

# Life-cycle costs approach for WASH services that last



## Life-cycle costs in Ghana

Briefing Note 7: Poverty and access  
to rural water Services

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**WASHCost project partners have developed a methodology for costing sustainable water, sanitation and hygiene (WASH) services by assessing life-cycle costs and comparing them against levels of service provided. The approach has been tested in Ghana, Burkina Faso, Mozambique and Andhra Pradesh (India). The aim of the life-cycle costs approach is to catalyse learning to improve the quality, targeting and cost effectiveness of service delivery.**

In Ghana, Kwame Nkrumah University of Science and Technology (KNUST), IRC International Water and Sanitation Centre, and Community Water and Sanitation Agency (CWSA) are using the WASHCost Life-Cycle Costs Approach (LCCA) to identify the true costs of providing sustainable WASH services in rural and peri-urban areas. These series of briefing notes have been developed to explain the methodology, share the findings, and draw out the implications for policy and practice in Ghana's WASH sector.

This briefing note No. 7 presents the findings on **poverty and access to water services** and draws out the implications for policy and practice in Ghana's WASH sector.

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## Front page photo

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WASHCost is a five year action research project investigating the cost of providing water, sanitation and hygiene services to rural and peri-urban communities in Ghana, Burkina-Faso, Mozambique and India (Andhra Pradesh). The objectives of collecting and disaggregating the cost data over the full life-cycle of WASH services are able to analyse cost per infrastructure and service level, and to better understand the cost drivers and through this understanding to enable more cost effective and equitable service delivery. WASHCost is focused on exploring and sharing an understanding of the true cost of sustainable services (see [www.washcost.info](http://www.washcost.info)).

# Life cycle costs in Ghana:

## Poverty and access to rural water Services

This briefing note presents findings on actual access to water services by users in small towns and rural communities, and analyses this access with respect to poverty. The WASHCost Project Ghana conducted studies in 31 rural communities and 4 small towns in Ashanti, Northern and Volta region (for more details of the study methodology, see WASHCost *Briefing Note* No 1). This briefing note is based on the results of WASHCost studies in 16 rural communities and 2 small towns from the Ketu South and Bosomtwe districts of Volta and Ashanti regions (see Figure 1 below), where in addition to analysis on services received, data was also collected on household poverty status.

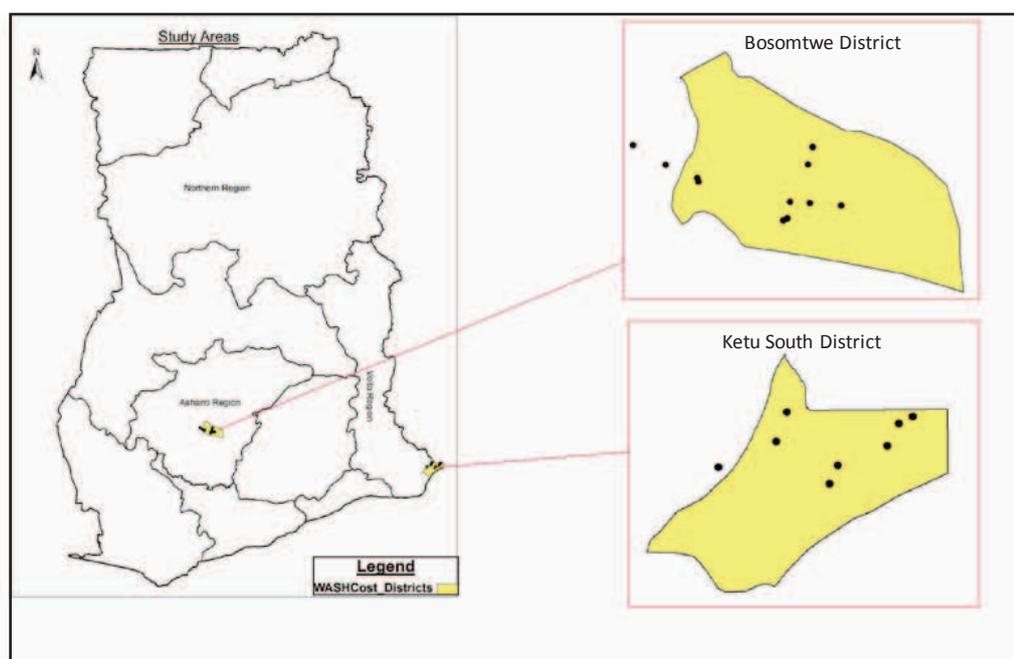


Figure 1: Map of study area

Access to water, sanitation and hygiene (WASH) services is important in the lives of all people everywhere, whether rich or poor. Yet, water and sanitation coverage statistics are usually not disaggregated by the users' poverty status. For example, the annual sector performance report of the Ministry of Water Resources Works and Housing (MWRWH) as well as the Community Water Sanitation Agency (CWSA) reports do not provide any poverty analysis on access to WASH services. Again, the WHO/UNICEF Joint Monitoring Program (JMP) data for water and sanitation does not provide information on access to WASH services by the poor. This means that programmes to improve WASH services delivery could, in principle, exclude the poor.

It is therefore important to measure access to WASH services with respect to the poor. Poverty analysis on WASH service delivery is important to answer questions such as: Is WASH service delivery pro-poor? Are the poor being marginalised? Answers to these questions are important to inform decision making for WASH service delivery in a more sustainable, equitable, efficient and effective manner.

### Framework of analysis

Households were categorised as poor or 'non-poor' based on the main economic activity of the main household breadwinner. This indicator was adopted from the Ghana Statistical Service (GSS) report on Pattern and Trends of Poverty in Ghana, where the link between household poverty and economic activities is established (GSS, 2007). The main economic activity of the household breadwinner was used as the indicator to measure household poverty.

Households with breadwinners engaged in food crop farming as their main economic activity are considered to be poor and those with other economic activities like public sector employment, private formal employment, export farming, non-farm self employment and non-working (mostly receiving remittances) are considered to be non-poor. This is because highest poverty incidence with rural and peri-urban inhabitants is associated with food crop farmers (almost always in subsistence farming) and also food crop farmers are the only group with a higher than average poverty rate according to the Ghana Statistical Service.

Household income indicators were not used in poverty analysis because of the experience of unreliable income and expenditure data from households during the pilot studies where households claimed they were (on the average) spending more than twice their incomes.

### Water service levels

The water service that users received was measured using the four indicators obtained from the country norms. These are the quantity and quality of water, the reliability of the service and the accessibility to the water facility. The framework for assessing the water service levels is shown in Table 1 below. Detailed information on the framework is presented in Briefing Note 1 in this series.

Table 1: Framework for assessing water services

| Service Levels | Indicators        |                          |                                     |
|----------------|-------------------|--------------------------|-------------------------------------|
|                | Quantity accessed | Distance to water source | Crowding-with-reliability           |
| High           | >= 60lcd          | <=500 meters             | <=300 per point-system or standpipe |
| Intermediate   | >=40 and <60lcd   | <=500 meters             | <=300 per point-system or standpipe |
| Basic          | >=20 and <40lcd   | <=500 meters             | <=300 per point-system or standpipe |
| Sub-standard   | >=5 and <20lcd    | >500 meters              | >300 per point-system or standpipe  |
| No service     | <5lcd             | >500 meters              | >300 per point-system or standpipe  |

### Poverty status of the districts

This section presents the services received by poor and non-poor households in both rural and small towns in Bosomtwe and Ketu South Districts. The distribution of economic status over sampled households (using the main economic activity of the respondent) is presented in Figure 2 below.

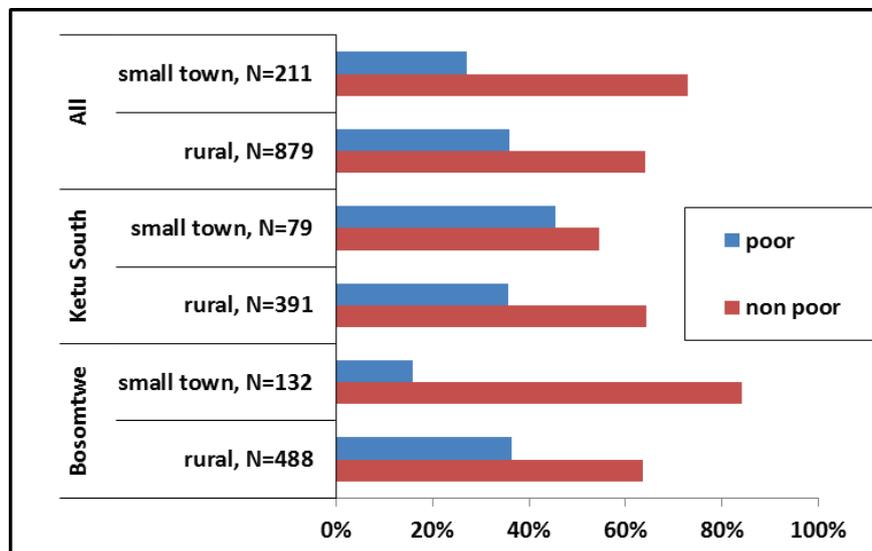


Figure 2: The economic status of respondents from the surveys

The distribution of poor and non-poor households in the rural areas is the same in the two districts but different in the small towns. The economic activities in the rural areas are relatively the same without much significant difference in livelihoods. However, a smaller proportion of the population are poor in Kuntense small town (in Bosomtwe district) as compared to Akame and Kpogedi communities under the Ketu Wego small town in the Ketu South district. The difference in the two small towns could largely be attributed to the disparity in physico-social and economic characteristics.

Kuntense small town is a single community water scheme, the community is a district capital with improved social amenities and economic activities compared to Akame and Kpogedi communities which are rural communities that form part of a multi-village water scheme with deprived or less social amenities and economic activities. Again the Ashanti region where Bosomtwe district belongs is wealthier than Volta region where Ketu south district belongs.

### Access to water services

The water services that users receive are presented for rural and small towns.

#### Rural water services

The overall water services received by the poor and non-poor in the rural areas visited are shown in Figure 3, where 29% of the poor households are getting acceptable services compared to 21 % of the non poor. However, in Figure 4, 60% of the non poor households receive more than 20l/c/d compared to 58 % of the poor. The figures show that there is not a big difference between economic status and the water service (overall service and service by water quantity) received by users.

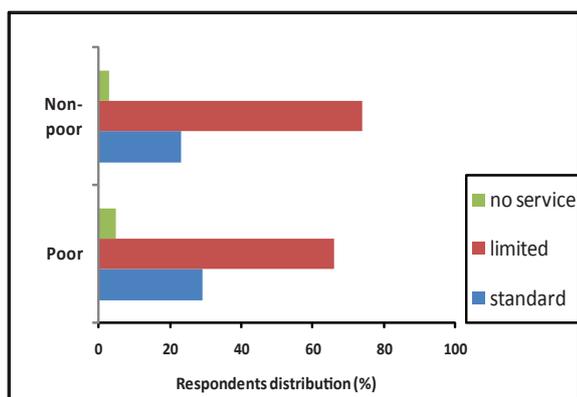


Figure 3: Overall water services (rural, N=879)

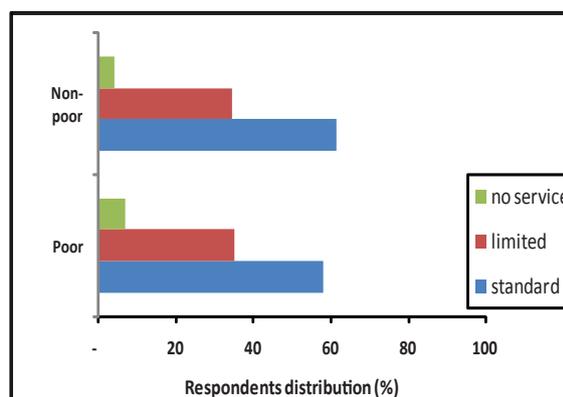


Figure 4: Water quantity accessed (rural)

The water service levels for the two districts also show no clear difference between poor and non-poor households in the district despite there being a noticeable difference between the two districts, particularly with respect to overall water service (see Figures 5 and 6).

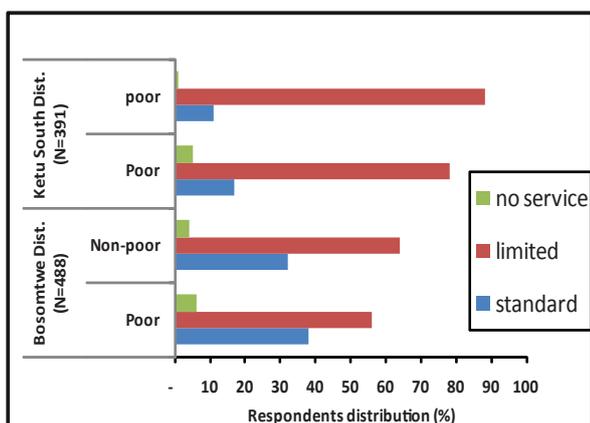


Figure 5: Overall water service by districts (rural)

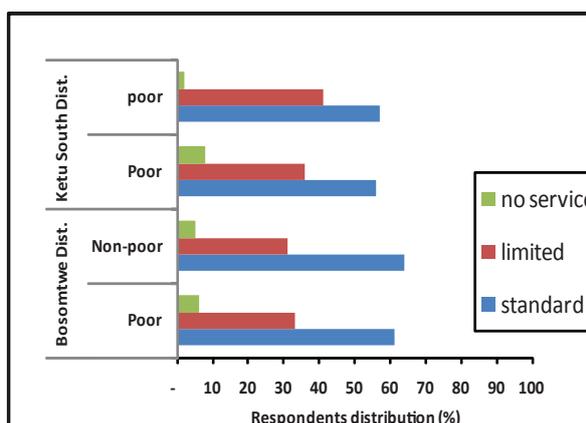


Figure 6: Water quantity accessed by district

The overall service levels is far better for rural areas in the Bosomtwe district (~34%) than the Ketu South district (~13%). Taken together with the data shown in Table 2, which shows overall poverty data from GSS for the three districts where WASHCost collected data, it seems that the two poorer districts (East Gonja and Ketu South) both have service levels that are considerably lower than the relatively wealthier Bosomtwe district (also seen in Table 2 below). If replicated elsewhere, this would tend to suggest more or otherwise that while there is little evidence for poverty related difference in access to services within a given district, poorer districts may have generally lower levels of service.

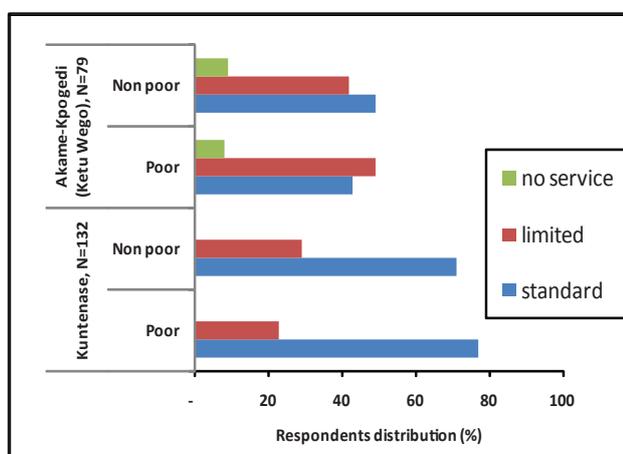
Table 2 below shows the population below the poverty line (from Ghana Statistical Service) in the various regions and coverage of improved water service according to the WASHCost survey. The table depicts that there is difference in service levels between the districts along poverty line. However, as has been stated earlier, replication elsewhere might provide more useful suggestions.

**Table 2: Poverty line and improved water service coverage (rural)**

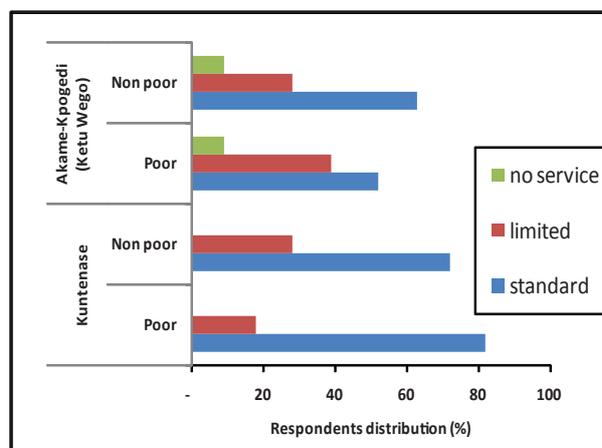
| Region   | District   | Percentage of regional population below the poverty line <sup>1</sup> | Percentage with improved services from field survey <sup>2</sup> |
|----------|------------|---|--|
| Ashanti  | Bosomtwe   | 20  | 33   |
| Northern | East Gonja | 52  | 10   |
| Volta    | Ketu South | 31  | 13   |

### Small towns water services

The water service levels received in the small towns are shown in Figures 7 and 8 below. The results show, once again, that there is no clear difference between access by poor and non-poor households to water services within a district. However, there is a difference in service levels between the districts, which again suggests that a higher proportion of the users in Kuntensee, the comparatively wealthier district (Bosomtwe) has improved services. It is also worth noting that, of course, in small towns with a mix of household connections and standpost supplies, it will typically be the wealthier households who have household connections (a clearly higher level of service). However, this does not show in the statistics due to the relatively small number of household connections in the overall sample.



**Figure 7: Overall water service by small town**



**Figure 8: Water quantity small town**

<sup>1</sup> 2005/2006 poverty line from Ghana Statistical Service report, patterns and trends of poverty

<sup>2</sup> This is from WASHCost Ghana field surveys carried out in the three districts

Table 3 below shows the population below the poverty line (from Ghana Statistical Service) in the various regions and coverage of improved water service according to the WASHCost survey. The table suggests that the wealthy region has better water services.

Table 3: Poverty line and improved water service coverage (small towns)

| Region   | District   | Small town                       | Percentage of district/region population below the poverty line <sup>3</sup> | Percentage with improved services <sup>4</sup> |
|----------|------------|----------------------------------|--|--|
| Ashanti  | Bosomtwe   | Kuntenanse                       | 20   | 73   |
| Northern | East Gonja | <sup>5</sup> Bakamba and Kpandai | 52   | 10   |
| Northern | East Gonja | Kpandai                          | 52   | 20   |
| Volta    | Ketu South | Akame-Kpogedi                    | 31   | 20   |

### Conclusions and emerging questions for policy

There is no significant difference observed in water service levels (overall service and water quantity) received by poor and non poor households in both rural and small towns within a district. However, there are differences between districts suggesting that a higher proportion of the users in the wealthier districts receive better water services. Given the small number of districts sampled, this finding is no more than indicative. It is worth noting in this context, that **Briefing Note 6** reported a higher proportion of the communities in the wealthier district (Bosomtwe) practicing “pay as you fetch” and spending more on operations and maintenance, which in turn contributed positively towards water service delivery.

### Recommendations for policy and practice

The Community Ownership and Management (COM) arrangement seems to be providing a relatively homogenous level of service within communities and districts. The findings suggest that the wealthier districts receive better water services with the implication that poorer districts need more support/subsidy to achieve the same level of service. However, there is the need to check if the implication of poorer districts having poorer service levels overall is a genuine trend. Therefore, it is important to replicate the study in a larger number of districts.

<sup>3</sup> 2005/2006 poverty line from Ghana Statistical Service (GSS) patterns and trends of poverty

<sup>4</sup> This is from WASHCost Ghana field surveys carried out in the three districts

<sup>5</sup> Formerly of East Gonja District

## WASHCost briefing note series

### Briefing notes relating to survey based work in Bosomtwe, Ketu South and East Gonja

**Briefing note 1:** Background and Methodology

**Briefing note 2:** Post-construction costs of water point-systems

**Briefing note 3:** Costs of rural and small town sanitation services

**Briefing note 4:** Access to services in rural areas and small towns

**Briefing note 5:** Access to sanitation services

**Briefing note 6:** Functionality of rural water point-systems

**Briefing note 7:** Poverty and access to services

**Briefing note 8:** Uses and sources of water in rural areas

### Briefing notes from desk or case study based work:

**Briefing note 9:** Case study of twelve small towns in the Central Region

**Briefing note 10:** Case study of Oyibi multi-village scheme

**Briefing note 11:** Cost drivers capital investment in small-town pipe schemes

**Briefing note 12:** Direct support costs to rural WASH service provision

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