



Adwafo community report

Cost of water and sanitation services in Adwafo, Bosomtwe District of Ashanti Region of Ghana

Adwafo community with a population of 983 has one water point system and a limited mechanised system with 8 standpipes. All the inhabitants in the community get adequate supply of water within a distance of 500 metres. The overall water service level received by a majority of the respondents (83%) is basic service and better services. At least half of the population of the community members have access to improved sanitation service.

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WASHCost has been undertaking an action research focusing on quantifying the cost of providing sustainable water, sanitation and hygiene services (WASH) in rural and peri-urban areas in Ghana. This community report presents findings of research carried out in the community of Adwafo in the Bosomtwe District of the Ashanti Region of Ghana

The WASHCost team visited the Adwafo community in February 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 983 people (CWSA, 2009). The inhabitants are mostly of the Ashanti tribe and their main occupation is agriculture (cash and food-crop farming). The location of Adwafo and the water and sanitation facilities available in the community are shown in Figure 1 below.

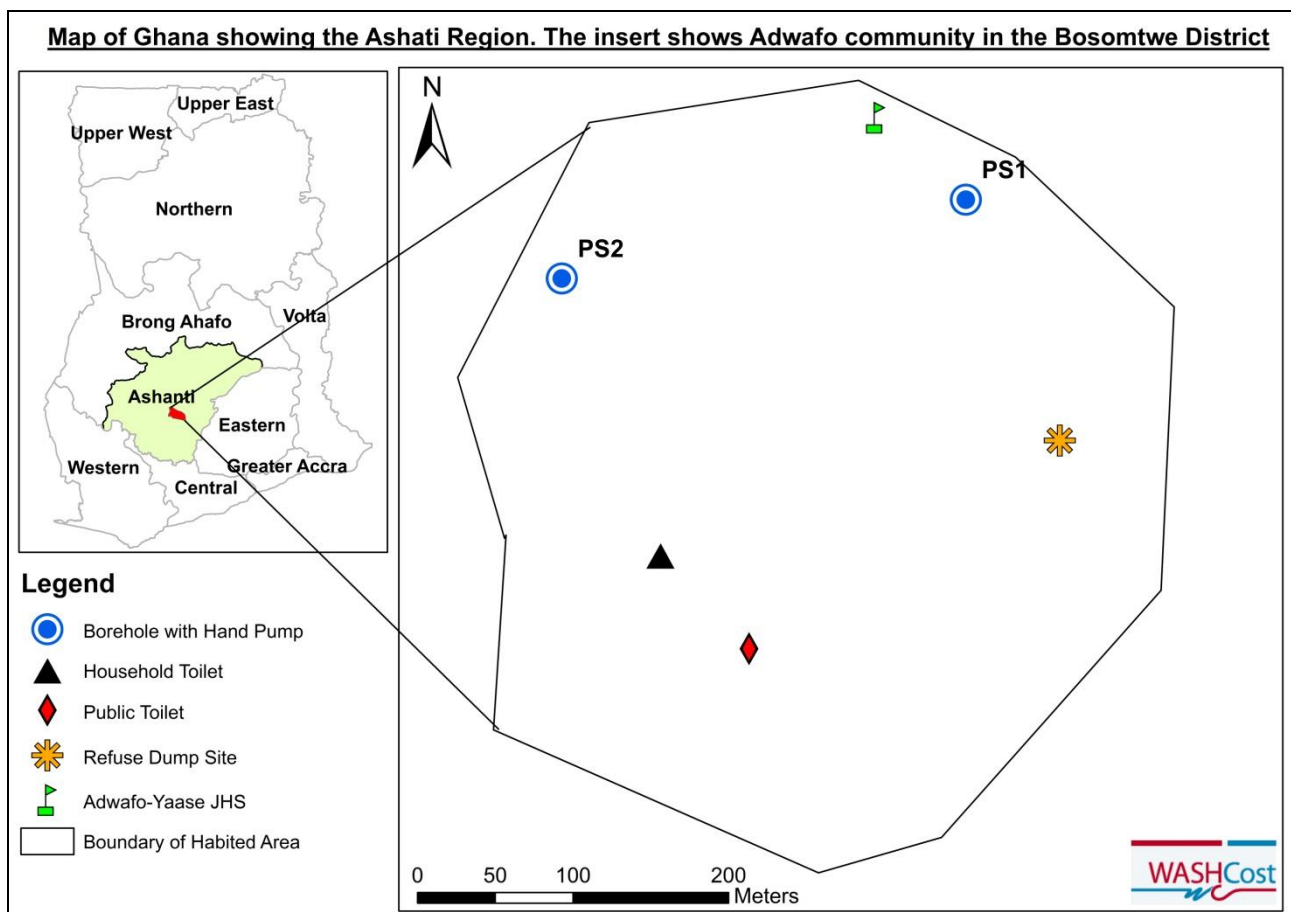


Figure 1: Map of community with water and sanitation facilities

WATER SUPPLY

Before the year 1999, the inhabitants of Adwafo relied on a river called Banko as their main source of water for all purposes including drinking. Due to the unreliable nature of the river especially in the dry season, the community appealed to the District Assembly for the provision of a formal water facility.

Currently there are two (2) formal water point systems available to the community. One of them, PS1 was recently mechanised and has 8 fetching points as standpipes and the second facility PS2 is fitted with a handpump. These facilities were functional during the time of visit. The subsequent history of the development of Adwafo's water supply is summarised in Table 1 below.

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

Pre-1999	1999	2009
River Banko for domestic and productive uses.	Two boreholes fitted with handpumps (PS 1 and PS 2) provided by the District Assembly. Community contributed 5% to the capital cost of providing the facility.	PS1 was mechanised into an 8 tapped-water network in 2009. Community funded the cost of mechanisation.

Water consumption from formal and informal sources

Average water consumption showed no seasonal variations for the formal water source and for the informal water source. Water consumption was the same throughout the seasons. However, informal water (harvested rain water) used in the wet season was not captured since respondents found it difficult to estimate how much they use.

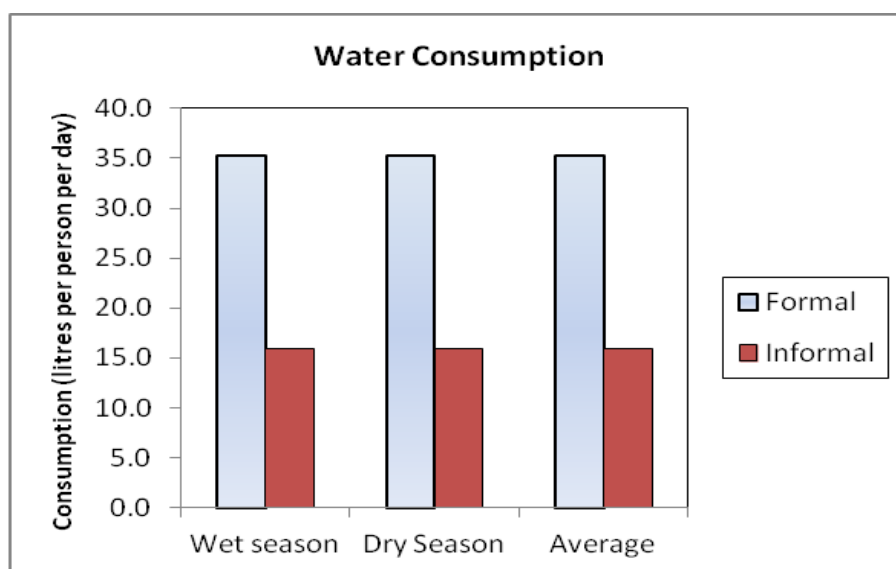


Figure 1: Average water consumption per season

Water service levels in Adwafo

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 and '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. From these norms, WASHCost has the water service ladder as shown in Table 2 below.

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

Service Levels	Indicators		
	Quantity (Litres per person/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 82% are enjoying acceptable service level (basic and better services) with respect to the quantity of water. This means that, a 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, 18% of the respondents are receiving a sub-standard and no service throughout the year.

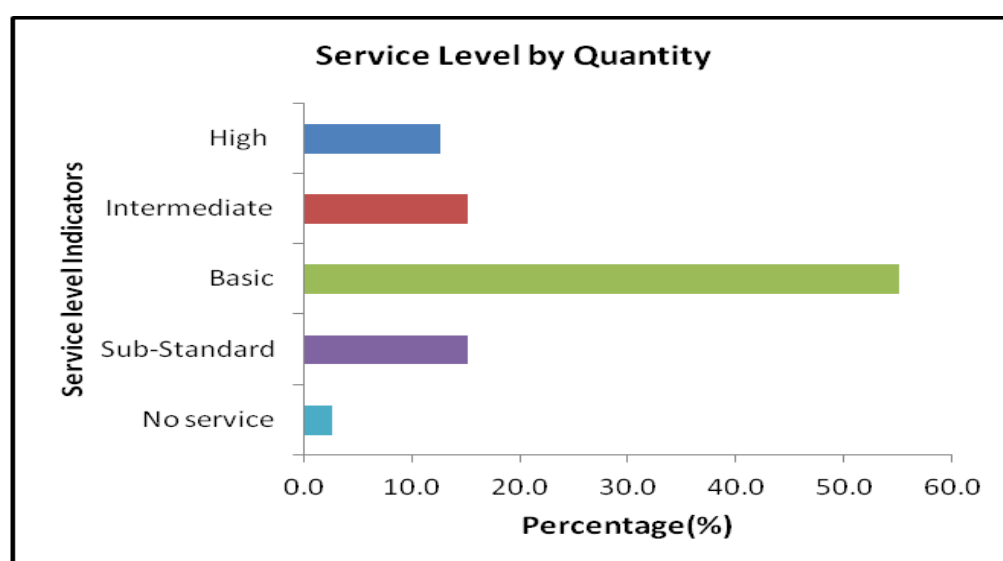


Figure 2: Percentage of respondents receiving a particular service

Accessibility

Everyone in the community (100%) has access (by distance) to the formal water systems within 500 metres as required by the CWSA norm.

Crowding with reliability

The community had been relying on a borehole with a handpump and a mechanised system with eight fetching points as standpipes as their formal water points. These facilities were found to be reliable (working 95% of the expected time) and are shared by 983 people (i.e. 110 per water point), which is less than the standard of maximum 300 people per water point. Due to this, everyone in Adwafo can currently be said to fully meet at least the basic standard for a rural water service.

Quality and Use

All the respondents (100%) perceived the quality of PS1 (limited mechanised system) to be good. Only 4% of the respondents perceived the quality of PS2 to be “salty” (saline). However, no water quality test was carried out to confirm their perception. Water from the formal sources is used for all purposes including drinking. Although the informal water sources are not acceptable for domestic use by the CWSA norm, the community members use them for domestic as well as productive activities. The informal sources used are a river and rainwater harvested by households.

SANITATION

The community has one Aqua Privy public toilet which is used by the inhabitants who do not have household toilets. About 42% of the respondents have household toilet. None of the respondents practice dig and bury or open defecation. More than half of the respondents (51%) have access to improved sanitation service based on the WASHCost sanitation service ladder (see details in WASHCost Ghana Briefing note 1).

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 costs were calculated using a regional average as actual costs were not available for all boreholes surveyed. The average regional cost of developing a borehole and handpump is US\$ 7,121. This implies that a total investment has been made in Adwafo of US\$ 14,242 for the two boreholes constructed in 1999. Thus, the investment per person without the cost of upgrading one of the water facilities to a limited mechanised system is close to US\$ 24 and US\$ 15 for the design and actual populations respectively. The cost of capital expenditure enhancement (cost of upgrading the facility to a mechanised type) was not available to the study.

Operational and minor maintenance costs

The water facilities incurred some costs on operation and maintenance. The operational and minor maintenance expenditure (OpEx) in terms of cost per capita per year based on actual population of 983 was US\$ 0.13.

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 hand pump. 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\$
	Actual population
Capital investment (US\$/person)	14.5
Operational and minor maintenance expenditures (US\$/person/year)	0.13
Capital Maintenance Expenditure (US\$/person/year)	0

Tariffs

According to the WATSAN committee, the water tariff is set by all members in an open forum at any time deemed appropriate. The water tariff is collected and kept by the WATSAN committee. A tariff of Gp 5 is charged for 36 litres of water fetched from the mechanised water point source or Gp 5 for 72 litres for water fetched from PS2 on pay-as-you fetch basis. A majority of the respondents, about 66%, considered the water tariffs acceptable.

Part of the revenue accrued by WATSAN and levies collected from households was used for the mechanisation of one of the boreholes with a handpump (PS1). A focus group discussion with the WATSAN committee revealed that, there are generally occasional breakdowns of the formal water point systems. These repairs are funded from monies accrued from the sale of water. The total balance of revenue available in the WATSAN account as at May, 2010 was US\$ 40 as there had been recent repairs.

Sustainability

Members of the WATSAN committee reported that the water point systems have never been down for more than a week due to the availability of funds for operation and maintenance activities. Repairs are carried out

with the money accrued from the sale of water. Thus all operation and maintenance could be funded from the expected revenue.

Conclusion

Crowding has reduced drastically due to the availability of a borehole which has being mechanised with eight fetching points as standpipes and a borehole with a handpump. Thus, Adwafo community with a population of 983 is considered over served in terms of water coverage per facilities provided. Distance to the formal water facilities is generally standard (meeting the norm). Thus, the overall water service level received by a majority of the respondents (83%) is standard service and better services.

Reported use from the water point source showed no seasonal variability. It was also clear that only 18% of the population of Adwafo were using quantities below the national norm of 20lcd, with 82% reporting basic or better daily use.

A little over half of the population (51%) of Adwafo is covered in terms of sanitation with 49% of the inhabitants having no access to improved sanitation service due to the unimproved sanitation practices.