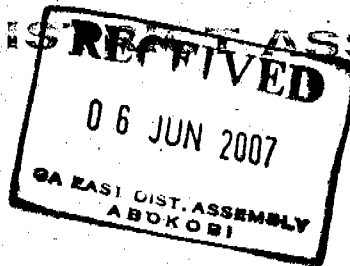


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GA EAST DIST ASSEMBLY



Facilities Management Plan

PANTANG AREA WATER AND SANITATION DEVELOPMENT BOARD

March, 2006

Prepared by
Fosat Consult Ltd.

824 GHA06 - 19350

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Barcode 19350
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Acronyms

CBO	Community-based Organisation
CWSA	Community Water and Sanitation Agency
DA	District Assembly
DWST	District Water and Sanitation Team
FMP	Facilities Management Plan
GEDA	Ga East District Assembly
GHC	Ghanaian Cedis
GWCL	Ghana Water Company Limited
km	Kilometre
KVIP	Kumasi Ventilated Improved Pit latrine
lpd	Litres per day
Lps	Litres per second
M	Metres
Mm	Millimetres
NGO	Non-government Organisation
O&M	Operation and Maintenance
RWST	Regional Water and Sanitation Team
STWSSP	Small Towns Water and Sanitation Project
USD	United States dollars
VIP	Ventilated Improved Pit latrine
WATSAN	Water and Sanitation Committee
WC	Water closet
WSDB	Water and Sanitation Development Board

1 INTRODUCTION

The Community Water and Sanitation Agency (CWSA), Greater Accra Region (GAR), has facilitated the provision of a Rural Piped Water Scheme to serve eleven (11) communities in Pantang area in the Ga East District of the Greater Accra Region. The project was implemented under a cost-sharing arrangement amongst the Government of Ghana supported by Danida and the beneficiary communities on a ratio 95:5 respectively. Additionally, user communities were required to be fully responsible for the funding and management of the operation and maintenance of the facility. As part of the implementation strategy, community management structures namely, WATSAN Committees for each community and a WSDB for the scheme were established and trained to enable smooth assumption of this management responsibility.

This document is termed Facilities Management Plan (FMP) and its purpose is to guide the work of the WSDB in operating, maintaining and managing the facility.

The document reflects the priorities and choices of the eleven (11) beneficiary communities with regard to improvement of their water supply and its future management. It is based on information collected and discussions held between project implementation staff, the Ga East District Assembly and representatives of the various beneficiary communities. It also specifies the roles and responsibilities of the District Assembly,

This document also contains the socio-economic profile of the communities as well as an account of their water supply, hygiene and sanitation status. The description of the water supply system, its investment and operation and maintenance costs have also been included. Finally, it provides an overview of the agreed organisational arrangements and procedures for the administrative and financial management of the scheme.

2 COMMUNITY PROFILE

2.1 Location

The beneficiary communities of the Pantang Area Water Supply and Sanitation scheme are located in the Ga East District in the Greater Accra region. The communities, numbered 11, are situated within 3km radius in the north-eastern part of Accra and measured close to 13 km from Madina, the nearest suburb of Accra. The topography of the area is generally flat with sandy/loamy soil characteristics. The rainfall pattern is bi-modal with an annual mean of about 1000mm. February and April are the hottest months with an average mean temperature of 27°C and 82% humidity during the year.

Notwithstanding the proximity of the area to the city of Accra, the communities have general characteristics of rural settlements evidenced by unplanned layout, poor infrastructure and unavailability of basic social amenities. There are however, sites earmarked for postal services, educational and health facilities, industry and markets in a general layout of the project area

2.2 Social Characteristics

2.2.1 Ethnicity and Religion

Most of the communities in the project area are heterogeneous settler communities with residents being immigrants consisting of Gas from other parts of the Greater Accra Region, Ewes, Akans and Northerners. The predominant language spoken by almost everyone in the area is Ga. Other languages that are widely spoken include Ewe and Twi.

The main identifiable forms of religion are Christianity, Islam and Traditional worshippers / pagans. About 67% of the population are Christians, 15% Moslems and 18% Traditional worshippers and pagans. Religious platforms provide effective avenues for information dissemination and fund mobilisation in the area. Most public fund raising programmes such as harvests are centred on churches.

2.2.2 Population

The project communities have a combined total population of 8,374 living in 561 households. This comprises 5,269 adults and 3,105 children with an average of 9 persons per household. The population distribution by communities is shown in Table 2.1 below.

Project Community	No. of household	No. of persons/household	Population		Total pop
			Under 18 years	Over 18 years	
Abladjei	20	8	71	79	150
Aborman	48	8	193	194	387
Adjako/Zion City	29	9	94	166	260
Akporman	48	10	234	342	576
Ashongman	205	8	798	905	1,703
Boi	84	7	266	352	618
Drivergah	24	7	81	80	161
Onyamekrom	20	8	82	81	163
Pantang Hospital	-	-	915	2,642	3,557
Pantang Village	76	10	362	403	765
Sempeni	7	5	14	20	34
Total	561		3,105	5,269	8,374

(Sources: August Survey, Holix Consult)

2.3 Institutional Characteristics

2.3.1 Education

The level of formal education among the resident adult population is relatively high and majority of children of school-going age have been enrolled. However, as regards provision of educational facilities only three communities, including Ashongman Village, Pantang Village and Pantang Hospital have public schools. Children from the remaining communities walk relatively long distances to attend schools in other communities. A few people send their wards to schools in the metropolis apparently due the lack of adequate facilities and trained teachers in the few schools in the project area. Table 3.3 indicates the state of educational institutions, staff strength, enrolment details and available facilities in project area.

Community	School	Enrolment		Total	Staff	Facilities	
		Boys	Girls			Water	Latrines
Ashongman	DA Nursery	40	26	66	20	No water supply	No latrines
	DA Primary A	104	135	239			
	DA Primary B	131	117	248			
	DA JSS						
Pantang	Presby Primary	103	127	230	7	Rain water	No latrine
	DA JSS	54	51	105	7	No water	No latrine
	Nursery (Private)			40	3		
Pantang Hospital	Pantang Nursery			40		GWCL system	W/C

	Pantang Primary -			370	18	(Does not flow)	
	Pantang JSS			200	12		
	Nurses Training College			900			

2.3.2 Health Institutions

Communities in the project area are privileged with the services of Pantang Hospital and Abokobi Health Centre which are located close by. Besides these and several private clinics and maternity homes, residents in the area also have quick access to all the major health facilities in and around Accra. Apart from the normal health services in the hospitals, doctors and nurses also organise outreach programmes which enable people to receive health services in their various communities.

2.3.3 Religious Institutions

There are about twenty different religious denominations present in the project area. Prominent among them are:

- The Presbyterian Church of Ghana
- The Church of Pentecost
- The Methodist Church
- Elim Christian Centre
- International Central Gospel Church
- The Twelve Apostles Church

The Ahmadiya Moslem Mission has also established a Mosque at Ashongman as the only Islamic mission operating in the area.

Aside places of worship, none of the religious missions in the area has engaged in the provision of social amenities such as schools, health or water supply facilities for the people. They however provide relevant platforms and forums for dissemination of information on issues concerning development.

2.3.4 Non-governmental / Community-based Organisations (NGOs / CBOs)

Boi Residents Association: Membership of this association is made up of mostly non-indigenous residents who have come from other parts of Ghana and settled in the community. The association aims at fostering unity and welfare services for members. Currently the group has initiated

a project to provide a library complex at Boi as a contribution towards development in the area.

Ekome Fee Mor Group: This is a women's group based at Pantang. Their objective has been to mobilise financial resources to support members to enable them engage in income generating ventures.

Abokobi Women's Association (AWA): This is a women's group which also engages in mobilising women in the area and supporting them through training in various employable skills. Although the group is based at Abokobi, there are branches at Pantang and Boi where they have training centres with facilities for learning batik, tie & dye, biscuit and jam preparation. The group also has production units for production of kenkey in large quantities for sale in the area.

2.4 Leadership and Organisation

2.4.1 Traditional Leadership

Communities in the area can be grouped under three separate traditional councils in the Greater Accra Region. These include Osu, Teshie and La. It is not clear which communities are ruled by the various traditional councils. This could not be ascertained in view of the frequent chieftaincy and land disputes that prevail in the area. The main functions of the traditional heads in the various communities include supervision of sales of stool lands and sometimes settlement of domestic and other local conflicts.

2.4.2 Political Leadership

Communities in the project area are under the political jurisdiction of the Ga East District Assembly headed by the District Chief Executive. The area forms part of two constituencies, namely: Abokobi-Madina and Kwabenya-Dome which are represented in Parliament by two members of Parliament. At the district level, there are three Electoral Areas each of which is represented at the Ga East District Assembly by their respective elected Assembly members. They include:

- Ashongman Electoral Area covering Ashongman and Abladjei,
- Abokobi Electoral Area covering Boi, Akporman and Adjako and
- Pantang -Electoral Area covering Pantang, Aboman/Sempeni, Nyamekrom

The Town/Area Councils, Unit Committees, the Assembly members and Members of Parliament assist the District Assembly to plan and implement development programmes and projects for the area.

2.5 Economic Activities

Economic activities in the area are identified in three sectors, namely, petty trading and small businesses, subsistence farming and formal employment (mainly outside the area).

About 55% of the economically active populations especially in the larger communities are engaged in the service centered activities such as petty trading and small businesses. This sector comprises predominantly women who engage in the retail of provisions, foodstuff and other household supplies. Subsistence farming engages 20% of the people including settler farmers from various parts of Ghana. People involved in the formal employment sector also constitute about 20% of the active population. The activities of these people are mostly based outside the communities.

3 EXISTING WATER SUPPLY

3.1 Overview of Water supply

Apart from five boreholes fitted with hand-pumps located in Ashongman, Boi, Onyamekrom and Akporman, the project area has no water supply point providing potable water. Most people rely mainly on tanker services for their domestic water requirements. There are also a few natural sources such as ponds, dams and streams, which residents use for limited purposes such as washing and irrigation. Aside their seasonal availability, water from these sources have very bad quality resulting from exposure to atmospheric and human pollution thus posing serious health risk to the user communities. The table below provides summary of the water supply situation in the area.

3.1.1 Boreholes

There are five (5) boreholes provided to serve the water needs of some communities in the project area. However, only three are fitted with hand-pumps and the remaining two are capped. Besides the insufficient number, most of the boreholes are seasonal in water yield, highly saline and therefore have limited uses.

3.1.2 Hand-dug Wells

There are 24 hand-dug wells in the area, 17 of which belong to private individuals who allow community members to use the water free of charge. Most of the structures are not properly protected and are therefore polluted. However, water from these facilities is used for most domestic purposes including cooking and drinking.

3.1.2 Existing Water Sources in the area

Dams, ponds and streams constitute the most widely used water sources in the area. These surface water bodies, which are found in almost every community, are heavily polluted because of exposure to atmospheric impurities and human activities in the area. In spite of the health risks, residents rely on these sources for most domestic purposes including washing, cooking and drinking. (See Table 3.1 below)

Table 3.1 below shows distribution of the various water sources in the area.

Community	Water source	Qty	Ownership	Yield	Water quality	Payment	Uses				
Ashongman	Borehole	1	Communal	Capped	NA	NA	NA				
	Dam	1		Seasonal	Polluted, coloured, hard.	Free	Washing, irrigation				
	Stream	1									
	Pond	1									
	Dugout well	5	Private	Perennial	Good	Free	Drinking, washing				
Drivergah	Dugout well	1	Communal	Perennial	Good	Free	Drinking, washing				
Abomman	Borehole	1	Communal	Seasonal	Saline	Free					
	Pond	5			Poor						
	Dugout well	2	Private	Perennial	Good		Drinking, washing				
Sempeni	Stream	1	Communal	Seasonal	Poor	Free	Drinking, washing				
	Dugout well	1	Private	Seasonal	Poor	¢200/bkt.	Drinking, washing				
Boi	Borehole	1	Communal	Perennial	Saline	Free					
	Stream	1		Perennial	Good						
	Pond	1		Seasonal	Poor						
	Dugout well	7	Private	Perennial	Poor	¢200/bkt.	Drinking, washing				
Nyamekrom	Borehole	1	Communal								
	Stream	1						Seasonal	Good	Free	Washing
	Pond	1						Perennial	Good		
	Dugout well	1						Seasonal	Fair		Drinking, washing
Akporman	Borehole	1	Communal	Seasonal	Saline	Free					
	Stream	1			Polluted						
	Dugout well	1			Polluted			Drinking			
Abladjei	Dam	1	Communal	Seasonal	Polluted	Free					
	Pond	3									
	Dugout well	2						¢1000	Drinking, washing		
Pantang	Pond	7	Communal	Seasonal	Polluted	Free	Washing, irrigation				
	Dugout well	4					Washing				
Pantang Hospital											

3.1.3 Tanker Services

Majority of community members also rely on services provided by tanker truck owners who draw water from various locations for sale in the communities. Water from this source is believed to be pipe-borne and therefore is used for cooking and drinking purposes. The average consumption rate is about 6 buckets per household per day.

3.2 Costs of Water

A bucket size 34 (18 lit.) of water supplied through tanker services costs between ₦1,000 and ₦1,400. This means an average household spends not less than ₦6,000 on water everyday. As regards the use of water from the traditional (natural) sources, households spend very little money on water. However, besides the health risks posed by these sources, women and children spend significant part of their time fetching water, as most of the sources are located far away from the residential areas.

3.3 Need for Safe Drinking Water

Most of the people in the project area rely on either unsafe sources (polluted surface water bodies) or very expensive water supply (tanker services). Only a few people have access to boreholes. The situation poses great threat to the health of the people and therefore requires urgent intervention by provision of easily accessible and affordable water supply for the area.

3.4 Commitment to Pay for and Maintain the New Water Supply System

Although during interactions all communities expressed their willingness to pay for and maintain the new water supply scheme, the practical aspect has not been encouraging. Community contribution towards capital cost has been extremely slow in spite of intensive mobilization and facilitation. This indicates that the communities will be unable to generate funds for major replacements or repairs. Appropriate operation and maintenance system is required to ensure efficient running of the scheme in order to obtain enough revenue, part of which can be reserved for future rehabilitation

4 CONCEPTUAL DESIGN

4.1 Choice of Technology

The selected technological option is to mechanize a 60m³/h borehole located at Drivergah. Water will continuously serve the Pantang Hospital Water Supply System and the other project communities through a 200m³ ground level reservoir.

4.2 Design Criteria

The planning horizon is over a ten-year period starting from the year 2004. The design is based on the design guidelines presented in the Small Towns Sector Policy of March 2003.

The main design criteria are:

Table 4-1: Key Design Parameters

Design period	10 years
Per capita water consumption from standpipe	20l/d
Per capita water consumption for house connection	60l/d
Population collecting from standpipes	80 %
Population get water from house connection	20 %
Daily Peak Water Demand factor	1.2
Hourly Peak Water Demand factor	2.2
Population per standpipe (2 taps/standpipe)	600
Unaccounted for Water	20 %
Maximum pumping hours	16 h
Maximum pressure in distribution network	4.5 bar
Minimum Residual pressure	0.5 bar

4.3 Population and Water Demand Projections

4.3.1 Population projection

Accurate estimation of water demand is essential for the determination of the required capacity of the new system. For this design, the regional population growth rate of 4.3% has been assumed. The present total population of beneficiary communities is 8,374. Using the regional growth rate of 4.3%, the projected population for 10 years is computed as 12,758.

4.3.2 Water Demand Projection

	Population	Water demand
Present situation	8,374	184 m ³ /day

Total Demand including losses	-	221 m ³ /day
Projections for 10 years	12,758	337 m ³ /day
Peak daily demand	-	404 m ³ /day

4.4 Components of the System

The Pantang Area Water Supply Scheme consists of the following components:

- Mechanised borehole located at Drivergah
- Pump-house, head-works and necessary fittings
- Distribution system linking the Pantang hospital water supply system and 21 standpipes in the other communities
- A number of house connections

5 COST ANALYSIS

5.1 Investment Costs

The initial investment was generally determined on the basis of current international prices in Ghana for supply and installation of the water supply components. In this case more precise costs were available by pricing the BOQ used for the detailed design. It is envisaged that each item will be replaced after its respective lifetime. The residual value at the end of the planning horizon is calculated as positive cash flow for the facility.

The total capital investment cost of the project based on 2014 planning forecast is computed as follows:

Table 5-1 Capital costs for Pantang Area Water Supply Scheme

ITEM	DESCRIPTION	QTY	AMOUNT (GHC)
1.	General Items - Civil Works	1	303,163,980.00
2.	Pump installation	1	309,968,050.00
3.	Pipe Works		
	- Transmission mains (100mm)	2,789.5m	296,190,050.00
	- Distribution Mains (OD 50 - 150mm)	17,552m	1,787,562,852.80
4.	Standpipes	21	103,744,326.00
5.	Reservoirs	1	551,494,624.00
6.	Generator set & House	1	181,722,650.00
7.	Additional Works		47,835,470.00
8.	Rehabilitation Works at Pantang Hospital		-
	Sub-Total		3,581,682,002.80
	Contingencies (10% are built in each component)		358,168,200.28
	Grand Total		3,939,850,203.08

The sub-total of ₵3,581,682,002.80 is the total certified payment up to Interim Payment Certificate (IPC) No.4. 10% of this sub-total has been computed as contingencies to obtain the grand total. The Consultant, Holix Consult, confirmed that extra works has been done awaiting confirmation for payment by CWSA -GAR. This means that the amounts quoted above will increase

5.2. Operation and Maintenance Costs

The initial operation and maintenance cost for the scheme could have been estimated from the itemized cost of all installations as presented in the as-built design report of the technical consultant. These data were however not immediately available as required. The required data would be gathered by the operating staff during the first year of operating the system for a more realistic calculation of the O&M costs.

5.3. Tariffs

Based on data collected from similar schemes in the area the following initial tariff has been estimated pending the collection of realistic data for actual tariff calculation.

- Price per m³ (Private connections) ₦13,000 per cubic metre
- Price per m³ (Public standposts) ₦11,000 per cubic metre
- Price per 18-litre bucket (size 34) ₦200

The tariffs shall be reviewed after one year of operations. Subsequent reviews would be dependent on changing price levels and other factors to be determined by the Board.

6 FINANCING OF THE PROJECT

6.1 Source of Funds

Total investment cost of the project amounts to 3,939,8502. The government of Ghana, supported by Danida, Ga East District Assembly and the beneficiary communities will shared the cost in the following manner:

GOG with support from Danida	-	90%
Ga East District Assembly	-	5%
Beneficiary Communities	-	5%

Besides the 90% contribution, the GOG with support from Danida will also bear the costs of the following consultancy services:

- Surveys
- Design
- Borehole construction and other civil works
- Supervision
- Training and other capacity building activities

Cash contributions from the beneficiary communities is an essential part of the requirements for successful accomplishment of project objectives since these will demonstrate the people's commitment as well as ability to cater for operation and maintenance costs. Community cash contributions were distributed on basis of population as well as number of stand-posts provided as shown in the table below:

Community	Population	Stand-posts	Amount (GHC)
1. Abladjei	150	1	3,900,000
2. Aborman	387	1	10,000,000
3. Adjako/ Zion City	260	2	6,724,000
4. Akporman	576	3	15,000,000
5. Ashongman	1,703	5	44,000,000
6. Boi	618	2	16,000,000
7. Drivergah	161	1	4,165,000
8. Nyamekrom	163	1	4,200,000
9. Pantang Hospital	3,557	Existing system	92,000,000
10. Pantang Community	765	3	19,900,000
11. Sampeni	34	1	867,000
12. Land owner at Drivergah	-	1	-
Total	8,374	21	216,756,000

7 OPERATION AND MAINTENANCE MANAGEMENT PLAN

7.1 Current Management

Prior to this intervention, only Pantang Hospital enjoyed piped water supply provided by GWCL. The facility was operated and managed by staff of GWCL as part of the urban water supply system for Accra. The Hospital being a public institution had its bills paid from government sources and therefore was not directly involved in the operation and maintenance of the facility. Four other communities were provided with point sources and had WATSANs established to manage the facilities. All the WATSANs however became dysfunctional because the community members claimed they were not using the water due to bad quality.

7.2 Administrative Arrangements

7.2.1 Administrative Structure

The proposed administrative structure of the Pantang Area Water Supply Scheme has a two-tier structure comprising eleven WATSAN committees formed by each beneficiary community and a joint WSDB.

The WSDB is made up of two representatives, one male and one female, from each of the eleven community WATSAN committees. The Board has an 11-member executive committee consisting of a chairperson, secretary, treasurer, technical officer, hygiene & sanitation officer and six other co-opted members from communities that have none of their reps among the elected executive members. At least one third of the WSDB membership are women. In addition all elected Assembly members shall also be co-opted as ex-officio members of the Board. Further details are contained in the WSDB Constitution.

7.2.2 Management System

The two main options of Direct and Indirect Management were considered for adoption in the management of the system. The WSDB in consultation with the communities and with approval of the Ga East District Assembly has adopted the option of Direct Management. However, in case the Direct Management proves unfeasible in the future, the WSDB in consultation with the DA may decide to change for a different management option.

This means that the communities through the WSDB and hired staff operates and maintains the water supply system on their own. They shall be supported by skilled artisans from within the community whose services may be procured when necessary. The WSDB assigns tasks to the employees, supervises and monitors them, and pays their salary or commission. The WSDB also ensures that the water system is functioning and calls a maintenance company for repairs when the need arises.

Experience shows that certain functions like preparation of financial reports, internal audits, or some aspects of planned maintenance are too complicated for the WSDB and its staff to fulfill. The WSDB may sign a

contract with a private firm(s) to perform the specialized technical, financial and administrative functions on a periodic basis.

It should be noted that with the high level of apathy that prevails in all communities in the service area, the GEDA should critically consider the adoption of other management options to ensure effective operation and maintenance management of the scheme. Apparently community members require some time for attitudinal changes before assuming full management responsibilities of the new system. Under the prevailing circumstances the Direct Community Management option may be detrimental to sustainability of the system.

7.2.3 Roles and responsibilities of key players

Roles of the WSDB

The Water Board is the major decision making body in matters of water supply and sanitation in the community and is overall responsible for the management of the water system, in particular the following activities:

- Participate in the planning and support implementation of water supply facilities;
- Adopt rules and regulations;
- Conduct regular board meetings;
- Ensure water system is properly managed;
- Ensure water system is properly maintained and as scheduled;
- Undertake financial planning and budgeting and monitoring the financial affairs;
- Employ and monitor staff for the day to day operation and maintenance;
- Make all payments: to staff (workers), buy spare parts, pay electricity bills, maintenance costs etc.;
- Set water tariffs for standpipes and house connections and decide on tariff collection system;
- Propose necessary bye-laws to regulate water use, enforce tariffs and other obligations and promote sanitation and hygiene practices within the community;
- Keep water production and financial records;
- Render accounts to the community either yearly or half yearly
- Report to the DA.

Roles of WATSAN Committees

The WATSAN Committees assist the Water Board in carrying out its responsibilities and facilitate easy communication between the water users and the Water Board. The WATSAN Committees also assist in the technical monitoring of the facilities and give feed back on disorders, defects etc.

Roles of the District Assembly

The DAs are the highest political authority at the local level and they have considerable responsibility in ensuring that water service delivery is sustainable. The WSDB should relate to the DA in the management of small towns water supply because:

- Ownership of small town water supply facilities is vested in the DA on behalf of the community;
- WSDB are set up with the authority of the DA which then vests in them the power to manage the water system on behalf of the community.
- DAs have the ultimate responsibility to ensure that potable water reaches the people. This means that they will provide financial resources for building new water supply facilities, rehabilitating old ones and assisting ongoing ones to provide water on a sustainable basis.

The roles and responsibilities of the District Assembly are to:

- Provide a legal framework for community based water supply management;
- Provide support to the Water Board in all matters of water supply management;
- Ensure that the Water Board operates on a sound financial basis;
- Provide auditors to periodically examine the Water Board's accounts;
- Approve tariffs set by the Water Board;
- Audit the accounts of the Water Board;
- Examine and approve water tariffs;
- Approve rules and regulations in respect of use and protection of the water supply system;
- Monitor operation and maintenance.

7.2.4 Management staff and their roles

The operating staff shall comprise:

Technical Operator and Assistant Operator/Plumber:

- Ensures daily functioning of the pumping system
- Pumps water into overhead/elevated tank
- Ensures the maintenance of the system
- Detects faults and breakdowns and reports them to WSDB
- Calls on maintenance company to undertake repairs, but informs WSDB before taking the action
- Keeps the stock of spare parts, informs WSDB Treasurer when the need arises to replenish stock
- Keeps the main supply plan and up-to-date information on the system
- Keeps records on production and other technical data

Accountant / Office Manager

- Prepares household and other bills
- Prepares daily, monthly and yearly financial records and prepares reports and accounting documents for submission to the water board
- Pays salaries, allowances and other
- Sends all monies collected to WSDB
- Writes memos and general correspondence
- Filing and office organisation

Revenue Collector

- Read metres
- Participates at the standpipe attendants recruitment by the WSDB
- Controls the standpipe attendants
- Collects the daily income from the standpipes and fees for house connections on a monthly basis and pays it to the Treasurer/Accountant.
- Keeps cash books

Standpipe Attendants (as many as number of standpipes)

- Opens and closes the standpipes as agreed
- Sells water at the agreed price
- Keeps the standpipe environment tidy
- Organises water collection in case of over crowding
- Reports on technical defects
- Directly responsible to the Revenue Collector.

Security man/men (max. 2)

- Guard the abstraction and storage system

7.3 Financial Management Arrangements

The WSDB's financial management arrangements are to be guided by sound policies and decisions to ensure efficient use of funds accruing from water sales and other related sources as well as ensure the long term sustenance of the scheme as a whole. The arrangements include:

Operating budget

The WSDB operating budget shall be based on an annual detailed and realistic costs relating to operation and maintenance, WSDB administrative costs and expenses, etc. with regard to the total revenue from water sales.

Budget preparation, review and appraisal

The accountant together with the WSDB treasurer in consultation with the other members of the Board will prepare a detailed budget of the system each year for review. The WSDB will then propose to the community and the District Assembly tariff options that will ensure financial viability of the systems.

Accounting system for management of funds

The WSDB book-keeping system should ensure openness in disbursement of funds and financial accountability. District Assembly's accounting staff will regularly undertake checks to ensure compliance with standard accounting principles and procedures.

Operation of bank accounts

The WSDB shall open and operate two bank accounts. These are:

- Operational Account: This may be Current Bank Account or Savings Account or both for meeting the day-to-day operations of the system.
- Reserve Fund Account: This fund is built up in a special bank account over the years for major replacements, system rehabilitation and expansion in the future. Withdrawal from this account can only be authorised by the DA.

Auditing arrangements

The District Assembly will provide an external auditor for an annual auditing of WSDB accounts to ensure adherence to accepted financial management practices.

Modality for payment of water tariffs

As far as the modalities of payment for water is concerned the communities have opted for the "Pay as you fetch (PAYF)" method instead of monthly or quarterly etc. rates per household or person. This system is organised as follows:

- Each standpipe is provided with a water meter. Water vendors will be responsible for the water sale at the standpipes whose taps will be locked when the vendors are not around. The vendors will follow agreed upon opening hours. The vendors will receive payments for the water fetched at the standpipe in accordance with the agreed tariff per unit and submit the collected money to the WATSAN treasurer on a daily basis. At the end of the month the payments will be balanced against the meter reading and the vendors will be paid their commission of 20 % of the revenue.
- Households will pay an agreed connection fee for house connections. Payments for consumption will be made soon after receipt of the monthly bill which is prepared on basis of the monthly meter reading for the household.

7.4 Operation and Maintenance Arrangements

The community lacks the full complement of personnel to handle all the operations and maintenance requirements of the water system. The WSDB though intends to hire a number of staff to handle certain aspects of the system's operations and maintenance and may also sublet certain repairs that are too complicated for its staff to carry out. The Board will approach CWSA and the District Assembly for assistance in selecting competent private contractors to render advanced technical services required for ensuring sound and continuous operation of the facility.

Identifying and selecting private sector operators

In selecting suitable maintenance firms the following procedures will be used:

- The WSDB in conjunction with the District Assembly invite a short-list of maintenance companies to submit detailed proposals for specified assignments
- Evaluation and pre-qualification of companies which submitted proposals, taking into consideration their experience in similar assignments, financial standing and equipment holding
- Submission of bids by pre-qualified agencies for the award of short term assignments
- Provision of appropriate orientation to selected operator

Contractual arrangement with private operators

The private operator will be engaged under the terms of a short term contract arrangement to provide specified technical services in the operation and maintenance of the water system. The DA supported by CWSA will provide support to the WSDB and the community in the selection of the operator. The WSDB will review the contract terms at the end of the contract period.

7.5 WSDDB Development Plan

Staff development

The WSDDB will solicit training programmes, exchange visits with other communities and other capacity building opportunities to improve upon the performance of its staff.

Organisation and management support to WSDDB

The WSDDB will need additional capacity building to enable it cope with its new roles and the load of responsibilities that accompany it. CWSA and EVORAP will support it with training in the following subject areas:

- Financial management
- Administrative management
- Human resource management
- Business planning
- Contract management

Service delivery to the community

WSDDB will ensure supervised and uninterrupted delivery of potable water and will adopt customer friendly approaches and simplified procedures to streamline processes through which interested households can have water connections. New households in developing parts of the community will be informed of modalities for accessing the service.

Improvement in water sales

Wrong strategies for water sales, poor pricing and failure to anticipate seasonal changes in demand for water can adversely affect cost recovery. The Water Board should ensure that water is sold at a level that will enable it to attain full cost recovery.

Reduction in unaccounted-for-water

The Water Board will employ a plumber as one of its operating staff for the early detection of leakages due to pipe bursts, illegal connections and other faults which lead to unaccounted for water and rectify them without delay.

Water resources protection

Water resources in the community require adequate protection and proper management to conserve it and thereby ensure sustainable use. WSDDB with the support of the District Assembly will adopt the following conservation methods:

- Catchments area protection
- Prevent the felling of trees along river banks to reduce their exposure to excessive sunlight in order to minimize evaporation

- Prevent source pollution by regulating effluent discharges near water sources
- Continuous hydrogeological investigations to facilitate management of abstraction and ensure sustainable use.

Operation and maintenance arrangements

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8 HEALTH, HYGIENE AND SANITATION

8.1 Health

The Pantang Hospital, Abokobi Health Centre and other private clinics within the vicinity of the supply area, address the Healthcare needs of the communities. Referral cases are transferred to other hospitals where facilities exist to handle more complex cases. These include the Korle Bu Teaching Hospital, 37 Military Hospital, Ridge Hospital and, occasionally, polyclinics.

The commonest water related diseases that afflict both adults and children in the area include malaria, diarrhoea and skin diseases.

8.2 Sanitation

8.2.1 Latrines

The supply area has relatively few latrine facilities. This is indicative of the high prevalence of indiscriminate defecation usually referred to as 'free range' in the area. There are only 50 household latrines and 1 institutional latrine with a few more under construction. Pantang Hospital however has better latrine facilities including about 150 water closets apparently, because the hospital is a public institution. The table below shows existing latrine facilities and their distribution in the area.

Project Community	Toilet Facilities			
	KVIP	Pit Latrine	Mozambique	Water Closet
Ashongman	1 No. 6-seater (public)	-	14 (household)	-
Drivergah	-	1 (public)		-
Boi	-	-	16 (household)	-
Akporman	-	-	20 (household)	-
Abladzei	1 No. 8-seater (public) under construction	-	-	-
Pantang Community	-	1 (public). Under construction	-	-
Pantang Hospital	-	10 No.	-	130

8.2.2 Refuse dumps

Indiscriminate dumping of refuse in nearby bush, gullies, shallow pits and open spaces is the commonest form of waste disposal in the area. Few communities have access to improved waste disposal facilities despite their nearness to the city of Accra. Waste management therefore should constitute an integral part of the capacity building component of this intervention.

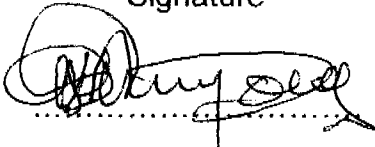
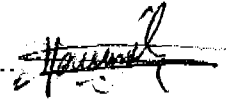
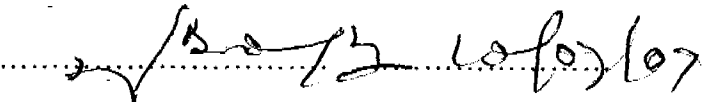
8.2.3 *Other waste disposal system*

Wastewater from bathhouses and kitchens flow to the immediate surroundings and stagnate into breeding sites for mosquitoes.

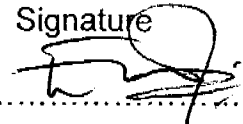
9 ACCEPTANCE OF THE FACILITIES MANAGEMENT PLAN

9.1 Endorsement of the FMP by WSDB/Community

This Facilities Management Plan (FMP) for the Pantang area Water Supply System was adopted at a community meeting held on for the common good of the community. The document provides details about decisions reached by the WSDB and the community. The community therefore authorise the WSDB Executives to sign this document as proof of the community's consent to the commitments made.

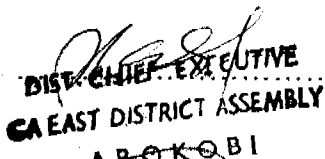
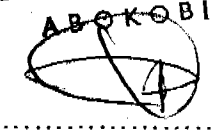
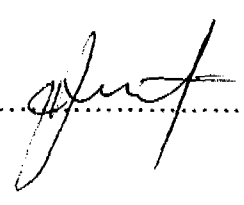
Name	Signature	Date
JR Adicampog Chairperson		10/7/07
Secretary		18-07-07
Treasurer		10/07/07

Witnessed by

Name	Signature	Date
Edem NYADUDZI		10/07/07
.....

9.2 Approval of the FMP by the DA

The Ga East District Assembly recognizing its responsibility to provide water supply to the community and its commitment to support the community ownership and management of a sustainable water supply facility do hereby approve this Facility Management Plan.

Name	Signature	Date
<i>Non Alotey</i> District Chief Executive Ga East District Assembly	 DIST. CHIEF EXECUTIVE GA EAST DISTRICT ASSEMBLY ABOKOBI	8/6/07
<i>Peter Nimo</i> District Coordinating Director Ga East District Assembly		8/6/07
<i>Jemima Lundy</i> DWST Coordinator Ga East District Assembly		8/6/07