WASHCost

Community Report

Nkwanta community report

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

Nkwanta community with a population of 1,050 with two formal water systems is considered to be poorly served in terms of water coverage, based on the CWSA norm of one borehole with handpump for 300 people. Despite subsidies provided by the Government of Ghana in 2004-2006 to community members who wanted to own household toilet facilities, only 16% of the community members own household toilet. As result only 10% of the respondents have access to basic 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 (WASH) services in rural and peri-urban areas in Ghana. This community report presents findings of research carried out in the community of Nkwanta in Bosomtwe District of Ashanti region.

The WASHCost team visited the Nkwanta community in March 2011 to collect data on the WASH services received by the inhabitants and the cost of providing the services. The community has a population of 1,050 according to the regional Community Water and Sanitation Agency (CWSA) records. The inhabitants are mostly of Ashanti ethnic group and their main occupation is farming (cash and food crop farming) and sand winning.

Map of Ghana showing the Ashanti Region. The insert shows Nkwanta community in the Bosomtwe District

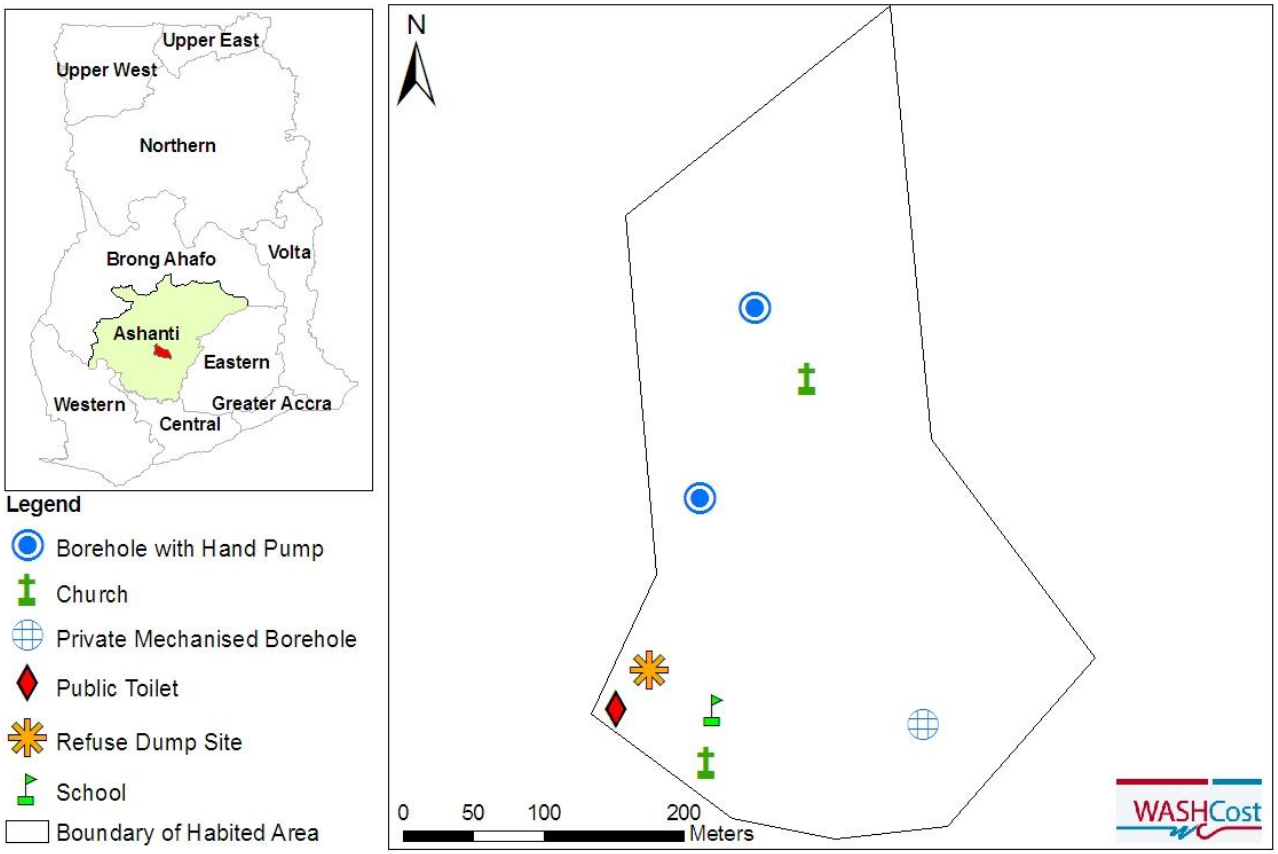

Figure 1: Map of community with water and sanitation facilities

Before the year 1998, the inhabitants of Nkwanta relied on a river and a stream as their main sources of water for all purposes including drinking. Due to the unreliable nature of the river and the stream especially in the dry seasons, the **Rural Water Supply Project (IV)** of the World Bank through the District Assembly provided the community with a formal water source. At the time of the visit, there were two (2) boreholes fitted with handpumps and they were both working. In addition there is a **limited mechanised borehole** owned by a **private individual** which was constructed in 2008.The subsequent history of the development of Nkwanta water supply is summarised in Table 1 below

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

Pre-1998	1998	2009
A river and a stream for domestic, non domestic and productive uses.	Rural Water Supply Project (IV) of the World Bank through the District Assembly provided a borehole fitted with handpump (PS2).	District Assembly in conjunction with the WATSAN committee provided a borehole fitted with handpump, PS1. The community made capital contribution of 75 Ghana pesewa per head towards the provision of the facility.

Water consumption from formal and informal source

Average water consumption for the two formal sources shows slight seasonal variation; consumption per person per day was 46 litres in the wet seasons and 47 litres in the dry seasons. However, consumption of informal water (harvested rain water and water from the stream and river) was the same in all seasons (≈ 32 l/c/d).

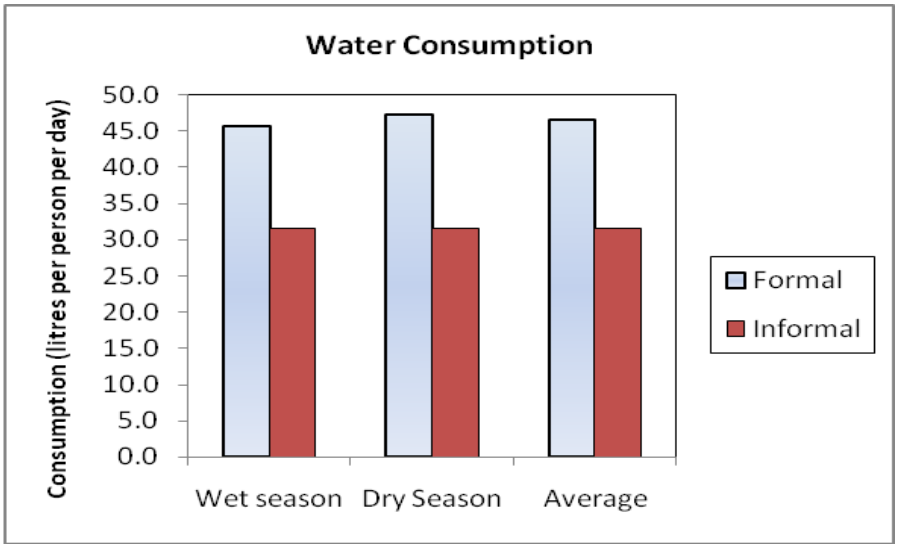

Figure 2: Average water consumption per person

Water service levels in Nkwanta

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.

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		

The result of the survey for water quantity revealed that,

- Almost everyone (90%) in Nkwanta actually use sufficient water per the requirements of the national guidelines.
- The two reliable water point systems are shared by 1050 people which is more than the prescribed standard of at most 300 people per water point.

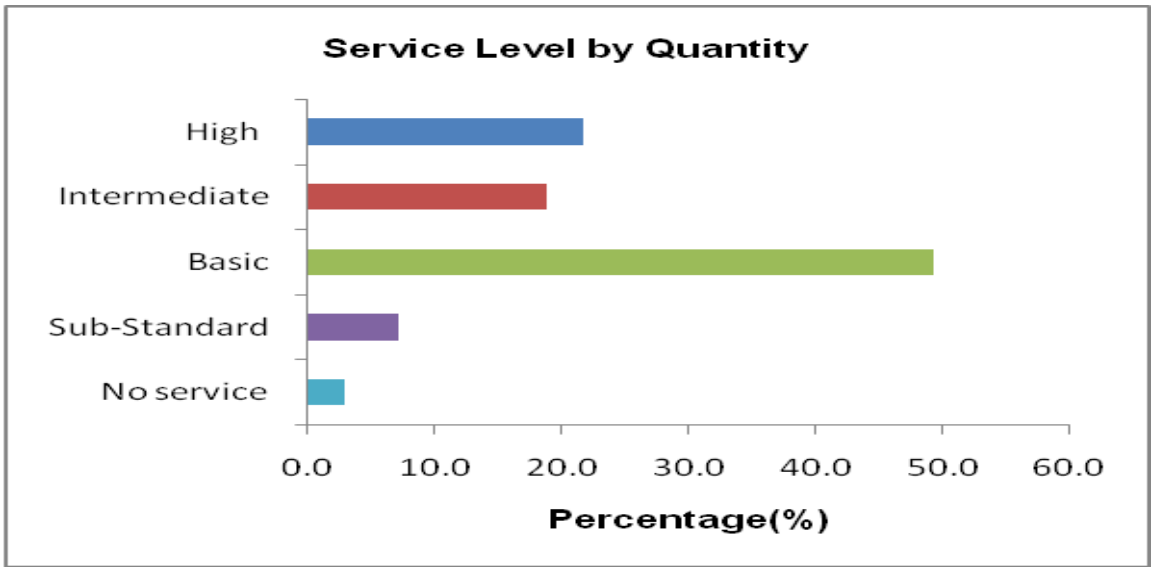

Figure 3: Percentage of respondents receiving a particular service

Crowding with reliability

All the respondents (100%) were receiving sub-standard service in terms of service level by crowding-with-reliability because two facilities have been reliable (working 95% of the time for the entire population) resulting in 525 persons per facility instead of the norm (300 persons per reliable facility). Due to this, everyone in Nkwanta community does not fully meet at least the basic standard for a rural water service in terms of crowding with reliability.

Accessibility

All the respondents meet the accessibility criteria. This is because their maximum walking distance to the formal water facility falls within the norm of 500 metres prescribed by the CWSA guidelines.

Quality and Use

Almost all the respondents (99 %) perceived the quality of water accessed from the water point systems to be satisfactory in both the dry and wet seasons. However, no water quality test was

carried out to confirm their perception. Water from the formal source is used for all domestic purposes including drinking and also for productive uses such as canteen activities.

Based on the WASHCost Ghana water service level matrix (Table 2), the overall water service level, putting all indicators together as equally important, gives 97% of respondents receiving **sub-standard service level and 3% of the respondents receiving no service.** This is because, all respondents are receiving sub-standard service in terms of crowding with reliability; otherwise all respondents would have satisfied the standard water service level.

SANITATION

The community has two public and an institutional toilet facilities (traditional pit latrines) provided by the community members. At the time of the field visit, the institutional toilet was not in use because the pit was full and had not been desludged for a very long time. Members of the community are not charged any user fee for accessing these public toilet facilities. About 16% of the respondents had household toilet facilities. In the past (2004-2006), subsidies to the tune of about GHS 47.00 were paid for the construction of household toilets by the Government of Ghana. About 3% of the respondents who owned household toilets received subsidies. About 12% of these household toilets are Ventilated Improved Pit (VIP) technology whiles about 4% are traditional pit latrine. A majority of the community members that do not have useable household toilet facilities access the public toilet. About 4% of the respondents resort to their neighbour's toilet, 7% resort to dig and bury whilst 17% resort to open defecation. Sanitation coverage in the community is therefore 10% percent.

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, calculated using a regional average as actual costs was not available for borehole that was surveyed. The average regional cost of developing a borehole and handpump is US$ 7,121. This implies that the total investment that has been made in Nkwanta is US$ 14,242. Using the design population of 300 people, this suggests a cost of US$ 24 per person but US$ 14 per person for the actual population of 1050.

Operational and minor maintenance costs

Operation and maintenance costs were reported for the water facilities, PS1 and PS2 over the period of their existence during which it suffered. Each suffered at least four breakdowns. Using the designed population of 300 people per borehole gives a cost of US$ 0.33 per person per year and US$ 0.09 per person per year for the actual population of 1050.

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 pop	Design pop
Capital investment (US$/person)	14	24
Operational and minor maintenance expenditures (US$/person/year)	0.09	0.16
Capital Maintenance Expenditure (US$/person/year)	0	0

Tariffs

According to the WATSAN committee, the water tariff is collected and kept by the WATSAN committee. The community pays for accessing formal water sources at **/5 Ghana pesewa for 18 litres of water**.

Sustainability

Revenue from the sale of water is collected by vendors who render accounts on monthly basis. They are given 20% as commission on return as incentives for spending almost all hours (6am – 8pm) in the day doing that business. Operational and Repair works are paid by the WATSAN committee from monies generated from sale of water by the vendors. As at the time of visit, the amount of money accrued from the sales of water by the WATSAN committee was GHS 150

Conclusion

Nkwanta community with a population of 1,050 is considered to be poorly served in terms of water coverage, based on the CWSA norm of one borehole with handpump for 300 people. By the CWSA criteria, the community should have about four boreholes fitted with handpumps thus, implying that currently the community is underserved. However, the reality is that, almost everyone in the community actually uses sufficient water per the requirements of the national guidelines. This could probably be due to the availability of a private owned limited mechanised system. Again almost everyone in the community perceived the quality of water accessed from the water point system, PS2 to be poor in both the dry and wet seasons. However, no water quality test was carried out to confirm their perception.

The overall water service in terms of quantity accessed, accessibility by distance, and crowding-with-reliability gives 97% of the respondents receiving sub-standard service and 3% receiving no service.

The data on operation and maintenance and major rehabilitation showed that the community practice break-down (responsive) maintenance. This means that they only repair any of the parts when there are breakdowns and there was no systematic or regular preventive maintenance schedule for the systems. Communities should therefore be encouraged to use preventive maintenance approach where parts of the water facility are changed or replaced periodically to ensure sustainability.

On sanitation, the community had two public and an institutional toilet facilities (traditional pit latrines) provided by the community members. Members of the community are not charged any user fee for accessing these public toilet facilities. Also, at the time of the field visit, the institutional toilet was not in use because the pit was full and had not been disludged for a very long time.
The Government of Ghana provided subsidies to the tune of about GHS 47.00 per person for the construction of household toilets for interested community members in 2004 to 2006. However, only about 16% of the respondents had household toilet facilities and about 12% of these household toilets are Ventilated Improved Pit (VIP) technology, whiles about 4% are traditional pit latrine. A majority of community members that do not have useable household toilet facilities access the public toilet. About 24% of the people resort to either dig and bury or open defecation. .As a result only 10% of the respondents has access to basic sanitation service.