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Article

# An Assessment of How Polokwane Local Municipality Executes their Mandate in Water Supply to Matlou and Letsokoane Residents

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Abstract: The main aim of this study is to assess water supply in general and specifically to "assess on how the Polokwane municipality executes their mandate in terms of water supply to Matlou and Letsokoane Residents. This was done on a case study about Matlou and Letsokoane inhabitants were chosen as a setting for the study. A mixed method approach was used for the study combining structured questionnaires and openended interviews. The findings of the study have showed that there is poor water supply to two affected rural communities by the Polokwane local municipality . Amongst contributing factors the increase in population growth in that area is a major problem as well as residents tampering with infrastructure , theft and no interventions by political representatives when there is no water. This has resulted in inadequate provision of clean water resources . Water supply Value chain model has been proposed emanating from the findings of the rural communities. Lessons that can be learned from this study include the following: consultation with the communities through ward councilors which include educational aspect such as preservation of water as a source of human life, providing a compelling case for concertizing the community with an attempt to reduce illegal activities as cited in the study regarding the steeling of water taps.

Keywords; Polokwane local municipality; mandate; water supply; Matlou; Letsokoane residents

# Introduction

Agreeing to Dikotla, Mahlatji and Makgahlela (2014), the challenge of benefit conveyance remains an uncertain and disturbing issue in nearly all South African districts. Destitute administrations such as streets, sanitation, wellbeing offices, water, powerand essential shield is what characterised numerous districts in South Africa (Beyers,2015).Subsequently, benefit conveyance recipients see regions as advancing at a snail's pace when it comes to conveying fundamental metropolitan administrations to the recipients at huge. In reaction to the challenges, the modern government administration has been advancing coordinates improvement arranging as an approach to construct thearranging capacity of all districts within the nation (Asha, 2014a).Polokwane has the biggest number of inhabitants within the rural and urban ranges within the area and it serves as the commercial center of Limpopo. At the middle of the range, there are a central commerce locale, mechanical zone, and city zones serving more wealthy residents of Polokwane and encompassing ranges. It includes an expansive parcel of the populace living in a country or peri-urban environment, which for most part is unplanned and ineffectively adjusted (Hedden & Cilliers, 2014, pp. 2-14).Polokwane Nearby District may be a common development point which capacities as a to begin with arrange settlement. Be that as it may, the geological region of Polokwane District comprises transcendently

of rustic communities. The Region is overseen politically and officially. Politically, the District is spoken to by councilors from diverse political parties that incorporate the African National Congress (ANC), the Majority Rule Collusion (DA), the Azania Individuals Organization (AZAPO), Financial Opportunity Warriors (EFF), and the Flexibility Front Also (FFP). The political structure is driven by the Official Chairman. On the authoritative administration, the structure comprises of Metropolitan Chief, the Chief Money related Officer, the Communication Officer, and the Neighborhood Financial Improvement Officer among others. The Polokwane Neighborhood District is made up of 45 wards; the most seven clusters of settlements are Polokwane. Seshego, Mankweng, Sebayeng/Dikgale, Molopo/Chuene/Maja. Moletji/Letsokoane/Matlou, and Picking up (Republic of South Africa, 1998). The study set out to assess water supply in common and in specific to "assess on how the Polokwane municipality executes its mandate in terms of water supply to Matlou and Letsokoane Residents". The comes about radiated from this paper are radiated from subjective investigate strategy. The study set out to determine how the Polokwane local municipality execute its mandate in terms of water supply to Matlou and Letsokoane.

The focus of this article is at Matlou and Letsokoane villages outside Polokwane. The two villages are currently experiencing water shortages. They depend on water supply which they buy from the privately owned boreholes for survival. The two villages have been forced by sever water shortages to make use of underground water such as boreholes.Water drawn from underground gets contaminated by pit toilets and cows manure (Broderick, Davis & Hirji, 2014,p.101). The communal tap which is installed in the two villages does not meet their water demand, since the pace at which water is flowing from the tap is very slow and at times water is not available for almost a whole week for households usage. Consequently, other members of the communities who cannot afford to buy water from privately owned boreholes travel to the shallow wells and unprotected ponds, which they share with animals closest to their vicinity to fetch water.

# **Literature Review**

The concept scholarship is consistently used in the study, but what does it mean?Kuye (2002a,pp.27-29) defines scholarship as the collective quest for knowledge, supported by a diverse inquiry of domains and delivered in a logical sequence, as may be exhibited in teaching, research and practice. A review of scholarship is an important component in any type of research. For example, those who do research belong to a community of scholars. The section begins by articulating the importance of providing portable water to communities .It then describes the situation of water services in South Africa in general and Limpopo Province. The Importance of Providing Potable Water to Communities:Human Right Perspective Odeku and Kononani (2014, p. 162) set that water is the spring of life and exceptionally imperative to human business; without water there's no life at all. Be that as it may, the current state of need of get to satisfactory clean water as ensured in Segment 27 (1) (b) within the Charge of Rights, South African Structure of 1996 could be a major concern to South Africa. Destitute communities within the larger part of the townships and country regions don't have get to to adequate water supply not at all like those who live in half breed regions and rural areas. Water is very critical within the acknowledgment of the proper to food and vocations as examined underneath in subtle elements: Utilization: washing, cleaning and showering. Natural and individual cleanliness is basic in advancing great wellbeing and limiting diseases. Diseases may be those that cause communicable and none communicable illnesses. A debilitated community can unfavorably influence the economy of the nation due to need of efficiency and colossal restorative bills (Jagals, 2012, p. 15). Lack of providing water supply has the following impacts which are discussed below.

## 1. The Impact on Development, Health, and Social Relations

Water shortage is additionally a prevention to an assortment of advancement ventures such as, street development, bridges, and complexes. Agreeing to Blignaut and Van Heerden (2009, p. 2), water deficiencies may obstruct financial development. In South Africa, thirty percent of children's passing's are since of destitute water and sanitation conditions. Jabeen (2011, p. 23) contends that need of clean water and destitute sanitation encompasses a major wellbeing impacts. There are numerous ways by which pathogens contaminate people through water, causing water related-diseases, water-washed illnesses, and water-borne infections.

Ladies and children relinquish quality time as a family with their fathers/husbands since they will be trying to find water somewhere else. Safe and clean water advances a solid living environment for human creatures.

## 2. Water Management Institutions in South Africa

The National government is the civil agent of the state's water assets, hence it gets to be responsible on ensuring South Africa's water assets ended up secured, utilized, industrialized, well-looked-after, finished, and measured in a viable and sensible way for the improvement of people considering the manager of the Structure. The state has the control apparatus to control the utilize, development and administer all channels within the nation. Serve of Water Issues and Sanitation is inevitably liable by making beyond any doubt that the water is allotted justifiably and utilized emphatically within the mindfulness of the metropolitan by supporting biological ethics. A significant surface of the new-fangled water technique is to emissary water asset administration parts to legitimate foundations. With respect to the Water Benefit Act 108, four categories of water running are given (Ruiters & Matji, 2015, p. 660).

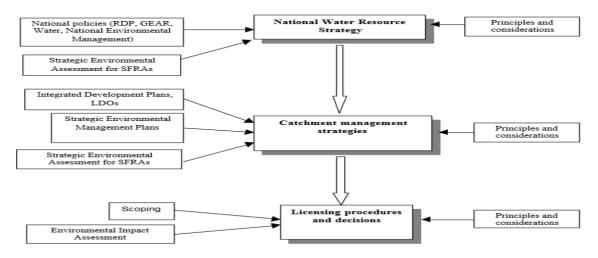


Figure 1. The South African water sector compulsory licencing.Source:(Researchers own illustration) Catchment Management Agency (CMA)

Catchment Administration Organization (CMA) was set up intentionally for designating water asset administration to a catchment level to include the conventional or ordinary inside the system of the national water procedure. Creating a nearby (catchment) administration arrange. Co-coordinating within the exercises of those who utilize water and educate that do oversee water within the water administration offices. Promoting the execution of any advancement arrange that's set up beneath the Water Benefit Act, for occasion, water benefit advancement arrange. Advancing social orders support in ensuring, utilization, improvement, preservation, administration, and control of water assets in its Water Administration Affiliations (DWA, 2014, p. 1). The area that takes after bargains with multi-stakeholder cooperation in water administration.

## 3. Multi-stakeholder Participation in Water Management

The chronicled imbalances by those who were underestimated and prohibited from the useful rights from the past, such as water, are highlighted and nitty gritty underneath by distinctive scholars' observational sees on the subject beneath the think about. Over the past decades creating nations have center on a bottom-up energetic of advancement, proposed as a substitution for the fizzled top-down endeavors whose benefits did not reach the destitute. In South Africa the guideline of Coordinates Water Assets Administration (IWRM) is urgent to the transformation process taking put within the water division which is almost changing chronicled disparities by counting those who were marginalized and prohibited from benefits and rights within the past. At the center of these rule is the idea of decentralization, proposed as a practical instrument for accomplishing feasible arrangements for normal asset administration.

# Methodology

#### 1. Research Design

Mouton (2005,p.56) explains that research methodology focuses on the research process and the kind of tools and procedures to be used compared with research design. The study utilised the combination of the qualitative and quantitative approaches which helped the researcher to have a deeper understanding of the phenomenon and assist in avoiding biasness of the results to be collected from the study (Leedy, & Omrod, 2013,p.101). As articulated by Bless, Smith and Sithole (2013,p.4), quantitative research is a study using a range of methods, which uses measurements to record and investigate aspects of social reality. A qualitative method generates subjective data. Qualitative methods allow the researcher to study selected issues in depth, openness, and detail as they identify and attempt to understand the categories of information that emerge from the data (Welman, Kruger & Michell, 2005,pp.8-9). The study set out to determine on how the Polokwane local municipality executes its mandate in terms of water supply to Matlou and Letsokoane.

#### 2. Participants

The population of the study consisted of Matlou and Letsokoane communities. The total population of the study is 2 210. The population of Matlou community is 1 115and that of Letsokoane is 1 095 (Statistics South Africa, 2018). Convinience sampling was used to select 111 research respondents out of 11 15 population of Matlou households and 110 out of 1095 of Letsokoane households, who participated in the study. Purposive sampling method was used to select 10 municipal officials who are directly involved with water supply.

#### 3. Data Collection

De-Vaus (200, p.9) defines research design as a logical structure of enquiry. Research design presents the plan or blueprint detailing how the study should be conducted in order to achieve the stated objectives (Babbie & Mouton, 2010,p.74). Case study method was followed in this study. Case studies, in their true essence investigate contemporarily real life phenomenon through detail contextual analysis of a limited number or conditions and their relationship (Babbie & Mouton, 2010,p.74).

Population	Population Size	Sample
Matlou	1 115	111
Letsokoane	1095	110
TOTAL	2 210	221

Table 1. Comm	unity Profile and	l sample size for	Matlou and	Letsokoane Residents
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The ratio of the sample was calculated using the following formula: A representative sample formula. Source: (Babbie & Mouton, 2001:478).

#### Source: Researchers own Illustration

The ratios of the sample for the study have been calculated as and each stratum was multiplied by these ratios. After multiplying each stratum by the ratios, the results are presented as follows:Convinience sampling was used to select 111 research respondents out of 11 15 population of Matlou households and 110 out of 1095 of Letsokoane households participated in the study. Purposive sampling is therefore, unambiguously what the name advocates, research participants are selected with a purpose (Ritchie & Lewis, 2003, p.66).According to De Vos *et.*, *al.*(2005,p.328), purposive sampling methods refer to a sample in which a research deliberately obtains units of analysis in such a manner that the sample obtained is regarded as being representative of the research population. Purposive sampling was used to respond to the set of questions in the interview scheduled.

Population	Sample
125	10
<b>TOTAL: 125</b>	TOTAL:10

Source: Adapted from PLK Water and Sanitation SBU (2018)

Purposive sampling was used to select 125 Municipal officials who are directly involved with water supply. The sample of the study is 10 research respondents who were selected out of 125 populations from the water department. One on one interview was conducted and field notes were also taken. The Table below outline the number of municipal officials participated in the study at the Polokwane local municipality.

Name	Gender	Population group	Marital status	Level of Education	Name of Municipality	<b>Operations role</b>	Tenure
Participant 1	Male	African	Married	Certificate	Polokwane	Operational water supply	3-5years
Participant 2	Male	African	Married	Diploma	Polokwane	Artisan Foreman	6 years
Participant 3	Male	African	Single	Degree	Polokwane	Engineering technician	3-5years
Participant 4	Male	African	Married	Certificate	Polokwane	Plumber	3 years
Participant 5	Female	African	Married	Diploma	Polokwane	O and M Foreman	6 years
Participant 6	Male	African	Single	Certificate	Polokwane	O and M Foreman	3 years
Participant 7	Male	African	Married	Diploma	Polokwane	Foreman water and sanitation	3 years
Participant 8	Male	African	Married	Certificate	Polokwane	Foreman	6 years
Participant 9	Female	African	Married	Post- graduate	Polokwane	Assistant manager.	5 years

Table 3. Demographic profile for municipal officials

From the data given in Table 3 above with respects to sex, eight guys and two ladies taken an interest within the investigate. Interests, all of the 10 members are from the African statistic populace.

Table 4. Demographic profile for Polokwane local municipal officials

Name	Gender	Population group	Marital status	Level of education	Name of municipality	Operations role	Tenure
Participant 1	Male	African	Married	Certificate	Polokwane	Operational water supply	3-5 years
Participant 2	Male	African	Married	Diploma	Polokwane	Artisan Foreman	6 years
Participant 3	Male	African	Single	Degree	Polokwane	Engineering technician	3-5 years
Participant 4	Male	African	Married	Certificate	Polokwane	Plumber	3 years
Participant 5	Female	African	Married	Diploma	Polokwane	O and M Foreman	6 years
Participant 6	Male	African	Single	Certificate	Polokwane	O and M Foreman	3 years
Participant 7	Male	African	Married	Diploma	Polokwane	Foreman water and sanitation	3 years
Participant 8	Male	African	Married	Certificate	Polokwane	Foreman	6 years
Participant 9	Female	African	Married	Post- graduate	Polokwane	Assistant manager.	5 years
Participant 10	Male	African	Married	Degree	Polokwane	Superintendent	6 years

As outlined in Table 4 above, the full number is 10 officials from the Polokwane Nearby District within the subjective portion of the think about. An important aspect that developed from the statistical data is that from the entire test, all members are from the same nearby district. The data is clustered concurring to their instructive foundation, sex, age, work status, and tenure.

#### 4. Data Analysis

The study used the combination of the qualitative and quantitative research methodologies. It is of utmost importance to explain that eventually, the study generated qualitative and quantitative data. As a result, it is imperative that the researcher explain how such data was analysed. Qualitative data analysis entails the process of categorising, order, and summarising the collected data (Cooper, 1998,p.104).For the analysis of quantitative data, the researcher used the two groups of different tests, such as Chi- square of independence,T-test using IBM and statistical packages for social sciences (SPSS) Version 25. NVivo 12 Pro statistical software was also utilised, the purpose of this analysis was to evaluate the difference between the groups in predicting the dependent variable in the study.NVivo12 Pro supports structures and new research process provided new choices for management and analysis of data, helps researchers to understand and access information captured on it, to evaluate, to critique the process by which data can be managed and explored and to assess the analysis conducted in it (Richards, 1999,p.319).The views from the Polokwane Local Municipality officials directly involved in water supply to Letsokoane and Matlou residents were captured, manipulated, classified and interpreted using those computerised software.

#### 5. Ethical Consideration

When conducting an academic or professional research activity, there is a need to be aware of the ethics behind the research activity in order to reduce suspicion and to increase transparency. Research ethics involve the application of fundamental ethical principles to a variety of topics involving research, these include the design and implementation of research involving human experimentation and animal experimentation (Skovdal & Adebe, 2012,pp.77-96). Right of privacy: participants were informed that their identity would remain anonymous. McMillan and Schumacher (1997,p.195) reasoned that information on research should be regarded as confidential unless otherwise agreed upon through informed consent share this view.

Protection from harm: The respondents should be given the assurance that they will be indemnified against any physical and emotional harm. Involvement of the researcher: Researchers should guard against manipulating respondents or treating them as objects or numbers rather than individuals human beings and should not use techniques of interviewing (Fontana & Frey, 1994,pp.361-376).Protection of participant identity: Seale et al (2004,p.231) emphatically pointed out the fact that researchers are obliged to protect the participant identity.In this research, intellectual property was thoroughly discussed; the researcher became conscious of multiple roles, followed informed-consent rules. Permission from the Traditional leaders and village lineage leaders was sought to distribute questionnaires to the targeted population. The sampled respondents were informed concerning the nature of the research, date and the times of questionnaire distribution. Respondents were not forced to participate in the study, the anonymity and independence of participants was respected.The above shows that the researcher was not willing to compromise the integrity of the research problem.

### **Findings**

In terms of instructive capabilities, three out of an add up to of 10 members are holders of college degrees, three are holders of Recognitions, and at last four are in ownership of certificates. With respects to the participants' operational parts, two are Operational (O) and foreman, two are water and sanitation foreman, one partner supervisor, one administrator, one operational water supply, one artisan foreman, one designing specialist, and at long last one handyman. To conclude, the inquire about populace comprised of individuals who have been within the Polokwane Nearby District between three and six a long time. The comes about displayed in this paper are exuded from subjective inquire about strategy as shown prior on. The findings of the study have demonstrated that there is poor water supply to two sets of resisdents by the Polokwane Local municipality. Amongst contribution factors the increase in population growth in that area is a major problem

as well as residents tampering with infrastructure ,theft and no intervention by political ward councillor when there is no water. The study comprised of six objecties, but the focus of this article is on Objective 3 which states as takes after: To determine how the Polokwane Local Municipality execute its mandate in terms of water supply to Matlou and Letsokoane.

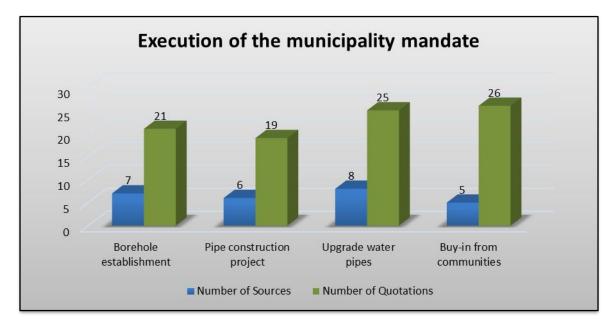


Figure 2. How the municipality execute its mandate

## 1. Borehole Establishment

Data given by the members accentuated that the Polokwane Nearby District is doing everything in its powers to work with other partners so that water supply within the Matlou and Letsokoane residents will make strides for the finest. From the data given through the information investigation prepare, it is obvious to note that the Region concedes that they are faced with a number of challenges such as support, labor, assets, restoration to specify but a couple of. Interests, most of them contended that the Polokwane Neighborhood District will remain committed to working energetically through inventive and inventive ways to ensure that there's water supply in these communities and infrastructure meets the desired guidelines. From the data given, the district in attempting to execute its command in rendering water supply, they have overseen to set up. a few boreholes so that the communities won't run dry when it comes to water. Member 5 fought that, "the Region is boring more boreholes to supplement the water in a few of these communities." Supporting the over said data is Member 6 who too fought that, "Yes, the District has penetrated boreholes and water tankers to supply more to the communities so that they won't get wiped out and all since water is life." Too, Member 9 reverberated what has been said over by expressing that, "the region arranged to bore extra boreholes to augment the framework and other boreholes have as of now been drilled already and the district is providing water to the communities through water tankers weekly".

# 2. Pipes Construction Project

The Polokwane nearby region has been confronting a number of challenges in providing clean, consumable water to their communities. This has brought about in lacking arrangement of water, meaning that not all communities have get to to clean water. A number of activities have been actualized by the nearby region as a way of rendering water to the communities. From the information given, a few of the members highlighted that the district actualized pipe development ventures as a way of making beyond any doubt that everybody gets water in their homes. Member 2 said, "Yes, since we active to lock in the community almost the pipe development venture around Letsokoane area". Buttressing the over articulation is Member 6 who shown that, "there could be a venture in town to settle water leaks and construct water channels at that point there may well be sufficient water to supply Letsokoane". More so, Member 7 moreover expressed that "Yes, since

presently there are ventures such as the water pipe developments which are on location to dispense with the issue of deficiency of water on certain places in spite of the fact that the source of water is rain". From the examination, members contended that the region is executing modern ventures and establishment of channels which are laid to supply the inhabitants with sufficient water pipe line. A few indeed underlined that the district is active "with creating the region, channels are laid, but with this issue of the city without sufficient water there's a problem" resounded by Member 8.

# 3. Upgrade Water Pipes

Updating water channels was moreover specified by the members as an elective way of moving forward water supply to Matlou and Letsokoane towns. From the data given within the investigation, Member 10 stated that, "Yes, each year the region meets with the partners to examine and allow inputs with the advancements of needs of the community with respects to water supply, for occurrence presently we are active updating the water channels so that communities will be able to urge sufficient water for their everyday needs". Resounding the over data is Member 2 who moreover fought that, "Yes, since we are overhaul the water channels to form lines that all residents must have water within the another three years". Moreover, Member 6 specified that there's a unused extend to update the water channels been done by the Polokwane nearby region. He said, "There could be a venture in town to settle water spills at that point there may well be sufficient water to supply Letsokoane".

## 4. Buy-In from Communities

Overhauling Data appear that buy-in from the communities is additionally helping the Polokwane nearby district in executing its command around the water supply. Data from the members resounded that the communities are taking portion in a few of the ventures that are actualized by the district.

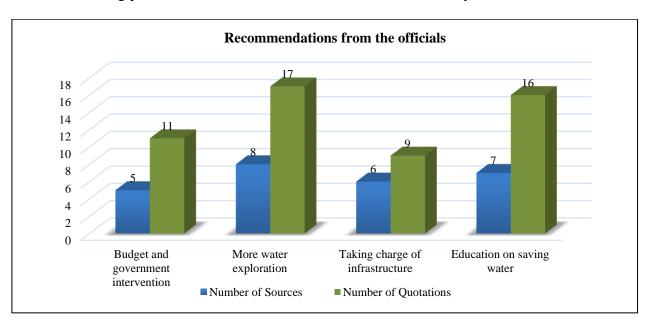


Figure 3. Recommendations to render water services to communities

Member 7 set that, "Getting bought in from the communities with respects to fulfilment of dependable water supply is imperative to us and it too helps us on how best we are able move forward our administrations. And yes, it'll make strides the administrations we are giving since we have modern improvements and the population is growing too". Supporting the data over is Member 4 who fought that, "through buy-in, there's co-operation between the communities, ward councillors, illustrious chamber and the municipality in attempting to dispose of unlawful association of water which at the conclusion of the day influences everybody within the community". Interests, Member 10 expressed that, "Yes the Region managed to conduct IDP amid the month of April and the two towns are included beneath the RWS (Territorial water plot) and yes, the towns

are included within the ace arrange and district is additionally providing the region with water tankers as a brief relief." The channels was moreover specified by the members.

# 5. Recommendations as Possible Solutions

#### **Budget Government Intervention**

Data given by the member ,s outlines that legitimate and satisfactory budget given to the region will offer assistance to progress benefit conveyance such as water within the two investigated communities. Moreover, members included that the government mediation will too offer assistance in checking a few of the challenges the municipality is confroting in attempting to supply water to a few communities such as Matlou and Letsokoane. Member 1 resounded, "Yes. As long as when we ask more budget/money from government they give us sufficient at that pont we win, and we'll be able to supply more water to the communities". Supporting the data over is Member 5who contended that, "We require cash to overhaul the water plot, and money to require care of the taps which are not mounded and linkages that ought to be fixed".

### More Water Exploration

Trough the informantion investigation, a few of the members highlighted that water investigation can be an arrangement to water benefit conveyance within the two communities beneath think about. Member 3 fought that, surface "The techniques are to investigate more ground water sources within the ranges in arrange to arrangement the surface water sources". Moreover. Proving the said data is Participant 5 who too expressed that, "To reticulate the full ranges. The region ought to penretrate more boreholes and to induce freed of copper cables and supplant them with fibre",

## Taking Charge of Infrastracture

Members demonstrated that taking charge of the foundation can a way out to water supply benefit conveyance within the Polokwane nearby communities. Members mentioned that the foundation must be kept up and made striedes as highlighted by Member 8 who said, " improvement must be done on foundation and abilities progression as there,s abilities deficiencies improvements ought to be made , meters be introduced in each family and government ought to framework,keeping up and moving forwatd will help in water benefit conveyance and making beyond any doubt that the gear is intaglio and not vandalized". It is in any case, the duty of the Polokwane nearby regions to guarantee that security measures are put to avert advance burglary.

#### Education on Saving Water

Information appear that the communities are too to fault with respects to water deficiencies in their homes. Data given by the members contended that, at times communities'ndividuals are seen vandalizing road taps, a few of them are taking water tanks and channels, a few of them take off water running from the tap. In this manner, the members are encouraging the community individuals to be taught on the significance of sparing water. Member 10 contended that, "Unless our communities are taught with respects to sparing water, knowing that water may be a rare product and getting rain to charge our underground water. Instruction on water shortage and sparing of water is vital and required in our communities". Member 2 moreover strengthened the said data by expressing that, "Community from Matlou and Letsokoane must lock in to spare water through teaching sessions, so that when they see water spill they must report to the chamber department". Member 6 concludes by underscoring that, "Capacity building in instruction and preparing is an imperative component that ought to guarantee a mindfulness of water supply, water preservation, wellbeing issues, administration and control of community water supply".

### Discussion

The results above explain on how the Polokwane local municipality executes their mandate in water supply to Matlou and Letsokoane inhabitants. Residents were asked to rate water supply in their communities. Majority of the residents from both communities stated that water supply in their community is poor. The results demonstrated that residents still struggle with water in their communities and women tend to be the ones who struggle most as they must go to fetch water once is run out. And residents from these different communities do not receive free basic water from the municipality at all. In line with a study carried out by Wright, H. et al. (2018), who made an argument that the deterioration of community water supply systems in various parts of the country is due to aging infrastructure, insufficient maintenance, and a lack of consistent water quality testing.

Residents of Matlou seem to be the ones who are most struggling with water because they spend more than one hour to get to the water source as compared to residents of Letsokoane because they only spend less than 10 minutes. Water scarcity seem to consume resident's lot of time because they use wheelbarrow to go and fetch water. The residents stated that they do not believe that the poor condition of water supply will ever improve in the next three years. Mokoena, O. & Mander, M. (2017) conducted studies that emphasized the concern of water contamination. They found that pollution from agricultural runoff, mining activities, and insufficient wastewater treatment have resulted in the presence of harmful chemicals and pathogens in community water sources. This contamination presents significant health risks to the population, including waterborne diseases and potential long-term health effects such as cancer and developmental disorders. According to the resident's inadequate water supply have negative effects in the community. For instance, learners tend to poorly perform at school, it results to poor economic growth, and members of the community have poor healthy condition.Residents said that lack of water supply violates their rights.

## Conclusion

Lacking water capacity within the Polokwane has been named as a major limitation that has made it troublesome for the region to convey water benefit to the community. The study have demonstrated complexity of local government municipality on the seriousness of the violation with the Constitution that they have responsibility to protect through participatory process of water supply. The district has five open dams that are to supply the country and urban zones of the region with water. Amongst contribution factors the increase in population growth in that area is a major problem as well as residents tampering with infrastructure ,theft and no intervention by political ward councillor when there is no water. The study has therefore produced a grounded model that separates responsibily and accountability to maximise potential workstream of water supply. The model includes consultation with the community through ward councillors, which include the platform for inculcating educational aspect of preservation of water as a source of restoration for human life and dignity. Lastly this article will hopefully serve as a guideline to other reserchers in pursuing their research interest.

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Informed Statement: Informed consent was obtained from all subjects involved in the study.

## References

- Anderson, J. E. (2011). *Public policymaking: An introduction wadsworth political science*. Part of Cengage Learning.
- Asha, A. A. (2014). Towards effective planning and implementation of development initiatives at the local level in Capricorn District Municipality. Limpopo Province.
- Babbie, E. and Mouton, J. (2010). *The practice of Social Research*. (10th ed.). Oxford University Press Southern Africa.
- Beyers, L. J. E. (2015). Service delivery challenges within municipalities in the Capricorn District of Limpopo Province. *Journal of Human Ecology*, 50(2), 121-127. https://www.researchgate.net/publication/321207173\_Service\_Delivery\_Challenges\_within\_Municip alities\_in\_the\_Capricorn\_District\_of\_Limpopo\_Province

- Bless, C., Higson-Smith, C., & Sithole, S. L. (2013). Fundamentals of social research methods: An African perspective. Juta and Company
- Blignaut, J., & Van Heerden, J. (2009). The impact of water scarcity on economic development initiatives. *Water*, 35(4), 415-420.
- Cooper, H. (1998). Synthesizing research: A guide for literature reviews (3rd ed.). Sage Publications Inc.
- Cullis, J., Strzepek, K., Tadross, M., Sami, K., Havenga, B., Gildenhuys, B., & Smith, J. (2011). Incorporating climate change into water resources planning for the town of Polokwane, South Africa. *Climatic Change*, 108(3), 437-456.
- Department of Water and Sanitation. (2014). *Resource directed measures: Reserve determination study of selected surface water and groundwater resources in the Usuthu/Mhlathuze Water Management Area. Pongola Floodplain—EWR Report—Hydrodynamic Modelling.* Pongola Floodplain–EWR Report.
- De Vaus, D. (2002) Surveys in Social Research. (5th Edition). Routledge.
- De Vos, A. S., Strydom, H., Fouché, C. B., & Delport, C. S. L. (2005). In *Research at grass roots. For social sciences and human service profession* (3rd ed.). Pretoria.
- Dikotla, M. A., Mahlatji, M. R., & Makgahlela, L. A. (2014). Knowledge management for the improvement of service delivery in South Africa's municipalities. *Journal of Public Administration*, 49(3), 847-859.
- Fontana, A., & Frey, J. (1994). The art of science. In *The Handbook of Qualitative Research* (pp. 361-376). Sage Publication, Inc.
- Goldin, J. A. (2010). Water policy in South Africa: Trust and knowledge as obstacles to reform. *Review of Radical Political Economics*, 42(2), 195-212.
- Hedden, S., & Cilliers, J. (2014). Parched prospects-the emerging water crisis in South Africa. *Institute for Security Studies Papers*, 11, 16.
- Hirji, R., Davis, R., Brown, F.A (2009). Improving water security for sustainable livelihoods and growth in Tanzania.https://documents.worldbank.org/en/publication/documentsreports/documentdetail/424361 468133185803/improving-water-security-for-sustaining-livelihoods-and-growth-in-tanzania
- Jabeen, S., Mahmood, Q., Tariq, S., Nawab, B., & Elahi, N. (2011). Health impact caused by poor water and sanitation in district Abbottabad. *Journal of Ayub Medical College Abbottabad*, 23(1), 47-50. https://ayubmed.edu.pk/JAMC/23-1/Sadia.pdf
- Jagals, P. (2012). The impacts of rural small-community water supply interventions in rural South Africa. Department of Environmental Health. Tshwane University of Technology.
- Kayser, G. L., Moriarty, P., Fonseca, C., & Bartram, J. (2013). Domestic water service delivery indicators and frameworks for monitoring, evaluation, policy and planning: a review. *International Journal of Environmental Research and Public Health*, 10(10), 4812-4835. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3823337/
- Leedy, P. D., & Ormrod, J. E. (2001). Practical research: Planning and designing. Merritt Prentice Hall.
- Mc Millian, J. H., &. Schmacher., S. (1997). Research in Education (5th ed.). Harper Colins College.
- Mokoena, O., & Mander, M. (2009). Water quality assessment in the Olifants River, South Africa: A case study. *Physics and Chemistry of the Earth, 100*, 201-206.
- Moriarty, P., Batchelor, C., Fonseca, C., Klutse, A., Naafs, A., Nyarko, K., Pezon, C., Potter, A., Reddy, R., & Snehalatha, M. (2011). Ladders for assessing and costing water service delivery. *IRC International Water and Sanitation Centre*. https://fr.ircwash.org/sites/default/files/Moriarty-2011-Ladders.pdf
- Mouton, J. (2005). *How to succeed in your master's and doctoral studies: A South African guide and resource book.* Van Schaik.
- Muller, M. (2007). Free basic water—a sustainable instrument for a sustainable future in South Africa. *Environment* and Urbanization, 20(1), 67-87. https://journals.sagepub.com/doi/abs/10.1177/0956247808089149
- Odeku, K. O., & Konanani, R. H. (2014). Poor water service delivery: an exposition of the plight of the Phiri community in Soweto, South Africa. *Studies of Tribes and Tribals, 12*(1), 161-170.
- Richards, J. A. (1999). Remote sensing digital image analysis: An introduction. Springer-Verlag.
- Reform, L., & Tenants, L. (1996). Republic of South Africa. Government Gazette,

- Ruiters, C., & Matji, M. P. (2015). Water institutions and governance models for the funding, financing and management of water infrastructure in South Africa. *Water Sa*, 41(5), 660-676. https://www.wrc.org.za/wp-content/uploads/mdocs/3129.pdf
- Ritchie, J., & Lewis, J. (2003). Qualitative research practice—a guide for social science students and researchers. Sage Publications Ltd. \
- Seale, G. C., Gobo, G., Gubrium, J. F., & Silverman, D. (2004). *Qualitative research practice*. Sage Publishers.
- Skovdal, M., & Adebe, T. (2012). Reflexibility and dialoque:Methodological and socio-ethical dilemmas in research with HIV-affected children in East Africa, *Ethics*, *Policy & Environment*, 15(1),77-96. https://childethics.com/library/journal-articles/reflexivity-dialogue-methodological-socio-ethicaldilemmas-research-hiv-affected-children-east-africa/
- Welman, C., Kruger, F., & Mitchell, B. (2005). *Research methodology* (3rd ed.). Oxford University Press.
- Wright, R. C. T., Friman, M. C., & Brockhurst, M. A. (2018). Cross- resistance is modular in bacteria-phage interactions. *PLOS Biology*, 16. https://pubmed.ncbi.nlm.nih.gov/30281587/