10-10-2017

The Impacts of Water Shortages on Women’s Time-Space Activities in the High Density Suburb of Mabvuku in Harare

Liliosa Pahwaringira  
*Zimbabwe Open University*

Lillian Chaminuka  
*Department of Counselling/Applied Social Sciences*

Kwaedza Muranda-Kaseke  
*Zimbabwe Open University*
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Keywords

conservation, water borne diseases, women’s time space activity, sanitary scarcity, snowball sampling, purposive sampling, Mabvuku, Harare, Zimbabwe, water management, water shortage

This original research is available in wH2O: The Journal of Gender and Water: http://repository.upenn.edu/wh2ojournal/vol4/iss1/8
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Abstract

The purpose of this study was to assess how water scarcity affects women’s time-space activity. Time-space activity refers to the lateral distance between locations. In this context time is taken when traveling to and from collecting water. Space refers to the radius covered. The study was carried out in Mabvuku, a high-density suburb of Harare, Zimbabwe, following observations and reports of serious shortages of water in the area. A case study approach was employed for the study and respondents were selected using purposive and snowball sampling. Data was collected using questionnaires, structured interview guides, and observational surveys. The study showed that there was a widespread water shortage in the suburb and women walked long distances to collect water while men rarely participated in such activities. The impacts affect various household activities, time for socialization, prevalence of waterborne diseases, and personal hygiene. Some of the recommendations include adding more potable water sources in the area, emphasis on education and awareness of water conservation within the household, and setting up water sources committee management in urban areas.

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Background

The availability of safe and clean drinking water is a basic necessity for all living beings. The Accra Declaration (2001) affirms that water is a fundamental human right, essential to human life to which every person, rich or poor, man or woman, child or adult, is entitled. Access to it is critical for human development. This is in line with one of the Millennium Development Goals (MDGs): Goal 7, Target 10, which aims to reduce the number of people without access to safe drinking water and sanitation by half by 2015 (UN, 2006). About 1.1 million people in the world are still using unimproved water sources (WHO and UNICEF, 2010). Projections by the United Nations Development Programme show that Sub-Saharan Africa would only reach the MDG targets for water services by 2040, and those for sanitation by 2076 (UNDP, 2006). In 2009 the Asian Development Bank (ADB) singled out government crisis, which is often associated with how countries manage their water resources, as the major limitation.

The situation in developing countries is further aggravated by urbanization, a major challenge for Sub Saharan Africa. Political interference and low tariff policies have led to inefficiency and chronic financial weakness of public utilities. The inability of water and sanitation utilities...
to maintain and extend services has typically led to situations where subsidized services are in fact reserved for those privileged to have a network connection, while most of the poor have to rely on more costly and lower quality alternatives (Kriss, 2002).

Zimbabwe's deteriorating water situation in urban areas is similar to that occurring in other parts of Africa. In sub-Saharan Africa, coverage of piped water has declined to 39% from 50% in the early 1990s due to increasing population (WHO, 2006) Rapid population growth has resulted in an enormous strain on basic services such as provision of clean water supply. In Zimbabwe's capital, Harare, the current population is 2,098,199, with an estimated 2% population increase per year compared to the national growth rate of 1.1% (ZIMSTAT, 2012). Other reasons have been cited as contributing to the problem, such as insufficient planning by municipal authorities, decaying water and sanitation infrastructure, and poor municipal governance (Manzungu, 2012). Urban residents in Harare (and other cities in Zimbabwe) frequently experience water shortages and are exposed to poor quality drinking water. The water shortage has caused residents to resort to using alternative water sources such as shallow wells, deep wells, and boreholes to meet their domestic needs. Some of these may be unsafe but continue to be used due to lack of a better alternative, a contributing factor to the cholera outbreak in 2008. During August 2008–June 2009, an estimated 95,531 suspected cases and 4,282 deaths due to cholera were reported. The breakdown of both potable water and sanitation systems, and the widespread contamination of available drinking water sources were considered responsible for the rapid and widespread distribution of the epidemic throughout the country.

The principle cause of the outbreak was the collapse of the urban water supply, sanitation, and garbage collection. Municipal water supplies were often cut off for days, leaving no chemicals in the country to treat the urban water supply. Urban populations resorted to collecting surface water, but with the onset of the rains in November 2008, raw sewage was washed into water sources used for drinking water. When the epidemic started, there was a shortage of emergency purification tablets for household water treatment. In the high density suburbs, few households could afford fuel (wood or charcoal) to boil their water. Additionally, lack of education on how to prevent cholera influenced the spread of cholera to the rural areas when city dwellers visited their rural homes at Christmas, fanning out to each of the 57 districts in the country. At this point the economy collapsed with hyperinflation at 231 million percent (WHO, 2009).

The inefficiency of water utilities is magnified in urban areas due to limited alternatives, such as wells and boreholes. Existing water services in many African cities and towns are characterized by intermittent supplies, frequent breakdowns, inefficient operations, poor maintenance, and depleted finances. Women and children usually bear the burden of water collection, walking kilometers to the nearest source, which is often unprotected and likely to make them sick (WHO, 2010). Unimproved drinking water sources include unprotected dug wells, unprotected springs, and surface water. In Africa alone, people spend 40 billion hours every year walking for water (WHO, 2006). According to the UN MDGs 2012 report, 71% of the burden of collecting water for households falls on women and girls in Sub-Saharan Africa. The time they spend walking and the water-borne diseases they may contract from the water keep them from attending school, going to work, and taking care of their families. Along their long walk, they are subjected to a greater risk of harassment and sexual assault. This assertion is true especially in countries where there are conflicts and wars (IRC, 2001). Additionally, hauling cans of water for long distances takes a toll on the spine and causes many women to experience back pain early in life. Medical research has documented cases of permanent damage to women's health attributed to carrying water. Problems range from chronic fatigue, spinal and pelvic deformities, to effects on reproductive health such as spontaneous abortions (HABITAT, 2000). In some parts of Africa, where women spend
as much as 85% of their daily energy intake collecting water, the incidence of anemia and malnutrition are very high (SIDA, 1997).

**Introduction**

Water crises are common in most of Zimbabwe’s urban areas, especially in the high-density suburbs. Mabvuku is one such old residential suburb, which has been severely impacted by these water problems. The water shortages date back to 2008, when the municipal water supply began to deteriorate, and it became common for the suburb to be without tap water for extended periods of time. Both Harare and Mabvuku have seen large population increases, resulting in increased strain on water supply infrastructure. Women seem to be more affected by water shortages and their time-space activities are usually disrupted. This prompted the study, which was carried out to assess the impacts of water shortages on women’s time-space-activities in the high-density suburb of Mabvuku in Harare. Time-space activity refers to the lateral distance between locations. In this context, time is taken when traveling to and fro collecting water. Space refers to the radius covered.

The study was conducted to investigate the following objectives:

- To establish the existing methods used by women to source water;
- To determine the distance traveled and time taken to access water from its source;
- To investigate the extent to which women’s socioeconomic activities are being impacted on by water collection.

**Study Area**

Mabvuku is a high-density suburb located 17 km east of Harare, the capital city of Zimbabwe. The area lies between 1,500 - 1,600 meters in altitude. Relief consists of gently undulating ground interrupted by granite outcrops and balancing rocks. The altitude makes pumping water from Prince Edward Dam and Morton Jeffrey Waterworks to Mabvuku difficult. Mabvuku lies upstream of Cleverland Dam. About 644,440 people live in Mabvuku and the population has been rising at an average of 7.5% per year (ZimStat, 2012). The rate is higher than that of the capital city, Harare, which is growing at 2%.

![Mabvuku map](image.jpg)

**Figure 1: Mabvuku, Source: Google Earth (2013)**

The problem of water shortages dates back to 2008, when people resorted to using unprotected water from shallow wells, which caused a serious outbreak of water borne diseases. Unprotected water sources include exposed dug wells, springs, and surface water (rivers, dams, streams) that may be influenced by dangerous environmental conditions. To help solve the problem, UNICEF installed boreholes in the area. However, there were not enough boreholes installed and people sill endured long distances of about a kilometer in search of water. The women, responsible for sourcing water for their households, were affected the most.

**Institutional Responsibility**

The municipality of Harare manages the water supply in the city of Harare, whose population currently stands at 2,098,199 (Zimbabwe National Statistics Agency- ZimStat, 2012). The source of the water is Lake Chivero, which is along the Manyame River (Fig. 2). The treatment plant for Harare is at Morton Jeffrey Water works. The municipality of Harare’s aim is to
meet the full demand for treated water by providing water connections to all residents. Water is also provided through various organizations such as UNICEF and USAID that have endeavored to assist with the water crisis in the area. UNICEF has provided assistance in the form of boreholes, while USAID installed 5000-liter steel water tanks to the needy\(^1\) around Mabvuku. However, the impact of this assistance is limited by the higher demand of the growing urban population.

**Methodology**

This research was based on a study conducted using Mabvuku High Density area of Harare as an exploratory case study. Where considerable uncertainty exists about program operations, goals, and results, the exploratory case study helps identify questions, select measurement constructs, and develop measures; such studies also serve as a first orientation before investigating in larger studies. The study was conducted from January to May 2013 and it was self-funded. Respondents were selected using purposive and snowball sampling. Purposive or judgmental sampling entails the use of an expert to identify respondents who may have intrinsic knowledge or experiences relevant to a particular hypothesis (Neuman, 2000).

Data was collected using field observations and key informant interviews, and multiple researchers recorded the observations and performed interviews. The researchers visited all the sites and, using purposive sampling, only spoke with individuals they saw at the site. Baseline information about the Mabvuku district was gathered through review of relevant materials and documents such as the recent National Census Survey of 2012. After this, researchers visited the district to inform key stakeholders about the study and agree on convenient dates and times. During the survey, researchers documented field observations of water points, and photographed the water points and households, which had water harvesting tanks. Boreholes and houses with water harvesting tanks were identified through the snowballing process. Key informant interviews were qualitative in-depth interviews with women who were experiencing problems associated with water shortages. The interviews allowed interviewers to establish rapport with respondents and provided opportunities to build a relationship with key stakeholders in the community. Researchers could clarify questions, raise awareness around a certain

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\(^1\) Needy people are defined as people without possessions or wealth and in need of help from others.
issue, and easily contact informants for further clarification. Interviews were completed at the boreholes, homes and offices of the Sister in Charge of Mabvuku Clinic and the Chief Clerical Officer from the Harare Municipality Mabvuku District Office. Respondents were interviewed in a local language, Shona. The total number of boreholes in Old Mabvuku is seven. A total of 21 people were interviewed.

Findings

Findings show that most households had an average of six people. These households go for months without tap water. The women in the area indicated that they used between 20 to 60 litres of water daily for household purposes such as washing clothes, cooking, bathing and washing dishes. During the research fieldwork, it rained and the residents were harvesting rainwater in dishes and 25 liter buckets. The respondents said that they were happy because it was raining and they had the chance to do a lot more laundry. Around Mabvuku, people even had a chance to wash some blankets, which lessened the burden of collecting water from the local boreholes on those rainy days. The findings are discussed in the paragraphs below.

Existing Methods Used by Women to Source Water

In Mabvuku, a range of water sources are available. These include boreholes, deep and shallow wells, water tanks, and rainwater. UNICEF drilled the boreholes and steel tanks used to harvest rainwater. Researchers observed that women and children collected water from boreholes more often than men, citing long queues of more than 20 women getting water and less than 5 men collecting water (4:1). This was observed for a period of two hours when the researchers spent time at the water sources. This trend was observed over the duration of the study, from February to May, and serves as evidence of the disparity between men and women who collect water from communal water sources.

Mabvuku residential area has 27 of the 5000 liter steel tanks which were installed on some of the houses by UNICEF to harvest rain water. These tanks were installed primarily in areas with high numbers of widows, orphans, and vulnerable children (OVC). The harvested water was meant to be shared between neighbors, but the study showed that the residents were not willing to share the resource, thus creating conflict within the community. Some were actually said to be selling the water at $1/bucket. Those who had no tanks relied on smaller 20 to 25 liter buckets and dishes to harvest rainwater. This was said to be difficult at times because some houses did not have gutters to collect the rainwater into the buckets.

Interviews with authorities from the municipality of Harare revealed that UNICEF had previously been charged with maintaining the boreholes, but now the municipality is responsible for maintenance of broken down boreholes. The study showed that very few households have their own deep wells, which are randomly located and some of which are not protected, which makes the water unsafe to drink. Unprotected water sources are sources that, by nature of their construction, do not protect the water from outside contamination, in particular from fecal matter. Some of the well owners were unwilling to share the water, forcing their neighbors to walk to the distant community boreholes.

In Mabvuku, clinics played a crucial part in water and sanitation by dispatching their health workers to educate the community about water, sanitation, and hygiene (WASH). This is in accordance with the Millennium Development Goals (MDGs). Health workers also distributed water treatment tablets (Aqua tabs) and other water purification chemicals such as Water Guard. The city authorities attempted to provide people with safe drinking water. However, despite these efforts, it is against the beliefs of certain religious groups such as Johane Masowe and Johane Marange to use medical pills or tablets. Members of these religious groups resisted the use of the Aqua tabs. Research showed that even though they accepted the tablets, they would not purify their drinking water. Instead, they used the tablets for
whitening their religious regalia and to remove stains and smell from their toilets.

*Time Spent and Distance Travelled to Access Water from Nearest Source*

The case study research shows that women walked one to two kilometers each way to collect water. The time spent walking to and from water sources reduced time for other activities such as socializing at home and in other social settings. Some women, who live far from the water source, indicated that they have to wake up around four o’clock in the morning in order to get in line for water. Affluent and merchant women who have to wake up early in the morning to prepare for work and to go to the markets reported that they had to pay boys who slept at the community boreholes to line up for them. Once they were at the water source, they spent approximately two to four hours waiting for their turn to get water. Between the hours of six and ten o’clock in the morning, long winding lines could be seen as people waited for their turn to get water. In this context, women’s household duties were also affected. For example, as mothers, the women had inadequate time to prepare their children for school.

*Socioeconomic Activities and Health Implications of Water Collection*

Beyond the shortcomings of physical water sources, this study showed various socioeconomic and health implications of women’s time spent collecting water. Firstly, the study showed that traditional socializing was trans-located and centered at the local boreholes since women had limited time to socialize at other locations with friends and relatives. In some instances, fights broke out at the water sources, especially when people tried to cut in line.

Additionally, 15 participants reported facing health problems due to lack of water, including chest and back pains that arose over time. As mentioned above, the women walk long distances three to four times a day. In some instances, women were seen carrying babies on their backs and at the same time balancing 20-25 liter plastic containers of water on their heads. This problem is highlighted by SIDA (1997), states that carrying cans of water for long distances takes a toll on the spine, and as a result, many women experience back pain early in life. Women also expressed their concerns on the effects of unclean water: whenever there are disease outbreaks such as cholera, typhoid, dysentery, and diarrhea, they were responsible for taking care of the sick, especially children and the elderly. They were responsible for caring for their sick relatives while still expected to collect water from community boreholes, leaving little to no time for other activities.

*Problems With Existing Water Sources*

The women gave various reasons for the causes of water’s inaccessibility including frequent power outages. The pumping of water is dependent on power availability and there have been instances where supply has virtually ceased for more than 6 months in the area due to power failure (Chipetya, 2013). These frequent power outages have negatively affected the supply of water in the city.

Water leakages due to burst pipes was another reason water was difficult to access. Even after reporting leakages to the City Council/authorities, burst pipes were left in disrepair for long periods. Interestingly, 10 of the respondents shared that some residents actually vandalized the water supply pipes so that they could access the water passing through their area. The fact that Mabhvuku would be dry yet water would be supplied to another area angered the residents and caused vandalism.

Some respondents felt that the water authorities were facing challenges in chemically purifying the water. Interviewees agreed that the quality of water from the communal boreholes was poor, and observation showed that the water was rusty and undrinkable. This could be because the pipes had become too rusty or the rocks in the area have high iron content. The women said that if the water is boiled, brick red residue remains in the containers. They also
expressed that borehole water was hard and was difficult to wash clothes with, as evidenced by using more soap than normal because lather formation was more difficult. This information is supported by WHO (1996) which states that soap consumption for uses such as laundry and bath is related to the water hardness: soap reacts less with hard water and is more difficult to lather. As a result, women are forced to buy more soap and detergents.

**Conclusion**

In conclusion, the study showed that the residents in Mabvuku face many challenges accessing water. The absence of nearby water sources increases the burden on women as they walk long distances to access water and causes women to face health problems due to lack of water. The research found that the women walk long distances three to four times a day, with health implications including chest and back pains. These women are often deprived of the ability to relax and socialize, as they spend most of their time collecting water. They either wait in long lines or walk long distances to access water, some of which is not safe for human consumption, as it is collected from unprotected sources. In Mabvuku, women are involved in multiple community and household roles, and adding the role of collecting water is overburdening them further. If no water is accessible in physical and economic terms, women’s ability to socialize and to take care of the family is disrupted. Water shortages affect various household activities, time for socialization, and exposure to waterborne diseases. To combat these problems, more potable water sources need to be installed in the area, awareness of water conservation within the household should be raised, and water source committee management should be set up in urban areas. Authorities are teaching people to conserve water by giving them pamphlets and advertising on social media and electronic media. With safe water nearby, women are free to pursue new opportunities and improve their families’ lives. Children can earn their education and build the future of their communities. A clean water project nearby means more than safe drinking water to communities in developing countries such as Zimbabwe. It means time, freedom, and incentive to change their communities and lifestyle.

**Recommendations**

The study leads to the following recommendations:

- In order to improve the socioeconomic status of women in this region, councillors in the different wards should secure funding to help women start market gardening projects. Because the study revealed that women in Mabvuku no longer grow their own vegetables due to lack of water, this will enable them to generate income as well as supplement their food supply at home.

- The City of Harare should establish a sustainable rotational schedule for water for the greater Harare area. In all residential areas of Harare, there should be equitable water rationing. All areas should have the same days of water rationing. Currently, in some areas there is no water rationing at all as compared to other areas. This will also provide women with more time for chores other than collecting water. The residents of Mabvuku experience water shortages for over a month at a time, and this has tremendous health effects. There is a fear of cholera as the most deadly viral disease that is common during the time of water shortages. To prevent this, people should be provided with water purification tablets and more boreholes should be dug near homes to prevent women from walking long distances.

- Harare Municipality needs to strengthen its ties with Non-Governmental Organizations (NGO) and seek larger containers for rain harvesting to enable women to collect maximum water from the rain for domestic purposes.

- Harare Municipality must add more potable water sources near residential areas. The study revealed that women have devised
some coping strategies to circumvent the water shortages they face on a daily basis: residents took advantage of the vandalized and burst water pipes to collect water for domestic use. The water from the burst pipes is neither clean nor safe. If there are more potable water sources available, people will be less likely to use unsafe water sources.

Liliosa Pahwaringira is a Lecturer in the Geography and Environmental Studies Department at the Zimbabwe Open University. She majored in Geography, Environmental Science and Water and Sanitation. Her major interests are in Environmental Issues and Water related issues. Ms. Pahwaringira can be reached at lpahwaringira@gmail.com.

Lilian Chaminuka is a Senior Lecturer in the Department of Counselling under the faculty of Applied Social Sciences. She has majored in counselling, water and sanitation and peace and governance. Her interests are in gender issues. She is also a qualified English teacher who has other certificates in the areas of HIV and AIDS and Systematic Family Therapy. Mrs. Chaminuka can be reached at lilianc915@gmail.com.

Kwaedza E Muranda-Kaseke is a Lecturer in the Department of Development Studies at the Zimbabwe Open University. She is pursuing her PHD in the area of Gender and Development. She also likes to do voluntary development work in the communities. Her e-mail is kemuranda@gmail.com.

Works Cited


