



Long-Term Alternative Strategies for Implementation in Water-Stressed Informal Settlements: A Case Study of Skiti in Mquma Local Municipality

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Abstract

This study seeks to improve water service provision in informal settlements and ensuring universal access to water by implementing sustainable strategies. South Africa has proposed several policies to alleviate water scarcity in informal settlements to ensure that individuals receive potable water. However, water provision challenges are underpinning the Amathole District Municipality, and water provision in the Mquma Local Municipality has been unsatisfactory, particularly in informal settlements, even before Covid-19. Interview and focus- groups were employed to collect data and thematic analysis was adopted to analyse the data. The study purposefully selected a sample from the Skiti informal settlement in Butterworth, an area that is currently facing water challenges. A sample of fifteen (N=15) participants were used for this study. Ten are community members and the remaining five are officials from the Mquma Local Municipality. The study provided the findings and recommendations to help the Mquma Local Municipality to improve water service provision in informal settlements.

Keywords: Covid-19; Development Agenda; Informal Settlement; Local Governance; Mquma Local Municipality; Sustainable Strategies; Water-Deficiency; Water Governance

Introduction

According to the World Health Organization (WHO) (2017); Olagunju, Thondhlana, Chilima, Sene-Harper, Compaore, and Ohiozebau (2019), 2.1 billion people worldwide do not have access to clean, safe water, and 4.5 billion people do not have access to sanitation. In light of these catastrophic circumstances surrounding access to water services, international declarations were passed to ensure that everyone has access to the fundamental human right to water. Among these declarations are, the Human Rights Council Resolution (2010), the Millennium Development Goals (MDGs) (2015), and the

Sustainable Development Goals (SDGs) (2030). Different countries are working together to ensure that these objectives are met (Wooldridge & Bilharz, 2017). However, despite the implementation of these declarations, developing nations like South Africa still continue to struggle with historically ingrained legacies in their citizens lack of access to potable water and sanitary facilities. This has led to South Africa also being listed as one of the most unequal societies in the world, with a very high gini-coefficient (Ramcharan-Kotze, 2020).

The COVID-19 pandemic further brought South Africa's inequality and water shortage issues to light, particularly in informal settlements, among the poor, and among vulnerable populations. These challenges of access to potable water in informal settlements can be further reflected in Mquma Local Municipality, especially in Skiti settlement. The Mquma Local Municipality is a Category B municipality in the Eastern Cape Province's south-eastern region. According to Bota (2013), it is under the jurisdiction of the Amathole District Municipality and includes the former Butterworth, Ngqamakhwe, and Centane Transitional Regional Councils. While the main cities and towns of Mquma Local Municipality are Centane and Ngqamakhwe, it also has informal settlements such as the Skiti in Butterworth (Bota, 2013). Due to their informal or illegal status, these informal settlements have experienced a variety of water shortages.

More troublingly, South Africa's water issue has also gotten out of hand, with water shortages being linked to, droughts, climate change, and surface runoff (Enqvist & Ziervogel, 2019). Rakodi (2016), who claimed that climate change should be at the forefront of the discussions surrounding potable water, also made note of this. Nazarko (2018) argues that, understanding that potable water is a necessary need for existence and that "*water is life*" which means that it should be emphasized as a human right. In accordance with Section 27(1) of the 1996-adopted South African Constitution, everyone has the right to get enough water. Section 27(2) mandates that the state use its resources to carry out appropriate legislative and other actions that will eventually establish these rights. The National Water Act (Act No. 36 of 1998), the Water Service Act (Act No. 107 of 1997), and Local Government Acts such as the Municipal Structures Act (Act No. 117 of 1998), its amendment (Act No. 117 of 2000), and the Local Government Municipal Systems Act (Act No. 32 of 2000), among others, were passed in order to also ensure that water rights are realized. However, those who reside in informal settlements such as the Skiti region continue to endure unsafe and unhealthy living conditions with people living in unfavorable conditions with untreated sewage streaming through their streets and homes (Dingana, 2012).

This paper's goal is to shed light on the current situation in the informal settlement of Skiti and to demonstrate the need for more robust sustainable alternatives to the methods being employed to deal with the potable water constraints. In the water-scarce informal settlements of the Mquma local municipality, the article offers recommendations for implementing sustainable potable water alternatives. Hopefully, these recommendations will aid municipalities in ensuring that they uphold their constitutional and developmental duties to guarantee citizens, including those living in informal settlements, have access to enough water. The study will, however, broaden community access to water services, which is essential in light of the sustainable development goal 6 of the 2030 agenda.

The Significance of Clean Water Access in South Africa

In the management and control of water, the adage "*water is life*" and "*sanitation is dignity*" (United Nations, 2019) cannot be discounted; yet the truth that water is one of the world's most urgent needs also carries the same weight (Thieme, 2018). It is also true that, despite being one of the most important fundamental services, access to potable water services is still limited to some communities in South Africa. The United Nations (2019) research also indicates that the situation is worse for people living in informal settlements with women and children being among the most vulnerable populations affected by this water crisis. The situation was further worsened and exposed by the global pandemic of COVID-19 where hygiene was key to combat the virus. Having access to water services is therefore key in reducing psychological stress and reducing the ripple effect of water-borne diseases in these overcrowded informal settlements (United Nations, 2019).

The right to access water services, which is an interdependent right, will most critically guarantee the fulfillment of other rights, such as the right to better health, the right to life through a decline in diseases and death rates, and the right to education (United Nations, 2019:43).

In 1994 when South Africa gained its independence, the Mandela Administration declared the Universal Water Supply Declaration. This declaration was important since a sizeable population was excluded from accessing these fundamental services because of the apartheid regime's association of providing water and other basic public services in South Africa with prejudice and discrimination (De Coning, 2006; Muzondi, 2014). Hence, the proclamation attempted to guarantee that all citizens had equal access to potable water supplies. Although South Africa implemented a number of laws, including the National Water Act (Act No. 108 of 1997) and the Water Service Act (Act No. 36 of 1997), access to potable water supply is still a problem among many.

It is crucial that people have access to clean water in this regard, especially in South Africa's informal settlements. This is also reflected in Sustainable Development Goals 2030, which places a strong emphasis on having access to adequate, sustainable, and fair water services. In order to ensure the realization of the right of access, it is crucial that the Water Service Authorities in South Africa prioritize and encourage growth in informal settlements. Despite Camkin & Neto (2016) arguing that the nation is thought to be water-scarce, a fundamental prerequisite was implemented post-apartheid, to ensure 25 liters of potable water per person per day for drinking washing and cooking. However, Muzondi (2014) argues that in informal settlements, these minimum standards are hardly ever met.

Water resources are limited as a result of urban regions' increasing urbanization and population increase. A survey by Muzondi (2014:105) found that 1.2 million families in 2700 informal communities lacked access to necessary basic amenities, particularly water supply. Evidence thus demonstrates that although the residents have a legal right to adequate water services, these standards are not being met in practice, and as a result, the supply of water in these informal settlements is consistently inconsistent in both quality and quantity. Thus, having more environmentally friendly water supply systems in South Africa is crucial. In this regard, it is therefore important to have more sustainable water supply systems in South Africa, especially in informal settlements such as Skiti.

Sustainable Development Goals and Water Supply (2030): Goal Six (6)

The Sustainable Development Goal (SDG) 2030 No. 6 aims to provide equitable water service provision for all, with women, children, the poor, the vulnerable, and those residing in slums or informal settlements being among the most targeted demographics (United Nation, 2019). These populations are the most affected and continue to suffer the most, even though the aforementioned worldwide figures show that a sizeable population is already and will continue to be afflicted by water stress and lack of access to water supplies. Additionally, SDGs relating to water are at the core of all the other sustainable development goals. This is due to the fact that the right to water and sanitation is inextricably related to other human rights including education, development, health, and safety (Brown et al., 2016; UN, 2018). Additionally, it is believed that failing to secure the fulfillment of the human right to water and sanitation has negative effects on both society as a whole and on an individual level. Lack of access to water has several negative repercussions, including violence, social instability, human migration and displacement, a lack of educational chances, and a lack of job opportunities (United Nations, 2019:35). The 2030 Agenda on sustainable development, therefore, aims at leaving no one behind that is ensuring water service provision without discrimination in terms of location for example informal settlements or slum dwellers, income, and political status, among other factors. In this regard, this study, therefore, focuses on water deficiency particularly in informal settlements, a group identified by the United Nations as one of the major groups which are left behind in accessing potable water.

Theoretical Underpinnings of Water and Sanitation

While water has been declared a human right, global statistics show that approximately 2.1 billion people still lack access to safe, ready, and available water in their homes, while an estimated 4.5 billion people lack access to safely managed sanitation (United Nations, 2019). The World Health Organization (WHO, 2012) added that, while developing countries are making progress towards ensuring access to potable water, the lack of concerted action and efforts towards the vulnerable has contributed to a continued lack of access to potable water in developing countries over the last few decades. Thus, recognizing these challenges, water and sanitation were included in the major international conventions, which are the Millennium Development Goals (2015) and the current SDGs (2030).

In terms of international law, potable water supply was recognized as a human right through the Human Right Resolution adopted by the United General Assembly in 2010 (United Nations, 2019:35). The General Assembly declared water and sanitation as a human right that should be adequately and sufficiently provided (Neves-Silva & Heller 2016). According to Thieme (2018), "*water is life*" and "*sanitation is dignity*." This common phrase has gained currency in water policy debates, particularly those concerning potable water supply since potable water supply is considered a basic human right due to its profound impact on human survival (Borja-Vega & Kloeve, 2018).

According to Power (2013), the theoretical underpinnings of the concept were influenced by many philosophers such as Abraham Maslow's Hierarchy of basic needs, in which water is one of the basic needs that one requires for survival. More so, the theories of Social Justice advocate for equity and justice in public service provision is enabled in ensuring that everyone gets access (Keysa et al., 2014). Furthermore, it is argued that human rights are a normative framework for fostering social justice through public policies and lay down legal provisions to make water and sanitation more available to all. While Power (2019) goes on to argue that Social Structural theories support the Human Rights-Based Approaches as they stress the need for effective public organisations, which preserve the values of equal access to sufficient potable water, sanitation and other important uses for present and future generations (Power, 2013).

The study is based on the Human Rights-Based Approach (HRBA). The theory can be traced back from the works of Thomas Hobbes, a philosopher who believed that all citizens should have equal rights and should be able to access them and the works of Aristotle who argued that the constitution must fully respect and protect the rights of all citizens (Miller, 1996). As defined by UNICEF (2015), HRBA is the conscious and systematic enhancement of human rights in all aspects of project and program development and implementation. In simple terms, human rights are specified as the minimum demands for justice. These are the main claims or rights that all people have against the main organized society institutions (Power, 2013). HRBA is widely recognised as one of the most influential theories in the water policy debates. It has been a powerful tool in influencing international declarations such as the Dublin Principles (1992), the MDGs (2015) and the current SDGs (2030) (World Meteorological Organization, 1992 & Power, 2013). While the HRBA has been internationally recognised, states have also incorporated human rights into their constitutions for instance the Constitution of South Africa 108 of 1996 (Chapter 2: Bill of rights) Section 27 which put access to sufficient water as human rights.

The HRBA, therefore, provides a solid basis for this study since it is a powerful tool in influencing policy decisions and programs that can be implemented by the local and national government on potable water access. The Human Rights-Based Approach advocates for access to water for all without discrimination. As an international agreement and a constitutional mandate, the Human Rights-Based Approach, therefore, mandates the state to make sure that those residing in informal settlements such as Skiti in Mngquma Local Municipality to be provided with sufficient, safe, clean and affordable water. It is therefore important that the human rights to water are met as they are dependent on the fulfilment of other rights such as the right to freedom, education, health, and a safe environment, among others. This was further noted by Right (2002) who argued that "*the human right to water is indispensable for leading a life in human dignity*". While the HRBA has been widely recognised, it has been criticized by some scholars such as Brown (1997) who argued that rights are regarded as fundamentally individualizing and

they are neglecting economic injustices. He argued that they allow a continuous breach of individuals' core personal integrity and building. Although this might be the case, the influence and critical role played by the Human Rights-Based Approach in water policy cannot be undermined. It enables those who are marginalized, especially those residing in informal settlements to be recognised and to have access to water services. Also, the approach is critical in this study as it does not argue that water should be for free but urges the state as duty bearers to come up with sustainable solutions to ensure that water is accessible for all. Such solutions include alternative strategies for implementation in Skiti informal settlement to improve access to water services.

Informal Settlements

Informal settlements are among the major targeted areas by the SDGs especially those related to water and sanitation. This is because, access to basic public services is limited and, in most cases, these informal settlements are neglected hence they lack access to these basic services (Hedden, 2016). According to global statistics, about a quarter of the urban population is residing in informal settlements and lack access to basic services (UN,2018; Muzondi, 2014) while 60% of those residing in cities in Sub Saharan Africa reside in informal settlements (Un-Habitat, 2016). More so, those living in informal settlements face, among other obstacles, insufficient accommodation, lack of access to or maintenance of basic services and the possibility of eviction (Socio-Economic Rights Institute of South Africa (SERI), 2018). Informality, which is characterized by poor living conditions and social and economic exclusion, is in fact a critical problem in the informal settlements. The development of informal settlements (squatter camps and slums) has been attributed to several factors including population development and rural-urban migration, the absence of urban deprived housing, bad governmental management, specifically policy planning, land and urban speculation, insecurity and underpayment, conflict-led separation and marginalization (UN-Habitat, 2015; Jones, 2017). Furthermore, Marutlulle & Ijeoma (2015) added that administrative uncertainty, institutional change and the absence of unified policies has allowed informal settlers to step forward and grow slums rapidly, thus making it possible for informal settlements to flourish. On the other hand, Jones (2017) attributes the growth of informal settlements as a response to poor state policies and the incapacity of institutions to meet the basic rights and human needs which include the right to adequate housing with the formal market (Jones, 2017:6).

Water Management Techniques for Informal Settlements

It is impossible to ignore the difficulties in providing water services and the lack of water in slum areas. Due to waiting in lines, traveling great distances to get water, and health dangers stemming from water-borne diseases, women, children, and families are being deprived of their right to water as well as other rights including the right to education, health, and life. The importance of long-term alternatives cannot be overstated in this regard. The supply of sustainable water services necessitates appropriate planning techniques and approaches. Therefore, many aspects should be considered as they would affect the provision of water services in informal settlements like Skiti informal settlement. Therefore, the following tactics can be used to guarantee increased access to water services in the Skiti informal settlement.

Less Contaminants and Higher Water Quality

The quality of the water is one of the key issues with water supply in the Skiti community. According to numerous studies, many water sources are unfit for human consumption, including some municipal provided water (Shezi, 2017:26). However, the situation is really bad in municipal settlements where the sewage and waste systems are barely maintained (Mukheibir & Sparks, 2003). Therefore, the strategy of lowering water contamination and raising water quality can enhance the availability of water

in these places. To ensure that the limited amount of available water is safe for use, this can be accomplished by safeguarding water sources, such as by having closed wells and tankers.

Saving Water and Lowering Demand

According to Schulze and Perks (2000), one of the main reasons for a lack of access to water supply in South Africa, is water scarcity. Furthermore, as a water-scarce country, it has experienced persistent droughts, resulting in a decrease in water reserves as dams and rivers have dried up. The rapid growth of the population, particularly in urban areas, as well as the rapid growth of informal settlements, has put additional strain on the water supply (Shezi, 2017:26). Thus, reducing water demand and encouraging water conservation in Skiti will result in a more sustainable and increased water supply. This could be accomplished through a variety of means, including voluntary compliance, water conservation awareness and educational campaigns, legal restrictions on water pricing policies, and water rationing through certain technologies.

Public-Private Partnerships: (PPPs)

According to Muzondi (2014), PPPs are one of the best option for ensuring water supply in informal settlements. Muzondi contended that, while publicly owned and operated entities may have citizens' best interests at heart and a constitutional and legal mandate to provide water in these areas, these entities are inefficient in most cases and require a strong economic base to sustain services. Privately owned entities, on the other hand, seek to maximize profits, and as a result, the poor who live in these informal settlements suffer. PPPs, as the best option, provide a balance that will result in the economic and social sustainability of water supply.

Sustainable Water Resource Management

One of the strategies that will lead to more sustainable water service provision in Skiti, is water resource management. It seeks to strike a balance between equity, efficiency, and the environment, resulting in the fulfillment of both economic and social values. The principle of equity in water management implies justice and fairness, which means that informal settlements must be recognized in broad national policies. De Carvalho, Carden, and Armitage (2009) go on to advocate for Sustainable Integrated Water Resource Management, which strengthens (IWRM) by promoting the sustainability of water management, particularly in urban areas (Muzondi, 2014:106).

Slum Improvement

Slum upgrading is one of the fundamental strategies that will lead to development and long-term water supply (Jones, 2017:2). The strategy, according to Muzondi, calls for seven interventions, including "*connections to a water supply for individual households; construction of underground sewage for individual households; installation of storm water drainage; provision of street lighting; stone paving of internal and approach roads; solid waste management; and delivery of toilets for individual households*" (2014:106). One important aspect of this strategy is that it addresses the challenges in informal settlements such as Skiti in a more sustainable manner.

Methodology

The interpretivism world view was used to guide this paper's qualitative research methodology. This methodology is based on the premise that people use "what they see, hear, and feel" to make sense of social interactions and focuses on non-numerical data collection and work (Liamputtong, 2019). According to Moore (2016), the knowledge gained from qualitative research methodology is the result of

more in-depth techniques and problems to be solved. As argued by Eisner (2017:45) "qualitative research seeks to comprehend phenomena through observation, in-depth interviews, analytical documentation, and focus groups". The researchers sought to interact with the municipal manager and other participants in order to learn about their perspectives and experiences with water challenges in Mngquma Local Municipality, specifically in the Skiti informal settlement. As a result, a qualitative research methodology provided a better understanding of the local realities. The paper purposefully chose a sample from the Skiti informal settlement in Butterworth, which is currently experiencing challenges. A sample of fifteen (n=15) participants were chosen for this study. From the 15 participants, ten (n=10) were community members from Skiti informal settlement in Mngquma Local Municipality, five (n=5) were officials (municipal manager (1), representatives from water services portfolio head (2), (1) ward councilor (1), and a representative from Department of Water and Sanitation from Mngquma Local Municipality. The reason for selecting municipal officials in different sectors of the municipality was because they are familiar with the phenomenon under study and would be able to provide useful knowledge to the study.

Findings

This section provides the findings from the interviews and focus- group discussion carried out.

Educational and Awareness Campaigns in Skiti

The research established that one of the interventions carried out in Mngquma Local Municipality was educational campaigns on the importance of water. Community and educational campaigns are thus, among the interventions implemented in the Skiti informal settlement in the Mngquma Local Municipality. This was also noted in the (Amathole District Municipality Water Service Development Plan (WSDP) 2017-2022: 9) in which the ADM as the Water Service Authority (WSA) indicated that vandalism and leakages contributed to the district's 40% water loss and that community and educational campaigns are part of the interventions implemented to address this. The municipal manager of the Mngquma Local Municipality responded that there is coordination and cooperation between the district and local municipalities to ensure the flow of service delivery. More so, the issue of vandalism raised in the Skiti informal settlement can be supported by Sinharoy, et al. (2019) who argues that social factors for instance community actions affect policy implementation and service delivery of water and sanitation in informal settlements.

Alternative Water Strategies for Skiti

According to the responses, water tanks and boreholes were used as interventions to improve water supply in Skiti informal settlements, particularly during the drought and COVID-19 pandemic. Skiti is an informal settlement located near a dam, and non-permanent measures to water provision in the area were supplied, such as tanks to support the communal taps during the COVID-19 pandemic, according to 91 (n=10) percent of community respondents. Boreholes were drilled, and they supplied residents with water during the severe drought and the COVID-19 pandemic, according to 71% (n=7) of officials who responded. While the officials highlighted these interventions, it was noted that the interventions in Skiti informal settlement were not enough to ensure sufficient water as required by Section 27 of the 1996 Constitution of South Africa nor the minimum standards of 50 liters per day per person as prescribed by the World Health Organisation (WHO).

Infrastructural Development in Skiti

According to the 65% (n=5) of officials interviewed, infrastructural development was among the interventions in progress to ensure water is supplied to the Skiti Informal settlement. The responses also

indicated that the water purification plant for the project is already in place with only the reservoir and pump station not yet secured, while the project seems to be promising, the officials highlighted that the project is meant to serve all the rural areas of Nqgamakhwe, and it is projected that water will also be supplied in Butterworth. However, the study argues whether the project will also include the informal settlements in Mquma Local Municipality such as Skiti informal settlement.

Community Vandalism

Among the causes of water scarcity in the Skiti Informal settlement, vandalism emerged as a theme with the municipal manager and officials putting much emphasis on how it is putting stress on the municipality. Vandalism leads to water loss and leakages as water will be left out running on the taps. These findings can be supported by ADM's 2017-2022 WSDP which indicated that about 40% of the municipal water is lost and vandalism is among the main reasons. Also, these findings can be supported by Mudombi (2020) who argued that communities are protesting as a way to be heard by the responsible authorities and among the main issue was the issue of water. It can then be deduced that vandalism in Skiti may be related to service delivery protests to force the responsible authorities to act and ensure that their constitutional right to sufficient water and sanitation are met.

Challenges Faced in Accessing Water in Skiti Informal Settlement

95% of the respondents from the focus groups indicated that while intervention and strategies may be implemented, Skiti informal settlement is faced with various challenges which include lack of infrastructure for instance they have to work with three shared taps, lack of political will to supply water by the councilor, poor maintenance of infrastructure leading to water leakages and the exclusion of the informal settlement in the municipality planning because of its status as an informal settlement as participants noted.

Conclusion

The provision of services as a basic right of citizens remains the core business of government, and satisfying citizens requires efficiency and effectiveness. The current government has transformed the public service from a racially based one to an all-inclusive one through the passage of legislation that promotes equity and fair treatment of all citizens. Although certain services have improved, the research findings show that the improvement has been minimal in several municipalities that have been and continue to be affected by water service delivery in the Skiti informal settlement. It can be deduced that a couple of interventions have been made and these include the provision of water tanks to supplement the three communal standpipes and the drilling of boreholes to increase water supply. However, the findings also reveal that the interventions made in the Mquma Local Municipality are not sustainable as reflected by the water tanks which are not being filled regularly and the boreholes which are supplying unsafe water for human consumption and as a result, there is unreliable water supply in the Skiti Informal settlement.

Furthermore, negligence from the Skiti residents in handling the limited infrastructure and water supplied as indicated by the issue of vandalism and water that is lost through unclosed taps is contributing to reduction in water supply in the area. The findings further reveal that corruption and maladministration, drought and the "informal status" of Skiti resettlement area also appear among the major contributions in the deceleration of water service provision. From the above observations, the study can safely conclude that the right to water in terms of Section 27 of the 1996 Constitution of the Republic of South Africa is not being met in the Skiti informal settlement in Mquma Local Municipality because of the abovementioned reasons.

Recommendations

Based on the findings, the following recommendations are made to assist the Amathole District Municipality, Mnquma Local Municipality, and other South African municipalities in improving potable water service provision in informal settlements. The proposed recommendations can also be applied to all other informal settlements facing similar challenges, assisting them in ensuring universal access to water service provision.

- The municipality should ensure that the supplied tanks are regularly filled with water. Furthermore, the municipality should have set days for filling the tanks, and these arrangements should be communicated to the community so that the available water is used efficiently.
- To address the issue of unsafe water from boreholes, the municipality should ensure that technical departments ensure that the locations and methods of drilling boreholes provide safe water. Furthermore, the water service authority should ensure that purification mechanisms are available in cases where the water supplied is unsafe for human consumption.
- The municipality should increase the number of tanks supplying water as water infrastructure is limited in the Skiti informal settlement. More tanks will lead to reduction on the pressure exerted on the limited available infrastructure and will also lead to reduced waiting times and more water as compared to limited water tanks.
- The municipality should carry out educational and water campaigns more regularly making sure that the targeted people are reached for instance children who maybe leaving taps open and vandalising the infrastructure.
- The municipality must ensure good governance (utilising the principles of good governance such as ethics, accountability, and transparency) in its operations. This will lead to sound financial management practices to avoid corruption, increase political will to ensure that water is provided in informal settlements and ensure proper administration of the municipality.
- Insight visits by the municipality should be done regularly so that the decision-makers are aware of the reality on the ground, this will ensure that such vulnerable groups are considered in decision making and will lead to increased political will to supply water services in these informal settlements.

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