and the spirit of ownership. These skills will help them to encourage and motivate other members of the community. Such skills and knowledge will also reduce the acts of vandalism, increase the sense of responsibility among community members and improve the quality of water and sanitation services.

5.4.4 Municipal expectations from the community

The municipality expects a responsible community that will take care of the water and sanitation infrastructure; a community that will have a sense of ownership and get involved in all aspects of planning and decision making in anything that pertain to water and sanitation. From the observations made, the two communities do not seem to be anything closer to the municipality's expectations. Vandalism is at its peak and people seem not to care. To achieve the above expectation, the municipality should take it upon themselves to get closer to the communities by making frequent visits both invited and uninvited. The municipality should show interest in community members by listening to their grievances; getting them involved in decision making; allowing them to suggest community projects and piloting them and introducing activities that will promote unity amongst the community members**.**

5.4.5 Communal challenges to poor water supply and sanitation

Generally the findings of the two communities are similar in every respect except for Luthulunye where not every household has a toilet structure erected within the yard. In both communities, members have to walk long distances to draw water from springs and streams. This exposes young girls and women to murder and rape. Time spent drawing water is wasted for other activities that would lead to personal or community development. A few fortunate households have access to water within 200 meters, but both queue for water in the early hours of the day and late evening, reducing sleeping hours for people involved. The streams and springs they draw water from cater for their domestic animals too. This leaves the water muddy and dirty from animal droppings. Community members with compromised immune system sometimes encounter health problems due to water contamination. For Luthulunye, open urination and defecation pollutes the air. Privacy is unknown.

The community members live their lives. The municipality doesn't live for them. Folding arms and waiting for the municipality won't accomplish anything. Therefore the researcher recommends the following:

- It is high time the community members decide to relocate to areas where it will be easy for the municipality to reach them and provide them with all the necessary services as per the constitution of South Africa.
- The community members should take it upon themselves to train and educate their youth the significance of water and care for infrastructure.
- The communities shouldn't wait for the municipality to plan water projects for them. Instead the community members should decide the projects according to their needs and recommend it to the municipality. They should be proactive and innovative.
- Instead of sharing streams and springs with their animals, they should separate the water sources so that sources used by animals are not used by humans.
- When building toilets structures, the community members must use strong materials to prevent possible accidents like a clay brick collapsing while someone is in the process of using the toilet and iron sheets being blown away by wind and injuring persons passing by.

5.5 FUTURE RESEARCH OPPORTUNITIES

The study has investigated the challenges the Amajuba Municipality District is facing in water supply and provision in Ndlamlenze and Luthulunye communities, located within the eMandlangeni local municipality. Future research can be undertaken to complement the findings by developing a water and sanitation model that the municipality can use to deliver the service. The research was confined to Amajuba District Municipality. Future research should be expanded to other municipalities throughout Kwazulu Natal.

5.6 CONCLUSION

The South African constitution states that all South African citizens must have access to good quality water and sanitation. Installation of water pumps, windmills, and erection of the jojo tanks and having water pumped from the springs into tanks, was one way in which the municipality could meet the obligation (picture 5).

According to document review, the Amajuba district municipality, despite all the hiccups they have encountered in their efforts to provide water supply and sanitation provision, have worked very hard to ensure that even remote areas such as Ndlamlenze and Luthulunye have known what a hand pump is and what a windmill looks like. The problem of poor water supply, to a great extent lies on the community members. From the results of the research, it is true that these communities appear to be neglected, but the reality stands that they are not responsible enough to take care of the little that has been supplied by the municipality. They have failed to discipline their children, but allowed them to vandalise the government property. What will it benefit the municipality and the country as a whole to keep on providing for the community that does not appreciate the efforts?

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APPENDICES

Appendix A: PICTURES ON TOILET STRUCTURES AND WATER SOURCES IN THE TWO COMMUNITIES

Picture 1. An iron sheet toilet structure at Ndlamlenze

Picture 2. Dangerous rubbles from a collapsed toilet block at Ndlamlenze combined school. Note that the pits were open at the time of the research, posing a danger to learners falling into them while playing.

Picture 3. An open pit awaiting completion at Luthulunye. The hole was very shallow and it wouldn't be long before it got filled up.

Picture 4. One of the streams, where the Ndlamlenze community members draw water from.

Picture 5. One of the jojo tanks and a windmill aimed at supplying water to the community, but were not functioning at the time of the research.

Picture 6. A toilet built from clay bricks and a loose iron sheet roof which can easily be blown away by a strong wind

Picture 7. The only hand pump working at the time of the research

Appendix B

Application to conduct a research

PO Box 511
Utrecht
2980
27 October 2015

The Municipal Manager
Amajuba District Municipality
Private Bag X6615
NEWCASTLE
2940

RE: Request for permission to conduct a research at your municipality and 2 communities in ward 1

Topic: Challenges of local government water and sanitation provision

I hereby make a request to conduct a research at eMadlangeni municipality and ward 1. I am a master's degree student with UFS in the field of Governance and Political transformation.
My research project is about investigating the challenges that the municipality encounter in the provision of water and sanitation especially in rural areas. My target areas are the Amajuba District Municipality (water and sanitation section), Dlamlenze and Luthilunye communities.

The objectives of the study are:
1. To compare water and sanitation governance practice across selected countries including South Africa

2. To determine the strategies utilized by eMadlangeni local municipality in providing residents with water and sanitation
3. To determine the community perceptions and expectations about the provision of water and sanitation by eMadlangeni municipality

The research is done for study purposes and no confidential information will be disclosed for other reasons or media purposes.

Hoping my request will be taken into consideration

_____

Muyunda R.N

Appendix C

COVER LETTER

University of Free State

Po Box 339

Bloemfontein

9300

30 March 2016

Dear Respondents

I am conducting a research project as part of the requirement for completing my Masters in Governance and Political transformation.

The purpose of the study is to investigate the challenges faced by Amajuba District Municipality in the provision of water and sanitation.

It would be highly appreciated if you could assist me by completing the attached questionnaire. The questionnaire is user friendly and might take you 10 to 20 minutes to complete. Completion of the questionnaire should be done anonymously to ensure objective results.

Be assured that responses will remain confidential and will only be used for the purpose of this study.

Your cooperation and assistance in this regard will be highly appreciated.

Yours faithfully

_____

RN MUYUNDA

APPENDIX D

MUNICIPALITY INTERVIEW PROTOCOL

Question 1

What challenges is the municipality encountering in the provision of water and sanitation to Ndlamlenze and Luthilunye communities?

_____
_____
_____
_____
_____
_____
_____
_____

Question 2

In your opinion, what are the main contributing factors to these challenges?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 3

What measures/ strategies does the municipality intend to implement to ensure that the disadvantaged community receives water and sanitation services from the municipality

_____

_____

_____

_____

_____

_____

_____

_____

_____

Question 4

What efforts has the municipality made in the past to improve water and sanitation provision in this community?

_____

_____

_____

_____

_____

_____

_____

_____

Question 5

How would you want the community to be involved to ensure that water and sanitation provision is successful?

_____

_____

_____

_____

_____

_____

_____

Question 6

Do you have anything more to say on this topic?

APPENDIX E

Demographical information

Please mark each answer with a cross in the space provided

Section A

1. GENDER / UBULILI

Male/**wesilisa**	Female/**wesifazane**

2.AGE?/ IMINYAKA

Younger than 20		20-29		30-39		40-49		50-59		60+	

3. RESIDENTIAL AREA/ indawo yokuhlala

Dlamlenze	
Luthilunye	

4. Years living in residence/ IMINYAKA YOKUHLALA

0-5		6-10		11-20		20-30 years		More than 30years	

APPENDIX F

NDLAMLENZE AND LUTHILUNYE COMMUNITY INTERVIEW PROTOCAL

Question 1

What problems have you encountered due to lack of water and sanitation provision?

IZIPHI IZINKINGA OBHEKANA NAZO MAYELANA NGA MANZI NO KULAHLWA KWENDLE (amatoilet) EZIVELA EMKANDLE?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 2

How has water and sanitation provision been like since you settled in this area?

SINJANI ISIMO SA MANZI NO KULAHLWA KWENDLE(amatoilet) LOKO WAFIKA KULENDAWO?

_____
_____
_____
_____
_____
_____
_____

Question 3

3. What measures have you taken to encourage the municipality to provide water and sanitation?

YIZIPHI IZINDLELA OZITHATHILE UKUGQUGQUZELA UMKANDLU NGE MANZI NO KULAHLWA KWENDLE(amatoilet)?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 4

Suppose water and sanitation provision were improved, what role would you play as a community to ensure continuity in the supply?

UMA EZEMANZI NOKULAHLWA KWENDLE ZINGATHUTHUKA, IYIPHI INDIMA OBUNGAYIDLALA UKUQINISEKISA UKUQHUBEKA KOKUHLINZEKA KWA MANZI NO KULAHLWA KWENDLE(amatoilet)?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 5.

What is the effect of the current provision of water and sanitation?

UYINI UMTHELELA WOKUHLINZEKA KWEMANZI NO KULAHLWA KWENDLE(amatoilet) ENDAWENI YAKO?

_____
_____
_____
_____
_____
_____
_____
_____

Question 6.

What do you expect the municipality to do for you as a community to satisfy your needs in the provision of water and sanitation?

ULINDELE UKUTHI UMKANDLU WENZENI UKUGCWALISA IZIDINGO ZAKHO KWEMANZI NOKULAHLWA KWENDLE(amatoilet) ENDAWENI YAKHO?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 7.

What are your perceptions on the provision of water supply and sanitation provision from the municipality?

USIBONA SINJANI ISIMO SAMANZI NOKULAHLWA KWENDLE (amatoilet) NGOMKANDLU?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Question 8

Are there any other views you may add to the topic?

YIKHONA YINI EMINYE IMIBONO ONGAYIFAKA KULESIHLOKO?

_____
_____
_____
_____
_____
_____
_____

APPENDIX G

QUESTIONAIRE

Households with water and sanitation provision/imizi ine manzi ne zinhlu zangasese

Mark each answer with a tick in the box provided and hand back the questionnaire to the person in charge after you have completed.

		Yes	No
1	There is a tap within the yard **Ikona impompi ejalidini**		
2	The tap is within 100m from the house **Impompi inga ngebanga eli ngu 200m uma uphuma edlini**		
3	No tap is available at all **Ayiko impompi**		
4	The source of water is the river **Amanzi siwaka emfuleni**		
4.1	The source of water is the spring **Amanzi siwaka emthojeni**		
5	The source of water is communinal tap **Amanzi siwakha empompini yo mphakathi**		
6	The source of water is from tankers **Amanzi si waka ompompi omphakhathi**		
7	There is no toilet at all **Ayikho indlu yangasese**		
8	We use a home built toilet **Indlu yangasese yokuzakhela**		
9	We use a bucket toilet **Indlu yangasese ibhakede**		

10	We use a VIP toilet **Indlu yangasese iVIP**		
11	We use a flushable toilet **Indlu yangasese iya flasheka**		

Enye inhlobo engasese _____

APPENDIX H

PERMISSION LETTER TO CONDUCT THE RESEARH

Private Bag X6615
NEWCASTLE
2940

B9356, Amajuba Building,
Section 1, Madadeni

AMAJUBA
DISTRICT MUNICIPALITY

Tel: (034) 329 7200
Fax: (034) 314 3785
e-mail:
jabulilem@amajuba.gov.za
web page:
www.amajuba.gov.za

Imibuzo:
Enquiries: ACTING, DCS

Inkomba:
Ref No: Pers File

08 December 2015

Mrs R.N. Muyunda
Utrecht

Dear Madam

LETTER: APPLICATION TO CONDUCT A RESEARCH

This is to confirm that Amajuba District Municipality is offering you an opportunity to conduct a research at Engineering Services under the Water and Sanitation section.

Kindly be advised that all information, documentation of the Municipality are confidential and may not be used for any other purposes except the research associated with your academic studies.

Hoping you find the above in order.

Yours Faithfully

LM AFRICA
MUNICIPAL MANAGER