BASELINE WATER ACCOUNTING AND HYGIENE PRACTICES IN MUS INTERVENTION COMMUNITIES IN GHANA

EXECUTIVE SUMMARY

Globally, access to water remains one of the key challenges in order to achieve sustainable development. However, information on water resources is not readily available for decision-makers within the water sector. Addressing water problems requires information from many disciplines, and the physical accounts (describing sources and uses of water) are the most important foundation. The current hydrological data does not provide all the required information for a proper water consumer communication. This hampers effective management of water resources. Harmonizing the information on water resources is essential in order to provide an integrated picture to assess the problems. The overall objective of a water accounting exercise is to achieve equitable and transparent water governance for all water users and a sustainable water balance.

The USAID West Africa Water, Sanitation, and Hygiene Program (USAID WA-WASH) conducted a water accounting exercise in the multiple-use water services (MUS) intervention villages in two districts of the Upper West region of Ghana. This exercise is in line with the Program's primary goal; to increase sustainable access to safe water and sanitation, and improve hygiene in West Africa. Water accounting was conducted to inform the implementation of MUS, and to develop a water resources plan for each community. The MUS approach is a consumer oriented and alternative model for water service provision in developing countries that involves planning, financing, and management of integrated water services for multiple domestic and productive uses (drinking, sanitation, health, food security, and livelihoods). The MUS approach necessitates a water accounting exercise to evaluate the water needs, determine existing water sources, and identify the gaps between needs and availability. This information is presented in the form of baseline data on water uses, sources, livelihood activities, and hygiene practices for the seven MUS intervention villages. The villages are Biro-Naamu-Guri, Babile Dagne Bire, and Birifo Baapare in the Lawra district, and Ko-Bukong, Tantuo, Piiri Gbolo, and Nabugaugn in the Nandom district.

The specific objectives of the water accounting exercise include; (1) to assess the existing domestic and productive water needs of the households and in public places such as markets, schools and hospitals; (2) to survey existing water sources for both domestic and productive activities; (3) to analyze the gap between water needs and available sources for both domestic and productive activities; (4) to gather information on livelihood activities; and (5) to gather information on hygiene practices in the intervention communities. The study used both quantitative and qualitative data collection methods through a survey, semi structured interviews, focus group discussions, and in-depth interviews. The survey had a sample size of 140 respondents (20 respondents from each community). One focus group discussion (FGD) was held in each of the communities with key stakeholders to learn about and discuss the available water resources, their reliability, and the water uses as well as the community WASH issues. Productive water uses such as livestock production, *pito* brewing and gardening were taken into account.

Four parameters were considered in the calculation of existing water needs and sources. The four parameters are: (1) the quantity of water needed by the community in liters or cubic meters; (2) the quality of potable water and non-potable water; (3) the reliability of the water point; and (4) the estimated distance in km from the households to the water point. To quantify the daily water needs and productivity of sources, the values were estimated using the Ghana Community Water and Sanitation Agency (CWSA) standards. The estimated value for a protected well is 3,000 liters per day for potable water and 8,000 liters per day for productive water, boreholes produce 6,000 liters per day, and public taps produce 6,000 liters per day. However, these estimates vary from one village to another. The water yield from rivers, swamps, springs, lakes, and ponds was not quantified.

The major water needs were divided into potable water needs (in households and public spaces) and productive water needs (market gardening, *pito* brewing, and livestock). Using the MUS guidelines, the household estimated water needs were calculated based on the household size. The MUS guideline estimates that a person needs 20 liters of water per day. Other estimates included 30 liters per day per head of large livestock, 10 liters per day per head of small ruminants, eight liters per day per square meter of land for irrigation purposes, 720 liters per day for every *pito* brewer and two liters per day per user of potable water in public spaces such as mosques, churches, and schools.

The results from the water accounting are organized per intervention village and address five aspects including number of potable water sources, number of productive water sources, hygiene practices, livelihood activities and presence of water users associations (WUAs). In the village of Nabugaugn, there were five boreholes and one protected well for potable water sources, and two hand-dug wells for productive water sources. The gap analysis showed that, these water sources did not meet the community water needs. In relation to hygiene, 75% of the population in the village practiced open-defecation and there were no hand-washing stations in the village. There were two livelihood activities' groups but there was no WUA in the village. In the village of Piiri-Golbo, the water sources for domestic and productive uses were two unprotected wells that did not meet the community water needs. While there were no hand-washing stations in the village, 81.3% of the households had access to latrines. . Three livelihood activity groups were present but there was no water users association.

In Tantuo village, there were six boreholes for domestic water needs and five unprotected wells for productive water needs. However, the water yields from these sources did not meet the needs of the community. In the village, 80% of the households did not have access to latrines and practiced open-defecation. In the village of Ko-Bukong, there was only one borehole used for domestic water needs. The borehole did not meet the comunity productive and domestic water needs. In this village, 95% of the household practiced open-defecation. There were two livelihoods activity groups and there was no water users association. In the village of Bin-Naamu-Guri, there were no potable water sources. The community members used water from six unprotected wells for both domestic and productive purposes. The majority of the households in the village (90%) practiced open-defecation and none of the household had hand-washing stations. In the village of Babile, there were four boreholes and six hand dug wells for potable and productive water needs, respectively. All the households in the village had hand-washing stations. In addition 70% of the households had access to a latrine. There were five livelihood activities groups but there was no water users association. Finally in the village if Birifo-Bapaare, potable water needs were provided by one borehole and one improved well while productive water was supplied by five unprotected wells. These sources were not adequate to meet the community water needs. In this village, the majority of the households (70%) had access to a latrine.

The findings from the study show that most of the villages have improved potable water sources except in the villages of Bin-Naamu-Guri and Piiri-Golbo. However, the gap analysis revealed that the water sources did not meet the communities' domestic and productive water needs in all seven villages. There were sanitation facilities in only three of the communities through the intervention of other development programs. This highlights possible environmental risks of contamination of the drinking water sources by human waste resulting from the practice of open-defecation. The findings also show that none of the villages had a water users association emphasizing the establishment of WUAs for improved management of water resources.

The full report is available (in English) upon request via our website. For more details about our program activities and other reports please visit http://wawash.fiu.edu/.

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