



# An exploration of the water crisis in Tswaing Local Municipality South Africa: A study of Khunwana village

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**Declaration**

A declaration is hereby made that I, NTHABISENG CHARLOTTE LIPHOKO, submit for the first time this dissertation for the degree Master of Social Science in Development Studies at the North-West University. It has, therefore, not been previously submitted by me for a degree at any university. This dissertation is my own work. All works cited in this study have been duly acknowledged in the references.

**Signature** :.....

**Date** :30 November 2022

## **Dedication**

I hereby dedicate this dissertation to six people who mean so much to me. First and foremost, it is dedicated to my grandmother, Ntsoaki Liphoko, who has always encouraged me to reach beyond the stars. Your unconditional support, prayer, care, and love is always appreciated. Secondly, it is dedicated to my parents Emily Thaba and Charles Thaba, for always believing in me. Thirdly it is dedicated to my aunt Jeanette Dlamini, who never saw the doors of a school but taught me the importance of education. Finally, dedicated to my siblings Bokang and Neo, as I remind them that education is the gateway to a better future.

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## **Abstract**

The purpose of this qualitative study was to explore the extent of the water crisis in Tswaing Local Municipality with specific reference to Khunwana village. Semi-structured interviews were conducted with five officials from administrative and technical departments of Ngaka Modiri Molema District Municipality and Tswaing Local Municipality, elected local government officials, rate payers' association and Khunwana traditional authority who were purposively selected. Twenty community members responded to a researcher administered questionnaire with open ended questions. Following a thematic analysis, key findings reveal that the available water sources in Khunwana village are unable to meet community's needs. The unavailability of funds and failure to collect revenue have made it difficult for municipal authorities to maintain infrastructure. This was worsened by illegal connections which the local municipal authority failed to address. The lack of role clarity between the two local government authorities and what seems to be a neglect of constitutional mandate worsened the community's inability to enjoy its right to a basic need. To try and close this gap, the municipal authorities provided the community with water tanks which must be refilled by a water truck on a regular basis. However, due to financial challenges, this is not being fulfilled. Due to being dissatisfied with the municipal services, community members came up with their own strategies some of which are unfortunately not always hygienic. A taxpayers' union was also established to put together resources to keep water provision and sanitation systems alive. The study, therefore, recommends that the municipal authorities must adopt a standardised monitoring and maintenance infrastructure plan, review the service level agreement, continuously train municipal personnel, encourage a culture of payment for services rendered, increase the number of tanks in Khunwana village and employ a consumer management officer who can attend to consumer queries. These will assist them to carry out the local government's constitutional mandate while the community enjoys its right.

**Key words:** water supply, climate change, water crisis, water shortage, drought and basic water.

## **List of acronyms and abbreviations**

<b>CDP</b>	City Development Strategy
<b>DWAF</b>	Department of Water And Forestry
<b>HIV</b>	Human Immunodeficiency Virus
<b>IDASA</b>	The Institute for Democratic Alternative in South Africa
<b>IDP</b>	Integrated Development Plan
<b>MFMA</b>	Municipal Finance Management Act
<b>MIG</b>	Municipal Infrastructure Grant
<b>MUSSA</b>	Municipal Service Strategic Assessment
<b>NGO</b>	Non-Governmental Organisation
<b>NMMDM</b>	Ngaka Modiri Molema District Municipality
<b>NWU</b>	North-West University
<b>PFMA</b>	Public Financial Management and Accountability
<b>SIBU</b>	Sannieshof Inwoners Belastingbetalers Unie
<b>TLM</b>	Tswaing Local Municipality
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Plan
<b>UNICEF</b>	United Nations International Children Emergency Fund
<b>WHO</b>	World Health Organisation
<b>WSP</b>	Water Service Provider

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## **CHAPTER 1: ORIENTATION OF THE STUDY**

### **1.1.Introduction**

Water is one of the basic needs and therefore remains fundamental for human life. Consequently, no human being can survive without it. Globally, the access to clean water is a human right that is required for household chores such as bathing, cooking, drinking, and washing. Moreover, providing a community with clean water is an important component for the world to minimise poverty and improve public health (Chartres & Varma, 2010).

According to du Plessis (2017) poor water provision is becoming a global concern due to an increase in population growth and a significant gap between demand and supply. This has put pressure on governments to supply communities with water. People in both developing and developed countries still have limited access to clean water. In the developed world, close to 10 million people experience water shortages (Food and Agriculture Organisation of the United States, 2018). According to Langford and Russel (2017) in the developing world, countries that continue to experience dissatisfaction related to inadequate provision of clean water are also increasing. This is due to challenges faced by local governments ranging from lack of capacity, the influence of central governments regarding creation of fair policies and efficient financial support that would promote effective municipal service provision (Shaw & Thaitakoo, 2010).

In Africa, there are massive reservoirs of ground water. The continent has plenty of water resources coming from its rivers and lakes such as the Congo-Nile, Zambezi, and Lake Victoria (Nkonya, 2008). However, Africa is still considered to be the second driest continent in the world, probably because of the uneven distribution of existing water compared to the population density. People in African countries struggle to access adequate water services due to challenges faced by local governments such as poor maintenance of wastewater treatment plants, expensive technology resources, poor monitoring, economic hardships, and poor institutional framework (Nhapi, 2014).

In South Africa, the process of restructuring the entire governmental service delivery system to meet the basic needs of every citizen is a daunting task for the government that is generally under capacitated (Palmer et al, 2017). According to Phillips (2013) while good progress has been made in resolving the water crisis, huge problems remain, mostly in areas where water services are provided by rural municipalities. While it is normal for any sphere of government to struggle in meeting the demands of South Africa's transformation, the profound problems in local municipalities remain a significant barrier to meeting this challenge. This country is a

semi-arid, water stressed country, with an average rainfall of approximately 450mm, which is well below the world average of about 860mm per year (South Africa Year Book, 2011). Due to development, urbanisation and population growth, the demand for the municipalities to provide water to all citizens continues to increase, putting pressure on the capacity of both the municipalities and natural systems to provide sufficient quality of water sustainably (Phillips, 2013).

The way in which the 1994 government of national unity rendered services to communities cannot be separated from the apartheid legacy. That is because the apartheid government delivered services based on a system of privileged treatment with the white population being the most favourably endowed in terms of provision of basic services, which was unacceptable to poor communities (Mc Lennan & Munslow, 2009). According to Phillips (2013) after the democratic dispensation which ushered in change in 1994, the government shifted its emphasis towards making sure that water services are being made available to all its citizens, as a way of improving their standards of living. To address the apartheid-borne inequalities, the government came up with the Reconstruction and Development Programme (RDP), whose main emphasis was to ensure that people have access to basic services such as clean water. However, out of 16.7 million households only 7.7 million were able to access reliable water (Stats SA, 2017). Furthermore, remote areas that receive basic water services, still experience regular breakdowns which are not fixed within a short space of time. This causes people to live without a reliable water supply which also compromises sanitation systems (Phillips, 2013). The situation, therefore, triggers possibilities of diseases and illnesses.

One of the areas experiencing water problems is the Tswaing Local Municipality. In 2007, residents in Sannieshof declared a dispute with the Tswaing Local Municipality. The residents established a rate payers' association called the Sannieshof Inwoners Belastingbetalers Unie (SIBU) which assumed the responsibility of administering the payment of rates and services, as well as provision of water and sanitation services. They collectively decided to stop paying their municipal rates and taxes; and instead deposit the money into a trust account (Gouws et al, 2010). Their motivation was that they could not continue to pay for services not rendered. In the year 2008 April, it was estimated that 60% of Sannieshof residents, including other communities from the same local municipality such as Phelindaba and Agisanang had joined the initiative. Consequently, the SIBU team ensured that the municipal rates and taxes were paid, and communities received water. They repaired broken infrastructure and attended to other service delivery problems (Gouws et al, 2010).

In 2012, the municipality appeared before the North West Legislative Local Government Committee due to poor service delivery. The committee was concerned that despite multiple provincial interventions in the municipality's service delivery efforts, there had been no visible progress (South African Government, 2018). In 2016, the Water and Sanitation Department announced that it will put additional measures to support the water provision and associated infrastructure in the District Municipality of Ngaka Modiri Molema (Water and Sanitation Department, 2016). To facilitate the achievement of this goal, the department approved a R1.9 billion plan aimed at solving the water problems in the district including Tswaing Local Municipality (South African Government, 2016). Despite these interventions, the community is still experiencing a continuous lack of access to water.

This qualitative study, therefore, explores the extent of the Tswaing Local Municipality water crisis which is part of the District Municipality of Ngaka Modiri Molema found in the North West Province. The justification for selecting Tswaing Local Municipality was borne out of the fact that this local municipality has been facing severe water service delivery challenges since 2005 (Tswaing Local Municipality IDP, 2012). However, the problem seems to have worsened as the number of violent protests from communities demanding clean water from the local municipal authority has increased. Its focus was on Khunwana village. The village is one of the poorest communities in the local municipality as community members still travel a long distance to get water that they can drink from the rivers and streams, which may not be safe for consumption. Community members responded to an open-ended questionnaire. Semi-structured interviews were also conducted with a municipal manager from Ngaka Modiri Molema District Municipality, water and sanitation senior technician from Tswaing Local Municipality, a ward councillor, a member of the Sannieshof Inwoners Belastingbetalers Unie (SIBU) and one member of the traditional authority from Khunwana village.

## **1.2.Problem statement**

In South Africa, the democratic government of national unity established measures and policies such as the Constitution Act 108 of 1996 and Water Service Act 108 of 1997, which provides for the right to sanitation and water. This was intended to give the local authorities the legislative responsibility to provide people who were denied by the apartheid regime with access to clean water (Water Service Act 108 of 1997). Moreover, Section 27 (1) (b) of the Constitution provides that "everyone has the right to have access to sufficient food and water". This places a duty on the government to provide people with access to this right. Section 27

(2) further states that the government must take reasonable legislative or other measures, within its available resources to achieve progressive realisation of this right (Constitution Act 108 of 1996). As stated by Ncube (2018) while water cannot be provided to everyone immediately, the government has the responsibility to initiate steps towards the progressive realisation of this right. The community of Khunwana has similar expectations.

While there are such policies and measures that make water a human right, some provinces such as North West are water stressed. The province has relatively low rainfall that varies from 300mm per annum in the west, 500mm in the central part, and 600mm per annum in the east (South Africa Yearbook, 2011). Regardless of these climatic conditions, municipalities still have the responsibility to provide water services to communities. However, despite these legislative commitments, Tswaing Local Municipal Authority still seems to be facing a water crisis as 79% of community members do not have access to adequate piped water for domestic and commercial use (Stats SA, 2017).

As reported by Tshehle (2015) the challenges encountered by the municipal authority relating to water provision are poor water supply, irregular flow of water from the taps, increasing water backlogs and lack of infrastructure. Further to that, the IDP reported that most of the rural water supply sources are currently failing to meet communities' demands due to deteriorating water tables, failing infrastructure, and the growing demands (Tswaing Local Municipality IDP, 2012). As stated in their IDP the municipality has four pump stations which were built in 1995. Further to that, there are boreholes which have windmills and diesel pumps. These require maintenance which could demand more money (Tswaing Local Municipality IDP, 2019). Therefore, an important question to ponder is whether the municipal authority has the capacity to make it possible for the community to enjoy the right to water.

According to Tshehle (2015) there has been a deterioration of water supply in this municipality since 2005. The situation seems to have worsened in the past six years (2015-2020) as there have been constant violent protests in many areas around the local municipality, including Khunwana village. Community members were complaining that the water supply schemes are unreliable as they can spend close to a week or more without access to water and no explanation from the municipal council (Pheto, 2019). In 2019, AfriForum tested the drinking water's quality being supplied by the municipalities of South Africa, including Tswaing Local Municipality. Through this project, it was discovered that the local municipality has been

supplying infected drinking water since 2018, posing health risks to its communities (AfriForum, 2019).

Villagers in Khunwana, which falls within the Tswaing Local Municipality have not been spared the water problems. They seem to be facing an extreme water crisis, as they have to walk a long distance to collect water for basic household use. The water comes from deep wells in the dry riverbed. This is the only accessible source of water for community members who cannot afford to drill boreholes in their own yards or buy water from neighbours who have drilled boreholes in their yards (Pheto, 2019). This is the case despite many government policies and legislations promising to pay more attention to the needs of the poor and vulnerable. In 2015, villagers in Khunwana joined other communities under the Tswaing Local Municipality in protests over the state of water supply systems. During one of the protests, angry residents torched the traffic department's office, a clinic, three schools, a library, and a municipal building (Tshehle, 2015). Consequently, in 2019, Section 139 (1) was implemented by placing Tswaing Local Municipality under administration for failing to provide municipal basic services such as water to its communities, including Khunwana village (Pheto, 2019). The study, therefore, intended to explore the extent of the water crisis in Tswaing Local Municipality with specific reference to Khunwana village.

### **1.3.Aim of the study**

Exploring the water crisis in Tswaing Local Municipality with specific reference to Khunwana village is the aim of the study.

### **1.4.Research questions**

- What are the causes of the water crisis in Khunwana village?
- What are the challenges faced by the Tswaing Local Municipality in the provision of water in Khunwana village?
- Which effective municipal interventions are used to solve the water crisis in Khunwana village?

### **1.5.Significance of the study**

In terms of section 27 (1) b of the Constitution of South Africa, everyone has the right to sufficient water, therefore, it is the responsibility of the government to take reasonable legislative measures to achieve this right (Department of Water Affairs, 2013). However, the government seems to be going against its constitutional obligation with respect to providing,

especially, the poor and marginalised communities with water. Therefore, this study intended to establish the extent to which the government ensures that people of Khunwana village enjoy this right. Many studies have been conducted about the water service delivery crisis in South Africa. For example, a study was conducted by Gool (2013) to analyse the level of water and sanitation provision in South Africa. The study found out that the water service infrastructure in South Africa is of unsatisfactory standards and that water supply facilities in most provinces were at risk and unfit for usage (Gool, 2013).

Another study was conducted by Gouws, Moeketsi, Templehoff, Van Greuning and Van Zyl in Tswaing Local Municipality which focused on Sannieshof. It found out that community members were dissatisfied with the poor provision of water, and they decided to stop paying their municipal rates and taxes into the municipal account, instead they established an initiative called Sannieshof Inwoners Belastingbetalers Unie (SIBU) which took over the functions of the local municipality (Gouws et al, 2010). Through this initiative, they created a trust account in which they deposited money for taxes and rates and used that money to repair infrastructure, provide water services and paid some of the local municipal debts (Gouws et al, 2010).

Therefore, from the study by Gouws et al (2010) there is some knowledge about the water crisis in the urban settings of Tswaing Local Municipality. However, little is known about the rural areas. This necessitates the need to investigate the extent of the water crisis in rural areas which constitutes 70% of the province. Researching on the water service delivery crisis in this area provided the researcher an opportunity to get an insight into the actual issues that are experienced by rural communities. This research may also assist Tswaing Local Municipality with solutions to improve their water service delivery to communities under its jurisdiction. Lastly, this study may also contribute to the increase of literature with regards to the water crisis in Khunwana village and how municipal capacity affects municipal services such as water.

### **1.6.Organisation of the study**

Like any other writing project, this study is structured into several specific chapters. To adequately achieve the primary aim of the study, this study comprises the following five chapters:

Chapter one focuses on providing a brief background on the key study aspects such as the problem statement, research questions and the research outline. In chapter two, the outcome of a systematic literature review is presented. Chapter 3 presents the study design and

methodology that was followed during the collection of data from the Tswaing local municipality and Khunwana village and provides motivation for decision to choose key methodological aspects. Chapter four provides a detailed report on the findings of the study. Chapter five offers a summary of the research findings, conclusions, and recommendations.

## **CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

### **2.1.Introduction**

This chapter offers a detailed discussion of the causes and consequences of the water crisis in rural settings of Africa, the communities' response to water challenges and the causes of the water crisis in South Africa including before and after 1994. Furthermore, this chapter includes the challenges faced by municipalities in the provision of water in South Africa, the municipal interventions employed to resolve the water crisis in rural settings. Lastly, the theoretical framework will also be discussed.

#### **2.1.1. The causes and consequences of water crisis in rural settings in Africa**

According to Obeta and Nwanko (2015) efficient water supply is essential for sustenance of socio-economic growth, poverty alleviation and food security. However, most rural areas in the African continent are experiencing inadequate water supply. Water supply is described as the provision of water by the municipalities, private institutions, or communities, usually via systems of pumps and pipes. It is the availability of water for the community (Majumder, 2015). As stated by World Health Organisation (2019) an estimated 785 million of the world population lacks access to basic drinking water services. Such people are left with no option but to consume water from unsafe sources. Half of these people live in Africa.

As stated by Marshall (2011) the challenges of rural water supply are caused by poor management of portable water sources, population growth and drought. Mmbadi (2019) reported that Africa is the most vulnerable continent to climate change because of its low adaptive capacity. Low rainfall has led to a sequential occurrence of cumulative and overtime droughts and floods. Levy and Patz (2015) define climate change as a change in the average conditions such as rainfall and temperature in an area over a long period of time. Schellnhuber (2010) states that climate driven water crisis occurs when insufficient precipitation and high evaporation create low available stream run-off. Climate driven water crisis is worsened by global climate change, climate availability and recurrent drought. Sholinah et al (2019) reported that over the last 60 years, the size of Lake Chad which is shared by Nigeria, Niger and Cameroon has decreased by 90% due to extended drought and climate change.

According to Olutola (2020) water is used by different groups of people for different purposes and meeting competing needs. Some of the competing interests include agriculture, power generation, domestic use and industrial use. However, due to population growth, the increasing consumption has culminated into declining the availability of some water resources. (Marshall,

2011). According to Masongeni (2020) the world water consumption rate doubles every twenty years, a pace that is double the rate of population growth. As a result, the growth of the population often outstrips infrastructure and service capacity which leads to environmental degradation. This means that the poor and failing infrastructure is also failing to keep up with the increasing demand for clean water.

According to Mutamba (2014) access to drinking water is one of the most complex challenges facing rural communities in Africa. In some parts of the continent, people, especially women and children must walk miles daily to find any water at all. As stated by UNICEF (2016) in Malawi, the United Nations estimated that women and children who collected water spent 54 minutes on average. This has shortened the time women have available to spend with their families, finding employment or even in leisure activities. For children, water collection takes time away from their education while others have stopped attending school altogether. A study was also conducted by Siraj and Rao (2016) which discovered that an estimated 9 million children, most of them younger than the age of five, die annually because of diarrhoea. Most deaths occur in rural African communities where most of the community members lack access to safe and clean water. Tapfumaneyi (2020) reports that women and children in Mwenezi District in Zimbabwe are the hardest hit by the challenges of poor water supply. Some private water suppliers have been accused of preying on desperate women and girls fetching water by asking them for sexual favours in exchange for water.

Magoum (2021) reported that water shortages in rural areas is mostly caused by remoteness as villages in this region are usually far from national water networks, this makes it difficult and expensive to access water. As stated by Maina (2010) water shortage is a situation whereby water sources become insufficient to the community. The World Health Organisation (2019) also argued that poor monitoring, weak capacities of governments to implement water service delivery plans, lack of funding for infrastructure and poor human resource are the main causes of portable water challenges in African rural communities.

### **2.1.2. Community's interventions to solve the water problems**

According to Obesi (2020) community based-self-help initiatives have become popular in communities that lack access to municipal water services. They generally rely on wells and water systems which they built and manage themselves. Ainuson (2010) also attests that community water supply has been orchestrated through self-help initiatives by local communities without the help of the government. For instance, in Kenya, community water

projects have been recognised as alternative Water Service Providers (WSP) (Obesi, 2020). The community water supplies are mainly through individual boreholes, shallow wells, and water connection (kiosk) main utility companies. Whereas some households have shallow wells in their yards, which neighbours can access free of charge, others rely on a single tap from which they sell water by the jerry can (Obesi, 2020).

As stated by Malima (2020) citizens increasingly lose hope and trust towards the government due to paying high transaction costs in terms of time, money and other resources to access improved drinking water sources. In most poor communities, especially in rural areas, residents resort to buying water from vendors, water kiosks and other unapproved sources which inflate their household expenditure. In Mozambique, some rural communities have formed partnerships with private companies to deliver portable water through private trucks (Malima, 2020). Whereas in areas with piped water close by, residents pay people to carry water to their residents by horse or donkey carts, those who live too far rely on small-scale suppliers who deliver water in motorised tanks which is costly (Magoum, 2021).

According to Obesi (2020) some governments also buy into the self-help concept. To help alleviate the water crisis, the government of Ghana encourages communities to provide services for themselves in the form of self-help projects. Despite the evidence that the community water supply has contributed positively to provision of water supply in Africa, it is still regarded as an informal approach, especially in developing nations, where there is no existence of supply quality assurance (Obesi, 2020). The fact that natural sources, most of which are unsafe, still form a large portion of the communities' water sources, is an indication of the African governments' failure to provide quality water to its citizens. The use of different sources of community water is therefore a coping mechanism to mitigate the failures of the governments to provide adequate water (Ainuson, 2020).

In this sense, communities' active involvement is seen as having a huge impact on democratising service delivery beyond just representative government but locating users and communities as central role players in the process. This process enables full involvement of community members in decision making, planning, designing, organising and executing development initiatives that affects them. It incorporates the poor and marginalised in local affairs to take ownership of local resources and make appropriate decisions to use such resources in a sustainable manner (Mziba, 2020).

## **2.2.The causes of water crisis in South Africa**

According to Damania et al (2017) water crisis refers to a situation whereby insufficient water is available to meet the needs of a community. Wesdyk (2019) defines water crisis as the unavailability of portable and unpolluted water within an area being less than the population's demand. South Africa has been experiencing unequal distribution of water service since the apartheid era due to unfair governmental regulations. Moreover, unhindered water use has grown at twice the rate of population growth in the twentieth century and has caused some municipalities to no longer be able to deliver reliable water services, especially in rural areas. This section provides a discussion on the causes of water crisis in South Africa.

### **2.2.1. Climate change**

Various data from the South African weather service indicates that the country has the lowest annual rainfall (450 mm per year) compared to the global average of 860 mm per year, this rainfall equates to only 60% of the world average (Botai et al, 2018). In the same vein Scholes et al (2015) are of the view that South Africa's precipitation concentration exhibits variability in space and time. The precipitation in the north-western region often remains below 200 mm, whereas much of the eastern highveld receives between 500 mm and 900 mm per annum. This country also has recurrent droughts and unpredictable climate. It is therefore not surprising that South Africa is considered one of the driest countries in the world (Bwapwa, 2018).

Climate change manifests itself through its impact on water resources such as drought which is increasingly apparent in many parts of the country (Bwapwa, 2018). Drought is described as the extended periods of dry weather, characterised by low rainfall or no rainfall at all. Some areas experience seasonal drought whereby the water table decreases with the rainfall that those areas get, which results in several catchments with limited or no water (Kheswa, 2019). For instance, as noted by Sholinah et al (2019) many rural communities in South Africa face challenges in accessing water, particularly during periods of drought. This is because most of the water supply schemes in these areas greatly depend on groundwater (Khuzwayo, 2017). A study conducted by Rankoana (2020) found that villagers in Maheni village in Limpopo Province have been experiencing water challenges due to a decline of the underground river sources which is caused by drought. The problem is further worsened by aging and poor infrastructure services.

According to Omran and Herion (2018) climate change has a significant impact on the economic, health and safety and production. Climate change has been affecting both the local

and national economy of South Africa by adding pressure on the nation's agricultural and economic system, including increased unemployment, a negative impact on the upstream economic activities and production loss (Omran & Herion, 2018). It is for this reason that Bwapwa (2018) highlights that these water infrastructures require regular recharge to ensure sustainable supply to mitigate the effect of drought.

### **2.2.2. Highly polluted water sources**

Based on the Green Drop Watch Report (2023) 50% of municipalities whose waste water treatment systems were found to be in a critical condition in 2022 have failed to develop and implement plans to improve them. According to the report, 334 out of 850 municipal wastewater systems in 90 municipalities, including Ngaka Modiri Molema District Municipality are in a critical state (Department of Water and Sanitation, 2023). While South Africa has made progress in expanding access to water infrastructure on a national level, access to water has declined in five provinces between 2002 and 2019 (Patel, 2023). As a result, only 64% of households are estimated to have access to reliable and safe water supply services. The poor functioning of wastewater treatment works is accompanied by significant negative implications for public health, the environment as well as socio-economic development and growth (Motaung, 2023).

According to Bwapwa (2018) South Africa is in short supply of freshwater and this is mostly caused by industrial pollutants. The Vaal Triangle is one of the major industrial hubs in the country, with diverse industries such as petroleum oil and coal companies. According to Iloms et al (2020) the Vaal River which passes through the Vaal Triangle is one of South Africa's most important water sources as it provides water to about 60% of the population. However, the water quality in this river has deteriorated due to the chemicals from the nearby industries. A report by Iloms et al (2020) indicated that most wastewater treatment plants in South Africa rarely treat their water to acceptable standards, while some engage in direct discharge of industrial effluents thereby polluting receiving surface water sources. Some wastewater treatment plants are not generally equipped to remove large quantities of heavy metals that are eventually discharged onto the surface water sources (Iloms et al, 2020).

According to Odiyo and Makungo (2012) South Africa's scarce water resources are under threat due to extensive water pollution. This is caused by many sources such as pesticides and fertilizers washed away from farms, industrial waste sewage and waste dumping. For instance, as noted by Odiyo and Makungo (2012) several villages in Limpopo are using water of a very

poor quality due to high levels of calcium and nitrate in private boreholes, attributed to the agricultural practices and washing of clothes in the neighbourhood of the boreholes. As stated by du Plessis (2017) water supplied through boreholes in rural areas is unfit for human consumption due to fluoride, nitrogen and salinity.

Akwensioge (2012) reckons that high nitrite concentrations experienced in borehole waters have the potential of causing a blood disorder known as blue baby in infants. It was discovered that water from areas such as Taung was not in compliance with the South African drinking water standards. This is mostly due to inadequate coverage of wastewater treatment facilities, poor operational state of wastewater infrastructure, insufficient funds allocated for wastewater treatment and overloaded capacities on existing facilities (du Plessis, 2017). The consequence of water pollution is a decline in the quality of resources and therefore a decrease in the availability of water. This has also caused a serious problem of dental fluorosis, especially in the North West Province (du Plessis, 2017).

According to Harrington and Fishcher (2014) many South African rural dwellers use untreated water domestically and are more at risk of the devastating effects of diarrhoea. Edokpayi et al (2018) add that consumption of contaminated water is a cause of diarrheal diseases, which is a leading cause of child mortality in developing countries. In South Africa, diarrhoea is one of the leading causes of death among young children infected with HIV (Edokpayi et al, 2018). Excessive consumption of contaminated water can also lead to diseases such as cancer, dental and skeletal fluorosis, acute nausea, memory lapses, renal failure and skin rashes. Clean and safe drinking water is vital for human health as it can reduce the burden of these illnesses (Harrington & Fishcher, 2014).

### **2.2.3. Illegal tap connections**

According to Ziemendorff and Kersting (2020) illegal tap connections are as a result of people being excluded from the water and sewage coverage system. The justification for such is always that people need access to water. Unfortunately, such uncontrolled water connections lead to extreme underground water pumping, which may cause erosion and overuse of water resources. Such acts also overburden the water infrastructure. The more illegal connections are being used, the less water is received by the end user. This can cause many consequences on the day-to-day life of a community due to lack of enough water for domestic duties (Foreign Policy at Brookings, 2017).

According to the South African Local Government Association (2023) Section 152 of the Constitution provides that municipalities must ensure the provision of services to communities in a sustainable manner and to promote social and economic development. However, due to infrastructure vandalism and illegal connections, municipalities are impeded from providing services such as water to communities as mandated by the constitution. According to Malima (2020) in many poor communities in South Africa, households are directly accessing water through illegal tap connections. Illegal tap connections often damage the infrastructure and shorten its life span.

Illegal tap connections allow leaks to develop which lead to pollution of water. Sometimes, connections are made by simply cutting into a plastic pipe and banding a new connection onto it with rubber tubes from bicycle tyres held on by wire (Water Integrity Network, 2020). Due to illegal tap connections, households that are entitled to a free basic water supply are likely to use more than their basic allowance as their supplies are unmetered and unbilled. For instance, during a particular challenging period of drought, many municipalities implemented a restriction of 50 litres of water per person per day to save water. However, some people, especially business owners, used more than 50 litres in order to run their businesses (Ngcobo, 2021). As a result, the overuse of water often contributes to poor maintenance and early failure, which also deprives other users of their supply (Department of Water Affairs, 2013).

According to Ngcobo (2021) poor socio-economic conditions contribute to illegal tap connections. Due to the increase of water rates and taxes, poor citizens are often unable to pay their rates due to financial constraints. As a result, they end up connecting illegally to municipal pipelines. Illegal tap connections can take different forms. They include tampering with water meters, the illegal reopening of connections which have been cut off due to unpaid water bills or installing an illegal tap to the water network (Ziemendorff & Kersting, 2020). A report by Water Integrity Network (2020) suggests that illegal connections are often made by current or former employees of the municipality or service providers who have the knowledge and access to the tools and material required. Given these dynamics, many water service providers simply ignore the problem. Illegal tap connections and under-registration water meters are one of the main sources of non-revenue water in water utilities. This has a negative impact on both the commercial and operational sectors (Ziemendorff & Kersting, 2020).

### **2.3.Portable water supply in South Africa pre 1994 and post 1994**

Prior to 1994 South Africa experienced unequal access to water which was part of the biggest segregation policies introduced by the apartheid government. These laws were meant to sustain the needs of white people and assist them to take part in social and economic activities without a hassle. This means that water supply was racially biased. This resulted in the majority of black people being denied access to water (Mc Lennan & Munslow, 2009).

According to Smith and Hassan (2003) the apartheid government used a three-tier system for water provision. The first level was characterised by the best standards and mainly found in urban centres because this is where most of the white population lived. They received high pressure piped water system and sewerage, and even though they were charged for those services, they had heavy state subsidies. On the other hand, where black people lived, they received the second level (Smith & Hassan, 2003). These areas had unplanned layouts, and the taps were installed to individual households with simple waterborne sanitation, and the residents paid a flat rate for the municipal services in a joint bill. The last level, which was the lowest level was the rural areas. For these areas, water was supplied through commercial standpipes which were often situated far away from people's homes. While that was the case, white farmers who lived on farms had access to high pressure piped water which was highly subsidised (Van Koppen & Schreiner, 2014).

According to Nnadozie (2011) water in this third tier of the water provision system was provided by fragmented homeland government structures which depended on the apartheid government for funding. The arrangement was such that there was no specific department dedicated to taking responsibility for water supply and sanitation in the rural areas. Moreover, due to the unavailability of resources, corruption, and lack of legitimacy of homeland administration, huge backlog figures on water supply also increased (Nnadozie, 2011). Basic social services such as water supply were often non-existent as opposed to areas where the white population lived. In rural areas, if such services existed, they often did not meet the needs of the people, water provision was often irregular. The lack of basic water supply contributed to high incidents of waterborne diseases such as diarrhoea and cholera in rural areas (Sethulego, 2017).

According to Tsatsire et al (2009) most of the local government revenue in the urban parts of the country occupied mainly by whites was self-generated through businesses, property as well as basic social fees from residents. The apartheid regulations were used to prevent revenue

from most retail and industrial developments to be used for provision of water and other services in black areas. This limited the tax regulation and mobilisation for areas occupied by blacks thus forcing them to spend most of their money in white areas only. This approach strengthened the revenue base for the whites, while black areas were deprived of the means to meet the needs of residents (Sethulego, 2014). The development of South Africa's resources was associated with supporting the country's economic sector by being used as an important resource for mining and agriculture rather than improving the lives of the poor. Therefore, water was viewed as a securitised resource and its distribution and management was controlled by the biased apartheid government (Van Koppen & Schreiner, 2014).

According to Enqvist and Ziervogel (2019) in 1994, South Africa had a total population of 42 million, but only close to 14 million of them had access to clean water. This is the reason why the democratically elected government came up with various initiatives to improve water provision and sanitation in all settlements. These initiatives were supported by the recognition that everyone has a right to 'basic water' as stipulated by the Constitution. According to Tshandu and Karuiki (2010) the water sector in South Africa has experienced radical changes since the liberation in 1994 and the subsequent introduction of new policies and legislations. The Constitutional and legislative context that defines public service delivery in South Africa is anchored in Chapter 10 of the Constitution (section 195), which sets the minimum standards of services expected from the public administration. These include professional ethics, provision of equitable and unbiased service, efficient utilisation of resources and meeting people's needs. The provision also calls for public service which is development oriented, promotes and appreciates public participation in policy making (Tshandu & Karuiki, 2010).

In the same vein, Schreiner and Hassan (2011) note that significant changes in water management were driven by the need to create more socially just, economically efficient and environmentally sound water management and allocation in the country. The changes were premised on the need to provide safe water and sanitation to the vast number of South Africans who were left to fend for themselves by the apartheid government. In 1997, the government announced the Water Service Act. In sync with the constitution, this Act states that everyone has the right to access basic water supply and sanitation, and every service institution must take required steps to ensure that this right is realised (Van der Linder, 2010). Section I of the Act defines 'basic water' as a prescribed minimum standard of water supply necessary for the reliable supply of an adequate quantity and quality of water to households, including informal households to support life and personal hygiene (Muller, 2014). The regulation 3 of this Act

explains that the minimum average for basic water supply is 25 litres per individual daily or 6 kilolitres per household per month, at a minimum rate of not less than 10 minutes and must be within 200 metres of a household (Department of Water and Sanitation, 2017).

The Water Service Act also establishes and clarifies the institutional arrangement for water service provision, with local government at the centre. It also regulates municipal authorities as important water service providers, who must ensure that there is access to clean drinking water services (Muller, 2014). This means that the responsibility of the provision of water services was given to municipalities. According to Section 78 of the Municipal Systems Act of 2003 water service authorities such as Ngaka Modiri Molema are responsible for the provision of water services, either by providing bulk water services themselves or by selecting and contracting with external water services providers. This means that water service providers such as Tswaing Local Municipality enter into contracts with water service providers to receive bulk water services which they will reticulate to their communities (South African Year Book, 2016).

As stated by Oosthuizen and Thornhill (2017) the Local Government Transactional Act 209 of 1993, in line with the Constitution, requires every local municipal authority to integrate the services previously assigned separately to white, coloured, and black authorities in a particular geographical area. The national government supports the integration and enables this municipal transformation process. It also creates an enabling legal framework, decentralising powers and functions to local government, support improved service delivery by means of capacity building and working with all stakeholders who can contribute to building municipal stability (Molinyane, 2012).

#### **2.4. The challenges affecting water provision in South Africa**

As stated by Mmekoa and Momba (2019) while South Africa has a substantial economy with a well-developed infrastructure, there is, however, inequality in both the distribution of and access to services such as adequate water. Over the past few years, since the advent of democratic local government, many municipalities have not been able to perform their functions adequately. In the worst-case scenario, some municipalities have been placed under administration in line with Section 139 of the constitution. This policy grants the provincial executive board the powers to intervene when a municipality fails to fulfil its executive obligation in terms of the Constitution (Parliament of the Republic of South Africa, 2020).

Below are the types of capacity challenges that many municipalities are experiencing in terms of water service provision.

#### **2.4.1. Consumer debt and non-payment of services**

According to Van Schalkwyk (2012) the non-payment of service charges began in black communities during the apartheid era. It was used as a political strategy to confront the apartheid government and its system of separate development. However, decades later, the non-payment of services continues to pose a financial challenge to municipalities. This poses a challenge to local municipalities because service delivery mostly relies on consumer charges such as utility fees on water to obtain money that is needed to finance their operations. However, many of them are facing a problem of inadequate collection of revenue (Beyers, 2016). The Helen Suzman Foundation (2018) reports that households account the 71.2% of the total debt (R143.6 billion) bulk of consumer debt owed to municipalities. Surprisingly, the government accounts for 5.5% out of this debt and only R27.2 billion had been accumulated from the total debt. The inability to service this debt hampers the local municipalities from rendering quality services, including water provision.

Stats SA (2016) reported that there has been a steady decrease in the number of households that are satisfied with the water services they receive from municipalities. For instance, a total of 144 service delivery protests were reported in the first six months of 2018, and 90 of them were related to poor municipal water supply. Many of these protests result from consumers being dissatisfied by the poor municipal service (Ngcamu, 2019). Some communities resort to either total non-payment or withholding of rates money and paying into a community trust account. For instance, in December 2020, the North West High Court declared that the Kgetlengrivier Local Municipality was in breach of its constitutional responsibility. It was also blamed for failing to supply portable water to the residents of Koster and Swartrugges (Potter, 2021). The court ordered that the services be placed in the hands of the Koster taxpayer's association which was formed by some community members of Kgetlengrivier Local Municipality who withheld their tax payments due to not receiving appropriate water services from the local municipality (Potter, 2021). The association managed to pay R 7.5 million to repair pumps and rent generators to ensure that pumping water continues during load shedding (de Villiers, 2021).

Another reason why there is a high percentage of consumer debt is due to the lack of affordability. People seem to be unable to pay for municipal services because they have no

money due to being poor and unemployed (Department of Planning, Monitoring and Evaluation, 2018). This has been proven by a survey which was conducted in 2010 by the City Development Strategy (CDS) at 32 localities in all the nine provinces. The survey found that poverty experienced by many households prevents them from paying for their water. Nine out of every ten low paying households included in the survey indicated that unemployment or low income is the main reason for their inability to pay for water (Mavhungu, 2011).

According to Beyers (2016) municipalities are facing a critical challenge due to the inability to collect revenue owed to them for services rendered to the communities they serve. In terms of Section 96 (a) of the Municipal Systems Act 32 of 2000, a municipality must collect monies due to it. Section 96 (b) of the constitution stipulates that a municipality must have a credit control and debt collection policy that is consistent with its rates and tariff policies and compliant with the provision of Municipal Systems Act (Venter, 2007). Such revenue is used to sustain provision of basic services such as water. The non-payment of services significantly influences the ability of the local government to fulfil its functions and address the governance challenges that municipalities face. As a result, municipal authorities are unable to pay their creditors, like water boards, for the provision of water services which results in poor municipal water provision (Beyers, 2016).

#### **2.4.2. Financial mismanagement and lack of accountability**

According to Section 41 (1) c of the Constitution of South Africa 1996, all the spheres of government must provide effective, transparent, accountable, and coherent governance for the country as a whole (Nissanke & Ndulo, 2017). Municipalities receive grants such as the Municipal Infrastructure Grant (MIG) which they are supposed to use to improve the living conditions of the communities. As such, they are required to respond to communities' needs for infrastructure, service provision and special development within their boundaries (Department of National Treasury, 2014). However, as noted from the Auditor General South Africa (2018) report, it is of concern that in many cases, the funds dedicated to service delivery growth and expansion are mismanaged. For instance, in the 2016/17 auditor's report, the North West Province stood out in irregular expenditure of the intergovernmental revenue contributing 15% to the country's total figure.

Consequently, this affects the quality and extent of the provision of basic services such as water supply. Currently, 47% of Water Service Authorities are in a critical state, with a further 31% regarded as highly vulnerable, including Ngaka Modiri Molema District Municipality which is

the water service provider for Tswaing Local Municipality (National Business Initiative, 2019). As such, almost 80% of South Africa's Water Service Authorities are severely constrained and their ability to provide reliable water services is under threat (Dinar et al, 2015). Moreover, the lack of accountability and sound financial management by the leadership has a negative impact on the municipalities.

It also appears that internal measures such as audit committees that are in place to prevent municipal mismanagement are not always sufficient, as they can be outwitted by corruption (Oosthuizen & Thornhill, 2017). It is evident that financial mismanagement and lack of accountability hampers service delivery progress. Service delivery refers to the distribution of basic services such as portable water (Msweli, 2019). The delivery of such services falls on municipalities as they are directly responsible for improving the quality of life for communities. The municipal financial mismanagement and lack of accountability also affects the struggling economy to such an extent that, if the government loses revenue through mismanagement, they are obliged to recover such losses by means of imposing higher taxes and tariffs on innocent communities (Rankoana, 2020).

### **2.4.3. Lack of infrastructure**

Adequate infrastructure is an essential part of a supportive environment for investment and livelihoods, reducing poverty, improving economic growth and municipal service delivery. However, South Africa suffers a lack of infrastructure especially in rural areas where a large population of fragile people such as the elderly reside (Mogooe & Muyengwa, 2021). According to Bikam and Chakwizira (2021) many rural communities in South Africa do not have access to water due to non-functional or broken infrastructure. Govender (2019) reckons that effective investment in municipal infrastructure is therefore critical although complicated.

A study by Bikam and Chakwizira (2021) found that about 60% of municipal infrastructure in rural municipalities have on average outlived their lifespan by more than 10 years, and as a result, they are failing to meet the increased demand for services. This has led to a decrease in investments to replace the aging infrastructure in rural municipalities. Consequently, many municipalities opt to repair old infrastructure rather than investing in new ones (Kodongo, 2017). According to Govender (2019) the longer the installed infrastructure is used, the more vulnerability of it to fail. These failures are caused by the age of the infrastructure, the inadequate design, and the poor installation of the infrastructure. This means that old

infrastructure is costly to repair and maintain. Therefore, municipalities need to invest in new and advanced infrastructure.

According to Hove et al (2019) one of the most important differences between rural and urban areas is simply the infrastructure. Some of the infrastructure that is usually found in urban areas does not exist in rural areas. This is not surprising as inadequate and unreliable infrastructures are common in majority of rural environments throughout South Africa as many rural households do not have access to safe drinking water. In most cases, rural municipalities provide water through tinkering. This set up is not sustainable, especially during rainy days when trucks fail to deliver water to rural dwellers due to poor road networks (Hove et al, 2019). However, Nguyen (2021) argues that water tinkering is regarded as an unimproved water source. These water sources have significantly higher risks of being contaminated compared to improved water sources. This could pose a threat to the health of community members, especially children.

#### **2.4.4. Poor municipal infrastructure maintenance**

Infrastructure maintenance refers to a mixture of all technical, administrative, and managerial activities during the life cycle of infrastructures, intended to maintain or restore them to a state in which they can accomplish the required purpose, which in this instance is water supply (Mogooe & Muyenga, 2021). Many municipalities fail to conduct any conditional assessment of their infrastructure to inform their plans such as the IDP adequately, and this leaves them vulnerable to crisis management. For instance, 36% of municipalities did not have standard procedures for assessment of water structure in 2018 (Auditor General South Africa, 2018). This caused many municipalities to lose almost a third of their water supply.

The availability of funds plays a vital role in maintaining the level of municipal infrastructure operations. However, Bikam and Chakwizira (2021) noted that most municipalities do not have a budget for operations and maintenance of water supply infrastructure, which hampers water distribution to communities. For instance, the purpose of the MIG is to eradicate municipal infrastructure backlogs and to also maintain the conditions of municipal infrastructure to ensure the provision of basic services in poor communities (Malima, 2020). However, many rural municipalities use their grant for other purposes such as paying salaries which defeats the purpose of the MIG allocation for infrastructure operations and maintenance (Department of National Treasury, 2019). This affects the process of infrastructure maintenance for water.

Ntjatsane (2017) supports this view by indicating that 70% of infrastructure collapse due to non-maintenance resulting from diversion of maintenance funds to pay for salaries.

Johannessen et al (2014) are also of the view that broken infrastructure often takes time to be repaired in rural areas, and this disrupts portable water supply systems. During this period, communities have no option but to collect portable water from unprotected sources. This proves that without infrastructure monitoring and evaluation and maintenance, water sources cannot be sufficiently managed. Inadequate maintenance of infrastructure in South Africa undermines service delivery and increases the service backlogs (Bikam & Chakwizira, 2021).

#### **2.4.5. Poor human resource and poor leadership**

According to Ngobese (2017) municipalities are key institutions that are close to the heart of communities, and therefore, their employees form the cornerstone of service delivery to communities in general. However, municipalities generally lack the technical knowledge, skills and expertise in planning and project management. As a result, it becomes difficult to perform operational functions. This deficit is a major constraint to effective service delivery. For instance, in the North West Province, twelve municipalities (55%) did not have a permanent chief financial officer (PFMA, 2017). (Cloete, 2016) states that vacancies and instability in key positions within municipalities are among the reasons for the accountability failures in municipalities. According to Obeta and Nkwanko (2015) poor operation and poor maintenance of infrastructure in most rural municipalities are due to lack of skilled technicians, engineers, and maintenance specialists. This is supported by Managa (2012) who contends that the situation has resulted in service backlogs that hamper municipalities from supplying portable water services to rural communities effectively. According to Bliss and Fisher (2013) poor leadership and coordination between municipalities and stakeholders makes it difficult for water to be supplied to communities.

According to the Municipal Structures Act 117 of 1998, municipal capacity refers to having enough administration, financial and human resources, and infrastructure to perform each of the Constitutional tasks assigned to a municipality. As stated by Malima (2020) the lack of managerial capacity often leads to project funds in rural areas not being spent. Marshall (2011) concurs that management and leadership are important aspects for the adequate performance of municipalities, particularly on water affairs. The role of management and leadership is to serve to improve the performance and satisfaction of communities about adequate water supply. World Health Organisation (2013) stresses that poor management plans, lack of human

resource and weak conservation strategies contribute to water crisis in rural areas. Where there is poor management and leadership, reduced maintenance and deteriorating infrastructure, communities struggle to access municipal services.

### **2.5. Interventions employed to resolve the water crisis in rural settings**

According to Mnguni (2020) municipalities have been providing some communities in South Africa with alternative solutions such as supplying water through municipal trucks by filling water storage tanks and or tankers. However, some villages still struggle to access these tanks. For instance, nineteen villages in the Intsika Yethu Municipality have been waiting to receive tanks promised to them by the district municipal authority in March 2020. The villages are also surrounded by other drought-stricken areas which have not had water for years, yet some were not even considered for the 230 water tanks which were to be delivered by the Department of Water and Sanitation (Maliti, 2020). Moreover, experts have argued that short term solutions are not the answer to the systematic water problems in communities. The government has to ensure that their solutions are fit for the number of people living in communities, their average consumption and usage pattern.

According to Malima (2020) Non-Governmental Organisations (NGOs) also play a vital role in assisting rural communities with portable water. There are various NGOs which are involved in water supply projects within rural communities in South Africa. These NGOs strengthen the people-centred approach in operating and maintenance of clean water in rural areas. They assist municipalities by providing expertise and resources for portable water supply systems in rural areas (Cothren, 2013). For instance, the Mvula Trust and Association for Water and Rural Development support rural municipalities with workshops about understanding water balance issues and the cost implications of illegal tap connections (The Mvula Trust, 2017). To date, NGOs continue to provide assistance to rural communities with water due to the government's failure to provide such services to these communities.

### **2.6. Theoretical framework**

This section reviews the theory of access, which originates from the rural sociology literature of Jesse J Ribot and Nancy Lee Peluso who define access as the ability to derive benefits from things, including objects, persons, institutions, and symbols (Ribot & Peluso, 2003). According to Ribot and Peluso (2003) formal institutions such as the legal and political systems, various decentralised units of local governments and water management boards are important in shaping access. However, these institutions often overlap or contradict each other. In South

Africa, water provision authorities such as municipalities and water boards have to work together to provide communities with water. However, in most cases, these authorities often fail to work together effectively, and this often affects water service delivery. This theory points to the importance of understanding the mediating role of institutions in poor people's access to resources.

The theory of access can be used to understand who has the ability to benefit from public services, how they gain, maintain and control that ability (Tejada & Rist, 2018). As understood from the literature, the community of Sannieshof, Koster and Swartruggens made an effort to use their capital to try and resolve the water crisis caused by abandonment of constitutional responsibility. Therefore, this theory, will assist in analysing the extent to which the local municipal authority contributed to the water crisis experienced in Khunwana village. It will further assist in analysing the role that the community played in ensuring that despite the crisis they find ways of accessing the services and benefit from it.

According to Peluso (1996) the state's control over access to resources is always met by various forms of violent and non-violent resistance from people living in particular geographical areas. The theory will, among other things assist in assessing the dispute between the Sannieshof Inwoners Belastingbetalers Unie (SIBU) and Tswaing Local Municipality in relation to access to water. According to Ribot and Peluso (2003) various political and economic circumstances can change the terms of access for users at any given time. Therefore, the steps that were taken by the provincial authority to manage the problem of lack of access to water among community members will be analysed to determine the outcome thereof.

### **2.6.1. Mechanisms of access**

According to Ribot and Peluso (2003) there are two sets of mechanisms by which access is gained, controlled and maintained. One is the right based access. Right based access means that people have a right to a particular thing, which is water in this regard. While people have this right, whether they are able to access it is another thing. This study intends to assess this aspect, thus establishing what the causes and the extent of the crisis is.

The second mechanism is illegal access (when benefits are obtained through illegal mechanisms). Illegal access in a sense is also right based, it is a form of direct access defined against those based on the sanction of the law. Illegal access refers to the enjoyment of benefits from resources in ways that are not socially sanctioned by the state (Ribot & Peluso, 2003).

For instance, even in the poorest communities, many households are involved in illegal water connections. This means that they do not contribute to the cost of public supply. Those who are entitled to free water supply are likely to use more than their basic allowance if supplies are unmetered and unbilled, which has a negative impact on both consumers and water provision authorities. However, many communities often see the situation differently, arguing that this approach is simply self-help and should be allowed, particularly if they are told that water in a passing pipe is not for them or when municipalities fail to provide them with free municipal water (Foreign Policy at Brookings, 2017).

According to Ribot and Peluso (2003) access to technology mediates resource access as many resources cannot be extracted without the use of tools or technology. These tools increase or facilitate the ability to physically reach a resource. For instance, access to tube-wells and pumps can determine who can benefit from groundwater that is pumped from ever-greater distances below the surface (Ribot & Peluso, 2003). Technology gives the government automation and the ability to provide services at a low cost. In South Africa, many municipalities spend most of their funds more on infrastructure maintenances such as pipes for drinking water because majority of them are old and can no longer carry out the services (Water Integrity Network, 2020). This contributes to more service delivery backlogs because the government is focused more on maintaining and fixing old infrastructure instead of investing in advanced technologies which can promote effective water service delivery by providing communities with good quality and quantity of water.

Availability of capital is another factor that affects access to resources such as water. Access to capital is generally thought of as access to finances that can be put into the service of extraction, production, conversion, labour mobilisation, and other processes associated with deriving benefits from things (Ribot & Peluso, 2003). Nissanke and Ndulo (2017) also attest that capital can be used to maintain resource access when used to pay water rates or formal access fees. The crisis of lack of capital is most pressing for municipalities, especially those located in rural areas as majority of them are not financially self-sufficient. Rural municipalities derive 70% of their revenue through grant compared to 24% grant dependence for metropolitan municipalities and 238% for non-metros (Stats SA, 2017).

Access to authority shapes an individual's ability to benefit from resources and the law partially shapes access to resources. However, governments may also compete or conflict in the sense of having overlapping jurisdiction authorities (Ribot & Peluso, 2003). According to Dzansi and

Dzansi (2010) there are too many governmental departments and layers (national, provincial, municipal) which sometimes lack a clear line of authority and accountability. This complex structure of government makes it difficult to solve challenges, because getting one department or municipality to work well may have limited impact on the bigger picture. The structure of government also complicates accountability, with service delivery split between government at local, provincial and national levels. Efforts to align such levels often have little impact on departments with weak capacity (Dzansi & Dzansi, 2010).

This theory will assist in exploring how the availability or the lack of municipal capacity has caused a water crisis in Tswaing Local Municipality and how it affects the livelihoods of villagers in Khunwana village. The theory of access is relevant in this study as it explores a range of powers embodied in and exercised through various mechanisms, processes and social relations that affects people's ability to access and benefit from resources. These powers constitute the materials, political and economic strands within the bundles and powers that configure resource access.

## **2.7.Summary**

Municipalities are the spheres of government that are responsible for facilitating effective provision of basic services such as adequate water. The primary focus of this chapter was the discussion on the general factors influencing the provision of basic municipal water services to communities in South Africa. Based on the discussion, access to reliable and clean water remains a challenge for the municipalities. The literature indicates several common factors that influence the provision of water services such as poor human resource, municipal consumer debt, lack of required skills and the inability of infrastructure in general to respond to community needs.

## **CHAPTER 3: METHODOLOGY**

### **3.1.INTRODUCTION**

This chapter outlines the research methodology adopted in this study. The chapter covers the research methodology, study design, study setting, sampling, data collection, data analysis, ethical considerations, and limitations. The study used qualitative methods to assess the water crisis in Tswaing Local Municipal authority with specific reference to Khunwana village.

### **3.2.Methodology**

According to Naranyana et al (2018) methodology refers to the techniques and strategies employed within a discipline to manipulate the data and acquire knowledge. For the purpose of this research, qualitative research methodology was adopted. In the qualitative research paradigm, the most important focus is for the researcher to accurately capture the existing experiences and perceptions of participants involved in the study (Ahmed et al, 2016). This study took place in a natural setting and participants were able to offer expressive information relating to how they experienced provision of water in Khunwana village.

Semi structured interviews and a questionnaire with open ended questions were used to collect data from the municipal manager of Ngaka Modiri Molema District Municipality, a senior technician for water and sanitation from Tswaing Local Municipality, a member of the Sannieshof Inwoners Belastingbetalers Unie, a ward councillor of Khunwana village, a member of the tribal authority and the community members of Khunwana village. This allowed the researcher to generate very rich and deep data from people's first-hand experiences as opposed to if the study had used secondary sources of information. This afforded the researcher an opportunity to acquire an in-depth understanding of the water crisis in Khunwana village.

### **3.3.Study design**

According to Rajendra (2020) a study design provides the framework to be used as a guide in collecting and analysing data. This study adopted an exploratory research design in order to gain understanding of the water crisis in Tswaing Local Municipality in terms of what led to the situation, how it affects the community members of Khunwana in particular and the interventions employed to try and mitigate the problem. Not only will the study enhance academic literature, but it may also conscientise community members and the municipal authority and their principals about the extent of the crisis. It will further shed light with respect to how the crisis can be managed.

### **3.4. Study setting**

Tswaing Local Municipality is one of the five category B municipalities situated in Ngaka Modiri Molema District Municipality (NMMDM) in the North West Province. The major towns of this local municipality include Delareyville, Ottosdal and Sannieshof. The local municipality is predominately rural in nature and has a total population of 124 218. In terms of political administration, the municipality comprises of 15 wards. Setswana is the most dominant language in the municipal area, with an estimate of 81.5 % of the population speaking Setswana as a first language, followed by Afrikaans with 6.5% (Stats SA, 2018). Khunwana village has a total population of 7,651. This village has a series of low, rocky hills, with an annual rainfall of 360mm during the summer months, between October and April. It is very rich in agricultural land which community members have in abundance. As a result, some of them depend on livestock and vegetable production, however at a subsistence level (Tswaing Local Municipality IDP, 2012). Villagers in Khunwana village in the Tswaing Local Municipality have resorted to using underground water drawn from beneath a dry riverbed after taps have been dry for over a year. The village has a total of 8 water pumping engines and 104 taps of which only 10 of them are still functioning. However, all these engines are broken, as a result community members can only rely on untreated water from the riverbed and water tanks which were provided by the municipality (Pheto, 2019).

### **3.5. Sampling**

According to Flick (2015) sampling refers to strategies which ensure that the researcher has the right cases in their study. For this research, purposive and systematic sampling were used. Purposive sampling is a non- probability form of sampling used in special situations where the sampling is done with a specific purpose in mind (Maree, 2016). Purposive sampling was used to select municipal managers from the Tswaing Local Municipality and Ngaka Modiri Molema District Municipality, a ward councillor, a committee member of the Sannieshof Inwoners Belastingbetalers Unie (SIBU) and a member of the traditional authority from Khunwana village. Therefore, a total number of five key informants were purposively selected to participate in this study.

According to Frey (2018) systematic sampling refers to a probability sampling technique that applies a constant interval to choosing a sample of elements from the sampling frame. Systematic sampling was used to identify the households from which the participants were selected. The village has 1,989 households (Stats SA, 2018) which was divided by the pre-determined number of households which is twenty. This gave an interval of 99. In each of these

20 identified households, the researcher used convenience sampling to select any adult who was available and agreed to participate in the study (Levy & Lemeshow, 2013). They were given consent forms which outlined the purpose and ethical principles guiding the study. This was followed by the process of setting appointments.

### **3.6.Data collection**

According to Morris (2015) data collection refers to the process of gathering and measuring information about a specific research question, which allows the researcher to answer relevant questions and evaluate the outcomes. In this study, semi structured interviews and a questionnaire comprising open-ended questions were used to source information from community members and relevant stakeholders. The questions for the semi structured interviews were drafted and finalised under the guidance of the supervisor. The interviews were conducted with a senior technician for water and sanitation from the Tswaing Local Municipality, a municipal manager from Ngaka Modiri Molema District Municipality, a ward committee member, the ward councillor, a committee member from Sannieshof Inwoners Belastingbetalers Unie (SIBU) and a member of the traditional authority (refer to Annexure C-G for the interview guides). The researcher had a one-on-one session with each interviewee for a maximum of one hour in the municipal and traditional authority boardrooms and the doors were closed for confidentiality purposes (Babbie, 2016). The interviews were recorded, with permission of the participants. As suggested by Mackey and Gas (2015) questions for the interviews were prepared, however, follow up ones were asked where necessary.

For the questionnaire, a total of 20 community members responded to it. They were administered and the researcher provided clarity where necessary to help those who cannot read and write (refer to Annexure H for the questionnaire for community members). All questions were typed and asked in English. However, in cases where participants requested the Setswana version to be used, the researcher read it out loud (refer to Annexure I for the Setswana version questionnaire). The open ended questions assisted the researcher in getting as much information as possible from the participants. This helped the researcher to gather rich information regarding how the community is affected by the water crisis and get an insight on how Tswaing Local Municipality operates in terms of service provision. Data was collected until saturation was reached. Data saturation refers to that point where all the themes and categories have been saturated and no new data is generated (Maree, 2016).

### **3.7.Data analysis**

In this research thematic data analysis was used. According to Cassel et al (2017) thematic analysis is a form of qualitative data analysis that principally focuses on identifying, organising, and interpreting themes in textual data. It is used to analyse classifications and present themes that relate to the data. According to Ibrahim (2012) qualitative research should be able to draw interpretations and be consistent with the data that is collected. By using thematic analysis, the researcher was able to detect and identify factors that influence any issues generated by the participants.

The researcher familiarised herself with the data by listening attentively to the recorded interviews and thoroughly reading the responses on the questionnaire. This was followed by transcription of the data (Guest et al, 2012). According to Braun and Clarke (2013) it is important for the researcher to familiarise themselves with the data in order to understand the depth of the content. This process usually involves repeated reading of the data and searching for meaningful pieces of information. From these meaningful pieces of information, the researcher produced initial codes. This was achieved by highlighting potential features which were relevant to the research questions. The coding process was repeated until a point where the researcher organised the data into significant groups and provided the final codes. It involved retrieving and categorising data that are similar in meaning so that the researcher can quickly find and cluster the segments that relate to one another (Stuckey, 2015).

In the third phase, similar codes were grouped together. A name was given to each set and produced a concise explanation for each. Themes emerged from the codes that belonged together (King et al, 2018). As stated by Guest et al (2012) the codes were critiqued to determine their relevance to each theme. Where there was a mismatch, the researcher read the data from which the code and the theme emerged. In the fourth phase, the researcher went back to the extracted codes of each theme to check if the codes formed a consistent pattern. At the end of this phase, the researcher was able to understand what differentiates the themes, how they are matched and the story they tell about the data.

The researcher reviewed and refined themes while reading and re-reading the data. In this phase, the researcher deducted what the theme says, what it is about and the aspects of the data covered by the theme (Harding, 2013). Moreover, the researcher determined whether each theme has sub-themes or not (Braun & Carke, 2021). A short summary of the scope and contents of what each theme is about and the content of each theme are provided. Lastly, the

findings were presented in accordance with the themes (Guest et al, 2012). It is important to note that the story of themes is expressed accurately, consistently, rationally, with no duplication and with attraction through or from within the themes (Braun & Carke, 2021).

### **3.8. Ethical considerations**

According to Flick (2015) research ethics relates to the manner in which a researcher treats participants in the research study. It is also concerned with the steps taken to protect those who participate in the research. The researcher requested a covering letter from the North-West University explaining the purpose and nature of the study and provided it to all the participants. To ensure transparent and ethical management of the study, the researcher requested permission from the North-West University Ethics Committee, Tswaing Local Municipal administration office, Ngaka Modiri Molema Municipal administration office and the traditional authority from Khunwana village. The North-West University Ethics Committee cleared the study and gave the researcher an ethical number which is NWU 00 662 21 A7 (refer to Annexure A for the ethics certificate).

Permission was also received from Tswaing Local Municipal administrative office, Ngaka Modiri Molema Municipal office and Khunwana village tribal authority (refer to Annexure J-L for the letters of granted permission from the stakeholders). Moreover, the researcher attended community meetings with permission from the traditional authority in order to inform community members about the study and asked for their permission to participate in the study. During the meetings, community members gave the researcher a positive response and verbally agreed to participate in the study. The researcher approached the municipal administrative office at Ngaka Modiri Molema District Municipality and Tswaing Local Municipality to assist in recruiting municipal managers to participate in the study. However, at Tswaing Local Municipality, the senior technician for water and sanitation was appointed as the best candidate to participate in the study. Furthermore, the researcher set appointments through a face-to-face method with all the participants to ask for their permission to participate in the study and discuss how and when the interviews will take place. Despite permission being granted by the authorities, the participants were asked for informed consent first and they were given two days to decide if they are still willing to participate in the study. Those who agreed to participate were asked to sign the consent form. This was to ensure that every participant gives their consent to be part of the study (Refer to Annexure B for the participants consent form). Participants were not forced to participate in the study and they were informed that they may withdraw anytime should they feel uncomfortable with the questions asked (Cope, 2014).

According to Wiles (2012) the duty of confidentiality is taken to mean that identifiable information about individuals collected during the process of research will not be disclosed. For confidentiality purposes, the interviews were conducted in a closed boardroom with one interviewee at a time, and it was explained to them that this is done for confidentiality purposes (Babbie, 2016). The researcher asked for permission to record the interviews, and all participants approved for their interviews to be recorded. With respect to the questionnaire, the participants were informed that the researcher would administer it in their presence, and in a private space within their household. All questions were typed and asked in English, however, in cases where participants requested the Setswana version to be used, the researcher read it out loud. The participants' right to privacy and confidentiality was not violated and their information will not be revealed to the public without their permission.

The main way by which researchers seek to protect participants from the accidental breaking of confidentiality is through the process of anonymization, which occurs by using pseudonyms (Wiles, 2012). Pseudonyms are used to avoid the violation of the participants' right to privacy and to avoid the possibility of the results being linked to the participants. All the information was communicated before each interview. In addition, it was included on the cover page of each questionnaire and the researcher explained these principles to all the community members. The obtained data was stored in the researcher's personal computer with a protected password. Lastly, for credibility purposes, the researcher ensured that the findings reflect true views of the participants (Babbie, 2016).

Due to the Corona virus pandemic, the health and safety of participants was one of the paramount principles that the researcher adhered to. The researcher informed the participants about the importance of practicing physical distancing and other pharmaceutical hygiene measures during data collection. Physical distancing was practised by ensuring that the one and half meter rule was always observed (World Health Organisation, 2020). The researcher asked all participants to wear masks during interviews, including when completing the questionnaire with community members of Khunwana village. The researcher provided a mask for any participant who did not have one at no cost. The researcher explained to the participants that this is not intended to influence their participation. Strict hand hygiene was also being practised by sanitising the participants' hands at an interval of 10 minutes in the case of questionnaire administration and 15 minutes in the case of interviews. Furthermore, all the devices were sanitised before and after each interview. The researcher kept a list of everyone for tracing purposes.

### **3.9. Study limitations**

According to Aparasu and Bentley (2014) study limitations are any research constraints that diminish the validity or restricts the generalisation of the results. This study only addressed the water crisis in Tswaing Local Municipality. Therefore, it cannot be generalised for all the municipalities and the areas that have been severely affected by the water crisis. Secondly, the researcher had requested to interview the Municipal Manager of Tswaing Local Municipality, however, due to his busy schedule, a senior technician for water and sanitation was proposed as the next best candidate to participate in the study.

In this study, there was a possibility that some participants could drop out due to lack of interest in the subject matter. The researcher motivated participants by explaining the purpose of the study in a simple and straightforward manner for the purposes of their understanding. Once they understood and confirmed their availability, the researcher set up appointments with them. Some participants were not available to honour their appointments due to work demands. To avoid sample loss, the researcher kept in contact with the participants to remind them about their appointments and to check their availability.

### **3.10. Summary**

This chapter outlined the research methodology used in this study, which was determined based on research questions. The target population, area of the study and methods of data collection were also outlined. The study is qualitative in nature and semi structured interviews along with a questionnaire were used. The next chapter provides the results of the study.

## **CHAPTER 4: FINDINGS OF THE STUDY**

### **4.1. Introduction**

This chapter presents the findings of the study in relation to a questionnaire responded to by the Khunwana village community members and interviews held with officials from Tswaing Local Municipality, Ngaka Modiri Molema District Municipality, the ward councillor of Khunwana village, a member of the Khunwana traditional authority and a member of the Sannieshof Inwoners Belastingbetalers Unie (SIBU).

The main themes which emerged from the analysis include mechanisms used by the community to access water, challenges faced by the community members of Khunwana village, water provision in Tswaing Local Municipality, weak infrastructure management systems, weak administrative systems, the effects of the water crisis on community members and strategies adopted to mitigate the water crisis. The responses from the community members and officials are discussed in accordance with these themes. Examples of the verbatim quotations of the participants are presented to support the themes. The community members are identified as P1 to P20 being residents of Khunwana village and representatives of the councils and SIBU are referred to as officials O1 to O5.

### **4.2. Demographic background**

This section presents the demographic profile of participants in the Khunwana village, Tswaing Local Municipality, and the officials. The profile covers gender, age group and number of years lived in the area. The study utilized the demographic profile to help explain the water crisis as experienced by participants in the study area.

The statistical presentation is used to shed light on the social characteristics of the participants. The use of figures is not intended to suggest that the study is quantitative as suggested by Ahmed et al (2016). Most of the participants were males both in the case of community members and officials. This is not in line with the Statistics South Africa survey conducted in 2016 which revealed that the population of females is lower with 49.1% than those of males in the province which stood at 50.9 (Statistics South Africa, 2016). Almost half of the participants were within the age range of 51-56 years, and 13.3% were between 20-26 years. Those aged 40-46 years made 23.6% of the total participants. Only 6.6% were of the age 70-76 compared to the age 35-36 (13.3%). It is evident from the research findings that almost half of the participants were in their 50s. This is consistent with the 2016 community survey which shows

that there has been an upward increase of people within that age group (Statistics South Africa, 2016). Almost half of the participants had lived in the area for 50 years.

### **4.3. Information obtained through a questionnaire**

The section presents the findings of the research which were sourced through a questionnaire from a total of twenty (20) participants.

#### **4.3.1. Mechanisms used by the community to access water**

The first theme that emerged relates to provision of water in Khunwana village. In answering the question of access to municipal water for domestic use, participants revealed the following:

*“We have boreholes, a reservoir and taps. The reservoir gets water through the boreholes and then water is transferred to the taps. There is someone who is responsible for operating the boreholes, he ensures that that the reservoir is full so that water can be transferred to the communal taps” (P8, 2021).*

*“There are sections that have municipal taps. However, they are not installed in the yards, they are on the streets” (P20, 2021).*

Based on the participants’ responses, boreholes and communal taps are the main sources of water in Khunwana village. As stated by P8 the municipality drilled boreholes and installed communal taps around the village in order for the community to get water. Ground water is pumped from the boreholes to the reservoir and transferred through connected pipes to the communal taps. The village also has a borehole operator who is responsible for ensuring that the boreholes refill the reservoir so that the community can continue getting water from the taps. According to Nkuna et al (2014) ground water is the most reliable source of water supply for meeting the daily needs of rural communities. P20 also indicated that the communal taps are not installed in their yards. Instead, they are located along the main road at irregular distances. This is mainly because most rural communities are not geographically structured in lines or streets which could make accessing them easy. A report by the UNESCO (2021) revealed that water provision in rural areas is more challenging due to the settlement location. In many cases, scattered settlements which are dominated by an agro-based economy and limited water resources make it difficult for local authorities to construct water infrastructure needed for water provision to rural communities.

Another participant said:

*..... the municipality also provided us with water tanks because the communal taps were not enough for the whole community. There is a truck that usually comes to refill the tanks” (P6, 2021).*

Based on P6’s response, due to the insufficient availability of taps, the municipality has also provided them with water tanks which have to be refilled by water trucks on a regular basis. This finding is in agreement with the study of Nguyen (2021) which revealed that municipalities have been providing some communities in South Africa with water through municipal trucks by filling the storage tanks and/ or tankers. It is clear that having realised that water from the boreholes was not enough to meet the demand, the local authorities and water providers deemed it necessary to adjust the manner in which members of the community accessed water. This arrangement agrees with the theory of access, which suggests that various circumstances can change the terms of access for users at a given time (Ribot & Peluso, 2003). Be that as it may, Nguyen (2021) also argue that water tinkering is not a sustainable solution as water tanks should only be used in an emergency when the main sources are dysfunctional. This is mainly because tinkering operations are not hygienically safe, are expensive and relatively time consuming to administer (World Health Organisation, 2013). Despite these challenges, this system facilitates access to water which people cannot survive without.

When a question was raised about the community’s alternative methods used to mitigate the water crisis, the following are extracts from the participants:

*“I get water from the nearby stream because there is no other source of water here in Moiragale. Whenever we go to the stream, we have to dig so that water can come out. After getting water we cover the hole again for next time. This happens when it is not raining. I am unemployed with two children, so we depend on the children’s grant for food and other necessities. I cannot afford to pay people to fetch water for me, and as someone who has chronic conditions it is hard for me to walk long distances or carry heavy objects. Therefore, if my children are not around to get water from other sections such as Moseja and Go-Molefi section or during rainy seasons, we do not have a choice but to use the unhygienic water from the stream. My children are very young, so even the water that they get water from those sections is not enough for cooking, drinking and bathing.” (P9, 2021).*

*“I get water from my neighbour’s tap. I pay a fee of R100 a month as a way of contributing towards their electricity” (P16, 2021).*

*“There are people who travel to other nearby villages to get water for us. This is because the local taps do not always have running water. We have very few water supply systems and all of us depend on them” (P13, 2021).*

The views demonstrate that they get water from the stream, by paying local suppliers while some get water from the neighbours. According to P9, they depend on water from the stream because there is no municipal water source nearby and they also cannot afford to pay local water suppliers because they depend on child support grant, which is not enough to cover all their expenses. When the stream is dry, they must dig small wells and cover it to prevent it from being contaminated. Ahile et al (2015) also note that most rural dwellers are not able to pay for water services due to not having any income. Due to chronic illnesses, the participants such as P9 cannot fetch water from Moseja and Go-Molefi section as they are too far. Problems of not having access to water is also a burden to children because they become responsible for fetching water, especially when parents cannot manage. However, since they are still minors, they cannot carry heavy buckets, as a result, they end up getting more water from the stream.

An observation made by P16 is that they get water from their neighbour’s tap and they pay a monthly fee of R100. This means that the participant’s neighbour drilled a borehole in their own yard and has allowed other people such as P16 to get water from their tap at a fee. In the same vein, P13 indicated that they get water from the local vendors who travel to other villages to get water for them. This is mainly because Khunwana village does not have enough water sources to cater for the whole village. A study by Malima (2020) also revealed that in most poor communities, especially in rural areas, residents resort to buying water from water vendors, water kiosks and other unapproved sources which inflate their household expenditure. In areas with piped water close by, residents pay people to carry water to their residents by horse or donkey carts. Those who live far from the piped water, contact small-scale suppliers who deliver water in motorised tanks (Magouam, 2021).

#### **4.3.2. Challenges faced by the community members of Khunwana village**

When a question was raised concerning the challenges faced by community members due to the water crisis, participants provided the following.

*“We use water from the stream for everything and we do not even have electricity. It becomes hard to boil water before we can consume it during rainy days because it*

*means we must save the wood for cooking, so sometimes we just drink that water without even boiling it. We do not have clean water for our daily needs. They say we must wash hands regularly, when did they give us water? We struggle to get water for cooking but we are expected to wash hands. If we do not have water, it means we can't bath, cook or do the washing. So the only solution is to get water from the stream. Our health is always at risk because we do not have access to water in Moiragale” (P7, 2021).*

*“I was arrested in 2018 during a water service delivery protest and it was not for the first time. We never spend a full month accessing adequate water that would be a miracle” (P18, 2021).*

Another one said:

*“The frequent water cuts are just too much, we always have to find other means of accessing water because the municipal supply is not sustainable. We end up walking long distances searching for taps that have running water. This sometimes happens at night or early in the morning because some taps only work during those times. This is not safe for me as a woman and also for our children” (P17, 2021).*

According to P9, they depend on water from the dirty stream for domestic usage which they cannot even boil due to not having access to electricity. This means that they have to rely on energy sources like firewood which have their own challenges. A study by Masekela and Semanya (2021) revealed that firewood is still the main source of energy in rural areas for household use, as most communities do not have access to electricity due to being far from the main grid while others cannot afford other forms of energy for their basic household energy needs. The participant said that the water crisis is also an overwhelming impediment which contributes to hunger and inability to do household chores as it is always difficult for them to prepare food, wash and do laundry without clean water. P9 raised another challenge which is that they are unable to comply with Covid-19 non-pharmaceutical protective measures such as washing hands regularly because they do not have access to it on a continual basis. As a result of the corona virus pandemic, life has become even harder for them as they are unable to wash hands as required. This puts them at a higher risk of being infected by the virus. Life is an ongoing struggle for this family as they are always struggling to get water.

P18 stated that they were arrested in 2018 during a water service delivery protest and this was not for the first time. The participant revealed that they never have access to adequate water

for a full month in Khunwana village. This means that the community members of Khunwana experience challenges of accessing water monthly. Malatji (2016) revealed that many rural communities in South Africa have taken to the streets to express their frustration with the lack of water supplies. These delivery issues include inadequate access to water, poor quality of water, water cut-offs and lack of maintenance on existing infrastructure. These violent protests bear clear testimony to the potentially explosive water provision challenges that communities such as Khunwana village are faced with.

Frequent water cuts are also a problem as mentioned by P17. They usually walk long distances to find water for domestic use. Sometimes, they have no choice but to walk during late hours or early hours to search for water because some taps only function during those hours. This endangers the lives of many women and children around the village. This indicates that Khunwana villagers seem not to have a consistent access to water, especially when they need it most. This was also observed by Dolo (2019) who indicated that there are rural residents who still walk more than 200 metres from their yards to get water. A similar observation was made by Mutamba (2014) who reported that most improved safe water sources in rural areas are frequently located a distance further from home. The need for access to clean water forces people to travel or walk some distance. Tapfumaneyi (2020) also reported that women and children are mostly the hardest hit by the challenges of poor water supply, as men often prey on them by asking them for sexual favours in exchange for water.

In response to the question regarding satisfaction about the type of water supply rendered by the Tswaing Local Municipality. Participants provided the following responses:

*“I am not satisfied; yes, there is a water tank nearby, but it takes weeks or a month, sometimes even more for the municipality to refill the water tanks. This means that we always have to find other ways of accessing water” (P5, 2021).*

*“I am not satisfied; those taps are not our regular sources of water because the municipality is always cutting water. We experience water cuts every month, sometimes we even spend months without getting water from the taps” (P19, 2021).*

Another one said:

*“There is an old tap nearby but it is not working, this forces us to go to Go-Molefi section. Therefore, I am not satisfied because I always have to walk to other sections to*

*get water. We sometimes stand in long ques at night because of the water cuts during the day. Some of us are women it is not safe for us to walk at night” (P14, 2021).*

Another one said:

*“There is nothing to be satisfied about. We do not have any municipal source of water in Moiragale section. They even failed to provide us with a water tank. Sometimes the truck drivers do not refill the tank from the nearby section. It is still too far but it is not like we have a choice since we were not provided a water tank. So we always depend on unhygienic water sources” (P3, 2021).*

A highly level of dissatisfaction was expressed by the community members regarding accessing water in their area. According to P5, they are supposed to get water from the nearby tank, however, the local authority is not consistent with refiling it. During this period, they have to find alternative ways of accessing water. P19 also complained that water is not always available from the communal taps that they depend on because of the constant municipal water cuts. This is supported by P14 who indicated that they have a tap nearby, however, it no longer provides them with water due to aging. This leads to the burden of collecting water being borne by women and children as they spend most of their time walking long distances to collect and carry water to their homes.

This constant water unavailability forces them to rely on other means of accessing water. These findings are similar to those of Edokpayi et al (2018) who established that many rural municipalities are still facing problems of water distribution. Most of them lack the water infrastructure or the facilities they need to supply and deliver water to rural communities. As a result, this limits access to water. Moreover, even in rural communities where such infrastructure exists, people still experience inequality in water provision as much of their infrastructure is ineffective, it cannot cater for the whole community and the water is often not available on a continuous basis.

While the other sections of the village such as Go-Molefi are provided with communal taps and tanks as alternative sources of water, according to P3 they do not have either communal taps or tanks. This means that they do not have any water source in Moiragale section. They try to walk to the nearest water tank, but they often find it empty because the municipality is also failing to refill the tanks. As a result, they always depend on unhygienic water sources. As stated by Mothetha et al (2013) most rural dwellers in South Africa still do not have access to

water services as expected, and thus they often resort to using unprotected water sources for their water needs.

#### **4.4. Data collected through interviews**

This section discusses the findings obtained through interviews from officials from the Tswaing Local Municipality, Ngaka Modiri Molema District Municipality, SIBU, the ward councillor of Khunwana village and a member of the Khunwana tribal authority.

##### **4.4.1. Water provision in Tswaing Local Municipality**

In answering the question of how communities access municipal water for domestic use, participants revealed the following responses:

*“Tswaing Local Municipality is a water service provider for its communities. As the local municipality, we operate the boreholes, pump station and we also do maintenance on the internal reticulation. We do not provide water for 24 hours, it is usually in the morning from 4am to 10am and then in the evening from 6pm to 9pm because of water shortage issues. Some boreholes use electricity while others depend on diesel. But the boreholes in rural areas still use diesel to pump water. So if the diesel runs out, it means those boreholes will not be able to function” (O1, 2021).*

*“Our main responsibility is bulk supply of water and sanitation. But the actual reticulation happens within the boundaries of a specific local municipality, which in this instance would be Tswaing Local Municipality” (O2, 2021).*

*“We had one hundred and four (104) communal taps, but only eight are still functioning. The village also had eight pumping engines, however, we are only left with two functioning engines. We also have water tanks around the different sections such as Go-Molefi in the village” (O4, 2021).*

According to O1, Tswaing Local Municipality is a water service provider for communities under its jurisdiction. This means that they are responsible for distributing water to its communities. However, this does not happen on a 24-hour basis. Due to water shortages, water is only available in the morning and in the evening. This is against the law of the Department of Water Affairs which states that interruptions of water supply should be less than 48 hours at any given time and less than 15 days in a year, cumulatively (Department of Water Affairs, 2013). O2 stated that they are responsible for bulk supply. They provide bulk water to the local municipality who in return should perform the actual reticulation. This is supported by Loubser

et al (2021) who explained that water service authorities are responsible for ensuring that consumers, within their area of jurisdiction have efficient and sustainable access to water services. O4 stated that only eight of the one hundred and four communal taps are working in Khunwana village. The village also had eight pumping engines, but they are only left with two functional ones. They also have water tanks which were placed on different sections across the village which unfortunately do not always have water. The municipality also has different types of boreholes, some operate on electricity while others operate on oil and diesel, which are mostly found in rural areas. This means that if the municipality does not have diesel, majority of the rural communities will not get water.

#### **4.4.2. Weak infrastructure management systems**

In response to the question concerning the challenges the municipality is facing, this is what the officials had to say:

*“The biggest challenge that we are facing is illegal pipe connections. The water network is designed to pump boreholes and fill the reservoirs first and then supply to the households. What communities usually do is that they connect on the supply line that goes to the reservoir; this prevents the reservoir from receiving water, because the water is going straight to the households. This is mostly common in rural areas. Khunwana is one of the villages that performs these illegal connections. They decided to illegally connect to the mainline, now their reservoir is not getting enough water. This is the reason why many community members are not getting water from the communal taps (O1, 2021).*

According to O1, illegal tap connection is the most challenging factor for Tswaing Local Municipality. Illegal connections affect the supply line that goes to the reservoir, and this prevents the reservoir from receiving water. Such illegal activities are also very common in Khunwana village. Some of the villagers have illegally connected to the mainline, as a result, the reservoir in Khunwana village has not been receiving enough water and this has affected the rest of the community. This is in accordance with the findings of Malima (2020) who found that many poorest communities in South Africa were involved in illegal tap connection. Such illegal activities often damage municipal infrastructure and allow leaks to develop. A report by the Department of Water Affairs (2013) reported that the consequences of such activities affect both the municipalities and the community members. Households that are entitled to a free basic water supply are likely to use more than their basic allowance as their supplies are

unmetered and unbilled. Overuse then contributes to poor maintenance and early failure, which often deprives downstream users of their supply (Department of Water Affairs, 2013). However, according to the theory of access illegal access in a sense is also right based, it is a form of direct access defined against those based on the sanction of the law (Ribot & Peluso, 2003). Many communities often argue that this approach is simply self-help and should be allowed, particularly if they are told that water in a passing pipe is not for them or when municipalities fail to provide them with free municipal water.

Another challenge that was raised by the officials is old infrastructure and poor infrastructure maintenance:

*“..... usually what we experience which is across the Ngaka Modiri Molema District Municipality and I can confidently say across the province and the entire country at large is old infrastructure, that is the major problem. Whereby pipes bust all the time and we have to intervene by repairing all the time. We mostly struggle with relevant infrastructure, especially as rural municipalities. Municipalities in urban areas are better able to deliver services as most of them have infrastructure in place in the form of water and waste management facilities. This challenge is beyond the sole capacity and powers of Ngaka Modiri Molema District Municipality. We also do not have proper infrastructure for bulk supply, the inadequacy of regional bulk infrastructure means that piped portable water supply from other district municipalities in the province is not a viable option for bulk water supply.” (O2, 2021).*

*“.....another issue is old infrastructure, most of the infrastructure from Tswaing Local Municipality is old, as a result we always experience regular infrastructure breakdowns and water cuts in our village” (O5,2021).*

*“.....Tswaing Local Municipality is also using old infrastructure such as asbestos pipes. Those are aged pipes hence we are always experiencing pipes leaks. It is also well known that asbestos is not safe for human beings, so that is another challenging issue” (O1, 2021).*

*“.... Tswaing is always losing money because they do not have a water loss management plan. They are always losing purified water through leaks because there is no maintenance plan but they are always claiming that they need to pay for maintenance” (O3, 2021).*

According to O2 the use of old infrastructure is a challenge that is being experienced by all the municipalities in the country. Municipalities often have to deal with pipe busts due to aging and the only solution is to repair them instead of replacing them with new ones. Rural municipalities such as Tswaing and Ngaka Modiri Molema do not have the relevant infrastructure in the form of water and waste management facilities compared to urban municipalities. There is also inadequate bulk infrastructure within the country, which makes it impossible for the district municipalities within the province to share bulk water among themselves. A study by Bikam and Chakwizira (2021) found that about 60% of municipal infrastructure in rural municipalities have on average outlived their lifespan by more than 10 years, and as such, they are failing to meet the increased demand for services. Govender (2019) adds that this challenge has led to a decrease in investments to replace the aging infrastructure in rural municipalities. As a result, many municipalities opt to repair old infrastructure rather than investing in new ones.

Similarly, a study by Hove et al (2019) revealed that the infrastructure that is usually found in urban areas does not exist in rural areas. Inadequate and unreliable infrastructure services are common in many rural environments throughout South Africa as a large number of rural households do not have access to safe drinking water. This was also supported by O1 who stated that Tswaing is still using old infrastructure such as asbestos pipes, which is not safe for human health.

According to O5, the water infrastructure in the TLM and NMMDM has regular breakdowns. This is because their maintenance system is also not effective, as O3 indicated that these authorities are always incurring huge financial losses as they do not have a water loss management plan. As a result, purified water is always lost through leaks due to non-existent maintenance that still needs to be paid for. This is in line with the assumption of the theory of access which states that resources cannot be extracted without the use of tools or technology. Water infrastructure in this instance, increases or facilitates the ability of communities to physically reach the resource which is water. For instance, access to tube-wells and pumps can determine who can benefit from groundwater pumped from ever-greater distances below the surface (Ribot & Peluso, 2003). Johannessen et al (2014) add that broken infrastructure often takes time to be repaired in rural areas, and this disrupts access to portable water. During such periods, communities have no option but to collect water from unprotected sources. This proves that without infrastructure monitoring and evaluation, water sources cannot be sufficiently maintained. Inadequate maintenance of existing municipal infrastructure in South Africa

undermines service delivery and increases the service delivery backlog such as water, which is the case in Khunwana village (Bikam & Chakwizira, 2021).

The unstable relationship and lack of communication between representative councils was also raised as a challenge:

*“As I have already explained, Ngaka Modiri Molema District Municipality is the one that is responsible for rural water supply. Based on the service level agreement between us and the district municipality, Ngaka is responsible for providing us with bulk water and other necessary resources such as diesel and oil for boreholes in rural areas and our job is to ensure that water is transferred to those boreholes and the rural communities receive water. If there is any infrastructure fault in rural areas, we have to contact the district municipality. For instance, if there is problem on a borehole or pump station in any of the rural areas within Tswaing, the district municipality has to attend to the matter and fix it. This also means that if Ngaka Modiri Molema does not provide diesel or repair the infrastructure, rural communities will not get water. Previously we used to assist rural areas with diesel and oil, but we decided to stop because the district municipality would fail to repay or replace our resources, so we decided to stick to the service level agreement.” (O1, 2021).*

*“The relationship between the local and the district municipality is also another challenge, because these two offices are failing to work together in coming up with solutions for the water crisis in Khunwana village. Community members always receiving different information about who is actually responsible for providing Khunwana with water. Another problem is that the district municipality does not listen to members of the tribal council. They do not involve us in their decisions. They claim that we are part of their council and that we should represent our people but they never listen to us. The tribal authority is undermined by both the district and the ward councillor” (O5, 2021).*

*“We have members of the tribal authority from different villages under Ngaka. They are the representatives of their communities. However, they never inform us prior about the new settlement developments in their villages so that we can plan on how those people are going to receive services” (O2, 2021).*

According to O1 Ngaka Modiri Molema District Municipality is the rightful state organ and authority that has to provide Khunwana village with water. However, due to lack of capacity,

both the municipal district and local authorities agreed that the latter will be responsible for providing Khunwana and other villages within Tswaing with water. Since most of the rural areas in Tswaing are still using generators for pumping water from the boreholes which require diesel, the district committed to supplying diesel for this service. However, they have a tendency of failing to supply diesel and oil as agreed. As a result, the Khunwana community members end up not receiving water. Previously, the local authority used to assist rural areas with diesel and oil, however they have decided to stick to the Service Level Agreement because the district municipal authority failed to refund them for a service they provided on an emergency basis on their behalf. O5 also explained that the blurred relationship between the local and district authorities affects service delivery within Tswaing. Community members are also not informed about who between these two municipalities is actually responsible for providing them with water.

Based on Dzansi and Dzansi's (2010) observation, such challenges are caused by too many government departments and layers (national, provincial, municipal) which sometimes lack a clear line of authority and accountability. The complex structure of government makes it hard to solve challenges, because getting one department or municipality to work well may have limited impact on the bigger picture. With so many levels in charge of service delivery, the lines of authority are often blurry and the efforts to align the various levels of government often have little impact on departments with weak capacity (Dzansi & Dzansi, 2010).

As mentioned by O5, members of the tribal authority are part of the municipal council, however, their views are never taken into consideration during the council meetings. However, O2, stated that one of the causes of service delivery backlogs in rural areas is due to not receiving information about settlement developments in rural areas from members of the tribal authority. Based on the theory of access, formal institutions such as the legal and political systems, various decentralised units of local governments and water management boards are important in shaping access. However, in most cases, these authorities often fail to work together effectively, and this often affects water provision. Water provision authorities such as municipalities and water boards have to work together in resolving the challenges to provide the community with water (Ribot & Peluso, 2003).

The uncontrolled expansion of human settlement and lack of bulk supply was also raised as a challenge:

*“You know what happens in our country, before you know it we have 5 000 new informal houses, next thing the government has to come with RDP housing, as and when that happens, no one would’ve thought of water availability. People are also moving back to rural areas to build homes, so rural areas are also growing in terms of population. So we basically find ourselves as the district in the back foot of this whole situation, whereby we have to respond to these demands as they come up. The North West Province is generally a dry area and the inadequacy of regional bulk infrastructure means that piped portable water supply from other district municipalities in the province is not a viable option for bulk water supply. So accessing bulk water is a major cause of some of the many challenges the municipality is facing and will continue to face for years to come” (O2, 2021).*

According to O2 the uncontrolled expansion of human settlement is also a challenge as the population in these areas keeps on increasing, thus putting more strain on the already overloaded and old infrastructure. This causes a bulk and reticulation backlog within the district municipality. This challenge is worsened by the dry weather conditions, which prevents municipalities within the province to share bulk water. These findings are in line with the Sholinah et al (2019) research which acknowledges that many rural communities in South Africa face challenges in accessing safe drinking water, particularly during periods of drought. Water supply schemes in rural areas become vulnerable during drought periods because they depend on groundwater (Khuzwayo, 2017). It is also hampered by continued deterioration of water quality as well as poor and at times non-existent operation and maintenance (Mutamba, 2014). This, therefore, causes a water crisis as the demand exceeds supply. Motheta et al (2013) are in agreement with this observation as they stated that many municipalities suffer from lack of reliable water supply due to population growth.

#### **4.4.3. Weak administrative systems**

Another theme that emerged is that there are weak administrative systems in terms of resources such as funding and personnel.

*“Tswaing Local Municipality is also struggling financially, there is very little maintenance funds within the municipality. Actually, we never receive a budget for infrastructure maintenance, even if you approach the financial department to enquire or request funds for maintenance you will not get it. The budget is simply written on paper but there are no funds for it. I also think that the municipality has been losing*

*money because it does not have its own equipment such as trucks for distributing water. The mismanagement of funds by the municipal management makes matters even worse. Funds always go missing and nobody is ever held accountable” (O1, 2021).*

*“The municipal workers are always on strike due to municipality’s failure to pay their salaries. They are also failing to pay their workers, and the sad thing is that when the workers are on strike, it means we won’t get water. They are also not paying their service providers. In May, the municipal manager was suspended for financial misconduct, he went to court where he was given a court interdict to block the municipal bank account. The previous MEC had placed the municipality under administration in May 2019 and ended the process in June 2020. It is October 2021 and the municipality has yet again been placed under administration. In the past 10 years, Tswaing has been placed under administration at least 5 times with no significant improvement to the municipality’s functionality. The municipality was put under administration in August 2020 after it has just come out of 12 months failed provincial intervention.” (O3, 2021).*

Despite numerous grants such as the Municipal Infrastructure Grant that rural municipalities receive every year, Tswaing municipal authority is said to still be struggling financially. According to O1 the local authority does not have funds for infrastructure maintenance. The IDP budget always includes funds set aside for infrastructure improvements, however, the funds are never available when they are needed. This explains the numerous pipe leaks and broken infrastructure that the local authority is failing to fix. Most of the municipal funds also go to private companies because Tswaing is always hiring private companies and resources from outside to perform some of the municipal duties. The cost of using consultants within municipalities in the North West Province amounted to R227 million in 2020 (Auditor-General South Africa, 2020). Moreover, the irregular expenditure and mismanagement of funds by the management team is an issue that cannot be ignored as those who perform such activities are never held accountable for such acts. Therefore, it is not surprising that O3 reported that the municipality has been struggling to pay the salaries of its employees, pension funds and third-party deductions since 2019. This is the reason why Tswaing is always experiencing workers strikes. During such times, residents are always left with no water and other essential services. The municipality has also been struggling to pay its service providers such as Sedibeng water and Eskom. This has greatly affected the already struggling service delivery processes within the municipality. In May 2021, the municipal manager of Tswaing was suspended for financial

misconduct and he was given a court interdict to block the municipal bank account. During such period, the communities were without services as the municipality could not access the municipal accounts.

Municipal managers are the ones who are supposed to ensure that the municipality provides services to the communities, therefore, if they spend municipal funds it means the whole municipality will not function properly. Tswaing Local Municipality was placed under administration in October 2021. This comes after being under administration in 2020, however, this did not yield any fruitful outcomes. It is evident that financial mismanagement and lack of accountability hampers service delivery progress. Marshall (2011) concurs that management and leadership are important aspects for the adequate performance of municipalities, particularly on water affairs. The role of municipal managers is to serve to improve performance to the satisfaction of communities with regard to adequate water supply. Therefore, the municipal financial mismanagement and lack of accountability hinders service delivery.

According to the theory of access the availability of capital is one of the factors that affects access to resources such as water (Ribot & Peluso, 2003). The Institute for Democratic Alternative in South Africa (IDASA) (2010) indicated that municipalities in South Africa are associated with the worst form of financial mismanagement. The issue of corruption, failure to provide clean audits and non-compliance with financial regulations are common factors that hamper service delivery. This always results in poor performance and a compromise on the delivery of services such as water. Financial mismanagement hinders progress, growth and municipal development and also compromises the honesty and integrity of the local government. Hoffman and Nkadimeng (2016) add that it also affects the struggling economy to such an extent that, if the government loses revenue through mismanagement, they are obliged to recover such losses by means of imposing higher taxes and tariffs on innocent communities.

Hiring unskilled personnel was also raised as a challenge:

*“Some of the municipal workers are not even qualified or fit for the positions they are occupying at the local municipality; they were hired through political connections. They have been bringing the municipality to the ground for many years now” (O3, 2021)*

*“Tswaing also has a tendency of hiring unskilled professionals; some of the borehole operators have never even received training. For instance, a borehole is not supposed to pump for 24 hours, but majority of these borehole operators just leave these boreholes running for the whole day and they end up needing maintenance” (O1,2021).*

According to O3 some of the municipal personnel in Tswaing Local Municipality are not fit for the positions they are occupying as they do not have the required skills and qualifications for the job. It is reported that they were hired through political connections, and they have been contributing to the dysfunctionality within TLM. Similarly, O1 stated that the borehole operators who were hired to look after the boreholes in rural areas did not receive any form of training to support them to carry out this work. This means that both municipal authorities do not follow municipal procedures to ensure that their workers are equipped with appropriate skills for their job.

According to Malima (2020) the availability of skilled personnel is essential for consistent portable water supply in rural areas. Moreover, access to knowledge is important in deciding who can benefit from resources. Resource access is in this way shaped by the power to produce categories of knowledge (Ribot & Peluso, 2003). However, Ngobese (2017) reported that many municipalities, particularly those in rural areas, do not have skilled personnel in water services with the capacity to implement their mandates. This is supported by Managa (2012) who contends that employment of unskilled people for jobs that require certain skills results in service backlogs that hamper municipalities from supplying portable water services to rural communities effectively. World Health Organisation (2013) stresses that poor management plans, lack of human resource and weak conservation strategies contribute to water crisis in rural areas. Water shortages manifest because of poor management and leadership, reduced maintenance, deteriorating infrastructure and non-efficient systems of operation.

Tswaing Local Municipality is supposed to receive most of its revenue from rates and services paid by consumers. However, the local municipality has been facing a challenge of inadequate collection of revenue:

*“....the local municipality has also been struggling to collect revenue from service charges and rates; the number of people who are paying for rates and taxes is very small. The situation worsened last year because of covid-19 as people were losing their jobs. Most municipalities receive their income from revenue collection, therefore, if residents are not paying we experience more challenges. In situations like this, funds*

*end up going to the wrong place, for example the municipality is in deep debt with Eskom. Most of the budget ends up being used to settle such debts, meaning that basic services such as water are compromised in order to settle historical debts. Rural communities do not even pay municipal rates and taxes and their population is more compared to those who are paying for municipal rates which is mostly people in urban areas. It is time they also started paying because some of them can actually afford to pay” (O1, 2021).*

*“It’s been more than a year since people last received their municipal account statements, we have been blindly paying our accounts, Tswaing does not even have an audit system in place to ensure that our payments reflect on their accounts” (O3, 2021).*

*“... we stopped paying municipal rates because we were tired of paying our rates and taxes while the local municipality was not responding appropriately in the form of service provision” (O3, 2021).*

O1 stated that Tswaing Local Municipality has been struggling to collect revenue for water rates and taxes which is needed to keep the service running. The unwillingness of consumers to pay has created more financial problems for the local municipality, and as a result, most of their available funds have been used to pay historical debts instead of providing services. This has affected other functions of the municipality as they do not have enough funds to maintain and replace old infrastructure. The situation has worsened since the covid-19 lockdown as most people have lost their jobs. People have been failing to pay their municipal bills due to being poor and unemployed. An official reported that it is unethical that other citizens are expected to pay municipal rates while rural dwellers are getting all the municipal services for free, despite the fact that there actually those who can afford to pay the municipal fees.

The view of this official is aligned to the report of the Local Government Budget and Expenditure Review (2011) which states that although most of the households in rural areas are poor, there are some households and local businesses that can afford to pay for the municipal services. Van Schalkwyk (2012) adds that the non-payment of municipal services is not a new phenomenon in South Africa. During the apartheid era, boycotts of municipal services were used as a weapon against the apartheid government. With the passing of the apartheid system, such a culture was expected to end. However, this seems to have become a norm in many areas, which creates constraints in the attempt to develop a viable new local government system in South Africa.

The non-payment of services by non-poor households undermines the finances of municipal authorities to mobilise the financial resources required to sustain provision of services. It also breaks the revenue service link between the municipal authorities and consumers which entitles the latter to demand better quality of services for which they have the right. This also illustrates that the municipal authority is unable to collect revenue for services rendered which contributes to the decline in the quality of services (Enwereji & Uwizeyimana, 2020).

The far-reaching result of this culture that is entrenching itself is that the municipal authority fails to provide water to communities. What worsens the situation as reported by O3 is that consumers have not been receiving their municipal accounts from TLM for more than a year. This means that they have been blindly paying for their utility fees. This is mainly because the municipality does not have an audit system in place to ensure that consumer payments reflect on their accounts. As a result, billing them becomes a problem. According to the Auditor General Report (2020) credible financial statements are critical to the municipal authority to illustrate to consumers how and why they are charged the amount shown on the account statement.

#### **4.4.4. The effects of the water crisis on community members**

In response to the question of the effect of water insufficiency on the livelihoods of the communities, the officials responded:

*“Early last year we experienced water shortage for more than two months in most areas around Tswaing. We were unable to perform basic domestic tasks such as cooking and bathing. In addition, the municipality was declared a covid-19 hotspot in the North West Province last year and yet people did not have water to drink, let alone follow the needed hygiene protocols to mitigate the spread of the virus” (O3, 2021).*

*“Water is not simply a vital need for our bodies, it is also a resource we benefit from every day. We use in our households for cooking, cleaning, bathing and sanitation purposes. Without it everything comes to a standstill. So it affects the livelihoods of the communities in so many ways. The absence results to poor health, food insecurity, lack of personal hygiene and poor energy supply” (O2, 2021).*

*“Not only has the water crisis affected their daily activities, but it has also affected their crops and livestock. Most villagers in Khunwana depend on farming for survival, and this problem has badly affected them through hunger” (O5, 2022).*

According to O3 in the beginning of 2021, communities under TLM experienced water shortage for a period of two months. During that period, the community struggled to perform their domestic tasks such as cooking and bathing. Their businesses were also affected as they could not continue with their daily operations without water. Tswaing was also declared a covid-19 hotspot in the North West Province and people did not have water to perform the necessary non pharmaceutical measures. O2 also explained that water is vital for household use and without it, people experience poor health and food insecurity. O5 highlighted that some villagers in Khunwana also practice subsistence farming and the lack of access to water has affected not just their livelihoods, but their crops and livestock as well. This means that without water, their crops and livestock cannot survive. Their responses are similar to the view of Obeta and Nkwanko (2015) who hold that efficient water supply is essential for sustenance of socio-economic growth, poverty alleviation and food security.

#### **4.4.5. Strategies adopted to mitigate the water crisis**

When a question was raised about strategies adopted to address the challenges, this is what the officials had to say:

*“The best approach that we have adopted is ensuring that the existing infrastructure for bulk supply is used to its full potential. We are committed to ensuring that the infrastructure for water provision is performing optimally and is well maintained and effectively operated. For instance, in the Tswaing Local Municipality there is an assessment that is currently taking place to replace the bulk line between Greysdorp and Delareyville. This is an action plan that has been developed by the provincial government to respond to these challenges, not just in Tswaing Local Municipality, but all the municipalities under Ngaka Modiri Molema District Municipality” (O2, 2021).*

*“.....we are also in the process of moving the borehole operators to the district because they get all the necessary resources from them, and they also operate boreholes in rural areas. Currently they are within our payroll. The money that we have been paying those borehole operators will be used for other things related to water supply. We are also busy with term contracts for service providers. We are planning to appoint service providers on a contract basis so that they can provide us with all the service that we may need” (O1, 2021).*

According to O2, the district municipal authority has been working hard to ensure that the existing infrastructure for bulk supply is maintained and utilised to its full potential. There is

an exercise that is currently being carried out; of replacing the bulk line between Greysdorp and Delareyville. This is a remedial action plan that was developed by the provincial government to respond to infrastructure maintenance challenges for all the local municipalities under Ngaka Modiri Molema District Municipality including Tswaing. O1 reported that both municipal authorities have been in discussions of transferring all the borehole operators to Ngaka Modiri Molema District Municipality. The plan is to use the money they would have saved through this change to improve water service delivery within the local municipality. As mentioned by O1, the local municipality is also planning on appointing companies who have facilities that they need such as water trucks used for water tinkering. Tswaing Local Municipality seems to heed the call by the theory of access which suggests that water provision authorities must engage locally based institutions which can help them to decentralise service provision (Ribot & Peluso, 2003).

In their attempt to broaden access, both municipal authorities adopted water tinkering:

*“The one strategy that we have adopted throughout the whole district, which is a short-term solution is water tinkering. This is a short-term intervention while the necessary longer term sustainable provision is put in place” (O2, 2021).*

Similarly, O1 reported that

*“We do water tinkering around Tswaing. We have about 97 jojo tanks throughout the whole municipality and Khunwana was provided with 7 of those tanks” (O1, 2021).*

According to O2 and O1 both municipal authorities have come up with a strategy of providing water tanks to places such as Khunwana. However, this is a short-term intervention while they are still trying to come up with long-term solutions. As mentioned by O1, this is a common practice in South Africa. Matseka et al (2020) note that municipalities have been providing some communities in different parts of the country with alternative solutions such as supplying water through municipal trucks by filling water storage tanks and / tankers. Similarly, Macanda (2014) reported that in most cases, rural municipalities provide water by sending out water trucks to deliver certain number of litres to the people on an agreed timetable. The water is then poured into large tanks in some sections while in other areas water is poured into containers that people bring themselves. However, Hove et al (2019) argue that water tinkering is regarded as an unimproved water source. The scholars argue that these water sources have significantly higher risks of being contaminated compared to improved water sources. This could pose a threat to the health of community members, especially children.

While municipalities have come up with their own strategies, community members also sought alternative strategies:

*“In 2007 we formed a taxpayers’ association called the Sannieshof Inwoners Belastingbetalers Unie (SIBU) which declared a dispute on Tswaing Local Municipality. We were an organisation made of three communities within Tswaing, which are Sannieshof, Ottoosdal and Delareyville. We did our research before we could take action against the local municipality. Before the dispute, we had countless meetings and written letters to the municipality to complain about the poor service delivery and other service delivery issues within the municipality. After waiting for improvements for almost a year, that’s when we decided to declare a dispute with the municipality. We were tired of paying our rates and taxes while the local municipality was not providing us with services as they should (O3, 2021)”*

*“The whole municipality was dysfunctional, but our biggest concern was water supply and sanitation. We became more motivated to declare the dispute when the municipal tractor that was used for the extraction of sewage from household septic broke down. As a result, we were without sewage services for more than two months and the sewage waste flowed from our toilets. Consequently, boreholes and drinking water became contaminated. This was followed by an irregular supply of water due to pipe busts which the municipality refused to fix as they claimed they did not have enough funds. This is when we decided to take action through SIBU. We stopped paying municipal rates and taxes. Instead, we deposited that money into a different account and the money was used to improve service delivery within Tswaing” (O3, 2021).*

According to O3, a taxpayers’ association known as the Sannieshof Inwoners Belastingbetalers Unie (SIBU) from Tswaing Local Municipality declared a dispute with the local authority due to the water provision and sanitation challenges they were facing in 2007. This taxpayers’ association was started by three communities under Tswaing Local Municipality. Before the dispute, the organisation asked for meetings with local municipal council, but they could not take place. These were followed by formal written correspondences. They were inquiring about the unsustainable water supply and faulty municipal accounts. All these attempts were repeatedly ignored by the local authority. A legal route was pursued, which failed on two occasions. Similarly, according to Sethulego (2017) taxpayers’ associations follow precise steps in putting forward grievances on behalf of communities. Sethulego (2017) notes that,

firstly, they document their efforts to resolve the problem through engagement with the municipal authority in a form of a meeting and grievance letters. If the effort fails, they declare a dispute with the municipal authority in terms of the existing legislation. This is the same procedure followed in the case of SIBU and TLM. Their actions seem to have been lawful.

The communities of Tswaing Local Municipality were tired of paying for services which they did not receive. As mentioned by O3, the dysfunctional sewage system spilled over the drinking water thus contaminating it. Moreover, the community experienced an irregular supply of water due to pipe busts, and the municipality claimed it did not have money to fix it. Deciding to pay the municipal rates and taxes into a different account allowed SIBU to take over municipal governance, which made them a municipality within the Tswaing Local Municipality. They used the funds they had transferred to their trust account to finance essential municipal services. According to Sethulego (2017) between November 2007 and February 2013 an amount of approximately R1 million was withheld by the community of Tswaing.

Over the years, other communities from other municipalities have also followed the same steps of forming their own taxpayers' associations due to being dissatisfied with the services they are receiving from their municipalities. For instance, in December 2020, the North West High Court declared that the Kgetlengrivier Local Municipality was in breach of its constitutional responsibility in that it had failed to supply portable water to the residents of Koster and Swartrugges (de Villiers, 2021). The court ordered that the services be placed in the hands of the Koster's taxpayer's association which was formed by the community members of Kgetlengrivier Local Municipality who withheld their tax payments due to not receiving appropriate water services from the local municipality (de Villiers, 2021).

When asked about the effectiveness of these strategies, the officials responded:

*“The strategy of water tinkering is a short-term solution, and so far it has reduced the demand for portable water because people have the tanks to depend on while we are still working on coming up with permanent solution” (O2, 2021).*

*“I wouldn't say that water tinkering is effective, but it has made the situation much better. The issue is that Tswaing does not have its own water trucks. Because of financial challenges, the municipality only hired two trucks and they are used to transport water to all the communities in the municipality. There are communities who do not have municipal taps at all, so these tanks are their only sources of water. Tswaing has a lot of villages, so it sometimes takes weeks or a month for us to cover*

*the whole of Tswaing. The tanks which were offered to these communities are also not enough. For example, those 7 tanks are not enough for Khunwana village because that village is very big. Another thing is the issue of diesel, we sometimes run out of diesel for the trucks and other facilities. When we don't have diesel those trucks cannot transport water” (O1, 2021).*

*“The water tanks provided by the municipality do not supply water for all the areas under Tswaing, in fact, residents in villages such as Matshelapad, Senthumole and Khunwana which is your study area have complained that water tanks are only provided to certain people. Water tanks have never even reached households in Delareyville” (O3, 2021).*

*“The municipality provided the community with water tanks and placed them in some parts of the village. They are not sustainable because firstly, they were not placed in all sections of the village. Khunwana is a very big village, those tanks do not cater for the whole community. Secondly, those who do not have tanks in their sections are forced to travel a long distance to get water from other sections such as Moseja and Go-Molefi where these tanks were placed, they do this even when it is raining or windy. Another issue is the municipal failure to refill the tanks consistently. They sometimes take weeks to refill the tanks and I always raise such matters during municipal meetings. But that's the only thing I can do, report and raise these issues to the municipality” (O4, 2021).*

According to O2 the water tinkering is a short-term solution which has reduced the demand for portable water temporarily while the municipal authorities come up with permanent strategies. The district municipal authority is aware that there are a number of problems with water tinkering such as cleanliness and the duration it takes to refill the tanks. However, O1 does not seem to be too sure about the effectiveness of water tinkering. As reported by O1, there seems to be challenges with this temporary intervention. For instance, the local municipal authority does not have its own trucks to transport water to different communities, instead, they hired private trucks. However, due to financial challenges, they could only afford to hire two. The two trucks are responsible for refilling ninety-seven tanks in Tswaing. As a result, they end up taking more than a week or a month to go back to Khunwana and other villages to refill the tanks. This means that the municipal authority does not have its own facilities as they are always hiring trucks from private companies.

Moreover, the trucks are not always available due to the unavailability of diesel at the Local Municipality. O1 also indicated that the water tanks are also not enough to cater for all the residents. For instance, Khunwana was provided with 7 tanks, and those are not enough due to the large population that Khunwana village has. Similarly, a study that was conducted by Hove et al (2019) found that the water trucks sometimes fail to deliver water due to lack of fuel and also that they were alleged to deliver contaminated water. Furthermore, community members in rural areas see water tinkering as an impediment to provision of domestic taps.

While other communities at least have one tank, O3 observed that in areas like Delareyville they did not receive any tank even though most of the residents in the area are paying municipal utility fees. Even those who were provided with tanks such as Khunwana, the community members have been complaining that the tanks were provided to certain people in their villages. Similarly, O4 stated that water tinkering is not sustainable because as O1 has indicated; the village was only provided with 7 tanks,-which means that many community members have to walk long distances to get water where those tanks are situated. This set up becomes even more unfavourable for them during bad weather. Moreover, the local municipality is not consistent with refilling the tanks, it takes them months to refill those tanks.

Based on a report by Matseke (2020) municipalities have been providing some communities in South Africa with alternative solutions such as supplying water through municipal trucks by filling water storage tanks and// or tankers. However, some villages still struggle to access these tanks. For instance, nineteen villages in the Intsika Yethu Municipality have been waiting to receive tanks promised to them by the district municipality in March 2020. Moreover, experts have argued that short term solutions are not the answer to the systematic water problems in communities. This set up is not suitable, especially during rainy days when trucks fail to deliver water to rural dwellers due to poor road networks (Hove et al, 2019).

Hove et al (2019) added that water tinkering is regarded as an unimproved water source. These water sources have significantly higher risks of being contaminated compared to improved water sources. This could pose a threat to the health of community members, especially children. The Water Service Act of 1997 explains that the minimum average for basic water supply is 25 litres per individual daily or 6 kilolitres per household per month, at a minimum rate of not less than 10 minutes and must be within 200 metres of a household (Department of Water and Sanitation, 2017). Therefore, the government has to ensure that their solutions are

adequate for the number of people living in communities, their average consumption and usage pattern.

This is what the official had to say about the effectiveness of the taxpayers' dispute on Tswaing Local Municipality:

*“Our taxpayers’ association was able to fix the local wastewater treatment works that the municipality had failed to maintain for years. We spent close to R80 000 on repairing most of the municipal infrastructure such as repairing water pumps, servicing broken pumps, including in local townships. Everyone was happy with the results of our invention. When the local municipality realised that they were no longer getting money from the consumers, they opened a case against some of the members of the team, and that is how a legal battle between us and the municipality began. The matter could not be resolved at the local magistrate court because we learnt that the prosecutor had thrown the case out. Instead of giving up, the municipality decided to take the matter to the high court. During the court case, Tswaing Local Municipality claimed that we were undermining the local municipality ignoring the fact that they had failed to provide us with adequate services for years, especially water. We pleaded with the court to allow our association to be part of the municipal council as we had the best interests of the residents at heart. Despite losing this plea, Tswaing Local Municipality was ordered to pay our legal fees” (O3, 2021).*

According to O3, SIBU spent close to R80 000 in repairing and maintaining most of the municipal water infrastructure such as the wastewater treatment plant, the water pumps, and also serviced broken pumps, including the ones in townships. Despite these improvements, the local municipal authority decided to take members of the taxpayers' association to court. This was stirred by the consumers' non-payment of municipal rates and taxes as they were transferring the money directly to SIBU's trust account. However, the case was thrown out at the local magistrate court. Tswaing Local Municipality then took the matter further to the high court. During the trial, the local municipal authority reported that SIBU was not working towards improving service delivery in communities under Tswaing, instead they were actually undermining the local municipal authority. In their defence, SIBU requested that they should be allowed to become part of Tswaing's municipal council, which the court denied. Despite SIBU being denied the plea, the high court ordered TLM to cover SIBU's legal fees.

Gouws et al (2010) reported that SIBU had close to 300 members and through this association, most of Tswaing's infrastructure were upgraded and repaired, including the broken water systems and the waste disposal site. SIBU employed four workers and also paid some of Tswaing Local Municipality's outstanding amounts. In total, this cost them R163 000. Due to withholding money for rates and taxes, by May 2009, about 500 ratepayers were in arrears and the municipality was owed R73, 9 million. Gouws et al (2010) add that due to this debt, the local municipal authority announced that it was suing the ratepayers. The National Taxpayers Union stood behind SIBU and was confident that the association had a strong case. In May 2009 members of SIBU who were found at the sewage plant were arrested for trespassing. However, when they showed up at the Delareyville magistrate's court in on the third of June, they were informed that the public prosecutor had refused to begin the formal prosecution and had thrown the case out, which forced the local municipal authority to take the matter to the high court.

Gouws et al (2010) observed that when the high court case began, about 100 residents from different communities in Tswaing were present at the Mafikeng high court. During the trial, SIBU asked the then Tswaing Municipal Manager to submit a sustainable development plan for service delivery which was in compliant with the requirements of the provincial department of local government. Moreover, the association requested that they continue with the management of the municipality. Tswaing Local Municipality in their response argued that SIBU was not a representative of all the residents, instead, they were a small group of privileged white people trying to undermine the government's service plan. Gouws et al (2010) further report that the court pointed out that SIBU had been called upon to take an active interest in the matters of their council. However, they could not form part of the municipal council, they had to specify the foundation on which they demanded the participation.

Similarly, the Koster's taxpayers' association also managed to pay R 7.5 million to repair pumps, rent generators to ensure that pumps continue to pump water during load shedding (de Villiers, 2021). Unlike SIBU, the Koster's taxpayers' association was granted an urgent order to take over water provision and control the sewage plant. Both the local and provincial governments were ordered to cover the costs of the sewage plant and the court cases' legal fees. As noted by Sethulego (2017) despite the fact that the rise and prominence of taxpayers' associations has generated tensions at local government level, they have become useful. In the current study, SIBU took it upon itself to mobilise physical and human resources to perform a function which according to the Constitution, is the responsibility of Tswaing Local

Municipality and Ngaka Modiri Molema District Municipality. What they did is similar to the action taken by Koster's taxpayers' association which managed to repair water equipment. This demonstrates the contribution taxpayers' associations have in closing the gaps created by their municipal authorities.

#### **4.5. Discussion of the research findings**

The study revealed that before the water crisis, Khunwana village had a total of 104 communal taps and eight boreholes. However, during the time of the study, the village was only left with eight functional taps and two boreholes. This means that these are the only functioning water sources, and they are unable to keep up with the need in the area. Due to the insufficiency of the municipal water sources, both the district and local municipal authorities decided to provide communities such as Khunwana with water tanks. Similar to the communal taps, the water tanks were not installed in their yards, instead they are dispersed along the main road at irregular distances. Another concern raised by the community is that the water tanks were not sufficient as they were not placed in all the sections of the village. The only sections which received water tanks are Go-Molefi and Moseja section. The local municipal authority also takes time to refill the tanks. During such periods, it means that the community does not have any source of water to depend on.

The study findings were also confirmed by the municipal officials who reported that they have adopted water tinkering as a short-term solution while they are still trying to come up with permanent ones. The municipal authorities reported that they are also aware of the challenges of this short-term solution such as cleanliness and the duration it takes to refill the tanks. The study found that Tswaing Local Municipality does not have its own trucks for water tinkering due to financial challenges, as a result, they only managed to hire two private trucks to refill ninety-seven tanks in Tswaing. As a result, they end up taking longer to go back to Khunwana village. The village was provided with seven tanks, but they are not enough to cater for the whole community. From the findings of the study, some community members did not receive water tanks at all, and this is the case even in areas where the residents are paying for municipal utility fees.

It is clear from the findings of the study that the community of Khunwana village has taken to the street on numerous occasions to protest about the municipality's failure to provide them with adequate water; some were even arrested for being part of the protests. However, years later the situation is still the same. Due to being dissatisfied with the water provided by TLM,

the villagers adopted their own strategies to access water. Those who can afford, have resorted to buying water from the local vendors while others buy from their neighbours. Unfortunately, not all community members can afford to buy water. This forces them to travel a long distance to get water from other sections of the village. Other community members depend on water from the nearby dirty stream for their domestic usage. However, when the stream is dry as it is not always raining, the villagers indicated that the water comes from wells which they have to dig themselves in the dry riverbed. In most cases, they cover the dug well after getting enough water in order to prevent it from being contaminated. It is impossible for them to even boil the water due to not having access to electricity. This means that they have to rely on energy sources like firewood.

The findings of the study revealed that the lack of access to water has actually angered a lot of communities in Tswaing, especially those who are paying for municipal services. After countless complaints since 2003, some communities in Tswaing formed a taxpayers' association named the Sannieshof Inwoners Belastingbelers Unie (SIBU) which declared a legal dispute with the local municipal authority in 2007. This came after the failure of several meetings, informal correspondence and two legal battles about the quality of drinking water, faulty sewage systems, incorrect municipal accounts and corruption within the municipality. This association decided to withhold municipal rates and taxes which are legally supposed to be paid directly to the municipality. Members of this association paid their municipal bills directly into a trust account which was opened for this purpose. SIBU would then directly pay the electricity and water bills of its members while withholding the percentage of rates and taxes in the trust account. This means that SIBU chose to administer these funds on behalf of Tswaing Local Municipality, but it was not as per any agreement.

Through the dispute, SIBU spent R163 000 in repairing and upgrading most of the municipal infrastructure, they paid some of Tswaing's outstanding debt and also employed four workers from the community. By May 2009, close to 500 taxpayers were in arrears and the municipality was owed R73, 9 million. As a result of this debt, the local municipal authority took the taxpayers' association to court for the non-payment of municipal rates and taxes. However, the case was thrown out at the local magistrate court and the prosecutor refused to begin the formal prosecution. Tswaing then decided to take the matter to the high court. During the trial, the taxpayers' union requested the then Municipal Manager to submit a sustainable development plan for service delivery which was in compliance with the requirements of the provincial department of the local government. Furthermore, they requested that they continue with the

management of the municipality and be allowed to be part of the municipal council. The local municipal authority then argued that SIBU was not acting in the interests of everyone in Tswaing, but instead, they were a small group of privileged white people and their actions were undermining their service plan. During the judgement, the court concluded that despite SIBU taking active interest in the matters of their council, they could not form part of the municipal council as they had no specific foundation on which they demanded the participation. Moreover, the local municipality authority was ordered to cover the legal fees between them and SIBU.

The study found that some of strategies that the community came up with are unsustainable, unsafe and unreliable. Participants indicated that they sometimes have to walk to other sections of the village at night because some taps only function during late hours or in the early hours of the morning. Marginalised women and children endure most of the water crisis as it is not safe for them to walk during such hours. Those who have resorted to using unhygienic water from the stream are at risk of contracting waterborne diseases which mostly affect children as these sources are not treated. Due to the covid-19 pandemic, life has become even harder for these villagers as they are unable to comply with Covid-19 non-pharmaceutical protective measures such as washing hands as they do not have access to it on a continuous basis.

Similarly, an official reported that at the beginning of 2021, Tswaing experienced water shortage for two months. During that period, residents struggled to perform their domestic tasks, and their businesses were also affected as they could not operate without water. This was a challenge for them, especially when Tswaing was declared a covid-19 hotspot in the province as people could not wash their hands. An official indicated that in Tswaing Local Municipality, they have a time schedule for water availability in most of their areas. Water is only available in the morning from 4am to 10am and in the evening at 6pm to 9pm. This is their way of saving water. The study also found that the crisis of lack of water has not only affected the livelihood of Khunwana villagers, but also their livestock and crops as most of them depend on subsistence farming. Without water, it becomes difficult for them to maintain and sustain their livestock and crops. Water crisis has become an overwhelming impediment for the community of Khunwana village which contributes to hunger and inability to do household chores as a result of such inadequate access to water.

Based on the findings of the study, Ngaka Modiri Molema is the legal state organ and authority that has to provide Khunwana and other villages within the district municipality with water.

However, due to lack of capacity, both NMMDM and TLM agreed that Tswaing will be responsible for providing Khunwana and other villages within Tswaing with water. Based on their service level agreement, the district municipal authority is responsible for providing Tswaing with bulk water and other necessary resources required to distribute water to villages, such as diesel and oil. This is mainly because most of the boreholes in rural areas are still using generators for pumping water from the boreholes. However, the district municipal authority does not always supply diesel and oil as required. Consequently, the residents of Khunwana end up not receiving water. Officials indicated that previously, they used to assist rural areas with diesel and oil whenever the district municipality failed to deliver, however, they have decided to stick to the initial principles of the Service Level Agreement because the district municipality always failed to refund them for a service they provided on an emergency basis on their behalf.

Study findings revealed that community members were clueless about the agreement between the district and local municipal authorities regarding their shared responsibilities in terms of water supply. Community members reported that they are always sent to different directions whenever they enquire or complain about the inadequacy of water supply in Khunwana. Both seem reluctant to take responsibility over this matter. At the moment, the community of Khunwana village is not aware of who is responsible for providing them with water. This suggests that both municipalities are not committing to taking responsibility and be accountable for the water supply in Khunwana village.

Officials reported that members of the traditional authority are never included in the decision making processes made by Ngaka Modiri Molema District Municipality. During council meetings, the opinions and suggestions of members of the traditional authority are never acknowledged. This is the case despite the fact that Section 81 of the Municipal Structures Act and Section 4 of the Traditional Leadership and Government Framework Act, 2003 make provision for members of the traditional authority to sit in municipal councils and participate. However, the study also revealed that traditional authorities are failing provide appropriate information such as new settlement developments. This was raised as one of the factors which prevents the district municipal authority from planning to increase the capacity of water provision to the new settlements.

It is essential for municipalities to follow municipal procedures to ensure that their workers are equipped with appropriate skills for their job. Based on the findings of the study, some

municipal personnel in Tswaing Local Municipality were hired through political connections. This means that they do not have the required skills and qualifications for the job; they are not suitable candidates. Borehole operators who are responsible for the maintenance in rural areas were also not made to undergo any form of training to support them to carry out this work. These workers have also been contributing to the dysfunctionality within Tswaing Local Municipality.

While both the district and local municipal authorities are blaming each other and also being blamed by the community for the water crisis, there are other factors which contribute to the problem of water provision in Khunwana village such as illegal tap connections. The study revealed that some community members in Khunwana have illegally connected to the mainline. As a result, the reservoir in Khunwana has not been receiving enough water. This has affected the whole community as residents can no longer get water because some people are using more than their basic allowance. The growth of human settlement was also mentioned as a challenge as the population in villages keeps increasing while the infrastructure is failing to cater for the whole population.

Just like many rural municipalities in South Africa the local and district municipal authorities seem to struggle with maintaining their infrastructure and this prolongs the disruptions in service delivery. The study found that both the district and local municipal authorities are using old infrastructure, which causes a huge problem. This seems to be an outcome of poor or no replacement of the old infrastructure. In cases where replacement of old infrastructure is needed, their solution is always to repair them. As a result, much of this infrastructure has reached its life span. The maintenance system in Tswaing is not as effective as the municipality is always losing clean water through leaks and this creates more financial losses for the municipality. Tswaing is still using asbestos pipes which also cause health hazards. The absence of the water management plan worsens the situation. The repair and maintenance of water infrastructure is critical to minimise water losses through unattended leaks.

Officials also reported that the district municipal authority does not have proper infrastructure for bulk supply, which makes it impossible for the district to access piped portable water from other district municipalities within the North West Province. However, one of the strategies that the district municipal authority has adopted to mitigate the water crisis has been ensuring that the existing infrastructure for bulk supply is maintained and utilized to its full potential. This is rather surprising as most of the boreholes and taps in Khunwana have aged and are thus

failing to function properly. Based on the findings, NMMDM has implemented an infrastructure programme in Tswaing which aims at replacing the bulk line between Greysdorp and Delareyville.

The flexibility and availability of funds is essential for any municipality as unexpected events that need urgent response do occur. When such eventualities happen, the need for portable water is triggered. However, it was reported by officials that funds were not available for the replacement of old infrastructure to take place. It is alarming to note that Tswaing Local Municipality does not have funds for infrastructure and maintenance. The funds are always included in their IDP, but the money is never available when it is needed for maintenance. This explains the multiple infrastructure faults that the municipality is always experiencing.

Most of their funds also go to paying private companies and hiring private equipment to perform municipal duties such as hiring trucks for water tinkering because the municipality is failing to invest in their own infrastructure. However, the municipal officials reported that Tswaing Local Municipality is planning to appoint companies which can provide them with facilities that they need such as trucks for water tinkering on a contract basis. They believe this may reduce overspending and all the expenses will be included in their budget which will be adhered to.

From the findings of the study, Tswaing Local Municipality has been experiencing constant workers' protests since 2019 due to failing to pay the salaries of their employees, pension funds and third-party deductions. During those protests, community members across Tswaing are not always provided with essential services. The study also found that the local municipal authority is under immense pressure because of funds with detrimental consequences for effective and efficient service delivery. In 2021, a senior official was suspended for financial misconduct. This could be an indication of the failure of the management team to set aside funds for delivering services to communities. This is one of the reasons why communities such as Khunwana are in dire need of help so that they can get access to portable water.

Municipalities receive most of their income from revenue collection as required by Section 4 of Municipal Systems Act 32 of 2000. The findings revealed that the municipality is being owed substantial amounts of money by consumers, which makes it difficult for them to plan for the proper management of resources. The situation has worsened since the covid-19 lockdown as most of the consumers lost their jobs. This means that people were not able to cover all their expenses such as municipal bills. Most rural communities in South Africa do

not pay for municipal services. The study also revealed that some consumers have stopped paying their utility fees due to not receiving their municipal account statements from the local municipality. This has been happening for more than a year. The explanation from the authorities is that the local municipal authority does not have an audit system in place to ensure that the consumers' payments reflect on their accounts.

Officials indicated that although rural areas are known to be poor, there are those households and local businesses that can afford to pay for municipal services. Therefore, they believe that it is unethical and unfair that such people are receiving services for free while they can afford to pay. However, the study findings also revealed that some community members who can afford, have drilled boreholes in their own yards. This means that people who can afford, do not depend on the municipal water services.

This study stresses the importance of the theory of access by stating that if the authorities such as Tswaing Local Municipality, Ngaka Modiri Molema District Municipality and water boards can work hand in hand with the communities; they will provide better access to water in Tswaing. According to Ribot and Peluso (2003:154) access is defined as the ability to derive benefits from things, including objects, persons, institutions and symbols. The theory of access argues that the formal institutions such as the local municipality and water management boards play an essential role in shaping access to water (Ribot & Peluso, 2003:185). The availability of capital or funds is another factor that affects access to resources such as water. Funds can be used to maintain resource access when used to pay water rates, and formal access fees. The crisis of lack of funds is most pressing for municipalities, especially those located in rural areas as the majority of them are not financially self-sufficient.

#### **4.6. Summary**

This chapter provided findings on the state of water supply in Khunwana village which falls under Tswaing Local Municipality. The analysis ascertained that indeed the villagers of Khunwana are not receiving adequate water from Tswaing. The findings revealed that the challenges of water supply in Tswaing Local Municipality are due to illegal pipe connections, aging and poor infrastructure maintenance, mismanagement of funds, population growth, municipal consumer debt, unskilled personnel, an unstable relationship and poor communication between representative councils.

## **CHAPTER 5: SUMMARY OF THE STUDY FINDINGS, CONCLUSION AND RECOMMENDATIONS**

### **5.1. Introduction**

This chapter provides a summary of the finding of this study and outlines how the research questions were answered. It further provides a conclusion and recommendations towards dealing with factors causing the water crisis in Tswaing Local Municipality.

### **5.2. Summary of the findings**

#### **5.2.1. The causes of the water crisis in Khunwana village**

The water crisis in Khunwana village seems to be emanating from the structural apartheid government tactics to deny black people access to basic necessities. While it was expected that the community will be provided with water post 1994 as promised in the Constitution a community with almost 1,989 households has to rely on 104 communal taps and 7 boreholes. These were provided by the district municipal authority as required by the same law. However, during the period of the study, the village was left with 8 functional taps and 2 boreholes. The study findings show that these water sources are not coping with the demand for water.

To resolve the inadequacy of the communal taps, the municipal authorities promised to provide the community with water tanks which had to be refilled by a water truck on a regular basis. However, this is not being fulfilled. This apparently results from financial challenges. Even though bulk water supply is the responsibility of Ngaka Modiri Molema District Municipality, in this community Tswaing Local Municipality is the one that is carrying out this function. They depend on two hired trucks to refill the water trucks to provide water to communities including Khunwana. Since Tswaing has a lot of villages, it always takes a month or more for the trucks to go back to Khunwana village to refill the tanks. During this time, community members do not have any source to access water from.

The study also found that some communities including Khunwana village are involved in illegal tap connection as their strategy to access water. This has affected the rest of the community as those who are involved in this activity have been using more water than their basic allowance, while the rest of the community receives little or no water at all. The situation is worsened by the dry conditions which limit water access, especially for those who rely on underground water. Failure to deliver on the constitutional mandate by the municipal authorities due to factors mentioned above as well as their inability to manage illegal connection triggered water crisis in Khunwana village.

### **5.2.2. The challenges faced by the Tswaing Local Municipality in the provision of water in Khunwana village**

Based on the findings, it is evident that the municipal authorities do not have the capacity to make it possible for the community to enjoy the right to adequate water. It has become clear that both the district and local municipal authorities experience frequent infrastructure breakdowns which among other things cause water leaks due to age. What is also important to note is that most of their infrastructure has outlived its life span. It appears that instead of replacing them with new ones, the solution is always to repair them. This has resulted in the municipality incurring huge financial losses through leaks which lead to loss of purified water.

The study found that Ngaka Modiri Molema District Municipality is the rightful state organ and authority that has to provide villages within the district with essential services such as water. However, due to lack of capacity, both the municipal district and local authorities agreed that Tswaing municipal authority should be responsible for providing Khunwana and other villages with water. According to the service level agreement between the two municipal authorities, NMMDM is obliged to provide TLM with bulk water and other necessary resources required for water supply such as diesel and oil. As a result, communities such as Khunwana have not been receiving water as they should. To ameliorate the situation, the local municipal authority used to assist during such incidents, but it was reported that the district municipal authority had a tendency of failing to refund TLM for performing emergency services such as providing the boreholes with diesel. As a result, TLM then decided to abide by the service level agreement. This unstable working relationship between the municipal authorities hampered service delivery in Tswaing. What became clear from the findings is that community members are also not aware of where they should submit their grievances to as they were not informed about the shared responsibilities between the two municipal authorities.

The Municipal Structures Act 117 of 1998 makes provision for members of the tribal authority to become part of the proceedings of municipal councils so that they can express the views of the community on matters that affect their areas. Be that as it may, the study found that even though members of the tribal authority are part of the municipal council, their views are never taken into consideration during council meetings. It was reported that to some extent service delivery backlogs are caused by members of the tribal authority because they have a tendency of withholding important information which municipal authorities need. For instance, it was mentioned that they do not inform the council about new settlements in rural areas.

Withholding such information creates a situation where old infrastructure gets overstretched, which also causes water crisis as the demand exceeds supply.

The study also established that Tswaing municipal authority is facing financial challenges as it does not have funds to perform important duties such as infrastructure maintenance. The officials explained that the budget for maintenance is always included in the municipal IDP budget, but the funds are never available when they are needed for infrastructure maintenance. It is therefore not surprising that community members are always experiencing constant pipe leaks, regular tap and borehole breakdowns. Apart from maintenance problems, Tswaing municipal authority has also been struggling to pay its service providers such as Sedibeng water.

It was also revealed that the local municipal authority has been experiencing constant workers' protests due to failing to pay the salaries of employees, pension funds and third-party deductions since 2019. This has affected the already struggling service delivery processes within the local municipality. The study findings also confirmed that some municipal personnel do not have the required skills and qualifications as they were hired through political connections, which makes them unsuitable for the position they are occupying. Such employees are reported to be contributing to the dysfunctionality within the local municipal authority.

According to the Municipal Systems Act, municipal authorities must raise revenue through rates and taxes. While this is the case, Tswaing Local Municipality seems to be performing poorly in this regard. There is an inability to collect revenue, which then stands as one of the causes of the financial challenges. The unwillingness and inability of consumers to pay has created more financial constraints for the municipal authority as most of their provided funds now have to be used to pay historical debts and service providers instead of improving the delivery of essential services.

The covid-19 pandemic made matters worse as most consumers could no longer afford to pay for essential services due to losing their jobs. The study also revealed that some consumers in Tswaing have stopped paying their municipal utility fees due to not receiving their municipal accounts for more than a year. There was a concern raised that it is unfair that there are some citizens such as rural dwellers who are receiving municipal services without paying any fees even though there are actually those who can afford to pay for such services. This undermines the municipal authority's ability to mobilise funds required to sustain the provision of services.

It is perhaps worth noting that the culture of non-payment for services has its roots in the strategies employed by the black people to fight against the apartheid government. This culture unfortunately seems not to receive the attention that it deserves.

The study found that community members were highly dissatisfied by the municipal authority's inability to provide them with water. This is mainly due to the challenges they have been experiencing before and after 1994. It was revealed that some villagers in Khunwana depend on the dirty water from the stream for domestic usage as they do not have any water source nearby. They are also unable to boil the water due to not having access to electricity. It was also established that community members experienced severe challenges during the Covid-19 pandemic as they could not comply with the Covid-19 non-pharmaceutical protective measures such as washing hands because they did not have access to water on a continuous basis. It is then not surprising that Tswaing local Municipality was declared a Covid-19 hotspot during hard lockdown as the lack of access to water put them at a higher risk of being infected by the virus.

Study findings revealed that Khunwana village community participated in countless service delivery protests as there has never been a time when they received water for a full month without experiencing water cuts. However, their situation is still the same. It was reported that some villagers were arrested numerous times during water service delivery protests. The water cuts have mostly affected women and children by endangering their lives. The water crisis has also affected businesses because they cannot continue with their daily operations without water.

### **5.2.3. Interventions employed to resolve the water crisis in Khunwana village**

Various strategies were adopted to try and mitigate the water crisis. The study found that both the district and the local municipal authorities have adopted water tinkering as a short-term solution. This has reduced the demand for water while the municipal authorities come up with permanent solutions. From 97 tanks within the local municipality, Khunwana village was provided with 7 water tanks which have to be refilled by a water truck that was hired by the local municipal authority. It was also established that the district municipal authority is currently busy with a remedial plan that was developed by the provincial government to respond to infrastructure challenges within the district municipality.

While municipal authorities have come up with their own strategies, community members also sought alternative strategies. Based on the study findings, Khunwana does not have enough water sources to cater for the whole community, and the regular water cuts also make matters

worse. As a result, some Khunwana villagers find themselves depending on water from the stream as they do not have a municipal water source in their section and they also cannot afford to buy water as they depend on child foster grant, which is not enough to cover all their expenses. This is happening despite the promise of the right to basic services as provided in the Constitution Act 108 of 1996. During dry seasons, they must dig small wells and cover them in order to prevent them from being contaminated. The water crisis has forced some community members who can afford, to drill boreholes in their yards. The study found that such community members have allowed their neighbours to pay a monthly fee to get water from their taps. Similarly, some community members have become water vendors. This is also a way for the villagers to get water.

The study found that in 2007, community members in Tswaing formed a taxpayers' association known as the Sannieshof Inwoners Belastingbetalers Unie (SIBU) which declared a dispute with the local municipal authority. The community members were tired of paying for services which they did not receive. The water supply was irregular due to constant pipe busts and the dysfunctional sewage system that was contaminating the clean drinking water. The local municipality was failing to attend to these grievances as they claimed that they did not have enough funds to repair and maintain the infrastructure. Before the dispute, the organisation asked for meetings with the local municipal council but these could not take place. They were followed by formal written correspondences of inquiring about the poor provision of water and faulty municipal accounts. However, all these attempts were repeatedly ignored by the municipal council. The organisation also followed a legal route which failed on two occasions. The study established that the organization opened a trust account which was used to transfer the municipal rates and taxes instead of paying them into the actual municipal account. This allowed them to form a municipality within a municipality as they took over the governance of the local municipality. The funds were used to finance essential municipal services such as water supply.

In terms of the effectiveness of these strategies, the study found that water tinkering has reduced the demand for water temporarily while municipal authorities come up with permanent strategies. However, these strategies also have their own shortcomings. The study established that since the local municipal authority does not have its own water trucks, they have hired two private trucks which are responsible for refilling 97 tanks in Tswaing. As a result, they end up taking weeks to go back to Khunwana village to refill the tanks. Since the district municipal authority has a tendency of failing to provide diesel, sometimes these trucks fail to deliver

water to communities. During such times, community members, especially those who depend on water tanks as the only source of water, are left with no access to water. Moreover, Khunwana village was provided with 7 tanks which are not sufficient to cater for the whole community. This means that villagers have to walk long distances to get water from where those tanks are situated. This set up becomes difficult for them during bad weather. This research question was answered as it emerged that while the municipal authorities have come up with different strategies to mitigate the water crisis, villagers of Khunwana are still experiencing the water crisis.

### **5.3. Conclusion**

Water is a basic need that is fundamental for human life, development and economic stability. However, the world is facing a water crisis as major sources of water are significantly deteriorating. This study explored the extent of the water crisis in Khunwana village which falls under Tswaing Local Municipality. This village which is located in a generally dry area does not have reliable water sources nearby. The community's expectation was that this situation would not be a problem as the Tswaing municipal authority is obliged by the constitution to provide them with water. However, this municipal authority has been struggling to supply its communities with water for years. The study revealed that Khunwana villagers depend on very few water sources which are not enough to cater for the needs of the whole community.

Due to the insufficiency of the water sources, community members decided to come up with their own solutions, such as using water from the dirty stream for domestic use, which put their health at risk as they cannot even boil the water due to not having electricity. To show how badly the lack of water has affected the village, some community members have even created employment opportunities for themselves as water vendors. They travel to other nearby villages to collect water at a fee for other people in the village. Moreover, some community members pay to get water from their neighbours who have drilled boreholes in their yards. Women and children are the hardest hit by this water crisis, as they sometimes have to travel at night to search for water and this puts their lives at risk. Despite the district and local municipal authorities introducing water tinkering to mitigate the water crisis, this short-term solution also has its own challenges. For instance, the local municipal authority does not have enough trucks to distribute water to communities, and as a result they always fail to deliver water as per the agreed timetable. This illustrates the inability of the district and local municipal authorities to

uphold their constitutional obligation. This leaves the community with an unsatisfied basic human right.

Adequate service provision means that municipal authorities should ensure that there is a steady supply of essential services to residents and constant maintenance of infrastructure for service deliver. Moreover municipal authorities should ask for interventions from other provincial governments if they lack capacity. The inadequacy of water service provision led to violent protests in Khunwana like in many municipalities in the country. The boycotting of payments by consumers rose as they are frustrated because of not receiving services that they have paid. SIBU's decision to withhold municipal rates and fees came after several attempts to communicate with Tswaing's municipal council about the quality of water, faulty sewage system, incorrect municipal accounts and corruption within the local municipality. However, their attempts were simply ignored by the municipal council. This is another breach of the constitution. A temporary solution was sought by a community association, SIBU. For the time that it was allowed, it rendered water to the community without fail. If such a small organisation could do this, it boggles the mind that a government entity could fail. It is for this reason that community members concluded that mismanagement of funds and corruption prevent them from performing such duties. Of course, the municipal authority's explanation is that it had a financial crisis. Be that as it may, they managed to fight this intervening community organisation through legal battles, which cost thousands of rand. This is the money that could have been invested in ensuring that the community enjoys its constitutional rights.

A factor in successful institutions is the role played by the leaders and this is equally important in local government. It is clear that both municipalities are failing to adhere to the regulations made on the service level agreement that they agreed upon and this is affecting service delivery. This suggests that the roles and responsibilities of the different stakeholders that are responsible for water supply are not clear to the community. The confusion that the community has over the responsibilities of the district and local municipal authorities can be attributed to poor communication and information sharing between the relevant stakeholders. This means that the municipal authorities along with the ward councillor are not doing their duty of involving and informing community members about their new developments and decisions which affects them.

Much of the infrastructure under the municipal authorities operates above the design capacity whilst the bulk pipeline is both very old and highly infested with illegal connections which

makes it difficult for water to be stored in the reservoir prior to distribution. This is worsened by the lack of infrastructure maintenance. Municipal infrastructure is also damaged by municipal personnel who were hired without relevant skills and qualifications. For instance, borehole operators were not trained on how to operate a borehole, hence they can leave boreholes running for hours. Such acts contribute to the dysfunctionality of municipal infrastructure which affects service delivery.

The inability to mobilise payments from owing consumers also contributes to the decline of the quality of services provided. The municipal authority's failure to collect revenue has created more financial constraints and affected service delivery processes. The situation was worsened by the Covid-19 pandemic as most people lost their jobs. Unemployment poses a problem to consumers as they further live below the poverty line, thus finding it difficult to pay for the municipal services rendered. However, the study also established that some consumers have stopped paying their municipal bills due to not receiving their municipal accounts. Study findings also outlined that those rural dwellers do not pay municipal services, this includes those who can actually afford to pay for such services. Such people, especially those who run businesses in rural areas, should also pay for municipal services as they do not live below the poverty line.

For an upgrade and replacement of old water infrastructure to take place, more funds are required, however, it is very unfortunate to note that Tswaing Local Municipality does not have proper financial management. This is proved by constant workers protests due to the municipality's inability to pay its employee salaries and also pay its service providers such as Sedibeng water. The local municipal authority also provides false information on their documents as the study findings revealed that they always include a budget for infrastructure maintenance, while it is never available when it is needed. This means that Tswaing's Integrated Development Plans should be questioned as it provides false information which is also misleading to the public. The failure of the municipal council to take accountability and their financial acts of misconduct have dire consequences as they affect the already struggling service delivery processes within the municipality.

The fact that unsafe sources still form a large portion of the community's water sources, is an indication of the municipal authorities' failure to provide quality water to Khunwana villagers. The use of different sources of water is therefore a coping mechanism to mitigate the failure of the municipal authorities to provide adequate water. It has become clear that Tswaing and

Ngaka Modiri Molema municipal authorities are not fulfilling their duties of providing water sustainably to communities. It remains a grave shortcoming that rural communities drink water while risking contracting diseases and others do not even have access to water services at all. The reason for this is not only the scarcity of water, but also the lack of social and political commitment as well as the capacity of the municipalities to meet the basic needs of the people.

The Water Service Act 108 of 1996 stipulates that everyone has the right to basic water supply. This basic water is defined as the “prescribed minimum of water supply services needed for reliable supply of a sufficient quantity and quality of water both to formal and informal households, to support life and personal hygiene. Moreover, Section 27 (2) of the Constitution provides that the state must take reasonable legislative and other measures within its available resources to achieve the progressive realisation of this right. From the findings of the study, while great strides have been made in bringing basic services such as water to communities, villagers of Khunwana still do not have access to sufficient water. This means that they are being deprived of their constitutional right. Therefore, it is imperative for the municipalities to consider the recommendations of this study.

#### **5.4 Recommendations**

To work efficiently on its budget, the Tswaing Local Municipality must prioritise basic social services such as water to work within their allocated budget. They also need to apply appropriate financial management practices. The municipality should also invest in their own resources so that they can stop hiring private companies to perform municipal tasks. Laws such as the Public Finance Management Act (PFMA) and Municipal Finance Management Act (MFMA) which aim at promoting proper management of finances, transparency and accountability should be enforced in both the district and local municipal authorities.

Having the right people in the right positions at the right time increases the smooth flow of service delivery. Therefore, this study recommends that both the district and local municipal authorities should ensure that their employees undergo training and are mentored to become better qualified and skilled candidates, especially those who occupy strategic and critical positions. Technical and administrative service departmental officials must undergo proper professional development to ensure that they are equipped with relevant skills and knowledge. Appointments must also be merit-based.

The management of infrastructure requires consistent operational oversight and maintenance of completed infrastructure. A standardised method of monitoring existing infrastructure with

the aim of either repairing or replacing needs to be adopted by the municipal authorities. This requires that the infrastructure be assessed regularly in line with the maintenance plan to keep it in good shape and form. Every ward or village must be equipped with a workshop where all the spares and materials are kept to facilitate repairs and maintenance of the water infrastructure. On top of this, there is a need to extend the infrastructure to meet the growing demand. This will reduce the inconvenience of travelling long distances that rural dwellers must endure when accessing water.

Community members need to be educated about the necessity to save water. They must be informed of the damages caused by illegal connections and the harm it causes at the economic, health and infrastructural level. Illegal tap connection must be addressed as a crime and not as a norm.

The current temporary water tinkering system should be serviced on a 24-hour basis so that community members cannot be without this basic need. The local municipal authority has to increase the number of tanks that supply the community with water and priority must be given to sections which do not have any source of water nearby. This is because the system that is currently being used is uncoordinated and disorganised, which denies the community access to water. As stipulated in the Water Service Act of 1997, the minimum for basic water supply is 25 litres per individual daily or 6 kilolitres per household per month, at a minimum rate of not less than 10 minutes and must be within 200 metres of a household. Therefore, the local municipal authority has to ensure that their solutions are adequate for the number of people living in Khunwana village, their average consumption and usage pattern.

There is a need to consider introducing payment for water received from the municipal authority so that the service can be available on a continuous basis. This can be done in accordance with the indigent policy. A special rate billing system may also be introduced for the businesses and farms. The collected revenue must be used to pay the service providers without fail.

The municipal authority should consider establishing a Consumer Management office or call centre that deals with consumer queries. Weekly or monthly reports of queries and how they were resolved needs to be collated to ensure accountability by the relevant officials.

In terms of incorrect municipal accounts which encourage non-payment of municipal rates, the study recommends that the local municipal authority should ensure that meter reading is done consistently and in a transparent manner. If the integrity of the meters is questionable,

consumers become reluctant to pay which results in low income for the municipal authority, thus triggering failure to render quality services in a consistent manner.

Once the new system is up and running, the local municipal authority must encourage a culture of payment for services. They must issue correct statements timeously and also ensure that municipal debts are collected within the stipulated time according to financial legislation. Community members need to be educated about the importance of paying municipal services and how this contributes to effective service delivery.

A key part of the municipality's annual plans should be how to communicate and involve community members in decisions that involve the developments in their areas. The municipal authorities must develop a public participation and communication strategy in order to keep the community updated at all times.

In terms of sharing responsibilities between the district and local municipal authorities, the study recommends that both NMMDM and TLM should review the service level agreement of rural water provision. It should have clearly defined roles of each stakeholder and dispute resolution mechanism in line with the local government framework. This requires open conversations with all affected parties.

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## Annexure A: Ethical Clearance Certificate



Private Bag X6001, Potchefstroom  
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Tel: 018 299-1111/2222  
Web: <http://www.nwu.ac.za>  
**Basic and Social Science Research Ethics Committee (BaSSREC)**

**Faculty of Humanities**  
Tel: 018 299 1586  
Email: [21081719@nwu.ac.za](mailto:21081719@nwu.ac.za)

<https://humanities.nwu.ac.za/basic-and-social-sciences-research-ethics-committee-bassrec>

2 November 2022

### APPROVAL FOR CONTINUATION OF THE RESEARCH STUDY

**Ethics number:** NWU-00662-21-A7

**Study title:** An exploration of the water crisis in tswaing local municipality south africa: a study of khunwana village.

**Study leader/supervisor:** Dr M.P Molohe & Dr S Tanyanyiwa

**Student:** NC Liphoko (24428353)

**Application type:** Single Study

**Risk level:** Low

Dear researcher

You are kindly informed that this application was reviewed for monitoring at the meeting of the North-West University Basic and Social Science Research Ethics Committee (BaSSREC), Faculty of Humanities, North-West University, held on **2/11/2022** Following the review of the application, it has been decided that the study is approved for continuation.

Suspension	
Continuation	X
Termination	

**Approval date:** 2/11/2022

**Expiry date:** 2/11/2023

If you have any questions or need further assistance, please contact BaSSREC.

Yours sincerely

A handwritten signature in black ink, appearing to be 'M. Molohe', is written over a horizontal line.

Professor Erhabor Idemudia Chairperson: NWU-BaSSREC

Current details: (23239522) G:\My Drive\9. Research and Postgraduate Education\9.1.5.3 Letters Templates\9.1.5.3.6\_Gatekeepers\_Letter\_HREC.docm  
30 April 2018

File reference: 9.1.5.3.6

## Annexure B: Informed Consent Form



Private Bag X1290, Potchefstroom  
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Tel: 018 299-1111/2222  
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Date: .....

**BaSSREC Authorization**

Prof Jacques Rothmann Digitally signed by Prof Jacques Rothmann  
Date: 2021.07.06 15:27:08 +02'00'

**Approved 6 July 2021**

### PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

**TITLE OF THE RESEARCH PROJECT:**

**AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY SOUTH AFRICA: THE STUDY OF KHUNWANA VILLAGE.**

**ETHICS NUMBER: NWU-00662-21-A7**

**PRINCIPAL INVESTIGATOR: NTHABISENG LIPHOKO**

**ADDRESS: 10224 LEKOKO VILLAGE, MAFIKENG 2745**

**CONTACT NUMBER: 060 412 1080/ email address [nthabibliphoko@gmail.com](mailto:nthabibliphoko@gmail.com)**

You are being invited to take part in a research project which forms part of my Master of Social Science in Development Studies qualification in the faculty of Humanities at the North-West University Mafikeng Campus.

Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part. Prior to publication of the study's results (or the point that publication is in process), you may also withdraw the data you generate.

This study has been approved by the **Basic Social Sciences Research Ethics Committee (BaSSREC) of the Faculty of Humanities of the North-West University (NWU-00662-21-A7)** and will be conducted according to the ethical guidelines and principles of the international Singapore Statement on Research Integrity (2010) and the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records to make sure that we (the researchers) are conducting research in an ethical manner.

**What is this research study all about?**

This study will be conducted by Nthabiseng Liphoko, a researcher trained to use the data collection methods below. The study intends to explore the extent of the water crisis in Tswaing Local Municipality which falls under the Ngaka Modiri Molema District Municipality. For the purpose of this study, Khunwana village will be used as the study area. Moreover, it intends to provide recommendations or alternative measures which can be used to solve the water crisis in Tswaing Local Municipality.

This study will involve one-on-one structured interviews and the administration of a questionnaire comprising open-ended questions. This study will involve five purposively selected key informants and twenty community members from Khunwana village.

Therefore, you are requested to be part of this study by participating in a structured interview or filling a questionnaire comprising open ended questions.

*The research questions of this research are:*

- What are the possible causes of the water crisis in Khunwana village?
- What are the challenges faced by the Tswaing Local Municipality in the provision of water in Khunwana village?
- Are the municipal interventions employed to resolve the water crisis in Khunwana village effective?

**Why have you been invited to participate?**

- You have been invited to participate in this study because you were identified as a key informant and community member who have knowledge about the water crisis in Tswaing Local Municipality.
- However, you may withdraw from participating should you feel uncomfortable with the questions asked.
- You will be excluded if: You are under the age of 18 and d. Or you do not wish to participate in the study.

**What will your responsibilities be?**

- You will be invited to complete a questionnaire or participate in a one-on one interview session with the researcher. These activities will be once-off, thus, there will not be any follow-up interviews or questions.
- Both these activities will take approximately 30-45 minutes. The questions will be asked based on your knowledge and experiences in relation to water crisis in Tswaing Local Municipality.

**Will you benefit from taking part in this research?**

- The direct benefit for you as a participant includes voicing your thoughts and concerns regarding the water crisis in Tswaing Local Municipality.
- The indirect benefits include: Participants will get an understanding of the root causes and challenges of the water crisis and this study will also add to the body of knowledge relating to the water crisis in Tswaing Local Municipality.

**Are there risks involved in your taking part in this research and how will these be managed?**

The risks in this study, and how these will be managed, are summarised in the table below:

Probable/possible risks/discomforts	Strategies to minimize risk/discomfort
Due to covid-19, there might be a risk of possible infection among the researcher and the participants.	<ul style="list-style-type: none"> <li>• The health and safety of participants will be of the utmost importance. The researcher will inform participants about the importance of practicing physical distancing and pharmaceutical hygiene measures during data collection.</li> <li>• Physical distancing will be practiced by ensuring that the one-and-a-half-meter rule is observed at all times.</li> <li>• The researcher will ask all participants to wear three-ply masks during interviews, including when completing the questionnaire with community members of Khunwana village. If a participant does not have a mask, the researcher will provide it for them at no cost.</li> <li>• Strict hand hygiene will also be practiced by sanitizing the participants' hands at an interval of 10 minutes in the case of questionnaire administration and 15 minutes in the case of interviews.</li> <li>• All the devices will be sanitised before and after an interview or completion of the questionnaire. The researcher will keep a list of everyone she meets with for tracing purposes.</li> </ul>
Disclosure of names, or information which may harm participants or ruin their reputation.	<ul style="list-style-type: none"> <li>• Pseudo names will be used to avoid violating the participants' rights to privacy and this will ensure that the principle of anonymity is observed. The pseudo names will be provided by the researcher.</li> <li>• Participants will not be forced to participate in the study and they may withdraw anytime should they feel uncomfortable with the questions asked.</li> </ul>

- *However, we do believe that the benefits to you and to science (as noted in the previous section) outweigh the risks we have listed. If you disagree, then please feel free not to participate in this study. We will respect your decision.*
- *Should we learn, in the course of the research, that someone is harming you, or that you are intending to harm someone, then we must tell someone who can help you/warn the person you are intending to harm.*

**Who will have access to the data?**

- The data will only be accessible to the researcher. All your information, especially sensitive and personal information will be protected and only be available to the researcher. The information collected through interviews will be stored in the researcher's personal laptop

with a strong password. For the questionnaire, all the hardcopy data will be stored in a lockable cabinet in the privacy of the researcher's home.

- The primary way that researchers seek to protect participants from the accidental breaking of confidentiality is through the process of anonymization – this means that the researcher will provide every participant with a fictitious name, or so-called pseudonyms. Pseudo names will be used to avoid violating your right to privacy (e.g., Participant 1 will be used instead of your actual name). Those pseudo names will be assigned by the researcher.
- For confidentiality purposes, the interviews will be conducted in a boardroom or office with one interviewee at a time. Only the researcher and the participant will be in such a room during the course of the interview. With respect to the questionnaire, participants will be requested that the researcher should administer it in their presence, in a private space in their household.

#### **What will happen to the data?**

This is a once-off study and the data collected through it will not be re-used for any other project. The results of the study will be reported in a chapter four of the research and it will be strictly for academic purposes. In all of this reporting, you will not be personally identified. This means that the reporting will not include your name or any information that will help others know that you participated. This information will also be kept for five years as is prerequisite by the NWU research policy.

#### **Will you be paid/compensated to take part in this study and are there any costs involved?**

Participation is voluntary, therefore, there will be no compensation for participating in the study.

#### **How will you know about the findings?**

The researcher will arrange meetings with the different categories of the participants to share the results with them. For community members, the researcher will approach the tribal authority to arrange a community meeting in order to share the findings with community members.

#### **Is there anything else that you should know or do?**

- You can contact the researcher, **Nthabiseng Liphoko** at 060 412 1080 or [nthabibliphoko@gmail.com](mailto:nthabibliphoko@gmail.com) if you have any further queries or encounter any problems.
- You can contact the chair of the Basic Social Sciences Research Ethics Committee (Prof Jacques Rothmann) at 018 299 1595 or [21081719@nwu.ac.za](mailto:21081719@nwu.ac.za) if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

**Declaration by participant**

By signing below, I \_\_\_\_\_ agree to take part in a research study entitled: **“AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY SOUTH AFRICA: THE STUDY OF KHUNWANA VILLAGE”**.

I declare that:

- I have read and understood this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher (if this is a different person), and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I understand that what I contribute (what I report/say/write/draw/produce visually) could be reproduced publically and/or quoted, but without reference to my personal identity.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (place) \_\_\_\_\_ on (date) \_\_\_\_\_ 20 \_\_\_\_\_

\_\_\_\_\_  
**Signature of participant**

\_\_\_\_\_  
**Signature of witness**

- You may contact me again  Yes  No
- I would like a summary of the findings of this research  Yes  No
- I would like feedback on my functioning/wellbeing as reflected in the questionnaires I completed  Yes  No

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

In case the above details change, please contact the following person who knows me well and who does not live with me and who will help you to contact me:

Name & Surname: \_\_\_\_\_

Phone/ Cell Phone Number /Email: \_\_\_\_\_

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**Declaration by person obtaining consent**

I \_\_\_\_\_ declare that:

- I explained the information in this document to \_\_\_\_\_
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (place) \_\_\_\_\_ on (date) \_\_\_\_\_ 20 \_\_\_\_

---

**Signature of person obtaining consent**

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**Signature of witness**

**Declaration by researcher**

I \_\_\_\_\_ declare that:

- I explained the information in this document to \_\_\_\_\_
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (place) \_\_\_\_\_ on (date) \_\_\_\_\_ 20 \_\_\_\_\_

\_\_\_\_\_  
**Signature of researcher**

\_\_\_\_\_  
**Signature of witness**

\_\_\_\_\_

**Declaration by researcher and participant**

**Personal face-to-face interviews during Covid-19 restrictions**

**Additional declaration by participant in those instances where the participant requests to participate in a personal face-to-face semi-structured interview:**

By signing below, I \_\_\_\_\_, acknowledge the following information related to the required measures regarding Covid-19:

I declare that:

- It is my personal choice and preference to participate in a personal face-to-face semi-structured interview with the researcher.
- This requires that I consent to the following strict measures to safeguard the personal health and safety of myself and that of the researcher/interviewer/primary investigator:
  - I consent to the researcher taking my temperature before the interview using a thermometer.  **Yes**  **No**
  - I confirm that my temperature measured at \_\_\_\_\_ degrees.  **Yes**  **No**
  - I consent to use the three-ply mask provided by the researcher.  **Yes**  **No**
  - I consent to wear the three-ply mask for the full duration of the interview.  **Yes**  **No**
  - I consent to the researcher sanitising the interview context using a sanitiser with an 80% alcohol content before the commencement of the interview.  **Yes**  **No**
  - I consent to the researcher using a sanitiser with an 80% alcohol content before and during the interview if required.  **Yes**  **No**

Signed at (*place*) \_\_\_\_\_ on (*date*) \_\_\_\_\_ 20 \_\_\_\_

\_\_\_\_\_  
**Signature of participant**

\_\_\_\_\_  
**Signature of researcher**

**BaSSREC Authorization**

**FOMO YA TUMALANO YA BOTSAYA KAROLO**

**SETLHOGO SA PATLISISO:**

**AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL  
MUNICIPALITY SOUTH AFRICA: THE STUDY OF KHUNWANA VILLAGE.**

**REFERENCE NUMBERS: 24428353**

**MMATLISISI MOGOLO: NTHABISENG LIPHOKO**

**ATERESE: 10224 LEKOKO VILLAGE, MAFIKENG 2745**

**NOMORE YA MOGALA: 060 412 1080/ email [nthabibliphoko@gmail.com](mailto:nthabibliphoko@gmail.com)**

O lalediwa go tsaya karolo mo projekeng ya patlisisong ya moithuti wa thuto e kgolwane (Master of Social Science in Development Studies) wa setheo sa NWU Khamphase ya Mafikeng, ka fa tlase ga botsamaisi jwa legoro la Humanities.

O gakololwa ka tseetswee go tsaya nako go buisa le go tlhaloganya tshedimosetso ka ga projeke e. tshedimosetso ka ga patlisiso eno e tla tlhagisiwa, mme dintlha ka botlalo di tla neelwa ka ga patlisiso eno. O kopiwa go botsa mmatlisisi dipotso le dintlha tsotlhe tse o ka tswang o sa di tlhaloganye ka ga patlisiso eno. Go botlhokwa thata gore o tlhaloganye mme ebile o tshwanetse go nametsega/kgotsofalela ditlhaloso/ dintlha tsotlhe ka ga patlisiso eno le ka ga botsaya karolo jwa gago mo patlisisong eno. Gakologeelwa, botsaya karolo jwa gago

mo projekeng eno ke boithaopi. Gape go botlhokwa go tshaloganya gore ga osa batle go tsaya karolo mo patlisisong eno o ka ikogela morago. Go ikogela morago ga gago mo patlisisong eno ga gona go nna le ditlamorago dipe leeseng tota. Fa o dumela go tsaya karolo mo patlisisong mme mo gare ga yone obe o batla go ikogela morago, o letlesegile go dira jalo ka bongwe fela jwa pelo. Le fa o tsere karolo mo patlisisong eno mme ere morago o batle go gogela dikarabo ta gago morago o letleletswe go dira jalo pele ga gore dipelo tsa patlisiso eno di phasaladiwe.

Patlisiso eno e amogetswe le go dumelelwa ke komiti ya tsa melao le tolamo mo patlisisong eleng **Basic Social Sciences Research Ethics Committee (BaSSREC)** mo botsamaising jwa **Legoro la Humanities jwa Univesithi ya Bokone Bophirima**. Patlisiso eno e tlike go tsamaisiwa go itshekegilwe ka melawana ya dipatlisiso ya khasele international Singapore Statement on Research Integrity (2010) and the ethical guidelines of the National Health Research Ethics Council. Mmatlisisi mogolo wa projeke eno a ka tlotlhomisiwa le go botsolotswa ke Makala go tswa kwa komiting ya Basrec go sekaseka fa mmatlisisi a dira patlisiso ka tsela ee maleba ka fa tolamong le tshiamong ya melawana ya patlisiso.

#### **Patlisiso eno e ka ga eng?**

Patlisiso e , e dirwa ke Nthabiseng Liphoko, mmatlisisi o o katisitsweng go dirisa mekgwa ya go kokoanya tshedimosetso e e fa tlase. Maitlhomho a patlisiso eno ke go itse ka ga dikgwetlo tsa metsi mo mmasepaleng wa selegae wa Tswaing e e welang ka fa tlase ga mmasepala mogolo wa Ngaka Modiri Molema. Motse wa Khunwana ke one o o tla dirisiwang go emela mmasepala selegae wa Tswaing mo patlisisong eno. Maikalelo magolo a patlisiso eno a akaretsa go matlhale le ditsela tse mmasepala wa Tswaing o ka di dirisang go itebaganya le dikgwetlo tseno tsa metsi le tharabollo go mathata ano a metsi. Go kokoanya tshedimosetso ka ga patlisiso eno, mmatlisisi o tla botsa dipotso tse a di baakantseng ka bongwe ka bongwe go batho ba a tla beng a ba botsa tsona. Mmatlisisi o tla thusa babodiwa ka khweshineye. A botsa aba ba Patlisiso e tla akaretsa batho bale barataro go tswa kwa mmasepaleng gammogo le baagi ba motse wa khunwana bale someamabedi.

Ka jalo, o kopiwa go tsaya karolo mo patlisisong eno ka go araba dippotso tse o tla di bodiawang ke mmatlisising kana go tlatsa khwesheniye ya dipotso tse di buleging gore motsaya karolo a kgone go ntsha maikutlo a gagwe sentle.

**Dipotso tsa patlisiso eno di eme jaana:**

- Sebakwa sa go tlhabela ga metsi mo motseng wa Khunwana ke efe?
- Ke dikgwetlo dife tsa metsi tse mmasepala wa Tswaing o nang le tsone mo go tsamaiseng metsi mo baaging ba motse wa Khunwana?
- A gona le se mmasepala o se dirang go sekaseka dikgwetlo tsa metsi mo motseng wa Khunwana?

**Goring o lalediwa go tsaya karolo?**

**O tlhopilwe go tsaya karolo mo patlisisong gonne o na le kitso ka ga dikgwetlo tsa metsi kgotsa tlhalelo ya metsi mo mmasepapeleng wa selegae wa Tswaing. Le fa go ntse jalo, o na le tetla ya go ikgogela morago mo go bodiweng dipotso fa osa ikutlwe sentle ka dipotso tse mmatlisisi a tla di botsang mabapi le tlhalelo ya metsi.**

- **Ga ona go dumelelwa go tsaya karolo mo patlisisong fa:...**
- Ole kafa tlase ga dingwaga dile 18 kgotsa o sa dumalane go tsaya karolo mo patlisisong eno. You are under the age of 18. Or you do not wish to participate in the study.

**Maikarabelo a gago ke afe?**

Mmatlisisi o solofela gore o tla araba dipotso ka mkgwa wa go kgwala kgotsa go kgwaritsa karabo ee maleba mo khwesheneireng kgotsa go tsaya karolo mo go bodiweng dipotso ke mmatlisisi gangwe fela. Seno se ka tsaya sebaka sa metsotso ele 30-45. Diotso di tla bodiwa mabapi le kitso ya gago le maitemogelo a gago a go tlhabela ga metsi mo mmasepaleng wa selegae wa Tswaing.

**O ka solofela dipoelo dife ka go tsaya karolo mo patlisisong eno?**

Dipoelo tse di malebana le batsaya karolo mo patlisisong eno di akaretsa go buwa maikutlo le ditlitlebo tsa bone ka tsa tlhalelo ya metsi mo mmasepaleng selegae wa Tswaing. Dipoelo tse di sa lebaganang batsaya karolo ke gore ba tla kgona go tlhaloganya se tota se bakang dikgwetlo tsa metsi gammogo le tlhalelo ya metsi. Patlisiso e, e tlile go nna le boleng mo kitsong mabapi le tlhalelo ya metsi goakaretsa dibakwa tsa dikgwetlo tsa metsi ka go farologana mo mmasepala selegaeng wa Tswaing.

**A gona le matshosetsi mo go tseyeng karolo mo patlisisong eno? mme matshosetsi ano a ka isiwa tlase jang?**

Matshosetsi a a ka nnang teng fa patlisiso eno e dirwa le gore a ka tilwa jang a thadisitswe le go shobolokiwa fa tlase: :

<p><b>Kgonagalo</b> <b>Probable/possible</b> <b>risks/discomforts</b></p>	<p><b>Se se ka dirwang go fedisa matshosetsi</b></p>
<p>Due to covid-19, there might be a risk of possible infection among the researcher and the participants. Go na le kgonagalo ya gore motsayakarolo gammogo le mmatlisisi mogolo ba ka tswaetsega ka mogare wa covid-19.</p>	<ul style="list-style-type: none"> <li>• Tsa pholo ya batsayakarolo e botlhokwa thata, ka jalo, mmatlisisi o tlabe a ela tlhoko maperego aa beilweng ke puso mabapi le mogare wa covid-19 jaaka go katologana, le go tlhapa matsogo kgapetsakgapetsa. Mmatlisisi ee tla tlhalosetsa batsaya karolo ka ga seno le go se diragatsa e bone ka nako ya fa a tlabe a kokoanya tshedimisetso mo patlisisong.</li> <li>• Katologano e tla diragadiwa ka go netefatsa gore sekgala magareng ga batsayakarolo ke dimmitara dile 1.5.</li> <li>• Mmatlisisi o tla kopa batsaya karolo go rwala sethiba molomo le nko (mask) ka nako ya fa a tlabe a ba botsa dipotso, go akaretsa le baagi ba Khunwana fa ba tlabe ba tlatsa khweshiniye. Fa motsaya karoloa sena mask, mmatlisisi o tla mo fa one ntle le tefo epe.</li> <li>• Go tlhapa kana go itlotsa sanitizer mo diatleng le gona go tla diragadiwa. Batsaya karolo b aba tlabeng ba tlatsa khweshiniye ba tla tlodiwa sanitizer kgapetsakgapetsa morago ga metsotso ele 10 fa ba ba tla bodiwang dipotso ka molomo bone bat la tlodiwa sanitizer kgapetsa morago ga metsotso ele 15.</li> <li>• Didiriswa tsotlhe di tla tlodiwa sanitizer pele le morago ga mmotsolotso kgotsa pele le morago ga go tlatsa khweshiniye. Mmatlisisi o tla kwadisa maina a batsaya karolo botlhe gore a kgone go sala motlhala wa bone</li> </ul>

	<p>morago fa go ka tlhokega gore a ba bolelele gore ba itlholele mogare. All the devices will be sanitised before and after an interview or completion of the questionnaire. The researcher will keep a list of everyone she meets with for tracing purposes.</p>
<p>Phasalaso ya maina a batsaya karolo e ka tloga ya senya batsaya karolo semelo le go ba tsenya mo mathateng.</p>	<ul style="list-style-type: none"> <li>• Maina a e seng a nnete a tla dirisiwa boemong jwa maina a batsaya karolo. Seno se direlwa go efoga go gatakaka ditshwanelo tsa go nna le sephiri ga batsaya karolo. Seno se tla thusa gape go dira batsaya karolo bothokaina. Maiina ano a eseng a nnete a tla tlangwa ke mmatlisisi.</li> <li>• Batsaya karolo ga bana go patelediwa go tsaya karolo mo patlisisong ebile ba ka ikogela morago nako nngwe le nngwe e ba tla beng ba sa ikutlwe ba gololesegile go araba dipotso tsa mmatlisisi.</li> </ul>

- Mmatlisisi o dumela gore matshosetsi a patlisiso eno ga se aa kalo gona le dikuno tsa yone. Mme fa wena o sa dumalane le se, ka tsweetswee lotologa mme o se dumalane go tsaya karolo mo papatlisiso eno. Mmatlisisi o tla tlotla le go amogela tshwetso ya gago. di feta ka maatla However, we do believe that the benefits to you and to science (as noted in the previous section) outweigh the risks we have listed. If you disagree, then please feel free not to participate in this study. We will respect your decision.
- Fa mmatlisisi a ka itemogela go utlwiwa bothoko ga mongwe ke ba bangwe kgotsa fa wena motsaya karolo o ka utlwiwa mongwe bothoko, mmatlisisi o tla tshwanelwa ke go kopa thuso gongwe gore ope a seka a utlwiwa bothoko.

**Ke mang oo tla fitlhelang tshedimotso? Who will have access to the data?**

Tshedimotso e tla fitlhelwa ke mmatlisisi fela a le nosi. Tshedimotso e tshwana le maina a batsaya karolo le maikutlo a bone ka ga tlhalelo ya metsi, a tla be a sireletsegile ebile a itsiwe fela ke mmatlisisi. Tshedimotso e mmatlisisi o tla beng a e bone go tswa mo batsaya karolong, e tla bewa ka manontlhotlho mo khomputareng ya mmatlisisi e e nang le password e e masisi. Fa ele khweshiniye yone, dipampiri tsotlhe tse di nang le tshedimotso ka ga patlisiso eno di tla bewa mo khabineteng e e lotlelwang mo sephiring kwa legaeng lla mmatlisisi. Ka mantse a mangwe ga gona ope oo tla fitlhelang tshedimotso eno. The primary way that researchers seek to protect participants from the accidental breaking of confidentiality is through the process of anonymization. Pseudo names will be used to avoid violating your right to privacy (e.g., participant 1). Those pseudo names will be assigned by the researcher.

Gore go nne le sephiri, dipotsotso (interviews) di tla tshwarelwa mo boardroom kgotsa kantoro ya mmotsotswa. Go tla tsena mmotsotswa ale mongwe go botsotswa mme morago go latele o mongwe jalo, jalo. Ka jalo, ka nako ya potsotso mo kantorong, go tlabe gole batho ba le babedi eleng mmotsotswa ( interviewee ) le mmatlisisi. Mabapi le khweshiniye, mmatlisisi o tla thusa go buisa le go tlatsa khweshiniye mo sephiring eleng kwa malapeng a batsaya karolo.

**Go tla diragala eng ka tshedimotso? What will happen to the data?**

Patlisiso eno ke ya ka ganwe fela ka jalo tshedimotso ya yooone ga ena go dirisediwa sepe gape ntle fela le yona. Dipholo tsa patlisiso eno di tla dirisediwa fela go kwala chapter ya bone ya patlisiso ya moithuti, dipholo te ga dina go dirisewa sepe fela ntle le tsa thuto. Maina a batsaya karolo ga ana go tlhagelela ka gope mo tokomaneng e e tla kwadiwang ke moithuti. Tshedimotso e tla dula kwa setheong sa thuto e kgolwane dingwaga dile tlhano jaaka ele molao wa NWU research policy.

**A o tla lefiwa go tsaya karolo mo patlisisong? Will you be paid/compensated to take part in this study and are there any costs involved?**

Go tsaya karolo mo patlisisong eno keg a boithaopi, ka jalo ga gona tefo epe e motsaya karolo a tla e bonang go tswa mo patlisisong eno.

**O tla itse jang ka dipelo/ dipholo tsa patlisiso? How will you know about the findings?**

- Mmatlisisi o tla bitsa kopano le batsayakarolo ka go frologana go abelana dipelo tsa patlisiso le bone. Mmatlisisi o tla buisana le ba bogosi go biletsa batsaya karolo ba baagi pitso kwa motseng wa khunwana gore mmatlisisi a ba bolele ka dipelo patlisiso.

**A go sengwe gape se o ka ratang go se itse? Is there anything else that you should know or do?**

- O ka ikgolaganya le mmatlisisi, **Nthabiseng Liphoko** mo nomoreng ya mogala ya 060 412 1080 kgotsa ka email mo [nthabibliphoko@gmail.com](mailto:nthabibliphoko@gmail.com) fa ona le dipotso kgotsa ditlitlebo.
- O ka ikgolaganya gape le modulasetilo wa komiti ya Basic Social Sciences Research Ethics Committee (Dr Jacques Rothmann) mo nomoreng eno ya mogala 018 299 1595 kgotsa email eno [21081719@nwu.ac.za](mailto:21081719@nwu.ac.za) fa ona le dipotso kgotsa matshwenyego a a sa rarabollwang ke mmatlisisi.
- O tla fiwa copy ya fomo eno ya tumalano ya botsayakarolo gore o nne le yone. .

### Maikano ka motsaya karolo

Ka go saena fa tlase, nna \_\_\_\_\_ kea dmela go tsaya karolo mo patlisisong eno.

Ke ikana gore:

- Ke buisitse le go tlhaloganya thedimosetso le gore fomo ya tumalano ya botsaya karolo e kwadilwe ka puo e ke e tlhaloganyang.
- Ke nnile le tshono ya go botsa motho yo o batlnag e tsaya karolo mo patlisisong (fa ele motho o eseng mmatlisisi) kgotsa mmatlisisi dipotso, mme dipotso tsame di arabilwe sentle tsotlhe.
- Kea tlhaloganya gore go tsaya karolo mo patlisisoong eno keg a boithaopi ebile ga kea patelediwa go tsaya karolo.
- Ke tlhaloganya gore se ke se buiwang, ke se kwala, ke se taka, ke se bontsha ka matlho, se ka dirisiwa mo phatlalatseng mme leina la me le sa tsenngwe mo teng.
- Ke ka shwetsa go lesa go tsaaya karolo nako nngwe le nngwe mme ga kena go dirwa sepe mabapi le seo.
- Ke ka kopiwa go lesa go tsaya karolo pele ga patlisiso e fela fa mmatlisisi a bona go ntshiametse kgotsa fa ke sa sale se mmatlisisi a se batlang morago jaaka re dumalane.

Saenilwe kwa (lefelu) \_\_\_\_\_ ka (letlha) \_\_\_\_\_ 20

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### Tshaeno ka motsaya karolo

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### tshaeno ka paki

- O ka ikgolaganya le nna gape  Ee  Nyaya
- Ke ka rata go sobokanyadipoelo patlisiso  Ee  Nyaya
- Ke a rata go bolelelwa gore a go tsaya karolo game go nnile mosola mo patlisisong  Ee  Nyaya

Tsela e e maleba ya go ikgolaganya le nna ke:

Leina le Sefane: \_\_\_\_\_

Aterese ya poso: \_\_\_\_\_

Email: \_\_\_\_\_

Nomere ya kwa tirong : \_\_\_\_\_

Nomere ya Cell Phone : \_\_\_\_\_

Fa go ka direga gore tshedimose tso eno e fetoge, ka tsweetswee ikgolaganye le motho oo latelang o o nkitseng sentle ebile a sa dule le nna o o ka go thusang go ikgolaganya le nna:

Leina le Sefane: \_\_\_\_\_

Nomere ya Cell Phone /Email: \_\_\_\_\_

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**Maikano a motho o o kopang tumalano ya botsaya karolo**

Nna \_\_\_\_\_ ke ikana gore:

- Ke tshalositse sotlhe se se mo tokomaneng eno go: \_\_\_\_\_
- Ke mo rotloeditse go botsa dipotso ka be ka tsaya nako e e maleba go araba dipotso tsa gagwe.
- Ke kgotsofalela gore o tshaloganya sentle sengwe le sengwe se se mabapi le patlisiso eno jaaka go kailwe fa godingwana
- Ke dirisitse/ ga kea dirisa tolokore.

Saenilwe kwa (lefelu) \_\_\_\_\_ ka (letlha) \_\_\_\_\_ 20

\_\_\_\_\_

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**Tshaeno ka motho oo kopang tumalano  
ya botsaya karolo**

**maikano ka mmatlisisi**

nna \_\_\_\_\_ ke ikana gore:

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**Tshaeno ka paki**

- Ke tshalositse sotlhe se se mo tokomaneng eno go:  
\_\_\_\_\_
- Ke mo rotloeditse go botsa dipotso ka be ka tsaya nako e e maleba go araba dipotso tsa gagwe.
- Ke kgotsofalela gore o tshaloganya sentle sengwe le sengwe se se mabapi le patlisiso eno jaaka go kailwe fa godingwana
- Ke dirisitse/ ga kea dirisa tolokore.

Saenilwe kwa (lefelu) \_\_\_\_\_ ka (letlha) \_\_\_\_\_ 20

\_\_\_\_\_

\_\_\_\_\_  
**Tshaeno ka motsaya mmatlisisi**

\_\_\_\_\_  
**Tshaeno ka paki**

**Maikano ka mmatlisisi le motsaya karolo**

**Mmotsolotso wa bongwe ka bongwe go lebanwe mo matlhong ka nako ya maparego a g  
[Covid-19](#)**

**Maikano a tlatlaletso fa motsaya karolo a batla go tsaya karolo mo mmotsolotsong wa  
bongwe ka bongwe go lebanwe mo matlhong:**

10

Ka go saena fa, nna \_\_\_\_\_, ke ikana gore se se latelang se diragaditswe ele boitshireletsi kgatlhanong le Covid-19:

Ke ikana gore:

- Ke tshwetso yame ya go tsaya karolo mo mmotsolotsoong ono le mmatlisisi.
- Se se batla ke itshekega le melawana e e beetsweng thoko go itshireletsa gatllhanong le mogare ga me/ ga mmotsolotsi/ ga mmatlisisi mogolo.
  
- Ke dumela gore mmatlisisi a ka ntsaya mogote wa mmele ka thermometer pele ga go mpotsolotsa dipotso.  **Ee**  **Nyaya**
- Ke dumalana gore mogote wame wa mmele ke \_\_\_\_\_ degrees.  **ee**  **Nyaya**
- Ke dumela go rwala mask wa three-ply o ke o fiwang ke matlisisi  **ee**  **No**
- Ke dumela go rwala mask wa three-ply go tloga kwa tshimologong go ya kwa bokhutlong jwa mmotsolotso.  **ee**  **Nyaya**
- Ke dumela gore mmatlisisi aka ntlotisa matsogo ka sanitizer e e nang le alcohol content ya 80% pele ga mmotsolotso o tswelela.  **ee**  **Nyaya**
- Ke dumela gore mmatlisisi aka dirisa sanitizer ya alcohol content ya 80% pele le magareng ga mmotsolotso fa go tlhokega.  **ee**  **Nyaya**

Saenilwe kwa (lefelu) \_\_\_\_\_ ka (*letlha*) \_\_\_\_\_ 20

\_\_\_\_\_ **Tshaeno ka motsaya karolo**

\_\_\_\_\_ **tshaeno ka mmatlisisi**

## Annexure C: Interview Guide for Ngaka Modiri Molema District Municipality

North-West University  
Private Bag X 2046  
Dr Albert Luthuli Drive  
Mmabatho  
2735

Dear respondent

I am a masters' student at the North-West University Mafikeng Campus, and I am conducting a research project titled: **AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY: THE CASE OF KHUNWANA VILLAGE.**

The purpose of this study is to assess challenges experienced by both the community of Khunwana village and Tswaing Local Municipality. This research will be guided by the NWU ethics policy. The interview will be conducted within an hour. The interview will be audio recorded for verification of the findings. However, the information which you will provide will be strictly for research purposes and be kept confidential. Your right to privacy will be respected at all times. Please note that participation is voluntary, and you may pull out anytime should you feel the need to. Therefore, you are requested to participate in an interview.

Your willingness to participate in the interview will be highly appreciated.

By signing below, I ..... agree to take part in a research study titled: **An exploration of the water crisis in Tswaing Local Municipality: The case of Khunwana village.**

I declare that:

- I have read and understood this information and consent form, and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I understand that what I contribute (what I report/say/write/draw/produce/visually) could be produced publically and/or quoted, but without reference to my personal identity.

- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I understand that my name and that of my colleagues will not be mentioned during discussions.
- It has been explained to me that raw materials will be kept under lock to ensure confidentiality and information with regard to all the collected material will only be accessible to the researcher.

Signed at (place) ..... on (date) ..... 20.....

**Signature of the participant** .....

- You may contact me again  Yes  No
- I would like a summary of the findings of this research  Yes  No

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

**Declaration by the researcher**

I Nthabiseng Liphoko declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.

Signed at (place) ..... on (date) ..... 20....

**Signature of the researcher** .....

**INTERVIEW QUESTIONS FOR NGAKA MODIRI MOLEMA DISTRICT MUNICIPALITY**

1. What is the main responsibility or the role of Ngaka Modiri Molema District Municipality in terms of water supply?
2. Which policies or regulations guides the district municipality in terms of providing bulk water to its local municipalities?
3. How do you believe the district municipality has been performing in exercising its functions related to water provision?
4. What challenges is Ngaka Modiri Molema District Municipality facing in terms of providing bulk water to its local municipalities? (administrative, structural, finance or funding, infrastructure and political challenges).
5. What are the causes of these challenges?
6. What strategies has the district municipality put in place in order to address these challenges?
7. How effective are these strategies?
8. Do you report any bulk water related challenges to the local municipalities?
9. What are you doing to ensure that you provide local municipalities with bulk water consistently and in line with the needs of the communities?
10. How does water insufficiency affect the livelihoods of the rural communities?

**THANK YOU FOR PARTICIPATING**

## Annexure D: Interview Guide for Tswaing Local Municipality

North-West University  
Private Bag X 2046  
Dr Albert Luthuli Drive  
Mmabatho  
2735

Dear respondent

I am a masters' student at the North-West University Mafikeng Campus, and I am conducting a research project titled: **AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY SOUTH AFRICA: THE CASE OF KHUNWANA VILLAGE.**

The purpose of this study is to assess challenges experienced by both the community of Khunwana village and Tswaing Local Municipality. This research will be guided by the NWU ethics policy. The interview will be conducted within an hour. The interview will be audio recorded for verification of the findings. However, the information which you will provide will be strictly for research purposes and be kept confidential. Your right to privacy will be respected at all times. Please note that participation is voluntary, and you may pull out anytime should you feel the need to. Therefore, you are requested to participate in an interview.

Your willingness to participate in the interview will be highly appreciated.

By signing below, I ..... agree to take part in a research study titled: **An exploration of the water crisis in Tswaing Local Municipality South Africa: The case of Khunwana village.**

I declare that:

- I have read and understood this information and consent form, and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

- I understand that what I contribute (what I report/say/write/draw/produce/visually) could be produced publically and/or quoted, but without reference to my personal identity.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I understand that my name and that of my colleagues will not be mentioned during discussions.
- It has been explained to me that raw materials will be kept under lock to ensure confidentiality and information with regard to all the collected material will only be accessible to the researcher.

Signed at (place) ..... on (date) ..... 20.....

**Signature of the participant** .....

- You may contact me again  Yes  No
- I would like a summary of the findings of this research  Yes  No

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

**Declaration by the researcher**

I Nthabiseng Liphoko declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.

Signed at (place) ..... on (date) ..... 20....

**Signature of the researcher .....**

**INTERVIEW QUESTIONS**

1. What is the main responsibility of the Tswaing Local Municipality in terms of water supply?
2. What is the status of water supply in Tswaing Local Municipality?
3. What is the cause thereof?
4. How would you rate the standard of water supply services rendered by Tswaing Local Municipality?
5. What are the constraints (technical, infrastructure, human resource, stakeholders, finance or funding) that prevent Tswaing Local Municipality to provide adequate water to its communities?
6. Does Tswaing Local Municipality have the capacity to provide water services to its communities?
7. What are some of the strategies that were adopted by the local municipality to resolve the water crisis in Khunwana village and what was the outcome thereof?
8. How sustainable are those strategies?

**THANK YOU FOR PARTICIPATING**

## Annexure E: Interview Guide for Sannieshof Inwoners Belastingbetalers Unie

North-West University  
Private Bag X 2046  
Dr Albert Luthuli Drive  
Mmabatho  
2735

Dear respondent

I am a masters' student at the North-West University Mafikeng Campus, and I am conducting a research project titled: **AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY SOUTH AFRICA: THE CASE OF KHUNWANA VILLAGE.**

The purpose of this study is to assess challenges experienced by both the community of Khunwana village and Tswaing Local Municipality. This research will be guided by the NWU ethics policy. The interview will be conducted within an hour. The interview will be audio recorded for verification of the findings. However, the information which you will provide will be strictly for research purposes and be kept confidential. Your right to privacy will be respected at all times. Please note that participation is voluntary, and you may pull out anytime should you feel the need to. Therefore, you are requested to participate in an interview.

Your willingness to participate in the interview will be highly appreciated.

By signing below, I ..... agree to take part in a research study titled: **An exploration of the water crisis in Tswaing Local Municipality South Africa: The case of Khunwana village.**

I declare that:

- I have read and understood this information and consent form, and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

- I understand that what I contribute (what I report/say/write/draw/produce/visually) could be produced publically and/or quoted, but without reference to my personal identity.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I understand that my name and that of my colleagues will not be mentioned during discussions.
- It has been explained to me that raw materials will be kept under lock to ensure confidentiality and information with regard to all the collected material will only be accessible to the researcher.

Signed at (place) ..... on (date) ..... 20.....

**Signature of the participant** .....

---

- You may contact me again  Yes  No
- I would like a summary of the findings of this research  Yes  No

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

---

**Declaration by the researcher**

I Nthabiseng Liphoko declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.

Signed at (place) ..... on (date) ..... 20....

**Signature of the researcher .....**

**INTERVIEW QUESTIONS**

1. What is the status of water supply in Tswaing Local Municipality?
2. What is the cause thereof?
3. What is your role in the water crisis management?
4. How would you rate the standard of water supply services rendered by the Tswaing Local Municipality?
5. What are the constraints (technical, infrastructure, human resource, stakeholders, finances or funding) that prevent Tswaing Local Municipality to provide adequate water to its communities?
6. Does Tswaing Local Municipality have the capacity to provider water services to its communities?
7. How has your role in the water crisis management contributed to resolving the water crisis?
8. Have your interventions yielded any positive outcomes?
9. Are there any further alternatives to resolve the water crisis?

THANK YOU FOR PARTICIPATING

## Annexure F: Interview Guide for a Ward Councillor

North-West University  
Private Bag X 2046  
Dr Albert Luthuli Drive  
Mmabatho  
2735

Dear respondent

I am a masters' student at the North-West University Mafikeng Campus, and I am conducting a research project titled: **AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY SOUTH AFRICA: THE CASE OF KHUNWANA VILLAGE.**

The purpose of this study is to assess challenges experienced by both the community of Khunwana village and Tswaing Local Municipality. This research will be guided by the NWU ethics policy. The interview will be conducted within an hour. The interview will be audio recorded for verification of the findings. However, the information which you will provide will be strictly for research purposes and be kept confidential. Your right to privacy will be respected at all times. Please note that participation is voluntary, and you may pull out anytime should you feel the need to. Therefore, you are requested to participate in an interview.

Your willingness to participate in the interview will be highly appreciated.

By signing below, I ..... agree to take part in a research study titled: **An exploration of the water crisis in Tswaing Local Municipality South Africa: The case of Khunwana village.**

I declare that:

- I have read and understood this information and consent form, and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

- I understand that what I contribute (what I report/say/write/draw/produce/visually) could be produced publically and/or quoted, but without reference to my personal identity.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I understand that my name and that of my colleagues will not be mentioned during discussions.
- It has been explained to me that raw materials will be kept under lock to ensure confidentiality and information with regard to all the collected material will only be accessible to the researcher.

Signed at (place) ..... on (date) ..... 20.....

**Signature of the participant** .....

---

- You may contact me again  Yes  No
- I would like a summary of the findings of this research  Yes  No

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

---

**Declaration by the researcher**

I Nthabiseng Liphoko declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.

Signed at (place) ..... on (date) ..... 20....

**Signature of the researcher .....**

**INTERVIEW QUESTIONS**

1. What is the status of the water supply in Khunwana village?
2. What is the cause thereof?
3. What role do ward councillors play in water provision processes?
4. How has the water crisis affected the villagers?
5. What are the alternative sources of water and how sustainable are they?
6. How would you rate the standard of water supply services rendered by the Tswaing Local Municipality?
7. What challenges are you aware of that the municipality faces in the provision of water in Khunwana village (technical, administrative, infrastructure, human resource, finances or funding)?
8. What is the contribution of the ward councillors towards resolving the water crisis?
9. Which results has that yielded?
10. How do you engage the municipal council and community members regarding resolving the water crisis?

**THANK YOU FOR PARTICIPATING**

## Annexure G: Interview Guide for one member of the Traditional Council

North-West University  
Private Bag X 2046  
Dr Albert Luthuli Drive  
Mmabatho  
2735

Dear respondent

I am a masters' student at the North-West University Mafikeng Campus, and I am conducting a research project titled: **AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY: THE CASE OF KHUNWANA VILLAGE.**

The purpose of this study is to assess challenges experienced by both the community of Khunwana village and Tswaing Local Municipality. This research will be guided by the NWU ethics policy. The interview will be conducted within an hour. The interview will be audio recorded for verification of the findings. However, the information which you will provide will be strictly for research purposes and be kept confidential. Your right to privacy will be respected at all times. Please note that participation is voluntary, and you may pull out anytime should you feel the need to. Therefore, you are requested to participate in an interview.

Your willingness to participate in the interview will be highly appreciated.

By signing below, I ..... agree to take part in a research study titled: **An exploration of the water crisis in Tswaing Local Municipality: The case of Khunwana village.**

I declare that:

- I have read and understood this information and consent form, and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I understand that what I contribute (what I report/say/write/draw/produce/visually) could be produced publically and/or quoted, but without reference to my personal identity.

- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I understand that my name and that of my colleagues will not be mentioned during discussions.
- It has been explained to me that raw materials will be kept under lock to ensure confidentiality and information with regard to all the collected material will only be accessible to the researcher.

Signed at (place) ..... on (date) ..... 20.....

**Signature of the participant** .....

- You may contact me again  **Yes**  **No**
- I would like a summary of the findings of this research  **Yes**  **No**

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

**Declaration by the researcher**

I Nthabiseng Liphoko declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.

Signed at (place) ..... on (date) ..... 20....

**Signature of the researcher** .....

**Interview questions**

1. What is the status of the water supply in Khunwana village?
2. What is the cause thereof?
3. What role does the traditional council play in water provision processes?
4. How has the water crisis affected the villagers?
5. What are the alternative sources of water and how sustainable are they?
6. What challenges are you aware of that the municipality faces in the provision of water in rural areas?
7. How would you rate the standard of water supply services rendered by the Tswaing Local Municipality?
8. What is the contribution of the traditional authority towards resolving the water crisis?
9. Which results has that yielded?
10. How do you engage the municipal council and community members regarding resolving the water crisis?

How should the water crisis be resolved or managed? Are there any approaches you think should be employed to ensure sustainable water services in Khunwana village?

**THANK YOU FOR PARTICIPATING**

## Annexure H: Questionnaire guide for Community Members

North-West University  
Private Bag X 2046  
Dr Albert Luthuli Drive  
Mmabatho  
2735

Dear respondent

I am a masters' student at the North-West University Mafikeng Campus, and I am conducting a research project titled: **AN EXPLORATION OF THE WATER CRISIS IN TSWAING LOCAL MUNICIPALITY: THE CASE OF KHUNWANA VILLAGE.**

The purpose of this study is to assess challenges experienced by both the community of Khunwana village and Tswaing Local Municipality. This research will be guided by the NWU ethics policy. The information which you will provide will be strictly for research purposes and be kept confidential. Your right to privacy will be respected at all times. Please note that participation is voluntary, and you may pull out anytime should you feel the need to. Therefore, you are requested to participate by filling a questionnaire.

Your willingness to participate in the questionnaire will be highly appreciated.

By signing below, I ..... agree to take part in a research study titled: **An exploration of the water crisis in Tswaing Local Municipality: The case of Khunwana village.**

I declare that:

- I have read and understood this information and consent form, and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions to the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I understand that what I contribute (what I report/say/write/draw/produce/visually) could be produced publically and/or quoted, but without reference to my personal identity.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

- I understand that my name and that of my colleagues will not be mentioned during discussions.
- It has been explained to me that raw materials will be kept under lock to ensure confidentiality and information with regard to all the collected material will only be accessible to the researcher.

Signed at (place) ..... on (date) ..... 20.....

**Signature of the participant .....**

- You may contact me again  Yes  No
- I would like a summary of the findings of this research  Yes  No

The best way to reach me is:

Name & Surname: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_

**Declaration by the researcher**

I Nthabiseng Liphoko declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above.

Signed at (place) ..... on (date) ..... 20....

**Signature of the researcher .....**

**Questionnaire for community members of Khunwana village**

**Biographical information of respondents**

**N.B. (tick the relevant box)**

• **Gender**

Male	
Female	

• **Age of respondents**

18-25	
26-35	
36-45	
46-55	
56-65	
67 and above	

• **How long have you lived in this area?**

Less than a year	
1-5 years	
6-15 years	
Over 15 years	

1. What is the water situation in the village for domestic use?
2. How do community members in your village get access to water for domestic use?
3. What are the water related challenges you are experiencing as a community?
4. How do those affect your life?
5. What caused these water related challenges?
6. What do you do to ensure that you still have water despite the water crisis?

7. To what extent are you satisfied with type of water supply rendered by the Tswaing Local Municipality?
8. What challenges is the municipal council facing in terms of providing you with water?
9. Do you report any water supply infrastructure faults such as leaks to the local municipality, and how long does it take before those leaks or pipes can be fixed?
10. What has the local municipality said about how the water crisis is being addressed?
11. Which alternatives did the municipal authority provide you with to try mitigate the water crisis?
12. How affective are these interventions?
13. What should be done to ensure that there is full service of water provision in Khunwna village?
14. What do you think is your role in resolving the water crisis?

**THANK YOU FOR PARTICIPATING**

## Annexure I: Setswana translated questionnaire

- **Dingwaga tsa baagi**

18-25	
26-35	
36-45	
46-55	
56-65	
67 goya ko godimo	

- **Ke lobaka lo lo kae o nna mo motseng ono?**

Less than a year	
1-5 years	
6-15 years	
Go feta dingwaga di le 15	

1. Boemo jwa tiriso ya metsi mo motseng ke jo bo ntseng jang?
2. Baagi bamo motseng ba fitlhelela jang metsi ao ba a dirisetsang ditlhokego tsa fa lapeng?
3. Ke mathata afe a metsi ao le tshwaraganeng le one jaaka baagi ba mo motseng?
4. Mathata ano a ama jang matshelo a lona?
5. Mathata ano a metsi a tlhodiwa ke eng?
6. Ke eng se ose dirang go netefatsa gore o nna ntse ona le metsi lefa gona le tlhokego ya metsi mo motseng?
7. O kgotsofala gole gokae ka ditirelo tsa metsi ao a reboletwang ke masepala wa selegae wa Tswaing?
8. Ke dikgwetlo dife tseo masepala wa selegae wa Tswaing o itemogelang tsone go rebola bothata jwa tlhokego ya metsi?
9. A o begela masepala wa selegae fa o itemogela mathata ao a amanang le metsi, jaaka go dutla ga dipompo? Mme masepala o tsaya sebaka se se kanakang go ka tsibogela bothata jono?

10. Masepala wa selegae o rileng ka tharabololo ya tlhokego ya metsi?
11. Ke tsela efe eo bolaodi jwa masepala wa legae o tsibogileng go efoga tlhokego ya metsi?
12. Ditsereganyo tseno di nnile le boleng jo bokae?
13. Ke eng se se tla diriwang go netefatsa gore dithebolo tsa metsi di tsamaya sentle mo motseng wa Khunwana?
14. Ke karolo efe e oka e tsayang go rarabolla tlhokego ya metsi?

**KE LEBOGELA BOTSAAKAROLO JWA GAGO**

**Annexure J: Letter of Granted Permission from Ngaka Modiri Molema District Municipality**



**NGAKA MODIRI MOLEMA  
DISTRICT MUNICIPALITY**

Cnr. Carrington Str and 1st Avenue, Industrial Site, Mahikeng, 2745 | Tel: (018) 381 9400|Fax (018) 381 4300  
Private Bag X2167, Mahikeng, 2745| www.nmmdm.gov.za

**OFFICE OF THE MUNICIPAL MANAGER**

**MEMORANDUM**

**TO : NTHABISENG LIPHOKO**

**FROM : THE MUNICIPAL MANAGER**

**DATE : 09 APRIL 2021**

**SUBJECT : RESEARCH: MA DEVELOPMENT STUDIES**

1. Your letter regarding the cited subject matter refers.
2. The Manager responsible for such initiatives has evaluated your request and agreed to it.
3. Of concern to her is the fact that there may be a limitation on data as you peruse Tswaing Local Municipality. Note that NMMDM is a water authority responsible for bulk supply of water and sanitation whereas, Tswaing and other local municipalities within the district reticulates water within their area of jurisdiction.
4. Be that as it may, permission is thus granted and please contact the municipality's Michelle van Rooyen for a possible appointment with the writer hereof. She is reachable at 018-381-9400.
5. It is my wish and trust that the Municipality shall be favoured with your research work once complete.

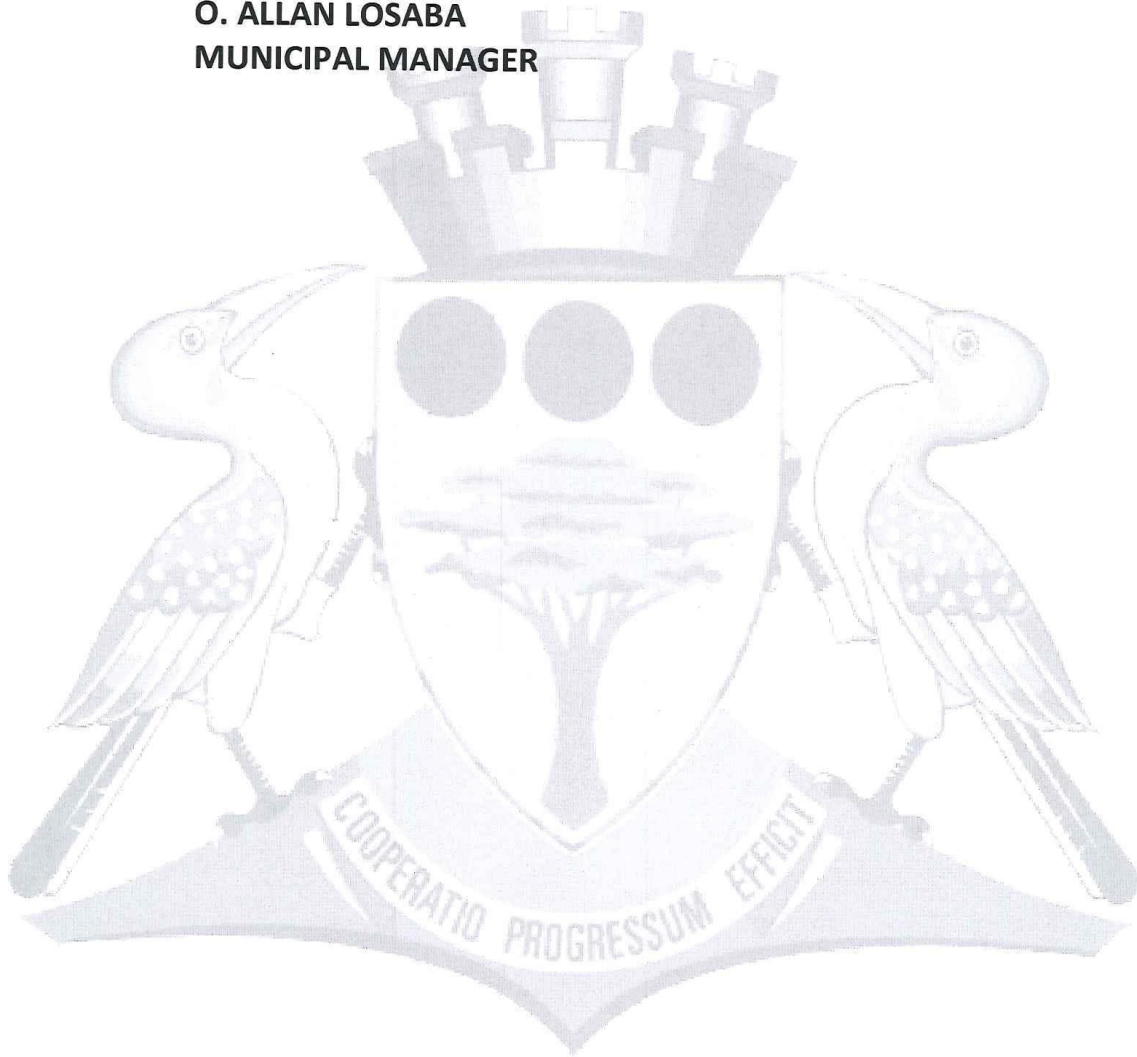
**"Leaders in integrated municipal governance"**

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6. With every good wish.

*Duly Signed*

**O. ALLAN LOSABA  
MUNICIPAL MANAGER**



## Annexure K: Letter of Granted Permission from Tswaing Local Municipality



### TSWAING LOCAL MUNICIPALITY

Corner Government & General De La Rey Streets, Delareyville, 2770  
P.O. Box 24, Delareyville, 2770 | Tel: 053 948 9400  
[www.tswaing.gov.za](http://www.tswaing.gov.za) | email: [corporate@tswaing.gov.za](mailto:corporate@tswaing.gov.za)



Enquiries:  
MG Motsekwa

RefNo:

**MS NTHABISENG LIPHOKO  
NORTH WEST UNIVERSITY  
MAHIKENG CAMPUS**

**08<sup>TH</sup> APRIL 2021**

#### **GRANTED PERMISSION TO CONDUCT RESEARCH**

In reference to the letter dated 19<sup>th</sup> October 2020, that North West University requests our Municipality to give Ms Liphoko Nthabiseng a permission to conduct a research for her Master of Social Science with Development Studies. According to the request the study would be conducted in one of our Wards (Khunwana village) regarding water crisis.

Given the above consideration, the Municipality is hereby authorizing or granting Ms Nthabiseng Liphoko the permission to access information through interviews and questionnaires with relevant officials and MMC.

Hope you find this in order.

Kind regards,

**MANAGER  
MR. MG MOTSEKWA**

06/05/2021  
DATE

**Annexure L: Letter of Granted Permission from Khunwana Village Traditional Council**

**Barolong Boo Ratlou Ba ga Seitshiro**

P.O.Box 998

Khunwana

2748



Tel no: 018 887 0919

Fax no: 018 887 0918

Stand 40225 kgosing section, khunwana

MINA TSEIPI

REF NO: 11/2/110/3/2

ENG! KGOSI M. C MOSHOETE

DATE: 01 FEBRUARY 2021

TO: THE NORTH WEST UNIVERSITY  
MAFIKENG CAMPUS



SUBJECT: PERMISSION TO CONDUCT RESEARCH: MS  
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THE BAROLONG BOO RATLOU BA GA SEITSHIRO, KGOSI AND TRADITIONAL COUNCIL PERMITTED MS LIPHOKO NTRABISENG TO MAKE A RESEARCH IN OUR VILLAGE (KHUNWANA) AND TO FINISH HER MASTER OF SOCIAL SCIENCES.

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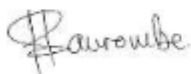
### CERTIFICATE OF EDITING

I, Hazvineyi A. Saurombe, confirm and certify that I have read and edited the entire mini dissertation titled: *An exploration of the water crisis in Tswaing Local Municipality South Africa: A study of Khunwana village* by Nthabiseng Charlotte LIPHOKO, Student number:24428353. This dissertation was presented in partial fulfilment of the requirements for the Master of Social Science degree in Development Studies at the North-West University, Faculty of Humanities in the School of Social Sciences.

Nthabiseng C. LIPHOKO was supervised by Dr M.P Molope.

The views and research procedures detailed and expressed in this dissertation remain those of the scholar.

Yours sincerely,



Dr H. A. Saurombe  
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