ASSESSMENT OF REALIZATION OF FUNDAMENTAL HUMAN RIGHT TO WATER AT UMLALAZI LOCAL MUNICIPALITY, KWAZULU NATAL

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DECLARATION

I Asanda Buliswa Mnguni, declares that this research document has been carefully guided and given best supervision and it is the product of my work and effort. The sources I have used or quoted have been indicated and acknowledged by way of direct and indirect referencing. It is submitted in partial fulfilment for the award of master's in Development Studies at the University of the Zululand, South Africa.

Signature……..

Date……

DEDICATION

This study is dedicated to my parents, Mrs Ntombeziningi Altar Mnguni and Mr Sibonakaliso Mnguni, who supported me through thick and thin times, undergoing difficult situations, and all the sacrifices they made ensuring that I also get hold of the Key to Success (education). To my brothers, Lwethu Mnguni and Siyamukela Mnguni, and my sister Bongeka Mnguni, your support is appreciated.

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But last not least, I wish to express my appreciation for the power that Jehovah God provides to his worshippers, which enables them to surmount the most daunting of tasks. (2 Corinthians 4:7). My Living God for keeping me safe and guiding my life.

ABSTRACT

The aim of the study was to examine the municipal water resource governance and fundamental human rights to water in the UMlalazi Local Municipality of the KwaZulu-Natal Province. The study employed the post-positivist paradigm and closed ended questionnaires for collection of data. Stratified random sampling technique was used to sample 375 respondents, who were the households (head of households). Chi-square was used to determine relationships between the variables.

The findings showed that most of the respondents strongly agreed that the 6kl of monthly water supply was not enough for meeting their domestic, consumptive and hygiene neds. The municipality has a youthful population structure. Females were mostly affected household water scarcity compared to their male counterparts. For the households, a day would be terribly difficult without this life enabling commodity. Access to potable water, good, human rights to water, water contamination, women inclusion in planning and decision making and agriculture significantly influenced water access in the Municipality. Consequently, the null hypothesis (H_o) was ruled out in favour of the alternative hypothesis (H_A).

The study concludes that the municipality still lack the capacity for water supply. There are problems of funding, governance and free riding on water supply persist and these continue to affect government's water supply from reaching targeted beneficiary communities. From the hypothesis test, the concludes that in the UMlalazi Local Municipality, good governance, human rights to water, contamination of water, women inclusion in decision making and agricultural activities in the area are significantly associated with access to potable water and sanitation delivery among the rural population.

To improve and sustain drinking water access, the study recommends that the Municipality should strengthen measures to promote good water governance, improve rights of localities to water, control the rate of water pollution, expand access and inclusion of women in planning and streamline activities for ecologically friendly agricultural activities in the communities. It is important that the households are provided with adequate water to meet their water needs. Ensuring equity in water access would play a major role in ensuring that the rural communities and previously disadvantaged groups are given priority of water access in the Municipality.

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AMCOW	African Council for Water Ministers
AWV	African Water Vision
CMA	Catchment Management Agencies
COGTA	Cooperative Governance and Traditional Affairs
DWS	Water and Sanitation
FBWP	Free Basic Water Policy
FFA	Framework for Action
GWP	Global Water Partnership
HRWAS	Human Right to Water and Sanitation
IWRM	Integrated Water Resource Management
MSA	Municipal Systems Act
NDP	National Development Plan
NGOs	Non-governmental Organizations
NWA	National Water Act
NWRS	National Water Resource Strategy
RDP	Reconstruction and Development Program
RSA	Republic of South Africa
SADC	South African Development Community
SWCIs	Shared Watercourse Institutions
SDGs	Sustainable Development Goals
UNICEF	United Nations Children’s Fund
WSDP	Water Service Development Plan
WHO	World Health Organization
WSPs	Water Service Providers

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

An unhindered admittance to water is significant for human endurance and a technique to help break endless loop of neediness. However, for some, impartial admittance to consumable water involves day by day battle. Accordingly, water governance is a fundamental system for progression, poverty alleviation and fulfilment of basic rights to water supply (DWAF, 2011).

The issue of water access has deteriorated as of late in view of a few conditions, similar to populace development which has truly influenced non-industrial nations the most. Lack of water can dislocate drinking water supply, disinfection, medical clinic activity, mechanical cycles and numerous different parts of life. The 2020 UN World Water Development report distributed globally, highlighted the underfunding of water infrastructure around the world, notwithstanding its importance. One of the reasons underlying the investment gap in water and sanitation is that these services are seen mostly as a social and in some cases ecological issue, as opposed to economic one, like energy. Understanding the economic significance of water and sanitation should provide an additional catalyst for greater investment (UN, 2020). There is a rivalry for water assets, but ensuring that the individuals who need water get, it is a good speculation, hence the need for good governance in water supply.

Water governance in UMlalazi Local Municipality is an unpredictable interaction as water ‘flows’ through the rapidly changing ‘hydro social’ pattern of the city creating rivalry for and conflict over its utilization and removal. This ‘hydro social’ cycle, which catches and incorporates ‘the socio-political and biophysical measures that establish water arranged in a rapidly changing municipality that is being transformed by on-going urbanisation, post-apartheid restructuring, and the pro-growth and pro-poor agenda of national government (van Kopen et al 2016). Decentralisation of water supply and sanitation delivery has appeared to improve responsibility, acknowledgement of multicultural patterns, and proficient and successful service delivery. However, it is hard to control the appropriate support of enormous number of treatment unit, hence the danger for general medical conditions increases. Besides,

the cost of building the treatment and capacity or removal units, along with an additional network for the water and the water to be reused, expands the expense of the structure and cannot be recovered by the cost of saved water (Sutherland et al, 2015). Water strategy formulation policy, enforcement and the proactive nature of water clients are likewise essential to more readily water and sanitation service delivery, if sustainable water management will be realised in the near future (Global Water Partnership, 2006).

Mostly in parched and semi-arid areas, access to sufficient water in regards to quality, amount, and moderateness is indispensable for economic development. However, a few difficulties block water supply in numerous spots around South Africa, particularly in rural areas. There are numerous advantages of improved water service delivery, including prevention of illnesses, improved fundamental medical care, and better sustenance, expanded admittance to institutions, like wellbeing focuses and schools, improved water quality, expanded amount and admittance to water, decrease on schedule and exertion needed for water assortment, advancement of financial action, reinforcing of local area association, upgrades in lodging, and eventually, improved personal satisfaction (Mbatha, 2016).

To address the looming water crisis, the public authorities of South Africa has made a few interventions. Adoption of the Integrated Water Resources Management Policy by the South African government support of the African Water Vision (AWV) and the Framework for Action (FFA), contribution to the foundation of the African Water Facility (AWF) and execution of Rural Water Supply and Sanitation Initiative, among others, are some of the significant interventions embraced by the public authority lately (Department of Water and Affairs and Forestry, 2009). In 2001, the Department of Water Affairs and Forestry introduced a policy of providing each of the indigent households with free basic water. The overwhelming cholera outbreak in August 2000 at Ngwelezane in KwaZulu-Natal Province was the chief justification for this initiative.

The departments of health, water affairs and forestry, and local government battled to keep the pandemic under control. Then again, The Phiri Case in Soweto additionally fills in as a rule to accomplishing value in feasible sustainable services delivery. At Phiri, the community fought against the introduction of prepaid meters and took the government to court and the ruling was in favour of the community. The judge ruled

that government should provide households with 50 litres of water for free as a realisation that water is a human right (Naidoo, 2005, Dugard, 2014 cited in Meyiwa et al, 2014). Much has changed in South Africa since 2003 in as far as the water issues are concerned. The change is progressive, the municipalities are still trying to provide people with water. Nevertheless, the role of the state in relation to the right to water remains as argumentative as ever. The development of indigent policies by individual municipalities from the late 2000s has implied that the state is not simply ready to choose what is and what is definitely not an only dissemination of water yet in addition who is and who is not the meriting poor according to municipal service provision (Dugard, 2014).

In 2001, in the location to uMlalazi Local Municipality and COGTA, the strategy called 6kl of Free Basic Water Allocation to a family of 8, but recently there were municipalities that were still offering just 6kl, while Durban expanded their allocation to 9kl and other municipalities are now offering 12 kl, the urban areas has been able to adjust 6kl to 12kl because most people are able to pay for water. Research has shown that a small local municipality in the North West Province named Rustenburg Local Municipality is offering the Royal Bafokeng Nation unlimited quantities of free basic water, along with the Royal Bafokeng Government. As proposed in the Free Basic Water Policy, the goal of equitable realization of free basic water should be to ensure equal access to water for everyone and not only the indigent (Tabane, 2020). The Human Right to Water and Sanitation (HRWAS) is a rule that recognizes that clean drinking water and sanitation are fundamental for each individual's life. It was perceived as a basic human right by the United Nations General Assembly on 28 July 2010.The HRWAS has been perceived in global law through human right treaties, affirmations and different principles.

A few commentators have determined that the human right to water stipulated in the General Assembly Article 11.1 of the International Covenant on Economic, Social and Cultural Rights, its restricting under worldwide law. The option to perfect, safe water and disinfection has clear roots in global basic liberties law, worldwide helpful law, and global water law. The option to water and disinfection has developed both in global practice and lawful conviction, the base of standard worldwide law. A few considerable rights in the Constitution's Bill of Rights are of significance to water. The Constitution is quite certain about water. Which is all well and good, it is vital for all life, including

human existence. The electrolytes in water render it a fundamental piece of everyday nourishment. In section 27 of the Bill of Rights it is expressed that: "Everybody has the privilege to receive adequate food and water and sanitation (Republic of South Africa, 1996, UN, 2015). Gumbi (2017) states that the country territories especially those that are under traditional authorities are described by underdevelopment and related neediness. An enormous number of individuals live under hopeless neediness, emerging from a high pace of joblessness, utilitarian ignorance, administration's overabundance and helpless admittance to public offices (like absence of water administration conveyance and disinfection). The inability to give adequate water can mess up people groups' lives to work well, restricting profitability and support of individual cleanliness, not just in their own lives just as in the rest of the world. All in all, the privilege to adequate water isn't unequivocally perceived.

1.2 Background of the Study

Achieving great water governance through water asset creation and the management stays fundamental for financial development, sustainable development and neediness decrease, particularly with regards to the UN Sustainable Development Goals (SDGs). South African water governance is generally characterized by the Constitution and water enactment, for example, the National Water Act (NWA; Act a day and a half 1998) and the Water Services Act (WSA; Act 108 of 1997), which the Department of Water and Sanitation (DWS) oversees at its heart (RSA, 1997, 1998). The Department of Water and Sanitation's main goal is to serve individuals of South Africa by: having a constructive outcome on the country and its kin as caretakers of its assets in the field of water and sanitation, and as creative and devoted accomplices in the drive for sustainable development. Worldwide, South Africa is acclaimed for having the best and most reformist laws and institutional arrangements on water.

There are, however, rising worries about the corruption in the nature of common water supplies and a vital hole in normal asset provision, the role of water boards and other water service providers (WSPs) and strategy implementation because of expanding institutional vulnerabilities and disappointments. These are in accordance with the concerns of numerous South African analysts and specialists who require a change in perspective from the training of water professionals and a more certain, reasonable way to deal with the issues of administration and management of water resources.

From 2014 to 2017, a subjective hypothesis building on contextual analysis by longitudinal activity research was done by (Gumbi 2017). Objective six of the Sustainable Development Goals (SDGs) plans to guarantee the accessibility and reasonable management of water and sanitation for all. Like the National Development Plan (NDP), the objective requires the accomplishment of the universal and impartial access to protected and reasonable drinking water for all by 2030. The goal additionally requires a significant expansion in water-effectiveness across all areas while offsetting supplies with request to decrease the quantity of individuals experiencing water scarcity (United Nations, 2015).

For other SDGs, accomplishing SDG 6 is key since water is a fundamental facilitator of sustainable development of the economy, which is crucial for food security, wellbeing and sanitation, and is a key basic human right. As a result of population development, water-related monetary development, contamination and an evolving climate, water supplies are under pressure. SDG 6 is particularly applicable to South Africa. The water supply industry has gotten progressively significant for financial development in the course of recent many years, as the surface 72% of water supply is showing an approach to deal with a prompt full utilization of water.

More than 60% of the stream results from just 20% of the land territory requiring enormous scope between bowl moves. Simultaneously, neediness, joblessness and imbalance are serious issues in South Africa almost 46% of the populace (DWA, 2016). Despite enormous upgrades in the water infrastructure, a few families actually need access to protected, moderate and reliable sources of water. Therefore, Government should expand the access to water and other essential basic services (DPME, 2014). South Africa is a country with marked spatial and fleeting inconstancy in the precipitation it gets (Earle and Kgomotso, 2005).

This shows that most places of the nation do not have high precipitation and dry spells are a consistently presenting a danger in all areas. South Africa is likewise inadequately enriched with groundwater, all things considered, essentially underlain by hard rock arrangements which albeit plentiful in mineral, do not contain any major groundwater aquifers which could be utilized on a material scale (Earle and Kgomotso, 2005). This makes the accessibility of water a delicate issue. The Cooperative Governance and Traditional Affairs (COGTA) have seen the need of complimenting

fundamental free basic water service delivery with the motto; let there be water for all (Cooperative Governance and Traditional Affairs, 2014). Likewise, the National Development Plan clearly states that people have rights to access fresh drinkable water (2015). Nonetheless, a greater part of families in the area doesn't have consumable water since they can't manage the cost of them and they appear to be dismissed. These individuals battle when it comes to accessing water, they rely upon the close by networks that have water and they likewise rely upon vans claimed by their neighbours who get water at a cost. Mismanagement of water supplies influences nearly everybody in South Africa, yet those living in countries and regions that are most influenced on the grounds that they do not access consumable water and adequate sanitation.

The district trucks do not convey water in the networks on schedule and subsequently, the inhabitants bring water from unclean water sources including waterways and dams inside the local area. It now and then happens that the dam they depend on evaporates (UMlalazi Local Municipality, 2016). As supply and demand increase because of advancement, urbanization, unreasonable utilization, consumption of wetlands, water misfortunes and a reduction in precipitation because of environmental change, UMlalazi's water shortage could quickly deteriorate (Umlalazi Local Municipality, 2016). King Cetshwayo District Municipality and uMhlathuze Water Board are accountable for water supply and governance at uMlalazi Local Municipality. Most families around uMlalazi Local Municipality do not afford to pay for water, except Phushini Park, King Dinuzulu, Sunnaydale, Mthunzini, and urban areas within Gingindlovu. The absence of assets, poor planning, and financial limitations, lack of advancement plans, correspondence channel and dependency on grants for infrastructural development are the motivation behind why they neglect to perform its constitutional function of ensuring potable water supply to the municipality. Thus, there is a need for the Umlalazi Local Municipality to take over the management of Phobane Dam and the establishment of their water board is essential (UMlalazi Local Municipality, 2016).

1.3 Problem Statement

Numerous examinations have explored the capricious supply of water, because of dry spells and different glitches that represent a danger to human livelihoods and other

living things. UMlalazi Local Municipality is one of the spots encountering capricious supply of water because of significant degrees of interest. It has been seen that the parts of water provisioning specialists at uMlalazi Local Municipality are not sufficient for this local municipality which is predominantly rural since some of the households do not have satisfactory water either in their families or in their networks. This issue stays tremendous and earnest. The issue of precarious water supply in this space has for quite some time been an issue; a greater part of families doesn't have consumable water (UMlalazi Local Municipality, 2016). The public authority has made progress in the conveyance of other essential services. Nonetheless, water service conveyance is as yet an issue for most of nearby regions in South Africa (Carpenter et al., 2014).

Numerous investigations have shown that a portion of the rustic communities in South Africa actually don't have access to water services and thus would regularly depend on utilizing unprotected water hotspots for their water needs (Basson et al., 2011). South Africa is confronting various difficulties concerning water, both at the level of the resource just as in the genuine arrangement of water services by districts. Berkowitz (2009) states that this issue is mostly critical in little districts; serving rural communities and it is not an issue for enormous regions and metropolitan territories. Hence, this plainly shows that the momentum of water supply framework needs more ability to adapt to the needs as the water supply is insufficient, thus results in many people who do not get water for an extended period.

The residents of the local area are compelled to utilize water from streams and hand-burrowed wells which regularly has serious outcomes to their wellbeing (Berkowitz, 2009). These days, individuals are expected to pay for water, a few groups cannot manage the costs of water since they do not have cash or they are confronted with poverty. The water crisis has additionally added to the spread of illnesses like looseness of bowels, cholera and skin disease on account of debased water that individuals utilize in their families. Rustic individuals experience loss of sufficient water for domestic purposes. A dominant part of individuals in rustic zones experience the ill effects of an absence of access to clean water and inadequate water for food creation (Motoboli, 2002).

As per Motoboli (2002), mostly in oppressed zones, individuals bring water from numerous sources which they use for a few purposes as they attempt to support and

keep up their livelihoods. However, these water sources are inconsistent and have a deficient water supply. The sources are either messy or they are dry, and they are additionally a long way from individuals. Accordingly, rural communities actually depend on sullied sources like streams and dams since they are not provided with more readily available water services. During the stormy seasons, the communities get more water and battles during the dry seasons. In non-industrialized nations, gathering water for domestic use in rustic zones is a serious issue. At times a long way from homes, natural surface water supplies give inferior quality of water and are powerless against the impacts of dry spells or dry seasons (Makon, 2014).

The existing water supply and demand in UMlalazi Local Municipality is still high. The King Cetshwayo District Municipality and UMhlathuze water play a vital role at UMlalazi Local Municipality, as the support base in the provision of water to their areas of jurisdiction. They both ensure that efficient, sufficient and equitable water is provided to the communities to sustain their livelihoods (Department of Water and Sanitation, 2014). The existing water supply and demand in UMlalazi Local Municipality is still high.

1.4 Research Questions

What are the roles of the UMlalazi Local Municipality in the governance of water and realisation of the fundamental human right to water within the KwaZulu-Natal Province?

1.4.1 Specific research Questions

1.4.1 How effective are the constitutional and policy frameworks implemented to support municipal water resource governance and fundamental human rights to water in the UMlalazi Local Municipality?

1.4.2 What is the extent to which decentralization of water management promotes or hinders access to water services as a basic need?

1.4.3 What cost recovery measures and subsidies are provided for water service delivery in the UMlalazi Local Municipality?

1.5 **Aim and objectives of the Study:**

1.5.1 **Aim of the Study**

The aim of the study was to examine the governance of water in the UMlalazi Local Municipality of the KwaZulu-Natal Province in South Africa

1.5.2 **Objectives of the Study**

1.5.2.1 To explore the constitutional and policy frameworks adopted to support municipal water resource governance and human rights to water in the UMlalazi Local Municipality.

1.5.2.2 To investigate the decentralization of water management and the extent to which it promotes or hinders access to water services as a basic need.

1.5.2.3 To investigate cost recovery measures and subsidies provided for water service delivery in the UMlalazi Local Municipality.

1.6 **Hypotheses**

1.6.1 Null hypothesis (H_o); there is no statistically significant relationship between good governance, human rights, water contamination, women inclusion, agriculture and access to potable water at the UMlalazi Local Municipality.

1.6.2 Alternative hypothesis (H_A); There is a statistically significant relationship between good governance, human rights, water contamination, women inclusion, agriculture, and access to potable water at the UMlalazi Local Municipality.

1.7 **Significance of the Study**

The investigation has caused to notice the significance of executing sufficient water supply procedures that will work for uMlalazi Local Municipality and the encompassing communities. This has increased the value of collection of information on challenges that thwarts adequate and impartial water supply and important measures to improve those difficulties and improve livelihoods of oppressed communities. The study does not apply to all the areas within uMlalazi Local Municipality. The focus is primarily on rural areas, in particular where the majority of people have poor access to potable

water. The social groups that are expected to benefit from this study are the King Cetshwayo District Municipality; uMlalazi Local Municipality and Department of Water Affairs in KwaZulu-Natal. As water is important to all development, proper management, and supply of water; will eventually help in the economic development of underprivileged South African communities. UMlalazi Local Municipality is part of King Cetshwayo District Municipality. The uMlalazi Local Municipality is a Category B municipality located within the King Cetshwayo District in KwaZulu-Natal. It borders on the Indian Ocean and has a coastline of approximately 17km. It is the largest of five municipalities in the district, making up almost a third of its geographical area (Stats SA, 2011).

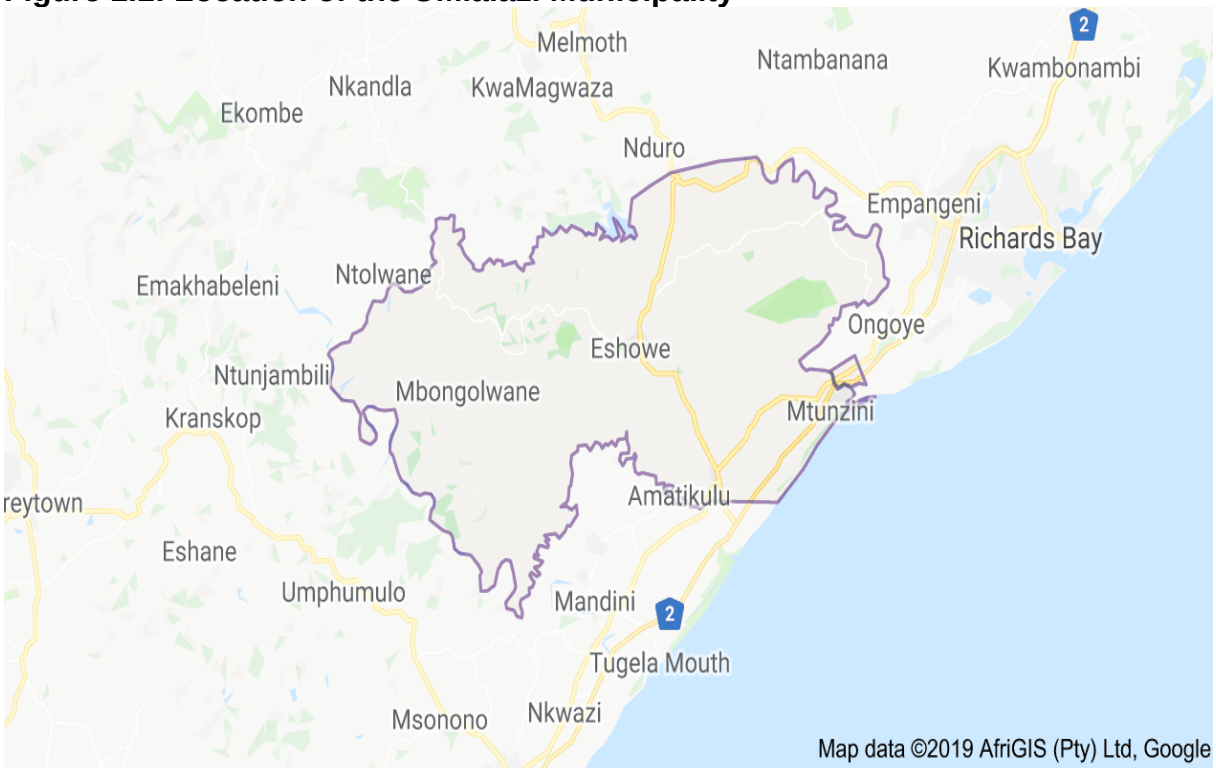
For the purpose of the study, is to provide more information on the impacts of inefficient water supply in UMlalazi Local Municipality. The research findings would help the government and the relevant water supply to prevent future occurrence by informing them to identify the causes off erratic water supply. This can ensure future water security, while reducing the challenges posed by decreased water supply. Findings from this study would be important as they contribute to the governments future planning due to increased population and environmental management of natural resources, especially water, because water supply is a basic necessity to prevent future occurrence. The findings of this study would serve as an eye opener to recognize the impacts of water supply for both municipal council and other environmental organizations. This would also encourage them to implement water management laws and regulations to minimize negative impacts. This will ensure a safe water supply.

1.8. Description of the study Area

The population dispersion in the metropolitan region is described by moderately high population densities inside metropolitan hubs and low densities in country territories, 213 601 people, the gender are spread as follow: male 44.7% and female 55.3%.There are 45 062 households as per the 20011 census report. The residential region is dominated by ancestral land, and 14 ancestral or traditional authorities exist inside the space. The town of Eshowe is of incredible recorded importance in that it is the organisation of King Cetshwayo, who was the ruler of the Zulus during the Anglo-Zulu war of 1979. Figure 1 presents the location of the UMlalazi Municipality. Eshowe

Town is likewise viewed as the managerial and administration centre of the UMlalazi Local Municipality. The coastal town of Mtunzini is situated on the north coast of KwaZulu-Natal on the banks of the UMlalazi River, and borders on the uMlalazi Nature Reserve. Mtunzini is the number one residential and eco-tourism destination in South Africa (UMlalazi Local Municipality, 2016).

Figure 1.1: Location of the UMlalazi Municipality



Source: AfriGis (2019).

The city region comprises of business cultivating territories in an expansive, nonstop band from the West of Eshowe to kwaGingindlovu (also known as Gingindlovu) and the North of Mtunzini. The remainder of the space comprises of ancestral positioned land, where land is inhabited by the poor households. It is characterized by undulating topography, causing difficulties for the delivery of engineering services. The uMlalazi Local Municipality is endowed by a number of important transportation routes, such as the N2 motorway between Durban and Richards Bay, the R34 between Richards Bay/Empangeni and Nkwaleni Valley to the north of Eshowe, and the R66 from the N2 motorway to KwaGingindlovu, Eshowe, Melmoth, Ulundi and Vryheid (Umlalazi Local Municipality, 2016).

1.9. Study Outline:

Chapter One: Introduction and Background of the Study -This chapter introduces the study and states the focus of the study. It begins with introduction regarding the problem under investigation. It includes the background to the study, problem statement, aim and objectives of the study, research questions, and hypotheses, significant of the study.

Chapter Two: Literature Review -The purpose of Chapter 2 is to provide the reader with a comprehensive review of the literature related to the problem under investigation. The review of related literature greatly expands upon the introduction and background information presented in Chapter 1. This chapter also contain theories and models relevant to the problem, a historical overview of the problem, current trends related to the problem, and significant research data published about the problem. The chapter consist of Free Basic Water Policy (FBWP), The Institutional framework, the water service Act no.108 of 1997, key institutions in water service provision, water governance, the municipal systems Act, no. 32 of 2000, initiatives for water management and water supply: reconstruction and development programme (RDP), rural water supply and sanitation, decentralisation of water service delivery in South Africa, decentralisation policy and local government legislation, IWRM Dublin principle no.2, water as a human basic right, Dublin principle of IWRM no.4, the importance of water, water and development, gender related issues to access water, and problems hindering sufficient water supply. The chapter ends with a conclusion.

Chapter Three: Theoretical framework - this chapter provides information about the theoretical framework, focusing on the following theories: water as a human basic, right, scale/ size of the economy, equity in water, allocation of resources, and distribution of wealth. The chapter ends with a conclusion.

Chapter Four: Research design and methodology - this chapter provides the research methodology, gives reasons for the choice of approach as well as the method that is used to conduct the research. The chapter also provides information about the instruments for data collection that the study adopts to draw both primary and secondary data. Other critical information such as research design, paradigm, target population and sampling as well as the field operations, validity and reliability of the data, limitations and delimitations, ethical considerations, data processing and

analysis techniques are also outlined to give a sense of the credibility of the data collected. The chapter ends with a conclusion.

Chapter Five: Findings and discussion - this chapter presents the results and discusses the findings. The results are presented based on the research question, objectives and the research aim. The chapter ends with a conclusion.

Chapter Six: Summary, Conclusions and Recommendations – This chapter presents summary of chapters, the conclusions recommendations and suggestions for future studies.

1.10 Chapter Summary

In this section, the researcher has fore-grounded the work of this study and further provided the background of the study. There is a fundamental, undeniable, and acknowledged fact that there have been several studies done specifically on water crisis effect in South Africa. However, in this chapter, the study focuses on the municipal water governance and human rights to water. The next chapter will present the literature review.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The prime objective of this review is to survey water governance in the UMlalazi Local Municipality of KwaZulu-Natal Province; South Africa. To accomplish this research task, the survey gave some authentic setting on water services and sanitation development in South Africa in order to comprehend the increase or decrease in water and sanitation resources. The study basically investigates the decentralization of water supply and how much, as a principal need, it works with or thwarts access to water supply and sanitation services. In addition, it looks at cost recovery activities and subsidies allocated to the UMlalazi Local Municipality for water and sanitation delivery as part of the municipal infrastructure grant as well equitable share.

In its Bill of Rights, enshrined in the constitution, South Africa has set the right and not the privilege to satisfactory get access to water as a Constitutional right by all the inhabitants of the country. This implies that it puts a legitimate obligation on the public authority to guarantee the right and not the privilege to adequate water for all individuals living in South Africa. The Constitution does not propose more about the responsibility and mandate yet leaves that to be decentralised organs of state (Clark, 2017). The state institutes guidelines, laws, policies and approaches to guarantee the realisation of the right to get access to water supply and sanitation services by households especially those who are indigent. Presently, the National Water Act (NWA, 1998) and the Water Services Act (1998) are the two key laws which guarantee the right to water and the fulfilment and realisation of this right by the state.

It is imperative to note, nonetheless, that the approach to guarantee a human right to water was not part of the previous apartheid and homeland administrations. So, the approach has its sources in the conservative development that started after the Second World War (1939-1945) globally, and in South Africa at the dawn of democracy in 1994 and offers a way to set objectives dependent on friendly and lawful qualities (Kakwere, 2019). As such, it is essential to take note of the fact that as much as water accessibility is viewed as a major human right by the National Water Act Guide, 1998, local government structures appear to battle to pay for the water they give their citizens, as endorsed in the Water Services Act, 1997, Act 108 of 1997

(Cloete, 2020). In South Africa, many pieces of law seek to increase access to sufficient water supply and sanitation services by households. The nation's water laws and strategies have been upheld to guarantee access to water for all and give guidelines for water protection (DWAF,1998). The guidelines, rules, strategies and techniques to determine the water pressure allowed to households by local authorities incorporating water resources such as stream flow reduction are needed in the management and governance of water (Thompson, 2016). The right to water and sanitation is realised through the provision of free basic water by local authorities introduced in 2001.

2.2 Free Basic Water Policy (FBWP)

As per Gumbi (2018) the South African government introduced a Free Basic Water Policy which was aimed at providing poor families with 6, 000 litres of free basic water each month and at guaranteeing that all families receive an essential water supply. The objective of the Free Basic Water Policy is to improve the personal satisfaction of individuals who are unable to pay for water and to increase the role of local authorities to mitigate water and sanitation poverty in rural areas where the water emergency is generally a great concern.

Nevertheless, the policy expresses that any utilization over the free litres of water ought to be paid for. The 6, 000 litres limit was set to guide provincial local and metropolitan levels of government, since where water is provided, in excess of 50 meters or something like that, the usage per capita drops to around 25 litres. The World Health Organization (WHO) sees this as the base that ought to be accomplished all around before services are improved (Hlophe, 2004).

Free basic water policy was a fundamental move from the 1994 arrangement of the ANC-led government. The ANC's Reconstruction and Development Program (RDP) had tried not to guarantee bogus desire to individuals. Its way to deal with water services was moderate, cautioning that all would need to pay something, discussing a life saver duty to guarantee that all South Africans can manage the cost of water which is adequate for wellbeing and cleanliness prerequisites; in rural regions, a levy that covers working and support expenses of local administrations (ANC, 1994:04). Free essential services were important for the government to provide assistance to poor and indigent households as part of its subsidy strategy outlined in the RDP.

Free basic water provision is a National Government Policy, however, it must be executed by the local government. As per the Constitution Act 108 of 1996, the local government is responsible for the delivery of basic services such as water supply, sanitation, waste management and basic electricity. Nevertheless, the National Government and the South African Local Government Association are offering help to local government institutions to guarantee that they can execute the strategy in their respective municipal wards. In order to avoid the expenses and promoting a culture of reliance, the ANC government adopted the social compensation policy, which incorporates free basic water, basic electricity and provision of free houses. For the beneficiaries of free basic water, the fundamental difficulties are to acquire administrative foundation, which guarantee that it works securely, dependable and reasonable (Muller, 2007).

Water governance is a powerful component in eThekwini Municipality as water 'moves' through the city's quickly developing 'hydro social' cycle, producing contention for and discussion over its 'utilization' and 'removal. 'This 'hydro social' cycle, which includes and associates' water-based socio-political and biophysical measures which are situated in a quickly changing environment due to continuous urbanization, post-politically-sanctioned racial segregation change, and the public government's supportive role in development and favourable to helpless plan (Sutherland, 2015).

Contentions have additionally been made with regards to who is obligated for taking care of power and pay the bills for water provision. Frequently, these cases left individuals without water for quite a long time and even months, without anybody in water trucks giving any water, they would be left to manage the lack of access to water all alone. Different cases were about which government-supported ventures could help towns and rural areas. By 2005, out of 48.1 million occupants, just an estimated3.7 million were without access to clean water. The 1996 Constitution of SA stipulated that an undeniable degree of decentralization as a component of the political settlement of the nation is essential in ensuring that all the inhabitants of South Africa get access to water (Muller, 2008). While the water supply program was pushed and upheld for the initial five years by the DWAF, the second five years were a period of decentralization, during which, following the 2000 local government elections, new local government establishments were established.

From the start, the DWAF program was characterized by building local government and making the constitution work rather than just growing water sources (Stats SA, 2016). In 2001, a decentralized monetary framework was set up that coordinated the financing of the public water supply and sanitation program, it necessitated that consideration be paid to supporting new districts so that they could fulfil their obligations. While the water resource management capacities were being decentralized, the water resource and governance technical capacities were kept at the focal level. This assisted with keeping up the balance between waterways, the building up and strengthening of institutional mechanisms between local government districts and metropolitan councils as water service authorities, water boards as water service providers, local municipalities and DWAF as the sector leader (Muller, 2008).

There is a profoundly decentralized local government structure in South Africa, revered and ensured by the Constitution. Under this framework, the duty regarding water resources management has been stipulated by the Constitution to the local government institutions. The connection between the decentralization of local government and the decentralization of water and sanitation administrations is subsequently strong. The area's authoritative system, hierarchical jobs, administration structures and monetary streams are altogether steady with this decentralized institutional arrangement structure (Eberhard, 2017).

2.3 The Institutional Framework

The United Nations General Assembly explicitly perceived the human right to water and sanitation through Resolution 64/292 and acknowledged that protected drinking water and sanitation are integral to the acknowledgment of all human rights. In subscription to this initiative and because of its widespread impact on the citizens of the region and its economic growth, SADC appointed a specific regulatory agency, the Water Division of SADC, to oversee and ensure the timely implementation of policies on water resources and sanitation infrastructure in the region. This initiative came from the United Nations and its agencies, for example, UNHABITAT, UNICEF, WHO and other global institutions like the World Bank, the World Water Council, to a new few.

The African Council for Water Ministers (AMCOW) resolved that each African state contribute a large portion of a percent (0.5%) of their GDP to sanitation (DWAF, 2008 cited in Nojiyeza, 2014). The nations of the African Union consented to contribute 1%

of their GDP to water supply and sanitation (African Union Commission, 2008 cited in Nojiyeza, 2014). Participation ought to be organized by powerful shared watercourse Institutions (SWCIs), like Watercourse Committees, Water Authorities or Boards, for the planned administration of shared streams. The SADC Protocol on Shared Water Courses stipulates and upholds the setting up of SWCIs to control shared streams. A conventional understanding concluded between the riparian states will be characterized by the essential terms of foundation, including the capacities and association of SWCIs (SADC, 2015).

The 1996 South African constitution expresses that everybody has a right to access clean water, to social help, to individuals who can't provide for themselves and their wards. The institutional framework capacitates the establishment of the Department of Water and Sanitation (DWS) which serves, as the body that plans and executes the water supply and sanitation programmes. This constitutional obligation is delegated to WSAs and WSPs. Section 27 of the Constitution guarantees that all South Africans receive, adequate water and the environment that is not harmful to their well beings (The Republic of South Africa, 1996).

As per the South African Constitution Act, 108 of 1996 and the Water Services Act 108 of 1997, the obligation of water service delivery lies with the local government, either as a water services authority or as a water services provider. The duties of a WSA or WSP are performed by a district or local authority or a water board. Also, the Constitution expresses that every district or metropolitan council should structure and deal with its cycles of administration or establish a department that is responsible for the provision of water and sanitation services and to advance the social and monetary return and guarantee that water is distributed in a common manner to all (The Republic of South Africa, 1996).

Since water and sanitation is the duty of the local government (responsible for the arrangement and delivery of the water supply within the domestic water cycle), the Constitution specifies the accentuation on the significance of cooperation between government and the communities in the planning of service provision. It is critical to design with individuals as opposed to getting ready for them, since one would have the option to recognize their necessities and afterward have the option to give those

requirements, as if there should arise an occurrence of water shortages as a result of the collapse of the water schemes (the Republic of South Africa, 1996).

All water service providers and water service authorities ought to be responsible, financially stable, effective, and reasonable, and have the option to execute fitting business, gender equity approaches and water services. The costs of water and sanitation services need to reflect the way that they are both socially and monetarily stable (that is, estimation to elevate access to water, to basic services, empower the stable and reasonable usage of water resources and guarantee monetary manageability (DWAS, 2014). It is critical to organize a successful structure to guarantee that the nation's water assets are utilized, created, managed, secured and controlled reasonably and even-handedly that will be helpful for all residents of South Africa as long as possible. The structure ought to incorporate the institutionalisation of basic water rights that are essential for accomplishing ecologically practical, social and monetary advantage for every living being (Bekink, 2006).

The South African government is committed to guaranteeing that its residents are furnished with satisfactory water and sanitation services, economically and fairly distributed by 2010 (Republic of South Africa, 2007/08). This commitment was not accomplished in all regards. This was because of the excess and issue of accounts in government. The Water Services Act requires water specialists to set and create an enabling environment and conditions manage water resources in an equitable manner whilst recognising it as a social good. The conditions and the technology should be known and perceived by the inhabitants as reasonable and equitable for the general public (Department of Water Affairs and Forestry, 1997).

Ismail et al., (1997) states that the local government ought to endeavour the accomplish targets in their monetary and authoritative limit: the fulfilment of funding with a budget vote allocated for water and sanitation. The local authorities are expected to provide services to residents in a sustainable way, whilst promoting the advancement of social and financial benefits. The local authorities should offer the essential types of assistance to individuals with the goal that they can meet their water needs. The monetary stability is additionally imperative to help with guaranteeing that individuals impartially get the sufficient water subsidies.

2.4 The Water Service Act No. 108 of 1997

This Act regulates a system of managing water supply and sanitation services and its distribution to households in South Africa. The Act focuses on the rights of impartial, sustainable, and productive access to basic consumable water supply and sanitation required and important to guarantee a sound way of life (Motloung, 2010). The Water Services Act (WSA) gives local authorities the mandate to take sensible measures to oversee water supply administration and sanitation and further stretches out the duty to all levels of government to realise this objective within the limits of their budgets (RSA, 1997). Gabru (1995) stipulates that the local authority's aim is to secure the right to provide an essential water supply when individuals are unable to pay. He further contends that each South African family ought to be provided with 6, 000 litres of water each month without a charge.

The Water Services Act, No. 108 of 1997 is based on the lifeline approach of the Reconstruction and Development Program (RDP). The act expresses that water is to be delivered by the local government. This act shifted the duty to provide water and sanitation from the Department of Water and Sanitation to local government institutions. As indicated by the Water Services Act, local government especially the district and metropolitan councils are the Water Services Authorities (WSA), with the duty to provide access to water and sanitation services to households within their jurisdictions (DWAF, 1997).

The act additionally characterizes the Water Service Provider (WSP) as the institution that design the schemes under which water services are provided. This might be simply the WSA, or a body contracted to do as such, on its behalf. In clause 19.2 it says that the private sector should possibly be considered as a service provider if all public sectors have been explored and discovered not ready to work. But, in June 2000, the Minister of Water Affairs and Forestry Ronnie Kasrils declared new guidelines to amend the Act, known as clause 19.5. This defines a water supplier as anything from local government to the private sector. This presently takes into consideration private sector involvement in water services. This institutional shift resulted in the privatisation of water and adversely affected the realisation of water as a social good and a fundamental human right (Nnadozie, 2011).

Of recent, the Human Settlements, Water and Sanitation Department of KwaZulu-Natal reported that the total updated expenditure allocation in the business plan 2020/21 is R36 740 000.00. As to the issuance of consistence endorsements, there were some city issues that is rate clearances; designing declarations now and again emerging from the payment of services, etc. The aim is to set up a KwaZulu-Natal water ground-breaking strategy, which assesses flow and possible interest for water and characterizes short, medium and long haul measures, to guarantee the drawn out security of KZN water for domestic use, agribusiness and other monetary exercises (Department of Human Settlements, Water and Sanitation, 2020). During the politically-sanctioned racial segregation period, there was no focal division of government that was devoted to general water supply on-board in South Africa. The homeland governments ran water administration frameworks within these Bantustans. In the more unfortunate dark days of apartheid, these schemes were run wastefully by homeland administrations that were totally reliant on the South African Government for financing. In this current dispensation the remains of apartheid approaches to water resources management remains intact (Nnadozie, 2011).

Centralization had left an exceptionally unevenly distributed municipal infrastructure, with black municipalities characterised by deficient and inadequately maintained services. Centralising water the water boards and other WSPs hurt individuals' lives in light of imbalance, hardships, socially and strategically. Therefore, the test of water supply is a quick issue pointing towards the South African metropolitan supervisors in light of the fact that a water administration is a fundamental component of metropolitan development (Goldblatt, 1996).

2.5 Key Institutions in Water Service Provision

Many individuals are benefiting as a result of the role played by King Cetshwayo District Municipality, working together with UMhlathuze Water Board in providing water to UMlalazi Local Municipality. Government-owned Water Boards play a key role in the South African water sector. UMhlathuze Water operates dams, bulk water supply infrastructure, some retail infrastructure, and some wastewater systems, and also provides technical assistance to municipalities. Through their role in the operation of dams, UMhlathuze Water also plays an important role in water resource management (Department of water and sanitation, 2014).

King Cetshwayo District Municipality as a Water Service Authority sometimes performs the functions of a Water Service Provider, and also forms a joint venture with another water services institution to provide water services. In providing water services, King Cetshwayo prepares a water service development plan (WSDP) to ensure effective, efficient, affordable and sustainable access to water services (Department of Water and Sanitation, 2014). According to King Cetshwayo District Municipality, (2011), King Cetshwayo District Municipality focuses on water services and on providing at least a basic level of service to consumers in its area of jurisdiction.

2.6 Water Governance

Rogers and Hall (2003) describe water governance as the scope of political, social, financial and regulatory frameworks that are set up to create and develop water resources, and the delivery of water services, at various levels of society. Water governance is the set of systems that control dynamics concerning water supply and sanitation improvement. (Motloung, 2010) specifies that the management of water, and not the shortage of water, is the issue in many parts of the world. It is thus only understood that water governance gives preference to a central structure of water supply towards the end when there is a failure of the management of water and when water shortages are prevalent. In water governance debates IWRM is perceived as an interaction where different partners collaborate and formulate standard procedures to protect water resources for future and present generations (Motloung, 2010). Governance involves a cycle of institutional interrelation wherein role players from government, the private sector and civil society can meet.

The gathering of role players allows a chance to diminish the effect of water contamination associated with different water uses. IWRM, within the setting of a catchment such as uMlalazi or a river basin authority, the various stakeholders within the domestic water cycle negotiate water allocations. Agarwal et al., (2000: 12) additionally distinguished the requirement for a statement of political will and an obligation to act in a dynamic manner as a basic requirement for the advancement of sustainable water resources management. It is encouraging to take note of the fact that the South African government perceives that all levels of government should endeavour to give water and sanitation administrations sufficient budgets to subsidize access to water supply and sanitation services (RSA, 1997: 2).

Water governance creates a capacity to provide for the core principles, instruments, and cycles that are important to empower district and local municipalities to move logically towards the social and monetary up-liftment of local networks. It further guarantee a widespread access to local municipalities that are moderate to all; to characterize the lawful idea of a region as including the local community inside the metropolitan territory, working in association with the region's political and regulatory designs; to accommodate the way wherein city powers and capacities are practiced and performed; to accommodate local area support; to set up a straightforward and empowering structure for the core processes of planning, execution, asset assembly and hierarchical change which support the thought of formative local government (Rogers and Hall, 2003).

2.7 The Municipal Systems Act, No. 32 of 2000

Under the South African IWRM measure, this enactment incorporates guiding principle, systems and cycles that offer legitimacy to local government development and engages regions to steadily venture towards local area social and financial upliftment and the arrangement of essential services to all occupants, particularly poor people and those who are denied fundamental and basic rights such as water (RSA, 2000). The Act accommodates the assortment of taxes and subsidies for local governments. Local government organizations are responsible for water and sanitation services, as stipulated in Section 73(1), whereby district municipalities are expected to guarantee that all nearby local area individuals get access at any rate to basic municipal services (RSA, 2015).

The Municipal Systems Act (MSA) consequently demonstrates the legitimacy of water as an economic good and a product whose availability is based on financial resources. The subsidies such as free basic water allowance is dependent on the ability to raise utility taxes for water and other forms of taxes which are disbursed to local authorities. The challenge to access water supply and sanitation services is linked the colonial history of South Africa as well as the liberation struggle which affected the culture of payments in historically black communities. These newly established local authorities are liable for gathering water supply levies that have put the burden on the shoulders of the seriously challenged local government framework (RSA, 2015).

2.8 Initiatives for Water Management and Water Supply:

2.8.1 Reconstruction and Development Programme (RDP)

During the apartheid era, there was no dedicated government department that was committed to provide universal access and supply of water in South Africa. The local government institutions were responsible for water service infrastructure (DWAF, 2004). In poorer black territories these were run wastefully by homeland government structures that were totally dependent on the South African Government for subsidizing (Gumbi, 2007). Along these lines, in 1994 it was assessed that 30% of the South African population needed access to satisfactory water supply services and that half were without sufficient sanitation services (DWAF, 2004). Black African families were discovered to be bound to need access to basic services: housing, water, sanitation, and electricity, among others (Gumbi, 2017). The post-apartheid government (after 1994) introduced the Reconstruction and Development Program as cornerstone of the new government. The RDP gave the DWAF the obligation of guaranteeing general access to basic water services for every single South African. Hence, the White Paper on Water and Sanitation was promulgated in 1994, with emphasis on subsidies for delivery of water and sanitation administrations to guarantee that all South Africans get access water supply as a fundamental right (DWAF, 2011).

In 2004, 10 years into majority rule the former President of South Africa, Thabo Mbeki, in quite possibly the most wonderful States of the Nation addresses, made different time-bound guarantees on the main points of interest around family benefits, training, medical services, and security. Concerning to water, President Mbeki guaranteed that "inside the following five (5) a long time all families will have access to clean running water and all bucket latrines that dehumanise our people will be eradicated" (Mbeki, 2004:04). The RDP and resulting advancement programs, the official targets and, at the worldwide level, Target 10 of the Millennium Development Goals (reduce by half before 2015 the number of individuals without reasonable access to safe drinking water and basic sanitation), are unequalled bound improvement and responsibilities that require steady estimation of progress towards accomplishing the objectives (Gumbi, 2017).

The RDP was a coordinated, sound financial approach structure, which tried to mobilise every single South African and the country's resources towards the last destruction of the after-effects of politically sanctioned racial segregation; the structure of a majority rule; non-racial and non-sexist future. It addressed a dream for the essential change of South Africa. Women were targeted as the recipients of the RDP both as far as participation in water project's controlling and advisory groups and by facilitating the power put on them in the local governance to give water to their families. All through the Beijing Conference Report, explicit emphasis was set on the strengthening of the women's rights (Schmitz, 1999). As indicated by Schmitz (1999) the institutional change guaranteed that all the nations create a solid stable majority rule, its practices are described by promotion and support; of a completely fair and non-racial society; a prosperous society, with the protection of the ecosystem development and the advancement of the good, just and moral improvement of the general public.

2.8.2 Rural Water Supply and Sanitation

Provincial Water Supply and Sanitation was the Reconstruction and Development Program Presidential Lead Project carried out by DWAF. The absence of basic service delivery, for example, water supply and sanitation, are the vital signs of destitution and underdevelopment. The provision of such services were viewed as critical to recreation and improvement in South Africa. The requirement for running water is explicit to women as it identifies with their domestic duties in local areas for the most part. It is likewise women who are responsible for the collection of water for household consumption (Gumbi, 2017).

The fundamental concept focuses on the fact that development ought to be demand driven and local area based. There is as yet a need to talk about the pertinence of the sexual orientation to deal with development. (Movic 2016) traces the methodologies to engage women in water supply and makes the accompanying focuses: as a feature of a technique to make a more equivalent society, women ought to be more associated with arranging and tasks; their inclusion ought to be more than work and ought to incorporate access to capital, dynamic and the management; care ought to be taken not to overwhelm women.

While it appears to be evident that, based on profitability and fairness, there ought to be a more elevated level of women' support, there are as yet significant issues with accomplishing an undeniable degree of interest. Women' job in a water project is complex; in the planning cycle, during the implementation stage, and in the assistance and support stage. The RDP's two essential objectives were to accomplish both value and return of investment (Vyver, 2016). For the sustainable utilization of water, cooperation by networks is basic. The right of access to different residents and how water is taken care of are affected by each specific setting in which water is utilized. At the local level, water ought to be taken care of. To guarantee access to water for everybody, all partners, states, civil society, non-statutory associations and the private sector should cooperate in organizations. Water user associations, water boards, and cooperatives have been dynamic in water resources management at a local level (Vyver, 2016).

2.9 Decentralization of Water Service Delivery in South Africa

The 1998 National Water Act No 36 defines public water trusteeship and unequivocally focuses on local authority responsibility for the provision of water services. The aim of the Act is to preserve, use, create, maintain, manage and regulate the water resources of the nation in accordance with its underlying equity and sustainability principles. The Act creates the Minister's progressive establishment of catchment management agencies (CMAs). These organizations are expected to designate the management of water resources to the regional or catchment level and to include local communities within the context of the national strategy for water resources (Nomquphu, Braune and Mitchell, 2007).

The National Water Act (NWA) of 1998 was promulgated to control the administration of the nation's water resources utilizing the IWRM approach which is based on the South African Constitution and the Water Services Act of 1997, which sets out an administrative system for the management of water resources. The monitoring and evaluation structure for the management of water happens across a few measurements, including the various parts of the hydrological framework (surface water, groundwater, wetlands, estuaries, and so forth); the implementation, the water boards, land and related resources; coordination of natural resources; supported by legal, financial, and social mechanisms. One of the Acts primary aim is logically to

decentralize the management and governance of water resources and the management by provincial and local government structures, to take an interest to all the more viably in the administration of these assets (Nomquphu, et al., 2007).

Decentralization had prompted the improvement of a three-tier water management system based on the provisions of the National Water Resource Strategy (NWRS) which was implemented at the national level. The main level is a public national and administrative structure, key and improvement arranging at the public and global level, providing details regarding the condition of the climate and meeting peaceful accords. At a provincial level, the water board and the district municipality (level 2), centres principally around implementation of water supply at the catchment scale (for example approval/permitting and coordination of water-related exercises) (Nomquphu et al., 2007).

The local level (tier 3) focuses on the provision of water services and the management of own water use in terms of tiers one (1) and two (2) requirements. The third tier is also responsible for meeting efficiency targets set by water services authorities and providers, including water boards, as well as all the water users and water user associations (Braune, 2007). The institutional changes for water resources management have major implications for the monitoring of water resources. Monitoring, which historically was almost exclusively a DWAF function, in the future takes place at each tier as part of their respective responsibilities for water resources management. The IWRM approach, as embodied in the NWA and the NWRS, was envisaged to cut across the water management hierarchies for implementation, coordination, integration and where necessary monitoring (Braune, 2007).

2.10 IWRM Dublin Principle No.2

This principle expresses that water management and implementation ought to be based on a participatory approach, including clients, planners, organizers, and strategy creators at all levels. The participatory approach includes bringing issues to light of the significance of water among strategy creators and the overall population. It implies that choices are taken at the most lower and suitable level with full open meeting and associations of clients in the planning and execution of water projects (GWP, 2005 cited in Nojiyeza, 2014). Partners play an important role in decision

making regarding the implementation of water supply and sanitation delivery, with specific consideration regarding getting the inclusion of women and poor people.

Genuine support happens when partners are important for the domestic water cycle. Likewise, when the local communities are included and can make water supply, and water use decisions, there is a strong possibility for such projects to be sustainable. Support necessitates that partners at all levels of the social construction affect choices at various levels of the water cycle. A participatory methodology is the solitary methods for accomplishing sustainable institutional arrangements. Interest, additionally happens in justly chose or in any case responsible offices or representative can address partners' gathering. The kind of cooperation will happen contingent on the spatial scale pertinent to specific water board and venture choices and upon the idea of the political economy wherein such choices occur (Global Water Partnership, 1996). Governments at all levels have the duty to make support conceivable; this includes making an instrument for partner conference.

The public authority additionally need to help make participatory limit, especially among women and other minimized gatherings of people (Global Water Partnership, 1996). The participation in policymaking, water provision, water boards, and checking of clients assumes a significant part in the execution of a sustainable water management framework. Where these capacities are vested in establishments with practical obligations regarding explicit water utilities, or for discrete financial obligations, water access, and the implementation probably won't be level-headed.

In these cases, each concerned stakeholder may in general assist or perform water assignments as per vested user interests, regardless of the cause of supply or the sustainability of water schemes. To avoid such issues, numerous reviews were undertaken regarding policymaking, water distribution, program and undertaking assessment to a non-client office or service. A World Bank Report stresses the need to separate strategy, implementation, and administrative capacities from operational capacities at each level of government (Global Water Partnership, 1996).

A participatory approach and the implementation of water resources, to be compelling it should have the option to give ideal information on what kind and nature of water are accessible where, and on who is utilizing the water and for what purposes. Hence, powerful water users such as water boards, water user associations and catchment

management agencies who form part in river basin and catchment management frameworks require sufficient authority to overview, verify inventories, and capacities of water sources and water supplies, just as state-of-the-art registers and records of water uses and releases into waters sources, water rights, and recipients of such rights, with their individual water portions (Global Water Partnership, 1996).

The target of information is to permit proper choices by policymakers, overseers, administrators, clients, and general society. In this way, enactment requiring monitoring and evaluation of data by supervisors to policymakers, clients and general society everywhere, and by clients and the general population to administrators, is turning out to be important for current water law. Interest by non-governmental organizations (NGOs) is fundamental to give an empowering climate to networks on the local level to participate in the administration and management of water resources. This will require continuous correspondence and distribution of water-related information. Local area radio such as Kora FM and media such as the Zululand Observer ought to give details on how residents can work together increase water as an economic and a social good (Agarwal et al., 2000: 67). Institutional arrangements are crucial for the viable and effective implementation of IWRM and rules in a given territory.

As Manzungu (2004: 18) proposes, there is a general political culture of a country (or all the more explicitly, the situation with administration) which assumes a significant part in moulding partner investment, in light of the fact that powerful partner support can't happen without an appropriate institutional setting. Subsequently, the NWA makes arrangements for partner obligations within allotted and lawfully perceived institutions in a given context. These efforts need the coordination of efforts among water users from various institutions and should regard the interests and customs of the networks in light of a legitimate concern for the strength of political authority in the country.

2.11 Water as a Basic Human Right

Water is essential to keep the human creature alive and healthy. This takes 30-50 litres of clean water, per individual each day, as per the World Health Organization (contingent upon environment and different exercises) recommendations. In any case, having sufficient water to drink yet insufficient to wash can in any case prompt

weakness or passing, may be not as straightforwardly yet with no less conviction than an absence of drinking water. Thus, the requirement for water for washing and individual cleanliness, (for example, hand washing after defecation) is consistently fundamental (Muller, 2009:179 cited in Nojiyeza, 2014).

Domestic water is additionally required for garbage removal through sewers or into septic tanks or restrooms. These uses, just as little amounts for cooking and cleaning/washing, are so fundamental for a human's health that they are generally recognized as being both a need and a right. While planning for access and use must be incorporated with different areas and clients, water for domestic needs is all around recognized as having first concern in water resources management. Moriarty (2003) cited in Nojiyeza (2014) noticed that there is a need to guarantee the right of access of communities to a decent amount of water supply for all their work needs, domestic and economic, and steps ought to be taken to utilize this offer as productive, viable and reasonable as could really be expected. (UNDP, 2007a), specifies that access or right to utilize water or water supply goes together with power and control. Many roles and obligations that are summed up in the enactment on water rights and possession have a perplexing connection with water administration.

2.12 Dublin Principle of IWRM: Principle No. 4

The fourth Dublin Principle underlined that water has a monetary value in all its contending uses and ought to be recognised as an economic good. Inside this standard, it is critical to perceive first the needs of all people to gain access to clean water and sanitation at a reasonable cost. Past inability to recognise the economic value and costs of water has resulted to inefficient and wastage of the water resources. Recognising water as an economic good with its associated costs is a significant method of accomplishing proficient and effective use, and of ensuring conservation of water resources (Rogers, Batia, and Horner, 1998).

The value, costs and charges are too various things. The costs of water significant for the objective allocation of water as a scarce resource, regardless of whether by consistently or financial instrument to influence the conduct towards moderate and productive water use, to give the water utilities an incentive to produce water where the recuperation of the costs are guaranteed. The costs of water need to factor in the

users' ability to pay for extra consumption over and above the free basic water allocation (Rogers, Batia, and Horner, 1998, Muller, 2009).

The International establishments and financing associations argue that access to water and sanitation should be charged at a reasonable price (UNCED, 1992). Likewise, water rights ought to be made dependable with the accessibility of the resource (Hartje, 2002). This has prompted the introduction of a full cost recovery framework which undermines the right to water enshrined in the SA constitution. Accordingly, Bluemel (2004:964) observed that water has a monetary value, without limit, as is done under the rule of full cost recovery, which can result in local authorities charging the poor more for water supply and sanitation services. Holland (2005: 12) encourages that the full cost recovery framework allows the water utilities to recover operational costs put into water production and its reticulation to consumers.

2.13 Gender-related issues to Access Water

Water plays a fundamental part in the financial development of the country and of a particular region and in individuals' lives. Inability to provide adequate water principally to water system and in domestic use (drinking, washing, cooking), has caused a struggle over water and the impacts of gender-influenced decisions and outcomes on individuals' lives, financial development and social change (Crow and Sultana, 2002). The IWRM discourse distinguishes women as vital members in accomplishing the expressed objectives of effectiveness, value and natural resources sustainability (GWP, 2006). It advocates for gender-sensitive approaches in the execution of IWRM standards to guarantee women' more prominent inclusion in water provision.

The access to water in rural regions is by and large more hazardous, more separated, less secure and requires broad uses of work, time and cash. Rich and conspicuous families may have particular states of access, and various wells, springs of water, contrasted with those of vulnerable families. The quality, dependability, and expenses of water for a specific family will be impacted by a scope of attributes including states of the water source, geographic area of the family or endeavour comparable to the water source, past friendly interests in water framework, and the social, financial, and surprisingly political situation of a family or undertaking (Crow and Sultana, 2002).

These may incorporate property relations, varieties of pay, state arrangement, rules of access to the normal social property, and economic wellbeing. Access to water for some, vulnerable and helpless families, limits both their wellbeing, and work. Helpless families normally gain access to risky and defiled water, and their access may likewise be deficient to address their issues (Booth, et al., 1998). Gender relations impact the social relations of access to water. Women have essential duty regarding putting together and collecting water for domestic use (Elson, 1995). This work incorporates a scope of exercises: keeping up day by day life (cooking, cleaning, washing garments), dealing with the soundness of the relatives, and really focusing on and bringing up the kids. So where family access to water requires huge contribution of work time, the women and children (young women) of a family frequently undertake these domestic chores. Women will in general, work longer hours than men do in numerous social orders (Pearson, 1992).

For the most part in rural regions, women and young ladies might be avoided school to attempt the tedious every day undertaking of collecting water. Water collection is a significant piece of crafted by women in rural spaces of the global South. In Senegal, women go through 17.5 hours of the week collecting water. In Mozambique, they go through 15.3 hours out of each week collecting water in the dry season. In the Baroda locale of India, women go through 7 hours of the week gathering water. Perceptions from Nepal affirm the significant job of female children in the collection of water, with young girls of 10 and over dedicating just about 5 hours out of each week to the chores of fetching water (United Nations, 2000). In Bangladesh, women and young girls have been found to stroll somewhere in the range of 2 and 5 hours every day to bring water (Shamim and Salahuddin, 1994).

Class and location in rural territories determine access to domestic water. More prosperous families by and large own profound shallow wells, giving cleaner water and they have consumable water inside their families. More extravagant women in this way have preferable access to clean water over more unfortunate women (Shamim and Salahuddin 1994). Access to water is differentiated by area in that those families closer a shallow well is probably going to utilize groundwater all the more regularly.

Without access to clean water, women’s everyday lives are very influenced; as people as well as on the grounds that they can't complete their assigned roles within their

families and communities (United Nations 2005; and Souza 2008). Restricted access to clean water and sanitation affects the women's and men's wellbeing, physically and mentally, security and access to education. However, this impact differs by gender, since the differences and inequalities between women and men influence how individuals respond to changes in water resources management (Gender and Water Alliance, 2006).

The provision of a protected and reliable domestic supply of water is basic to keep away from water-related illness, and it is women who are responsible for domestic supply and usage of water. Thus, to address this medical problem, women role and responsibilities must be perceived and upheld. Hence, water resource management has suffered from an uncoordinated approach, which has led to overexploitation, the inappropriate allocation of resources, and burdens of management; and gender inequalities (GWA, 2006b). The problem of gender inequality in the provision of water is frequently serious in rural areas. Because of inadequate water supply in rural areas, men's and women's interests in water are differentiated. Women's role is focused on the home and reproductive responsibilities, whereas men are primarily focused on activities outside of the home, including the care and sale of cattle, other commercial farming activities, and a role in local governance. Gender inequality in accessing water sources is enshrined at the local level because men in rural areas maintain economic power and also control how laws and regulations are implemented (Almeida and Chalub-Martins, 2008)

2.14 Problems Hindering Sufficient Water Supply

Water shortage is today a worldwide marvel that influences near 2.8 billion individuals around the world, particularly in developing nations (Mbua, 2013). Both the accessibility and nature of water are focal. There is an immediate association between water, water supply, and water management. That is the reason albeit 71% of the world's surface is covered by water, access to consumable water is as yet uncommon to numerous vulnerable families. In any event, during the dry seasons in the rural areas consumable water stays a scarce resource.

Poor governance lies at the core of the world's water crisis (Rogers and Hall, 2003). For the most part, the rustic districts rely upon subsidies for infrastructural development, which makes it difficult for them to give adequate water, of better quality

to individuals within their jurisdictions. Additionally, poor planning and absence of resources and poor governance prevent the availability of water. How accessible water assets is imperative to accomplishing water security (United Nations Development Program, 2013). Notwithstanding, Rogers and Hall (2003) have demonstrated that the incapability of water administration by states has been the ruining variable to water security.

Water service authorities experience many intricate issues with regards to the management and reticulation of water to individuals. Population growth and financial development, along with expanded contamination of scarce freshwater sources and environmental change, make various insidious issues and upsets water supply in rustic regions the most. Consequently, there is an earnest need to execute extraordinary measures, to guarantee adequate water supply for human utilization, financial use, and biological system wellbeing. The organizations will keep on working, of course, providing new freshwater, treated for human utilization, to meet all domestic, civil, rural and mechanical necessities isn't an alternative (Bjornlund, Nickum, and Stephan, 2018).

Expanded interest for and contamination of freshwater; have additionally made this alternative economically impossible. One clear measure is to reuse water a few times and use water of different attributes to address the issues for which every quality is reasonable. This will increase accessible resources, lessen interest for new freshwater and decrease the expense of water for each use (Bjornlund, Nickum, and Stephan, 2018). Although the government has made extraordinary progress in giving water to many parts of the country, the difficulties to offer types of assistance to those communities that have been not reached remains huge, and dire. Basically, individuals that live under neediness and conditions where water supply is the issue (Nzimakwe, 2009).

2.15 Chapter Summary

The literature shows that water is fundamental for a quality of life. The prosperity of individuals should be given acknowledgment, determines the ability access water supply and sanitation. This implies that sensible estimates should be taken by all water suppliers to guarantee that all South Africans are given access to adequate water, or it could put the existence of individuals in danger. As interest for water expands, water

administrators and water organizers need to search generally for approaches to improve water and increase water supplies. The change concerning water administration in South Africa through decentralisation is impacted predominantly by enactment recommended in the Constitution and systems identified with water. The next chapter will focus on the theoretical framework which guided this study.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1 Introduction

The United Nations Development Program [UNDP] (2004) states that officially recognizing water as a human right, and expressing the willingness to give content and effect to this right, might be a method of empowering the global local area and governments to improve their endeavours to fulfil fundamental human requirements and to meet the Sustainable Development Goals (SDGs) as water forms a part of it. However, DWAF (2002) reports that the point of regarding water as a fundamental human need is to advance value in water and sustainable management water use. Though, DWAF (2004) specifies that water conservation guarantees natural sustainability, social value and economic good. This study uses ecological economics and will focus on five themes: water as a basic human right, scale/size of the economy, equity in water, distribution of wealth and allocation of resources.

Ecological economics addresses the relationships between ecosystems and economic systems in the broadest sense, hence, emphasizing the importance of these relationships to promote a sustainable economy (Costanza, 1989).Thus, the aim of ecological economics is to improve and to promote a deeper logical understanding of the complex linkages between human and natural systems, in order to make effective policies that will promote ecologically sustainable environment through equal distribution and allocation of scarce resources such as natural and social capital (Romeiro, 2012). Similarly, this will further promote equity in water access and sustainable management of water in an integrated manner (Stockholm International Water Institute [SIWI], 2017, Hassan, Mtsweni, Wilkinson, Weston, Mutundo, Magagula, Sithole, Farolfi, and Dinar, 2014).

3.2 Water as a Basic Human Right

Regarding water as a human right can essentially affect public water law, strategy, support, and development program. Sprightly (2008) states that recognising the basic human right of access to drinking water accomplishes more than to underline its significance, it stresses the obligation of the state to guarantee access.

Water is quite possibly the main resource for individuals and every single living thing. The human right to water focus on the requirements of individuals initially in regards to the use of water and advance human-focused water resource management and the reticulation of water to households is dependent on the well-spoken legitimate standards and administrative responsibility. It aims to permit the people to reach their maximum capacity and freedom to take up rights in using water. Subsequently, it intends to guarantee that all residents or vulnerable communities access water within a reasonable distance or without some other conditions such as paying connection fees etc. (Klawitter, 2007).

The human right to water guarantees that everybody get access to adequate, protected, satisfactory, physically accessible and reasonable water for individual and domestic uses (UN, 2002). This is to guarantee that while the adequacy of water may contrast as indicated by various conditions, the issues of accessibility, quality, and availability are all around appropriate. The human right to water incorporate physical accessibility and non-discrimination among others (Economic and Social Council, 2002).

Physical accessibility implies that sufficient, protected and adequate water ought to be accessible within a distance open to everybody including vulnerable people like children, old people and people with disabilities. There ought to be satisfactory framework and the successful effective maintenance of facilities and equipment, and fair access in any underprivileged areas. Economic access alludes to the monetary expenses related with getting access to water. The right of access to adequate water in segment 27(2) ought to be perceived to imply that the State is not obliged to give water openly, however is under a commitment to make systems that empower individuals to receive adequate water.

Water supply to the communities is a basic human right, not a privilege. Thus, individuals should access water consistently. Blignaut and de Wit (2004) concurred that the provision of water to communities is a right that is enshrined in the constitution of South Africa. The constitution stipulates that each resident ought to access and be provided with adequate water services. The Department of Water Affairs and Forestry and the district or local municipality are assigned the status of being a water sector leader and a water service authority respectively. DWS and King Cetshwayo District

Municipality should make sure that communities are given access to adequate water supply in order to improve their livelihood. Water is a catalyst for development and without water, there would be no improvement by any means (Blignaut and de Wit, 2004).

As per the (United Nations Educational, Scientific and Cultural Organization, 2006), everybody has the right to get to safe drinking water amounts and of a quality that will actually want to meet their fundamental requirements. The acknowledgment of water as a basic right was proclaimed in the Convention on Elimination of Discrimination against Women, (CEDAW, 1979) and the Convention on Rights of the Child, (CRC, 1989). Nonetheless, regardless of several global efforts, 1.1 billion individuals on the planet actually need sustainable access to safe water for domestic and individual use (UNDP, 2003).

Water as a fundamental human right has been perceived as a need for an acknowledgment of various other common rights, which incorporates the right to food, self-determination, improved jobs, housing, schooling, health and to partake in social life (ECOSOC, 2002; Scanlon et al., 2004; and WHO, 2003).

The Constitution of the Republic of South Africa (Act 108 of 1996) is the preeminent law in the country and it enshrines the rights of all people regardless of race, gender, age, handicap, and so forth. To the degree that it has detailed rights for women, including rights to freedom and security of the individual, and furthermore sets thorough norms for the human rights of women, the Constitution exhibits a solid obligation to gender equality as stipulated in (Section 8, in Chapter 3 of the Bill of Rights) (Republic of South Africa, 1996).

3.3 Scale/ (Size of the Economy)

The development of a specific area depends on the size of the economy that it has. If the size of the economy is enormous, that implies that everybody will get access to water. Water supply depends on the huge economic base. Many municipalities depend on Municipal Infrastructure Grant for purification and treatment of water. The financial constraints lead to severe problems; the poorer communities would have access to contaminated water from the rivers because the water service providers and water boards were not able to raise funds to provide water for people in their areas of

jurisdiction (DWAF, 2007). A sum of 23 to R48 million rand was raised to address water problems with a 63% allocated to the Western Cape that experiences water deficiencies and sanitation difficulties. Rural people should be given more water allocations since they rely upon free basic water, they do not afford to pay for additional amounts they use beyond the free basic water allocation from government.

Lele and Jayaraman (2011) argue that where the poor are directly dependent on natural resources such as forests for firewood, pastures for grazing or scarce water resources for survival, the degradation or destruction of these ecosystems hurts the poor the most, thus the need for additive purified source of water is crucial and taking cognizance that this is costly and would require funding to support the initiative.

However, there are still challenges and a huge gap between the poor and the rich, water is not distributed equally and the rural communities do not benefit from the rivers in their surrounding areas. According to McArthur, (2012) global monitoring shows that rural populations persistently have lower levels of access than urban populations. It is the areas that benefit more because they afford to pay for water. Rural areas have challenges of scale. UMlalazi Local Municipality's economy is little, as it is associated with a high level of unemployment, poverty, and inadequate water supply and sanitation. The municipality depends on grants for infrastructural development. Inside the households, there are no water meters in uMlalazi, which means that a majority of people do not have potable water (UMlalazi Local Municipality IDP, 2016: 17).

3.4 Equity in Water

The terms 'equity', 'fairness' and 'justice' are often used interchangeably (Konow, 2003). Lele and Jayaraman (2011) postulate that in general, an emphasis on equity highlights the importance of good governance, redistribution of income and wealth, empowerment, participation, transparency and accordingly accountability. According to Singh, Åström, Hydén, and Wickenberg (2008), gender and water are interconnected with rights, responsibilities, roles, and privileges regarding water distributed differently between men and women. However, there is also still a huge gap between the poor and the rich in accessing sufficient water. It happens that urban areas benefit more than rural areas. Water is a precious commodity, all living things need water to survive.

Therefore, it is important that water is distributed equally to the rural areas and urban areas, everyone should benefit from it regardless of their distance or any other circumstances. The people in rural areas depend on free basic water because they cannot afford to pay for water. Some of them depend on their neighbours who get water at a fee. This is a serious matter in rural areas. There is a lack of equity; water is not distributed equally among the communities. Catarina de Albuquerque (2012) conducted a pilot analysis which was carried out in the framework of the Working Group on Equity and Non-discrimination of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation.

It demonstrated that significant disparities exist in water and sanitation access among ethnic, religious, and language minorities in some countries. According to Opotow and Clayton (1994); Albrecht (1995); Clayton (1996); and Horwitz (1994) people of the same community do not have equal use and access to water resources or they do not benefit from them. Instead, the suffering continues within the poorer societies (e.g., living in a polluted society with an inefficient water supply and lack of access). Moreover, the poor, as well as racial and ethnic minorities are mostly affected by exposure to hazards and toxic wastes.

In rural areas water supply is associated with women as it relates to their reproductive responsibilities. It is also women and young girls who are responsible for the collection of water (Hlophe, 2004). Women are affected the most; they continue to face the hardships of supplying water to their families. Therefore, it is vital that they also benefit equally as men, with increased choice and voice in the water management processes so that their access to and control over water resources can be strengthened (Singh, et al., 2008).

Participation of women in water projects is complicated, in planning, during the construction phase, later in operation and maintenance. The two main objectives of the RDP were to achieve both equity and economic growth (Hlophe, 2004). Participation by communities is significant for the sustainable use of water. Each specific context, in which water is used, influences the rights to access to different people and how water is managed. Water should be managed at a local level. All stakeholders, governments, civil society, NGOs, the private sector must work together in partnerships to ensure access to water for all (Hlophe, 2004) Typically to the

segment of individuals with disability as viewed by, Catarina de Albuquerque (2012) who claimed that much less is known about inequalities concerning access to, and use of, sanitation and hygiene, and about intra-household inequalities concerning age and disability.

According to Russell (1997), the inequities between industrialized and third world countries still exist. For example, the greenhouse gases emissions that are produced in industrialized countries pollute the water and the developing countries would suffer from that, and experience loss of water. The intergenerational imbalances still exist and raise justice concerns, empowering individuals to act (Montada and Kals, 2000). The future generations will have to manage with environmental damages, such as nuclear risks, greenhouse gas effects, or scarce water supplies, all of which they were not responsible for, nor did they obtain any profit from the processes that led to these damages (Russell, 1997).

A common negligible attribute by the community would be of seniors' citizens whom would be at a distance to acquire the water from the community stand pipe thus prompting a disparity in equality to premise on the notion of ageism. While the rights to water and sanitation have always been a component of the right to an adequate standard of living as contained in several international human rights instruments, their explicit recognition by the UN General Assembly and the Human Rights Council in 2010, thus The Commission on Gender Equality Act (Act no. 39 of 1996) is responsible for monitoring and evaluating all laws so that they treat women and men equally and fairly and also for ensuring that South Africa complies with the agreements made on gender equality with other countries internationally, regionally and those that are made nationally. Hang and Xuefeng (2009), state that various essential factors that affect people's perception of fairness concerning water rights allocation and access involve prior use and customary rights, targeted groups, the irrigation area, the contribution of water to livelihoods and production, water shortages experienced and the future needs of different stakeholders, including environmental needs.

For water use to be considered fair, all of these factors need to be considered and balanced against each other. Wang (2006) states that mostly, there are conflicts between fairness and efficiency in water allocation in rural areas the most. Fairness entails that the impartial water allocation to stakeholders is relatively equal or

proportional, while efficiency requires that those stakeholders with higher water use, utilize the water productively with utter most minimum wastage efficiency and greatest income or revenue per drop should get more water. However, it is difficult to satisfy both at the same time. From a legal and ethical point of view, fairness should be the main priority in initial water rights allocation where discrimination is eliminated in how water is allocated, with efficiency then addressed through water trading.

3.5 Allocation of Resources

According to the economic theory, water allocation is socially optimal if it satisfies two standards, the allocation must be efficient and be of quality, and the final distribution of water must be equitable (fair to everyone). The combination of these two conditions: efficiency and equity defines the socially optimal allocation of water, for example, the water's being allocated in a way that maximizes social welfare. Catarina de Albuquerque (2012) is in accordance with those who claims that every country in the world is committed to realizing human rights, including the human rights to water and sanitation.

According to Le Quesne, Pegram, and von der Heyden (2007), water allocation is the method of sharing available water resources between (legitimate) claimants at a specific time under specified circumstances. How water is allocated between users (cities, farmers, energy suppliers, industry and the environment) and within sectors (such as between low-value subsistence agriculture and high-value export crops) affect the overall welfare of a basin and the distribution of wealth among water users. Water allocation is especially essential in regions where water is scarce and water users compete to access the water they need to meet their basic needs.

According to OECD (2012), this competition is expected to increase due to rapidly growing water demand for energy supply, industry, and domestic use, which are projected to come into serious competition with irrigated agriculture for available water in the coming decades. Agriculture withdraws more than 70% of the allocated water. The allocation of scarce resources (natural and human) involves broad philosophical issues, questions of values, preferences, efficiency, and equity. Therefore, there should be equity in allocating resources to the people, and also in rural and urban areas. Distributed resources amongst places should be equal, and everyone should benefit from them.

According to Stats SA (2011), UMlalazi Local Municipality appears to have sufficient sources for the provision of water. A complicating factor is a topography of the area which is characteristic to the entire municipal area. In some instances, it is therefore difficult and expensive to provide these services to the areas of jurisdiction especially in areas where there are hills and dams are situated in low area and pumping of water from dams to areas situated in hills require a lot of energy. Loss of water supply can be a threat, mainly in an area that does not receive high rainfall or is characterized by a dry climate. The change of climate and increase of water demand together contribute to water scarcity even worse, leading to a challenge of water resource management (Wolters, et al., 2016). An optimal water resource allocation can reduce the negative effect of uneven water resources distribution and temporally coordinate water demand and runoff (Condon and Maxwell 2013; Milano, et al., 2013). Also, it is an operative way to achieve water use sustainability and economic efficiency in a region.

According to Wolters, *et al.,* (2016) lack of management in water resources allocation often leads to water scarcity. The traditional water allocation models provide technical support for water resources management (Murray, et al., 2012). They focus on managing water demand and supply mainly ensuring the efficient allocation of water resources in a specific region. Constraints for water allocation mainly include water balance in the communities, reservoir storage, and failure to allocate as many resources that will be able to provide efficient water to people that will meet their needs. According to the economic theory, water allocation is socially optimal if it satisfies two standards, the allocation must be efficient and be of quality, and the final distribution of water must be equitable (fair to everyone). The combination of these two conditions efficiency and equity defines the socially optimal allocation of water, for example, the water being allocated in a way that maximizes social welfare.

3.6 Distribution of Wealth

In rural communities, people do not have equal use of ecological resources or satisfaction of ecological benefits. Wealth should be distributed to people according to their effort and it should involve all the stakeholders. According to Catarina de Albuquerque (2012) when millions of children, women and men have no access to essential services such as sanitation or water, a global development agenda cannot continue to ignore their daily reality. Practical access to distribution of wealth is

essential for sustainable widespread economic prosperity and democracy. Wealth inequality in South Africa is high and has increased in recent decades according to the Joint Monitoring Programme (JMP) (2012).

The JMP report claimed that the rate of progress is very uneven among wealth quintiles in many countries, with the poorest two quintiles frequently experiencing lack of improvement while other quintiles experience significant improvements. There is still a huge gap in the distribution of wealth among people in the rural areas; this is associated with a high level of unemployment, low level of education, poverty, globalization, income gap, personal factors and growth in technology (Burger and Jansen, 2014).

Water pricing aims to ensure that water is used cautiously and that enough profits are earned. However, pricing can also be utilized to address the issues of equity. The policy often applied in developing countries is to charge a higher marginal price as consumption increases, to encourage a more efficient use of water, and to finance water subsidies by cross-subsidizing water use that is a compensatory billing at a marginal rate so as to utilize the profits to cover for the cost to deliver water at a breakeven point to the less fortunate. However, in developing countries, these water subsidies do not reach their beneficiaries (Burger and Jansen, 2014).

According to Burger and Jansen (2014), water pricing structure does not necessarily ensure that water subsidies reach the intended targets; that is, the developing countries. The magnitude of redistribution through the water tariff system is relatively small compared with other components of social spending. In most cases, water is treated as an economic good, not human right, which is the reason why it is not distributed equally. Besides, water pricing also incorporates issues of equity to ensure that water is also affordable to poor households. Water is vital for all aspects of life, so the pricing should not hinder the poor from accessing it (United Nations, 2005). Therefore, water is usually underpriced, mostly in developing countries, where many households receive subsidized water (Whittington, 2002). As a means to try and ensure that all individuals gain access to the water by the state through subsidies.

The developing countries do not have access to metered water because they do not have them inside their households. Thus, they cannot benefit from the lower prices (Whittington, 2002). Usually, the less fortunate individuals suffer volumetric charges

poorer countries purchase water of water from hawkers or their neighbors and end up paying more for water compared to other households. When the poor consume more water than the subsidized volume, they move into a higher consumption block and therefore also increase their cost of water. Involving the local governments in these issues, usually it is less popular in finance theory than in redistributing policy. Black *et al.,* (2012) proposes that the redistribution function of government is most effectively executed by the central government.

Muller (2008) states that after 1994 tariff and subsidy policies emphasize cost recovery and increase of access to people without access to safe water. However, water services placed a considerable financial burden on some poorer households, hence the implementation of the Free Basic Water (FBW) policy. In South Africa, water legislation distributes first six kiloliters of water to be free. The poorer communities live without access to water. The existing water infrastructures or water resources and access to metered water, the premium paid by households in the richest areas under the pricing structure are redistributed to households in the middle of the income distribution, and not to those in the poor areas.

There is a lack of equity and the poor are neglected (Burger and Jansen, 2014). If there were a greater investment in water infrastructure and an expansion of service provision, therefore the poor households will be reached and benefit from the free basic water. There is a lack of equity and the poor are neglected (Burger and Jansen, 2014). The poorer communities live without access to water. The existing water infrastructures or water resources and access to metered water, the premium paid by households in the richest areas under the pricing structure are redistributed to households in the middle of the income distribution, and not to those in the poor areas. If there were a greater investment in water infrastructure and an expansion of service provision, therefore the poor households will be reached and benefit from the free basic water.

3.7 Chapter Summary

Water shortages and inferior service delivery mostly affect poor people. Therefore, people must have access to equitable, efficient and clean water. The realization of a human right to water is also important, it stipulates that everyone has access to water.

Allocation of resources does not mean that there will be ecological sustainability or fair distribution, thus, ecological economics emphasizes how far economic instruments can meet or expand the sustainable development interests of human beings (Lawn, 2000). The chapter analyses and presented themes of ecological economics such as water as a basic human right, scale or size of the economy, allocation of resources and distribution of wealth. The chapter is based on the understanding of the extent to which water shortages and inferior service delivery mostly affect poor people in all its facets. The realization of a human right to water is also important, as it stipulates that everyone has access to water. Allocation of resources mean that there will be ecological sustainability or fair distribution, thus, ecological economics emphasizes how far economic instruments can meet or expand the sustainable development interests of human beings (Lawn, 2000). The next chapter focuses on the methodology adopted in conducting this study.

CHAPTER FOUR

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This chapter discusses the methodology of the current study, detailing the rationale for the methodology, research design, research philosophy (epistemology, ontology), research paradigms, target population and sampling, the research instrument, pilot study, data analysis, validity and reliability, delimitations of the study, elimination of bias, ethical consideration and conclusion. This is a quantitative study conducted using a questionnaire with an aim of testing a hypothesis, the instrument being validated using a pilot study and the reliability of the instrument tested using a Cronbach Alpha calculations. The study is exploratory in nature, drawing from post-positivist paradigm and basing the epistemology on objectivity. The target population and the sample frame is outlined in this chapter. The next section deals with the rationale for the choice of quantitative studies.

4.2 Rationale for the Methodology

In choosing a research approach Jackson *et al.,* (2007) contend that methodologies rely on the phenomenon being examined, how the problem is framed, how data is collected, and how to make a logical link between the problem, data generated, analysis and conclusions or inferences drawn. This study utilizes a quantitative approach since it is more reliable and unbiased and can be used in response to normal questions of variables and it is the best method to address the study's objectives and questions. A quantitative approach is a research methodology which deals with figures and everything quantifiable in a coherent system of study of facts and their interactions. This method can be used to answer questions on relationships in quantifiable variables with the purpose to clarify, forecast and guide some phenomena (Sibanda, 2017).

The quantitative findings are likely to be generalised to a whole population or a sub-population because it involves the larger sample which is randomly selected (Carr, 1994). Besides sampling, data analysis is less time consuming as it uses the statistical software such as SPSS (Connolly, 2007). Powers and Powers (2015), in their research on TOEIC tests, contented that the study sample reflects the larger proportion (2300)

of TOEIC test-taking population which helps making the study trustworthy. A quantitative research approach is considered suitable for the study since it uses a survey to draw in behavioural indications in social prodigies. Sibanda (2017), states that several angles of arguments, between quantitative and qualitative approaches, provide different pictures, but a quantitative research approach can use statistics to generalize a finding. The use of a quantitative method offers a platform to analyse data, which focuses on a relationship among variables, and can establish ground and result in an exceedingly monitored situation.

The collected data embodies quantitative data that can be expressed as a number or quantified. Using a quantitative approach, data improved an evaluation since this method often reduces and reforms an intricate problem to a limited number of variables. The use of the quantitative approach tests hypotheses and assumes that the sample is representative of the population (Khandker; Koolwal; and Samad, 2009). The research was quantitative in nature and employed the use of closed-ended questions. The purpose of using closed-ended questions was to collect data from large sample, measure the incidence of various views in chosen sample and quantify data and generalise results from a sample to the population of interest.

4.3 Research Design

Berg (2001) defines research design as the strategy of how the research will be conducted. In the case of this study, the researcher uses descriptive and exploratory research design, based on the quantitative research approach. Hence, the richness and depth of the description gained from a quantitative approach, which provides a unique appreciation of the reality of the experience (Creswell, 2011). Polit and Beck (2008) explain descriptive research design as the research design that has its central objective and the accurate portrayal of the characteristics of persons, groups or situations. Descriptive research collects data and characteristics about the population or the phenomenon being studied (Shields and Hassan, 2006).

This approach is used to explain variables rather than to test a predicted affiliation between those variables (Richards and Morse, 2012). The study uses a descriptive research design because participants are observed in a natural and unchanged environment. The data collection allows for gathering in-depth information and descriptive studies result in rich data that is collected in large amounts. Exploratory

research is conducted when enough is not known about a phenomenon and a problem that has not been clearly defined (Saunders *et al.,* 2007). It does not aim to provide the final and conclusive answers to the research questions, but merely explores the research topic with varying levels of depth. Therefore, its theme is to tackle new problems on which little or no previous research has been done (Brown, 2006). Even in the extreme case, exploratory research forms the basis for more conclusive research and determines the initial research design, sampling methodology and data collection method (Singh, 2007). The study used exploratory research design because explanatory research looks for causes and reasons and provides evidence to support or refute an explanation or prediction. It is conducted to discover and report some relationships among different aspects of the phenomenon under study.

4.4 Research Philosophy:

4.4.1 Ontology

Positivists hold a realist, foundationalism ontology. Based on the question of what is the nature of reality, positivists hold that there is a single, tangible reality that is relatively constant across time and setting. The researcher has to discover that reality. Positivists believe that reality is objective and independent of the researcher's interest in it. It is quantifiable and can be broken into variables. Post-positivists agree that reality does exist but maintain that it can be known only imperfectly because of the researcher's human limitations (known as critical realism). The researcher can discover reality within a certain realm of probability (Mertens, 2009; Ponterotto, 2005).

4.4.2 Epistemology

In the natural science paradigm, the nature of knowledge is inherent. Positivists view knowledge as those statements of belief or fact that can be tested empirically, can be confirmed and verified or disconfirmed, and are stable and can be generalized (Eichelberger, 1989). Knowledge constitutes hard data, is objective and, therefore, independent of the values, interest and feelings of the researcher. Positivists believe that researchers only need the right data gathering instrument or tools to produce absolute truth for a given inquiry. The research approaches are quantitative and include experimental, quasi-experimental, correlational, causal comparative, and survey designs. The techniques of gathering data are mainly questionnaires, observations, tests and experiments. Within this context, the purpose of research is to

discover laws and principles that govern the universe and to predict behaviours and situations. Post-positivists believe that perfect objectivity cannot be achieved but is approachable. The study used post-positivist epistemology. According to Moser (2015:7), epistemology "is the theory of knowledge, the philosophical study of nature, origin, and scope of knowledge". The researcher was objective; hence, there was no relationship between the researcher and the respondents. In addition, the philosophy allowed the researcher to obtain knowledge through a stratified random sampling collection of data from UMlalazi Local Municipality.

4.5 Research Paradigm

Panhwar, Ansari, and Shah (2017:9) define post-positivist as "a certain pluralism which balances both positivist and interpretivists approaches. It further focuses on researching issues in the context of involving experiences of the majority and announcing the result of what the majority says is acceptable". Moreover, post-positivism is grounded on epistemology which is a philosophical viewpoint that investigates the nature of reality, the relationship between a researcher and what is known, and the hypothesis that changes the method of knowing and the achievement of findings (Moriarty, 2011). Additionally, those active in research process attain understanding through the real life, and natural setting of the area studied (Thomas, 2010). However, the study uses quantitative methods. Hence, for quantitative methods a post-positivist paradigm recognises reported experience (such as questionnaires, and observes human behaviour as data. Ary, Jacobs, Irvine and Walker (2018) further state that post-positivism is often used to describe an approach to research where large amounts of qualitative data are categorised to produce quantitative data to be analysed using statistical methods.

4.6 Target Population and Sampling

Weil and Lentz (2016) state that the sample method involves taking a representative selection of the population and using the data collected as research information. The major objective for sampling is to provide accurate estimate of a sample that can be easily calculated. For this study, the population consists of uMlalazi Local municipality households from (Ndlangubo, KwaMaqhwakazi and Mlalazi), because these are the areas that are mostly affected by the crisis of water and poor water governance. The study primarily focused on the households because many households do not receive

a regular supply of water. The problem is escalating at an alarming rate as a number of households in the area increases rapidly. The researcher used a small number of officials to participate in the study because of their availability and time constraint on the researcher's side, could not make appointments with the municipal officials because they take long and that could have affected the duration of the dissertation writing.

The sample size equation is provided below:

Confidence level (a) 95%

Margin of Error (e) 5%

Population (p) 50%

Population size (N) (optimal) 15000

The sample size (n) is calculated according to the formula: $n = [z^2 * p * (1 - p) / e^2] / [1 + (z * p * (1 - p) / e^2 * N)]$

$n = [z^2 * p * (1 - p) / e^2] / [1 + (z * p * (1 - p) / e^2 * N)]$, *where* z = 1.96, p = 0.5, N = 15000, confidence 95%, hence, e = 100-95/100 = 0.05

Hence,

$n = [1.96^2 * 0.5 * (1 - 0.5) / 0.05^2] / [1 + (1.96^2 * 0.5) * (1 - 0.5) / (0.05^2 * 15000)]$.

n= [3.8416 * 0.5 * (1 -0.5) / 0.0025] / [1 + (3.8416 * 0.5) * (1 - 0.5) / (0.0025 * 15000)].

n = [1.9208 * 0.5 / 0.0025] / [1 + 1.9208 * 0.5 / 37.5].

n = [0.9604/ 0.0025] / [1 + 0.9604 / 37.5].

n = [384.16] / [1+ 0.9604 / 37.5].

n = [384.16] / [1+ 0.0256].

n = [384.16] / [1.02561.0262]

n=384.16/1.0256, hence, n= 374.570

n= 375(nearest whole number)

The study population covered three rural communities under UMlalazi Local Municipality. Nonetheless, the study used quantitative research method, thus,

probability sampling methods were the most suitable for this research. Probability methods, according to Clark and Creswell (2015), are based on the principles of randomness and probability theory. Thus, stratified random sampling (SRS) was used to sample 375 households. Shi (2015) argues that stratified random sampling is a technique that attempts to restrict the possible samples to those that are less extreme by ensuring that all parts of the population are represented in the sample in order to increase the efficiency. Therefore, the study consisted of 125 respondents from Ndlangubo, 140 respondents from KwaMaqhwakazi, and 110 respondents from Mlalazi. Therefore, the sample size of the study was enough to cover the three mentioned rural areas. The study used random sampling in selecting the individual respondents where by each respondent has an equal probability of being selected. Table 4.1 illustrates the stratification and distribution of the sample:

Table 4.1: Sample size distribution for households and official respondents

Community strata	Population	Sample proportion (p*n/N)
Ndlangubo	9050	226.25
KwaMqhwakazi	2224	55.6
Mlalazi	3666	91.65
Official respondents from the municipality	60	1.5
Total	15000	375

Source: Fieldwork (2019).

Stratified random sampling intends to guarantee that the sample represents specific subgroups or strata. Accordingly, the application of a stratified sampling method involves dividing the population into different subgroups (strata) and selecting subjects from each stratum in a proportionate manner. The researcher uses the stratified random sampling because there is higher precision of estimates and provides separate estimates for each stratum and stratified random sampling which accurately reflects the population studied and its ensures that each subgroup within the population receives proper representation within the sample (Den-scombe, 2008; DePoy and Gilson, 2008; Kerlinger and Lee, 2000; Thomas and Smith, 2003).

4.7 Research Instruments (data collection tools)

According to Creswell (2003), data collection instrument refers to the tools, techniques or procedures used to collect data. Quantitative data collection methods often employ measuring instruments (Delport and Roestenburg, 2011). The study used the questionnaires. Conducting quantitative research, questionnaires are a set of

technologies for generating data from individuals using a set of questions. Babbie (2007:246) defines a questionnaire as a “document containing questions and or other types of items designed to solicit information appropriate for analysis”. The study used questionnaires (hand delivery questionnaires) to collect data because many respondents can complete the questionnaire in a short space of time and the test administrators can check questionnaires for accuracy and it is the best method to address the study’s objectives and questions and aimed to obtain facts and opinions about a phenomenon being studied by people who are knowledgeable about the particular issue.

The questionnaire was self-generated, it was like a Likert scale with 5 options, (agree, strongly agree, not sure, disagree and strongly disagree). The questionnaire was constituted by 66 questions per copy. Creswell (2003) states that the questionnaire method is fairly inexpensive and easy to do, the respondents can be reached across long distances and the response rate is optimal. Data collection took place at three rural areas of uMlalazi Local Municipality (at Ndlangubo, KwaMaqhwakazi and Mlalazi). The researcher spent one month and 15 days in the field, because of traveling to different places and they are dispersed. The researcher was assisted by 2 research assistants during data collection. The experience of data collection was awesome, the respondents were not hard on the researcher, and they were all cooperating. The researcher went to house to house to collect data.

4.8 Pilot Study

A pilot study is a mini-version of a full-scale study done in preparation of the complete study. A pilot study is also referred to as a feasibility study. It can be treated as a specific pre-testing of research instruments, including questionnaires or interview schedules (Polit, *et al*., & Baker in Nursing Standard, 2002; Van Teijlinge & Hundley, 2001). The pilot study was conducted when researcher has got a chance to collect data. The researcher distributed 38 questionnaires for pilot study at Nzalabantu area; it was a rural area similar to the ones targeted in the study. The researcher did not make any changes in the questionnaire based on the difficulty, but the questionnaires were written in 2 languages English and IsiZulu, because the majority of people in this area are Zulu speaking. It was also for the reason for the time the respondents took to answer questions at the pilot stage of the study. The respondents took a very short

time to respond to the questionnaires about 3-5 minutes per respondent because they were just ticking correct options and the researcher explained if there was a question they struggled to understand. The researcher used the pilot study in order to check how well the research instrument (questionnaires) works in practice, and to check whether the selected people will be able to understand and answer the questions or not. Additionally, it enabled the researcher to check the study's reliability and validity. A pilot study is one of the important stages in a research project and it is conducted to identify potential problem areas and deficiencies in the research instruments and protocol prior to the implementation of the full study. It is useful for providing the preliminary work in a research project (Zailinawati, Schattner, and Mazza, 2006).

4.9 Data Analysis

The study uses SPSS (Statistical Package for the Social Sciences) version 24. SPSS is a software for editing and analysing all sorts of data. SPSS Statistics is a software package used for logical batched and non-batched statistical analysis. This software is one of the most popular statistical packages which can perform highly complex data manipulation and analysis with simple instructions. SPSS can take data from almost any type of file and use them to generate tabulated reports, charts and plots of distributions and trends, descriptive statistics and conduct complex statistical analyses. These packages of the programme are available for both personal and mainframe computers (Van Teijlingen & Hundley, 2001).

The study uses descriptive SPSS because exporting survey data to SPSS's proprietary format makes the process of pulling, and analyzing data clean and easy. By doing so, SPSS automatically set up and import designated variable names, variable types, titles, and value labels, meaning that minimal legwork is required from researchers. SPSS analysis has its advantages, broad coverage of formula and statistical routines, data files can be imported through other programs and the software can be annually updated to increase sophistication (Van Teijlingen & Hundley, 2001).

Descriptive statistics are often used to describe variables. Descriptive statistics are performed by analysing one variable at a time (univariate analysis). The study looks at the measures of tendency (mean, median, and mode) and the measures of variability (range, variance, and standard deviation). The chi-square (χ^2) test statistic was applied in determining relationships between the variables and for testing the

hypothesis. With 95% confidence level and error margin (e) =0.05, the decision rule for the hypothesis test was stated that; accept the null hypothesis (Ho) if the critical values (p-values) are greater than (>) the alpha level (α) 0.05 and do not accept the null hypothesis if the critical values (p-values) are less than or equal to (≤) the alpha level (α) of 0.05. To summarise data, the study used bar graphs, histograms, and pie charts (Van Teijlingen & Hundley, 2001).

4.10 Validity and Reliability

Reliability refers to the consistency of a measure or question in obtaining very similar or identical results. If a researcher asks a set of questions to the same people repeatedly, you should be able to get the same results (MacMillan and Schumacher 1993). To test for the reliability of a data collection instrument, the researcher conducted a pilot study. There are numerous statistical tests and measures to assess the validity of quantitative instruments, which generally involve pilot testing (Dewar College of Education, 2009). Therefore, for validity purposes, a pilot study was undertaken. Rouse (2013) states that a pilot study offers a platform for a researcher to test logistics, prove value and expose deficiencies before committing huge resources or spending a considerable amount of time, energy or money on a large-scale project. The researcher pre-tested the instrument from thirty-eight (38) respondents from Nzalabantu area to answer the questions that were going to be used for the study. The pre-test ensured modification of ambiguous items, elimination of repeated questions, grammatical and typographical errors and inconsistencies associated with the framing of the questionnaires. Table 4.2 presents the reliability result of the instruments.

Table 4.2: Reliability of the data collection instruments.

Reliability Coefficients	Cronbach's Alpha		Standardized Item Alpha		N of Items		
	0.856		0.710		66		
Statistics for Scale	n	Mean	Variance		SD		
	66	128.63	96.780		9.838		
Item total Statistics	Scale Mean if item Deleted	Scale Variance if Item Deleted	Corrected Item Total Correlation	Cronbach Alpha if Item Deleted	Mean	SD	n
Item 1	127.08	94.669	.189	.855	1.55	.504	38
Item 2	126.79	98.549	-.137	.871	1.84	1.079	38
Item 3	127.63	96.780	.000	.856	1.00	.000	38
Item 4	126.61	93.002	.300	.854	2.03	.592	38
Item 5	126.82	96.317	.040	.857	1.82	.393	38

Item 6	126.68	97.087	-.065	.858	1.95	.324	38
Item 7	126.66	94.718	.270	.854	1.97	.367	38
Item 8	126.58	95.007	.131	.857	2.05	.567	38
Item 9	125.18	90.479	.138	.871	3.45	1.519	38
Item 10	126.82	97.073	-.058	.858	1.82	.393	38
Item 11	126.66	93.366	.333	.853	1.97	.492	38
Item 12	126.87	94.928	.198	.855	1.76	.431	38
Item 13	126.68	92.492	.404	.852	1.95	.517	38
Item 14	126.79	92.711	.461	.851	1.84	.437	38
Item 15	126.47	91.013	.524	.850	2.16	.547	38
Item 16	126.53	90.526	.558	.849	2.11	.559	38
Item 17	126.61	91.435	.441	.851	2.03	.592	38
Item 18	126.55	90.362	.544	.849	2.08	.587	38
Item 19	126.45	91.821	.478	.851	2.18	.512	38
1tem 20	126.55	92.308	.522	.851	2.08	.428	38
Item 21	126.61	93.759	.406	.853	2.03	.367	38
Item 22	126.66	92.339	.611	.850	1.97	.367	38
Item 23	126.68	97.844	-.182	.859	1.95	.324	38
Item 24	126.71	92.427	.612	.850	1.92	.359	38
Item 25	126.68	95.536	.262	.855	2.00	.232	38
Item 26	126.68	93.898	.352	.853	1.95	.399	38
Item 27	126.74	94.686	.330	.854	1.89	311	38
Item 28	126.68	93.087	.459	.852	1.95	.399	38
Item 29	126.63	93.104	.452	.852	2.00	.403	38
Item 30	126.74	92.469	.472	.851	1.89	.453	38
Item 31	126.76	96.348	.032	.857	1.87	.414	38
Item 32	126.76	97.159	-.074	.858	1.87	.343	38
Item 33	126.74	94.145	.241	.855	1.89	.509	38
Item 34	126.66	95.204	.139	.856	1.97	.492	38
Item 35	126.74	94.253	.204	.855	1.89	.559	38
Item 36	126.71	93.503	.235	.855	1.92	.632	38
Item 37	126.71	93.779	.340	.853	1.92	.428	38
Item 38	126.61	92.786	.546	.851	2.03	.367	38
Item 39	126.71	93.292	.400	.852	1.92	.428	38
Item 40	126.68	93.465	.409	.852	1.95	.399	38
Item 41	126.74	92.469	.472	.851	1.89	.453	38
Item 42	126.66	94.772	.349	.854	1.97	.238	38
Item 43	126.76	94.456	.331	.854	1.87	.343	38
Item 44	126.74	95.550	.186	.855	1.89	.388	38
Item 45	126.74	93.821	.373	.853	1.89	.388	38
Item 46	126.66	97.258	-.100	.858	1.97	.238	38
Item 47	126.82	95.235	.181	.855	1.82	.393	38
Item 48	126.58	94.467	.350	.854	2.05	.324	38
Item 49	126.74	92.307	.579	.850	1.89	.388	38
Item 50	126.74	97.442	-.124	.858	1.89	.311	38
Item 51	126.74	92.578	.542	.851	1.89	.388	38
Item 52	126.58	94.737	.307	.854	2.05	.324	38
Item 53	126.63	90.780	.653	.848	2.00	.465	38
Item 54	126.71	94.049	.374	.853	1.92	.359	38
Item 55	126.68	95.627	.127	.856	1.95	.399	38
Item 56	126.74	90.902	.441	.851	1.89	.649	38
Item 57	126.71	92.536	.494	.851	1.92	.428	38
Item 58	126.71	95.509	.163	.856	1.92	.359	38
Item 59	126.74	94.037	.289	.854	1.89	.453	38
Item 60	126.66	98.339	-.292	.860	1.97	.283	38
Item 61	126.79	95.306	.185	.855	1.84	.370	38

Item 62	126.68	93.357	.360	.853	1.95	.462	38
Item 63	126.74	93.983	.351	.853	1.89	.388	38
Item 64	126.68	95.357	.208	.855	1.95	.324	38
Item 65	126.71	93.184	.500	.852	1.92	.359	38
Item 66	126.55	93.281	.278	.854	2.08	.587	38

Source: Fieldwork (2019).

From Table 4.2, a total of 66 questionnaires were pre-tested to 38 respondents in order to test for the reliability of the instruments. The study considered the Cronbach's alpha reliability coefficient between the ranges of 0 and 1. Therefore, the closer the Cronbach's Alpha coefficient is to 1.0, the greater the study considered the internal consistency of the items in the scale. The pre-test reliability report shows a Cronbach Alpha value of 0.856. The Cronbach's alpha value of 0.856 for all the items was considered to be generally acceptable and within the best standard practice for data reliability. Approximately, the analysis of the individual Cronbach alpha values (items 1-66) revealed a mean (128.63), variance (96.780) and SD (9.838) with a range of Cronbach Alpha values between 0. 855 to 0.871. The result is an indication that the instruments were "acceptable" and showed internal consistency of the items in the scale, hence, were suitable to be utilised for a large scale population or sampled population.

4.11 Limitations and Delimitations of the Study

The study focused only at UMlalazi Local Municipality whereas the realisation of a human right to water is also a major problem in many other areas of KwaZulu-Natal and South Africa. The limitations also include restrictions on the generalisation of the findings. Questionnaires were used to put these limitations within a specific context. The researcher focused on the theoretical framework of ecological economics entirely but chose specific themes relating to the study (water as a basic human right, scale/ size of the economy, equity in water, allocation of resources, and distribution of wealth) because of time constraints. The study was conducted in three different communities; hence, travelling to those communities was costly.

There are 5 local authorities within King Cetshwayo District and the study only focused on one of these, and the researcher collected data from these areas and did not target KCD officials as a WSA and uMhlathuze Water as a WSP because at this level the focus was on households and not municipal officials who constituted 1% of the sample.

The sample is large enough to generalise, but the context of uMlalazi is different from uMhlathuze, uMthonjaneni, Nkandla and uMfolozi.

4.12 Elimination of Bias

For the elimination of bias, the study checked the study's validity and reliability and also conducted a pilot study to examine the feasibility of an approach that was intended to be used in a larger scale study. The study collected data from both the female and male respondents and all adult ages were presented in the study. The respondents were not given any incentives in order for them to be part of the study. Therefore, there was no cultural bias; every culture under the study area was welcome to be part of the study. The researcher used a similar questionnaire for all the 375 participants of the study, the researcher did not influence the respondents by conducting interviews, they responded as they saw fit.

4.13 Ethical Considerations

The researcher got ethical clearance certificate from the University of Zululand Research Ethics Committee (UZREC) which gave permission for collection of the data from UMlalazi Local Municipality. The researcher also consulted the traditional leaders to obtain permission to collect the data within their traditional jurisdictions. Moreover, the researcher made it clear to the respondents that participation in the study was voluntary, and that should they for some reasons want to withdraw from participation, they had the right to do so at any time. In addition, respondents were assured that their privacy would be respected at all time and that everything they shared was going to be treated as confidential. To ensure quality assurance, the Cronbach's Alpha was used in testing the internal validity of the instruments. Cronbach's Alpha is a measure used to assess the reliability, or internal consistency of a set of scale or test items. Thus, Cronbach's Alpha, states Goforth (2015), and is one way of measuring the strength of that consistency. In addition, researchers recommend a minimum coefficient between 0.65 and 0.8. Coefficients that are less than 0.5 are usually unacceptable. Therefore, the Cronbach's Alpha value of 0.70 for all the items was considered generally acceptable and within the best standard practice for data reliability. The data collected was stored in a cabinet for the period of five years and each of the respondents signed an informed consent form despite the fact that they were not interviewed.

4.15 Chapter Summary

This chapter discussed the research methodology. It covered the description of the study; the rationale for the study, to understand the study context and the approaches for the collection of empirical data. Moreover, it discussed the research quantitative approach and descriptive and exploratory research design. Research philosophy and paradigm were also covered. The study was oriented towards the post-positivism epistemology. Furthermore, it discussed the techniques for data analysis and presentation of the results. The study also discussed the target population, sampling technique and method used to collect data. Pilot study and Cronbach's Alpha was used to test reliability and validity of the research instrument respectively. Lastly, the chapter described the limitations of the study, elimination of bias and ethical considerations. The following chapter discusses the results of the study that was obtained from the collection of data.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.1 Introduction

This chapter presents the results emanating from the field data analysis. The findings are interpreted and discussed based on themes and sub-themes which emerged from the objectives of the study and the research questions. Proceeding this introductory section is a discussion on the socio-demographic characteristics of the respondents, including the gender and age categories and racial elements of the respondents. The findings on free basic water policy, institutional framework of water governance, the Water Service Act No. 108 of 1997 and key institutions in water supply are presented in this chapter.

Moreover, the chapter discusses water governance in the study community, initiatives for water management and water supply and rural water and sanitation delivery. In addition, the chapter discusses the IWRM from the perspective of Dublin Principles (No.2 and No.4), and from the human rights to water perspective. It further discusses the importance of water, development, and water and gender roles in water resource management in the study community. The chapter further highlights the problems associated with water supply and the assessment of the hypothesis formulated by the study. The findings and discussion in this chapter are linked with the theoretical, conceptual and empirical literature. The chapter ends with a brief conclusion which summarizes the results and findings of the study.

5.2 Background Information

In this section, the study presents and discusses the results on the background characteristics of the respondents in order to reveal the general socio-demographic context of the study area. The themes and variables covered are gender and age categorization as well as the racial elements of the respondents. From Table 5.1; the findings showed that all respondents were eligible adults and with ages ranging between 25-75 years. Most of the respondents (41.6%) aged between 25-35 years, followed by those between 35-45 years (30.7%), 45-55 years (18.9%), 55-65-year group (6.7%) and those in the category of 65-75 years constitute (2.1%) of the

respondents. The findings reveal a predominantly youthful population structure of 25-45 years, which constitutes (72.3%) of the population within the study area. These population groups are considered the most energetic with human resource capacities and potentials which could be harnessed locally to promote the development of water resources in the rural communities.

Table 5.1: Gender and age of the respondents

	Age range (in years)											
	25-35		35 -45		45-55		55-65		65-75		Total	
Gender	n	%	N	%	n	%	N	%	n	%	n	%
Male	88	23.5	46	12.3	40	10.7	14	3.7	62	1.6	194	51.7
Female	68	18.1	69	18.4	31	8.3	11	2.9		0.5	181	48.3
Total	156	41.6	115	30.7	71	18.9	25	6.7	8	2.1	375	100

Source: Fieldwork (2019), n = 375

In terms of gender, Table 5.1 revealed a slightly higher rate of males (51.7%) compared to females which constituted (48.3%) of the population. The findings suggest possibilities for male domination in decision making on the provision of critical public and environmental services including water and sanitation in the Municipality. However, adult females appeared to be most likely interested in water issues compared to their male counterparts. This is because females appeared to be mostly affected by water scarcity and household's food security. Similarly, females become victims of water crises, since the cost of water shortage and inadequate infrastructure, fall extremely on women and girls (Vogelstein, 2017). Additionally, females seem to be mostly engaged in domestic household activities of cooking, washing, cleaning, and childcare and water haulage and therefore, turn to have direct effects in terms of water and food shortage.

In addition, the study interrogated the respondents on their racial elements. This was to understand the opinions of the respondents on race whose livelihoods are mostly impacted in terms of water scarcity. From Table 5.2, the findings reveal that the study area is predominantly constituted by black populations (97.9%) as compared with Coloured resident population (2.1%). The results convey to the forefront issues of racialisation, segmentation and segregation against native black populations on matters of water governance. Since blacks constitute the majority of the populations, scarcity of water in the area is likely to affect their standards of living and livelihoods,

particularly poor households and indigenous blacks who rely on water for agricultural activities. The black South Africans in the area must therefore have rights to decision making on matters which shape their livelihoods. The exclusion in planning, strategy formulation and implementation of development programmes within the Municipality would likely reinforce economic hardships, social and political powerless and continued marginalisation of black residents in the Municipality.

Table 5.2: Race of the respondents

Racial categories	Frequency	Percent (%)
African	367	97.9
Coloured	8	2.1
Total	375	100

Source: Fieldwork (2019), n = 375

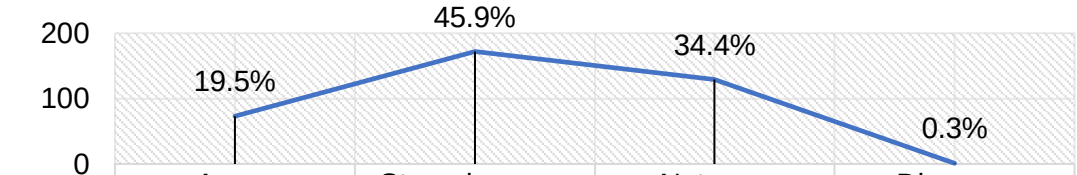
Furthermore, an essential dimension of water security involves black women. Since blacks constitute the majority of the population, the representation, including and participation of black women should be considered a priority for effective policy making on water and sanitation. In addition, the findings mean that the sustainability, ownership and effective management of water systems in the communities would require the development of capacities and broader consultation of black neighbourhoods and black populations. The results implied that in terms of water access, black residents in the community were more severely affected than whites, coloured and Indians. Lack of access to clean drinking water remains a problem today and low-income communities are disproportionately affected.

5.3 Free Basic Water Policy (FBWP)

In this section, the study seeks to address the first specific objective which is aimed to explore the constitutional framework adopted to support human right to water in South Africa. According to Gumbi (2017), Free Basic Water Policy was introduced by the government, aimed at providing 6, 000 litres of free basic water to the poor households, per month and to ensure that all households have access to a basic supply of water. The free basic water policy is aimed at improving the quality of life of those citizens who cannot afford to pay for water and at contributing to the government's initiative to eradicate poverty in the rural areas to the most that are faced with the water crisis. Thus, Figure 5.1 analysed the respondent's perception on whether the South African government is providing each household with 6kl of free

basic water per month. From figure 5.1, the results showed that most of the respondents (45.9%) strongly agreed on their perceptions of FBWP which is aiming to improve the quality of life of those citizens who cannot afford to pay for water and at contributing to the government's initiative to eradicate poverty in the rural areas especially the most that are faced with the water crisis.

Figure 5.1:Free Basic Water Policy is aimed at improving the quality of life of those citizens who cannot afford

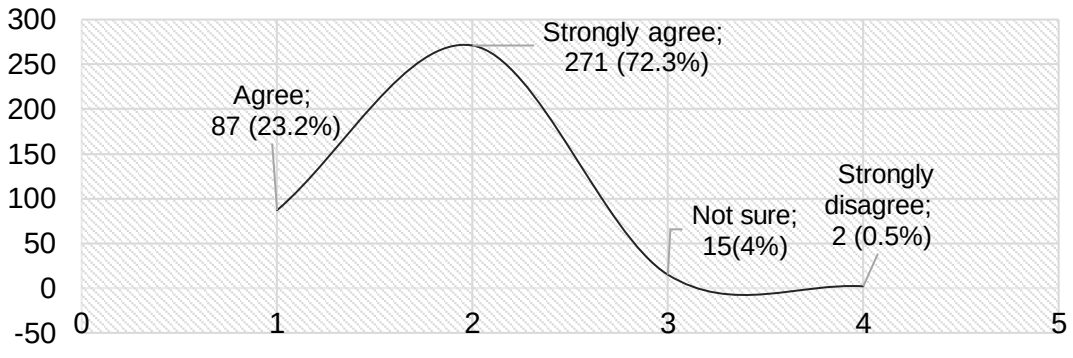


	Agree	Strongly agree	Not sure	Disagree
Series1	73	172	129	1

Source: Fieldwork (2019), n = 375

About 34.4% were not sure, 19.5% agreed and 0.3% disagreed. Free basic services were part of the government's response to debates about social welfare policy. Free basic water is a National Government Policy but it can only be implemented by the local government. In a similar study, ZDM (2017) reports that an approved indigent/deprived household must receive fully subsidised water at a minimum of 6kl per month. The finding affirms that the policy should target the poor and make sure that all the households have access to water supply; access within 200m of the house and the assurance of supply.

Figure 5.2:South Africans should have access to safe and affordable basic water and sanitation



Source: Fieldwork (2019), n = 375

From Figure 5.2, the study showed that most of the respondents (72.3%) strongly agreed that South Africans should have access to clean water and sanitation, (23.2%)

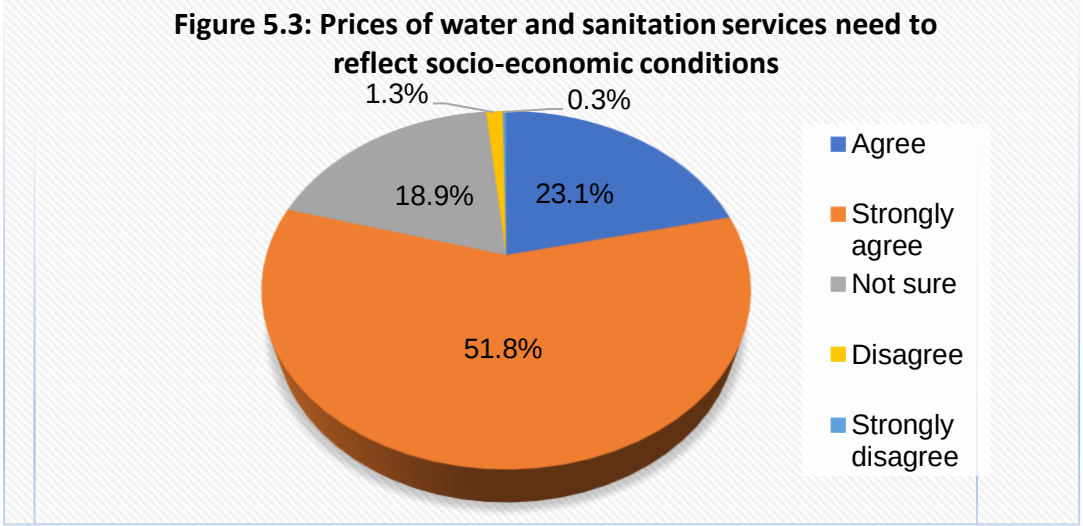
agreed, (4%) were not sure, and (0.5%) strongly disagreed. In a similar study, Machethe (2011) also discovered that the right to health care, food, water and social security is enshrined in the constitution. Section 27(1) (b) unequivocally states that; everyone has the right to access to sufficient food and water. Subsection two of this section states categorically clear that; the state has a full responsibility to see to it that these rights are realized progressively. The results implied that without water there is no life. The water required for each person or domestic use must be safe, therefore free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health. Hence, water facilities and services must be affordable to all.

Table 5.3: Water and sanitation services should be equitable, affordable, sustainable and gender sensitive

Response categories	Frequency	Percent (%)
Agree	67	17.9
Strongly agree	283	75.5
Not sure	19	5.1
Disagree	5	1.3
Strongly disagree	1	0.3
Total	375	100

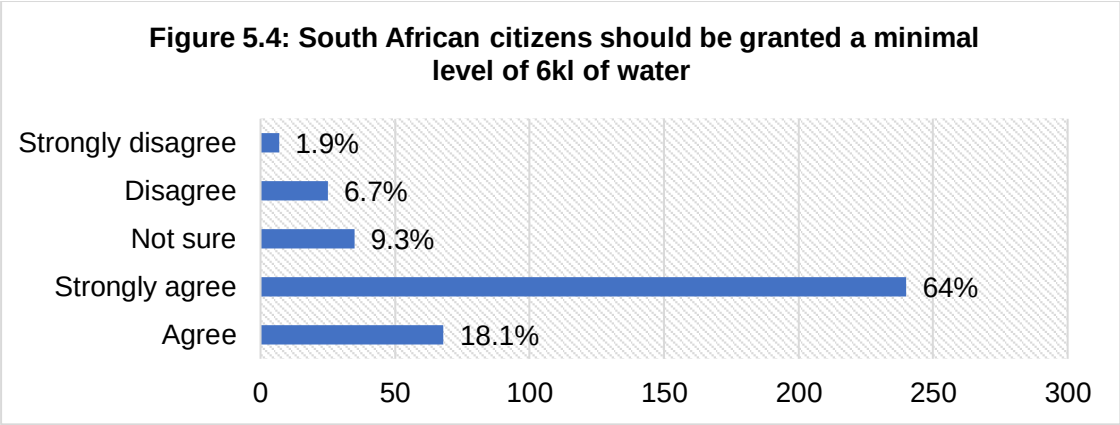
Source: Fieldwork (2019), n = 375

As depicted by Table 5.3, the study showed that most of the respondents (75.5%) strongly agreed that water and sanitation services should be equitable, affordable, and sustainable and gender sensitive, 17.9% agreed, 5.1% were not sure, 1.3% disagreed, and 0.3% strongly disagreed. The findings of the study agree with (Gumbi, 2017) who states that water should be of an acceptable colour, odour, taste for each person or domestic use. All water facilities and services must be culturally appropriate and sensitive to gender and lifestyle.



Source: Fieldwork (2019), n = 375

From Figure 5.3, the study showed that 51.8% of the respondents strongly agreed that prices of water and sanitation services need to reflect socio-economic conditions, 23.1% agreed, 18.9% were not sure, 1.3% disagreed, and 0.3% strongly disagreed. The prices of water and sanitation services need to reflect the fact that they are both socially and economically sound that is, pricing should promote access to basic safe services, encourage the wise and sustainable use of resources and ensure financial sustainability. The study findings agree with Bekink (2006) who states that free basic water policy should improve the quality of life of those citizens who cannot afford to pay for water and at contributing to the government's initiative to eradicate poverty in the rural areas, especially the most that are faced with the water crisis. Thus, water services should be affordable for all.



Source: Fieldwork (2019), n= 375

The study questioned the participants on their perceptions regarding their household's access to the 6kl of free basic water per month provided by the South African

government since 2001. This was to enable the study to discover the effectiveness of government's policy and state commitment towards basic water supply in the communities. Free Basic Water is supposed to be given to indigent households, but most municipalities such as eThekwini Metropolitan Municipality provide 9kl of Free Basic Water to all residents and not only to indigent households. The findings presented in Figure 5.4 revealed that most respondents (64%) strongly agreed regarding their perception of access to 6kl of monthly water supply, 18. 1% agreed, 9.3% were not sure, 6.7% disagreed and 1.9% strongly disagreed with state's supply of minimum of 6kls of water to their households. The findings of the study agree with Nealer (2009) who states that water is an indispensable commodity and life would be impossible without it. For the household, a day would be terribly difficult without this life enabling commodity. Therefore, it is important that the households are provided with a minimal 6kls of water to meet their water needs.

The results implied that government still lack the capacity for water supply or backlog and problem of finances in government and free riding on water supply which prevent government's water supplies from reaching targeted beneficiary communities. In a similar study, Gumbi (2018) states that the government launched a Free Basic Water Policy aimed at providing poor households with 6, 000 liters of free water per month and at ensuring that all households have access to a basic water supply. The goal of the Free Basic Water Policy is to improve the quality of life of people who are unable to afford to pay for water and to contribute to the government's effort to alleviate poverty in rural areas where the water crisis is most serious. The right of access to sufficient water is accorded to everyone in section 27(1) (b) of the constitution, which states that everyone has the right to have access to sufficient water. Section 27(2) requires the State to take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of the right.

Table 5.4: Any use of water above free kilolitres should be paid for

Response categories	Frequency	Percent (%)
Agree	29	7.7
Strongly agree	92	24.5
Not sure	54	14.4
Disagree	29	7.7
Strongly disagree	171	45.6
Total	375	100

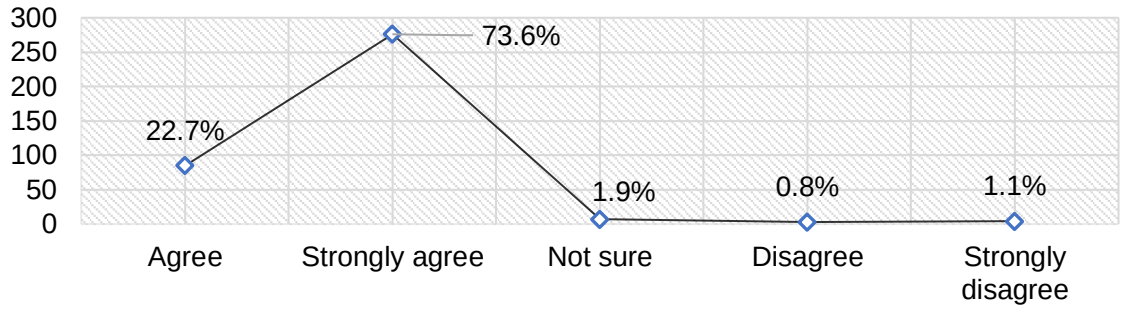
Source: Fieldwork (2019), n = 375

From Table 5.4, the results showed that 45.6% of the respondents strongly disagreed with respect to their perceptions on paying for water used above free kilolitres, 24.5% strongly agreed, 14.4% were not sure, 7.7% each agreed and disagreed respectively. The results showed that the majority of people deny paying for extra water beyond FBW. FWBP (2001) argues that people should be given 6kl of free water per month. The study findings agree with Ismail et al (1997) who states that the local authorities should strive to achieve the promotion of democratic and accountable government for local communities. The finding implies that the local authorities should strive to achieve the provision of services to citizens in a sustainable manner, the promotion of social and economic development, and the promotion of a safe and healthy environment. It is important that the local authorities provide the basic services to the people, so that they can meet their water needs. The financial stability is also important so as to assist in ensuring that the people receive the services in an equitable manner.

5.4 The Institutional Framework

In this section the study addresses the first objective which is aimed at; to explore the constitutional framework adopted to support human rights to water in South Africa. This is because the 1996 South African constitution states that everyone has a right to access clean water, to social assistance to people who are unable to support themselves and their dependents (Republic of South Africa). The institutional framework functions within the legislation of the country, on the basis that the Department of Water and Sanitation (DWS) serves, as the body that formulates and implements the policy concerning water supply and sanitation programs. Section 27 of the Constitution ensures that all South Africans have access to clean, sufficient water and a healthy environment within their communities (The Republic of South Africa, 1996). Hence, this study analysed whether everyone has a right to access clean, sufficient water and a healthy environment.

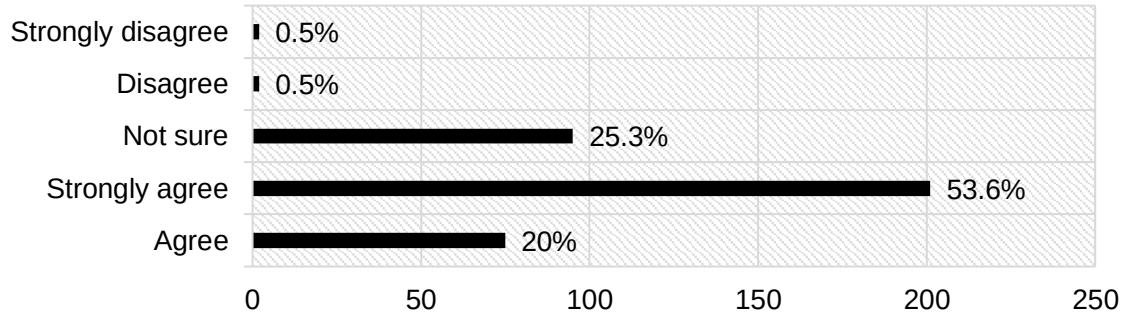
Figure 5.5: Everyone has a right to access clean, sufficient water and a healthy environment



Source: Fieldwork (2019), n = 375

As depicted by Figure 5.5, the findings showed that most respondents (73.6%) strongly agreed, 27.7% agreed, 1.9% were not sure, 1.1% strongly disagreed and 0.8% disagreed that everyone has a right to access clean, sufficient water and a healthy environment. The results prove that people are aware that water is important to their everyday lives and they should have access to it. In a similar study, Machethe, (2011) also discovered that the Constitution of the Republic of South Africa, 1996 section 27(1) (b) states that; everyone has the right to access to sufficient food and water. Moreover, everyone has a right to access clean water, to social assistance to people who are unable to support themselves and their dependants.

Figure 5.6: Responsibility for water service delivery lies with local governments



Source: Fieldwork (2019), n = 375

From Figure 5.6, the results indicated that most of the respondents (53.6%) strongly agreed that the responsibility for water services delivery lies with local governments, 25.3% was not sure, 20% agreed, 0.5% disagreed and 0.5% strongly disagreed. Therefore, Gumbi (2017) argues that the responsibility for water services lies with the

local governments, either as a water service authority or as a water service provider to the communities in their areas in a sustainable manner, have been approved by the findings of the study. Moreover, the Constitution states that each municipality must structure and manage its processes of service delivery in order to give priority to the basic needs for its communities and to promote the social and economic development and ensure that water is distributed equally.

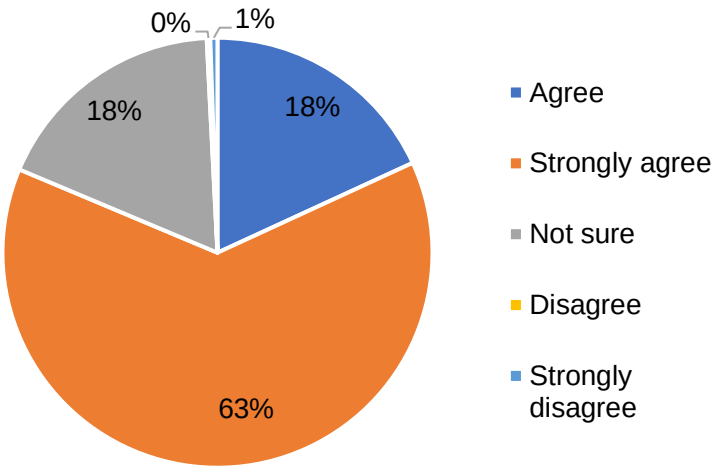
Table 5.5: Participation of communities in planning water service provision is important

Response categories	Frequency	Percent (%)
Agree	105	28.0
Strongly agree	249	66.4
Not sure	17	4.5
Disagree	3	0.8
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.5, the results showed that most of the respondents (66.4%) strongly agreed that participation of communities in planning water service is important, while (28.0%) agreed, (4.5%) were not sure, (0.8%) disagreed, and (0.3%) strongly disagreed. The findings of the study agree with (World Bank, 1993) who states that full and effective participation requires gender awareness and special efforts to allow women and vulnerable groups to participate in management decisions, in accordance with the third Dublin Principle. The findings of the study agrees with Water Services Act no.18 that states that to provide for the rights of access to basic water supply and basic sanitation; to provide for the setting of national standards and of norms and standards for tariffs, etc.

Figure 5.7:Existing inequalities to access to water services should be sustainably addressed



Source: Fieldwork (2019), n = 375

From Figure 5.7, the study found that most of the respondents (63%) strongly agreed that existing inequalities to access of water services should be sustainably addressed, 18% agreed, 18% were not sure, 1% strongly disagreed and 0% disagreed. The study corroborates Singh et al (2008) who argues that there is still a huge gap between the poor and the rich in accessing sufficient water. It happens that urban areas benefit more than rural areas. Water is a precious commodity, all living things need water to survive. Therefore, it is important that water is distributed equally to the rural areas and urban areas, everyone should benefit from it regardless of their distance or any other circumstances.

5.5 The Water Services Act No. 108 of 1997

In this section, the study seeks to address the first specific objective which is aimed to explore the constitutional framework adopted to support human right to water in South Africa. The Water Service Act No. 108 of 1997 provides a framework for the provision of water supply and sanitation services to households in South Africa. Also, this act mainly prioritises the rights of equitable, sustainable, and efficient access to basic potable water supply and sanitation necessary to ensure a healthy lifestyle (Motloung, 2010). The Water Services Act (WSA) gives municipalities the authority to take reasonable measures to administer water services and sanitation, and further extends the responsibility to all spheres of government to work towards this goal within the confines of feasibility (RSA, 1997). Gabru (1995) stipulates that the government's intention is to secure the right to access basic water supply when people cannot pay.

He further argues that every South African household should be allocated 6, 000 litres of water per month without a charge.

Table 5.6: Every South African household be allocated free 6klt of water per month

Response categories	Frequency	Percent (%)
Agree	56	14.9
Strongly agree	275	73.3
Not sure	30	8.0
Disagree	12	3.2
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.6, the findings revealed that most of the respondents (73.3%) strongly agreed that every South African household be allocated free 6kl of water per month, 14.9% agreed, 8.0% were not sure, 3.2% disagreed and 0.5% strongly disagreed. The study findings have confirmed DWAF (2000) who argues that the primary intention of free basic water policy is to alleviate poverty by ensuring that no one is denied access to a basic water supply. The findings imply that the people in rural areas depend on free basic water because they cannot afford to pay for it. Some of them depend on their neighbours who get water at a fee. This is a serious matter in rural areas.

Table 5.7: Centralisation affects distribution of Municipal infrastructure

Response categories	Frequency	Percent (%)
Agree	48	12.8
Strongly agree	205	54.7
Not sure	109	29.1
Disagree	8	2.1
Strongly disagree	5	1.3
Total	375	100.0

Source: Fieldwork (2019), n= 375

In terms of centralisation of Municipal infrastructure, the results in Table 5.7 showed that a little above half (54.7%) of the respondents strongly agreed that centralisation affects distribution of Municipal infrastructure, while 29.1% were not sure, 12.8% agreed, 2.1% disagreed and 1.3% strongly disagreed. The study findings agree with Goldblatt (1996) who states that centralisation could result in highly unevenly distributed Municipal infrastructure, with black townships characterised by inadequate and poorly maintained services. Centralising water management had negative impact

in people's lives because of the inequality, deprivation socially and politically. As a result, the challenge of water supply is an urgent issue facing South African urban managers because water service is an essential element of urban growth (Goldblatt, 1996).

5.6 Key Institutions in Water Service Provision

Government-owned Water Boards play a key role in the South African water sector. Many community members are benefiting as a result of the role played by King Cetshwayo District Municipality, working together with UMhlathuze Water Board in providing water to UMlalazi Local Municipality.

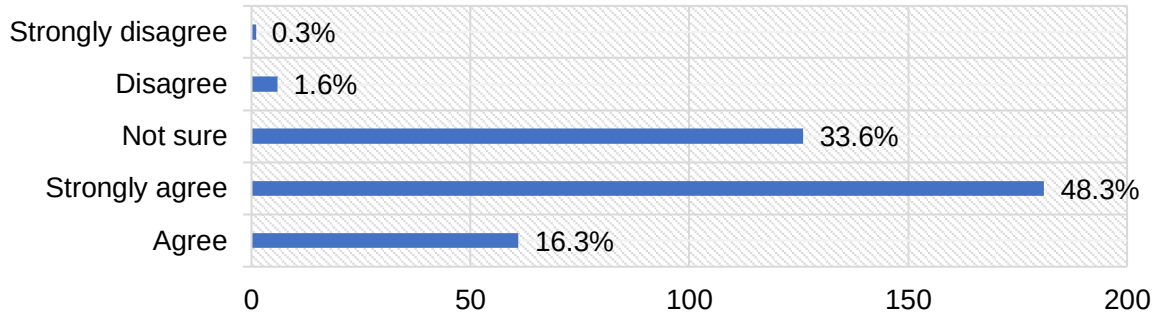
Table 5.8: Community members benefit from work relationship between King Cetshwayo District Municipality and UMhlathuze Water Board in water provision to UMlalazi Local Municipality

Response categories	Frequency	Percent
Agree	53	14.1
Strongly agree	184	49.1
Not sure	128	34.1
Disagree	7	1.9
Strongly disagree	3	0.8
Total	375	100

Source: Fieldwork (2019), n= 375

As illustrated by Table 5.8, the results showed that 49.1% of the respondents strongly agreed that community members benefit from work relationship between King Cetshwayo District and UMhlathuze Water Board in water provision to UMlalazi Local Municipality. About 34.1% were not sure, 14.1% agreed, 1.9% disagreed and 0.8% strongly disagreed. The study findings have confirmed that of Department of Water and Sanitation (2014) who argued that Government-owned Water Boards play a key role in the South African water sector. UMhlathuze Water Board operates dams, bulk water supply infrastructure, some retail infrastructure, and some wastewater systems, and also provides technical assistance to municipalities. Through their role in the operation of dams UMhlathuze Water Board also plays an important role in water resource management. At the time of writing, uMngeni Water Board was invited to assist Umhlathuze Water Board due to the latter's inefficiencies and challenges that people face as a result of lack of water supply.

Figure 5.8:State-owned water Boards play a key role in the South African water sector



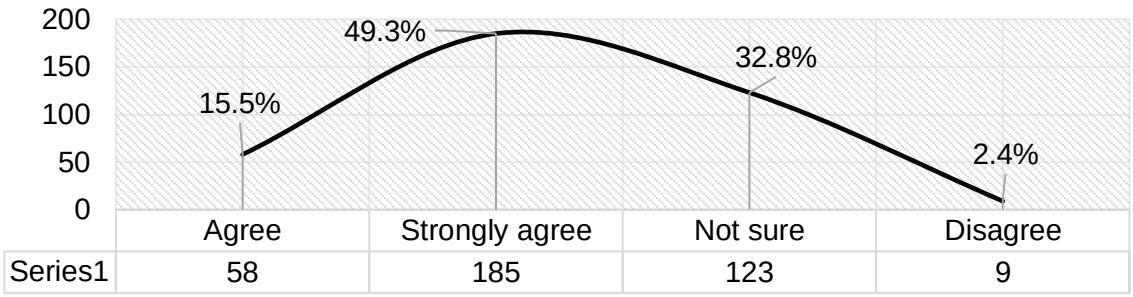
Source: Fieldwork (2019), n = 375

From Figure 5.8, the study interrogated the respondents on whether the state-owned water boards play the key role in the South African water sector. The findings indicated that 48.3% of the respondents strongly agreed that state-owned water boards play a key role in the South African water sector. About 33.6% of the respondents were not sure, 16.3% agreed, 1.6% disagreed and 0.3% strongly disagreed. The study findings have confirmed Department of Water and Sanitation (2014), that uMhlathuze Water operates dams, bulk water supply infrastructure, some retail infrastructure, and some wastewater systems, and also provides technical assistance to municipalities. Through their role in the operation of dams, UMhlathuze Water also plays an important role in water resource management. King Cetshwayo District Municipality as a Water Service Authority, sometimes perform the functions of a Water Service Provider, and also form a joint venture with another water services institution to provide water services. In providing water services, King Cetshwayo prepare a water services development plan (WSDP) to ensure effective, efficient, affordable and sustainable access to water services (Department of Water and Sanitation, 2014).

5.7 Water Governance

In this section, the study seeks to address the first specific objective which is aimed to explore the constitutional framework adopted to support human right to water in South Africa. This section further argues that governance play a critical role in improving water resources management and service delivery. Hence, without proper management of water resources, current and future generations might be affected in terms of water access.

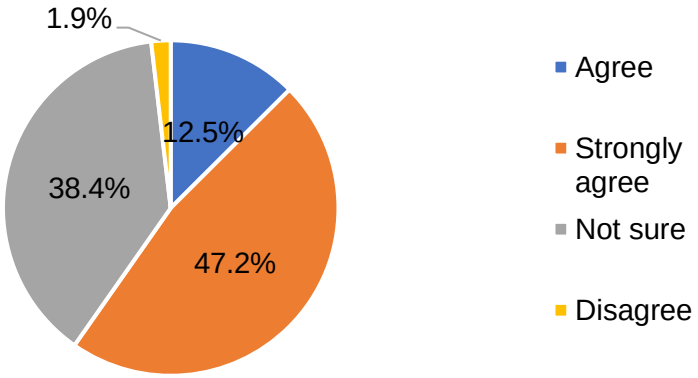
Figure 5.9:Water governance provides fundamental framework for water management



Source: Fieldwork (2019), n = 375

From Figure 5.9, the results showed that 49.3% of the respondents strongly agreed that water governance provides a fundamental framework for water management, 32.8% were not sure, 15.5% agreed and 2.4% disagreed. Water governance is responsible to provide for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities and ensure universal access to essential services that are affordable to all. The findings of the study agree with Motloung, (2010) that water governance provides a fundamental framework of water management towards the end of failure of management of water and water scarcity. Water governance recognises IWRM as a process where various stakeholders build ground rules to preserve water resources for cost effective and sustainable socio-economic development (Motloung, 2010).

Figure 5.10:Water governance entails interrelationships between government and civil society



Source: Fieldwork (2019), n = 375

As illustrated by Figure 5.10, the findings showed that 47.2%of the respondents strongly agreed that water governance entails interrelationships between

governments and civil society. Moreover, 38.4% were not sure, 12.5% agreed and 1.9% disagreed. The meeting of role players allows an opportunity to lessen the impact of water pollution connected with various human activities. IWRM, within the context of catchment management agencies and water user associations, becomes indispensable for this purpose. Agarwal et al. (2000) also identified the need for an expression of political will and commitment to act in decision-making as an imperative tantamount in importance to financial investment for the development of sustainable water resources management.

Table 5.9: South African government recognizes that all spheres of government must strive to provide water and sanitation services

Response categories	Frequency	Percent (%)
Agree	50	13.3
Strongly agree	199	53.1
Not sure	118	31.5
Disagree	6	1.6
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n= 375

As depicted by Table 5.9, the findings revealed that a little above half of the respondents (53.1%) strongly agreed that South African government recognizes that all spheres of government must strive to provide water and sanitation services. About 31.5% were not sure, 3.3% agreed, 1.6% disagreed and 0.5% strongly disagreed. It is encouraging to note that the South African government recognises that all spheres of government must strive to provide water and sanitation services in accordance with the principle of co-operative governance (RSA, 1997).The findings of this study agree with RSA (1997 which provides the water governance framework, the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and ensure universal access to essential services that are affordable to all. Governance plays a critical role in improving water resources management and service delivery. Nevertheless, the water crisis that the country is experiencing do not only look at having too little water or clean water to satisfy the human needs, but also talks to managing water in an integrated manner and making it accessible to all at all times regardless of their setting (SIWI, 2017).

5.8 Initiatives for Water Management and Water Supply

In the post-apartheid era, the South African government introduced acts and policies to govern the provision and management of water supply, especially to address backlogs in previously disadvantaged areas. Those policies are discussed below:

5.8.1 Reconstruction and Development Programme (RDP)

In this section, the study seeks to address the first specific objective which is aimed to explore the constitutional framework adopted to support human right to water in South Africa. During the apartheid era, there was no central department of government that was committed to universal supply and management of water resources in South Africa. The RDP was an integrated, coherent socio-economic policy framework, which sought to mobilise all South Africans and the country's resources towards the final eradication of the results of apartheid; the building of a democratic; non-racial and non-sexist future. It represented a vision for the fundamental transformation of South Africa.

Table 5.10: During apartheid, black African households were more likely to lack access to basic services

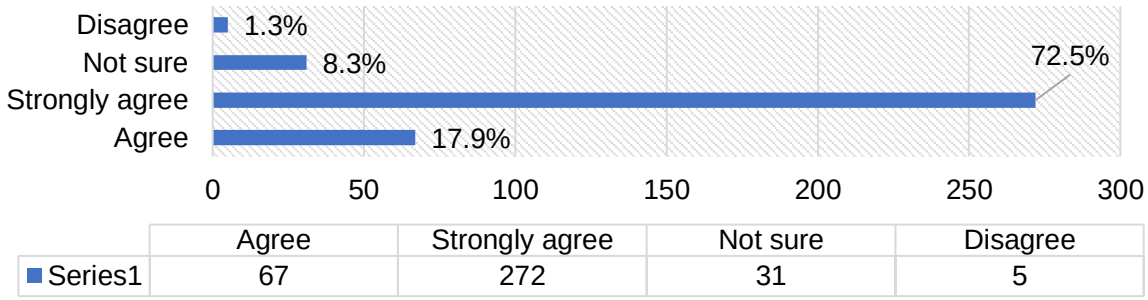
Response categories	Frequency	Percent (%)
Agree	78	20.8
Strongly agree	260	69.3
Not sure	32	8.5
Disagree	4	1.1
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.10, the findings indicated that most of the respondents (69.3%) strongly agreed that during apartheid, black African households were more likely to lack access to basic services. About 20.8% agreed, 8.5% were not sure, 1.1% disagreed, and 0.3% strongly disagreed. In a similar study, Gumbi (2017) also discovered that in poorer black rural areas, water services were run inefficiently by uncoordinated homeland government structures that were almost completely dependent on the South African Government for funding. Thus, in 1994 it was estimated that 30% of the South African population lacked access to adequate water supply services and that 50% were without adequate sanitation (DWAF, 2004). The results confirmed that Black African households were found to be more likely to lack access to basic services:

housing, water, sanitation and electricity, amongst others. However, the post-apartheid government (after 1994) introduced the Reconstruction and Development Programme as the policy foundation stone of the new government. The RDP gave the DWAF the responsibility of ensuring universal access to basic water services for all South Africans.

Figure 5.11: Water and sanitation are key indications of poverty and underdevelopment



	Agree	Strongly agree	Not sure	Disagree
Series1	67	272	31	5

Source: Fieldwork (2019), n = 375

From Figure 5.11, the results showed that more than half (72.5%) of the respondents strongly agreed that the lack of basic services delivery, such as water supply and sanitation, are the key indications of poverty and underdevelopment. In addition, 17.9% agreed, 8.3% were not sure and 1.3% disagreed. These results implied that water is important to human lives. Therefore, the study agrees with Gumbi (2007) who argues that there is a need for a more sustainable approach to water and sanitation services provision at the global, regional and local/ household level in order to avoid poverty and underdevelopment in the surrounding communities has been approved by the findings.

5.8.2 Rural Water Supply and Sanitation

Rural Water Supply and Sanitation was the Reconstruction and Development Programme Presidential Lead Project implemented by DWAF. The basic policy principle emphasises the fact that development should be demand driven and community-based. From Table 5.11, the findings showed that most of the respondents (70.4%) strongly agreed that the need for running water is specific to women as it relates to their reproductive responsibilities in rural areas mostly.

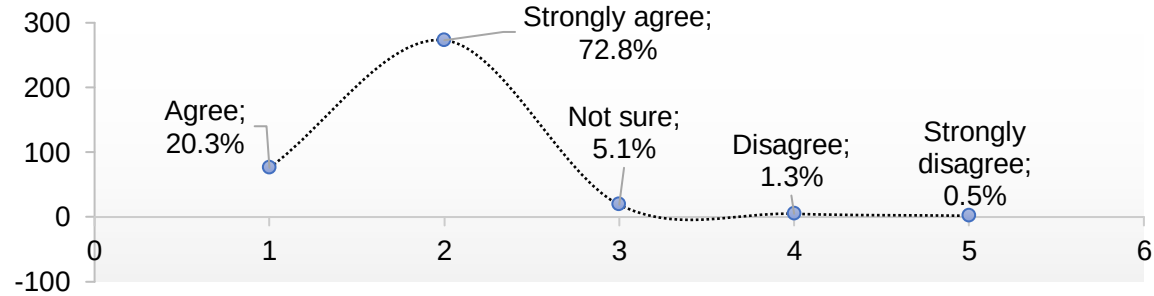
Table 5.11: Need for water mostly specific to women in rural areas

Response categories	Frequency	Percent (%)
Agree	75	20.0
Strongly agree	264	70.4
Not sure	26	6.9
Disagree	9	2.4
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

Besides, 20.0% agreed, 6.9% were not sure, 2.4% disagreed, and 0.3% strongly disagreed. The findings agree with Gumbi (2017) who states that the strategies to empower women in water delivery should include the following: women should be more involved in planning and operations as part of a strategy to build a more equitable society; their involvement should be more than labour and should include access to resources, decision-making and management; care should be taken not to overburden women; to automatically perpetuate and reinforce the traditional roles of women. It is important to work with people, rather than working for them because one will be able to identify their needs and be able to provide them, as the case of water and sanitation.

Figure 5.12:Gender approach to development needs to be addressed



Source: Fieldwork (2019), n= 375

From Figure 5.12, the results showed that most of the respondents (72.8%) strongly agreed that the importance of gender approach to development still needs to be addressed. Again, 20.3% agreed, 5.1% were not sure, 1.3% disagreed, and 0.5% strongly disagreed. Similarly, Singh et al (2008) also discovered that women are affected the most; they continue to face the hardships of supplying water to their families. Therefore, it is vital that they also benefit equally as men, with increased

choice and voice in the water management processes so that their access to and control over water resources can be strengthened.

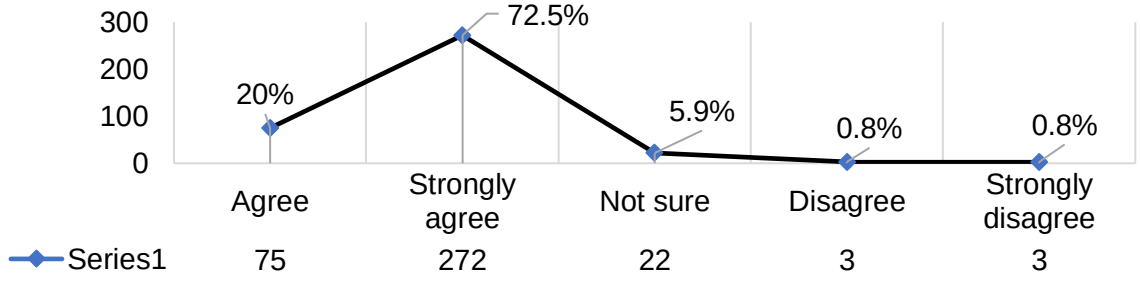
Table 5.12: Women should be more involved in planning and operations to build a more equitable society

Response categories	Frequency	Percent (%)
Agree	84	22.4
Strongly agree	269	71.7
Not sure	10	2.7
Disagree	11	2.9
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

As illustrated by Table 5.12, the findings showed that most of the respondents (71.7%) strongly agreed that women should be more involved in planning and operations to build a more equitable society. Moreover, 22.4% agreed, 2.9% disagreed, 2.7% were not sure, and 0.3% strongly disagreed. The findings agree with Hlophe (2004), who states that participation of women in water projects is complicated, in planning, during the construction phase, later in operation and maintenance. He further states that it is important to involve women in decision-making and management and automatically perpetuate and reinforce the traditional roles of women. The Commission on Gender Equality (1996) is responsible for monitoring and evaluating all laws so that they treat women and men equally and fairly and also for ensuring that South Africa complies with the agreements made on gender equality with other countries internationally, regionally and those that are made nationally.

Figure 5.13:Participation of communities is significant for sustainable use of water

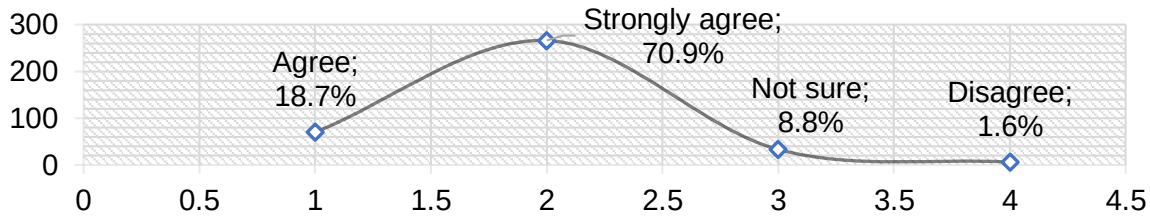


Source: Fieldwork (2019), n= 375

As illustrated by Figure 5.13, the findings showed that most of the respondents (72.5%) strongly agreed that participation of communities is significant for sustainable use of water. In addition, 20% agreed, 5.9% were not sure, 0.8% disagreed, and 0.8%

strongly disagreed. The findings agree with Hlophe (2004) who states that each specific context, in which water is used, influences the rights to access of different people and how water is managed. He further states that it is important to work with people, rather than working for them because one will be able to identify their needs and be able to provide them, as the case of water and sanitation. Although it seems obvious that there should be a higher level of community's participation on the grounds of efficiency as much as equity, there still a serious problem about ensuring a high level of participation.

Figure 5.14: Water should be managed at the local level



Source: Fieldwork (2019), n= 375

From Figure 5.14, the results showed that most of the respondents (70.9%) strongly agreed that water should be addressed at the local level, 18.8% agreed, 8.8%) were not sure and 1.6% disagreed. In line with Hlophe (2004), this study affirmed the notion that all stakeholders, governments, civil society, NGOs, the private sector must work together in partnerships to ensure access to water for all. At a local level, water user associations, watershed committees and co-operatives have been very successful in water supply management.

5.9 IWRM Dublin Principle No.2

In this section, the study seeks to address the second specific objective which is aimed to investigate the decentralisation of water management and the extent to which it promotes or hinders access to water services as a basic need. Water development and management should be based on participatory approach, involving users, planners and policy-makers at all levels. The participatory approach involves raising awareness of the importance of water among policy-makers and the general public. It means that decisions are taken at a lowest appropriate level with full public consultation and involvements of users in the planning and implementation of water projects (GWP 2002, cited in Nojiyeza, 2014). Stakeholders are given a choice in

water management, with particular attention to securing the involvement of women and the poor.

Table 5.12: Water development and management should be based on participatory approach

Response categories	Frequency	Percent (%)
Agree	62	16.5
Strongly agree	251	66.9
Not sure	61	16.3
Disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), N = 375

As illustrated by Table 5.12, the findings showed that most of the respondents (66.9%) strongly agreed that water development and management should be based on participatory approach. Moreover, 16.5% agreed, 16.3% were not sure, and 0.3% disagreed. The study agrees with (GWP, 2004 cited in Nojiyeza, 2014) who states that the participatory approach involves raising awareness of the importance of water among policy-makers and the general public. It means that decisions are taken at a lowest appropriate level with full public consultation and involvement of users in the planning and implementation of water projects. He further states that Water development and management should be based on participatory approach, involving users, planners and policy-makers at all levels. Real participation occurs when stakeholders are part of the decision making process. Also, when the local communities are involved and are able to make water supply, management and use decisions (GWP, 2004 cited in Nojiyeza, 2014).

Table 5.13: Participatory approach is the only means for achieving agreements.

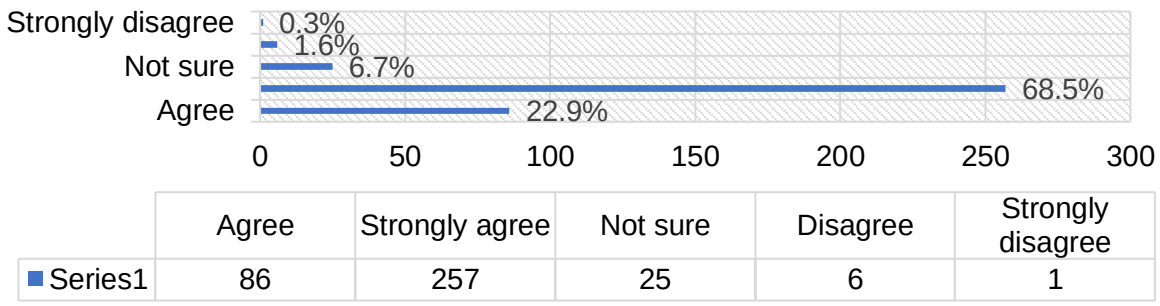
Response categories	Frequency	Percent (%)
Agree	63	16.8
Strongly agree	258	68.8
Not sure	46	12.3
Disagree	7	1.9
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n= 375

From Table 5.13, the results showed most of the respondents (68.8%) strongly agreed that participatory approach is the only means for achieving agreements. In addition, 16.8% agreed, 12.3% were not sure, 1.9% disagreed, and 0.3% strongly disagreed. The findings of the study agree with (World Bank Institute, 1993 cited in Nojiyeza, 2014) who states that the third approach of IWRM is to strengthen community-based

organisations, water user associations, and other stakeholders to enable them to take a greater role in management decisions. Giving a voice to all user groups and affected populations ensures that social welfare considerations are given proper weight.

Figure 5.15:Real participation occurs when stakeholders are part of the decision making process



	Agree	Strongly agree	Not sure	Disagree	Strongly disagree
Series1	86	257	25	6	1

Source: Fieldwork (2019), N = 375

From Figure 5.15, the results indicated that most of the respondents (68.5%) strongly agreed that real participation occurs when stakeholders are part of the decision making process. Again, 22.9% of the respondents agreed, 6.7% were not sure, (1.6%) disagreed, and 0.3% strongly disagreed. The study agrees with (Global water Partnership, 1996) who states that real participation occurs when stakeholders are part of the decision making process. Participation also occurs in democratically elected or otherwise accountable agencies or spokesperson can represent stakeholders group. The type of participation will occur dependent upon the spatial scale relevant to particular water management and investment decisions and upon the nature of the political economy in which such decisions take place.

Table 5.14: Participation requires that stakeholders at all levels of the social structure have an impact on decisions at different levels of water management

Response categories	Frequency	Percent (%)
Agree	78	20.8
Strongly agree	261	69.6
Not sure	28	7.5
Disagree	6	1.6
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

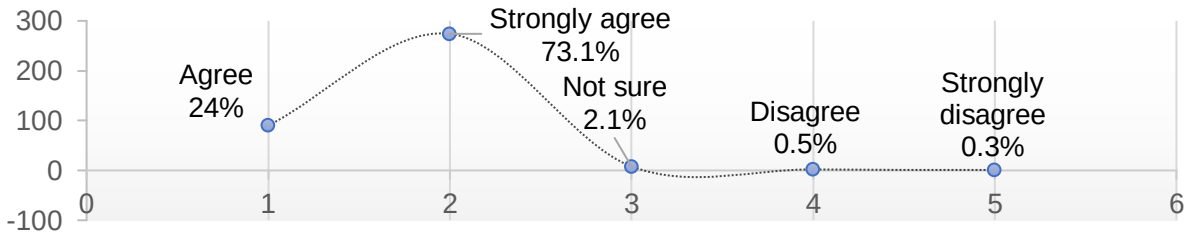
From Table 5.14, the results showed that most of the respondents (69.6%) strongly agreed that participation requires that stakeholders at all levels of the social structure have an impact on decisions at different levels of water management. Besides, about

20.8% of the respondents agreed, (7.5%) were not sure, (1.6%) disagreed and (0.5%) strongly disagreed. The findings of the study agree with (Global Water Partnership, 1996) who states that government at all levels have the responsibility to make participation possible, this involve creating mechanism for stakeholder consultation. Government also has to help create participatory capacity, particularly among women and other marginalized social groups.

5.10 Water as a Basic Human Right

In this section, the study seeks to address the third specific objective which is aimed to investigate cost recovery and the subsidies provided for water services in South Africa. Water is crucial to keep the human organism alive and healthy. This takes 30-50 litres of clean water, per person per day, according to the World Health Organisation (2003) depending on climate and other activities. However, having enough water to drink but not enough to wash can still lead to ill health or death, perhaps not as directly but with no less certainly than a lack of drinking water. Hence the need for water for bathing and personal hygiene (such as hand washing after defecation) is always essential (Muller, 2009).

Figure 5.16: Water is crucial for keeping human organisms alive and healthy

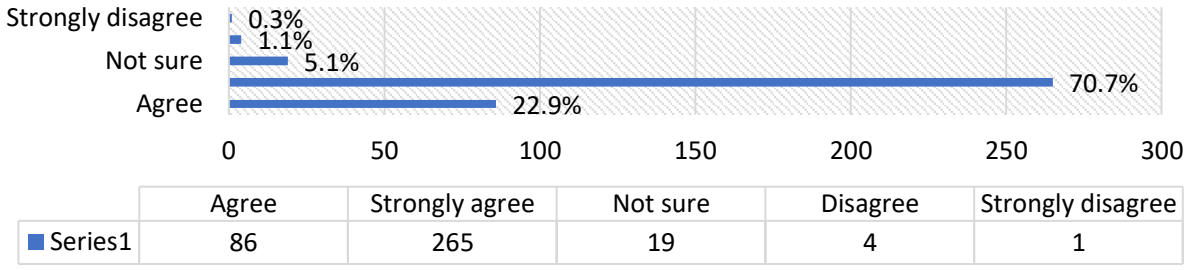


Source: Fieldwork (2019), n = 375

From Figure 5.16, the results showed that most of the respondents (73.1%) strongly agreed that water is crucial for keeping human organisms alive and healthy. About 24% agreed, 2.1% were not sure, 0.5% disagreed and 0.3% strongly disagreed. The study agrees with (UN, 2002) who states that the human right to water authorizes everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. This is to ensure that while the sufficiency of water may differ according to different circumstances, the issues of availability, quality, and accessibility are universally applicable. Thus, treating water as a basic human need is

necessary as water contributes to the economic growth and development of the country. Hence, scarcity of water would, therefore, likely affect the everyday life, health, growth and development of residents in the district. Water is one of the most important commodities for human beings and all living things. The study corroborates (Klattiwer, 2007) who argues that the human rights to water prioritize the needs of people first regarding the use of water and promote human-centered water resource development and management based on the articulate legal norms and governmental accountability.

Figure 5.17:Water supply to the communities is a fundamental right and not a privilege.



	Agree	Strongly agree	Not sure	Disagree	Strongly disagree
Series1	86	265	19	4	1

Source: Fieldwork (2019), n = 375

As illustrated by figure 5.17, the study showed that most of the respondents (70.7%) strongly agreed that water supply to communities is a fundamental right and not a privilege. About 22.9% of the respondents agreed, 5.1% were not sure, 1.1% disagreed, and 0.3% strongly disagreed. In a similar study, (Gumbi, 2007) also discovered that water is an important aspect of socio-economic development and it is associated with environmental impacts, it is central for all forms of life, economic growth, development-related activities, and environmental sustainability. Without water many sectors cannot function; therefore, the equitable water supply of sufficient quantity and quality is central to the growth of an economy of a particular geographical area and the improvement of public welfare. From Table 5.15, the results showed that most of the respondents (73.3%) strongly agreed that having enough water to drink but not enough to wash can still lead to ill health or death. About 17.9% of the respondents agreed, 5.6% were not sure, 2.7% disagreed and 0.5% strongly disagreed.

Table 5.15: Having enough water to drink but not enough to wash can still lead to ill health or death

Response categories	Frequency	Percent (%)
Agree	67	17.9
Strongly agree	275	73.3
Not sure	21	5.6
Disagree	10	2.7
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

The study findings have confirmed the finding by Muller (2009) that having enough water to drink but not enough to wash can still lead to ill health or death, perhaps not as directly but with no less certainly than a lack of drinking water. Hence, the need for water for bathing and personal hygiene (such as hand washing after defecation) is always essential. Domestic water is also precarious for waste disposal through sewers or into septic tanks or latrines. All of these uses, as well as small quantities for cooking and cleaning/washing are so essential to a human's well-being that they are universally acknowledged as being both a need and a right.

5.11 Dublin Principle of IWRM: Principle No. 4

In this section, the study seeks to address the third specific objective which is aimed to investigate cost recovery and the subsidies provided for water services in South Africa. The fourth Dublin principle emphasized that water has an economic value in all its competing uses and should be recognized as an economic good. Value and charges are too different things. The value of water in alternative use is important for the rational allocation of water as a scarce resource, whether by regularly or economic instrument to affect behaviour towards conservative and efficient water usage, to provide incentives for demand management, ensure cost recovery, and to signal consumers' willingness to pay for additional investments in water services (Rogers, Batia, and Horner, 1998). From Table 5.16, the results showed that most of the respondents (61.9%) strongly agreed that water has an economic value in all its competing uses and should be treated as an economic good. In addition, 20.3% agreed, 16.3% were not sure, and 1.6% disagreed respectively.

Table 5.16: Water has an economic value in all its competing uses and should be recognized as an economic good

Response categories	Frequency	Percent (%)
Agree	76	20.3
Strongly agree	232	61.9
Not sure	61	16.3

Disagree	6	1.6
Total	375	100

Source: Fieldwork (2019), n= 375

The study corroborates UNCED (1992) which argues that the International institutions and funding organizations stipulate that access to water and sanitation must be at an affordable price. Thus, the value of water in alternative uses is important for the rational allocation of water as a scarce resource, whether by regulatory or economic means. This reflects the growing recognition of water as a scarce and productive resource, which therefore should be allocated with due regard to economic principles of efficiency and equity. Recognising that water is an economic good highlights the need to access the broader costs to the economy (e.g. opportunity costs and externalities,) in addition to the more traditional financial costs to individual users.

Table 5.17: It is important to recognize basic right of all human beings to have access to clean water and sanitation at an affordable price

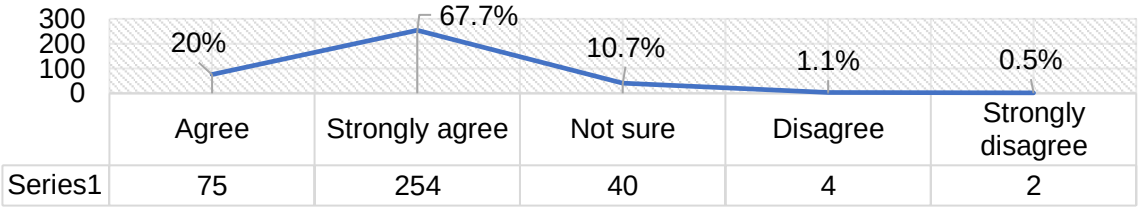
Response categories	Frequency	Percent (%)
Agree	78	20.8
Strongly agree	219	58.4
Not sure	64	17.1
Disagree	12	3.2
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n= 375

From Table 5.17, the study showed that most of the respondents (58.4%) strongly agreed that it is important to recognise basic right of all human beings to have access to clean water and sanitation at an affordable price. Similarly, (20.8%) of the respondents agreed, (17.1%) were not sure, (3.2%) disagreed and (0.5%) strongly disagreed. The study agrees with (UN, 2002) who states that the human right to water authorizes everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. Thus, it is to ensure that while the sufficiency of water may differ according to different circumstances, the issues of availability, quality, and accessibility are universally applicable. Blignaut and de Wit (2004) agreed that the provision of water to communities is a right that is enshrined in the constitution of South Africa that every citizen should have access and affordable water services. As depicted by Figure 5.18, the study showed most of the respondents

(67.7%) strongly agreed that past failure to recognize the economic value of water has led to wasteful and environmentally damaging uses of the resource.

Figure 5.18:Past failure to recognize the economic value of water has led to wasteful and environmentally damaging uses of the resource



Source: Fieldwork (2019), n = 375

Again, 20% of the respondents agreed, 10.7% were not sure, 1.1% disagreed and 0.5% strongly disagreed. The results implied that many past failures in water resources management are attributable to the fact that water has been and is still viewed as a free good or at least that the full value of water has not been recognized. The study agrees with Rogers, Batia, and Horner (1998) who state that in a situation of completion for scarce water resources such as a nation may lead to water being allocated to low-value uses and provides no incentives to treat water as a limited asset.

Table 5.18: Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources

Response categories	Frequency	Percent (%)
Agree	59	15.7
Strongly agree	235	62.7
Not sure	77	20.5
Disagree	2	0.5
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.18, the study showed that most of the respondents (62.7%) strongly agreed that managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources. Moreover, 20.5% of the respondents were not sure, 15.7% agreed, 0.5% disagreed and 0.5% strongly disagreed. The findings of the study agree with (Briscoe, 1996) who states that water pricing should primarily serve the purpose of financial sustainability through cost recovery. Giving a reasonable price to water has a benefit

that it sends precaution to users that water should be used wisely, but the prime target of water remains cost recovery. From Table 5.19, the results showed that most of the respondents (66.4%) strongly agreed that treating water as an economic good without limitation, as it is done under the principle of full cost recovery, can lead to injustices.

Table 5.19: Treating water as an economic good without limitation, as it is done under the principle of full cost recovery, can lead to injustices

Response categories	Frequency	Percent (%)
Agree	60	16.0
Strongly agree	249	66.4
Not sure	61	16.3
Disagree	4	1.1
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

Again, about 16.3% of the respondents were not sure, 16.0% agreed, 1.1% disagreed and 0.3% strongly disagreed. The findings of the study agree with Holland, (2004) who maintained that this encourages a culture of privatisation in the water sector, a move promoted by the International Monetary Fund (IMF) and the World Bank. This system saw water service providers cut off water supplies to users who failed to pay for water services. Activist groups believe that this is against the ethos of access to water as a human right. Similarly, Bluemel (2004) states that the cost recovery principle may lead to unaffordable water prices for some remote underprivileged communities. Given that private companies operate for profit, privatisation entails the implementation of cost recovery principles with the attendant problems of inequity.

Table 5.20: Water is a key driver of economic and social development

Response categories	Frequency	Percent (%)
Agree	77	20.5
Strongly agree	274	73.1
Not sure	18	4.8
Disagree	5	1.3
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

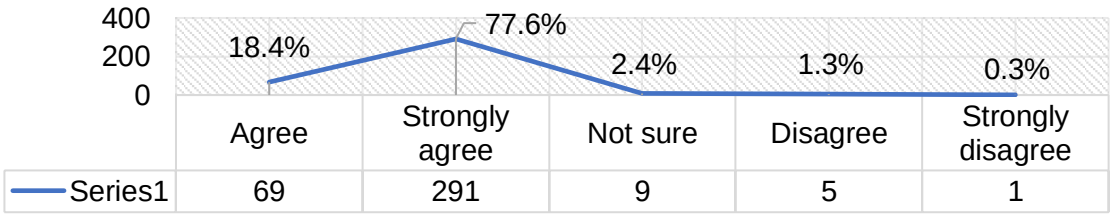
From Table 5.20, the study showed that most of the respondents (73.1%) strongly disagreed that water is a key driver of economic and social development. About 20.5% agreed, 4.8% were not sure, 1.35% disagreed and 0.3% strongly disagreed. The results implied that respondents regard water as a key driver for economic and social

development. The findings affirm Grey and Sadoff's (2008) assertion that water has always played a central role in societies by alleviating poverty and ensuring sustainable socio-economic growth. Moreover, the survival of living and non-living organisms in the community is linked to the availability and access to water.

5.12 The Importance of Water

In this section, the study seeks to address the third specific objective which is aimed to investigate cost recovery and the subsidies provided for water services in South Africa. Water is an important aspect of socio-economic development and it is associated with environmental impacts, it is central for all forms of life, economic growth, development-related activities, and environmental sustainability. Water is a key driver of sustainable growth and development, water is a source of life and prosperity (Goswami and Bisht, 2017). Hence, water provides for agriculture, industries and humans, which all contributes to an increase in socio-economic development of the country. Without water, there will be no sustainable livelihood and socio-economic development. Hence, this study questioned the respondents' perception on water as a key driver for economic and social development. The aim was to analyses whether the respondents agree to the statement that water plays a major role in socio-economic development.

Figure 5.19:Without water many sectors cannot function



Source: Fieldwork, (2019), n = 375

As showed by Figure 5.19, the results demonstrate that most of the respondents strongly agreed that without water many sectors of the economy cannot function. About (18.4%) of the respondents agreed, (2.4%) were not sure, (1.3%) disagreed, and 0.3% strongly disagreed. In a similar study, (Gumbi, 2017) also discovered that without water many sectors cannot function; therefore, the equitable water supply of sufficient quantity and quality is central to the growth of an economy of a particular geographical area and the improvement of public welfare. From Table 5.21, the study

showed that most of the respondents (76.0%) strongly agreed that water is an important aspect of socio-economic development. Again, 20.8% agreed, 2.7% were not sure and 0.5% disagreed.

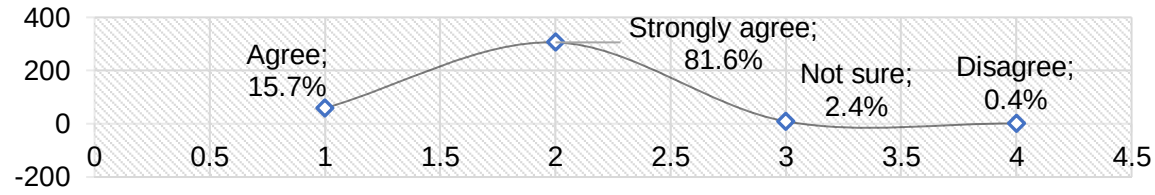
Table 5.21: Water is an important aspect of socio-economic development

Response categories	Frequency	Percent
Agree	78	20.8
Strongly agree	285	76.0
Not sure	10	2.7
Disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

The results implied that respondents regard water as a key driver for economic and social development. The findings affirm Grey and Sadoff's (2008) assertion that water has always played a central role in societies by alleviating poverty and ensuring sustainable socio-economic growth. Additionally, economic activities depend upon the availability of water resources, including its quality (Logar, 2018). Moreover, the survival of living and non-living organisms in the community is inextricably linked to the availability and access to water.

Figure 5.20:Contaminated water threatens the social and physical health of society and it is dangerous to human life

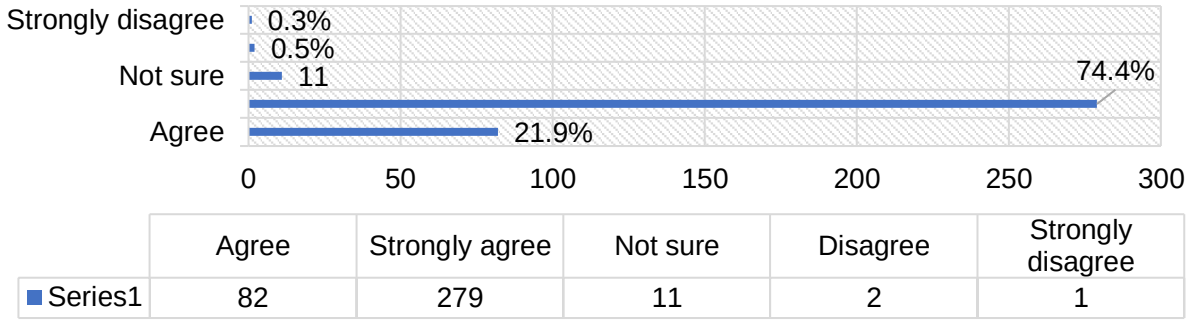


Source: Fieldwork (2019), n = 375

In Figure 5.20, the study showed that most of the respondents (81.6%) strongly agreed that contaminated water threatens the social and physical health of the society and it is dangerous to human life. Just over fifteen percent of respondents 15.7% agreed, 2.4% were not sure, and 0.4% disagreed. The findings of the study agree with Gumbi (2017) who states that lack of water supply in the rural areas or communities remain vulnerable to the general state of drinking water management. Water related problems affect many people throughout the world, particularly rural communities. As depicted by Figure 5.20, the results showed that most of the respondents (74.4%) strongly agreed that water is one of the key and undoubtedly the most essential natural

resource. About 21.9% agreed, 11% were not sure, 0.5% disagreed and 0.3% strongly disagreed.

Figure 5.21: Water is one of the key and undoubtedly the most essential natural resources



	Agree	Strongly agree	Not sure	Disagree	Strongly disagree
Series1	82	279	11	2	1

Source: Fieldwork (2019), n = 375

The aim of water quality management by the Department of Water Affairs and Forestry, was to ensure the fitness for use of our water resources for domestic, industrial, agricultural and recreational purposes on a sustainable basis while protecting the ecological integrity of the water environment. The findings of this study agree with DWAF (1994) which states that a comprehensive water quality management policy had been developed by DWAF which embodied the principles of pollution prevention, a precautionary approach and a receiving water quality objective that will meet user requirements.

Table 5.22: Water is important to life, the environment, food production, hygiene, industry, development, and power generation

Response categories	Frequency	Percent (%)
Agree	64	17.1
Strongly agree	280	74.7
Not sure	25	6.7
Disagree	6	1.6
Total	375	100

Source: Fieldwork (2019), n = 375

In Table 5.22, the study showed that most of the respondents 80.3% strongly agreed that water is important to life, the environment, food production, hygiene, industry, development, and power generations, 17.1% agreed, 6.7% were not sure, and 1.6% disagreed. The results implied that most of the respondents see water as important to life, the environment, food production, hygiene, industry, development and power generations. It reinforces that water is intrinsically part of the social and economic life

of the people. In a similar study, (Stein, 1989) also discovered that water is the most important source of life for which no organism can survive without. Thus, treating water as a basic human need is necessary as water contributes to the economic growth and development of the country. Hence, scarcity of water would, therefore, likely affect the everyday life, health, growth and development of residents in the district.

Table 5.23: Human lives depend on and demand sufficient and safe water

Response categories	Frequency	Percent (%)
Agree	72	19.2
Strongly agree	287	76.5
Not sure	9	2.4
Disagree	5	1.3
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n= 375

As illustrated by Table 5.23, the study showed that most of the respondents 76.5% strongly agreed that human lives depend on and demand sufficient and safe water to be always healthy, 19.2% agreed, 2.4% were not sure, 1.3 disagreed, and 0.5 strongly disagreed. Water supply to the communities is a central human right. Therefore, people must have access to water at all times. The findings of the study agree with Blignaut and de Wit (2004) who agreed that the provision of water to communities is a right that is enshrined in the constitution of South Africa and that every citizen should have access and affordable water services.

It is for this reason that the Department of Water Affairs and Forestry and the District and Local Municipalities which are assigned the status of being water service authorities should see to it that communities are provided with sustainable water services to improve their livelihood. Water is a catalyst for development and without water, there would be no development at all (Blignaut and de Wit, 2004). From Table 5.24, the results further showed that most of the respondents (74.7%) strongly agreed that water needs to be provided continuously with a stipulated minimum rate of flow and quality to the people, 17.1% agree, 6.7% were not sure, and 1.6 disagreed. Sufficient, safe and acceptable water should be provided and be accessible to everyone including vulnerable individuals such as children, elderly persons and persons with disabilities.

Table 5.24: Basic water needs to be provided continuously with a stipulated minimum rate of flow and quality to the people

Response categories	Frequency	Percent (%)
Strongly agreed	280	74.7
Agree	64	17.1
Not sure	25	6.7
Disagree	6	1.6
Total	375	100

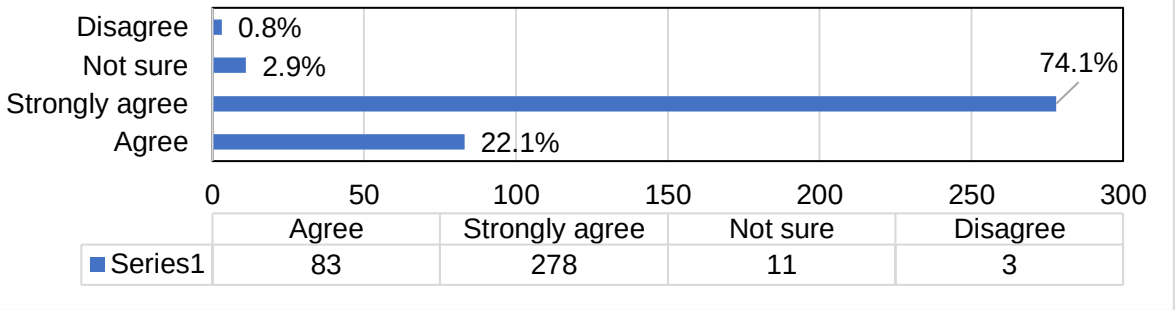
Source: Fieldwork (2019), n = 375

There should be adequate infrastructure and the effective maintenance of facilities and equipment, and equitable access even for underprivileged areas. The study agrees with United Nations Educational, Scientific and Cultural Organization, (2006) who states that everyone has the right to access safe drinking water in quantities and of a quality that will be able to meet their basic needs. The recognition of water as a human right was declared in the Convention on Elimination of Discrimination against Women, (CEDAW, 1979) and the Convention on Rights of the Child, (CRC, 1989).

5.13 Water and Development

In this section, the study seeks to address the third specific objective which is aimed to investigate cost recovery and the subsidies provided for water services in South Africa. Water is one of the key and undoubtedly the most essential natural resources. Therefore, water is important to life, the environment, food production, hygiene, industry, development, and power generation. Basson (1997), states that water is also central to the overall quality of life. Stein (1989) agrees that water is the most important source of life for which no organism can survive without. Stein (1989) further stated that agriculture which is referred to as the backbone of human survival cannot succeed or function well without the availability of sufficient and equitable water supply.

Figure 5.22: Water is the most important source of life for without which no organism can survive



Source: Fieldwork (2019), n = 375

As illustrated by Figure 5.22, the study indicated that the most of the respondents 74.15 strongly agreed that water is the most important source of life for which no organism can survive without, 22.1% agreed, 2.9% were not sure, and 0.8% disagreed. The results implied that the respondents see that water is allied to all the aspects of life and livelihood as well as growth and development. The findings of the study agree with (Boojh and Gueidon, 2017) who states that conservation and sustainable management of water is needed to avoid hostilities and struggles and create permanent peace and sustainable development.

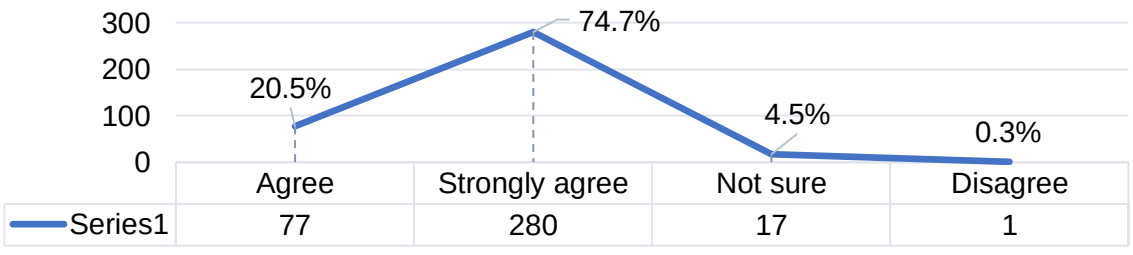
Table 5.25: Agriculture which is referred to as the backbone of human survival and cannot succeed or function well without the availability of sufficient and equitable water supply.

Response categories	Frequency	Percent (%)
Agree	56	14.9
Strongly agree	295	78.7
Not sure	23	6.1
Disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

As shown by Table 5.25, the study found that most of the respondents (78.7%) strongly agreed that agriculture which is referred to as the backbone of human survival cannot succeed or function well without the availability of sufficient and equitable water supply. About 14.9% agreed, 6.1% were not sure, and 0.3% disagreed. The study findings agree with Dotse, (2016) who states that water scarcity has a negative impact on household's food security; therefore, it is important that water is always available for agricultural purposes. In South Africa, studies have shown that agriculture plays an important role in poverty reduction and achieving food security. He further states that in most rural areas, agriculture serve as a way to be food secure and provide opportunities for unemployed residents.

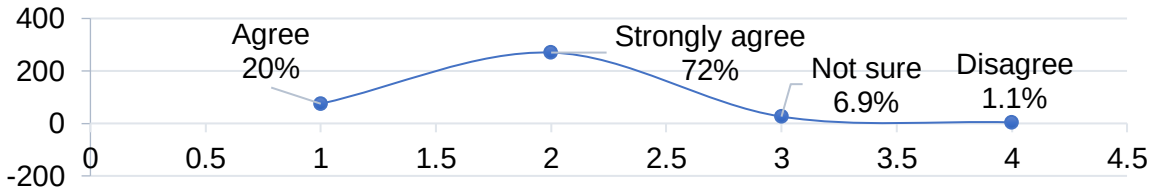
Figure 5.23: In rural areas there have been various challenges that hindered the access to water services



Source: Fieldwork (2019), n = 375

In Figure 5.23, the study showed that most of the respondents (74.7%) strongly agreed that in rural areas there have been various challenges that hindered the access to water services, 20.5% agreed, 4.5% were not sure, and 0.3% disagreed. The study corroborates DWAF (2006) who argues that in rural areas there have been various challenges that hindered the access to water services. It is strangely dominating in poor communities in undeveloped countries, as it causes water related diseases. Therefore, DWAF (2006) suggests that provision of clean water of great quantity and quality to the communities can reduce the occurrence of water related diseases such as cholera since people will stop from using water collected from the streams and contaminated rivers.

Figure 5.24:Water scarcity and drought occurrence has led communities to drink unhealthy and unclean water from open sources



Source: Fieldwork (2019), n = 375

As illustrated by Figure 5.24, the results showed that most of the respondents (72%) strongly agreed that water scarcity and drought occurrence has led communities to drink unhealthy and unclean water from open sources, 20% agreed, 6.9% were not sure, and 1.1% disagreed. In a similar study Kobe, (2008) also discovered that water service authorities experience many complex problems regarding the provision of water to the people. Population growth and economic growth, together with increased pollution of scarce freshwater sources and climate change, create multiple wicked problems and hinders water supply in rural areas the most.

Table 5.26: Boreholes should be initiated to supplement the available water dams

Response categories	Frequency	Percent (%)
Agree	84	22.4
Strongly agree	229	61.1
Not sure	58	15.5
Disagree	3	0.8
Strongly disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n = 375

In Table 5.26, the study showed that most of the respondents, 61.1% strongly agreed that boreholes should be initiated to supplement available water dams, 22.4% agreed, 15.5% were not sure, 0.8% disagreed and 0.3 strongly disagreed. The results implied that there should be other means to help provide water in situations of water scarcity. Therefore, it is important for South Africa to enter into an agreement with countries such as Lesotho for the importation of water into the country. This is one of the ways to ensure that communities in South Africa preferably rural areas receive water for consumption as well as for irrigation and for use by industries in order to fight against water scarcity and also drought issues.

5.14 Gender Related Issues to Water Access

In this section, the study seeks to address the third specific objective which is aimed to investigate cost recovery and the subsidies provided for water services in South Africa. The problem of gender inequality in the provision of water is frequently serious in rural areas. Because of inadequate water supply in rural areas, men's and women's interests in relation to water are differentiated. Women's role is focused on the home and reproductive responsibilities, whereas men are primarily focused on activities outside of the home, including the care and sale of cattle, other commercial farming activities, and a role in local governance. Gender inequality in accessing water sources is enshrined at the local level, because men in rural areas maintain economic power and also control how laws and regulations are implemented (Almeida and Chalub-Martins, 2008).

Table 5.27: Failure to provide sufficient water for irrigation and in domestic use has caused conflict

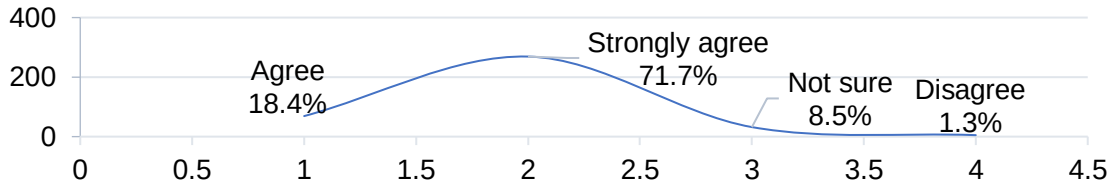
Response categories	Frequency	Percent (%)
Agree	78	20.8
Strongly agree	255	68.0
Not sure	37	9.9
Disagree	5	1.3
Total	375	100

Source: Fieldwork (2019), n = 375

In Table 5.27, the results showed that 68.0% of the respondents strongly agreed that failure to provide sufficient water for irrigation and in domestic use has caused conflict, 20.3% agreed, 9.9% were not sure, and 1.3% disagreed. The study findings agree with Crow and Sultana (2002) who states that the failure to provide sufficient water primarily for irrigation and in domestic use (drinking, washing, cooking), has caused

conflict over water and the effects of gender-influenced decisions and consequences on people's lives, economic growth and social change The results implied that there should be adequate infrastructure and the effective maintenance of facilities and equipment, and equitable access even for underprivileged areas.

Figure 5.25: Access to water in rural areas is generally more problematic and requires extensive expenditure



Source: Fieldwork (2019), n = 375

In Figure 5.25, the study found that 71.1%) of the respondents strongly agreed that access to water in rural areas is generally more problematic and requires extensive expenditure. Again, 18.4% of the respondents agreed, 8.5% were not sure, and 1.3% disagreed. The results implied that there is a lack of equity amongst the distribution of water services; water is not distributed equally among the communities. The finding of the study agrees with Opotow and Clayton (1994), Albrecht (1995), Clayton (1996) and Horwitz (1994) who states that people of the same community do not have equal use and access to water resources or they do not benefit from them. Instead, the suffering continues within the poorer societies (e.g., living in a polluted society with an inefficient water supply and lack of access). Moreover, the poor, as well as racial and ethnic minorities are mostly affected by exposure to hazards and toxic wastes.

Table 5.28: Rich and prominent households may have preferential conditions of access, and different sources of water, compared to those of poor households

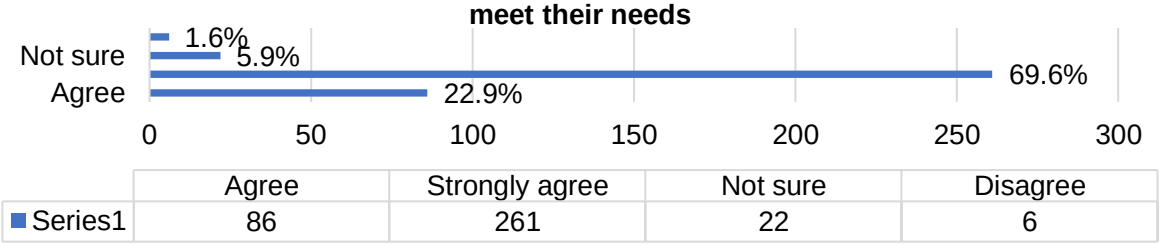
Response categories	Frequency	Percent (%)
Agree	77	20.5
Strongly agree	260	69.3
Not sure	19	5.1
Disagree	11	2.9
Strongly disagree	8	2.1
Total	375	100

Source: Fieldwork (2019), n = 375

As illustrated by Table 5.28, the study showed that 69.3% of the respondents strongly agreed that rich and prominent households may have preferential conditions of access, and different sources of water, compared to those of poor households, 20.5%

agreed, 5.1% were not sure, 2.9% disagreed, and 2.1% strongly disagreed. The findings of the study agree with Wang, (2006) who states that mostly, there are conflicts between fairness and efficiency in water allocation in rural areas the most. He further argues that fairness entails that the water allocated to stakeholders is relatively equal or proportional, while efficiency requires that those stakeholders with higher water use efficiency and greatest income or revenue per drop should get more water. However, it is difficult to satisfy both at the same time. From a legal and ethical point of view, fairness should be the main priority in initial water rights allocation, with efficiency then addressed through water trading.

Figure 5.26:Poor households usually get access to unsafe and contaminated water, and their access may also be insufficient to meet their needs



	Agree	Strongly agree	Not sure	Disagree
Series1	86	261	22	6

Source: Fieldwork (2019), n = 375

In Figure 5.26, the study showed that most of the respondents (69.9%) strongly agreed that poor households usually get access to unsafe and contaminated water, and their access may also be insufficient to meet their needs. About 22.9% respondents agreed, 5.9% were not sure, and 1.6% disagreed. The findings of this study agree with WHO, (2011) who states that polluted drinking water is estimated to cause more than 500 000 diarrheal deaths each year. Contaminated water can spread diseases such as diarrhea, dysentery, typhoid, and polio. Therefore, it is vital that people are provided or have access to clean water to avoid diseases that causes death.

Table 5.29: Gender relations influence the social relations of access to water

Response categories	Frequency	Percent (%)
Agree	94	25.1
Strongly agree	237	63.2
Not sure	39	10.4
Disagree	5	1.3
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.29, the results showed that 63.2% of the respondents strongly agreed that gender relations influence the social relations of access to water. In addition,

about 25.1% of respondents agreed, 10.4% were not sure, and 1.3% disagreed. The study agrees with (Elson, 1995) who states that women have primary responsibility for organising and doing domestic work. This work includes a range of activities: maintaining daily life (cooking, cleaning, washing clothes), managing the health of the family members, and caring for and raising the children. So where household access to water requires significant input of work time, the women and children (young girls) of a household often do this work. Women tend to work longer hours than men do in many societies (Pearson, 1992).

Table 5.30: Mostly in rural areas women and girls may be kept away from school to undertake the time-consuming daily task of collecting water.

Response categories	Frequency	Percent (%)
Agree	79	21.1
Strongly agree	256	68.3
Not sure	23	6.1
Disagree	10	2.7
Strongly disagree	7	1.9
Total	375	100

Source: Fieldwork (2019), n = 375

In Table 5.30, the results demonstrate that the 68.3% of the respondents (strongly agreed that mostly in rural areas women and girls may be kept away from school to undertake the time-consuming daily task of collecting water. Again, 21.1% of the respondents agreed, 6.1% were not sure, 2.7% disagreed, and 1.95% strongly disagreed. The study findings have confirmed findings by (United Nations, 2000) that water collection is a major part of the work of women in rural areas of the global South. In Senegal, women spend 17.5 hours per week collecting water. In Mozambique, they spend 15.3 hours per week collecting water in the dry season. In the Baroda region of India, women spend 7 hours per week collecting water.

Observations from Nepal confirm the important role of female children in the collection of water, with girls of 10 and over devoting almost 5 hours per week to the task (United Nations, 2000). In Bangladesh, women and girls have been found to walk between 2 and 5 hours each day to fetch water (Shamim and Salahuddin, 1994). From Table 5.30, the study showed that most of the respondents (70.1%) strongly agreed that the problem of gender inequality in the provision of water is frequently serious in rural areas.

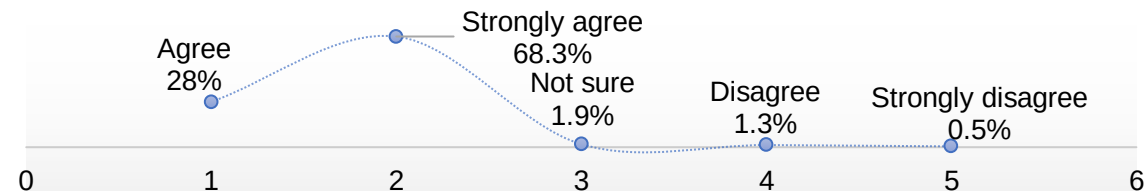
Table 5.31: Problem of gender inequality in the provision of water is frequently serious in rural areas

Response categories	Frequency	Percent (%)
Agree	87	23.2
Strongly agree	263	70.1
Not sure	19	5.1
Disagree	3	0.8
Strongly disagree	3	0.8
Total	375	100

Source: Fieldwork (2019), n = 375

In Table 5.31, the findings demonstrate that about 23.2% of the respondents agreed, (5.1%) were not sure, (0.8%) disagreed and (0.8) strongly disagreed that gender inequality in the water sector is predominant in rural areas. The findings of the study agree with Shamim and Salahuddin (1994) who states that class and location in rural areas differentiate access to domestic water. Hence, more prosperous households generally own deep tube wells, providing cleaner water and they have potable water inside their households. Richer women thus have better access to clean water than poorer women. Access to water is differentiated by location in that those households nearer a functioning tube well are likely to use groundwater more often.

Figure 5.27: Without access to clean water, women's daily lives are extremely affected



Source: Fieldwork (2019), n = 375

As depicted by Figure 5.27, the study showed that 68.3% of the respondents strongly agreed that without access to clean water, women's lives are extremely affected. About 28% agreed, 1.9% were not sure, 1.3% disagreed and 0.5% strongly disagreed. The study findings agree with Souza (2008) who states that without access to clean water, women's daily lives are extremely affected; not only as individuals, but because they cannot carry out their prescribed role within their families and communities. Limited access to clean water and sanitation has an impact on both women's and men's health, physical and psychological integrity, privacy and access to education. However, this impact differs by gender, since the differences and inequalities between

women and men influence how individuals respond to changes in water resources management (Gender and Water Alliance, 2006).

5.15 Problems Hindering Sufficient Water Supply

In this section, the study seeks to address the third specific objective which is aimed to investigate cost recovery and the subsidies provided for water services in South Africa. Limited access to water and sanitation is a risk to health, dignity, and ability to engage in occupations. Water scarcity is today a global phenomenon that affects close to 2.8 billion people worldwide, especially in developing countries (Mbua, 2013). Both the availability and quality of water are crucial. A study conducted by Masuku *et al*., (2017) found that in South African rural communities, poor infrastructural conditions, including limited storage facilities, transportation and access to new technology pose a threat in achieving socio-economic development for rural households. Hence, the inability to access water and being exposed to poor infrastructural conditions further pose a serious threat to rural areas.

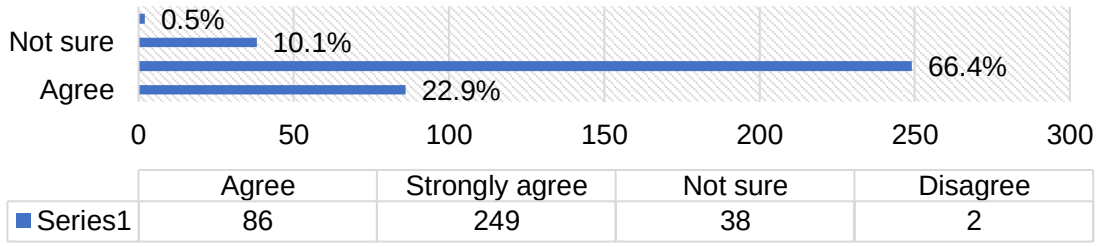
Table 5.32: Water scarcity is a global phenomenon

Response categories	Frequency	Percent
Agree	94	25.1
Strongly agree	258	68.8
Not sure	15	4.0
Disagree	8	2.1
Total	375	100

Source: Fieldwork (2019), n = 375

In Table 5.32, the study showed that most of the respondents (68.8%) strongly agreed that water scarcity is a global phenomenon. Moreover, 25.1% agreed, 4.0% were not sure, and 2.1% disagreed. The findings of the study agree with Mbau (2013) who states that water scarcity is today a global phenomenon that affects close to 2.8 billion people worldwide, especially in developing countries. Both the availability and quality of water are crucial. There is a direct connection between water, water provision, and water management. That is why although 71% of the earth's surface is covered by water, access to potable water is still rare to many poor households.

Figure 5.28: Even during the rainy seasons in the rural areas potable water remains a scarce resource



Source: Fieldwork (2019), n = 375

In Figure 5.28, the results showed that most of the respondents (66.4%) strongly agreed that even in rainy seasons in the rural areas potable water remains a scarce resource. About 22.9% agreed, 10.1% were not sure, and 0.5% disagreed. In a similar study (Uma and Egboka, 2009) also discovered that most rural communities do not have modern water facilities. They depend on traditional sources that are generally of questionable quantity and often liable to seasonal failures.

Table 5.33: Poor governance lies at the heart of the world's water crisis

Response categories	Frequency	Percent (%)
Agree	82	21.9
Strongly agree	258	68.8
Not sure	27	7.2
Disagree	6	1.6
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.33, the study showed that most of the respondents (68.8%) strongly agreed that poor governance lies at the heart of the world's water crisis. Besides, 21.9% agreed, 7.2% were not sure, 1.6% disagreed, and 0.5% strongly disagreed. The results implied that without proper management of water resources, current and future generations might be affected in terms of water access. The findings of the study agree with SIWI (2017) who states that it is important for government to play a critical role in improving water resources management and service delivery. Nevertheless, the water crisis that the country is experiencing do not only look at having too little water or clean water to satisfy the human needs, but also talks to managing water in an integrated manner and making it accessible to all at all times regardless of their setting.

Table 5.34: Poor planning, lack of resources and ineffective governance hinder the supply of water

Response categories	Frequency	Percent (%)
Agree	98	26.1
Strongly agree	252	67.2
Not sure	24	6.4
Disagree	1	0.3
Total	375	100

Source: Fieldwork (2019), n= 375

In Table 5.34, the findings revealed that most of the respondents (67.2%) strongly agreed that poor planning, lack of resources and ineffective governance hinder the supply of water, 26.15 agreed, 6.4% were not sure, and 0.3% disagreed. The findings of the study agree with Rogers and Hall (2003) who states that the ineffectiveness of water governance by states has been the hindering factor to water security. The study implied that water service authorities experience many complex problems regarding the provision of water to the people. How available water resources are managed is a key to achieving water security (United Nations Development Programme, 2013).

Table 5.35: Population, economic growth, increased pollution of scarce freshwater sources and climate change create multiple problems and hinders water supply in rural areas

Response categories	Frequency	Percent (%)
Agree	63	16.8
Strongly agree	261	69.6
Not sure	48	12.8
Disagree	1	0.3
Strongly disagree	2	0.5
Total	375	100

Source: Fieldwork (2019), n = 375

From Table 5.35, the results showed that most of the respondents (69.6%) strongly agreed that population, economic growth, increased pollution of scarce freshwater sources and climate change create multiple problems and hinders water supply in rural areas. Moreover, 16.8% agreed, 12.8% were not sure, 0.5% disagreed, and 0.3% strongly agreed. The findings of the study agree with Bjornlund, Nickum and Stephan (2018) who state that population growth and economic growth, together with increased pollution of scarce freshwater sources and climate change, create multiple wicked problems and hinders water supply in rural areas the most. Hence, there is an urgent need to implement drastic measures, to ensure sufficient water supply for human consumption, economic use, and ecosystem health. The businesses will continue to

function, as usual, supplying new freshwater, treated for human consumption, to meet all domestic, municipal, agricultural and industrial needs is not an option.

5.16 Hypothesis Test Results

In this section, the study provides answers and discusses the test outcome for the hypothesis. The null hypothesis (H_o) for the study was that "there is no statistically significant relationship between good governance, human rights, water contamination, women inclusion, agriculture and access to potable water at the UMlalazi Local Municipality" while the alternative hypothesis (H_A) assumed that "there is a statistically significant relationship between good governance, human rights, water contamination, women inclusion, agriculture, and access to potable water at the UMlalazi Local Municipality". The study adopted the chi-square technique in determining the relationships between the variables. As a nonparametric tool, the chi-square is a distribution free technique which did not strictly require normality of the sample distribution. Moreover, since the sample size was reasonably large (n = 375) and the sampling was randomly determined, the study assumed the possibility for sample error will be effectively neutralised. With 95% confidence interval and error margin of (e) = 0.05, the decision rule for the hypothesis test was stated as "accept H_o if p-value < 0.05 and do not accept H_o if p-value > or = 0.05".

Table 5.36: Relationship between good governance, human rights, water contamination, women inclusion, agriculture and access to potable water at the UMlalazi Local Municipality

	Observed (OB) and Expected (EX) scores								
	Agree		Strongly agree		Not sure		Disagree		
Variables	OB	EX	OB	EX	OB	EX	OB	EX	N
Good governance	58	93.8	185	93.8	123	93.8	9	93.8	375
Human rights	86	75.0	265	75.0	19	75.0	4	75.0	375
Water contamination	59	93.8	306	93.8	9	93.8	1	93.8	375
Women inclusion	85	75.0	269	75.0	10	75.0	12	75.0	375
Agriculture	56	93.8	295	93.8	23	93.8	1	93.8	375
Access to potable water	87	93.8	271	93.8	15	93.8	2	93.8	375

a. **0 cells (0.0%) have expected (EX) frequencies less than 5.** Source: Fieldwork (2019)

b. **Note: OB= Observed and EX= Expected**

In Table 5.36, the findings showed that the least expected scores was (75.0) and the highest (93.8), meaning none of the expected scores were less than 5, a condition which implied that the analysis did not violate the conditions associated with chi-square test. From Table 5.37, the finds showed the chi-square values for the variables were; access to potable water (chi-square = 491.549[a], df = 3, p-value = 0.00 and n= 375); good governance (chi-square = 188.189[a] df =3, p-value = 0.00 and n = 375); human rights to water (chi-square = 664.987[b], df = 3, p-value = 0.00 and n = 375), water contamination (chi-square = 661.789[a], df = 3, p-value = 0.00 and n = 375), women inclusion in planning and decision making (chi-square = 686.853[b], df=3, p-value = 0.00 and n = 375) and agriculture (chi-square = 592.371[a], df=3, p-value = 0.00 and n = 375).

Table 5.37: Effects of good governance, human rights, water contamination, women inclusion and agriculture on access to potable water in the UMlalazi Local Municipality

	Variables					
Chi-Square Test Statistics	Access to potable water	Good governance	Human rights	Water contamination	Women inclusion	Agriculture.
Chi-Square	491.549[a]	188.189[a]	664.987[b]	661.789[a]	686.853[b]	592.371[a]
Df	3	3	3	3	3	3
Asymp. Sig.	0.000	0.000	0.000	0.000	0.000	0.000
n	375	375	375	375	375	375

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 93.8.
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 75.0. Source: Fieldwork (2019)

The findings indicate statistically significant relationships between the variables. Therefore, from the decision rule on the region of acceptance of the null hypothesis (H_o), since the p-values of the calculated chi-square statistics were less than the critical value of 0.05, the study proceeded to rule out the null hypothesis (H_o) in favour of the alternative hypothesis (H_A). The study concludes based on the hypothesis test outcome that in the UMlalazi Local Municipality, good governance, human rights to water, contamination of water, women inclusion in decision making and agricultural activities in the area are significantly associated with access to potable water and

sanitation delivery among the population. Hence, to improve and sustain drinking water access, the Municipality should strengthen measures to promote good water governance, improve rights of localities to water, control the rate of water pollution, expand access and inclusion of women in planning and streamline activities for ecologically friendly agricultural activities in the communities. The findings of the hypothesis agree with (Gumbi, 2017) who states that rightful access to water is important to live and is recognized as a fundamental human right. Human lives depend on and demand sufficient and safe water to be always healthy. South African law and policy state that basic water supply must be sufficient, safe, accessible and affordable. Basic water needs to be provided continuously with a stipulated minimum rate of flow and quality to the people. Moreover, contaminated water threatens the social health and physical health of the society and it is dangerous to human life (World Vision, 2010). The United States Environmental Protection Agency (2013) states that water is an important commodity for human life and all people on the planet depend upon it to survive.

5.17 Chapter Summary

The study concludes that there is a relationship between good governance, human rights, water contamination, agriculture and access to water. It can be presumed that access or scarcity of water has the capacity to affect good governance. The results mean that access or scarcity of water could pose a serious threat on peoples' livelihoods, public health risk, and development of the community. Moreover, this could result in widespread consumption of polluted surface water that could expose the population to water born disease.

The evidence from the findings confirmed that some residents still suffer from water scarcity, as a result of poor governance. Hence, the study suggests that each could be provided with metered water inside their homes and tanks and taps to avoid long distances to fetch water. The next chapter looks at the conclusions and recommendations of the study.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This section presents the summary, conclusions and recommendations of the study which was conducted at UMlalazi Local Municipality. The summary is based on the main findings, while the conclusions are based on the objectives and research questions. The chapter subsequently provide recommendations for addressing the governance challenges as well as providing possible solutions to enable appropriate institutional arrangements and governance of water supply services at UMlalazi Local Municipality. The recommendations are derived from the conclusions and the chapter ends with suggested areas for future studies

6.2 Conclusions of the Study

The conclusions are derived from the objectives which were linked with the research questions of the study. The conclusions are discussed based on the objectives as outlined in the first chapter.

6.2.1 Institutional framework adopted to support human rights to water in South Africa

Regarding this objective, the study found that there are various pieces of enactments that plans to help and improve the access to satisfactory and adequate water. However, at UMlalazi Local Municipality, they install communal standpipes far away for local people to gather together to fetch water. This type of a service, as much as people do not pay for water, but they are inconvenienced by the fact that this is a shared facility which is often not situated close by for many people. The country's water laws and policies were introduced to ensure equitable access to water for everyone and provide means of water management. The legal framework in respect of water service delivery includes policies, laws, strategies, and approaches to deal with water stress situations and integrated water resource management.

6.2.2 Decentralisation of water management and extent to which it promotes or hinders access to water services as a basic need.

In terms of this objective, the study found that decentralisation has positive effects on water governance aspects of water access and clean water supply. Thus, this is

expected to increase resource use, efficiency, promote equity and ensure greater participation and responsiveness of government to local people. Furthermore, the study found that decentralisation tendencies are being adopted by the UMlalazi Local Municipality, but they remain elusive as there is concentration of power and roles in the central governments. Additionally, UMlalazi Local Municipality depicts decentralised water management tendencies and ultimately basic service delivery. However, some of the households are unable to access water due to long distances they have to go to access water; some does not have money to pay for water. Thus, this calls for an improved decentralisation, water governance and service delivery. Similarly, Awortwi (2004) and Helmsing (2000) emphasised the need for a multi-actor framework involving government players, indigenous institutions and community based organisations as well as citizens to enhance effective decentralisation, to promote access to water services as a basic need.

6.2.3 Cost recovery and the subsidies provided for water services in South Africa

In terms of this objective, the study found that water supply service provides benefits to communities in the form of health, opportunities for women and poverty reduction, but for rich and prominent households compared to those who are poor. However, water services must be improved, especially for the poor, who are the most likely to lack access to these services. Providing water services is not free. The evidence from the study confirmed that the municipality still depends on municipal infrastructure grants (MIG) disbursed by the National Treasury as stipulated in the Division of Revenue Act. Most municipalities also depend on equitable share grants as their sole source of funding because they are unable to collect taxes, rates and service fees because in rural areas, the taxes are not paid and there no properties which are financed by commercial banks, therefore they do not pay rates. The service where the municipality derive most of its service fees is electricity, because community halls and libraries, water and sanitation are subsidised and communities are not paying for these. Hence, it suggests that more attention should be paid to address water issues within the municipality and there should be a way how costs can be recovered whether from users, donors, government or others and what costs need to be recovered to encourage sustainability. Furthermore, the study found that cost recovery does play a critical role in the water sector to reduce gaps in service provision. Without cost recovery, financially strapped local authorities are unable to finance network

expansions into rural areas, to properly maintain the existing services. Hence, low service and poor water quality decrease the willingness of customers to pay, which in turn lowers the service level. Poor cost recovery leads to the waste of possibly scarce resource, and inability to maintain water services and possible health risks if people are compelled to use alternative and often unsafe sources of water.

The study revealed that the ability to pay is the real problem with unemployed residents whose rate in the country is estimated to be above 35%, with average household's income in black rural and townships areas below R1000 per month, many households are unable to pay the costs of services they use. Therefore, it suggests that the households be provided with free water, as the FBWP argues for 6 litres of water per month. Hence, the study revealed that water systems of UMlalazi Local Municipality provide a low level of service; they are dependent on government investment, financing and transfers for operations and maintenance expenses, and the quality and quantity of services that are unreliable.

6.3 Recommendations

The study revealed that water is perceived by the rural public as a social right, to be provided free by the Government, rather than a scarce resource which must be managed locally as a socio-economic good to ensure its effective use. Hence, the study revealed the challenges faced by women and girls in water access. Therefore, it is important that they also benefit equally as men, with increased choice and voice in the water management processes so that their access to and control over water resources can be strengthened. They should be given more authority in water sector as they are the one who suffer more from water scarcity.

Furthermore, the study found that under communal water systems, all consumers are expected to pay the same monthly rate, regardless of their socio-economic status or level of consumption. In the absence of restrictions on consumption for domestic use, this could be construed as an advantage to those who are not paying. Hence, it is difficult to regulate water consumption or meter out punitive action for non-payment in situations of shared facilities. The study recommends that people should be provided with free water and more attention should be paid to address water issues. In addition, the study made other recommendations as follows:

I. It is recommended that each household be provided with tanks and taps near their houses to avoid long distances to fetch water

II. It is recommended that the UMlalazi Local Municipality provides people with 9kl of water and increase the allocation to 12kl of water, like EThekwini Municipality and other metropolitan councils who progressively increased their free basic water allocations since the introduction of this policy in 2001

III. It is recommended that UMlalazi Local Municipality addresses the entitlement and non-payment culture by residents.

6.4 Areas for further Research

The study recommends the following areas for further research:

i. A further research is recommended to research on the obstacles hindering collaborative water governance in South Africa. This will further detail the potential of various partnership solutions in establishing long lasting collaborations for good water governance.

ii. A further research is recommended on discovering the relationship between good governance and economic growth. This will further detail the impact of good governance to the country's economic growth.

6.5 Summary

The aim of the study was to examine the water governance at UMlalazi Local Municipality, of the KwaZulu-Natal Province in South Africa. Thus, the first chapter introduced the study. The second chapter presented literature that relate to the concept of water governance at UMlalazi Local Municipality. The study revealed that water is a basic need for human life and it promotes sustainable life. Although the government has made great progress in providing water for many parts of the country, the challenges to provide services to those communities that have not been reached remains enormous and urgent. Mainly, people that live under poverty and conditions where water supply is the issue. The study revealed that decentralisation has positive effects in water governance aspects of water access and water supply. The study explored that water service delivery becomes easy for the communities near the municipal offices but for those that are far it becomes difficult. In addition, the study revealed the roles played by the key institutions in water service provision. In essence,

levels of cost recovery from users and other sources lead to insufficient income for the effective and efficient supply and management of water services. As a result, poor service leads to dissatisfaction of users' thus decreasing willingness to pay.

The study further revealed that water is an important aspect of socio-economic development and it is central for all forms of life, economic growth, development related activities, and environmental sustainability. It is stated that for households to access water, women and girls walk long distances to go and fetch water from the unprotected wells. Hence, without access to water, woman's daily lives are extremely affected, not only as individuals, but because they cannot carry out their prescribed role within their families and communities.

Access to water is a basic need for human life and it is recognised as a fundamental human right. A healthy human life demands sufficient and safe water supply. However, in UMlalazi Local Municipality there are challenges that are experienced in terms of effective water supply to local communities. These challenges include:

i. Some wards do not consistently have potable water while, other wards do not have any clean water at all times. The lack of clean water and inconsistency of water in other areas affect children, especially girls who either miss school to fetch water. The inadequate supply of water also comes at a cost to the community members who have to buy water from the nearby municipal wards.
ii. The responsibility of water management and supply is a district level, make it challenging for local municipalities to easily follow-up on matters of concern while making it difficult for management to keep the priorities of the communities.

The third chapter presented the theoretical framework. The study followed the Ecological Economics and focused on the five major themes: water as a basic human right, water is one the most important commodity for human beings and for all living things. Hence, water supply to communities is a central human right, not a privilege. Regarding scale/size of the economy, study revealed that the development of a particular area depends on the size of the economy that it has. If the size of the economy is large, that means everyone will have access to water. Water supply depends on the large economy. Equity in water still needs to be addressed, hence it is important that water is distributed equally to the rural areas and urban areas,

everyone should benefit from it regardless of their distance or any other circumstances. In rural communities, people do not have equal use of ecological resources or satisfaction of ecological benefits. Wealth should be distributed to people according to their effort and it should involve all the stakeholders.

According to Catarina de Albuquerque (2012) when millions of children, women and men have no access to essential services such as sanitation or water, a global development agenda cannot continue to ignore their daily reality. Practical access to distribution of wealth is essential for sustainable widespread economic prosperity and democracy. The allocation of scarce resources (natural and human) involves broad philosophical issues questions of values, preferences, efficiency, and equity. Therefore, there should be equity in allocating resources to the people, and also in rural and urban areas. Distributed resources amongst places should be equal, and everyone should benefit from them.

The fourth chapter presented the methodology. This study followed the quantitative research design; the selection of the respondents for the open-ended questionnaires was done through stratified sampling. The study used Statistical Package for Social Science (SPSS) for data analysis. The researcher used the population of Eshowe area under UMlalazi Local Municipality. Three sections namely, Ndlangubo, KwaMqhwakazi, and UMlalazi.

The fifth chapter presented the results and discussion. This chapter presented the results which proceeded from the field data analysis. The findings were interpreted and discussed based on the themes and subthemes which emerged from the objectives and the research questions.

The sixth chapter brings the investigation to the end. The conclusion and recommendations are discussed in this chapter based on the objectives and the findings of the study.

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UNIVERSITY OF ZULULAND
RESEARCH ETHICS COMMITTEE
(Reg No: UZREC 171110-030)

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ETHICAL CLEARANCE CERTIFICATE

Certificate Number	**UZREC 171110-030 PGM 2020/20**							
Project Title	**Assessment of realization of Fundamental Human Right to Water at uMlalazi Local Municipality, KwaZulu-Natalo**							
Principal Researcher/ Investigator	B Mnguni							
Supervisor and Co-supervisor	Dr I.S Nojiyeza							
Department	Developmental Studies							
Faculty	Arts							
Type of Risk	Med Risk – Data collection from people							
Nature of Project	Honours/4th Year		**Master's**	x	Doctoral		Departmental	

The University of Zululand's Research Ethics Committee (UZREC) hereby gives ethical approval in respect of the undertakings contained in the above-mentioned project. The Researcher may therefore commence with data collection as from the date of this Certificate, using the certificate number indicated above.

Special conditions:

(1) This certificate is valid for 1 year from the date of issue.
(2) Principal researcher must provide an annual report to the UZREC in the prescribed format [due date-22 July 2021]
(3) Principal researcher must submit a report at the end of project in respect of ethical compliance.
(4) The UZREC must be informed immediately of any material change in the conditions or undertakings mentioned in the documents that were presented to the meeting.

The UZREC wishes the researcher well in conducting research.

Professor Mashupye R. Kgaphola
University Research Ethics Committee
Deputy Vice-Chancellor: Research & Innovation

22 July 2020

CHAIRPERSON
UNIVERSITY OF ZULULAND RESEARCH ETHICS COMMITTEE (UZREC)
REG NO: UZREC 171110-30
22-07-2020
RESEARCH & INNOVATION OFFICE