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WATER MANAGEMENT OF HARARE METROPOLITAN PROVINCE MIRIAM RUTENDO CHIKUKWA

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Abstract

The research sought to assess the management of Harare metropolitan province focusing on water provision. The research method used was qualitative and quantitative qualitative approach and the data was generated through the use of questionnaire, face-to-face interviews, focus group discussions, and the researcher as a tool. This research uses a combination of purposive and convenience sampling and this is because of limitedness of resources and also the unplanned structure of certain suburbs. The findings of the study could be generalised as those affecting the water challenges and their implications. This research shows that the provision and availability of water has become inadequate, people are forced to use contaminated water, resulting into water-related diseases, such as cholera, dysentery, and diarrhea, as they fetch water from unprotected sources and use the bush system, as toilets are closed because of the shortage of water which has an impact on health and livelihood of community members which affects the livelihoods and community health of residents. The other implications of water scarcity on community health as well as livelihoods is time and resources being spent to obtain basic commodity such as water. It was concluded that population growth coupled with water infrastructure that is available is causing water shortages. Broken pipes, less rain, unfair distribution of water to various sections of the area is contributing to water shortages. The municipality is trying to save water, and some residents at some reasons they don't pay water bills.

1. Introduction

Water is a very important natural resource which is essential for good health and life. Water covers 70% of the Earth's surface, but only 3% of this is fresh water, of this only 1% is usable in rivers, lakes, and subsoil aquifers (Bakker, 2010). According to Barreto (2018), the world contains an estimate of 1400 Mln Km³ of water, but only 0.003% which is not easily accessible can be utilised for drinking, hygiene, agriculture, and industry. Water is a contributing element to the body but the body system cannot survive for more than a few days without it. Harare, formally Salisbury before independence in the 1890s, has always been a victim of water shortages since the millennium of time. Before independence, the allocation of water was synonymous to access to property rights and colonially skewed (Nzengya, 2015). Salisbury then was an urban settlement and only white people had the right to own property in urban areas without restrictions.

Precisely, the settlers who were the minority (or few) were the only ones with the right to own property inclusive of residential places and businesses in urban areas and because few people demanded for water it seemed as if there was not a

water shortage crisis. People who worked for these white people in urban areas lived in now called Ghetto suburbs like High fields and Mbare, and in these suburbs water, hygiene, and sanitation levels were poor. Despite the construction of 290 million cubic meters Lake McIlwaine in 1952 for the purposes of water supply in Greater Harare and Manyame dam in 1976 for the same greater Harare before independence, the discrimination in terms of water supply was just unheard of because of colonial interests. It is argued that despite the construction of these two water bodies to supply greater Salisbury with water they were quickly polluted by as early as 1978 (Musemwa, 2008).

Water is a natural resource and a basic need that should be easily accessible to everyone as it forms the basis of life in its various facts. This is in line with the sustainable development goals (SDG), Goal 6 which aims at ensuring availability and sustainable management of water and sanitation. Harare Metropolitan Province residence depend on municipal water for domestic uses such as drinking, bathing washing, and cleaning. Dzirutwe (2020) states that Southern Africa, generally, has a huge problem in providing good water



services and this has harmfully impacted the livelihood activities as well as the health. Zimbabwe is not an exemption as its follow record of urban water supply has been affected by challenges. Since water is a basic need in life and an essential human right that is important and shapes all aspects of human livelihoods. There are important stakeholders such as the state, businesses, and international development agencies who must deploy policies and practices to ensure that individuals and communities have access to adequate freshwater to guarantee decent livelihoods for example borehole drilling. The focus of this research is the residential section of Harare Metropolitan Province where water shortages culminated into a livelihood challenge and community health problem. Residents adopted various coping strategies notably the use of ground water and residents are drilling boreholes without permission (Dzirutwe 2020). Some residents have to walk for long distances and queue the whole day to get water from the surrounding farms and low-density areas which greatly affect their livelihoods. The problem has even led some people to sale water for use undermining the constitutional right to water.

2. Objectives

- To explore factors causing water provision in the Harare Metropolitan Province.
- To examine the implementation of water provision guidelines in polarised existing water administration structures.
- To recommend strategies that safeguard the dignity of the legitimate residents of Harare. Metropolitan Province that ensure provision of clean water as a human right.

3. Conceptual framework

The study was guided by the concept of integrated water resources management. According to the concept of integrated water resources management presented here, water resources managers would play a more active role in stimulating and guiding sustainable socio-economic development through concerted actions towards both supply and demand. According to Bakker, (2010), Integrated management in refers to the fact that water resources should be managed as an integral part of a nation's social and economic development. This differs substantially from a traditional approach where water resources management has been supply oriented in pursuit of ever-increasing growth scenarios, and where its efforts were mainly focused on providing the proper conditions for socio-economic development by removing water shortages before they occur.

The Water Resources System is considered an input-output system, which includes all elements to produce water and related goods and services to meet final and derived demand from society. Such systems essentially consist of the following four components: (i) the total of water and its physical, chemical, and biological constituents; (ii) the natural subsystem, including rivers, lakes, vegetation, and soils; (iii) the man-made infrastructure such as canals, diversion weirs, dams, and water treatment plants; and (iv) the administrative

subsystem including the existing legislation and regulations as well as the institutional framework consisting of agencies and their linking mechanisms

4. Research Methodology

The researcher in this study was guided by four philosophical pillars or foundations namely Ontology which is branch of Metaphysics, Empiricism which falls under Epistemology, Induction as the guiding Logic or principle of reasoning, and Ethics or moral reasoning. The four philosophical pillars act as the torch directing the researcher in this study. There are two main models in research namely, quantitative which involves the objective way of studying things, and qualitative which involves the subjective ways of studying (Adams, 2017). By undertaking this integration, the researcher sought to get a better understanding of the research topic in order to give more detailed answers to research questions, identify new research areas and propose outcomes that can be promulgated as laws in the Harare Metropolitan Province. The population in this study is the whole of Harare metropolitan province with its four cities namely Chitungwiza, Epworth, Harare City, and Ruwa and within these cities, there are many suburbs. The researcher collected data through primary and secondary data.

5. Findings

From the findings in the study, majority 55% cited inefficiency of municipality officials as the major cause water provision in Harare Metropolitan Province, 40% indicated that poor maintenance is contributing to water provision and only 5% cited lack of education as the cause of water shortage. Participants in an interview indicated that Zimbabwe has been experiencing serious power shortages, which have resulted in power cuts, which have negatively affected the supply of water. The magnitude of the problem has worsened in Harare Metropolitan Province, as the waterworks could go without electricity for periods ranging from 6 hours to 18 hours on a daily basis. The municipality employees revealed that power shortage problem started manifesting in Harare Metropolitan Province in 2005. Participants when asked the other causes of water provision in Zimbabwe urban areas they indicate that the country is facing a severe water shortage, and public health concerns, as water levels in dams supplying Harare have “drastically” dropped due to recurring droughts dating back from 2018. Charities have stepped-up free water deliveries to poor neighborhoods but, health authorities have implemented Covid19 social distancing which is a challenge at public water points which has an impact on livelihoods and community health of Harare Metropolitan Province residents.

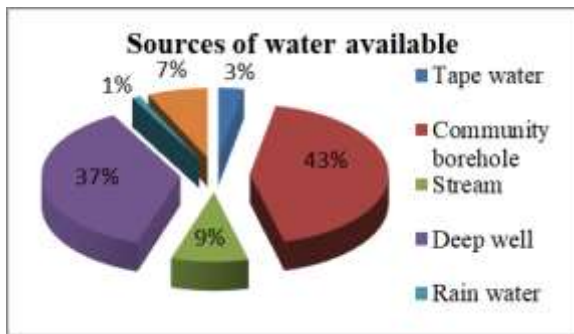


Figure 1 Sources of water in Harare Metropolitan Province

From the findings majority of the participants 43% get water from community boreholes, 37% use deep well water, 9% use stream water, 7% have water reservoirs, 3% use tape water, and 1% use rainwater. The participants indicate that there are two major sources of water available in the study area which are boreholes deep well water but are not sustainable because they directly or indirectly depend on certain factors. As rainfall reduces ultimately surface water declines, water scarcity intensifies and ends in water insecurity in the communities. Also, the borehole might need maintenance and electric power to operate the pumping machine which if not readily available in the study thereby making the borehole not functional and impacting on livelihoods and community health of Harare Metropolitan Province residents.

Participants when asked when they started to experience water shortage in Harare Metropolitan Province and the reason for the cause as well as the impact, the response indicate that water distribution system was built long before independence in 1980, and has gone without proper maintenance for many years, and its pumps, that have an expected lifespan of between 15 and 20 years, have not been replaced since they were installed. This means that the water systems are dilapidated and will continuously break down causing water shortages. The provision and availability of water has become inadequate, people are forced to use contaminated water, resulting into water-related diseases, such as cholera, dysentery, and diarrhea, as they fetch water from unprotected sources and use the bush system, as toilets are closed because of the shortage of water which has an impact on health and livelihood of community members which affects the livelihoods and community health of residents. Participants when asked how they rate the implications of water scarcity on community health as well as livelihoods the findings are presented in Figure 4.4 below

Table 1 Implications of water scarcity

Implication	SA		A		N		D		SD	
	N	%	N	%	N	%	N	%	N	%
Poor basic hygiene	106	27	186	47	-	0	53	13	53	13
Conflicts	173	43	119	30	15	4	27	7	66	17
Disease	160	40	133	33	27	7	27	7	53	13

outbreak										
School absenteeism	187	47	107	27	-	0	40	10	66	17
Women and children abuse	200	50	133	33	-	0	13	3	54	13

As indicated in table 4.4 above 47% agreed poor basic hygiene is an implication caused by water scarcity in Harare Metropolitan Province, 43% strongly agreed that water shortages cause conflicts in the study area, 40% strongly agreed that water provision cause disease outbreaks while 47% agreed that it cause school absenteeism as most school going children spent most of the time to queue for water and 50% strongly agreed that water provision is causing women and children abuse which has an impact on livelihood and community health.

Participants pointed out that a lot of fuel is spent looking for water and also there are diseases due to lack of clean water. One respondent, however, is seeing this problem of water shortage as an opportunity because he makes money out of selling water. The other implications of water scarcity on community health as well as livelihoods is time and resources being spent to obtain basic commodity such as water. Women and children are bearing the brunt of the crisis. Harare Metropolitan Province residents forget about social distance to contain coronavirus and get crowded while waiting for free water deliveries from well-wishers like Clean City while children are not studying at all as they are now spending most of their time in water queues at the boreholes as shown in plates below.



Plate 1: Budiriro residents crowded while waiting for free water deliveries from Clean City, Aug. 20, 2020.



Plate 2: Mabvuku District ward 21 community piped water scheme

In plate 1 its shows Budiro residents crowded while waiting for free water deliveries from Clean City in August 2020 during the peak period of Covid19. Water crisis has become a major challenge in all urban areas in Harare in the case of Mabvuku and Tafara resident's residents are being forced to pay US\$1.00 for a bucket of clean safe water in community boreholes buy corrupt councilors and youth in the area. The district office community piped water cannot be accessed throughout the day since tapes are being unlocked from 08:00 to 16:00hrs only as said by Participant 1:

*"Mvura yatitambudza muno mudhunhu
reMabvuku makoronyera arikutibhadharisa dhora
kuti tichere mvura yaunenge wamukira pakati
pehusiku, kana usina mari hauwani mvura, uyezve
vana vedu varikubakwa chibharo nevarume kuti
vapihwe mvura zviripachena"*

The participant indicate that water is a major problem in the area and residents are being forced to pay for water which they have waited from midnight and also girl child is being sexually abused in exchange for water.

Plate 2 shows the Mabvuku District Ward 21 community piped water scheme funded by UNICEF. The participants in interviews indicate that some residents have resorted to drilling boreholes to access clean water, however, these boreholes require electricity to pump water, something which is a challenge considering the constant power cuts lasting up to 18 hours daily in Harare Metropolitan Province. Generally, many local authorities throughout the country cannot pump running water to residents due to power cuts. Residents are mostly dependent on city or donor-drilled boreholes. These water sources are sometimes unclean due to poor sanitation as evidenced by the September 2018 cholera outbreaks.



Plate 3: Epworth Presidential borehole drilling scheme

Currently, the ruling party ZANU PF is drilling boreholes in all of the country's cities and towns to avert water shortages as shown in plate 3. The Presidential Borehole drilling scheme has been set in motion, with Chitungwiza being the first beneficiary of the initiative aimed at eradicating the perennial water challenges. Chitungwiza has become synonymous with dry taps and poorly managed sewer systems in the last two decades owing to the collapse of an efficient reticulation system in the opposition-led urban council. The repercussions have weighed heavily on residents. The municipalities had become so accustomed to recycling and reusing dirty water, residents have tap water once a week, and having water at the local borehole is a challenge due to politics. For the past 15 years, water in Harare metropolitan province has been a

challenge and majority of people could not get access to portable water and ended up buying a 20-litre bucket of water for US\$1. In the absence of a long-term solution, relief has been brought through the Presidential Borehole Drilling scheme initiated by the Zimbabwe Youth Presidential Support Organization (ZYPSO) with one eye on the smart city concept.

The participants indicate that school attendance may decrease due to the combined effects of diarrhea cases and time spent on fetching water which has an impact on the livelihood and health of the community in Harare Metropolitan Province. The findings from interviews indicate that because of lack of consistency in water supply in Harare Metropolitan Province, most customers have lost confidence and trust in the water service provision. This has affected the patterns of paying for water, leading to Harare Metropolitan Province municipalities failing to mobilise the financial resources needed for meaningful water development projects and upgrade of the system to keep water supply continuous. This is because the municipal water system operations are largely financed by water bills paid by consumers. Most residents have sunk shallow home wells as an alternative source to unreliable municipal water supply in Harare Metropolitan Province. However, there are risks of these wells drying up and of water quality issues, jeopardising human health, hence a consistent potable municipal water supply is indispensable.

Causes of water shortages identified in the study were that Harare Metropolitan Province municipality cannot readily replace the broken down equipment as they have financial problems. For example, the city of Harare cannot afford to buy new motors and pumps for Morton Jaffray water treatment plant as it is financially incapacitated. As a result, residents go without water for more than several days or months. Urban councils also suffer from the limited foreign currency resources. A severe shortage of foreign currency means service providers cannot maintain or replace aging equipment, or import water treatment chemicals, or electricity from neighboring countries to keep waterworks functioning. Despite heavy rains which filled up city reservoirs in Zimbabwe Harare Metropolitan Province continued to experience water rationing, as the town did not have foreign currency to purchase purification chemicals. The findings were in line with Butcher (2016) who state that even though there may be plentiful water in the reservoirs, it cannot be delivered for consumption in its raw state. Low revenue levels also meant that the city cannot collect enough money to enable it to treat and deliver water to the residents. Due to the increase in the population, the city is unable to manage its domestic water efficiently.

Harare as an old location the challenges of water is now being historical for many years the city fathers seem to be ignoring this issues, in an interview with one of the engineers who are working at Mbudzi Round about along Simon Mazorodze road where there are uncontrollable burst water pipes, the engineer said:

“It was concluded that in Harare they are illegal water connections underground caused by city fathers due to the expansion of residential area, these connections were not put on the original water connection map which has caused to water pipe damages when a new project emerged. Also, most of the water pipes underground are now long overdue for replacement”

Lack of political will has affected the water situation in Zimbabwe, at the time of the study. Residents were of the view that the councilors in office lacked the vision to turn around the pathetic water situation in Harare Metropolitan Province. They felt most of the councilors were concerned with securing votes from their relative constituencies instead of ensuring that service delivery was improved in a wholesome manner. For example, councilors would insist on their constituencies being attended to first, instead of having refurbishments of the water system being done ward by ward. The end result is that multiplicity fails to repair the infrastructure when there are insufficient funds for such an exercise. According to Adams, (2017), an instituted probe into the on-goings at the local authority showed that, apart from the salaries council managers, the councilors were illegally granted loans. Interviews with residents revealed that Harare Metropolitan Province councilors were allocating themselves loans using the ratepayers' money instead of channeling the money towards the needs of the people. This reflected misdirected priorities, which only worsened the plight of the citizens.

The implication of water provision was found more on women and children, especially young girls bear the brunt of the water provision. This group spends most of their days looking for water and there have been unconfirmed reports of men soliciting sexual favours from women so that they easily access water at boreholes. School children spend long hours in water queues resulting in them getting to school tired as they at times queue up to the early hours of the morning. Without water, the chances of them attending school and learning productively are compromised. The water and sanitation crisis places millions of residents at risk of contracting waterborne diseases. Residents have often resorted to drinking water from shallow, unprotected wells that are contaminated. The crisis has brought about issues of extortion, exploitation, and school absenteeism.

6. Recommendations

Based on the above findings, the recommendation is that the local authority in Zimbabwe should be in consultation with the community. The consultative forums will help the local authority when prioritizing community needs.

The researcher recommends the following:

- The study recommends that Zimbabwe should establish the most suitable institutional framework for urban water management such as autonomous water boards and public-to-private partnerships. Before this is done, town councils should be allowed to continue running their water and

sanitation systems autonomously, with government assisting with finance for rehabilitation and other capital developments. ZINWA should not policy its own activities but an enabling act is required, clearly spelling out the roles and responsibilities of the new institutional structure and dealing with the conflict points inherent in the current setup.

- It was recommended that bringing new machinery and pipes to draw water from other dams to augment the current one, equal distribution of water, minimizing watering of lawns should solve the problem.
- It was recommended that the government and NGOs should provide more water infrastructures and increase the supply of safe water in order to generate a wide range of potential benefits to individuals, households, and communities.
- Households should endeavour to purify their water before consumption and also conserve water to have enough during scarcity. The community could also monitor the activities of the people around the conserved water facilities to prevent pollution and wastage of water to be able to tackle water scarcity in rural communities.

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