

Case Study

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Community-Public-Private Partnership Model for the Management of a Multi-Town Scheme in Ghana

Joyce Maku Appiah, CWSA



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LIST OF ABBREVIATIONS

3DWSP	-	Three Districts Water Supply Project
3DWSS	-	Three Districts Water Supply Scheme
AfDB	-	African Development Bank
AWF	-	African Water Facility
COM	-	Community Ownership and Management
CPP	-	Community-Private Partnership
CWSA	-	Community Water and Sanitation Agency
DA	-	District Assembly
DANIDA	-	Danish International Development Agency
DWST	-	District Water and Sanitation Team
GAR	-	Greater Accra Region
GHC	-	Ghana Cedi
GIS	-	Geographic Information System
GWCL	-	Ghana Water Company Limited
HLT	-	High Level Tank
JICA	-	Japan Development Agency
MoU	-	Memorandum of Understanding
NCWSP	-	National Community Water and Sanitation Programme
NGO	-	Non Governmental Organisation
PPIAF	-	Public Private Infrastructure Advisory Facility
PSO	-	Private Systems Operator
USD	-	United States Dollar
WASH	-	Water Sanitation and Hygiene
WATSAN	-	Water and Sanitation Committee
WSDB	-	Water and Sanitation Development Board

1. INTRODUCTION AND METHODOLOGY

1.1. Introduction

The Tripartite Partnership Project (TPP) is a joint collaborative project between the Netherlands Water Partners, TREND, the lead implementer and some national actors and stakeholders in the water and sanitation sector in Ghana. The Project started in January 2008. The African Water Facility (AWF) of the African Development Bank (AfDB) would provide support for the infrastructure development of pilot projects that would be undertaken under the Project. The project seeks to identify and promote innovative management models for the delivery of Water, Sanitation and Hygiene (WASH) services to the urban poor in Ghana. It has been designed as a response to the current lack of capacity for dealing with the challenges of pro-poor urban water and sanitation services.

The overall goal of the project is ensuring a “strengthened sector capacity for planning and delivery of pro-poor water and sanitation services.”

The specific objectives of the Project are:

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

Within the framework of the Project, various Management Models, both at the local and global levels are reviewed and the most innovative ways of ensuring sustained delivery of WASH services to the urban poor are identified. The best practices gleaned from the various studies are applied in the design of various tools and guidelines for replication within the Ghanaian WASH sector. Knowledge management, advocacy and promotion of networking are key strategies for ensuring improved service delivery at the decentralised level and strengthened policy at the sector level.

As part of Project activities to achieve the above objectives, a scope of existing Management Models and a GIS mapping exercise were carried out between April and November 2008. At a Learning Alliance meeting on 12th November 2008, the outcomes of the 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.

1.2. Objectives and Scope of Assignment

Bearing in mind the central theme of the TPP (innovative Management Models for WASH services delivery to the urban poor), the case study presents the Community-Public-Private Partnership (CPPP) Model¹ of the Three Districts Water Supply Scheme serving multi-communities in Dangme East and Dangme West Districts in the Greater Accra Region; and North Tongu District in the Volta Region. This case study is part of a series of eight conducted under the TPP Project with regard to promising Management Models in the Water and Sanitation Sector in Ghana.

The case study highlights the following issues:

- A comprehensive picture of the WASH situation within the beneficiary communities;
- An analysis of the Management Model and the processes of introducing the model;
- An assessment of the management model; and
- An assessment of the ‘next steps’ in terms of knowledge and application on a large scale.

1.3. Approach and Methodology

The methodology adopted for the study included a desk study, involving a review of sector policy objectives for rural and small towns’ water delivery and extensive field work in the study. The field work involved consultations with relevant stakeholders involved in the management and operation of the water scheme. Some of these stakeholders included consumers, members of the Water and Sanitation Committees (WATSANs), members of the Water and Sanitation Development Board (WSDB), staff of the three beneficiary District Assemblies and staff of the Private System Operator (PSO).

1.4. Organisation of Report

This chapter has presented the introduction, objectives and approach for the study

Chapter 2 describes the study area and highlights the location, socio-cultural, economic profiles of the towns and provides an overview of the water supply challenges before the implementation of the model.

Chapter 3 presents the CPPP model in a multi-community context. The basis for its adoption is presented first, followed by the development and implementation in the study areas.

Chapter 4 provides an assessment of the model.

Chapter 5 presents the conclusions and recommendations

¹ This model has also been described in the project documents and reports as Community-Private Partnership (CPP) but, by the management structure and arrangement, this management model is alternatively Community-Public-Private Partnership (CPPP)

2. DESCRIPTION OF THE CASE STUDY AREA

The Three Districts Water Supply Scheme (3-DWSS) is one of the peculiar small towns' water supply schemes constructed in Ghana. It is presently the biggest small town water supply scheme in Ghana, serving over 129 communities and 18 institutions in three Districts, namely: the Dangme East and Dangme West Districts in the Greater Accra Region; and the North Tongu District in the Volta Region. The total number of people currently served with water from the scheme is 115, 092², representing 36 percent of the year 2000 total population of the three Districts. The general profile of the areas under the 3-DWSS is presented below.

2.1. Overview of Dangme West District

The Dangme West District is located in the southern part of Ghana and it is one of the ten Districts of the Greater Accra Region. Dodowa is the administrative capital. It is the largest District of the Region, with a land area of 1,442 square kilometres representing 41.5% of the total land area of Greater Accra Region. The population of the area is 96,809³ with majority of the people (76.4%) living in the rural areas of the District. The sex ratio is 93 males to 100 females (48.2% - males; 51.8% - females). Agriculture is the major means of livelihood with 65% of the labour force engaged in crop farming, fishing and livestock.

Only 51.8% of the people in the District had access to potable water before the implementation of the Three Districts Water Supply Project (3-DWSP). The hydro-geological condition in most parts of the District is poor. The campaign to drill over 30 boreholes in the District with support from JICA and DANIDA in 1997 and 1998 respectively yielded only four successful boreholes representing a success rate of 13 percent. Besides, drilling resulting in dry wells, the presence of iron and manganese was a main challenge. WATSANs were established to manage and operate the boreholes that were successfully drilled.

Additionally, Ghana Water Company Limited's (GWCL) supply from the Kpong Water Works to the coastal communities in the District was irregular. The people in these areas without any source of potable water largely depended on unsafe sources such as streams, ponds and dugouts.

The sanitation coverage in the District was 32% with most of the toilets located in the urban areas. It was therefore not surprising that the major diseases in the District were water and sanitation related – Malaria, diarrhoea, schistosomiasis (bilharzias).

² PSO, October, 2009 Financial Report

³ 2000 population and housing census

2.2. Overview of Dangme East District

The Dangme East District is also located in the southern part of Ghana and forms part of the central portion of the Accra plains, in the Greater Accra Region. The administrative capital of the District is Ada Foah, which is about 20 kilometres off the Accra - Aflao road. According to the 2000 population and housing census, the District has a population of 93,112. The female population of the District was 48,913 representing 52.5% of the total District population, while that of males was at 44,199, representing 47.5%. The District is predominantly rural, depicting a rural- urban split of 82:18. The land area is 909 square kilometres and it represents 28% of the total land size of the Greater Accra Region. It is a coastal District making fishing and fish processing major sources of livelihood.

Before the implementation of the 3DWSP, only 43% of the population had access to potable water and 21% to improved sanitation in the District⁴. The limited access to potable water was a result of the high level of salinity in ground water along the coast and the inability to extend water from the GWCL Keseve Water Supply System to the coastal communities in the District due to limited system capacity. The problem of salinity became evident when the Greater Accra Community Water and Sanitation Agency (CWSA/GAR), in 1999 initiated the drilling of a total of ten boreholes including test wells in the District.

The Keseve Water Supply System which was the main source of potable water before the implementation of the 3-DWSS served people in the Eastern part of the District. The Keseve water system was designed and constructed by GWCL in 1997 and placed under Community Ownership and Management (COM) in 1998. Beneficiary communities had thus not participated in the implementation of the system. Under the COM arrangement, CWSA facilitated the establishment and training of WATSAN committees in each of the beneficiary community. These WATSANs were responsible for management, operation and maintenance of the installed facilities at the community level while GWCL was responsible for production and distribution of the water. Water distributed directly to the metered standpipes was managed by vendors employed by the WATSANs. Water bills of individual communities were paid in bulk to GWCL by the respective WATSANs.

These arrangements were however curtailed due to the inability of the WATSANs to pay their bills regularly and promptly to GWCL. This was mainly due to the misappropriation of funds by the water vendors or WATSAN members. As a result, GWCL engaged its own vendors to manage the standpipes except the standpipes in 11 communities which were connected to the system in 1999 by CWSA/GAR and placed under COM immediately after construction. The Community-GWCL Partnership is relatively successful in these 11 communities because of the involvement of the beneficiaries; and the understanding of the concept in the initial stages of project implementation. Payment of water bills in these communities is thus, prompt.

The sustainability of the Keseve Water Supply System is however threatened because of low patronage by consumers as a result of salt intrusion at the intake whenever there is a rise in the sea level.

⁴ District Water and Sanitation Plan, Dangme East District Assembly, 2008.

Communities with no access to the GWCL system depended mostly on saline hand dug wells drilled by individuals, dug outs and tanker services⁵. Supply of water from tanker services in the District was priced at US\$ 0.156 per 18 litre container.

2.3. Overview of North Tongu District

The North Tongu District is one of the eighteen Districts of the Volta Region. It shares borders with the Dangme East and Dangme West Districts to the south west. The District is equally divided into two by the Volta River which runs from the North to South of the District. The administrative capital of the District is Adidome. The total land area is 1,460 square kilometres and about 7.1% of the total land area of the Volta Region. The 2000 population and housing census put the population of the area at 130,388 with males making up 48.5% and females 51.5%. The District is comparatively rural. River fishing and livestock rearing are the main sources of livelihood.

Until the year 2008 when the 3DWSP was implemented, people living in the North Tongu District depended on the raw water from the Volta Lake.

2.4. Overview of the Three Districts Water Supply Scheme

2.4.1. Project Initiative

In order to provide potable water, hygiene and sanitation services to the people of the Dangme West and Dangme East Districts, CWSA and GAR tasked a local Consultant to identify a potential intake source. The study identified transmission of water from the Volta Lake at Aveyime and the GWCL Keseve water system as potential sources. The Consultant recommended the construction of a surface water scheme with an intake from the Volta Lake in Aveyime in the North Tongu District of Volta Region for the following reasons:

- The distance between Aveyime and Sege (and the other densely populated communities such as Goi, Akplabanya and Anyamam), is about 18.5 kilometres, which is less than the distance between Sege and the GWCL Keseve Water Supply System, which is 28 kilometres. The total population of the aforementioned communities was 60,000, which is 52 percent of the total population to be served;
- Relatively good water quality;
- The sloping terrain would minimize major environmental damages and enhance construction of pipelines;
- Relatively lower construction and operation and maintenance costs; and
- Possibility of connecting more communities to the scheme because of proximity.

⁵ Feasibility Report, Afrowood Consulting Ltd, 2003.

⁶ Interbank selling rate of GHC 1.45 = USD 1

The choice of locating the intake at Aveyime required that CWSA and GAR considered taking into account nearby communities in the North Tongu District in the design of the system, hence the inclusion of communities in the North Tongu District and the name, 3DWSS.

2.4.2. Components of the Water Supply Scheme

The final evaluation of technical, economic and social issues settled on the following design:

- A system with hundred percent Slow Sand Filtration (SSF) installations with a capacity of 3,600 cubic metres per day on a per capita water demand of 28 litres per day; and a pumping station – all located at Aveyime;
- A clear water tank at the Treatment Plant at a capacity of 2,000 cubic metres;
- A Booster Station with 400 cubic metres ground tank located at Dawa in the Dangme West District;
- Eight High Level Tanks (HLTs) with a total capacity of 1,450 cubic metres spread over the three Districts;
- A network of pipelines of varying sizes between 50mm and 250mm in diameter up to a total length of approximately 400 kilometres;
- Fifteen pumps comprising: six low lift Grundfos SP 46-2, pumping 46 cubic metres per hour and six high lift Grundfos CR 45-5-2 18.5 kW, pumping 45 cubic metres per hour located at the head works. The Booster Station also has three Grundfos CR15-6, 5.5 kW, pumping 17 cubic metres per hour;
- A total of 235 public standpipes and 65 institutional standpipes (each standpipe has two spouts);
- An administration block located at Sege in the Dangme East District;
- The system is connected to the National power grid and has a standby Baifa Diesel Generator with Stamford parts and rated as 100KVA with a standby power of 88 kW, 415/240 V, 1500 rpm.

Details of population distribution and accompanying facilities are presented below:

Table 2.1: Population distribution and facilities

District	No. of communities	Population	Number of standpipes			Chambers (earmarked for private connections)	Reservoir size (m ³)
			Public	Institutional	Total		
Dangme East	54	52,987	116	31	147	47	2,400
Dangme West	31	24,907	57	15	72	20	800
North Tongu	41	28,135	62	19	81	42	350
Total	126	106,029	235	65	300	109	3,550

Source: Afrowood Consulting Ltd, 2008



Figure 2.1: Treatment Plant



Figure 2.2: Pumping Station

3. THE MANAGEMENT MODEL

3.1. Development of the Management Model

The 3DWSS is a unique system in the community managed water sector in Ghana. It therefore required the rethinking of a management model to manage this system, especially because of:

- The complexity of the design of the water scheme.
- The anticipated large number of communities to be connected to the scheme.
- The ownership rights of the scheme because of the multiplicity of Districts and communities involved.

The fundamental principle of the National Community Water and Sanitation Programme (NCWSP) and the District Assemblies Model Bye-laws for the establishment and operations of WSDBs adopted in 2008 makes beneficiaries of water services responsible for the operation and maintenance of the facilities. With this in mind, a study was commissioned by CWSA and GAR in 2003 to identify an appropriate management model for the 3DWSS. In order to assess the various management models, the management models of nine water supply schemes in Ghana were studied, with the aim to:

- Identify the effectiveness of the ownership and management structures;
- Analyse the advantages and disadvantages of the various Management Models; and
- To recommend which Management Model could best ensure the long term sustainability of the water supply scheme.

Based on this, and after careful consideration of the unique characteristics of the 3DWSS, the Community-Public-Private Partnership (CPPP) was proposed as the Management Model. Community-Public-Private Partnership refers to “*a range of options for involving the local private sector in service provision*”⁷. Under this management arrangement, the WSDB on behalf of the communities, contracts out the operation and maintenance of the scheme to a Private System Operator (PSO). It is believed that the WSDBs’ feeling of sense of co-ownership and community mobilisation capabilities complements the technical and financial expertise of the PSO.

The final decision on the choice of management option was made in consultation with stakeholders, including chiefs and opinion leaders of the beneficiary communities, Members of Parliament of the area, Presiding Members, Assembly members and District Chief Executives of the beneficiary Districts, CWSA officials and community members.

⁷ Manual for Community Private Partnership for operation and maintenance of small towns water supply systems in Ghana, 2003, MIME Consult.

3.2. Institutional Arrangement under the Management Model

The CPPP was formalised with the signing of an initial five-year Management Contract between the PSO, the three District Assemblies and the WSDB in June 2007. The WSDB is co-signatory to the Management Contract Agreement with the PSO. The operations of the WSDB and its relationship with the PSO are governed by a Constitution, which is certified by the District Chief Executives, Co-ordinating Directors and the Presiding Members of the three DAs.

Under the Agreement, the **PSO** is considered the “sole and exclusive, Operator and Maintainer of the water supply system from and including the intake at the treatment plant to the bulk meter point in each beneficiary community”⁸. The PSO has the additional responsibility to collect water sales from the public standpipes, institutional and private house connections on behalf of the DAs and the WSDB.

The three Districts appointed the Dangme East District Assembly as a Lead District to co-ordinate the processes for the engagement of the PSO. The Lead District was responsible for issuing of award letters and co-ordinating negotiation meetings with the selected PSO. The WSDB and the two other DAs were briefed regularly on the progress made.

The Contract was for a period of five years and contained schedules for monitoring and performance indicators, tariff collection, lodgement and disbursement, management fee and payment procedures and a format for reporting. A review of the contract agreement is to be renewed for two additional terms, if requested by any one of the parties. Tariff issues, management fees, cost of system operations among others, shall also be the basis for reviews. The first review was scheduled for 31st December 2007 and subsequently at the beginning of every other year or as may be requested by any of the parties.

The WSDB on the other hand, has oversight responsibility for the overall management of the system including monitoring the activities of the PSO and the WATSANs. The WSDB is accountable to the beneficiary communities. The main duties of the WSDB include:

- Managing the water and sanitation services;
- Setting tariffs and seeking for approval from the DAs; and
- Ensuring that water quality tests are done regularly and taking actions to correct any anomalies.

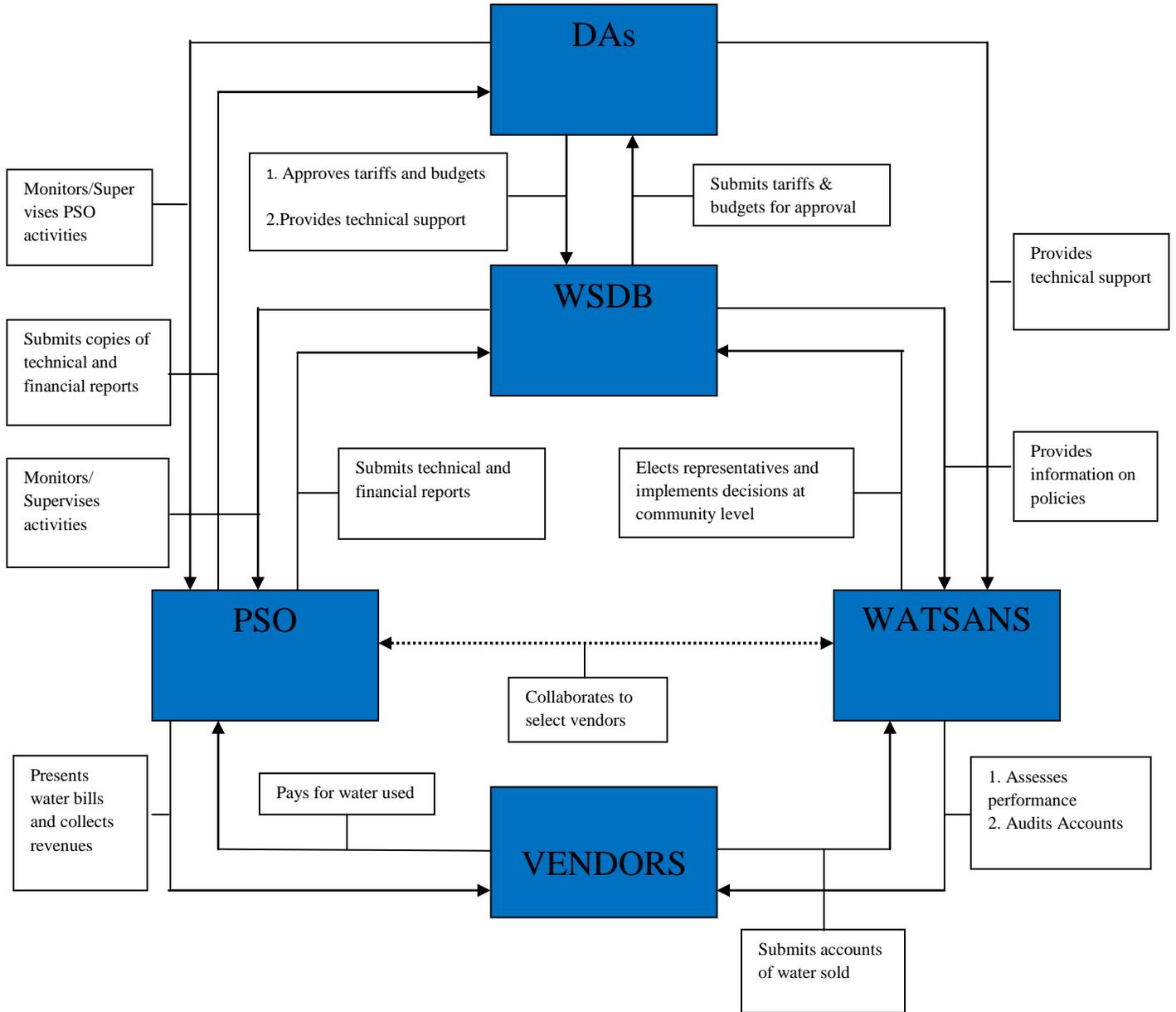
The **WSDB** are required to communicate all decisions taken at the WSDB level to WATSANs, who in turn disseminate such information to the community members. Vice versa, concerns of the communities are to be communicated to the WSDB by WATSANs’ representatives on the WSDB. However, in reality the WSDB is unable to implement this satisfactorily due to inadequate resources to organise meetings at their respective zones.

⁸3 Districts Water Supply Project, Management Contract Agreement for the operation and maintenance of the water supply system, June 2007

The **WATSANs** are charged with the responsibility of selecting and supervising water vendors from within the communities. Furthermore, they are to ensure the payment of water bills to the PSO and maintain the pipelines and standpipes within the community.

The **DAs** remain the owners of the facilities and are therefore required to demand quarterly technical and financial reports from the PSO. They are also responsible for providing technical support (on-the-job coaching) to the WSDB and WATSANs in the management and operations of the scheme.

Figure 3.1: Institutional Arrangement for the Management of the 3-DWSS



Source: Author (2010)

4. ASSESSMENT OF THE MANAGEMENT MODEL

The sections presented below analyzes the benefits and challenges of the Management Model as it relates to transparency and accountability, cost recovery, impact on the poor, sustainability and hygiene and sanitation improvement.

4.1. Introduction of the Management Model

Before implementation of the system, a series of workshops and durbars were organised in the three beneficiary DAs to introduce the project and to explain the reasons for the choice of the Management Model. An information brochure was prepared and distributed to community members and their leaders. The contents of training programmes designed to equip the WSDB and the WATSANs with the skills to manage the water system also included information on the adopted Management Model and the roles and responsibilities of all relevant stakeholders. It was believed that adequate information to community members on the advantages of the involvement of the private sector in the operation and maintenance of the water supply scheme at beginning of implementation of the system would help reduce the usual anxiety and reservations often associated with such partnerships. Also, the selection of the PSO and the subsequent contract negotiations were done with the involvement of the WSDB.

Anecdote experiences have indicated the need to build consensus with the communities and among stakeholders on why the private sector is needed for a sustained delivery of potable water. With this in mind, all relevant stakeholders, including opinion leaders and representatives of the various communities were involved in deciding on which Management Model to adopt.

The final decisions and the reasons for the selected Management Model were subsequently communicated to community members through extension services interventions. In order to minimise the initial fears of the communities about high water prices due to the involvement of the private sector, the selection of the PSO was subjected to open tendering, which meant individuals and firms from the Project areas had an equal opportunity of being selected if they had applied. The assignment was advertised in the National Dailies and bids from interested firms were evaluated by the District Assemblies with technical support from CWSA.

4.2. Institutional Set-up

An Extension Services Consultant was hired by CWSA to facilitate the election of WATSAN members in each of the beneficiary community and the establishment of the WSDB, among other things. The WATSANs were then grouped into seven zones, based on the distribution of the high level tanks. Thus, WATSANs of communities receiving water from the same tank were grouped together. However, to ensure fair representation on the WSDB, WATSANs in densely populated communities along the coast of Dangme East were further divided into two zones, making the total number of zones eight. A WSDB was established with membership of two WATSAN representatives from each of the zones, a representative from Central University – the only major institution benefiting from the scheme and a Planning Officer from each of the Districts. The Planning Officers are however co-opted members of the WSDB and therefore do not have voting rights. The membership of the WDSB is 20, with five (excluding co-opted members) of the members elected into executive positions.

To ensure the availability of members of WATSAN and the WSDB for the day to day management of the water system, membership of the WATSANs was restricted to permanent residents of the beneficiary communities. However, considering the relatively rural nature of most of the beneficiary communities, residents with financial and technical knowledge and skills for management of such a complex water system like the 3DWSS, were not available for election onto the WATSANs and subsequently on the WSDB. About 50% of the WSDB members elected had not received secondary school education (High school)⁹.

Consequently, provision was made in the WSDB Constitution to make it possible for the WSDB to occasionally establish committees made up of knowledgeable individuals who hail from the communities and DA staff with technical and financial capabilities to assess the performance of the Scheme and the PSO. This provision is yet to be implemented by the WSDB. The co-opted Planning Officers of the three beneficiary DAs have also been regular at WSDB meetings to provide inputs into most of the decisions taken by the WSDB. Follow-up visits to communities by the WSDB and DWSTs to provide on-the- job-coaching to the WATSANs and the Vendors at the community level have however been inadequate due to limited resources. Stakeholders review meetings organised on a rotational basis by the three DAs, though not regular in recent times, have also impacted on good governance.

The WATSAN and WSDB members were trained at the beginning of project implementation in organisational management, tariff setting, hygiene promotion, operation and maintenance among others by the Extension Services Consultant. Members of the WSDB and WATSANs were also encouraged to regularly participate in site meetings organised to discuss progress of construction in order to increase their knowledge in technical aspects of the scheme.

4.3. Financial Issues

4.3.1. Capital Cost Contribution

In compliance with the national policy of the NCWSP, beneficiary communities were asked to contribute to the capital cost by paying five percent of the total capital investment cost of the facilities. The total cost of community contribution was estimated at USD 441,232. Community contribution was expected to be transferred to CWSA before completion of the implementation of the system. A consultant was contracted to, among other things; assist the communities to identify innovative ways of mobilising funds to pay their contribution. One of the identified means of mobilising funds was seeking financial assistance in the form of loans from the District Assemblies. Dangme West District Assembly supported deprived communities in their districts with a loan totalling USD 10,345. Despite the many efforts of the Consultant and the DAs, most communities were unable to meet the target of full payment before handing over the facilities to the PSO. Communities had at the time of handing over the system, mobilised USD 170,997 representing about 39 percent of the total cost of contribution.

⁹ Maple Consult, report on training needs assessment of WSDB, May, 2007

4.3.2. Tariff Setting

The setting of the tariff for water use was done in conjunction with all stakeholders. The initial tariff was calculated based on all estimated expenses relating to the operation and maintenance of the water scheme. The estimated cost of capital replacement, water losses and sanitation improvement were also catered for in the tariff. The price of water at the public standpipes was set at USD 0.76 per cubic metres (USD 0.014 per 18litre container). The WSDB is yet to finalise setting the connection fee and water tariff for individual household connections. The PSO anticipates water to individual households to cost USD 1.03 per cubic metres of water consumed.

Due to the inability of most of the beneficiary communities to pay up their community contribution to the capital investment costs, a decision was taken by the WSDB and the DAs to increase the price of water from USD 0.76 per cubic metres to USD 1.9 per cubic metres (USD 0.014 to USD 0.035 per 18 litre container). The difference of USD 1.14 per cubic metres (USD 0.021 per 18litre container) was thus used to defray the cost of the capital investment cost contribution. It was anticipated that through this, all communities would have completed payment of their capital cost contribution and would subsequently have reverted to the original tariff of USD 0.014 per 18litre container by December 14, 2009. However, communities in the North Tongu District are still struggling to complete payment because of low patronage.

The decision of increasing the tariff was not adequately communicated to communities by the Zonal WATSAN representatives. This resulted in a number of confrontations between the communities and the PSO, especially in the relatively urban communities, and with people reverting to the use of unsafe sources of water because of the increased cost, thus reducing the average per capita consumption of the treated water.

4.3.3. Modalities for Cost Recovery

Water fees are collected at the public standpipes according to the “pay-as-you-fetch” mechanism. Water is sold at the various standpipes by Vendors who have been selected by the WATSANs and trained by the Extension Services Consultant. The initial arrangement was for the Vendors to account to the WATSANs the proceeds from the daily sale of water. However, five months into the implementation of this procedure, the DAs and the WSDB directed that water tariffs collected by the Vendors should be paid directly to the PSO instead. The decision was arrived at following huge losses in revenue collected, which resulted in the inability of the WATSANs to pay for water consumed. The payment of Vendors’ commission also became the responsibility of the PSO instead of the WATSANs. Though the current arrangement reduced the default rate of communities in the payment of water bills, it has resulted in the refusal of WATSANs to cooperate with the PSO. Vendors have become more accountable to the PSO instead of to the WATSANs, which has impacted negatively on the authority of the WATSANs.

Institutions connected to the scheme pay their bills directly to the PSO on monthly basis. As a government policy, the bills of government institutions are to be certified by the respective heads of the institutions. The WSDB then submits the certified bills to the Ministry of Finance and Economic Planning through CWSA for payment.

Revenue collected from the sale of water is paid into an Escrow Account by the PSO. The Escrow Account has the signatures of a representative of the PSO and the chairman and the Treasurer of the WSDB. The parties to the Account (PSO and the WSDB) issue a standing order at the end of every month to transfer money from the Escrow Account to various Accounts specified below. The total revenue realised from the standpipes is what is currently shared. The WSDB and the DAs are yet to decide on the modalities for sharing revenue mobilised from institutions and in future, from household connections.

The PSO pays each Vendor a commission of 20 percent of the revenue realised at the standpipe each time the meter is read and a bill is presented.

The percentage sharing of revenue mobilised at the standpipes is presented in the table below:

Table 4.1: Percentage sharing of Revenue at standpipes

Type of Account	Purpose	Percentage (%)
PSO's Management Fee	Full cost of operation and maintenance	70
WSDB	Payment of allowances, maintenance of WSDB Office & water quality tests	2
Replacements	Additional investments & major repairs/replacement of parts	3
Sanitation	Hygiene and sanitation promotion	2
WATSANs	Operation and maintenance of the facilities within the communities, including repairs of pipelines from the bulk meter to the standpipes.	3
Vendors	Commission on total sale of water at standpipes– paid at the point of collection	20
Total		100

Apart from the Replacement and Sanitation Accounts which are co-managed by the WSDB and the DAs, all other accounts are managed solely by the corresponding institutions.

4.3.4. Cost Recovery

According to the PSO and the WSDB, cost recovery has been satisfactory. There has been tremendous improvement in the payment of community bills ever since Vendors were asked to pay directly to the PSO. Recovered bills, according to the PSO, have increased from 30 percent to 99 percent. The 70 percent share of PSO Management Fee for January to December 2009 was USD 148,196 (The amount is exclusive of the share of revenue received from institutions and commercial businesses) while the total expenditure on operation and maintenance was approximately USD 146,054¹⁰. In all, it is clear from the aforementioned that cost recovery under the PSO has been positive.

Monthly allocation for WSDB operations was considered to be inadequate. According to the WSDB, allocated funds barely pay for the transportation and sitting allowances of Board members. The WSDB on the average have received USD 1,217 per quarter of 2009 (USD 406 per month) and spent an average of about USD 400 on sitting allowances, refreshment and transport fares to and fro WSDB quarterly meetings. The balance of USD 817 was inadequate to carry out independent water quality tests (at an estimated cost of USD 1,034 per quarter) as specified in the MoU and WSDB Constitution; and to make follow-up visits to the WATSANs. Though the PSO has been undertaking water quality tests on a regular basis, no water quality test has been conducted by the WSDB in order to validate the results from the water quality testing as presented by the PSO. The WSDB was however unable to provide information as to how much they will need to operate effectively.

It is worth noting that despite the fact that revenues have so far been able to cover the full cost of operation and maintenance by the PSO, the Scheme is beset with the following challenges which need to be tackled for long term sustainability:

- Defaulting Vendors, especially in the North Tongu communities: Vendors in Mepe community in the North Tongu District for example owe the PSO USD 4,138 in water bills. The Vendors collect money for water sold but are often not available to pay their bills to the PSO.
- Delays in payment of water bills of government institutions by the Ministry of Finance and Economic Planning. The current request for a refund of an amount of USD 12,350 for the period of January 2008 to May 2009 is yet to be paid by the Ministry.
- Reduced water consumption at the stand pipes during the wet season also reduces the total revenue to the WSDB. During the wet season, the PSO on average supplies the standpipes in the communities with about 14,000 cubic metres of water per month for a total revenue of approximately USD 10,621 as compared to an average of about 25,000 cubic metres of water per month for a revenue of USD 18,966 consumed in the dry season.

¹⁰ The total annual revenue could not be obtained because annual financial report was not available.

4.4. Transparency and Accountability

In general, the Contract Agreement which also contained a schedule of the PSO's Management fee has not been reviewed since signing the Agreement in June 2007. As specified in section 17.0 of the Contract Agreement, the percentage share of the PSO Management fee was to be decreased from 70 percent to 60 percent in the period 1st January to 31st December 2008. Subsequently, the Management Fees for the period 1st January, 2009 to 30th June 2012 - when the contract is expected to expire will also be subject to reviews. It was expected that by these periods, more communities would have been connected to the water system and revenues would have increased. At the time the contract was signed, only 50 communities were connected to the system. Presently, potable water is being supplied to a total of 129 communities, 18 commercial institutions and 8 government institutions.

The PSO however maintains that despite the increase in revenue, the scheme is faced with challenges such as frequent pipe bursts on the main transmission lines and reduced water consumption during the rainy season which results in increased cost of operations and reduced income respectively. Low payment rates in communities in the North Tongu District are also a major challenge to the sustainability of water delivery. Based on the figures presented by the PSO during a stakeholders' review meeting in August, 2009, the downward review of the PSO management fee was suspended.

The yearly external technical and financial auditing of the water system at the instance of the WSDB and the DAs as stipulated in the Memorandum of Understanding (MoU) signed among the DAs to assess the performance of the system and to serve as the basis for tariff reviews have never been conducted. Rather, the PSO, on its own initiative, audited its accounts for year 2008. The DAs have indicated their plan to use the staff of the Auditing Units of the DAs to audit the financial operations of the PSO and the WSDB. There will still be the need for a technical audit to assess the performance of the PSO.

The issue of accountability has further been questioned following the change in the modality for revenue collection. WATSANs and community members were of the opinion that the PSO was in it to make money at their expense. WATSANs, on the other hand, have not also met the expectations of the community members, in that virtually no WATSAN committee has rendered accounts on how money lodged in its account have been used.

4.5. User Perception

Unreliable supply of water and high cost of operations in recent times as a result of frequent pipe bursts have a potential to threaten the technical and financial sustainability of the scheme. Consequently, community members have expressed dissatisfaction in the performance of the WSDB and the PSO.

Also, some individuals are taking advantage of the change in government to question the legal status of the PSO and the WSDB. Some Assembly members have taken over the accounts of the WATSANs for purposes other than operation and maintenance of the pipelines and standpipes within the communities. For this reason, the DA representatives on the WSDB and the District Water and Sanitation Teams (DWSTs) must improve communication by providing newly elected

Assembly members and Government Appointees (District Chief Executives inclusive) adequate information on the operations of the Scheme and details of the partnership.

Furthermore, there is a general perception among WATSANs and the community members that the WSDB has not been up to the task. Beyond the election of Zonal representatives to the WSDB, there has been very limited communication between the WSDB and the communities due to the following factors:

- The modality for collecting tariffs promote interaction between the PSO and the Vendors whilst excluding the WSDB and the WATSANs; and
- Inadequate resources available to the WSDB limits the implementation of a number of activities planned to enhance information flow.

4.6. Ensuring a Pro-poor focus

The implementation of the 3DWSS is seen as accomplishing the pro-poor focus of the Government of Ghana. So far, smaller deprived communities have been provided with potable water. The price of water at the public standpipes mostly used by the poor is lower than what the WSDB anticipates for house connections, which are mostly applied for by relatively rich individuals. Beyond this, no measures have been put in place to minimise the plight of the poor/disadvantaged in terms of cost and access. The increase in the price of water from USD 0.014 to USD 0.035 per 18 litre container in order to pay for the capital investment cost contributions of the communities was considered as unfavourable for the poor. Sege community in the Dangme East District for example reverted to the original price earlier than the date announced by the WSDB for the purpose of making the water affordable for the poor in their society.

4.7. Hygiene and Environmental Sanitation consideration

Though an integral part of the Project implementation, there has not been much improvement in hygiene and sanitation practices in the beneficiary communities. The poor sanitation situation is prominent in the big communities and in the communities along the coast. Open defecation is common in most of the communities. In order to address the problem, CWSA and GAR used part of the Project funds to construct six Water Closets (WCs) in the Dangme East and Dangme West Districts. These six WCs were supplied with water from the 3DWSS. The management, operation and maintenance of the WCs have been franchised to the private sector.

There is however virtually no activity on hygiene and sanitation since the scheme was handed over to the WSDB. The focus of the WSDB and the WATSANs has mainly been on water. Even though 2 percent of the total revenue is lodged in the Sanitation Account¹¹ every month, the WSDB is yet to utilise the amount because no concrete plans for hygiene and sanitation promotion have so far been developed.

¹¹ Total amount was not readily available. Information on account was yet to be compiled in an annual financial report of the WSDB.

5. CONCLUSION AND RECOMMENDATIONS

The implementation of the project and the partnership has generated a wealth of lessons from the project initiation to completion. These are:

5.1. The need for a WSDB with technical and financial capabilities

The size and complexity in the management of a scheme such as the 3-DWSS requires a WSDB with members who have financial and technical acumen. Expertise in these areas is required on the Board to enable it to perform its assigned roles and responsibilities. Their technical and financial expertise should be in accounting – for the analysis and interpretation of financial data and reports presented by the PSO, management, engineering among others. In the current management model, this is absent.

In as much as community participation and management of rural water schemes should be promoted, there is also the need to have people with requisite expertise on the WSDB. In a situation where people of such calibre are not available on the WSDB as is the case with the current model, a WSDB should be encouraged to engage the services of people with this expertise on contractual basis to help in an independent assessment of the PSO. Also, the roles of a WSDB with inadequate technical capacity can be reviewed and modified as appropriate.

The presence of the Planning Officers on the WSDB as co-opted members was very useful in this instance. Local government, as legal owners of rural water systems must continue to build the capacity of the WATSANs and the WSDBs to scale up community management of the systems. DAs can also perform their monitoring and supervisory roles adequately when CWSA steps up its post construction support by providing training for new government appointees, newly elected Assembly members and newly posted DA staff.

5.2. The need to avoid Political Interference

The involvement of Assembly members in consultative meetings prior to the signing of the Partnership Agreement and in project progress meetings was desirable. It promoted transparency in the selection of the private partner and provided the platform for effective collaboration between the DAs, the communities and the PSO. However, in some instances this became the source of political interference as in the case of recent takeover of WATSAN accounts and the collection of revenue from vendors by Assembly members. Political interference in the day to day operation and management of such a complex system as the 3-DWSS could easily introduce factionalism which is detrimental to the success and sustainability of a Community-Public-Private Partnership.

5.3. The need to streamline information flow

Information, Education and Communication (IEC) are very important tools for sustainability. The flow of information to communities and the management of such information between the WSDB, the WATSANs, community members and the PSO are very crucial for the Management Model adopted. The ability and willingness of the WSDB to inform the WATSANs and the PSO on decisions taken and transparent processes for implementing decisions will promote

understanding and participation among the partners. Information flow in the current Management Model is lacking due to factors already enumerated. Distortions and misinformation (deliberate or not) have been a source of conflicts and strife between the WATSANs and the PSO especially. In order to prevent an atmosphere of increasing apprehension, anxiety and suspicion among some communities about the PSO, the perceived alienation of WATSANs by the PSO and a half-hearted WSDB, DAs should assist WSDBs to develop effective communication channels to ease information dissemination from the WSDB to the WATSANs.

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