



Kpalbe community report

Cost of water and sanitation services in Kpalbe in East Gonja District, Ghana.

Kpalbe community with a population of 2,430 has three formal water point systems which are reliable (working 95% of the expected time within the past 12 months). With respect to the national guidelines 92% of respondents receiving sub-standard service and 8% no service although all the respondents (100%) met the accessibility criteria and a good number of households (64%) were receiving basic and higher service level in terms of quantity accessed.

Majority of the community members use the available public toilet facility, while some households still practise open defecation and dig-and-bury. Sanitation service level in the community based on WASHCost sanitation service ladder indicates that only 8% of the respondents have access to improved sanitation service.

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WASHCost

WASHCost has been undertaking an action research focusing on quantifying 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 research carried out in the community of Kpalbe in the East Gonja District in the Northern Region of Ghana.

The WASHCost team visited the Kpalbe community in October 2009 to collect data on the WASH services received by the inhabitants and the cost of providing these services. The community has a population of 2,430 people, from the Regional Community Water and Sanitation Agency records for 2009, and 187 housing structures according to the WATSAN committee census. The inhabitants are mostly of the Gonja and Dagomba ethnic groups. Their main economic activity is farming.

Water supplies

The community prior to the provision of formal water point systems relied on informal water sources like three dams, open wells and rainwater. At the time of the visit, there was one mechanised surface water treatment system (using infiltration galleries) with limited reticulation constructed by the Rotary Club in 2007 under The Rotary Water Intervention Project and two other boreholes with hand pumps provided by EU/UNICEF in 2009. The subsequent history of the development of Kpalbe water supply is summarised in Table 1 below.

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

Pre-2007	2007	2009
Water sources: three (3) dams, eight (8) open wells and rainwater for all purposes including drinking.	mechanised surface water treatment system (with limited reticulation/distribution) MSWTS-LR with two spouts provided by the Rotary Club	Two other boreholes fitted with handpumps provided by the European Union in conjunction with United Nations Children's Fund (EU/UNICEF).

Water consumption from formal and informal sources

Average water consumption for both formal sources (MSWTS-LR and boreholes fitted with handpumps) shows a strong seasonal pattern rising sharply in the dry season and falling in the wet season when the informal sources are readily available. However, informal water (harvested rainwater) used in the wet season was not captured in this data as people found it difficult to estimate how much they harvest and use.

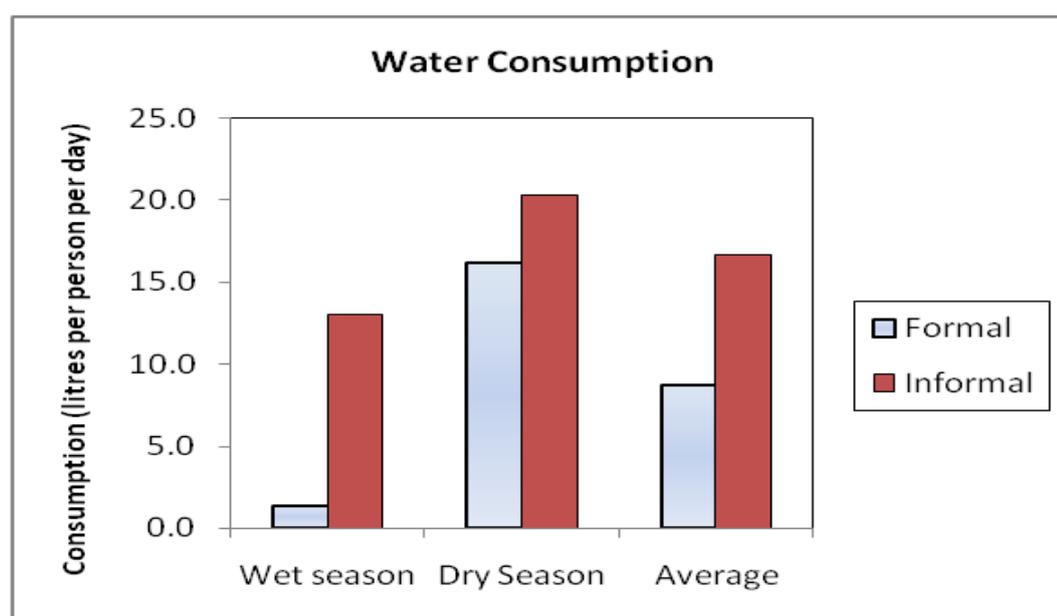


Figure 1: Average water consumption per season (litres per capita per day)

Water service levels in Kpalbe

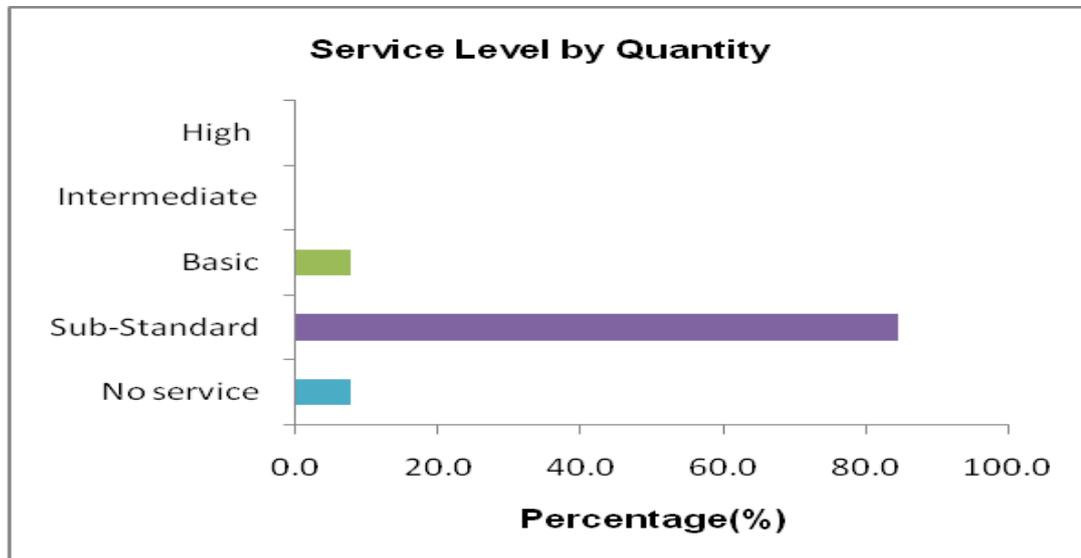
What matters to people is how much water they get, how far they have to travel to get it, the quality of the water and how often the service is available. These indicators of service levels can be expressed as high, intermediate, basic, sub-standard or 'no service'. A basic service is one that meets the guidelines set by the Community Water and Sanitation Agency (CWSA). 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 not more than 300 people. The service level is the service actually received by users, not what is supposed to be delivered to users (see Table 2 below).

Table 2: WASHCost Ghana service levels based on national norms

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

Service level by quantity

The result of the survey revealed that about 8% of the people in Kpalbe actually use sufficient water per the requirements of the national guidelines.



The result also indicates that almost all the respondents (92%) are not receiving acceptable service by quantity (sub-standard level of service) from the formal water systems. Thus, majority of the respondents are not receiving the basic level of at least 20 litres of water per person per day as stipulated in the CWSA guidelines. This is due to the overdependence on the informal water sources.

Quality and Use

All the respondents perceived the quality of water accessed from the formal water sources to be satisfactory in both dry and wet seasons. However, no water quality test was carried out to confirm their perception. Water from the formal sources is used for domestic purposes (including drinking, cooking, washing, bathing, etc.) Although the informal water sources such as non standardised household harvested rainwater, dams and open wells are not considered improved for domestic use, especially drinking, the community members use much of them for domestic as well as productive activities/purposes.

Distance

All the respondents (100%) meet the accessibility criteria. This is because their maximum walking distance to the most accessed formal water facilities falls within the norm of 500 metres prescribed by the CWSA guideline.

Crowding with reliability

The three water systems that were available to the community were found to be reliable (working at least 95% of the time within the past 12 months) are shared by 2,430 people implying 608 people per water point instead of the prescribed standard of at most 300 people per water point. As a result everyone in Kpalbe is receiving a sub-standard (“limited”) service. In other words, no one in Kpalbe could be considered to have been fully served even with the basic water service level (putting together all criteria stipulated by the norm) at the time of the visit.

Thus, based on the WASHCost Ghana service level matrix (see Table 2), the overall water service level, putting all indicators together as equally important, gives: 92% of respondents receiving sub-standard service and 8% no service although all the respondents (100%) met the accessibility criteria and a good number of households (64%) were receiving basic and higher service level in terms of quantity accessed.

Sanitation

There is one Kumasi Ventilated Improved Pit (KVIP) public toilet facility, two Ventilated Improved Pit (VIP) institutional toilet facilities and one Mozambique household toilet facility in this community. The District assembly made provision for the public and institutional facilities in 2001 and 2002 respectively, where the community provided labour and land. There were subsidies by the CWSA

in relation to the household toilet facility. A majority (54%) of the respondents use the public toilet facility, however some households still practice open defecation as well as dig-and-bury. Sanitation service level in the community based on WASHCost sanitation service ladder is 8 percent improved, 46 percent sub-standard and 46 percent no service which is less than the national sanitation coverage of 13% reported by the WHO/UNICEF JMP 2010.

Costs and finances

Cost data was collected where available to cover capital investment, operational expenditure and capital maintenance expenditure (that is larger repairs and rehabilitation), and were adjusted for inflation to a base year of 2009.

Capital investment costs

Capital investment cost was calculated using a regional average as actual cost was not available for the water systems surveyed. The average regional cost of developing a borehole and handpump is US\$ 7,795. Thus, the investment that has been made in water infrastructure provisions excluding the mechanised surface water treatment system (with limited reticulation/distribution) by the Rotary Club is around US\$ 15,590 (for the 2 boreholes with handpumps). Using the design population of 300 people, this suggests a cost around US\$ 26 per person but US\$ 6 per person for the actual population of 2,430.

Operational and minor maintenance costs

Data on operational and minor maintenance costs of the formal water systems were not available. The WATSAN committee claims that the caretaker or area mechanic has not worked on them yet since the water facilities (boreholes with handpumps) were new (less than a year old).

Capital maintenance expenditure

Capital maintenance expenditure had never been incurred. The reason is that, there had never been any major rehabilitation and/or replacement of handpump. This means that capital maintenance expenditure is US\$ 0 (see Table 3).

Table 3: Cost of providing WASH services

Cost Components	Current Cost (2009) in US\$	
	Observed population	Designed population
Capital investment (US\$/person)	6	26
Operational and minor maintenance expenditures (US\$/person/year)	NA	NA
Capital Maintenance Expenditure (US\$/person/year)	0	0

Tariffs

Members of Kpalbe community are charged tariff of GHp 5 per 54 litres for accessing water from the formal water systems. The general impression from users about the water tariff according to the WATSAN committee is high.

Sustainability

If all the users are to pay the tariff of 5Gp per 54 litres, the expected revenue will be GH¢ 7391 per year. This suggests that the community should be able to maintain all the water facilities since tariffs are set to recover all operations and maintenance. Thus, high patronage and commitment from inhabitants to pay for the water can ensure reliable maintenance of facilities to contribute to sustainability.

Conclusion

Kpalbe community (with a population of 2,430) could be considered underserved thus, based on the WASHCost Ghana service level matrix (see Table 2), the overall water service level, putting all indicators together as equally important, gives: 92% of respondents receiving sub-standard service and 8% no service although all the respondents (100%) met the accessibility criteria and a good number of households (64%) were receiving basic and higher service level in terms of quantity accessed.

A majority (54%) of the respondents use the public toilet facility, however some households still practice open defecation as well as dig-and-bury. Sanitation service level in the community based on WASHCost sanitation service ladder is 8% improved, 46% sub-standard and 46% no service which is less than the national sanitation coverage of 13% reported by the WHO/UNICEF JMP 2010.