



Ziome community report

Cost of water and sanitation services in Ziome, Ketu South District of Volta Region of Ghana.

A majority of the people (83%) receive acceptable service in terms of water quantity throughout the year. However, the overall water service is sub-standard and does not satisfy the national norm due to reliability and accessibility to the water systems. The inhabitants do not pay to access water from the formal sources. This makes it difficult for the community to carry out operation and maintenance works without the help of philanthropists or other support groups.

A majority of the community members resorts to open defecation, and dig and bury. None of the households have access to an acceptable sanitation service as the few available improved household toilets facilities were not in use by all the households.

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Front page photo

Bernice Donkor-Badu, WASHCost

WASHCost is undertaking action research to quantify the cost of providing sustainable water, sanitation and hygiene (WASH) services in rural and peri-urban areas in Ghana. This community report presents findings of the research carried out in the community of Ziome in the Ketu South District of the Volta Region of Ghana.

The WASHCost team visited the Ziome community in April, 2010 to collect data on the WASH services received by the inhabitants and the cost of providing the services. The community has a population of 551 according to the regional Community Water and Sanitation Agency (CWSA) records. The inhabitants, ethnically mostly Ewes, are predominantly farmers with a few of the women engaged in gari processing and trading as a means of generating income for the upkeep of their households.

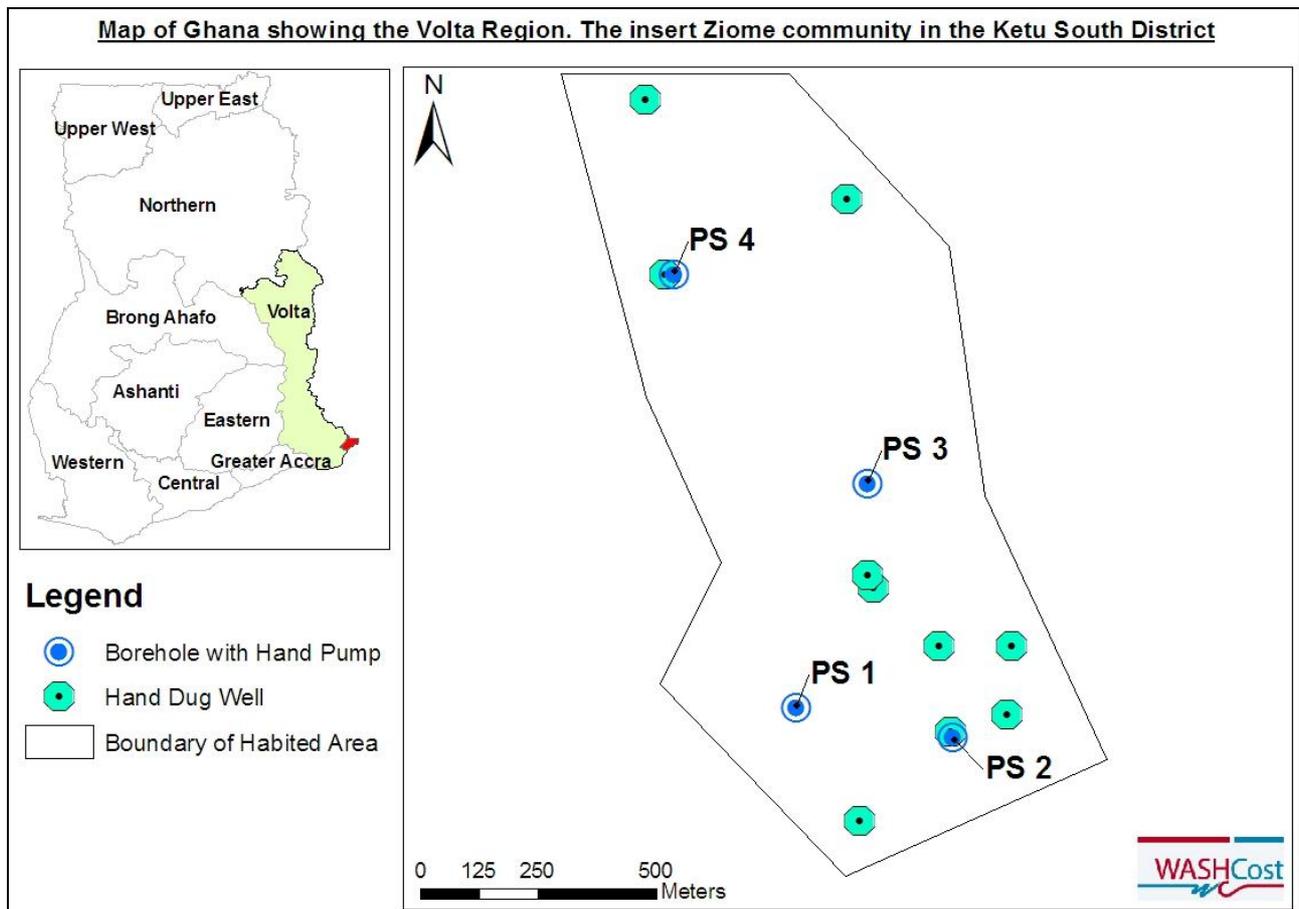


Figure 1: Map of Ziome with water facilities

**The boundary lines indicate only inhabited areas of the community and not the political boundaries of the community*

WATER SUPPLY

Before 1999, the inhabitants of Ziome relied on a pond and four hand-dug wells as their main sources of water for all purposes including drinking. These water sources were provided by the community members themselves and some are still in use.

There are four formal water point systems in the community. However, only one, PS3 was working, the rest had broken down. Water from these boreholes with handpumps is used for drinking, cooking, washing, cleaning, bathing and productive activities. The history of the development of Ziome water supply is summarised in Table 1 below.

Table 1: The history of the construction of formal water supplies

Pre-1999	1999	2009
A pond and four hand-dug wells for all purposes including drinking.	Two boreholes fitted with handpumps (PS1 and PS2) provided by DANIDA through CWSA. The Member of Parliament (MP) for the area contributed 5% to the capital cost of providing the facilities on behalf of the community.	Two boreholes fitted with handpumps provided by Life Time Well Drilling. Community made no contribution towards the provision of the facility.

Water consumption from formal and informal sources

Average water consumption of formal water shows a strong seasonal pattern, rising sharply in the wet season and falling in the dry season. The average water consumption from the formal sources for wet and dry seasons is 44 l/c/d and 33 l/c/d respectively. Moreover, the average water consumption throughout the year is 39 l/c/d. Much of the informal use of water in the wet season, particularly for productive use, is not captured in this data. People found it difficult to estimate their use of e.g. rainwater harvesting in the wet season.

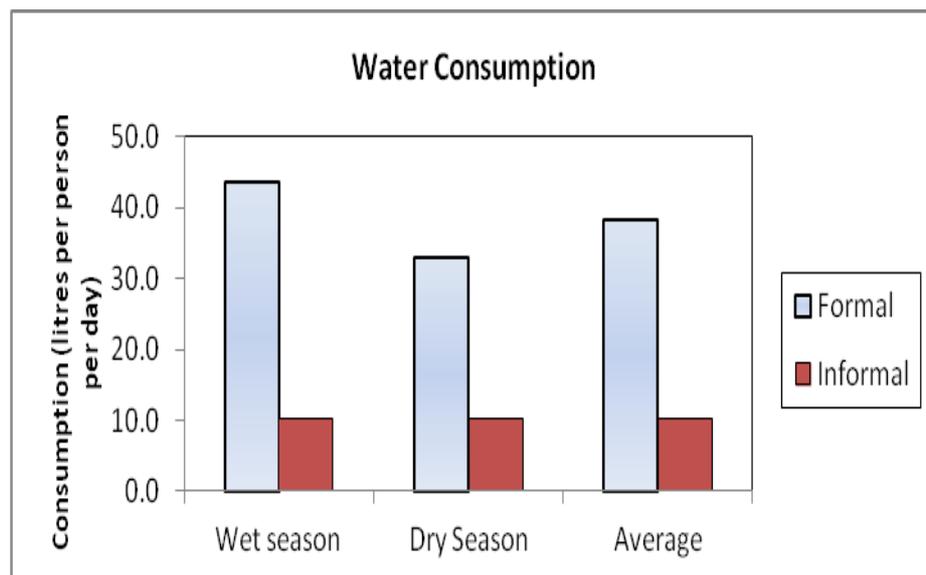


Figure 2: Average water consumption per season

WASH service levels in Ziome

What matters to people is how much water they get, how far they have to travel to get it, the quality of the water and how often the service is available. These indicators can be expressed as service levels – high, intermediate, basic, sub-standard and ‘no service’. A basic service meets the guidelines set by the Community Water and Sanitation Agency (CWSA). The service level is the service actually received by users, not what is supposed to be delivered to users.

Table 2: WASHCost Ghana service levels according to national norms.

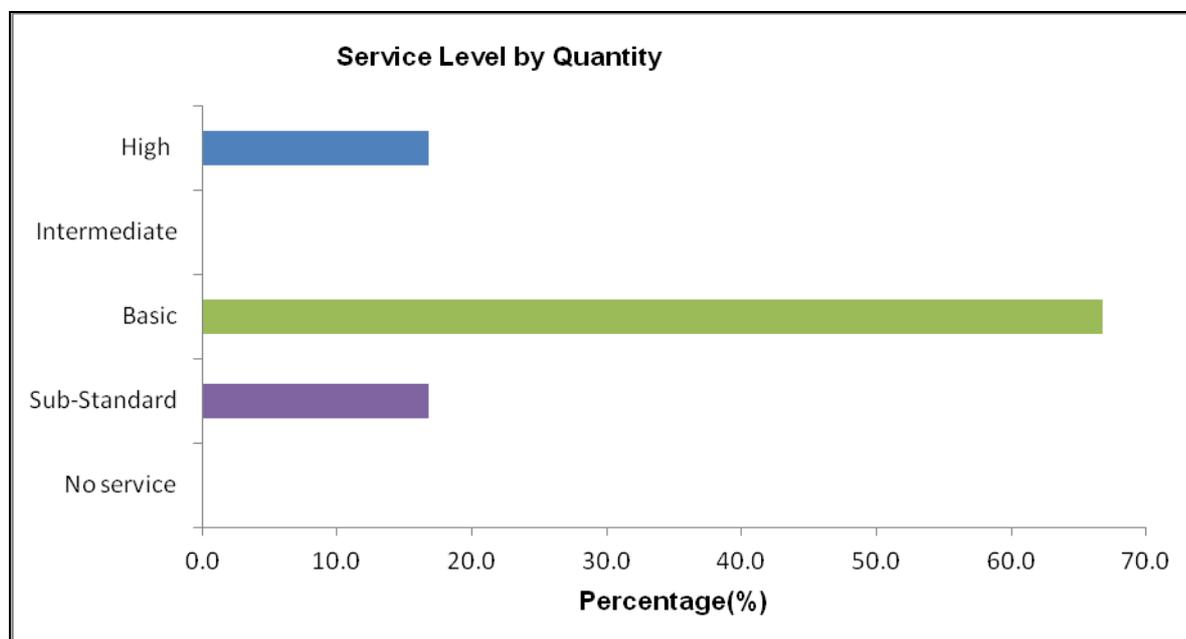
Service Levels	Indicators		
	Litres per person per day	Distance to water source	Crowding with reliability*
High	More than 60	500 metres or less	300 or less people per reliable water point system
Intermediate	40 to 60		
Basic	20 to 40		
Sub-standard	5 to 20	More than 500 metres	more than 300 people per reliable water point system
No service	0 to 5		

* Reliability means water points working at least 95% of the time

According to CWSA guidelines, a basic level of service entails receiving at least 20 litres of water a day and having a water point within 500 metres, which is shared with no more than 300 people.

In Ziome,

- A majority of people (83%) actually use sufficient water according to the national guidelines
- The only reliable formal water point is shared by 551 people, which is more than the standard of maximum 300 people per water point.
- A majority of the people (85%) have access to the water point within 500 metres



In terms of quantity of water, a majority of the respondents (83%) receive acceptable service (basic to high; 20 litres and more per person per day) throughout the year. This means that the majority of the people are receiving the basic level of at least 20 litres of water per person per day as stipulated in CWSA guidelines. However, about 17% of the respondents enjoy sub-standard (limited service, thus less than 20 lcpd) service.

Accessibility

All the respondents are receiving a standard service in terms of access. This is because their maximum walking distance to the formal water facilities falls below the norm of 500 m.

Crowding with Reliability

One out of the four boreholes with handpumps was found to be reliable (working at least 95% of the expected time). Due to crowding at the only reliable water point system, everyone is receiving a sub-standard service. In other words, no one in Ziome can currently be considered fully served even with the basic water service at the time of the visit.

Quality and Use

All the respondents perceived the quality of the formal water to be poor due to its saline taste. No water quality test was however carried out to confirm their perception. Water from the formal sources is mostly used for domestic and productive activities (small scale gari processing).

Overall service, due to sub-standard crowding with reliability, inhabitants of Ziome are considered receiving sub-standard water service though they have better service by access distance and a good number of households (83%) accessing basic and higher water quantities.

SANITATION

The community had no public or institutional toilet facility as at the time of the study. About 24% of the respondents had household toilet facilities. About 6% of these household toilets facilities were Kumasi Ventilated Improved Pit (KVIP) and 18% traditional pit latrines. However, these KVIP household toilets were not in use by all the respondents at the time of the visit. About 24% of respondents practice open defecation while the rest practice open defecation along side dig and bury. Therefore, sanitation coverage is zero.

COSTS AND FINANCES

Cost figures were collected, where available, for capital investment, operational expenditure and capital maintenance expenditure (larger repairs and rehabilitation). These were all adjusted for inflation to a base year 2009.

Capital investment costs

Capital investment costs are calculated using a regional average as actual costs were not available for all boreholes surveyed. The average regional cost of developing a borehole with handpump is US\$ 9,970. This implies that a total investment of US\$ 39,880 has been made in Ziome. Using the design population of

300 people per water point, this suggests a cost of US\$ 33 per person per facility or US\$ 72 per person for the actual population of 551 people.

Operation and maintenance costs

There has been cost incurred on operation and maintenance and at least one of the facilities has been repaired since it started operation. Operation and maintenance cost incurred was in the region of US\$ 0.06 per person per year. Part of the reason for this low figure is that several repairs were carried out by the Area Mechanic who complained in an interview with him that, the community members are not able to pay him after delivering the service.

Capital maintenance

Again, there has not been any expenditure on capital maintenance cost (CapManEx) as there has been no handpump replacement.

Table 3: Cost of providing WASH services

Cost Components	Current Cost (2009) in US\$	
	Actual population	Design population
Capital investment (US\$/person)	72	33
Operational and minor maintenance expenditures (US\$/person/year)	0.06	0.1
Capital Maintenance Expenditure (US\$/person/year)	NA	NA

Tariffs

Members of this community do not pay for accessing water from the facility (borehole with handpump). Therefore, the WATSAN committee does not generate any revenue for any operations and maintenance of these facilities. The community relies on the District Assembly and other philanthropic organisation or groups for assistance when there are breakdowns. It was not surprising that there was only one formal water system functioning at the time of visit.

Sustainability

Clearly, these facilities cannot be assured of delivering any sustainable services since functionality cannot be sustained with lack of funds for operation and maintenance.

Conclusion

Although a majority of the respondents (83%) receive acceptable service (basic to high) in terms of water quantity throughout the year, the overall water service level received by all respondents is sub-standard and does not satisfy the CWSA criteria due to sub-standard crowding with reliability. In spite of the

huge/significant investment into the four water facilities (boreholes with handpumps), which should hypothetically be adequate for a population of 1200, the reality is that the current population of 551 rely on a single operational water facility.

A majority of community members resort to open defecation and or 'dig and bury'. Available household toilets facilities were either unimproved sanitation facilities or improved but not used by all household members. Sanitation coverage is therefore zero.

The issue of this community not paying to access water from the boreholes with handpumps makes it difficult for the community to carry out operation and maintenance works without the help of philanthropists or other support groups. There was no expenditure on capital maintenance even though there were broken down handpumps which needed repairs or replacement. This was not done because the community did not have any money to carry out such replacements. At the present situation, it will be difficult, if not impossible, to ensure sustainability of the facilities in this community.