

The Domestic Water Supply Puzzle in Zimbabwean Cities: Challenges and Opportunities for Mtapa Residential Suburb, Gweru, Zimbabwe

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Abstract

Zimbabwe's economic meltdown decade of 2000-2009 virtually paralyzed all socio-economic sectors including services delivery in urban areas. Economic sanctions imposed by the West, coupled with the climate change threat have only exacerbated the urban services delivery nightmare, especially the water delivery system. Notwithstanding, not all hope is lost. This study sought to assess the urban domestic water supply challenges and opportunities in Gweru's Mtapa (or Mutapa) suburb using questionnaires, interviews and direct observations. Questionnaires were self-administered to 56 systematically selected residents of Mtapa Sections 5 and 6, while interviews were conducted with 3 purposively sampled key respondents who included Gweru Residents Association Organizing Secretary, Councillor for ward 6 which covers Mtapa suburb, and Chief Water Technician responsible for water supply. Results confirm that Mtapa suburb faces serious water supply challenges. Over 50% of the respondents confirmed that the unreliable water supply situation has affected their use of the toilet and they now live in fear of diarrhoeal diseases due to this unsanitary situation. Over 80% of the respondents have a negative perception in terms of water service delivery. Women have been largely affected by this situation in that they cannot fetch enough water for all domestic purposes mainly due to the distance to the alternative water sources (boreholes). There are, however, a number of feasible opportunities which can be pursued to improve this poor water supply situation in Mtapa and the city of Gweru in general. The study recommends that Gweru City Council avoids politicizing agreements with international organizations to help reduce the water problems because this will block these organizations from financially and technically helping in service delivery. The study also recommends that City Council resume pumping of water into reservoir tanks so that in cases of emergency or breakdown of pumps, water will be available for domestic use by residents. This can be achieved since there is now the involvement of international organizations for financial assistance.

Keywords: Water supply, Mtapa, Water Challenges and Opportunities, Gweru, Gweno dam

Background to the Study

Water scarcity already affects almost every continent, especially in developing regions. Around 1.2 billion people, constituting about one-fifth of the world's population, live in areas of physical water scarcity, and 500 million people are approaching this situation (UNEP, 2008). Another 1.6 billion people, almost one quarter of the world's population, face economic water shortages (Seckler et al, 1998). Water shortage is among the major ills to be faced by many societies in the 21st century especially in urban areas due to increased urbanisation. Domestic water demand has been growing at more than twice the rate of population increase, and there is an increasing number of developing cities in the world that are chronically short of water. This shows a problem in access to domestic water the world over especially in urban areas.

African cities today face quite a number of domestic water challenges which are worsened by the ever increasing population and also unreliable rainfall patterns (Chenje, 1996). In 2008, less than 10% of the population in sub-Saharan African countries like Uganda, Zambia and Rwanda had access to reliable water supply (World Health Organization, 2010). UN-Water (2007) observed that Sub-Saharan Africa has the largest number of water-stressed cities of any region of the world. Most cities in Sub-Saharan Africa experience acute domestic water shortages due to additive effects associated with lack of efficient, socio-politically acceptable, and transparent management of water resources.

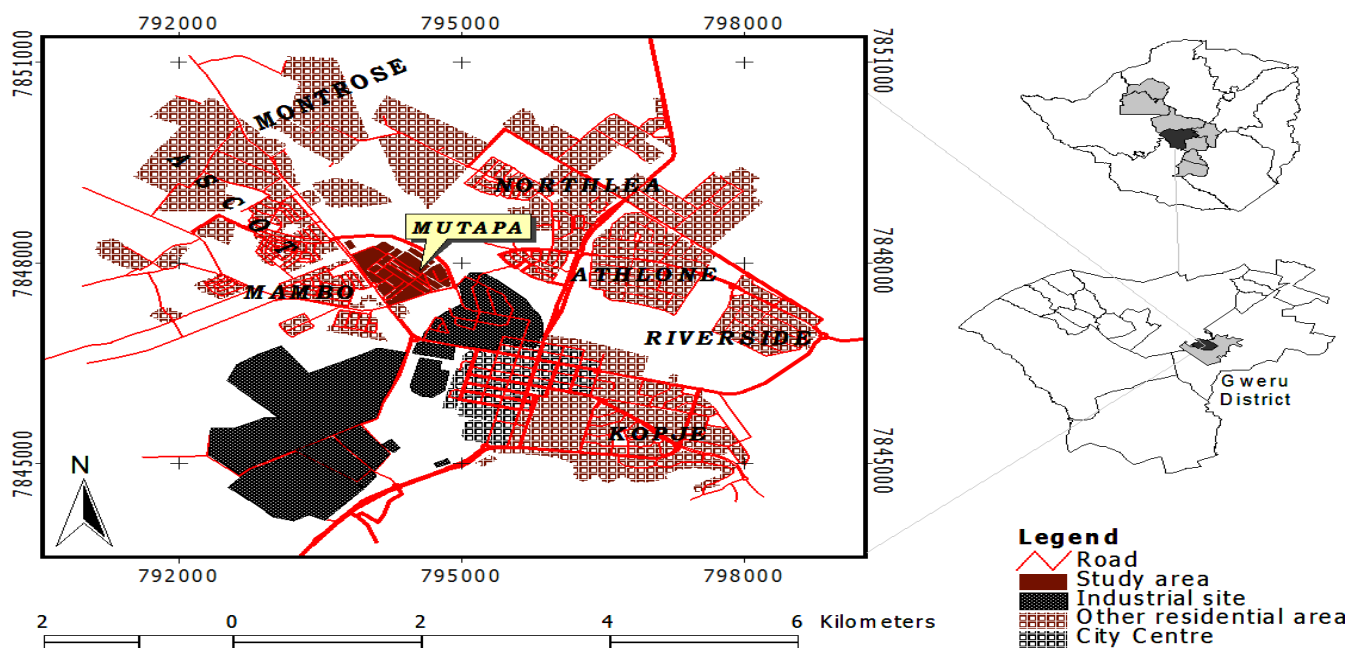
One of Malawi's largest cities, Blantyre was hit by domestic water shortage in 2011 and several areas in the city went for three weeks without water (Banda, 2011). In Zambia the Luapula province is facing challenges of safe and clean drinking water and residents queue for water at a community tap (UNEP, 2008). Domestic water has also been a challenge in Southern Africa's cities (Tevera, 2004).

Water for domestic purposes is also a problem in Zimbabwe and unreliable rainfall amounts have lowered the levels of water in the major reservoirs that supply towns and cities. Manyanhaire et al (2009) observed that the collapse of Mhangura mine has worsened the water situation in the mining town due to equipment damage and disrepair. The shortage has affected the normal functions of schools and hospitals in the area. This has worsened the workload for women who have to fetch water from dams in surrounding farms. Harare suburbs of Tafara, Mabvuku and Hatcliffe have gone without water for more than a year (Kasuzza, 2012). In the southern city of Bulawayo, high density suburbs of Njube, Makokoba and Mzilikazi are facing persistent water shortages (Banda, 2011). In Gweru, areas such as Senga, Nehosho, Mkoba, Mambo, Ascot and Mtapa have gone for weeks without water and this has since posed health risks to residents (Matsa, 2012).

Domestic water supply thus continues to be a serious challenge in Zimbabwe's towns and cities and research has lagged behind in addressing domestic water scarcity problems. The provision of houses to urban dwellers has not been matched with an increase in the number of water reservoirs (Chenje, 1996; Tevera, 2004). Most of the major water sources in many cities of Zimbabwe were built during colonial times when the population was far less than the current trend. Recent studies have been focusing more on the problems associated with water shortages (Manyanhaire et al, 2009; Mangizvo, 2010); assessment of water service delivery (Hove and Tirimboi, 2011; Matsa, 2012); water demand side management (Madebwe and Madebwe, 2011). This study therefore seeks to investigate the urban domestic water challenges and the available opportunities which research has failed to address in Gweru's high density suburb of Mtapa.

Map and Description of the Study Area

Figure 1: Location of Mtapa in Relation to other Suburbs



Source: Designed by authors

Physical Characteristics of Mtapa

This study is confined to Mtapa residential suburb, situated in the city of Gweru which lies within the Savannah Agro- Ecological Region III with rainfall averaging 700 mm distributed over 5 months of the year from November to March. The city's main water supply is from dams which include Whitewaters, which was commissioned in 1947, Gwenoro (1960), Amapongokwe (1984) and Ngamo (1985). The total water holding capacity of the four dams is 32 000 000 cubic metres (Madebwe and Madebwe, 2011).

Mtapa is one of the oldest suburbs in Gweru situated about 3km on the North-western side of the Central Business District. Neighbouring suburbs are Mambo to the west and Ascot to the North-west (Fig 1). The suburb has seven sections, all of which are facing domestic water challenges. Mambo High School is to the west, Ascot stadium to the North, Gweru light industry to the South-East and heavy industries to the South-west. The high density suburb has a clinic and a police station in Mtapa Section 1, residential flats in Mtapa 4, churches between Mtapa 5 and 6 and also a service centre (shops) between Mtapa 2 and 4.

Mtapa section 3 has more households (383) as compared to other sections, with Mtapa 1 having the least number of about 63 households. Mtapa section 1 and 3 are built on higher terrain and they have less water problems compared to the other sections. Many residents are upgrading their houses which were mainly blocks of single rooms although there are some which have not been upgraded especially in Mtapa sections 5 and 6. The suburb has two boreholes, one between Mtapa 2 and 4 and another in Mtapa section 7.

Socio-Economic Characteristics of Mtapa

A sample survey conducted revealed that Mtapa has about 12 500 people, 9 people per household on average and the majority of them are in the economically active age group (16-64 years). Some of these economically active people work in the heavy industries of Gweru still operational (following the 2000-2009 economic meltdown) which include Bata and Zim Alloys while others work in nearby light industries. Women in the suburb are mainly involved in Cross-Border trading. They are also engaged in the vending of vegetables and other low order goods like sweets and fruits at local shops and at Kudzanai market in city's Central Business District.

Some men and youths in the suburb are involved in panel beating of cars and welding in the light industries. Others do carpentry or sell airtime at street corners in town for survival. Overall, few people in Mtapa are involved in professional work but the majority own small subsistence businesses either in town or within the suburb. The elderly in the suburb are supported by the economically active (especially their children). A few residents are property owners so they lease some rooms in their houses for survival. The suburb is also characterized by a high number of children between the ages of 0-16 and these again are supported by the working class for survival. Many youths in the suburb are unemployed and spend most of their time loitering in the streets and at shopping centres.

Research Methodology

Target Population

The target population for this study was all residents of Mtapa sections 5 and 6 regardless of gender, period of stay or age. The reason for choosing these two sections was because they are the only sections that still have block houses and the water supply situation in these areas has not been improved. The remaining sections (1, 2, 3, 4, and 7) have undergone the process of decongestion. Initially, Mtapa had block houses with 5 rooms per block and each block had a water point and a toilet and this is still the situation in Mtapa 5 and 6. Gweru City Council improved the unsanitary situation in Mtapa 1, 2, 3, 4, and 7 by demolishing those communally shared toilets and constructed new toilets to be shared by two houses, down from five.

Sample Size

Mtapa 5 and 6 have 562 houses and using the average number of people per household which is 9 to multiply by the total houses; the population of the area was estimated at 5 058. The sample size of the houses to which the questionnaires were distributed was 56.2 which was determined by calculating 10% of the total houses in Mtapa 5 and 6 (562). The reason for using 10% was because it is widely accepted especially when dealing with a population of more than 100. This also accommodated the issue of time and resources for data collection since the project was self-funded. Thus, the sample size for this study was 56 houses, from a total of 562.

Sampling for Questionnaire Administration

Systematic sampling was used to select the 56 houses for questionnaire distribution. The technique involves a random start and then proceeds with the selection of every k^{th} time (population size divided by sample size). In this case it was $562/56.2=10$. The starting point was randomly selected provided the house was in Mtapa 5 and 6. Questionnaires were distributed on every 10th house until 56 houses were completed. The questionnaires distributed to the 56 houses had sections with questions addressing the research objectives.

Closed-ended questions were used to collect data on what both the residents and the city council chief water technician consider as the main challenges for water shortages; residents' perceptions on the current supply status and also on gender roles in domestic water sourcing and use.

The questionnaires were self-administered to the 56 systematically selected houses in Mtapá 5 and 6. The major reason for self-administering the questionnaires was to make sure that the researchers were available to make clarifications to the respondents where and when necessary.

Formal Interviews

Formal interviews directed by an interview guide were carried out to establish residents' perceptions on current water supply and also to identify available opportunities for improving the water supply situation in Mtapá 5 and 6. Purposive sampling technique was used to identify key informants for interviews who included the councillor for ward 6 (Mtapá), Gweru Residents Association organizing secretary and the city of Gweru chief water technician. The ward councillor for Mtapá is the one who represents the people of Mtapá in council meetings. The reason for selecting the chief water technician was because he is directly involved in the day to day water supplies to all residential areas in Gweru, therefore his input was very important in this study. Gweru Residents Association organizing secretary was selected on the basis that he is the one who represents all Gweru residents in the council.

Field Observations

Direct observation aided by photography, was an integral part of this research. This data collection method was used to identify the main challenges and impacts of water shortages in Mtapá and also to identify gender roles and constraints in water sourcing and use. Photographs were taken especially on alternative water points like boreholes to observe the ratio of women to men fetching water. Challenges and impacts of water shortages were also observed in a walk-through survey of the suburb.

Results and Discussion

Response Rate

Table 1: Shows the Response Rate to Questionnaires by Respondents in Mtapá

Distributed Questionnaires	Number of questionnaires returned
56	56

Questionnaires were self-administered to the 56 systematically selected residents of Mtapá section 5 and 6 and interviews were conducted with the chief water technician, Councillor for ward 6 and the organising secretary of Gweru Residents Association. The response rate for the questionnaires was 100% (Table 1) since it was self-administered. The results are therefore reliable because Dorneye (2007) has it that a response rate of between 75-100% can be used to qualify results as authentic.

Socio Demographic Characteristics of Respondents

Of the sampled questionnaire respondents, 55% confirmed that on average, there are about 10 people per household and this already is a problem on its own because initially, Mtapá was meant to accommodate not more than one person per house (room). It was meant for the labour force (bachelors) who were working in the industries and not families. This is one of the key reasons why there is poor water supply in the suburb, the population has exceeded the water supply system capacity. Mangizvo and Kapungu (2010) carried out their study in Kadoma's low and high density suburbs and discovered that the city is experiencing high urbanization rates which have resulted in an increase in the demand for domestic water. This further supports the current situation in Mtapá. An interview with the Gweru City Council chief water technician revealed that uncontrolled population increase was identified as one of the major causes of this decline in water service provision.

Main Causes of the Water Supply Problems in Mtapá

One of this study's specific objectives was to identify the main challenges being faced by Mtapá residents as a result of poor water supply. In order to understand these challenges, there is need to identify the underlying causes of this poor water supply. Separate interviews conducted with Councillor for ward 6 which includes Mtapá, and the city of Gweru chief water technician revealed a number of problems as being major causes of poor water supply in Mtapá.

These include breakdown of pumps; poor rainfall; vandalism of infrastructure (pipes) by newly resettled farmers along Gwenero-Gweru road and also high population. These causes are not peculiar to Mtapá intrinsically, but almost all high density suburbs which are supplied by Gwenero dam like Mambo, Ascot, and Mkoba among other areas.

The two key informants (the chief water technician and the Councillor) both confirmed that there has been serious vandalism on pipes that channel water from Gwenero to Range Booster in Ivène. Farmers who were resettled in that area are damaging the pipes to access water for both domestic and agricultural activities. This has caused a problem of less water reaching the Range Booster and consequently many suburbs which are far from the Range Booster including Mtapá. The technician revealed that they are working on reaching an agreement with these farmers on the best way to supply them with water but as of now, the situation remains unattended.

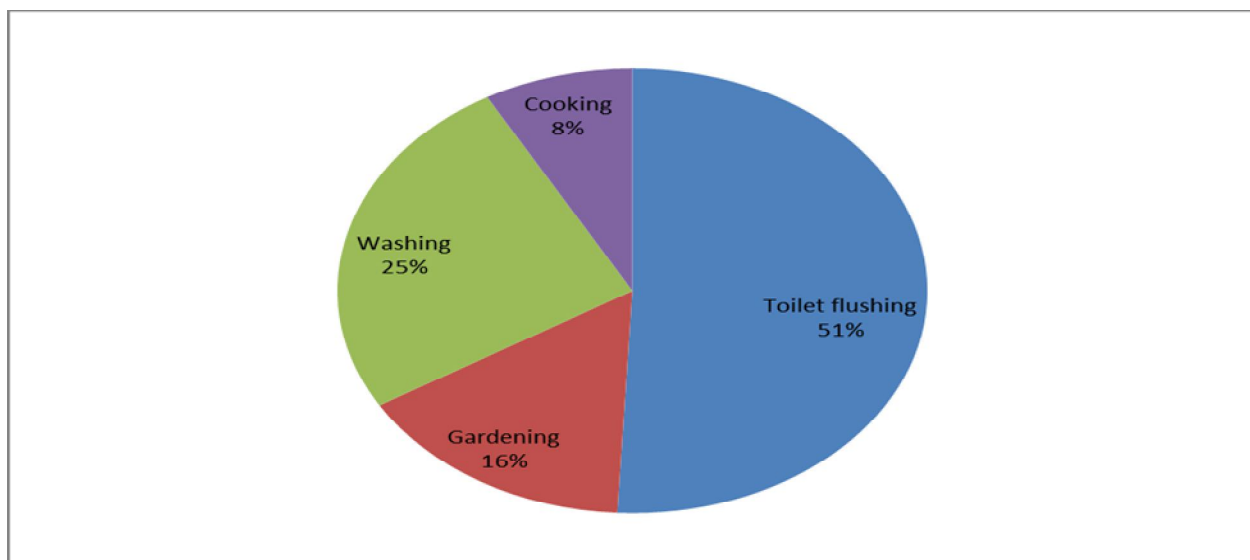
On the breakdown of pumps, the chief water technician revealed that out of the 5 raw water pumps at Gwenero, only 3 are functional and the two which are broken down supply about 50% of the required water meaning that currently only 50% of the required raw water is being pumped. Moreover, only 4 out of 9 clear water pumps are functioning meaning that less than 3/5 of the required water is being pumped. Gweru has experienced poor rains in recent years apparently as a result of climate change and climate variability, and this has caused dams like Gwenero to have low water levels. At the time of the study, Gwenero dam had less than 8 months supply until the next rainy season. The other major cause identified by the Councillor for ward 6 was the fact that new parts, especially pipes, were being fitted on old pipes and this has caused the problem to persist because old pipes have continued to burst leading to unreliable water supply in residential areas like Mtapá.

Main Challenges being Faced by Residents due to Water Shortages in Mtapá

The main uses of water in the households in both sections are toilet flushing, drinking, cooking, washing clothes, cleaning including personal hygiene and other activities like watering vegetables (Figure 2). Over 80% of the questionnaire respondents confirmed that on average, household water use in Mtapá is less than 50 litres/capita. However, this varied per household depending on household size and priority of activities the water is used for. According to UNICEF/WHO (2004), the recommended minimum daily water requirement is between 60-80 litres per capita, implying that the residents of Mtapá are not getting enough water to take care of their basic hygienic needs.

Questionnaire respondents said it is very difficult to collect enough water because facilities like boreholes are few and the distance to the alternative source (other boreholes) is relatively long (500metres) and so whatever water is collected is used sparingly. Chingonda (2010) carried out a research in Maridale, Norton and the issue of distance and limited alternative water sources were also identified as key challenges by Maridale residents. This shows that the water supply problem is not peculiar to Mtapá but also to other urban areas in Zimbabwe.

Figure 2: Main Water Shortage-Related Problems Faced by Mtapá Residents



Source: Field data

Interviews conducted with the organizing secretary of Gweru Residents Association; Councillor for ward 6 and the chief water technician in the city engineering department identified toilet flushing, gardening, and water for washing as the main challenges being faced by residents due to water shortage. 51% of the respondents confirmed that water for toilet flushing was a major challenge (Figure 2). Svotwa *et al* (2007) also did a research on water allocation capacity and drought contingency planning in Ruwa and over 75% of the residents also confirmed that water for toilet flushing was their major problem. A further 16% of respondents in Mtapá were worried about the issue of water for their gardens because the majority of women in Mtapá depend on vending as their source of income. Some of the vegetables they sell come from these gardens but because there is no water for watering the vegetables, they are finding it very difficult to continue with their day-to-day business. As for water for cooking and washing, the residents revealed that usually this water is stored in containers but they cannot store enough for watering the garden and also toilet flushing.

Table 2: Shows the Distance to the Nearest Water Source in Case of Water Shortage

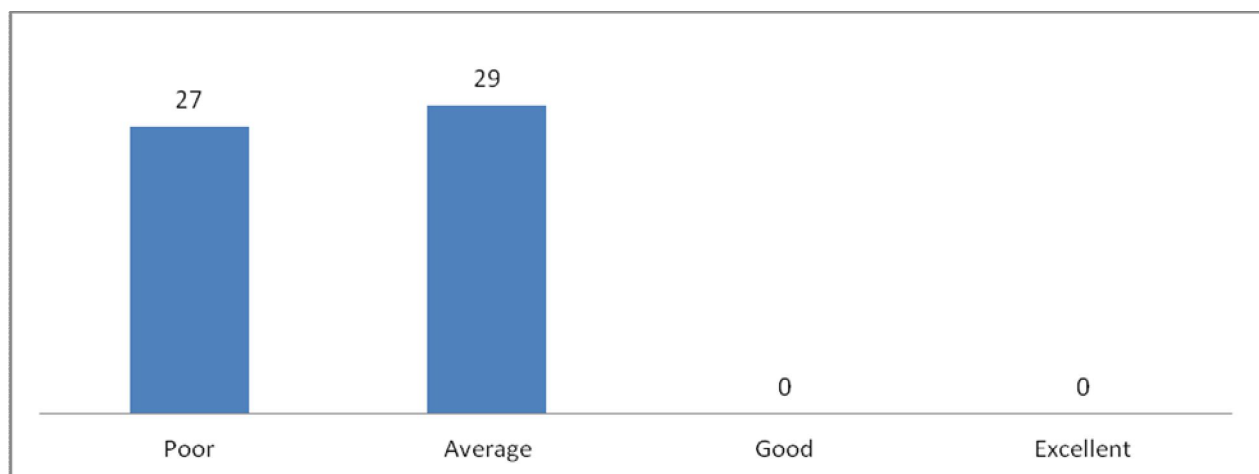
Distance to the nearest borehole	Frequency of respondents (%)
100-200 metres	7%
200-300 metres	18%
300-400 metres	16%
400-500 metres	59%

98% of the residents confirmed that they fetch water at the nearest borehole but all the same, they could not fetch enough water for all their domestic purposes mainly due to distance to the borehole and the types of containers that they had, which is 25 litre volume containers. Table 2 shows the frequency percentage of residents and the distance to their nearest alternative water source (borehole). As shown on table 2; 59% of those who responded, (with the help of the researchers for correct estimation of distances) confirmed that the distance to their nearest borehole was between 400-500 metres. That on its own is a problem because due to the long queues throughout the day, and demand for the water, the residents cannot fetch enough water for all domestic purposes. Again, 60% of the respondents revealed that water is usually running for only 1-2 days per week and in some sections, they only have it from 8pm to 6am. Matsa (2012) further supported and quantified this in his study on service delivery in Gweru and observed that most of the areas around Gweru receive water normally between 9pm-5am. Mangizvo and Kapungu (2010) observed that for most Kadoma suburbs, water is available only 1-2 days per week. This situation has left residents to live in fear of diarrhoeal diseases, especially children who cannot easily cope with the unsanitary environment.

Adding on to the main challenges being faced by residents, the researchers observed that there are long queues at boreholes especially early morning and also all the houses that were sampled for questionnaire distribution had multiple containers filled with water for domestic use. This shows that water is a problem in the high density suburb.

Residents’ Perceptions on the Current Water Supply Situation in Mtapá

Figure 3: How Residents Rate the Current Water Supply Status in Mtapá



Source: Field data

Asked to rate the water supply status in Mtapa selecting from poor, average, good and excellent, 29 out of 56 (52%) of the respondents said that it was average and the remaining 48% said it is poor showing that there is a problem of water supply (Figure 3). Respondents said the water situation is average because of the boreholes which they say have helped to reduce the water challenges although they have not solved the problem completely. A further 53% confirmed that this problem has persisted for the past 3-4 years. The residents articulated that the water supply challenge is worsening everyday and they are worried how the situation is going to be in the coming years if nothing is done. Chingonda (2010) also observed that 60% of sampled residents in Maridale rated the water situation as poor and this matches the results obtained in Mtapa that water supply in many urban areas has become poor.

Mtapa residents were worried that there is no formal communication or announcement on what exactly is causing this problem and whenever the water is running in taps, it will be having very low pressure to the extent that it is difficult to fill all the containers.

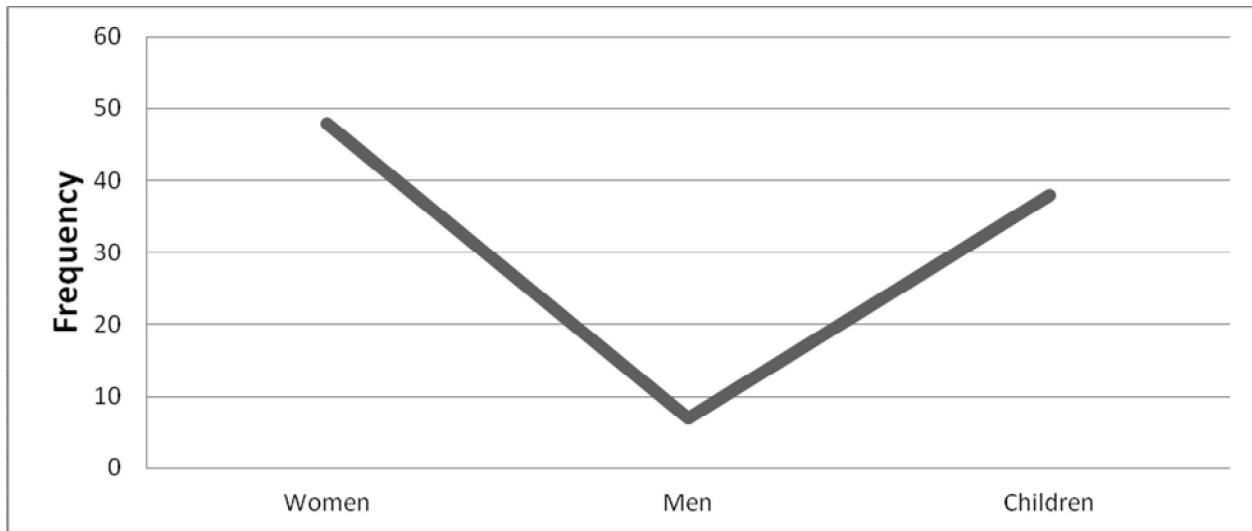
This unsanitary situation has affected residents in that they are living in fear of diseases that result from unsanitary environments, especially for children. Residents were also concerned about the quality of tap water. They said it is sometimes very dirty and produces some odour. Visible inorganic substances could be observed in the water. Matsa (2012) observed that 60% of the sampled residents in Gweru described the water quality from Gwenoro treatment plant as poor and is usually muddy or reddish-brown in colour with an unpleasant smell. Regarding borehole water which 98% confirmed as their alternative water source, residents have mixed feelings. Some said the taste of borehole water is bad and they would prefer tap water while others said that borehole water is very difficult to wash with (they use more soap compared to tap water). This may be due to hardness of the water. Such residents mainly use borehole water for toilet flushing and watering gardens and reserve tap water for drinking, cooking, and laundry purposes.

Respondents revealed that they wait for too long at the alternative water source for their turn to fetch water. On average, 81% of respondents in Mtapa confirmed that they wait for 2 hours before they could fetch water. They added that for one to save time, they have to wake up very early in the morning because the nearby residents of Mambo and Ascot suburbs also rely on these boreholes in case of shortage.

Svotwa *et al* (2007) in their study on water in Ruwa also confirmed that residents wait for 2 hours or more before they fetch water and this further supports this problem of more time being spent at boreholes in urban areas of Zimbabwe.

Gender Roles and Constraints in Water Sourcing and Use

Women are the most vulnerable to any negative change in domestic water use because in most societies, it is women's responsibility and not a choice to ensure that there is enough clean and safe water for their households. As shown on figure 4, women and children are the most affected by the poor water supply situation in Mtapa compared to men. 85% of the respondents confirmed that women are the most affected, followed by children with 67%. This is so because women are the ones who are involved directly in the domestic use of water. As for the children, they usually mess up, thereby requiring water to clean their mess. If mothers are busy, it's usually children who are sent to fetch water. World Bank, (2013) observed that women and children are the most affected by water scarcity since they are directly involved in almost all domestic activities that require water. These include water for washing, cooking, and many other domestic uses. Therefore, its shortage causes them to suffer the most.

Figure 4: Graph showing who is mainly affected by the Poor Water Supply Situation

Source: Field data

Regarding who does the water sourcing, 91% of the respondents confirmed that it is mainly the women who fetch water in case of shortage. This maybe the reason why 66% of the respondents were women (they are at home most of the time) so they have to do the water sourcing while men are away sourcing for income. To some extent children also help in the water sourcing and only 5% revealed that men are mainly responsible for domestic water sourcing. Montgomery and Elimelech, (2007) reported that the fetching of water is a duty frequently relegated to women and children, and in many cases this duty may take up to six hours a day to meet the needs of the household. This corresponds to the results of this study which revealed that 91% of the domestic water sourcing in Mtapá is done by women.

Responding to how women and children are mainly affected, 85% indicated that productive time was being spent fetching water instead of being involved in income generating projects. This is so because the majority of these women are cross-border traders and vendors so they feel that some of their important time is being used up on water sourcing. Katsande (2006) and World Bank, (2013) both ascertained that in times of limited water supply, women spend most of their time in non-productive work, sourcing domestic water while men spend their time in productive work.

The researchers also observed that the ratio of men to women on the boreholes was unbalanced, women dominated. This further supported the 91% of respondents who said that it is mainly women who do domestic water sourcing. Some even pointed out that men can leave the house without bathing and they do not have any problem with that but women cannot and also women always make sure that the children bath and therefore they source water for such critical domestic uses.

Opportunities for Improving the Water Situation in Mtapá

The available opportunities for improving the water supply situation in Mtapá are not peculiar to Mtapá only but they cut across all the residential suburbs which are supplied by Gwenoro dam, especially the high density suburbs. The city of Gweru is supplied by four dams, namely Amapongokwe (42 million m³); Gwenoro (30 million m³); White waters (25 million m³) and Ngamo (10 million m³). Of these four dams, only Ngamo supplies raw water for industrial uses while the other three supply treated water for domestic purposes. The chief water technician revealed that the population of Gweru has been growing whilst these water sources have not been improved in terms of capacity. This has resulted in an unreliable water supply for domestic purposes. However, there are opportunities for improvement.

An interview with the Councillor for ward 6 and the chief water technician revealed that Council has managed to acquire two pumps which were donated by a German organization, Gesellschaft für Internationale Zusammenarbeit (GIZ) which is currently working with the engineering department. Although these pumps have not yet been installed, they have the potential to add on to the 4 clear water pumps to make them 6 out of 9 and that will reduce the water supply problems in areas like Mtapá.

Gweru city chief water technician also confirmed the clear water pumps development and was optimistic that the water situation will improve if the pumps are installed.

The chief water technician also revealed in the interview that there was a proposal to raise the spillway of Gwenoro dam by 1 metre and this has been on the cards since the 1990s when the government promised to fund the project. The technician was confident that this will help reduce the water problem as more raw water will be readily available for purification and onward pumping to the city.

There is also another project which is yet to be implemented but it's already done on paper. The Lubonko dam project in Zvishavane has been completed on paper but hasn't yet been implemented. The chief water technician revealed that they are working on a project whereby Lubonko dam in Zvishavane can channel some of its raw water into Gwenoro especially in seasons where rainfall is low so that Gwenoro has an uninterrupted supply of raw water.

In line with the supply of raw water into Gwenoro dam, there is a significantly bigger dam just adjacent to Gwenoro called Amapongokwe which can also be used to supply raw water into Gwenoro. Currently Council is using raw water from Gwenoro and its volume has reduced to very low levels. The reason why they have not been drawing water from Amapongokwe for the past three years is because pumps which link the two dams have worn out and need replacement. However, because of cash flow problems in every sector of the country's economy, Council cannot afford this without donor assistance. Regardless of this, the replacement of these pumps remains an opportunity that can be put pursued to reduce water challenges in Mtapá and other residential suburbs in Gweru.

Another opportunity that was identified was that Gweru City Council has since identified a site downstream of Gweru river to construct another water source (dam) which can also be used to complement existing dams. If funds could be sourced to construct the dam, this is likely to ameliorate water shortages in Mtapá and in the city in general. Coincidentally, Gweru river runs adjacent to Mtapá suburb but on this section it has a problem of pollution from the city industrial waste.

Table 3: Organizations Currently Working with Gweru City Council to Improve the Water Situation

Organization	Type of help being offered
Gesellschaft für Internationale Zusammenarbeit (GIZ)	<ul style="list-style-type: none"> • Technical Advice. • Resources Management • Training of water personnel • Engineering and Financial assistance
Australian Aid and German Federal Ministry for Economic Cooperation and Development	<ul style="list-style-type: none"> • Infrastructure development • Financial assistance

The city of Gweru's engineering department is currently working with three international organizations to improve the water situation (Table 3).

A Germany funded organization (GIZ) has been engaged with Gweru City Council since late 2012 and they are providing technical assistance and resources management in the engineering department. In terms of training of personnel, the chief water technician confirmed that he and his other colleagues were in Hamburg, Germany for the first two weeks of March 2013 for training on how to manage water resources. The same organization has also donated 2 raw water pumps which are yet to be installed and all these are opportunities for water quality and supply improvement in Gweru.

The chief water technician also revealed that they have been working with an Australian organization (Australian Aid) and the Germany Federal Ministry for Economic Cooperation and Development to construct the road to Gwenoro dam from Southdowns extension to increase accessibility of the major supply dam, Gwenoro, from town. The main problem which the Councillor for ward 6 and the chief water technician identified regarding these organizations was that of sensitivity of their operations to politics. Any political change in the country will affect their operations and so they tend not to operate to their full capacity.

The other opportunity which was identified by the chief water technician in an interview was that of the interest which has been shown by the World Bank in partnership with GIZ to financially support the city's water projects. He revealed that the World Bank personnel were initializing their programmes and most likely, by early 2015,

they would have started work. This is another opportunity that can help reduce the water problems in Mtapá and the city of Gweru at large. All this will however, depend on the cooperation of both Council and Government. In addition, the city chief water technician revealed that in January 2011, Council introduced a new system whereby they are setting aside 2% of the rates collected for the replacement of pumps.

Urban domestic water use and allocation in the household has got a direct link with accessibility of the water supply sources. This is usually determined by the distance one travels to fetch water and also the time they take to fetch the water. The residents of Mtapá, especially women, are concerned about their inability to fetch enough water for all domestic uses particularly for toilet flushing. Women and children bear the burden of water sourcing and they are also living in fear of diarrhoeal diseases which usually result from unsanitary situations. Mutenga, (2012) observed that what triggered the countrywide cholera outbreak in many urban areas of Zimbabwe in 2008 were the prevailing unsanitary situations due to unreliable water supply. Gweru was not spared by the 2008-9 cholera outbreaks.

A reliable and efficient water supply to households in Mtapá can help reduce the burden laid upon women and children on looking for and collecting water and that will enable them to participate in other productive economic activities in their communities. There are quite a number of practical opportunities which can be implemented and the water supply problem can be reduced or solved not only in Mtapá but also in all other residential suburbs in Gweru.

Conclusion

There is a water supply problem in the residential suburb of Mtapá. The main challenges Mtapá residents are facing due to this water shortage are no water for essential domestic uses, toilet flushing, and other basic hygienic needs. This problem has been mainly caused by the breakdown of pumps at Gwenoro water treatment plant and also the financial incapacity by Gweru City Council to replace and maintain these pumps. The situation has been like this for the past five years and this has negatively impacted residents' daily lives especially on their use of the toilet. They live in fear of diarrhoeal diseases especially on children who find it difficult to cope with the unsanitary situation. This problem has mainly impacted women and children since they are the ones who are directly involved in the day to day use of water in cooking, washing among other domestic uses. The development and implementation of domestic water supply programmes must be founded on community needs and involvement of all groups including women who serve as water providers. Residents of Mtapá are living on less than 50 litres of water per capita per day which is below the World Health Organisation minimum which is pegged between 60 and 80 litres. About 85% of the residents in Mtapá have a negative perception of water service delivery and residents are worried that there is no formal communication from the City Council as to what is causing this problem and when the situation is going to improve. However, there are quite a number of feasible opportunities that can help improve the water supply situation not only in Mtapá but in Gweru at large. These include the extension of the spillway of Gwenoro dam by 1 metres which will increase the capacity of the dam. This will avail more raw water for purification and onward pumping to city consumers.

The other virtual opportunity is that international organizations are willing to partner the city of Gweru's engineering department to improve the water supply situation. Council can also contract partners to drill more boreholes in areas that are hardest hit by the water shortage problem.

Recommendations

An agreement should be reached between the City Council and the resettled farmers along Gwenoro road so that they have a focal point where they can fetch water for their domestic and agricultural uses without vandalising the water mainline pipes. All agreements or sponsorship deals between the City Council and international organisations should not be politicised so that these donors can operate to full capacity to reduce water problems in Gweru. The engineering department should resume the pumping of water into the 9 reservoir tanks in Ivene so that in cases of emergency or any breakdown of pumps, water will be available for domestic use by residents. This can be achieved since donors have supplied them with new pumps. When full, these tanks have the capacity to supply water to all Gweru residents for 3 days without re-supply from Gwenoro. There is need for council to make sure that the 2% money charged on ratepayers for water pump replacement is channelled towards these pumps and nothing else so as to improve the water situation.

This study observed that women and children are mainly affected by the shortage of water. There is therefore need by society, for special emphasis to be laid upon the active participation of women by prioritising their needs and ideas in the planning, implementation and management of the water projects in Mtapa community.

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