

# Case Study

September 2010

## Community-Utility Bulk Water Supply in Savelugu in the Northern Region of Ghana

Bernard A. A. Akanbang, Department of Planning  
and Management, University for Development  
Studies, Wa Campus

## LIST OF CONTENT

<i>List of Content</i> .....	<i>i</i>
<i>List of Figures</i> .....	<i>ii</i>
<i>List of Pictures</i> .....	<i>ii</i>
<i>List of Acronyms</i> .....	<i>iii</i>
<b>1 INTRODUCTION AND METHODOLOGY</b> .....	<b>1</b>
1.1. Introduction.....	1
1.2. Objectives and Scope of this Assignment .....	1
1.3. Approach and Methodology .....	2
1.4. Organisation of the Report .....	2
<b>2 OVERVIEW OF THE CASE STUDY AREA</b> .....	<b>3</b>
2.1. Location and Geophysical Characteristics .....	3
2.2. Demographic and Socio-Economic Context .....	3
2.3. Spatial Planning Issues.....	4
2.4. Water Supply Situation .....	4
2.5. Description of the Initial WASH Challenge .....	5
<b>3 THE CURRENT MANAGEMENT MODEL</b> .....	<b>6</b>
3.1. The Development of the Management Model .....	6
3.2. Description of the Management Model.....	7
3.2.1. Terms of Contract between the GWCL and Savelugu .....	10
3.3. Introduction of the Management Model in the Case Study Area .....	10
3.3.1. Putting Together a Proposal for the Project .....	11
3.3.2. Hardware Activities .....	11
3.3.3. Software Activities .....	12
3.4. Institutional Arrangements under the Management Model.....	13
3.5. Tariff Setting, and Operation and Maintenance.....	14
<b>4 ASSESSMENT OF THE MANAGEMENT MODEL</b> .....	<b>16</b>
4.1. Transparency and Accountability .....	16
4.2. Accessibility and Coverage .....	17
4.3. Operation and Maintenance (O&M) Capacity .....	17
4.4. Tariff levels and Willingness/Ability to Pay .....	18
4.5. Special Measures for Ensuring Pro-poor Focus and Gender Equity .....	19
4.6. Health, Hygiene Promotion and Environmental Considerations.....	19
4.7. Assessment of Impacts and Sustainability of the Programme.....	19
<b>5 CONCLUSIONS AND LESSONS LEARNED</b> .....	<b>21</b>

## **LIST OF FIGURES**

Figure 1: Case Study Area .....	3
Figure 2: Flow Chart of Community-Utility Bulk Supply Model .....	8
Figure 3: Sketch Map of the Savelugu Water Supply System .....	9
Figure 4: Organisational Arrangements for the Management of the Savelugu Water .....	14

## **LIST OF PICTURES**

Picture 1: Underground Reservoir, WSDB Office and Booster Station .....	12
Picture 2: Borehole with Electric Pump, Overhead Tank and Standposts .....	17
Picture 3: Public Standpipe and Containers Used for Fetching Water .....	18

## LIST OF ACRONYMS

AVRL	-	Aqua Vitens Rand Limited
CIDA	-	Canadian International Development Agency
CSOs	-	Civil Society Organisations
CWSA	-	Community Water and Sanitation Agency
DA	-	District Assembly
DANIDA	-	Danish International Development Agency
DCD	-	District Coordinating Director
DCE	-	District Chief Executive
DISCAP	-	District Capacity Building Project
DWST	-	District Water and Sanitation Team
GAP	-	Ghana Water Company Assistant Project
GWCL	-	Ghana Water Company Limited
GWSC	-	Ghana Water and Sewerage Corporation
GWEP	-	Guinea Worm Eradication Programme
GWSC	-	Ghana Water and Sewerage Corporation
MWRWH	-	Ministry of Water Resources Works and Housing
NDPC	-	National Development Planning Commission
NGO	-	Non Governmental Organisation
ODAs	-	Overseas Development Assistance
O&M	-	Operation and Maintenance
PURC	-	Public Utilities Regulatory Commission
SOEs	-	State Owned Enterprises
SNDA	-	Savelugu Nanton District Assembly
TPP	-	Tripartite Partnership Project
TREND	-	Training Research and Networking for Development
UNICEF	-	United Nations Children Fund
WSDB	-	Water and Sanitation Development Board
WASH	-	Water, Sanitation and Hygiene
WHO	-	World Health Organisation
WRC	-	Water Resources Commission
WVI	-	World Vision International
UNDP	-	United Nations Development Programme

# **1 INTRODUCTION AND METHODOLOGY**

## **1.1. Introduction**

The Tripartite Partnership (TPP) Project is a joint collaboration between the Netherlands Water Partnership, TREND the lead implementer and some national actors and stakeholders in the water and sanitation sector in Ghana working to identify and promote innovative management models for the delivery of water, sanitation and hygiene (WASH) services to the urban poor. TPP started in January 2008 as a response to the lack of knowledge and capacity for dealing with the challenges of pro-poor urban water and sanitation services delivery. The overall goal of the TPP is to ensure a “strengthened sector capacity for planning and delivery of pro-poor water and sanitation services.” The specific objectives of the project are to:

- Identify a range of innovative management models for providing water services to the urban poor
- Test innovative models through selected demonstration projects
- Utilize the learning outcomes of the project to support the creation of the enabling environment (policy, regulation legislative frameworks) for these models to be scaled up.

TPP has reviewed various management models, both locally and globally to identify promising innovative ways of ensuring sustained delivery of WASH services to the urban poor. The best practices gleaned from various studies will inform the design of various tools and guidelines for replication within the Ghanaian WASH sector. Using knowledge management, advocacy and promotion of networking, the results will be used to ensure improved services delivery at the decentralised level and strengthened policy at the sectoral level. Plans are advanced for TPP to pilot promising innovative management models with the support of the African Water Facility (AWF) of the African Development Bank (AfDB) for infrastructure development.

As part of project activities to achieve the above objectives, a scoping of existing Management Models and a GIS mapping exercise were carried out between April and November, 2008. At a meeting with stakeholders on 12 November 2008, the outcomes of the scoping studies were presented and a number of case study areas were identified, covering a wide range of issues across the four main ecological zones of Ghana, for further studies to provide better understanding on the ways different management models affect WASH service delivery in Ghana.

## **1.2. Objectives and Scope of this Assignment**

Bearing in mind the central theme of the TPP (innovative management models for services delivery to the urban poor), this case study presents the case of Community-Utility Partnership Model using Bulk Supply in Savelugu in the Northern Region, as part of a series of cases conducted under the TPP Project on promising management models in the water and sanitation sector in Ghana.

The objective of the study is to examine the Utility-Community Partnership based on bulk supply for innovative mechanisms to inform the development of appropriate management model for WASH delivery to the urban poor. The case study highlights the following issues:

- A comprehensive picture of the WASH situation within the community
- An analysis of the management model and the process of introducing the model
- An assessment of the management model
- An assessment of ‘next steps’ in terms of knowledge and application at scale.

### **1.3. Approach and Methodology**

The methodology adopted for the study included a desk study involving a review of innovative management models for delivery of water to the poor globally and countrywide, a review of sector policy objectives and extensive field work in the study area. The fieldwork involved consultations with relevant actors such as the Regional offices of the Community Water and Sanitation Agency (CWSA), Ghana Water Company Limited (GWCL) / Aqua Vitens Rand Limited (AVRL), the Savelugu Nanton District Assembly, the District Water and Sanitation Team (DWST) and the Water and Sanitation Development Board (WSDB) among others.

### **1.4. Organisation of the Report**

This chapter has provided the introduction, objectives and methodology for the study.

Chapter 2 presents the overview of the Case Study Area and describes the initial challenge the Savelugu Township faced before the introduction of the Utility- community Partnership Model.

Chapter 3 discusses the management model and the processes of its introduction and implementation.

Chapter 4 assesses the management model

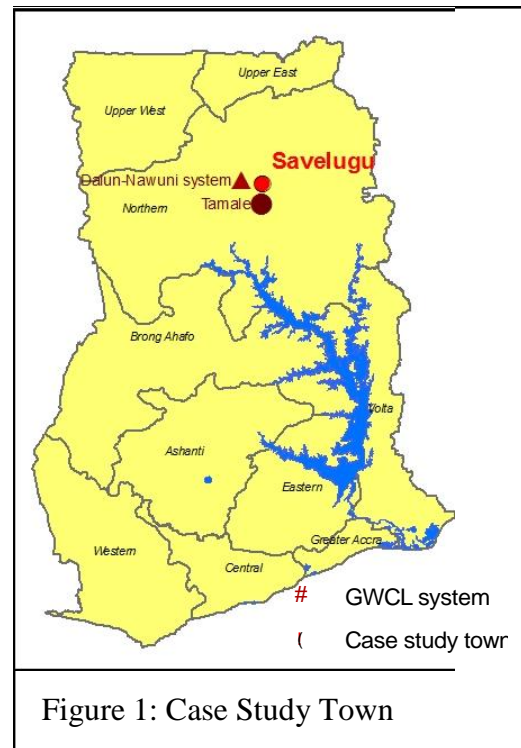
Chapter 5 highlights on the conclusion and lessons learnt from the study.

## 2 OVERVIEW OF THE CASE STUDY AREA<sup>1</sup>

### 2.1. Location and Geophysical Characteristics

The innovative model – Community-Utility Bulk Supply is located in Savelugu, the capital of the Savelugu Nanton District, one of the eighteen (18) administrative districts of the Northern region of Ghana. The District shares boundaries with West Mamprusi in the North, Karaga to the East, Tolon/Kumbungu in the West and Tamale Metropolitan Assembly to the South and has a total land area of 1790.70 sq. km. Savelugu is located 28 kilometers North of Tamale.

The District is generally flat with gentle undulating low relief. The altitude ranges between 400 to 800 ft. above sea level with the southern part being slightly hilly and sloping gently towards the North. The main drainage system in the District is made up of White Volta and its tributaries.



Geographically, it is located within the guinea savanna woodland with average range of rainfall of 600-1100mm which could sustain large scale livestock farming as well as the cultivation of staples like rice, groundnuts, yam, cassava, maize, cowpea and sorghum. Trees such as shea (the nuts of which are used for making sheabutter), dawadawa (that provides seeds used for culinary purposes) and the baobab (those common in the area are of little economic value).

### 2.2. Demographic and Socio-Economic Context

The population of the district was 91,415 (2000 population census). With a growth rate of 3%, the projected population as at March 2006 was about 109,442. This is broken down into 49% male and 51% female. With a land area of 1790.7 sq. km., the population density is about 61 Persons per sq. km. The population of Savelugu currently stands at 29,000 representing an increase of over 50% of the 1997 population estimate of 18,000 (the year the innovation commenced).

The District remains an agriculture-based economy employing about 97 percent of the labour force, majority of whom produce staple crops on subsistence level. The town is home to the District Hospital, the Savelugu Senior High School and other government institutions. A greater percentage of the District has no access to electricity. Out of the 149 communities only 17 are hooked to the national grid. Malaria and diarrheal diseases

<sup>1</sup> Savelugu Nanton District Assembly (2006) District Profile [ghanadistricts.com](http://ghanadistricts.com)

are common. As at December, 2008, 176 cases of guinea worm were reported in the district.

The Northern Region of Ghana has a peculiar problem with adequate ground water resources and has suffered from water related diseases over a long period of time. It is the most guinea worm endemic region in the country. Besides, the region is one of three poorest regions in the country.

### **2.3. Spatial Planning Issues**

There are 149 communities in the District. The communities are administratively demarcated into one urban/town Council (Savelugu, the district capital) and five Area Councils, namely, Nanton, Diare, Pong-Tamale, Moglaa and Tampion. The 143 other communities could be described as rural. Nearly 80% of the populace reside in these rural communities and 20% in the few urban towns.

Housing in Savelugu consists mainly of large compound houses constructed with mud bricks and mostly haphazardly built. Some buildings are built along water courses. However, efforts are underway to enforce building regulations of the assembly. There are limited access roads in the town and they are mostly untarred. The dust thus generated poses great health risks to the people.

The District is located in an area of the country with unfavourable natural environmental conditions. There is little tree-cover and it suffers harsh harmattan seasons, which lead to many bush-fires set up by farmers clearing their lands and hunters searching for game. The greatest threat however, is the rate at which the tree vegetation is being cut down for fuel wood. Farming along river courses has also caused vast silting of the few drainage systems which therefore, dry up quickly in the dry season and flood easily in the wet season.

Recent gravel winning on good farmlands alongside the major trunk road and sand winning, for which a greater percentage is used for construction work in Tamale without efforts at reclamation, are issues of concern. Public places of convenience are inadequate and scarce in the area leading to open defecation. The problems of poor disposal of solid and liquid wastes, slum conditions and degradation of the physical environments are becoming a nuisance especially in Savelugu.

### **2.4. Water Supply Situation**

Water facilities available in the district include; 44 hand-dug wells fitted with pumps, 179 boreholes, and six pipe systems. Coverage for water for the entire district is estimated at 47.6 percent for 2005 while the estimate for sanitation for the same year was 16%. Currently, Savelugu is able to meet only about 30% of its water need while that of sanitation is around 15-20%. The town's source of water is from the Ghana Water Company Limited (GWCL) system being managed since 2006, by Aqua Vitens Rand Ltd (AVRL). Bulk water is supplied by the AVRL into a reservoir and subsequently redistributed to customers under a community based management organization. Because of the limited supply of water, its supply is rationed on a rotational basis every three days



among the six electoral areas making up the town. The town has only one level of service, that is, 20 public stand posts with each stand post manned by two vendors. Current total number of household latrines stands at 112 compared to none as at 1997. Pan latrines mostly used before 1997 have been faced out.

## **2.5. Description of the Initial WASH Challenge**

Until 1993, Savelugu Core Township was served by Ghana Water and Sewerage Corporation. However, since 1993, the town had been without any potable source of water. Consequently in 1997, Savelugu was leading in the number of guinea worm cases in Ghana. Attempts by Community Water and Sanitation Agency (CWSA), Guinea Worm Eradication Programme (GWEP) and World Vision International at providing the town with a stand alone water system proved futile: surface water did not exist while ground water was insufficient; GWCL (then Ghana Water Sewerage Corporation - GWSC) could not extend their network to the town because it was thought to be capital intensive. Inhabitants depended upon 5 surface dams, dugouts and unprotected traditional wells for their water supply. This was often supplemented by hand-dug wells which dried up in the dry season. There was no arrangement in place for the management of dams and no one was particularly responsible for operation and management of the dams. Occasionally, ministry of health disinfected mostly the smaller dams to kill the larvae of the guinea worm. Access to water was an acute problem. A baseline survey in 1998 revealed that only 9 per cent of the town's population could afford and had access to potable water. For those who could afford, water had to be transported by private tanker operators from Tamale about 28 kilometres to Savelugu. Only the wealthy could afford the price charged by tanker services. The poor in this context, is defined as those who will not ordinarily have access to water if there was no specific intervention targeted at them. They will usually rely on non potable sources of water sometimes located several kilometres away from dwellings. These were generally left on their own to fend for themselves especially, in the dry season when the shallow wells got dried up and sometimes had to travel several kilometres to polluted surface water sources for their water supply needs.

### **3 THE CURRENT MANAGEMENT MODEL**

#### **3.1. The Development of the Management Model**

The management model is the outcome of a collaborative effort of a number of organisations in the water sector to a felt need. Savelugu had become prominent in the country following consistent lead on the incidence of guinea worm cases in the country. Efforts by organisations working in the sector to solve the water problem between 1993 and 1998 proved futile.

Consultative meetings involving United Nations Children's Fund (UNICEF), CWSA, Savelugu District Assembly, under the leadership of Guinea Worm Eradication Programme in 1997, resulted in the formulation of a project proposal which UNICEF agreed to contribute seventy percent of the funding (approximately US\$450,000) while the District Assembly (DA)/Community and World Vision International (WVI) contributed 10% and 20% of the remaining cost of the project, respectively. UNICEF came in as the main sponsor of the project because of its drive towards actions aimed at alleviating the sufferings of women and children and water related diseases. UNICEF's philosophy has been to pursue and chase out guinea worm wherever it exists. Guinea worm exists in areas where there is no reliable potable water, among other factors. Potable water provision was/is thus a line of attack of chasing out guinea worm.

As part of the process of the model development, a technical feasibility study was conducted in October-November 1998 to determine the most cost-effective and viable water supply option for Savelugu. A number of water supply options including bulk supply by GWCL to Water and Sanitation Development Board (WSDB) and small town's pipe system based on ground water were identified. The community's preference was for the second option where the community's water supply is a piped system based on ground water and under community management. The choice of the community was largely informed by the low capacity of the Tamale Water System (under the GWCL) that could not even meet the water needs of the Tamale municipality, unreliable delivery of service from Tamale in the past and deep desire to own their water system as was the case of other small towns in the region (e.g. Walawale, Bimbilla, Gambaga etc.).

Notwithstanding the strong reservations of the bulk supply from GWCL option, the consultant recognised that it will be the cheapest, most easily accessible and easiest to operate since a large fraction of the operation and maintenance costs would be borne by GWCL<sup>2</sup>. In the opinion of the consultant, this option would appear to be the most realistic, especially in the event of unfavourable borehole yields for the underground water option.

Based on the recommendation of all the stakeholders involved in the project to adopt the first-ranking recommendation, i.e., exploitation of underground water through mechanisation, WVI with funding from the Hilton Foundation conducted hydro-

---

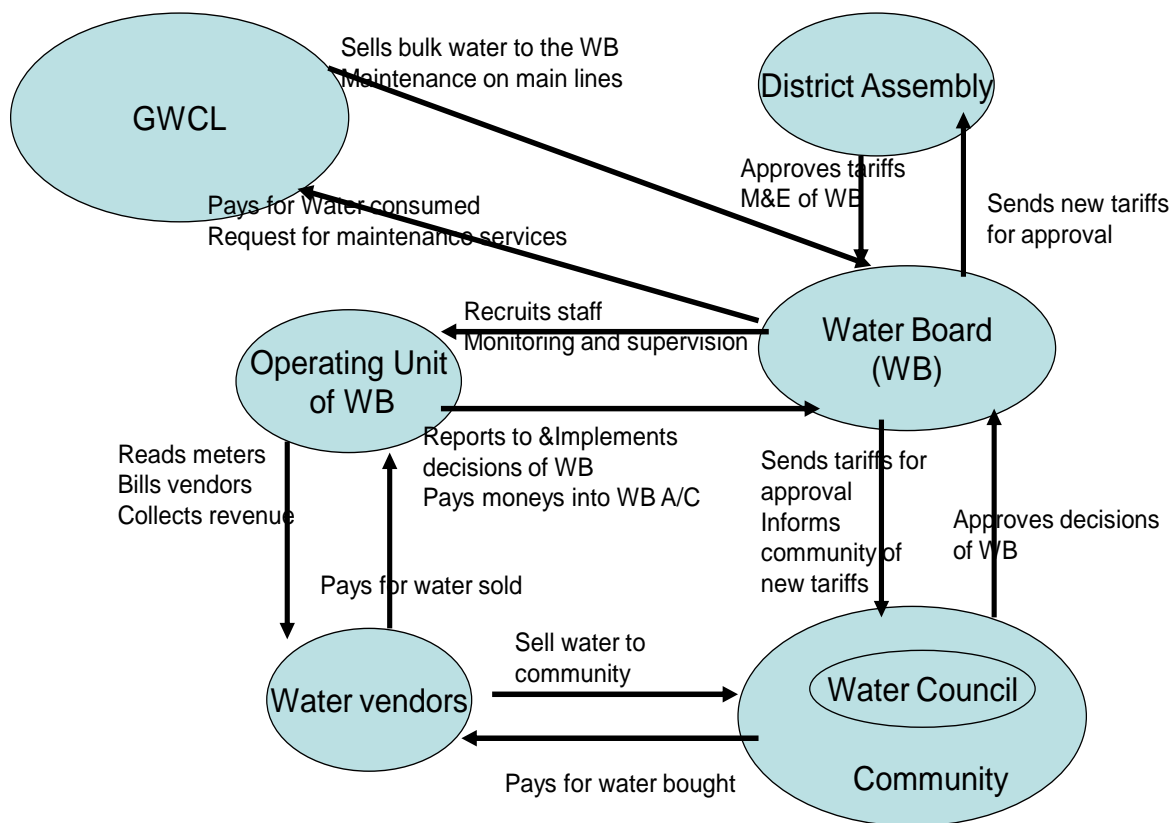
<sup>2</sup> Community Public Sector Partnership for the Provision of Water Services in Savelugu, Ghana Paper Prepared for the Civil Society Consultation on the 2003 Commonwealth Finance Ministers Meeting Bandar Seri Begawan, Brunei Darussalam 22 – 24 July 2003 by Patrick Apoya

geological investigations, employing very sophisticated techniques including remote sensing and satellite imaging to assess the underground water potential for drilling and mechanisation. After one month of prospecting within a radius of 6 km around the centre of Savelugu, drilling began in February 1999. There were about 48 drilling attempts and 16 were successful, of which four had yields adequate for mechanisation. Unfortunately, all these were 4-5 km from the town centre, with high financial cost implications for mechanization (Apoya, 2003). The current management model is thus the result of failure to locate high yielding wells within the immediate vicinity of Savelugu.

### **3.2. Description of the Management Model**

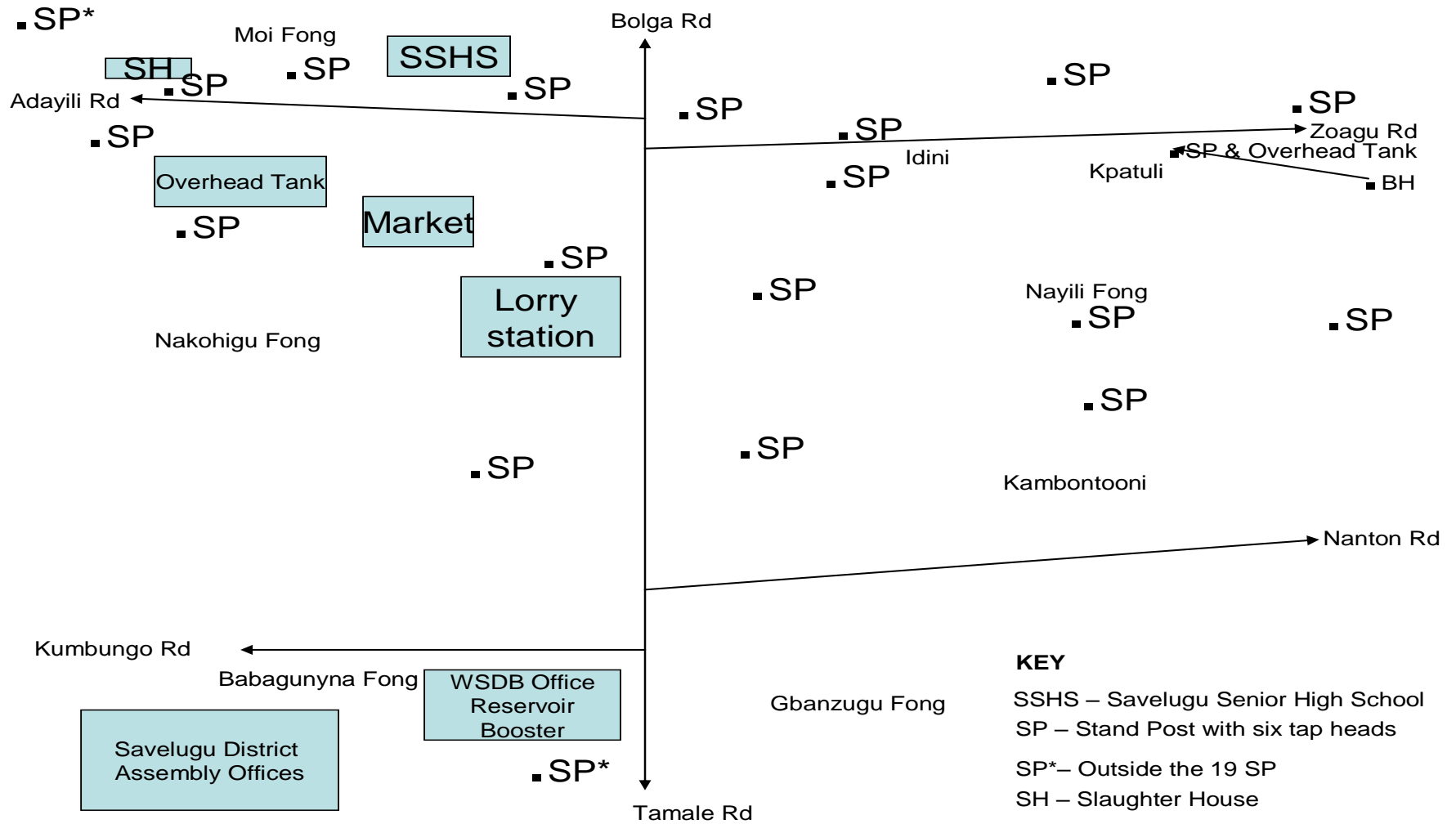
The management model is a community partnership with a utility company involving the delivery of bulk water by the utility company to the community to redistribute and manage the water using community ownership and management approaches. The scope of the model is mainly improving water supply by extending water from GWCL network at Kanvilli which ended in Kanshegu about 4 kilometres away from Savelugu and the institution of a community management system for the management of the water supply system. The model involved the construction of a reservoir (135m<sup>3</sup>), the reconstruction of a trunk line from Kanshegu to the reservoir in Savelugu, construction of distribution lines to 20 public standposts and the institutionalisation of a WSDB (a community based governance and management structure) to be responsible for the distribution and collection of revenue and the signing of a memorandum of agreement between GWCL, the WSDB and the Savelugu Nanton District Assembly. Under the model, GWCL supplies bulk water at a concessionary rate of 30% (less) of GWCL tariff to the WSDB while the WSDB distributes water, bills and collects revenue and pays for the bulk water supplied. There was also an extension of the service area from the initial core area of the town to the presently six electoral areas. There are in all 20 public stand posts, with each stand post (except one) having six spouts, three each on opposite sides. One of the stand posts was provided by the WSDB by mechanising an existing borehole. Figure 2 depicts diagrammatically, the nature of interaction between the various actors involved in the model. Figure 3 also provides a sketch map of the water supply system.

Figure 2: Flow Chart of the Community-Utility Bulk Supply Model



Authors Construct, May, 2009

Figure 3: Sketch Map of the Savelugu Water Supply System



### 3.2.1. Terms of Contract between the GWCL and Savelugu<sup>3</sup>

- a) The GWCL provides treated water on a bulk purchase agreement to Savelugu for redistribution to the population of about 25,000 inhabitants. The GWCL also provides consultancy services and on-site technical advice from time to time on matters related to the distribution of water.
- b) The GWCL is obliged to provide water daily, and Savelugu redistributes the water and pays the agreed full cost at the end of each month based on the amount of water supplied.
- c) The GWCL may carry out major repair works on the transmission main within the Savelugu system, and Savelugu provides labour and financial obligation in respect of the work done. All other payments to the GWCL for other services rendered are effected as and when the service is rendered.
- d) Savelugu plans and provides data and information for expansion, whilst the GWCL provides consultancy services and technical support for job execution.
- e) Partnership meetings to review any modification in the agreement occur every six months. Savelugu endeavours to pay regularly for water consumed whilst the GWCL sustains water supply in good pressure and flow, and of acceptable quality according to WHO standards. Where any party is unable to fulfill its part of the obligation, that party must explain the circumstances leading to the failure and recommend measures to address them. Apart from water sales to Savelugu, the GWCL also provides other services to the community, including:
  - i. Installation of water meters and servicing of the meters
  - ii. Repair of major pipe bursts leading to the system to avoid the interruption of the water supply to Savelugu
  - iii. Maintenance of electro–mechanical equipment when the need arises
  - iv. Technical advice on running the system effectively and efficiently.

### 3.3. Introduction of the Management Model in the Case Study Area

The project sought to provide a remedial solution to a looming crisis in the town through putting in place a mechanism that keeps daily decisions on the management of water into the hands of the community while the state utility maintained the role of bulk supply of water at a subsidised rate of 30% less of GWCL lifeline tariff.. A whole range of activities were undertaken to realise this objective.

---

<sup>3</sup> Community Public Sector Partnership for the Provision of Water Services in Savelugu, Ghana Paper Prepared for the Civil Society Consultation on the 2003 Commonwealth Finance Ministers Meeting Bandar Seri Begawan, Brunei Darussalam 22 – 24 July 2003 by Patrick Apoya

### 3.3.1. Putting Together a Proposal for the Project

Following from experience in trying to provide the community with potable water, it was realised there was a need for an integrated approach involving multiple stakeholders to tackle the problem. This realisation culminated in the GWEP taking a leading role in facilitating the development of a proposal with input from all the key identifiable stakeholders in the sector including; the Savelugu Nanton District Assembly (SNDA), WVI, Carter Center, GWCL, CWSA and the community. UNICEF agreed to fund the project and provided financial support to the tune of about \$450,000 (US), representing about 70 per cent of the total project costs<sup>4</sup>. These funds were used to procure pipelines, construction works for the replacement of the mainline connecting the community to the GWCL mains (4 km in length), the construction of public fountains or stand posts, and to erect a 20,000 gallon capacity overhead tank provided by GWCL. The remaining cost of the project was born by the SNDA and the community (both constituted 10%), World Vision International with funding from the Hilton Foundation conducted hydro-geological investigations and drillings of wells (20%). Details of activities - both hardware and software are discussed below.

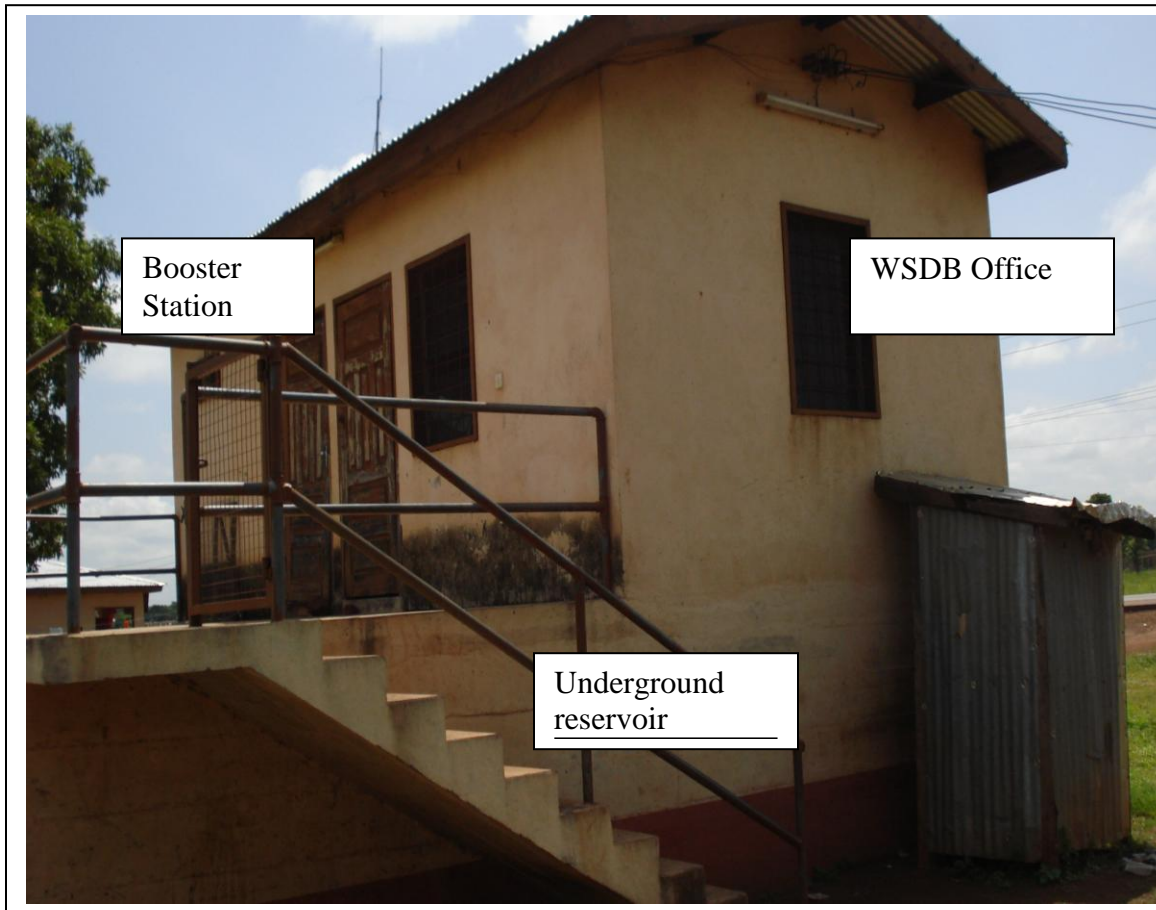
### 3.3.2. Hardware Activities

The hardware activities were packaged into a contract and awarded to Rajga, a construction firm. Afrowood Limited, a local consulting firm was selected as the consultant. Hardware activities consisted of the reconstruction of 4 km length of dysfunctional GWCL line from Kanvilli to Savelugu, the construction of a 91 m<sup>3</sup> capacity underground reservoir, erection of a 90 m<sup>3</sup> overhead tank on one of the high yielding boreholes located five kilometres away from Savelugu, construction of a booster station and WSDB Office, and construction of secondary lines to the six electoral areas. Picture 1 below shows the reservoir, booster and WSDB office. The construction of the secondary lines involved the replacement of 4 kilometres asbestos pipes with PVC pipes and the extension of water to the exterior of Savelugu. Private connections were not encouraged because the supply was limited. The project was only able to meet 30% of demand. The stakeholder meetings resulted in the selection of a design which was to provide relief to the people. They were not convinced of the ability of GWCL to supply them with water. They reasoned that, if GWCL was capable of supplying them, they would have linked them to their mains long time ago. There was an agreed schedule for distribution of the water to the electoral areas and was strictly adhered to thus ensuring that every electoral area was satisfied.

Afrowood Ltd was also tasked to conduct a technical feasibility study on the supply of water to Savelugu.

---

<sup>4</sup> Community Public Sector Partnership for the Provision of Water Services in Savelugu, Ghana Paper Prepared for the Civil Society Consultation on the 2003 Commonwealth Finance Ministers Meeting Bandar Seri Begawan, Brunei Darussalam 22 – 24 July 2003 by Patrick Apoya



Picture 1: Underground Reservoir, WSDB Office and Booster Station

### 3.3.3. Software Activities

The project implementation management adapted a model that emerged at the time and was vigorously pursued in the community water sector. It sought to place and build organisational capacity of communities for the management of the water supply in the communities (institution of a participatory community management system for the water supply project). The reasons for the adoption of such a management system are not far fetched. Sector policy in line with the national decentralisation process coupled with global best practices pointed towards greater involvement of communities in the management of water resources. Sustainability, it was thought, could be guaranteed when communities are involved in order to create sense of ownership essential to sustainability. In the particular case of this project, there was a more compelling need for community involvement in order to achieve consensus among community members regarding how benefits of the action could be equitably distributed to reap the gains of the project



because of the inability of the project to meet the demand of the community (only 30% of demand was met).

To this end, a software consultant (Gariba Development Associates) was hired to facilitate involvement of the community members in the project and to build their capacity to operate and manage the water supply system. The scope of activities under the software consultant included, assisting the communities to prepare a constitution to guide the activities of the WSDB, assisting communities to design an appropriate organisation framework for managing the post implementation management of the project, and building the leadership skills, technical knowledge on billing, meter reading and in general water and sanitation issues in the community. The work of the consultant resulted in the following organisational framework for managing the post implementation phases of the project at the community level depicted in Figure 3 below.

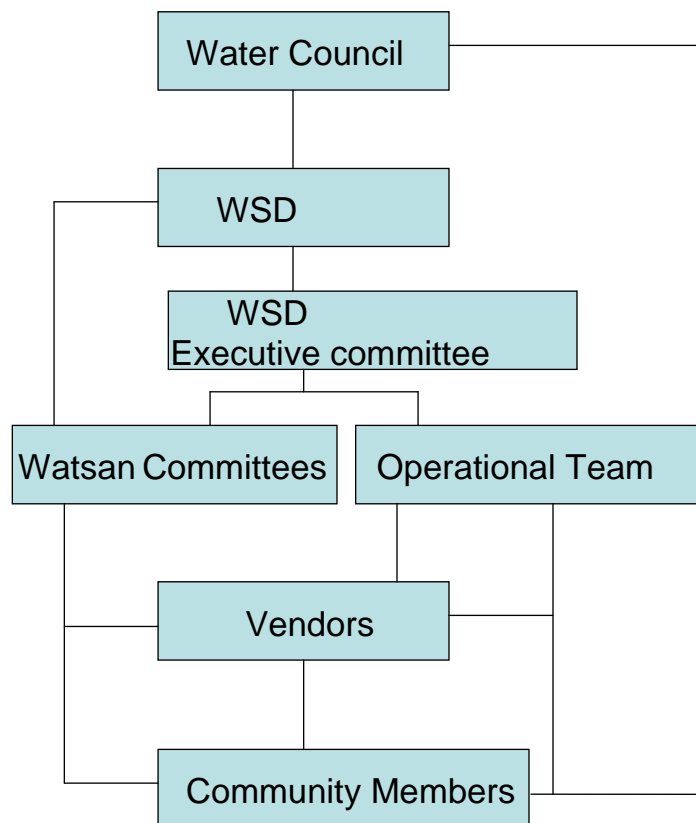
### **3.4. Institutional Arrangements under the Management Model**

Figure 4 below shows the organisational arrangement for the implementation of the model. At the apex of the management structure is the water council which is the highest decision making body at the community level. It consists of all identifiable groups in the community including representatives of religious groups, youth groups, traditional authority, representatives of traders, and some selected opinion leaders. It gives preliminary approval of new tariff proposals by WSDB and mobilises and educates community members on tariff proposals among others.

The WSDB is the community based management body responsible for governance and management of the water. They have an operating team made up two plumbers, two meter readers and revenue collectors and one system administrator to undertake the day to day operation and maintenance of the water system including, meter reading, billing of stand post vendors, collection of revenue and depositing the revenue into the bank accounts of the Board and implementation of the decisions of the WSDB. The WSDB also recruits and supervise the work of the operating team, payment of their salaries and ensuring that revenue due to GWCL is paid and requests maintenance support services of GWCL. Vendors man the stand posts and performs task including selling of water to community members, payments of water sold to revenue collectors, cleaning of stand posts site among others.

The SNDA is the legal owner of the water system. The assembly approves decisions agreed by the Water Council, and through the District Water and Sanitation Team (DWST) monitors and supervises the work of the Board and conducts annual audits of the accounts of the WSDB. GWCL sells bulk water to the WSDB and undertakes maintenance requested by the WSDB. There is a Water and Sanitation Committee at each six electoral areas of the town. Each committee is responsible for about three stand posts in their electoral area. The Committee mobilises the community to select the vendors to man the stand posts and elect or appoint representatives to the WSDB and reports faults in the water system to the WSDB.

Figure 4: Organisational Arrangements for the Management of the Savelugu Water System



### 3.5. Tariff Setting, and Operation and Maintenance

An important activity involving the innovation that lends itself to sustainability of the water system is the system for determining tariffs and collection of tariffs. To build the organisational capacity of the Board to manage this sensitive but important issue, a capacity building workshop was organised as part of software activities for the Board.

This workshop culminated in the design of an O&M plan for implementation. To ensure acceptability of the O&M by the wider community, the plan was presented to the wider community for their inputs to be captured before arriving at the final plan. The plan was to top up the GWCL tariff to be used for expansion and replacement. When the draft O&M plan was presented, the community felt that, the tariff levels were high. This resulted in the review of the plan to charge GWCL tariff to accommodate only operation and maintenance cost and the downplay of expansion and replacement cost. Nevertheless, the WSDB managed some savings from the O&M (30% concession) funds to mechanise an existing high yielding borehole to create additional standpost and also extended the supply to the District Administration and other institutions.

The active involvement of the community in the process of determining tariffs has ensured that the community is adequately informed of the basis of the tariffs. This has

generally, avoided agitations on tariffs in the community. The approved O&M plan has mainly guided tariff setting in the town. The process of arriving at new tariff involves meeting of the Board on a new tariff proposed by GWCL. The proposed tariff is presented to the council for their input and then to the DA followed by a community forum to approve the tariff. Following approval of the tariff at the forum, a van is hired to disseminate information on the new tariff to the community members. Tariff reviews are based on the reviews by the utility.

## **4 ASSESSMENT OF THE MANAGEMENT MODEL**

### **4.1. Transparency and Accountability**

Transparency and accountability systems in the Model have been the involvement of community members and the institution of a community based management structure for the water system. The transparent and accountable systems are discussed in the following sections.

From the onset, community members were involved in analysing and identifying the various options available for improving their water situation and had been part of all discussions aimed at improving their water situation. Such avenues as community durbars provided opportunities for community involvement in deciding organisational arrangements, distribution and location of stand posts, selection of vendors to manage the stand posts, determination of tariffs and service levels among others. Community involvement has also been institutionalised in the post implementation management structure of the water system. Avenues such as the water council and the WSDB continue to provide mediums for representative participation by all community members. Community members were fully oriented on components of tariff and the basis for either an increase or decrease in tariff level. Apart from the use of mediums such as the water council and vendors to provide information on tariff reviews, an information van is hired to announce to community members anytime there are tariff reviews. This avoided conflicts between community members and the vendors.

Also as a mechanism for ensuring free flow of information essential in the management of utilities such as water, the water council meets every quarter for the WSDB to brief members on its activities. This platform does not only provide a mechanism for dissemination of information, but helps to keep the wider community informed of any anomalies in the management of the water system for immediate remedies to be found to such anomalies before they degenerate into a crisis situation. Because the council members were oriented on the water supply scheme regarding O&M, they are in a responsible position to advice the WSDB on its activities.

The existence of management models for community involvement in small towns water supply schemes provided impetus to the whole process of community involvement in the Savelugu water supply scheme. Community members yearned for such a management system where they could be in control as was the case of many other towns in the Northern region that they were aware off. They wanted also to avoid exploitation from the private tanker services who had exploited them for over a decade (1985 to 1999) when they eventually took over the water supply distribution system in the town. The availability of tools, procedures and manuals for community management of water developed by CWSA facilitated the work of the consultant and guided community mobilisation, design of organisational arrangements for the community water supply scheme and the institutionalisation of transparency and accountability mechanisms within the management structure.

## 4.2. Accessibility and Coverage

A visible result of the intervention is the 12 hours of flow of water through 20 public stand posts evenly distributed in the six electoral areas of the town every three days. Even though water is still rationed in the town on rotational basis among the electoral areas, this has been a great relief to the community who otherwise depended upon dry shallow wells and dug outs for their water supply. Water has also been subsequently extended to the District Assembly, the Savelugu Senior High School, quarters of staff of the District Assembly and other institutions in the district. Consequentially, the flow of water in the town has witnessed a drastic reduction in the number of guinea worm cases in the town. From an incidence of a little below 700 cases in 1999, the number of cases dropped to less than 50 between 2000 and 2002. This remains a very significant achievement of the project and has gone a long way to influence the attitudes of the people who held a long standing view that the disease was a sign of a curse and positively affected their attitudes with environmental sanitation. To improve upon the current level of accessibility, funds should be sought to either, enable GWCL to supply more water from its mains to Savelugu or activate the Savelugu boreholes and link them to the transmission and distribution network as their yields are said to be adequate. Private organizations, such as the banks, telecommunications companies and other companies may be approached for this purpose, as it is an urgent need. Alternatively, it could be factored into the Government budget for 2010. Picture 2 below shows one of the high yielding boreholes that has been mechanized with an overhead tank installed on it. The water flows by gravity into a six head public stand post.



Picture 2: Borehole with Electric Pump, Overhead Tank and Standposts

## 4.3. Operation and Maintenance (O&M) Capacity

The model has an O&M plan, an operating staff of 7 (made up a system administrator, two (2) revenue collectors, two (2) security officers, two (2) plumbers and twenty (20) vendors on the ground attending to day to day operations of the system. The WSDB has 11 members (District Coordinating Director and District Chief Executive are ex-officio

members). As a requirement under community managed systems, an O&M plan was developed by the software consultant with input from the community and the relevant stakeholders. The community, water council, WSDB, operating staff and vendors were taken through the O&M plan so as to enable them understand how the system is run and what must be done right to ensure its sustainability. The O&M plan had proposals for two levels of tariffs – tariff level that encompasses O&M and expansion/rehabilitation, and tariff level for only O&M. Under the Model, GWCL is obliged to provide major O&M support to the WSDB upon request.

#### **4.4. Tariff levels and Willingness/Ability to Pay**

Tariff recovery had not been a problem for the WSDB for the first five years of its existence (1999-2004). Studies<sup>5</sup> on the system showed that between 1999 and 2002, GWCL recovered 100% of bills payable from the WSDB compared to only 60% under systems operated by GWCL itself. The high rate of tariff recovery is attributed mainly to payment of bills at the point of fetching and the institution of measures such as daily reading of meters and sales and banking of sales, timely payment of commissions to vendors among others. Willingness to pay is not a problem at all and there are no reported cases of illegal connections and bursting of pipes to protest against tariff levels. As at July 2009, GHC 0.50 is charged for 50 gallons (225 litres) container. Picture 3 below shows the containers mostly used for fetching and storing water.



Picture 3: Public Standpipe and Containers Used for Fetching Water

---

<sup>5</sup> UNICEF/Savelugu District Assembly 2006, Report on Management, Operation and Maintenance Audit of the Savelugu Water Supply Ssystem,

However, since 2005, following government's directive for all public institutions utility bills to be paid at central level, the water system has suffered a serious set back in terms of its ability to achieve full tariff recovery. This is due mainly to accumulation of huge institutional bills by public institutions such as the hospital, secondary school, department of agriculture, the district assembly, among others. A recent management audit commissioned by UNICEF in 2006 also showed deficiencies in management resulting in disregard for laid down procedures (WSDB members assuming the work of the operating staff), under reading of meters and under reporting of sales, tampering of meters, among others, which has potential to undermine the sustainability of the model. However, since the findings of the audit, attempts are being made including reconstitution of the WSDB whose tenure of office ended in 2004, negotiations with GWCL to replace faulty meters and the recruitment of a system administrator. The most significant challenge confronting the model as at the time of the study is the unilateral decision of GWCL to withdraw the 30% concession on their tariffs to the WSDB. This will mean that the WSDB in addition to bearing maintenance cost of the distribution lines, commission of vendors, cost incurred in billing and revenue collection; will pay for water as any other person getting supply directly from GWCL but without other obligations as maintenance of distribution network, among others. The obvious implication is that, the WSDB will transfer the cost onto the consumers and affordability will become an issue.

#### **4.5. Special Measures for Ensuring Pro-poor Focus and Gender Equity**

The impression that, community managed systems have the potential of ensuring equity in supply and are dynamic in making specialised arrangements for vulnerable groups to access water is validated in the Savelugu water system. Vulnerable people such as the poor widows/widowers and others are treated kindly in the community and the vendors generally, allow them to fetch free of charge from the stand posts. The WSDB has, recognised it and has allowed the vendors a small percentage (10%) for such purposes as unaccounted for water which is not included in the calculation of daily sales. Besides, the decision to go in for only one level of service was aimed at giving equitable access to everyone in the community especially the poor.

#### **4.6. Health, Hygiene Promotion and Environmental Considerations**

Generally, environmental situation needs to be improved even though there is recognition of an improvement through the institution of monthly clean ups to maintain healthy environmental sanitation under the Model. Efforts are underway by the assembly to bring sanity into the way people build in the town to conform to town planning standards and building regulations as a way of ensuring sound and healthy environment.

#### **4.7. Assessment of Impacts and Sustainability of the Programme**

The programme has demonstrated the potential of partnership between communities and utilities to provide effective and efficient services to the poor. It did not only help GWCL to achieve 100% cost recovery of tariffs with minimal cost compared to 60% with relatively high overheads under its own operations especially within the first five years of operations of the Savelugu system. It has helped ensure equitable access to water by all the residents of the town. The capacity of the community for self mobilisation and

initiative has been greatly enhanced. It has also opened up job opportunities for some residents.

An evolving trend in the town regarding the water system is the politicisation of the management of the water system. Even though, this trend presents its own challenges, the competition that is associated with it, in terms of one political grouping trying to work hard to outperform the other has the potential of improving upon the governance and effectiveness in the delivery of water. This trend should be observed and analysed to find out the relative merits and demerits of it instead of quickly dismissing it as not desirable. Since 2005, the sustainability of the water system has come to question because of certain events including: breakdown of transparency and accountability evidenced by disregard for the constitution and rules and procedures of the WSDB (WSDB performing duties of operating staff, some operating staff under reading of meters and reporting of sales; non payment of bills by public institutions; and the unilateral withdrawal of the 30% of GWCL tariff concession to WSDB).



## **5 CONCLUSIONS AND LESSONS LEARNED**

### Process of Introducing the Model

The participatory design and implementation process adopted by the Model and the outcomes as finding appropriate solutions to sensitive issues such as accessibility by the poor, equity, tariff setting, among others is very essential for the success of innovations. There is thus real need to involve all stakeholders in making informed decisions about what Level of Service (LOS) is most appropriate in the short term, in order to ensure that all residents, especially the poor, will experience some improvements in service, even if it is not as great as they hoped.

### Methods of Ensuring Pro-Poor Delivery

Management models such as community ownership and management, using an appropriate level that specifically guarantees accessibility to the poor, getting public stand posts closer to them as was the Savelugu case, are effective in ensuring that the poor are adequately served.

### Management Models Should Respond to Existing Need or Problematic Situation

The successes achieved by the model in the first five years of its operation is largely because of its appropriate response to existing precarious water shortage resulting in the town becoming known for its lead position in the guinea worm incidence in the country. Innovations should reflect the needs of local populations to generate the requisite support required for their success.

### Need for Elaborate Contractual Agreements

The partnership was in the form of a memorandum of understanding that simply indicated the responsibilities of each of the partners. Following from the current difficulties on both sides of the partnership with the partnership arrangement, an elaborate contractual agreement that states in clear and unambiguous terms, obligations of partners, penalties for defaulting, mediums of redress and processes of redress, terms of assessment of partnership, basis for the termination of partnership, objectives of the partnership among others that bind both parties and their representatives would be required.

### Need to Anchor Management Model within Defined Subsector

Models that integrate two or more approaches such as the community-utility bulk supply model require the definition of specific institutional arrangements regarding, for instance, the subsector to situate the management model so that the sector can be specifically responsible for the model. The absence of such an arrangement has meant the creation of a situation where GWCL basically treated the WSDB as their customer while CWSA increasingly failed to recognise the water system as a small town system under their management. The increasingly de-linking of the operations of the Savelugu WSDB from

the CWSA has meant that the WSDB did not receive the requisite technical support to better deal with the utility. They could not also take advantage of mechanisms currently in place where CWSA helps the WSDBs to recover bills from government institutions leading to the loss of GHC 30,000 (US\$ 21,430)<sup>6</sup>. It also required the allocation of monitoring and supervisory responsibility to one of the regulatory agencies (either PURC or WRC) to regulate the activities of the parties involved in the partnership to ensure that all abide by the tenets of the partnership. The confinement of the role of the software consultant to only the implementation stages of the project and the many challenges that emerged later during the post implementation stages give impetus to the role of civil society organisations in the TPP project. An extended role for civil society with reduced intensity during the post implementation stage is vital in helping to cater for capacity deficiencies in operation and maintenance and contract management.

### Strategic Role of Pilot Projects

The on-going reforms in the community water sector provided impetus to the success of the Model. Community managed water systems was not a new thing to all the stakeholders. The town was aware of community managed water systems across the three northern regions implemented under GAP 1&2 under CIDA. GAP 1&2 are projects that facilitated the rehabilitation and institutionalisation of community management of water systems previously under the then GWSC. The community in general looked for a water system in which they could call their own as with water supply systems elsewhere. Besides serving as motivation and generating the requisite interest of community in the innovation, ongoing initiatives within the community water sector provided readily available source of information, training manuals, and organisational arrangements among others which the innovation relied upon for its software component. This helped the capacity building activities of the innovation and has helped the community to fully understand and embrace the management model and to implement it this far.

### Accessibility to Technical Support

Accessibility to sustained technical support to the community to strengthen their position in the partnership beyond the post project is vital. This is more so under community-utility partnership arrangements, in view of the general perception of utilities as commercial entities motivated by profits and operate a service for a fee attitude with little consideration for social responsibility. They seize every opportunity to practice cost shifting even if it falls within their domain. This requires that people with high level technical skills interact with them and hold them responsible for costs which fall within their domain, thus avoiding the transfer of unnecessary costs to the weaker partner (community). The absence of technical support has meant that the model has been at the mercy of GWCL to the extent that, in the dry season, the minimum quantity of water to be supplied is reduced while in the rainy season where water is not in high demand, the volume of water supplied is so high that, it causes the pipes to burst. An extended reduced support by consultants' software and hardware staff would have filled such a vacuum.

---

<sup>6</sup> The US\$ equivalent is computed using the July average exchange rate of GH¢ 1.4 to US\$ 1

### Place of Multi-Stakeholder Partnerships in the Delivery of WASH Services to the Urban Poor.

The community-utility company partnership of the Savelugu Water System demonstrates the significant role of multi-stakeholder partnerships especially, the involvement of civil society in such partnerships. The absence of civil society involvement in the partnership has largely accounted for the current impasse between the two parties culminating in the unilateral withdrawal of the 30% concession in the tariff charged by AVRL to the WSDB. The genesis of the impasse has been the lack of appreciation by AVRL for the 30% concession in the level of tariffs to the WSDB, non availability of documentation of the MOU and the increasing inability of the WSDB to fully settle bills to AVRL due to the debts owed by public institutions. Civil society as a third party would have helped to bridge the gap between the two parties and would have identified warning signs and called for them to be addressed before they develop into significant differences that can collapse the partnership. Civil society have the potential for standing in gaps in capacity of community on technical issues and therefore, able to facilitate a process that ensures that communities are not disadvantaged.

## **List of References**

Patrick Apoya (2003) *Community Public Sector Partnership for the Provision of Water Services in Savelugu*, Ghana Paper Prepared for the Civil Society Consultation on the 2003 Commonwealth Finance Ministers Meeting Bandar Seri Begawan, Brunei Darussalam 22 – 24 July 2003

Savelugu Nanton District Assembly (2006) *District Profile*  
Accessed at [www.ghanadistricts.com](http://www.ghanadistricts.com)

UNICEF/Savelugu District Assembly (2006) *Report on Management, Operation and Maintenance Audit of the Savelugu Water Supply System*.