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The Downside of Water Service Delivery in the Mnquma Local Municipality, South Africa

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Abstract

South Africa is a semi-arid nation with limited water resources. Municipalities are expected to play a major role in ensuring that there is an adequate water supply in the communities they are serving; however, a significant proportion of municipalities are failing to provide their residents with sufficient water service delivery. The purpose of this study was to empirically investigate the factors that contribute to the failure of water service delivery in the Mnquma Local Municipality. The study was qualitative nature and utilised semi-structured interviews to collect data, which was analysed using thematic analysis. The sample of the study comprised six municipal employees and six residents from different rural areas of the Mnquma Local Municipality. The study found that loadshedding, theft and vandalism, and sand-filled dams were factors that contributed to the failure of water service delivery. Some implications and recommendations are flagged.

Keywords: *Factors, Failure, Infrastructure, Water Service Delivery.*

Introduction

Water is essential for life because it gives humans and animals access to food and drink (Sun & Yaun, 2020). In 1998, the South African government published the White Paper on local governmental domain that engages closely with communities (Masiya et al., 2019). Institutions of local government are assigned to ensure growth and development, to increase community engagement and accountability, as well as the delivery of services and the creation and maintenance of infrastructure that are essential for the wellness of the populace. Through public involvement, local governments have a responsibility to ask residents about the types of services (such as health, water, energy, and sanitation) they need. The Municipal Systems Act 32 of 2000 requires every municipality to prioritise the basic needs of the local community, promote the development of the local community, and ensure that all members of the local community have access to at least the minimum level of basic municipal services (RSA, 2000). Municipalities are expected to play a major role in ensuring that there is an adequate water supply in the communities they are serving. Even though municipalities are expected to provide services to residents, a significant proportion of municipalities are failing to provide their residents with adequate water service delivery, and people rely primarily on unprotected surface water or groundwater for drinking. This study seeks to explore the possible factors that contribute to the failure of water service delivery in the uMnquma Local Municipality (MLM).

Problem Statement

Soboksa et al. (2019) claim that the availability and accessibility of clean water are mostly important for the survival of human beings. However, Maramura (2022) reveals that MLM has poor service delivery, including water service delivery, which has led to service delivery protests in different communities within the local municipality. A local study conducted in Vhemba District Municipality reveals that a significant number of respondents spend a minimum of R101 daily to secure water from alternative sources; individuals in rural homes coping with the water delivery crisis often expend between R10 and R35, or even more, to purchase water from vendors or those with boreholes for survival (Malima et al., 2022). Although many studies have

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explored water service delivery in South Africa, there are a dearth of studies that explore the downside of water service delivery in the MLM in South Africa.

Literature Review

Water Supply

According to Mekeso (2023), water supply refers to the provision of water by government agencies, private businesses, nonprofit organisations, neighbourhood initiatives, or individuals, typically through a network of pumps and pipes. Mekeso (2023) also mentioned that the four main types of water supply systems are used to distribute water to communities, namely radial, gridiron, ring and tree. Water is the essential component of all living things; without it, life cannot exist or even be conceived (Hafeez et al., 2021). These authors further state that it is a fundamental human right and an absolute necessity to have access to clean water. However, 4.2 billion people, or more than half of the world's population, do not have adequate access to water supplies (WHO & UNICEF, 2017). A study conducted by Duressa et al. (2019) shows that more than 60% of communicable diseases in Ethiopia are caused by poor environmental health conditions brought on by unsafe and insufficient water supplies, along with subpar hygiene and sanitation standards. Available data reveal that societies with an adequate supply of drinkable water are always robust and healthy (Nkrumah et al., 2021). There are numerous benefits of improved water supply, including providing residents with a safe and sufficient amount of water. Basic health care in terms of preventing sickness, development of economic activities, and appropriate waste management, collection, and disposal results in an enhanced standard of living .

Water Supply Problems, Particularly in Rural Areas

A local study conducted in Vhemba District Municipality indicates that most respondents spend at least R101 per day to obtain water from alternate sources (Malima et al., 2022). These authors further state that to survive the water delivery crisis, some people from rural homes spend between R10 and R35, or even more, every day to buy water from water vendors or from people who have boreholes. Khabo-Mmekoa and Momba (2019) report that rural residents of Ugu District Municipality in KwaZulu-Natal Province had to walk up to 200 metres from their homes to gather water, typically less than 20 litres, for various needs like drinking, cooking, and washing. This setup limited their water usage and required household members, often women or children, to invest time and energy in water collection, negatively impacting their well-being, productivity, and economic opportunities. Hoffman and Nkadimeng (2016) state that the 2013 Elias Motsoaledi Local Municipality (EMLM) annual report reveals problems with the water supply in the Limpopo province. Furthermore, when there is water available, it is often of unsatisfactory quality, and the residents of Motetema in Limpopo frequently go without water for days at a time.

Similarly, communities in the Eastern Cape province are also facing water shortages or irregular water service delivery, even though large dams in other parts of the country are full. In 2011, Santini's inhabitants in the MLM took matters into their own hands and did what they could to connect to the primary municipal infrastructure to access clean water (Koko, 2022). However, a year later, the MLM severed the connection without giving any explanation for why the water supply was cut off.

Programmes that are available to improve water service delivery

Global Overview

A) *The Matabeleland Zambezi Water Project*

The Matabeleland Zambezi Water Project (MZWP) is a sizable water project in Zimbabwe's Matabeleland North province which seeks to alleviate the ongoing water shortage that affects Bulawayo, Zimbabwe's second-largest city (Johnson, 2021).

B) ONEE Water Supply Project

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The ONEE Water Supply Project is a component of Morocco's National Programme for the Supply of Drinking Water and Irrigation 2020-2027, which seeks to build 120 dams by 2024 (Ahmed, 2022). Ahmed adds that the Casablanca water supply project will ensure the provision of potable water to the southern region of the city by creating a hydraulic link in the north and south of the city to lessen the effects of the water deficit in the OumErRbiaa basin.

South Africa

A) Taung Water Supply Project

The project is one of the Department of Water and Sanitation's (DWS) significant infrastructure initiatives in the North West to create a water infrastructure that would meet community demands and provide water security (DWS, 2021a). The department further states that it is essential to maintain the building of a suitable infrastructure, such as Taung Bulk Water Supply, that can support and supply people in Dr Ruth Segomotsi Mompati District Municipality with reliable, safe water.

B) Highlandspan Water Supply Project

The Highlandspan Water Supply Project in Greater Taung Local Municipality in the North West Province is anticipated to be finished by 31st May 2023 (DWS, 2023). The department further states that Highlandspan's community will have access to fresh water through the Project, which will also help to resolve the region's water problems.

C) The Driefontein Regional Bulk Water Supply Scheme

The uThukela District Municipality in KwaZulu-Natal is using the Driefontein Regional Bulk Water Supply Scheme to increase the supply of potable bulk water, which is well underway (South African Government, 2020). The DWS is the primary funder of the project, which is being carried out by the uThukela District Municipality, and it is expected to ensure the supply of potable bulk water to more than 200 000 residents and roughly 34 000 households in the Emnambithi and Indaka Local municipalities.

Eastern Cape

A) The Umzimvubu Water Project

According to Katume (2022), the overall project entails building the Ntabelanga, Laleni, and Mbokazi dams, which will supply water to residents in the OR Tambo, Joe Gqabi, and Alfred Nzo districts. Along with supplying residential water, the Laleni Dam, which will be built along the Titsa River, will assist with watering programmes and the production of hydroelectric power.

B) Xonxa Water Project

The major goal of this project is to increase Chris Hani District Municipality's present water supply shortage and expand access to desperately needed bulk supply of potable water to impoverished areas inside and around Komani, especially the villages around the Xonxa Dam (DWS, 2021b).

Legislative Framework

Every person has the right to an adequate water supply, as stated in section 27(1)(b) of the Constitution of the Republic of South Africa (RSA, 1996), which is the country's highest legislation (Joubert, 2021). This author further states that access to water is a fundamental human right, guaranteed by the Constitution, and it must be upheld, promoted, and supplied for by the State. The DWS is responsible for leading, regulating, and supporting the South African water industry; it also creates policies and initiatives (Mmbadi, 2019). However, the National Water Act 36 of 1998 and the Water Services Act 108 of 1997 are the two

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pieces of legislation that provide the legal framework for the need to guarantee access to water supply and sanitation services in South Africa.

The goal of the National Water Act 36 of 1998 is to guarantee that South Africa's water resources are safeguarded, utilised, developed, preserved, managed, and controlled (Dinka, 2018). The Water Services Act 108 of 1997 aims to ensure access to essential water supply and sanitation, set national standards and norms for tariffs, establish plans for water services development, regulate water service entities, create and dissolve water boards and committees, monitor water services, offer financial support to water service institutions, grant specific powers to the Minister, establish a national information system, repeal outdated laws, and address related matters (RSA, 1997).

Factors That Contribute to the Failure of Water Service Delivery

A Global Overview

According to Balkhi et al. (2023), in rural and peri-urban regions of India, people primarily rely on unprotected surface water or groundwater for drinking. However, contaminants like pharmaceuticals, personal care products, and pesticides are increasingly entering these water sources. Pandey (2021) reports that urban areas in Nepal are experiencing a significant imbalance between water supply and demand. This growing disparity is the result of rapid urbanisation, increasing population density, and changing lifestyles that favour higher water consumption, all contributing to greater demand for water. Amenfia's (2020) study reveals that the distribution lines were weak and antiquated, which led to significant water loss during distribution in urban areas in Ghana. This promoted the widespread replacement of the distribution lines to enhance the supply of water to metropolitan areas. The study also shows that in urban areas in Ghana, there is a lack of reliable water infrastructure for the residents. Inadequate maintenance has resulted in degraded and damaged water infrastructure in Haiti, creating a major obstacle to the availability of adequate and high-quality drinking water (Preux & Fritz, 2022). In Indonesia, there has been no increase in the proportion of the population with access to piped water, as many individuals continue to rely on polluted water sources, heightening their risk of waterborne diseases like diarrhoea (Al Djono & Daniel, 2022). The primary cause of this issue is a careless approach, ongoing neglect, and insufficient investment in water infrastructure (Daniel et al., 2021).

South Africa

According to Section 27(1)(b) of the South African Constitution (RSA, 1996), every individual is guaranteed the right to adequate, safe, easily accessible, and affordable water for personal and household use. Conversely, Ramadapa's (2021) study reveals that population increase posed a problem to water supply, ageing infrastructure contributed to frequent breakdowns, and inconsistent pipeline monitoring disrupted water supply frequently in the Greater Giyani Local Municipality in Limpopo. The study further indicates that the lack of budget transparency makes long-term planning difficult and that there is a shortage of young people because the majority of the workforce is approaching retirement age. According to Asoba et al. (2020), the deterioration of infrastructure, along with challenges in its maintenance and improvement, has posed significant obstacles to delivering high-quality, safe water and sanitation services in South Africa. The study conducted by Mabizela and Matsiliza (2020) reveals that Maswazini in KwaZulu-Natal Province continues to utilise an outdated system of access to water services and sanitation. Their study further shows a clear absence of review to establish whether employed plans and methods are still useful or whether they require updating and maintenance.

Eastern Cape

According to Fiko et al. (2020), water equity ensures that every individual has fair access to water resources, equal entitlement to their use, and the opportunity to benefit from their use. However, Mbana (2023) reports that access to clean drinking water in the rural areas of Madiba and Nqabeni is hindered by infrastructure issues, institutional challenges, and the misuse or mismanagement of funds, including corruption. Mapeyi's (2023) study shows that Makana Local Municipality in the Eastern Cape province is

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having challenges in providing water services because of the increase in population in the municipal area. The study also indicates that Makana Local Municipality is unable to provide water and sanitation services because there are not enough employees with the necessary training and subject-matter knowledge. As a result, it takes time to fix leaking taps due to a shortage of staff to maintain the water and sanitation infrastructure. Tshona et al. (2025) reveal that limited staffing and funding strain municipalities by leaving positions unfilled and hindering water service delivery in the Amathole District Municipality, while in rural areas, high infrastructure maintenance costs are exacerbated by the involvement of unskilled contractors.

Research and Methodology

The study utilised a qualitative approach that allowed for a detailed, in-depth examination of individuals' experiences, perceptions, motivations, and attitudes, and provided a rich understanding of water challenges in the MLM. It also helped uncover nuances, variations, and diversity in experiences and perspectives, giving a more comprehensive picture of the water delivery challenge at MLM that was under study. The population for this research was the municipal employees and residents of MLM. The municipal employees were chosen as the study population because they were the only ones who had the capacity and could provide relevant information about service delivery in the municipality. A sample size of 12 participants, comprising six municipal employees and six residents, was considered adequate for this study. The study used nonprobability sampling, specifically, purposive sampling, to select participants. The semi-structured interview questions (open-ended) helped the researcher by allowing for in-depth responses and insights from participants on the municipal factors that contribute to the failure of water service delivery at MLM. The open format encouraged participants to give detailed and personalised answers, providing a richer understanding of their perspectives, experiences, and attitudes related to the research topic without being constrained in any way. The open-ended questions enhanced the validity of the study by ensuring that responses were genuine and not biased by predefined answer options, and the researcher was able to ask follow-up questions. Data from the respondents was examined using thematic analysis. The themes and responses were subsequently clustered into similar categories, categorised, and synthesised.

Results

Table 1 shows that ageing infrastructure, resource shortages, theft, vandalism, sand accumulation in dams, and load shedding are factors causing water service failures in the MLM.

Table 1. Analysis of Comments Given by Residents and Employees of the MLM

RESPONSE ANALYSIS SHEET	
Factors that contribute to water service delivery failure	**Comments**
Infrastructure and Resource Challenges	Most employees indicated ageing infrastructure, insufficient chemicals for water purification, a lack of materials and resources, staff shortages, and an unreliable transportation system. Some claimed that these challenges resulted in below-average water service delivery, exacerbated by frequent leaks and unresolved infrastructure issues.
Theft and Vandalism	The majority of participants indicated that vandalism and theft by residents such as stealing tap caps, damaging taps, and destroying infrastructure during strikes, are major factors contributing to the failure of water service delivery in the municipality. They stated that these actions, including the theft of cables and water pumps, lead to frequent interruptions in water supply and worsen service delivery challenges.

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Sand-filled Dam	The majority of employees of the MLM and residents indicated that water service delivery was being hindered by a dam that had become filled with sand. They further revealed that sand accumulation disrupted the water supply, making it difficult to deliver water services.
Loadshedding	Participants identified load shedding as one of the factors contributing to poor water service delivery in the MLM. They shared the same view that load shedding disrupts the electricity supply, which in turn affects water processing and distribution systems, leading to service interruptions.

These challenges lead to frequent service interruptions, poor water quality, and unreliable supply, which negatively impact residents' health and daily lives. Theft and vandalism further degrade the infrastructure, increasing repair costs and prolonging outages. As demonstrated, loadshedding disrupts water treatment and distribution, reducing access to safe water. The sand-filled dam also limits water availability, exacerbating shortages. Collectively, these issues contribute to a weakened water system that struggles to meet community needs.

Conclusion

Based on the findings, the study recommends that the MLM strengthen security measures to protect water infrastructure from theft and vandalism. Community awareness campaigns should be implemented to educate residents about the long-term consequences of damaging infrastructure, especially during strikes. The municipality should collaborate with human resource experts to develop a comprehensive staffing plan that addresses current vacancies and future staffing needs. Furthermore, it should consider competitive recruitment strategies to attract skilled professionals to fill critical positions and implement training programs to enhance the skills of existing staff. Regular maintenance and monitoring of dams, including desilting efforts, should be prioritised to prevent service disruptions. The study also recommends that, to mitigate the effects of load shedding, the municipality is encouraged to invest in alternative energy sources such as generators or solar-powered systems to ensure continuity in water processing. Infrastructure upgrades and improved resource planning are also essential to reduce leaks and improve service delivery. Overall, a coordinated and inclusive approach involving the municipality, residents, and key stakeholders is necessary to ensure sustainable and reliable water service delivery.

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