

Water Governance at Ehlanzeni District Municipality

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Abstract: The effectiveness and efficiency of water provision within municipalities especially in developing countries such as South Africa is still a huge problem. As a result, the article explored water governance in the community of Ehlanzeni District Municipality. The study aimed to determine the effectiveness and efficiency of water delivery and to identify challenges associated with water governance. Purposive sampling was utilised, and the interview and observation schedules were used to collect data from five municipality officials and five community members. Content analysis was used to analyse the data. The findings show that there is an inadequate water supply to the communities at Ehlanzeni Municipality and one of the major causes of the setback has been climate change. The findings of the study showed that the problem of lack of water provision had been persistent over the years to the extent that people have been relying on river water, which has made people sick in the community. It is also indicated that the adopted strategies to deal with the lack of water provision have only been effective in dealing with inequality, and not necessarily the problem of water shortages. The study recommends that the municipality, in collaboration with stakeholders, NGOs, and community members, should embark on massive campaigns to create awareness concerning the need for people to save water.

Keywords: water governance, water scarcity, municipality

Introduction

The distribution of basic services, especially water, to the public, stood out as unsurpassed among the many objectives of the anti-apartheid struggle in South Africa. Acute water scarcity has negative impacts on both human and non-mortal intake uses, such as farming, manufacturing, and other luxury usage [2]. In many communities, a lot of people drink water that has not been treated, and hence they suffer from water-borne diseases [5]. In developing countries, the effectiveness and efficiency of water provision within municipalities is still a huge problem. The distribution of water services, which was traditionally a responsibility of the state, has shifted to local government [43]. Local government has been the vehicle assigned by the state to deal with issues of water service delivery, reducing the apartheid backlog, and raising the standard of services delivered [18]. Water supply to settlements and villages is not dependable. On certain days, taps are waterless, and some areas experience dry taps for periods. Also linked to water supply difficulties is poor sanitation, mainly in the densely occupied settlement clusters and dispersed small settlements. Around 80% of the families in the municipal area use pit latrines, and the majority of the population do not meet the Redistribution Developmental Programme (RDP) sanitation standards [45]. Pit toilets are largely a threat for polluting the surface and ground water resources [23].

Literature review

[1] mentioned that, in developing countries, the provision of safe drinking water has become one of humanity's most fruitful public health interventions. Studies further highlight that in some cases there is also a risk that staff are selected mainly on political grounds rather than on their professional credentials, and these shortcomings are mainly prevalent in developing countries [12]. The scarcity of water in the community has been identified as a challenge to socio-economic development efforts in the community. [13] stated that water conservation focuses on minimising the percentage of water supply lost through poor maintenance, leading to burst pipes and leakages, illegal connections, and lack of end-use efficiency. Studies have shown that appropriate measures to improve water supply need to be enhanced by adopting appropriate water governance to regulate challenges of water resources management [19, 11]. The people in Ehlanzeni communities depend on agriculture as their source of livelihood. [1] argues that in many

third-world countries, people living in rural areas are still using unimproved water sources. [1] maintains that water quality problems are one of the manifestations of poverty, especially in most developing countries. [10] highlighted the fact that the responsibility of managing water and water services is often dispersed across multiple institutions, which rarely communicate or coordinate among themselves. In this way, the decision-making processes take a “top-down direction with absent or ineffective stakeholders’ participation”. In addressing this problem, it is important to develop institutional measures involving the public and private sectors, and communities that are well-prepared and have the right technical, economic, and legal tools to enable them to function effectively [10]. One of the solutions adopted by the Egyptian government in respect of the problems of non-compliance has been to separate the water service provision function from the regulation function. In this way the independent authority can monitor the water service providers monthly against specific performance indicators [10]. This will ensure that institutions know their exact parts and tasks and can thus be held answerable for non-compliance. In the last few eras, it has become evident that there is a gradual increase in the demand for fresh water [34]. Fresh water shortage has become an obstacle to the sustainable development of human society. The water crisis has thus become a major universal risk in terms of potential influence.

The Ehlanzeni District Municipality is a Category C municipality situated in the north-east of Mpumalanga Province. It comprises just over a third of the province's geographical area. The study focused on the Newington B area, which is a community that falls under this municipality. The community is governed by traditional tribal authority or a chief, and Xitsonga is the dominant language spoken in the community. Newington B has just about 2 rivers that are the main source of water [23]. The poor governance of water in the community has been identified as a challenge to socio-economic development efforts in the community. Ehlanzeni District does have the authority to perform the potable water provision function, but there is limited capacity available to perform the refuse removal function. Water provision within the district is generally inadequate as people may have no access to clean or tap water for up to three months or more. Many villages in South Africa remain characterised by a disjuncture between water for livelihood needs and their actual access to the available water supply [26]. [26] mentioned that rural water is dangerous for the well-being and livelihoods of rural societies in both Namibia and South Africa, as is the case in other parts of the world. Members of the community who are disconnected from the water supply vandalize the water pipes to get water at all costs [41]. Theft of water through illegal connections is also rife within the municipality. Installed pipes are of low quality, thus leakages are often experienced. [37] further declares that the problems of water governance have partly been due to the water provision policies that are in force in developing countries. According to [26], it is difficult to maintain water infrastructures in communities where water pipes are vandalised by community members to get free access to the water supply. Consequently, in many developing countries the governance of the water sector is in a state of confusion and dysfunction, with little responsiveness or accountability to citizens [40]. On the other hand, [20] argue that decentralisation is a better solution since it emphasises community-based management and attempts to transfer ownership and management responsibilities to water user level. Policies such as decentralisation, civil service reform, effective public administration and participatory planning, and the contracting out of service delivery to private providers and non-government organisations (NGOs), are employed for effective water delivery [40]. In addition, some parts of the community have tap water pipes that have not functioned for years. Water provision in Ehlanzeni Municipality is not reliable, and most of dwellers have to get their water from rivers and hand-dug wells. This has serious implications to their health and hygiene [23].

This study attempted to probe water management in Newington B, which is the location of the study, with a view to identifying solutions to the problems of water availability in this area. South Africa is a semi-arid, sub-Saharan country that suffers from inadequate water availability all through the year, and this has prompted the government to make significant efforts towards making the provision of water effective to all communities [32]. Most rural communities in South Africa suffer from inadequate water supply because they depend on municipalities to provide water to the masses, and this accounts for the country being rated as the 30th driest country [15]. Water is a scarce resource; hence some rural communities experience inadequate water supply due to water shedding [3]. Due to the water-stressed nature of South Africa [44], the communities’ demand for water supply to satisfy their needs remains challenged despite the demand for water that will reach approximately 17.7 billion cubic metres by 2030 [7]. This influences why South African municipalities have been striving to ensure an effective provision of water through the Water Services Act, 1997 (WSA, Act 108 of 1997). Municipalities strive to supply water adequately and regularly to rural dwellers. However, adequate and regular supply of clean water to the rural areas has been impeded by inefficient governance and ineffective water supply service delivery to the rural populace [32].

Reflection on water governance theory

This theory of water governance explains the need for efficient and effective water governance in the existence and continuity of the rural community in this study. The rationale for this theory in the study is the contextualisation of social actors in water governance to ensure effectiveness and efficient water provision and management by the concerned stakeholders. The theory also builds and supports the study, and provides the structure to define how philosophical, epistemological, and analytical approaches underpin the study [14]. Seemingly, [38] opine that water governance involves participation and involvement of every stakeholder who can enhance regular and consistent provision of water to mankind. [35] affirm that opinions and contributions of private and public organisations are critical to water governance. The Water Services Acts (1997, 2004, 2005) declare that it is the exclusive responsibility of the national government through the municipalities to provide access to clean, regular, and sufficient water to the citizens. [38] in Water Governance Theory affirm that the creation and adoption of various water policies does not only specify the roles of individuals or organisations in water supply, but also ensures that water is made available and managed for effectiveness. The theory also recognises the responsible communities' water usage as well as the protection of water installations and resources in their communities. This implies the use of various water policies to sustain water supply. In fact, several "water disasters" around the world appear to be more related to management failures than to the scarcity of the resource itself [17]. If a state does not routinely negotiate with groups in society, it manifests a despotic attitude and low capacity to govern [21,22].

Methodology of the study

The authors employed a qualitative research design because the qualitative approach is best suited for the study. This approach not only helped the researcher to acquire a deeper understanding, but also enlightened the researcher on how water is governed at Ehlanzeni Municipality. The qualitative research design as advocated by [9] may be seen as a research approach that relates to a research plan and procedure, and specifies the steps to be followed from broad assumptions to detailed ways of data collection, analysis, and interpretation. An interpretivist paradigm was adopted in the study to get a broad understanding of the perceptions and experiences that the community members deal with on a day to day basis. The qualitative approach gives interesting reports that are required for the interpretivist to fully comprehend the relevant contexts [47]. To select municipality officials, purposive sampling was employed, and because the officials are experts in this field, they tend to be more familiar with the government programmes such as water delivery. To this end, the researcher employed a purposive sampling of five (5) municipal authorities and five community members (5) who are in charge of water governance, so that researchers would gain a deeper understanding of the way water is governed. The idea behind qualitative research is to purposefully select participants or sites (or documents or visual materials) that will best help the researcher to understand the problem and the research question [9].

Data collection sets the stage for the discussion of issues, locating the borders for the study, and collecting material through semi-structured observations and interviews, documents and visual materials to found the procedure for recording evidence (9). In this study, the researchers used semi-structured interviews to collect data from a total sample of ten (10) participants and has also used observation to witness the area of Newington B, especially the water resources in the area. The interview questions have been translated to Xitsonga so that the participants can understand everything easily. The use of in-depth interviews helped the researcher to grasp the information in the perceptions and experiences of the community members on the ways in which water scarcity has affected economic activities. Data was collected on a household basis, with equal representation of men, women and the youth in order to achieve a fair reach and representation of the community. It is an interpretive study where open-ended questions were asked and analysed to make conclusions. The employing of snowball sampling made the identification of participants for the interviews easier as participants were located based on the information given to the researcher by a previous participant. Even though some of the participants were very busy and could not talk then, they gave the researcher an appointment for when they were free to be interviewed. The researcher collected secondary data from the following sources: journal articles, unpublished master's dissertations and PhD theses, electronic database, acts, books, internet, government publications, and conference papers. For the researchers to obtain comprehensive information, they observed the existing situation and made inquiries about water services in the area. The observation revealed that water collectors were mainly women and children. Observations were done at the water points around the area. Two dry rivers that were part of the community water sources were also observed. The researchers also observed the household water points and the kind of materials used for fetching water.

The researcher used content analysis to interpret the data collected. Content analysis is an investigation instrument used to define the occurrence of definite words or concepts within texts or sets of writings [53] with such uses in mind

[28]. Content analysis of the transcriptions was done following the process of content analysis [4], and was carefully sifted to separate the useful from useless data. Through a process of data encoding, all the interviews were recorded, transcribed, and coded to generate themes for the discussion of findings. Respondents were fully up to date about the risk and the procedure involved in the investigation. Therefore, all the ethical requirements were adhered to.

Discussing the results

The research findings presented here are based on the interview proceedings carried out by the researchers together with the municipality official, the councilor, and community members. To effectively capture the responses from the participants, the researcher did voice recordings of the respondents, took photos, and made notes of events whilst in the field. The following themes were identified: (i) Dominant problems of water scarcity, (ii) Human rights infringements (iii) The bedrock of water scarcity.

Dominant problems of water scarcity

The participants' own perceptions revealed diverse opinions on the challenges that communities are facing due to inadequate water provision by the municipality. The researchers picked a number of frequently cited problems that will be deliberated upon below as sub-themes.

Food security

The study established that both the officials from the municipality and the community members cited the dwindling of agricultural activities and other related challenges as a major problem. Of interest is a rural area where there is a high level of poverty and unemployment, which forced people to resort to farming as a major economic activity to earn a living. However, lack of water provision has put a strain on their farming efforts. One participant responded: *"People now no longer have gardens, they have to do with the liters they use to bath. Also, irrigation is stopped or it suffers. My vegetables are no longer growing, they dry up and sales go down. I don't make enough money to take care of my family. Because of lack of water now our cattle are dying, that is where our life depends on. We use our cattle to buy food when we sell them"* (Community 4). The researchers' finding then, is that food insecurity is a threat to the community if the problem of water provision persists. Community members indicated that water is a major requirement in agricultural activities, and since the area does not receive adequate rainfall to sustain agriculture, it means that more water provision is needed to guarantee food security, particularly to those who are unemployed.

This would enable them to make a living, either by reducing the money they spend on vegetables, or by selling the vegetables to earn an income. The findings concur with Grant & Osanloo's own findings (2014) that food security is heavily threatened by lack of water provision, especially in areas where people are dependent on agriculture for a living.

Human rights infringements

The participants expressed their displeasure on the lack of water provision by stating that the problem of water scarcity was infringing on their democratic right, especially now, 23 years into democracy. *"Access to water is a constitutional right of any citizen, so the scarcity of water does affect that right and that is inclined in constitution. They sometimes send water trucks and sometimes we have to go to rivers get water for our basic need, while water is a human right"* (Community 1). The two participants represent both the community and the officials. They both agree on the fact that while water is indeed a basic need, access to it continues to be a problem.

Health and hygiene problems

According to the participants, the problems associated with lack of water provision are a threat to their lives. When the community do not get adequate water supply, they resort to the use of river water and other untreated water sources for domestic use. One participant indicated: *"Uncleanliness is a problem because when there is no water we have to drink and bath, in so doing it creates disease. It also affects our health because a person has to drink 2 litres a day but when there is no water, we cut down on the litres). We have been faced by the problem of having an untidy environment of which is so unhealthy to us as a community and children. Children come to school without bathing when there is no water, only to find that some of their clothes are unclean. Kids get sick at school"* (Community 3).

The community members revealed that the lack of adequate water provision in the community affects even children who are sometimes forced to go to school without bathing. When students live in these unclean environments, they end up getting sick. These are the same sentiments shared by participants 10 and 6 who also say that they must cut down on the quantity of water they use daily. This has increased the chances of people getting sick, hence putting communities at risk from diseases like typhoid and cholera. When asked if there were any cases where water-related

diseases were reported or witnessed in the community, one participant said: *“Children have suffered running stomach as well as old people. Others have been diagnosed with tuberculosis. People suffered from diarrhea because of the water that is stored in tanks for a long time”* (Community 2).

The citizens acknowledged, and some of them applauded, the municipality for providing communities with bulk water in big tanks that community members can access water from. However, the community have explicitly condemned water tanks as they are one of the conduits that bring diseases in the area since water is stored in them for a long time without them being regularly cleaned, thus making the water unsafe to drink. On the other hand, some participants refuted the claims that there has ever been an outbreak of diseases in the study area. One participant stated: *“We are a very fortunate in this community we never experienced any health problems that I can think of and nobody has been sick that I know of. The municipality always supply us with clean water, we have not had any water-borne diseases. We work together with the people and the municipality”* (Community 5).

The disagreement in the community members’ statements are understandable since it is a big community where it is literally impossible for everyone to know everyone. This leads us to the conclusion that cases of sickness resulting from unclean water are confined to particular localities and do not constitute an outbreak affecting the whole community. However, it is important to note that some people may be exposed to health risk when they resort to unclean water as owing to the municipality failing to supply them with clean water.

The bedrock of water scarcity

The study revealed that the quagmire of water supply disparities in the community emanates from a wide range of problems. However, the community, as well as the officials who work with the municipality, have contradicting solutions that they think can help curb this persistent problem in the said community.

Climate change

The participants reported that the community has not been receiving enough rainfall of late. The dams and rivers around the community have threatened to dry up, or they are drying up more quickly than they used to do before. They also reported that there is a lack of water supply from the municipality because the dams are no longer filling up to their expected capacity as rains have been erratic over the years. One participant said: *“You see, I think climate change has been a major problem that we cannot deal with at the moment because this area has been seriously hit by seasons of drought over years and that makes it difficult for water supply. The problem is the issue of drought, there is no rainfall.”* (Community 3). Climate change is a global phenomenon affecting areas that were historically dependent on rainfall. The fact that the community relies on water from dams that are drying up or not filling up to full capacity is worrisome. However, the municipality has not responded well to the problem of climate change by drilling hand-pump boreholes so that even when the community does not get tap water, they can still access clean and safe drinking water via hand-pump boreholes. The idea of hand-pump boreholes is sustainable in that it does not require many resources. [33] opines that temperature transformation is an important environmental problem that impacts on the agricultural sector and threatens sustainable economic development. The river is supposed to be one of the water sources to the community, but due to low rainfall, the rivers are running dry. One participant responded: *“The issue of climate change and the issue that most people living in the rural areas do not work, so they can’t pay for the water. And that affects the municipality because it does not have enough resources”* (Community 5). [39] argues that South Africa is a water limited nation, and the annual rainfall is less than 500mm. Also, the roughness of the surface and groundwater supply are due to temperature and natural features.

Increasing water demand

The basic theory of economics is that when demand increases while supply is constant, the end result will be a shortage [30]. When asked about the last time that they received water from the municipality, the participants’ responses differed, but they all concurred that they do not receive it on a daily basis. One participant responded: *“We lastly received water a few days back, mostly we get water in weekends. We get water once in few days when they feel comfortable in supplying to us. Even now I am accessing clean waters, I always access water”. I think few days ago. We get water like 8 hours when they decide to allocate water that day”* (Community 2). The participants’ responses indicate that they do not get water daily, and when they do get it, they are only able to access it for eight (8) hours. Some of them indicated that they only get a supply during weekends while on the other extreme, others get it daily. This indicates that these shortages might have been worsened by the ever-increasing demand for water. Below, we will quote from the participants involved in this study.

One participant responded: *“The issue of urbanization, people coming from the rural areas that affect us because of water provided for the people is now very small. The demand for water is higher than the infrastructure can provide as a result you find that communities do not have a continuous supply of water and some receive it on a rational day where water today is receiving by other communities”* (Community 1). The responses given by the community lead this research to conclude that the municipality is cognizant of the fact that demand for water has increased over the years, but the municipality has not capacitated itself to make sure that access to water improves. Despite the changing climate and dams drying up, the municipality has been tardy to ensure that the supply of water matches up with the demand.

The contribution of crime to water shortages

The participants indicated that some of the blame for water shortages can be attributed to crime perpetrated mostly by community members themselves. These observations have been made by both the community members who were involved in the study, as well as the officials contacted. The contribution of crime to water shortages in the community is twofold: (1) the stealing and vandalizing of water pipes (2) illegal connections by community members or by some other people who are not connected to the main waterpipe. One participant responded as follows: *“One of the biggest problems we have are illegal connections, leakage taps, bulks of water is lost due to unfixed taps that cause runoff/ underground pipes that are leaking causes a loss. And also illegal connections into the municipal pipe line, the connection is not done professionally someone who is not skilled in doing it and as a result we have lots of leakages from the connection point up to the households where they don’t have a valve to close the bulk of water”* (Municipal official 3). *“Illegal connections that take water from the main pipe line, especially the new stands were not included when the plant was designed; so they take water from the main pipes that were meant for the reserved people end up not getting to them. They should stop all the illegal things because it affects everyone, they should stop illegal connections because they cause leakages”* (Municipal official 2). Listening to the responses given by the participants above, one can deduce that crime is a big problem in the community, leading to worsening water access problems. The community itself admits that one of the problems is caused by some of their own members. However, they argued that other people have resorted to illegal connections mostly because they do not have access to water. As such, they end up carrying out illegal activities just to access water. They further argued that if water supply is improved, the cases of illegal connections may decrease and the whole community can benefit from the normal supply of water.

Inadequate budget and lack of infrastructure for water provision

The participants reported that the municipality lacks proper and adequate resources to provide water to the community. The municipality either lacks sufficient budget to provide adequate water, or the pipes supplying water across the community are old, worn-out, or broken. The fact that the pipes are no longer in good condition has led to leakages and water wastage. When pipes are continually broken due to old age and the municipality has no funds to fix them, this becomes a very big problem as the municipality’s ability to supply water becomes impaired. People walk from afar to get water while the municipality is not even able to assist them by maintaining or fixing the waterpipes. The municipality’s water provision system looks neglected for a community’s main source of water, particularly when the community has challenges of water availability. One participant averred: *“Most people are living in the rural areas and do not work, so they can’t pay for the water. And that affects the municipality because it does not have enough resources to provide water to full capacity if people are not paying for it. We buy the water from Rand Water so they have cut down on the supply because we don’t have enough funds for the water supply”* (Municipal official 4) *“Municipality need to replace old pipes with new ones for efficient water supply because the old ones are wasting water. They should change the leaking pipes. The pipes really need to be maintained, for the leakages I have seen around the communities”* (Community 5). The participants all nodded to the fact that infrastructure has made it difficult for the municipality to supply water reliably, and for the community to get better access to water. If the community is to enjoy their basic right to access clean water, the municipality must improve its budget for refurbishing the infrastructure to ensure that no water is wasted. If the water that is wasted through leakages is saved, the community can have an improved water supply.

However, this needs all stakeholders to work together so that the desired goal of efficient water distribution and access can be achieved. Asked about their role as a community to facilitate better access to water, the participants agreed that they should report all the leakages to the municipality so that no water is wasted. The complementing efforts of both the community and the municipality can only bear fruit if the municipality also improves on its budget. It will not be of much use if the community reports damaged or leaking pipes, and the municipality does not act on the information to make sure that no water is wasted. [16], state that the number of people participating in a qualitative study is enough when saturation and verification of data is achieved in the study area. To explain this further, they assert that saturation

is reached when additional sampling does no longer provide new information. As for this study, saturation was reached when the researchers reached the thirteenth participant in the case of community members. In the case of this study, saturation was deemed to be achieved in relation to the major themes and the sub-themes that were used to analyse the data. The verbatim quotes included in the analysis are evident enough to demonstrate this saturation of data in the three major themes being analysed.

Conclusion and recommendations

This study reviewed core literature regarding the water governance. Notably, the several studies [16] reviewed have been able to unveil a clear understanding of water governance in rural communities as a constitutional responsibility of the municipality to the masses. The purpose of this study was to explore water governance in the community of Newington B at Ehlanzeni Municipality, as well as the perception of the community members on the issue of water governance. This study sought to put forward various strategies that might help to inform specific actions to be taken to ensure effective and efficient water provision, as well as to reduce water scarcity in the municipality. Although water provision is one of the basic services provided by the government to the citizenry, several policies and legislative Acts to ensure regular and adequate provision of water to the masses are lacking. Several problems have been identified as challenging factors limiting regular water provision to the communities. The problems include the vandalization of water infrastructural resources, illegal connection to the communities' main waterpipes. More than a few strategies have been employed by the municipality to check water shortages in the communities, such as the rationalisation of water supply to the communities, the provision of bulk water tanks to the communities, and awareness campaigns in community schools on how to save water. However, some of these strategies have been condemned by the participants as ineffective to improve water supply. The participants unanimously agreed that the budget of the municipality needs to be increased to cater for the escalating demand for water supply in the communities. An increase in budget will empower the municipality to improve water governance in the municipality.

The municipality's budget should be increased to enable the municipality to connect every rural community to treated water. The waterpipes should be run to every strategic point in the community for easy access to water by community members. Every family unit in the communities should have free and convenient access to bulk water tanks. This simply means that feasible plans should be made to ensure that water infrastructures are regularly maintained, and that resources are replaced or repaired. There is a need to hold frequent dialogues on how to improve water supply, how to prevent water shortages, how to save water, and how to curb the vandalization of water facilities and other deliberate illegal activities. The community can always assist the municipality to safeguard water infrastructures in their area.

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