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Water supply challenges in rural Ghana

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Abstract

Bongo faces a serious problem with its underground water supply. This paper examined the factors accounting for the poor water situation in the Bongo District. Bongo is in the Upper East Region of Ghana. Data was collected from the Water and Sanitation Committees and District Water and Sanitation Teams in all the communities under the District. Most of the boreholes were contaminated with high fluoride contents making it unsafe to drink with levels going up to 4 mg/L. The fluoride situation is worst so much that people have to compromise by still using these contaminated water sources including those that have been capped due to extremely high fluoride contents. The study reviewed that only 32% of the population in the Bongo District have access to potable drinking water and safe sanitation facilities. Access to water and sanitation is very inadequate in the district.

Keywords: Fluoride content; Rural water supply; Groundwater; Bongo

1. Introduction

In Ghana, dental caries poses a serious health problem especially among children. It has been reported that dental caries is prevalent in Ghana to the extent of about 60% or more [1].

This paper focuses on the Bongo District in the Upper East Region. The Bongo District is one of the eight districts in the Upper East Region of Ghana. It is noted as the poorest district in the region and in Ghana. The Bongo District is divided into seven Area Council. The major source of income of the District Assembly is the central government subvention (Common Fund). The District also generates internal revenue from taxes, but this is very ineffective. The total population of the District is about 78,000 per the 2000 population census and the people are predominantly farmers. The major challenges facing the water sector in the district is fluoride, low capacity of the district and at community level and inadequate funding for water and sanitation (WATSAN) projects.

The main Water and Sanitation Delivery Agency is the Community Water and Sanitation Project Phase-Two (CWSP-II) funded by the World Bank. However, the project was replaced with the Community-Based Rural Development Project (CBRDP) to take care of the provision of point sources whilst the CWSP-II continues to deliver the Small Towns Water System. Rural Aid, a British Non-Governmental Organizations (NGO), World Vision Ghana, European Union Micro-Projects Programme, Action Aid and the Land Conservation and Smallholder Rehabilitation Project (LACOSREP-II) have also provided quite a number of WATSAN facilities in the District [2].

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The water delivery points provided by these organizations include boreholes, hand-dug wells, hand-dug wells fitted with pumps and Kumasi Ventilated Improved Pits (KVIPs). Preparations are being made to provide a Small Town Water System for the Bongo Township and its environs [2].

1.1. Access to WATSAN

Facilities were and are still woefully inadequate. The cause of this are largely attributed to lack of proper planning, high fluoride content and low budgetary allocation to the WATSAN sector. Planning for the WATSAN sector had always been a nightmare for the Assembly because it lacked adequate funds as the common fund is being used to address all sector needs in the district. The Assembly is not able to carry out WATSAN project on its own without depending on External Agency Support (ESA) and NGOs. The District Assembly is only able to support the provision of WATSAN projects by paying 5% of the total cost. The Assembly therefore most often depends on ESAs and NGOs for support in delivering of WATSAN projects in the district since the central government subvention is inadequate to meet the total WATSAN demand in the district. In most communities, clean water is not always available or easily accessible and women and children have walk for miles and hours to collect surface water. Water from these sources is mostly not within the World Health Organization (WHO) permissible drinking water guidelines and is unsafe for human consumption.

Fig. 1. Drinking water of a household in a community in Bongo.

Table 1
Number of functional and non-functional boreholes in each of the seven Area Councils

Area Council	No. of Boreholes	Non-functional boreholes	Functional boreholes
Bongo	82	12	70
Balungu	27	3	24
Bongo Soe	32	1	31
Valley Zone	38	2	36
Beo	52	3	49
Namoo	74	1	73
Zorko	30	3	27
Total	335	25	275

Source: WATSAN Mapping, LMDG 2005 [2].
NB: 35 boreholes capped due to high fluoride.

2. Results and discussion

2.1. Water sources

Boreholes and hand-dug wells are the main source of potable water for the people in Bongo. From Table 1 below, there are 335 boreholes in all the seven Area Councils with 25 being non-functional due to faulty parts. It must however be stated that 35 of the boreholes have been capped due to high fluoride content. This brings the functional borehole in the district to 275.

2.2. Water coverage

Population and other indicators were used to determine surface accessibility to potable water in the district. These indicators included distance covered to access potable water, time spent to access potable water and litres of potable water available per head.

Table 2 indicates only 9% of the population in the District walk within 500 m to access potable, which is the recommended distance for one to access potable. In addition, only 11% of the entire population of the district have access to 35 L of potable water a day. When one uses population to determine accessibility to potable water in the district, the analysis indicates that about 65% of the population have access to potable water. However, when one uses distance and litres to