

Full Length Research Paper

Water and sanitation situation in Nima and Teshie, Greater Accra Region of Ghana

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This study examined the water and sanitation (WATSAN) situation in Nima and Teshie, Greater Accra Region of Ghana. A number of research instruments and methods of primary and secondary data collection were employed. These were focus group discussions (FGD), field observation, and interviews. Data collected were edited, coded, and analyzed with the aid of Statistical Package for Social Scientists (SPSS) to generate tables. The residents of Nima and Teshie communities reported that they fetched water from a number of sources. Among these sources are Ghana Water Company Limited (GWCL) pipe connections, rainwater harvest and hand dug wells for Nima. Contrary to Nima, Teshie had additional sources from tanker services, streams and the sea. The price of various containers of water varied depending on the season of the year, the source of water and storage system. Also, most adult women in Nima do not patronise public toilet facilities. All the FGDs conducted in Nima indicated that residents pay a fee to dispose of their garbage into the public refuse containers but residents do not pay to do so in the Teshie community. It is recommended that the taps should be opened frequently during the day time to ease the acute water supply to the urban poor. The urban poor (especially women and children) should be informed on the proper disposal of solid waste at designated places by providing more refuse containers at vantage points, and appropriate sanitation facilities that would not exclude any group of the society should be designed.

Key words: Urban poor, water, sanitation, waste management, health.

INTRODUCTION

Providing water for the poor is one of the Millennium Development Goals (MDGs). The aim is to reduce the number of people living in poverty and the proportion of people without access to water and sanitation. More than one tenth of the world's population still relied on unimproved drinking water sources in 2010 (UNICEF/WHO, 2012). The provision of water and sanitation services in deprived urban settlements is a challenge faced by many developing countries (Boadi, 2004). The lack of these services threatens public health and the integrity of the environment in both peri-urban areas and formal urban areas (McGranahan, 2007; Mulenga et al., 2004).

In Ghana today, at least 50% of the population resides in urban areas of which only 18% have access to improved sanitation and 90% to improved drinking water sources (Water Aid, 2008). Although accessibility to improved drinking water sources look encouraging, only

40% have access to piped water, which in most cases is supplied intermittently. The remaining 60% depends on other improved sources such as standpipes, protected dug wells, protected springs and rainwater harvesting. According to the Government of Ghana, inadequate water supply and sanitation services contributed to over 70% of diseases in Ghana, costing the country significant financial resources for health care and productivity (United Nations, 2005; UNDP, 2006). The aim of this research is to examine the ways in which the urban poor deal with in-adequate access to water and sanitation services in Nima and Teshie, Greater Accra Region. The specific objectives are:

- (1) To identify the water and sanitation issues of the urban poor in Accra and;
- (2) To investigate the effects of water and sanitation challenges on the urban poor.

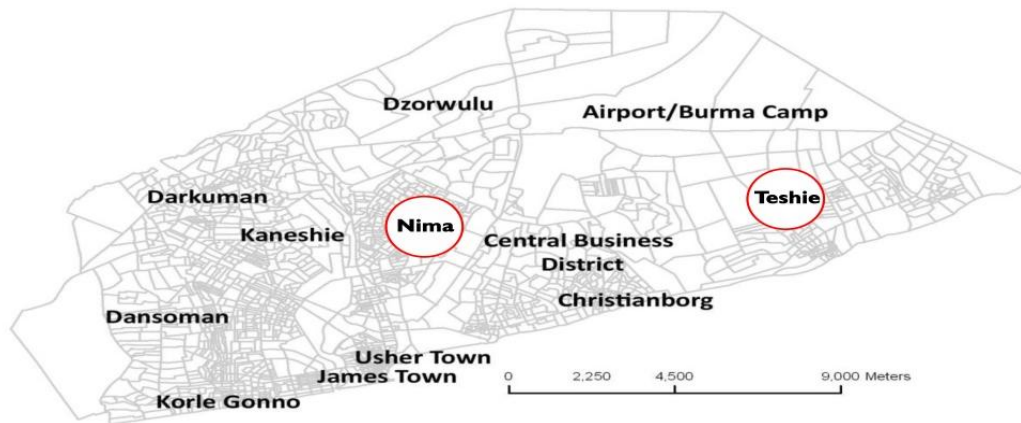


Figure 1. A map showing the two study communities.

Study area

Nima and Teshie (Figure 1) were chosen for the study because they were considered poor communities in Accra by Water Aid Ghana. This paper is written out of a large study on 'Poverty and Water'. Nima is densely populated with 82,329 people in 2008 (UNESCO-IHE/SWITCH, 2010). The population is made up of various ethnic groups but predominantly Muslims from the northern parts of Ghana and neighbouring West African countries. Water supply in Nima is served by Accra North District of Ghana Water Company Limited (GWCL) while the collection of solid waste is contracted to ABC waste management company.

Teshie is located 14 km to the east direction of Central Accra, bordered with Nungua (East) and Gulf of Guinea (South). It is categorized as urban as well, with high density of indigenous people. Population in Teshie was about 171,875 (LEKMA, 2012). The water supply service in this area is provided by Accra East District of GWCL. Ledzokuku Krowor Municipal Assembly (LEKMA) provided waste management services where the collection of solid waste is contracted to Daben and Zoomlion waste management companies.

METHODOLOGY

This study is part of a large study on water and poverty of two selected poor communities in Accra (Nima and Teshie). The analysis is based on data generated from various methods, namely secondary sources, FGDs, interviews (key informants), and field observations. The use of multiple methods ensured triangulation of data by allowing for the cross-checking of information, with the basic aim of validating answers and conclusions reached in the study. Poor urban communities of Accra (Nima and Teshie) were selected on the basis of several criteria, including their migrant or indigenous status, location, age of settlement, and demographic composition. Nima is largely a migrant community, while Teshie (along the coast) can be described as an indigenous community.

Twelve and five FGDs were conducted in Nima and Teshie communities, respectively. This involved men, women, the youth

(between the ages of 17 and 28 years, and single), school children (between the ages of 12 and 16), and members of a Community Based Organization (CBO) in the Teshie community; key informant interviews (mainly the health and sub-metropolitan council officials responsible for the Nima and Teshie communities). With the help of a local guide, a transect walk/observation was conducted in each community, which provided an opportunity to observe directly the community water and sanitation infrastructure and services. Data collected were edited, coded, and analyzed with the aid of Statistical Package for Social Scientists (SPSS) to generate tables.

The result of this study has been published as a technical report by Water Aid Ghana. Table 1 shows the number of participants from Nima and Teshie while Table 2 shows the demographic profile of participants. Even though the population of Teshie is bigger than the population of Nima; majority of the residents are poor, whereas in Teshie, it is basically those living along the coast that were considered to be poor. Besides this, Teshie has a mixed-income population made up of fishermen, fishmongers, traders, drivers and office workers. Also, there are some parts of Teshie (Teshie Estates) that house some rich residents of Accra.

FINDINGS

The residents of Nima and Teshie communities reported that they fetched water from a number of sources. Among these sources are GWCL pipe connections, rainwater harvest and hand dug wells for Nima. Contrary to Nima, Teshie had additional sources from tanker services and streams. Recently, "sachet water" (500 ml of water packed in a plastic sachet which is sold either cold or hot) has become one of the most preferred sources of drinking water. None of the two communities had a borehole even though the Nima community indicated it as one of the preferred sources of water. Table 3 shows the sources of water in the study areas.

Access to water was found to be difficult in that the taps flowed briefly at midnight when the people were asleep. Taps were also closed for as long as between 2 to 6 months. Whenever the taps were in good conditions, they were opened once in a week. For instance, the poor (especially women and children) spent a minimum of 5

Table 1. Study participants.

Study area	Respondent	No. of respondents	No. of meetings held	Method
Nima	Nima East	72	6	FGD
	Nima West	65	6	Interview
	Water vendors	15	16	Interview
	Toilet and bath attendants	14	8	Interview
	Sub-Metropolitan Council	10	1	Interview
	Biostatistician Mamobi Poly- clinic	1	1	Interview
	Building Inspector	1	1	Interview
	Cleansing Officer	1	1	Interview
	GWCL	2	1	Interview
	Refuse dump attendant	3	3	Interview
	ABC Waste truck driver	4	1	Interview
	Assembly members	2	2	Interview
Teshie	Teshie Concerned Citizens Association	59	1	FGD
	Water vendors	21	19	Interview
	Toilet and bath attendants	25	26	Interview
	Water vendors	21	19	Interview
	Sub-Metropolitan Council	3	1	Interview
	Biostatistician La General Hospital	1	1	Interview
	Environmental Health Officers	3	1	Interview
	Daben Cleansing staff	8	1	Interview
	Traditional rulers/opinion leaders	28	2	FGD
	Sub-metro council	5	2	Interview
Assembly members	4	4	Interview	

Table 2. Demographic profile of participants.

Community	Men	Percentage (%)	Women	Percentage (%)	Total	Percentage (%)
Nima	91	48	99	52	190	100
Teshie	86	48	92	52	178	100
Total	177	48	191	52	368	100

Table 3. Source Reliance

Source	Percentage reliance on source usage
Nima	
GWCL	64
Rainwater	30
Sachet Water	6
Teshie	
GWCL	40
Tanker Services	18
Rainwater	9
Hand dug well	12
Streams	6
Sachet Water	7
Seawater	8

minimum and a maximum 4 h in looking for water by travelling over long distances ranging between a few metres to about 10 km. They used water supplied by GWCL sources, "sachet water" and rainwater harvest. The price of various containers of water varied depending on the season of the year, the source of water and storage system. Table 4 shows the varying cost of water for Nima and Teshie, respectively.

The trotter (a container in which trotter/pig feet is stored and exported to the country), also known and commonly called "pig feet container" by respondents is not applicable to the Nima community. Also, about 48% of respondents in Nima said the toilets were far from their homes, thus it is inconvenient for them to always go to the public toilets. In this case, it did not apply to only women but all members of the community. The people of Nima and Teshie who used public toilets and facilities outside their homes reported that they would prefer having

Table 4. Price of water per container type.

Container type (litres)	Rainy season		Dry season	
	Direct from tap	Reservoir	Direct from tap	Reservoir
	USD (¢)	USD (¢)	USD (¢)	USD (¢)
Nima				
Bucket (18)	15-20	20-25	25-30	25-35
Gallon (36)	25-30	25-30	30-40	40-50
Bowls (27)	20-25	20-40	25-30	40-50
Teshie				
Bucket (18)	10-20	15-25	15-30	15-35
Gallon (36)	20-30	25-30	30-40	40-50
Bowls (27)	15-25	20-40	25-30	40-50
Trotter containers (72)	40-50	60-70	65-75	\$1.00

USD = United States Dollars, ¢ = cents

the facilities in their own homes, even if they have to share usage with other tenants. Adult women do not patronise public toilet facilities.

Levels of access to water and sanitation services

All the participants from both communities have indicated that service charges were not affordable. In the light of unaffordability of WATSAN services, some of the residents looked for alternatives knowing the implications though. All the FGDs conducted in Nima indicated that residents pay a fee to dispose their garbage into the public refuse containers but residents do not pay to do so in the Teshie community. People who could not afford the fees threw refuse into public drains. All the participants indicated that the quantity of water used for both domestic and commercial purposes in Nima and Teshie was insufficient. All respondents at FGDs conducted in Nima complained that “sachet water” producers use water-pumping machines to divert water to their homes/storage facilities, thus depriving other community members from getting water. The respondents indicated that even though they have reported the situation to the appropriate authorities (GWCL), nothing seemed to have been done about it. According to the residents of Teshie, insufficient water supply was attributed to undue delay in the completion of the rehabilitation of the under-ground reservoir and overhead tank at the “Cold Store Area” (a suburb of the Teshie community), development of large companies and residential estates, insufficient production of water at the water source and low pressure.

It is ironic to note that in the face of all the problems enumerated by the communities, the findings revealed that there were over 50 and 40 “sachet water” producers in Nima and Teshie, respectively. A sachet of water cost 5¢ and 30 pieces packed in a bag is sold at 50¢ by

distributors and retailed between 75¢ and \$1.50 (US dollars) depending on the brand and location. Access to WATSAN services is considered a major problem in the two communities. The factors that account for this are presented and these factors are ordered according to their importance as expressed by the participants from the FGDs. Most mentioned problems of access to WATSAN Services in Teshie are:

1. Irregular water supply;
2. Increase industrial use of water by Coca Cola, Printex etc.;
3. Damaged old pipelines (faulty valves and leakages);
4. Limited number of public toilets and refuse dumps;
5. Unplanned and poor access to Nima, resulting in the inability for tanker services to reach many parts of the community;
6. Springing up numerous sachet water production units;
7. Pay-as-you-use system.

Quantity and quality of water used by the poor

The daily quantity of water used is not sufficient (especially during the dry season) as reported above. The responses revealed that even though the various households would have preferred to use more water than what is served, they have learned over the years to manage water and also adopt measures to access water in difficult times. An average of 5 persons in a family use between 2 and 5 buckets (about 18 litres) of water a day for all their domestic water needs in Nima. In Teshie, a family of 4 persons used an average of 8 buckets of water daily. However, 50% of the respondents from Nima reported that water from GWCL is the most polluted due to the rupture of some pipelines and resultant seepage of foreign materials into the water. Even though the study

participants said they promptly reported burst in pipelines to their Assembly men (they represent local government electoral areas within a district) in the local government system of Ghana, they are elected by universal adult suffrage who also report to the GWCL; the company normally did not act on time. The GWCL officials however maintained when problems were reported, they responded promptly if they had the materials to repair it and delayed if the materials were not available.

Also, the research found out that the GWCL did not conduct any end-user quality check. The officials of the Company said they only check the quality of water at the treatment plant, and only supply water to consumers if the water was safe to use. A participant from one of the Nima FGDs has this to say about the quality of water supplied by GWCL:

“The pipe water is not good. I will never drink water from the taps. It is full of faeces. One day we were fetching from the taps, all of a sudden we realised that the water was dirty and smelly. Thinking it was dirty because the pipes have not been opened for a while. But in no time, we had the information that a burst pipeline was filled with human excreta from a neighbour’s over flowing toilet. We had already collected human excreta into our containers. No, I will never drink that thing again”.

The research found that those living along the coast in Teshie wash with seawater and rinse themselves with sachet water or a cup of fresh water. Washing of bowls and other utensils was done with seawater.

DISCUSSION

The poor in the two urban slums in this survey had poor access to water by not having their settlements well connected to the GWCL. A high proportion of about 46% of consumers in urban areas in the country do not have house connections, and thus obtain water through different supply options (yard connections, neighbours, private/public standpipes, trucks and domestic vendors). The residents of Teshie used water from tanker, stream and sea; these water sources were peculiar to Teshie because they were not available in Nima. For instance, the Teshie community is a coastal community and this thus explains why they used sea water. The use of the trotter container is not applicable to the Nima community. This may be due to the fact that a majority of the community residents are Moslems who are generally averse to pork and anything associated with it. The gallons and the trotter containers in Teshie were the most used containers for carrying water over long distances because these receptacles were covered and thereby minimized the incidence of pollution during transportation. Water from unconventional sources like streams and drainage gutters is used in the absence of water from safe sources.

Patronage of “sachet” or “pure” water becomes unusually high. The quantity for the various uses is also reduced to ridiculous levels like bathing with water from ‘booters’ (a plastic or metal kettle which the Moslems fetch water in to perform ablution before prayers). It can contain between 1.5 and 3 litres of water.

The quantity used by the households was not fixed, it changes as there occurred prolonged periods of no supply from the GWCL. Dry and rainy seasons also influenced the use of water. During the raining season, the quantity used was higher than what has been given above. The source of the rain water was polluted. The respondents indicated that the quality of water was very important to them as polluted water has health implications; thus they are very careful when it comes to quality of water, especially for drinking purposes. Some community members considered water from the GWCL source and “sachet water” as the safest for drinking

The people of Nima and Teshie do not have adequate access to sanitation facilities including an adequate waste collection system. Most of the bathrooms in the various houses do not have gutters connecting them to a nearby public drainage system. Thus when they wash, water spills all over the place. It is a common sight in both communities to see *Spirogyra* over a big area behind almost all houses. This was especially common in Teshie. This situation can have health implications for children in the areas, as they play around bare-footed in this fungal growth environment. Also, high cost, lack of privacy, inconvenience and long distance limited direct access to toilets for many households in the two study communities. The user fees charged for the use of the toilets were deemed unaffordable by the residents. However, they have no choice but to use them, but for the more vulnerable ones like the aged, children and the unemployed youth, it only makes them expose the communities and the general public to health risks by throwing their waste into public drains, opening their bowels along the beaches and throwing them into the refuse dumps. The practice of throwing faeces into refuse containers was not common in Teshie. However, 61% of the respondents living near the beach said they defecate at the beach when they are seriously pressed.

Many countries are off track in meeting the MDG sanitation target, including much of sub-Saharan Africa and several of the most populous countries in Asia (UNICEF/WHO, 2012). This study also found that about 95% of adult women in Nima do not go to public toilets due to lack of privacy at the toilets. They indicated that they feel uncomfortable in going to queue with men at the facilities, thus they prefer to defecate into carrier bags and later dump them in the public refuse containers. This practice was re-emphasised by one of the refuse dump attendants in Nima. The practice of adult women not patronising public toilets in Nima as indicated in the findings exposed the community and the general public to health problems. However in Teshie, the story was a bit

different as only 12% of women expressed the same feeling but the others did not really mind queuing with their male counterparts at the facilities, though they agreed that it is not comfortable doing so. Furthermore, all the toilet facilities visited, except the metro facility in Teshie, revealed that soap and towels are not provided for hand washing. The attendants at the toilets explained that they had previously provided soap and towels at the toilets but residents were fond of stealing them hence the decision to stop providing them. This happens in spite of the fact that both the attendants and the users know the implications of not washing their hands with soap and water after using the toilet.

The residents of these two poor communities in the city of Accra indicated that they will prefer having toilets in their homes to the public facilities. This is in line with what Arku (2010) found in his study in rural communities in the Volta Region of Ghana, that community members who used toilet facilities outside their homes reported that they wished to have the facilities located in their homes and at vantage points across their communities.

CONCLUSION AND RECOMMENDATIONS

The quality of water used by the residents of the two study areas under survey posed great deal of health concern to them. The situation was more pronounced in Nima Township where pipe borne water was usually polluted through the rupture of pipes. As a survival instinct, the people used various means to fill in the gaps created by insufficient water supply by GWCL, which resulted in perennial problems in the two areas. Those who lived along the coast in Teshie had to contend with bathing with seawater and rinsing themselves with sachet water or a cup of fresh water. Washing of bowls and other utensils was done with seawater. Indiscriminate defecation is commonplace in the urban poor townships. The beach of Teshie for instance was littered with human excreta and solid waste in much the same way as the gutters and open spaces in Nima.

The data supports the suggestion that women and girls often bear the brunt of problems associated with water and sanitation in poor urban settlement in developing countries (WEDO, 2003). Women and girls are burdened with fetching and carrying water over long distances, leaving them little time for education or to make a living. In city slums where sanitation facilities are poor or non-existent, going to the toilet at night or in the early morning puts women at risk of rape and sexual harassment.

It is recommended that the taps should be opened frequently during the day time to help ease the acute water supply to the urban poor. There should also be the cooperation between GWCL and secondary service providers to safeguard the quality of service rendered to the residents of poor urban dwelling places. The urban

poor (especially women and children) should be informed on the proper disposal of solid waste at designated places by providing more refuse containers at vantage points, also daily collection of refuse by private refuse collectors operating in poor urban settlements should be ensured and appropriate sanitation facilities that would not exclude any group of the society should be designed.

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