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PROJECT DOCUMENT

of

**Rural Drinking Water Supply and Sanitation Project
in Volta Region**

GHANA

SEPTEMBER 1992

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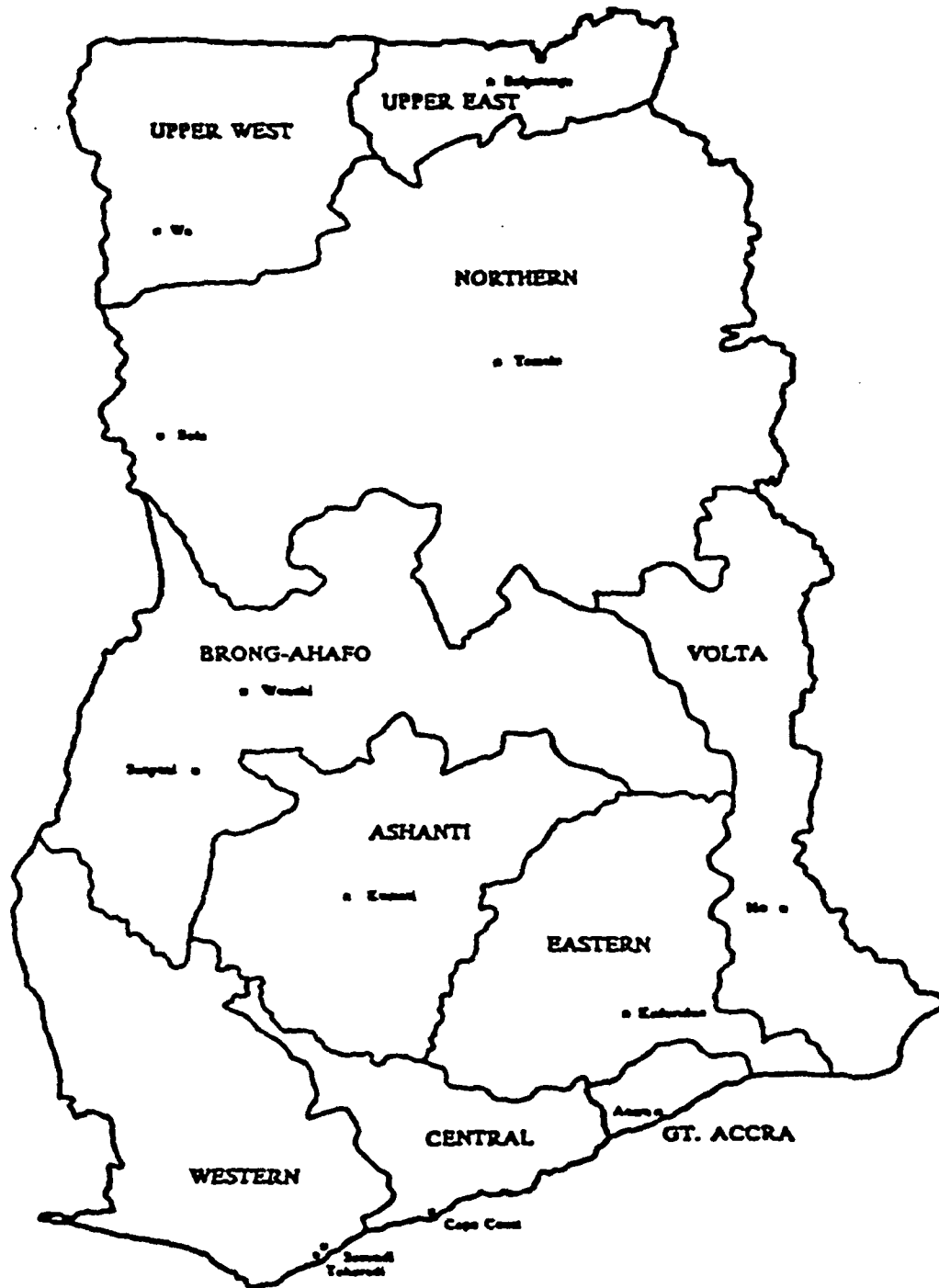
LIST OF ABBREVIATIONS

AESE	:	Hydrological Division of Architectural and Engineering Service Corporation
¢	:	Cedi (Ghanian currency)
CCCE	:	Caisse Centrale de Coopération Economique
CDR	:	Committees for the Defence of the Revolution
CIDA	:	Canadian International Development Agency
DCD	:	Department of Community Development
DMC	:	District Management Committee
DPBU	:	Development Planning and Budget Unit
DWM31	:	31st December Women's Movement
EHA	:	Environmental Health Assistants
EHSD	:	Environmental Health Services Division
ES	:	Extension Supervisors
FA	:	Field Assistant (Staff seconded to the Project from MoH and DCD)
GTZ	:	German Agency for Technical Cooperation
GWSC	:	Ghana Water and Sewerage Corporation
IFAD	:	International Fund for Agricultural Development
ITCZ	:	Inter-Tropical Convergence Zone
JICA	:	Japan International Cooperation Agency
KfW	:	Kreditanstalt für Wiederaufbau
masl	:	Metres above sea level
MC	:	Motorcycle
MIST	:	Ministry of Science and Technology
MLG	:	Ministry of Local Government
MoH	:	Ministry of Health
MSD	:	Meteorological Services Department
MTC	:	Ministry of Transport and Communication
MWH	:	Ministry of Work and Housing
NGO	:	Non-Government Organization
O&M	:	Operation and Maintenance
PAMSCAD	:	Programme of Action to Mitigate the Social Costs of Adjustment
PC	:	Project Coordinator
PD	:	Project Director
PHC	:	Primary Health Care
PNDC	:	Provisional National Defence Council
PPP	:	Pre-Project Period
PSU	:	Project Steering Unit
RPO	:	Regional Project Office
RWS/S	:	Rural Water Supply and Sanitation
TDC	:	Town Development Committee
TNC	:	Training Network Center
TOR	:	Terms of Reference
UNDP	:	United Nations Development Programme
UNICEF	:	United Nations Children's Fund
UST	:	University of Science and Technology
VIP	:	Ventilated Improved Pit (latrine)
VLOM	:	Village Level Operation & Maintenance
VORADEP	:	Volta Region Agricultural Development Project
VRA	:	Volta River Authority
Watsan	:	Water and Sanitation Committee
WB	:	World Bank
WRRI	:	Water Resources Research Institute
WVI	:	World Vision International

CURRENCY EQUIVALENTS

1 USD	=	410 Cedis
1 DKK	=	65 Cedis

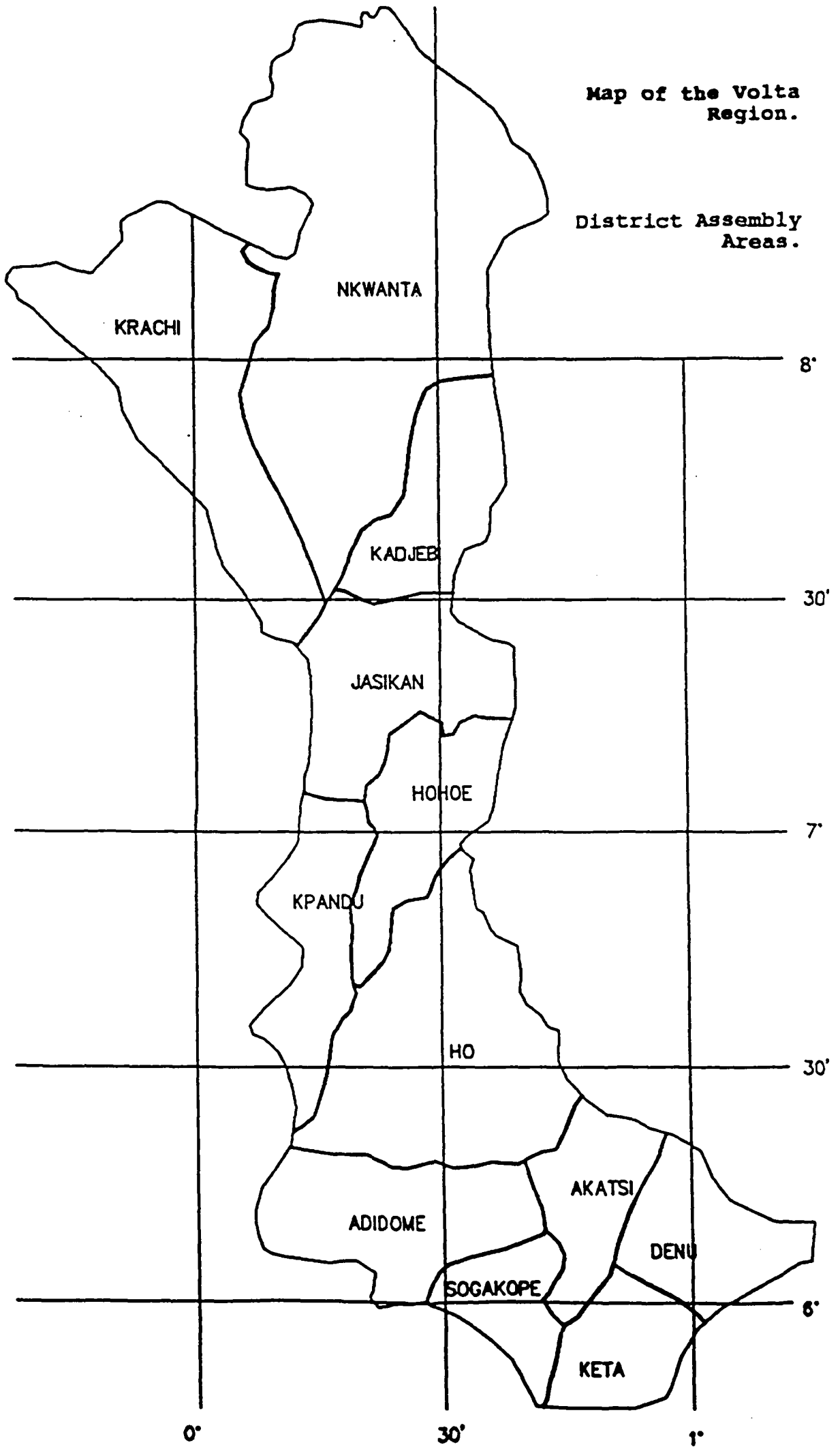
Map of the Republic of Ghana



REGIONS

Map of the Volta
Region.

District Assembly
Areas.



1. PROJECT CONTEXT.

1.1 National Water and Sanitation Sector Policy

The Government of Ghana undertook an extensive review of the national rural water supply and sanitation sector policy in 1990 and 1991 which culminated in the issuance of the Rural Water Supply and Sanitation Sector Strategy and Action Plan (hereafter referred to as the "Sector Strategy") in May 1991. This Sector Strategy was finalised only after the initial study was reviewed by all relevant Government agencies and sector active donors. The Kokrobite Conference was hosted by Government in February 1991 and it resulted in the finalised version of the Sector Strategy being adopted.

Basically the redefined sector policy calls for a decentralised approach to the operation and maintenance of water supplies and sanitation facilities with the recipient communities assuming more and more responsibilities for their water supply and sanitation facilities. The key elements of the overall rural water supply and sanitation sector strategy are as follows:

- community management of services, meaning ownership and control, as the central element of the strategy;
- a central role for the District Assemblies in supporting community management;
- a key role for the Government in promoting service provision;
- a role for the formal and informal private sector in provision of goods and services;
- ensuring equity and widespread coverage through targeted subsidies supporting basic service levels;
- a demand-driven programme, with self-selection and clear commitment by communities to enhance sustainability, and
- a special focus on women, as both the users of water as well as planners, operators and managers of community level systems.

1.2 Ongoing Activities in the Sector

Rural water supply and sanitation activities are supported throughout the country via the Ghana Water and Sewerage Corporation by numerous donors and non-government organizations. Most

notably (but not limited to) are the following:

Canada	Upper East, Upper West, and Northern Regions
Germany	Central, <u>Volta</u> , Eastern, Western, Ashanti and Brong-Ahafo Regions
Japan	Brong-Ahafo, Northern, and Western Regions
France	Central
Denmark	<u>Volta</u>
UNDP	<u>Volta</u> and Eastern Regions
UNICEF	<u>All regions</u>
UNDP /	
World Bank	Regional Water and Sanitation Group, Accra
PAMSCAD	<u>All regions</u>

Sector activities specifically targeted within Volta Region those by:

Germany (KfW)	3000 Wells Project (to finish in 1992, begun in 1975)
Denmark	Planning phase 1992, implementation 1993 - 2003
GWSC/UNDP	Water and Sanitation Management Programme
UNICEF	Wells programme
PAMSCAD	Wells and sanitation programme

The Programme of Action to Mitigate the Social Costs of Adjustment (PAMSCAD) has over the past three years been constructing hand-dug wells and public latrines throughout the country including Volta Region.

Until recently no government agency actively promoted improved sanitation services for the rural population in Volta Region. While the Ministry of Health staff in the region do "encourage" improved sanitation there are no coherent implementation programme options available to rural dwellers should they decide to invest funds and labour in the improvement of the environmental sanitation situation. The health and hygiene messages are delivered with no programmes and funding to back these messages with construction activities.

Within Jasikan and Hohoe Districts the GWSC/UNDP Water and Sanitation Management Project has made some progress during 1991 with the installation of individual ventilated improved latrines to roughly 30 households. While the project intervention is based upon the individual householder's demand and willingness to pay there is much project activity involved in the delivery of the product where the long term sustainability of the delivery mechanism is questionable.

1.3. Sector Institutions.

Ghana Water and Sewerage Corporation (GWSC).

GWSC is a state owned enterprise under the Ministry of Works and Housing and is responsible for both urban and rural water supply and sewerage. Its organisational structure and activities are dominated by an urban orientation. The organization is, however, also active in the rural areas, primarily with piped water schemes but also with boreholes.

GWSC has a regional office in the Volta Region at Ho, and it has District Managers in 7 of the 12 districts of the region. The District Managers at present are mainly responsible for piped water supplies.

The national sector strategy for rural water supply and sanitation includes the setting up of a Rural Water Division as a parallel structure to the urban operations in GWSC. This has not yet taken place, but a decision awaits a World Bank sponsored institutional study which should start in July 1992.

Ministry of Health (MOH)

MOH has staff based at the regional, district (Health Centres) and zonal levels (Health Posts). There are both curative and preventive activities, including health education and special programmes directed at the guinea worm problem.

As part of its activities, the Ministry of Health has an Environmental Health Services Division. There are Environmental Health Assistants (EHAs) who should be posted at the zonal level in the districts. However, most are at the district centres because their training has concentrated on urban health inspection activities, and they are under-employed. Most are Standard 7 leavers, and have a 2 year training at the School of Hygiene. With re-training in health and hygiene education and community mobilisation, they would be suitable extension agents. There are about 128 in the whole Region.

Department of Community Development (DCD)

DCD has a regional office in Ho. There are 84 staff based at the district offices with 53 of them being extension agents - Assistant Community Development Officers and Community Development Assistants/Mass Education Assistants. The department has suffered from personnel cutbacks, and they are understaffed at present. While their responsibilities include promotion of self-help projects including hand dug wells and latrine promotion, they have too many other duties to be able to be used as full-time extension agents for water supply and sanitation.

Local Government

The decentralised policies of government have resulted in District Assemblies playing an increasingly important role in development activities, and they will be significant institutions for ensuring sustainability of project outputs. At the community level, the Unit and Zonal Committees of the Committee for the Defence of the Revolution (CDR) together with the chieftaincy system form the local structures for planning and implementation of local development projects and community participation.

Training Institutions

GWSC has its own training programmes for the higher technical levels at one training institution. Another existing institution at Owabi has been recommended in the national strategy to become a rural water supply training centre, but this has not yet been implemented.

The Training Network Centre (TNC) of University of Science and Technology (UST) in Kumasi is the main institution concerned with the training aspects of the rural water and sanitation sector strategy, including curricula and training materials with special emphasis on software aspects. It is the most appropriate institution for implementing most of the project training needs.

1.4. Description of the Project Area.

The project area is the Volta Region, which covers an area of 20,570 km². The region can be divided into three geographic zones: the coastal plains in the south, the Voltaian sandstone basin in the north west, and the Akwapim-Togo ranges located in the central part of the Region and separating the other two geographic zones. The mean annual rainfall varies in the zone. It increases from approx. 700 mm near the coast to a maximum of approximately 1,600 mm in the central eastern area. In the north the rainfall decreases to about 1,400 mm.

The deep groundwater potential of the region is generally good except for the coastal plains where shallow aquifers must be utilized to gain sweet water. Surface water can be utilized in the central areas where an unspecified amount of springs and rivers exist which could be used for development of gravity piped schemes.

The region has an extensive road network and the Lake Volta hydropower plant supplies electricity to most towns (above 5,000 people) and electrification of villages (below 5,000

people) based on this grid takes place at an increasing speed.

The population census of 1984 determined the population of the region to be approximately 1.2. million. The census also showed that 77% lived in villages with a population below 4.000. Both the settlement pattern and household sizes vary considerably between the north and the south of the region.

2. PROJECT JUSTIFICATION.

2.1 Water and Sanitation in the Project Area

There are 932 boreholes equipped with hand pumps in the Region, many of which are not operational. Some households and communities depend upon hand dug wells, a few have small dams for drinking water; and some have gravity piped systems which again are mostly in disrepair. The majority of the population get their drinking water from rivers, streams, ponds, dug-out, etc. and these are often polluted. The 1991 Rural Water Supply and Sanitation Sector Strategy report indicated that the national average coverage for rural water supply improved services is 29%. The Volta Region rural water supply coverage is, in the same report, estimated to be 28%. Recent investigations carried out by GWSC estimate that the national coverage is close to 50%, although slightly lower in the Volta Region.

In the rural areas, some households have household latrines, while other villages depend on communal latrines. Still, part of the population depend upon the availability of open spaces just outside the villages for sanitation purposes. Awareness of public health and personal hygiene seems to be lowest in the northern part of the Region. There is a need in Phase 1 of the project implementation to better understand the existing situation in each of the districts in relation to sanitation.

In adopting the new policy of a much more decentralised operation and maintenance system for rural water supply, as a result of the Government redefined rural water supply and sanitation strategy of 1991, the issue of tariffs must be considered carefully in the design and implementation of this project. Presently (since 1986) GWSC collects tariffs on a per household basis in the rural areas where handpumps are utilised. The tariff is currently Cedis 190 per month per household.

Prior to 1986 water supply to the rural areas was free of charge. As a consequence most rural dwellers do not understand the rationale for the current collection of tariffs particularly when their handpumps are quite often out of service. Volta Region as of the end of 1991, consequently, had an arrears deficit of Cedis 23,545,000 (GWSC information) while only collecting Cedis 1,714,000 for the same year. The logistics alone in collecting tariffs from borehole users is complicated and expensive.

The KfW financed 3000 Wells Programme was begun in 1976 and in December 1981 a bi-lateral agreement was signed to establish and support Maintenance Units in each of the KfW project regions. Through this support two workshops have been established in Ho and Kpandu; in addition there is a third workshop in the north of the region which was established by the Volta Region Agricultural Development Project (VORADEP) in the early 1980s. GWSC has reported that it has cost Cedis 6,800,000 to

keep the Volta Regional Rural Water Supply Maintenance Unit operational for 1991. As they collected only Cedis 1,714,000 in tariffs the unit is operating at a considerable loss.

With normal "preventative maintenance" in the hands of the users and private sector service companies or individuals who will provide these services commercially there will still in the future be a role for GWSC in O&M services which are technically more complicated such as re-developing or de-silting of boreholes. These will likewise be performed on a "semi"-commercial basis with some form of government support required to supplement user payments for services.

It is therefore required that the existing O&M operations of GWSC be continued in the future with support from Danida initially as the KfW support will end by the end of 1993. The Danida project team will have to formulate an O&M strategy for these regional workshops during the first six months of the project. The GWSC-KfW 3000 Wells Final Report of January 1991 has a great deal of useful information contained by which the new project team can appreciate the nature of the O&M problems in the region.

Currently there is very little private sector involvement in the water supply and sanitation sector in the Volta Region. This will be changed considerably during the course of this project as the new policy placing government in the role of "promoters" and the private sector being more involved in actual construction and delivery of services. Of particular concern, in the drilling of boreholes, will be the promotion of local investment in the drilling industry to remove the GWSC monopoly of drilling at subsidised rates. It is difficult, if not impossible, to promote local investment if government subsidies of GWSC continue. A very comprehensive private sector strategy will have to be developed and nurtured during the project.

2.2 Water Related Morbidity

Looking at the ten most important diseases registered in the out-patients clinics in the Volta Region, four of them are water related and constitute more than half the cases seen in the clinics. Those are malaria (38%), diarrhoea (7%), skin infection (5%), and intestinal worms (4%).

Other less important water related diseases seen in the clinics are bilharzia, hepatitis, yaws, typhoid fever, river blindness, and guinea worm (together approximately 1.6%).

Very few cases of guinea worm diseases are reported to the clinics, primarily because people know there is no cure, when the infection is discovered. A total registration on guinea worm cases from village to village carried out by Ministry of

Health counted as much as 41,265 cases, almost the double of the number of diarrhoea cases seen in the clinics.

The areas worst affected by guinea worms are especially Adidome, Akatsi and the most southern part of Ho District, as well as Kete-Krachi and Nkwanta Districts.

2.3. Water Usage Patterns and Environmental Sanitation

Many villagers are unaware of the linkages between the water related diseases of their community and their water usage pattern. There are on the other hand ongoing efforts in the guinea worm affected areas to teach villages to filter their water. Environmental sanitation is poor in most villages, although to varying degrees.

2.4. Willingness and Ability to Pay for Water

Communities in the Volta Region make financial contributions to constructions such as feeder roads, schools and clinics. At present payment for water is a monthly tariff payment to GWSC, who then bear the responsibility for maintaining the supply systems. In some communities there is a resistance towards payment of the tariff, because villagers are dissatisfied with the service rendered. However, the contribution to other projects show that villagers are willing to pay provided the funds serve the needed purpose. Discussions with the district administration officials and village leaders indicate that although the affordability vary within the region and also within a village, households are generally able to make financial contributions. In some communities where there are water shortages at present, villagers pay Cedis 250 for a barrel (200 litres), which also is an indication of ability to pay.

2.5. Target Population

The target population will be the rural population residing in settlements from 300 to 4,000 inhabitants. The design population for a hand pump installation in accordance with the Ghanaian RWS criteria is 300 people, and by setting the upper limit at 4,000 almost all villages facing severe water supply and health problems caused by water and excreta related diseases will be included. An estimated 647,000 people live in these communities (1991) distributed in about 680 villages. Given the national annual growth rate of 3% the target population will be about 975,000 in year 2003 (the last year of implementation). The target population should also be extended to villages with less than 300 people and to rural communities above 4,000 people, provided these express a demand for water supply installations and fulfil the laid down criteria. However, they will be given a lower priority than the principal

target group.

The project aims at covering a minimum of 50% of the target population in year 2003. This is a guiding figure based upon the experience from the UNDP pilot project in two districts of the region. This means that the project can expect to reach slightly below 500,000 people during implementation.

The project will implement its activities in such a way that approximately the same level of coverage of water supply is achieved in all the different areas by the end of the total project period.

2.6. Justification for Project Support

A large proportion of the rural communities in Volta region lack a source of safe drinking water and are plagued by water and excreta related diseases. Sustained access to clean water is not, at present, set as one of the highest priorities in the communities, although the present situation points to an apparent need for a rural water supply project with built in possibility for sustained functioning covering the entire region.

This also encompasses some rehabilitation of existing water installations, health and hygiene education and a sanitation component. In order to sustain the functioning of the supply systems, it is in line with Government policy to move away from a centralised maintenance system, which has proved to render insufficient services and instead assist the communities to build up a community based O&M system.

The RWS/S Sector Strategy paper of May 1991 makes it clear that external donor support, financially as well as technically, is needed if the present adverse situation shall be improved within the foreseeable future. The Ghanaian Government has neither the financial nor the technical resources to cope with this task.

2.7. Suitability for Danida Financing

The project is suitable for Danida financing for the following main reasons:

- The beneficiaries are the rural poor exposed to water and excreta related diseases.
- Motivation and participation of the beneficiaries will be main criteria for project support.
- The beneficiaries will not be able to cover investment costs, but coverage of O&M will be within their affordab-

ility and willingness to pay.

- There will be considerable Danish software inputs in the form of long and short term consultancies, and for the proposed gravity and solar schemes hardware deliveries might come from Denmark.
- The project is in line with and complements other Danida supported programmes, e.g. the support to TNC and to education of public health personnel.
- The project also conforms with the sector strategy of the Government, which is almost identical to the Danida policy for RWS/S support.

3. PROJECT OBJECTIVES ¹

The project has been built up following the Logical Framework approach. The Logical Framework for the project has been included as Annex 5.

3.1. Development Objective

The project will contribute towards

- Better living and health conditions of the target population in the project area. This situation will be arrived at through provision of reliable and easily accessible sources of safe drinking water which are managed and sustained by the communities.

These conditions will have been further enhanced by a reduction in water and excreta related diseases through health education and household adoption of improved latrines.

3.2. Immediate Objectives

- In the communities which have been reached by the project, reliable and sustainable safe drinking water supply installations and systems are functioning through community management, which is supported by institutional structures at district level.
- Improved knowledge of hygienic and sanitary practices is applied in the communities reached by the project.
- Improved sanitary conditions function in some of the target communities.

¹ The exact quantification of objectives is not possible at this initial stage, because the project is demand driven. It is proposed that quantification is added to the objectives after the review mission (2 years after the project start). The project will have some empirical experience regarding the demand both for water and sanitation services.

4. PROJECT STRATEGY.

The overall project strategy conforms with the Kokrobite Recommendations and the Government endorsement of the strategy proposals prepared in conjunction with the Regional Water and Sanitation Group (RWSG-WA).

More specifically the project strategy includes:

- a) The project will work through the decentralised government structure with emphasis on building up planning, monitoring and community mobilisation capabilities at the district level.
- b) Provision of water supply and sanitation services will be based upon demand from rural communities in the Volta Region. Communities will apply for project intervention through the mediation of the District Assembly. The Districts will establish District Management Committees, which coordinate the interdisciplinary departmental linkages necessary for successful implementation.
- c) Subsequently, the project will require communities to set-up a Water and Sanitation Committee (Watsan Committee). The Committee will open a bank account, collect and deposit Cedis 40,000 (equivalent to USD 100) for hand-dug wells with a handpump. For the provision of hand-dug wells without a handpump, the deposit will be Cedis 10,000, and for drilled boreholes, the deposit will be set at Cedis 70,000. (These amounts will be adjusted annually for inflation). The deposits should be made prior to project support being given and should be seen as a sign of community commitment to bear the costs of operation and maintenance. The communities will also be required to provide labour where feasible.
- d) The project is essentially targeted at the rural communities living in villages between 300 and 4000 people. However, if communities below 300 people apply for support and comply with the demand requirements, the project should include such communities. Communities with more than 4000 people may also be included in the project. The conditions for such communities are that a technical and financial feasibility study is carried out by the project, and then the contribution from the community will be determined. The contribution from such communities should not only include operation and maintenance costs but also part of the capital costs. The community will then receive financial support from a special project fund if this is endorsed by the District Management Committee and a deposit is paid. The project is in particular directed at women, as they are responsible for household chores, child care and collection of water. The extension system will therefore ensure that women are centrally placed in the dialogue.

between project and community, and women's committees will therefore also be trained in health education.

The target population may be changed in the course of the project implementation, because the settlement characteristics show considerable variance within the region.

- e) The project period is proposed to be 10 years, divided into 3 phases. Phase 1 will be 4 years because it will take some time to start up project activities, Phase 2 will be 3 years and Phase 3 will be 3 years including a one year phasing out period. A rolling implementation schedule is envisaged, whereby the project will start in two districts, and at the end of Phase 1 work will be undertaken in about 5 districts. (Reference is made to the Implementation Schedule - Table 12.2.)
- f) It is recommended that Ho and Hohoe Districts be chosen as the first districts where the project should start its operations. The choice of Ho is based primarily on organisational and management considerations. The principal reason for choosing Hohoe district is that it affords the opportunity of benefitting from some of the activities of the UNDP-funded Water Supply and Sanitation Management Project, which will end in mid 1993, and which have set some district and community management structures in place.
- g) The project covers rehabilitation of existing water supply installations as well as new installations. The project will include all suitable technologies with the exception of diesel driven pump schemes, which are excluded because of their high operation costs. The technology choice of the project is thus based on cost effectiveness, financial and technical sustainability and minimization of risk for water pollution. Gravity schemes and boreholes and dug wells with hand pumps will be the preferred solutions. NIRA AF85, a VLOM type pump, is proposed for low lifting (< 12 metres) and the Ghana Modified India Mark II, a low-maintenance "semi"-VLOM type pump, as developed in the KfW supported 3,000 wells project is proposed for high lifting (> 12 metres). If other and more appropriate pump types become available during project implementation, the project may change to these.
- h) During the initial first few years of project implementation support to the current more centralised operation and maintenance system which is being supported by the KfW 3000 Wells Project is recommended. This KfW support has been ongoing for more than 10 years and has established 3 district O&M workshops. The move to the community management and community O&M of water supplies will be an evolutionary process over the period of the

project. Currently the KfW project supports the hard currency capital expenditures for the O&M system set up in Volta Region. Current tariff collections in the region cover some recurrent costs for the rural water supply O&M.

Tariffs to the rural water supply users throughout the region will be abolished and each community will be asked to establish an O&M fund of its own. For those districts which are not to be included in the project implementation during the initial period GWSC will need to carry out an extensive campaign explaining the procedures for O&M services and payments on a "as need" basis. GWSC will be requested to propose a workable solution for the non-collection of present arrears and the project will subsequently undertake to support the Maintenance Units within the region for the period of the project.

- i) All new water installations under the project will be handed over to and managed by the users. Thus repairs will be financed by the users themselves. No Government subsidies can be expected. The work can be carried out by a commercial pump supply company or local artisans (mechanics). The project will actively encourage that a supplier is made interested in setting up a training and maintenance service on commercial conditions. The project will also, if necessary, train local artisans in the work in some areas.

A study will be made of possible support to rural credit facilities so that finance will be available to rural communities for capital re-investment, i.e. replacement of pumps in the future.

- j) Private sector involvement in construction and operation and maintenance activities within the rural water supply and sanitation sector is a key element to Government's 1991 revised RWS/S sector strategy. This new approach to delivery of infrastructure and O&M services in the sector will require the identification and training of existing companies as well as the promotion of new firms interested in sector involvement. Construction activities will range from fairly small ventures in the construction of hand-dug wells to potentially much larger investments in drilling companies. One of the Kokrobite Workshop recommendations was that the GWSC Drilling Unit be commercialised and other private sector firms be encouraged to enter the field of borehole drilling.

Operation and maintenance activities will also need to move to private sector involvement during the course of the project. Identification, training, and promotion of new firms will likewise be key elements in implementing this new strategy for O&M services.

- k) The project will provide institutional support to GWSC at the regional and district level if GWSC follows the RWS/S strategy through the establishment of a Rural Water Division at headquarters and in the Volta Region.
- l) Government personnel at regional and district levels within GWSC, MoH and DCD will be actively involved in the project, and the decentralization aims of the RWS/S sector strategy will be followed as far as possible. The majority of the project extension workers will be Environmental Health Assistants seconded to the project by Ministry of Health and retrained by the project.

GWSC management at regional and district level as well as DCD extension staff will be offered training aiming at providing full understanding and a reorientation towards the project strategy. In addition, DCD has expressed interest in seconding approximately four extension officers per district to the project.

- m) Sanitation intervention will initially be low key and include extension messages at community level. The project will also facilitate that local traders can market latrine slabs, which is a low cost and easily transportable sanitary installation.

A sanitation study and possible preparation of a project proposal in the course of the first two years of implementation may upon recommendation of the Review Mission change the initial strategy.

- n) Training is a core component of the project and the Training Network Centre (TNC) with some technical and financial support is recommended to be made responsible for this task. The TNC will have a separate contract with Danida. The training aims at promoting the development of skills and attitudes which will ensure effective and sustained utilisation of improved water and sanitation facilities. The project will be introduced to the regional and district authorities in a Regional workshop attended by policy and decision makers. District workshops will follow for each district as the initial entry point for mobilization of village communities.

The Extension Supervisors (ESs) employed by the project and responsible for supervising the Environmental Health Assistants and Community Development staff, will be trained as the first group. The supervisors will act as resource persons in the training of the project's Field Assistants (the Environmental Health Assistants (EHAs) and the Community Development staff). The training of the FAs will be organized in modules with a strong emphasis on field work. The initial mobilization of village communities will thus constitute an integral part of the

training.

When recruiting ESs, the project shall attempt an equal gender distribution.

A Pre-Project Phase (PPP) training activity will have recruited and trained the first group of ES's and EHA's, and prepared training plans and materials for Phase 1. The Pre-Project Phase training activities will be carried out under the auspices of the University of Science and Technology's Training Network Centre (TNC) - details of these training activities are included in the TNC's proposal to Danida: **Training Support for the Rural Drinking Water Supply and Sanitation Programme in the Volta Region, Ghana. Pre-Project Phase**, (Second edition, dated June 1992).

5. PROJECT ORGANISATION AND MANAGEMENT

5.1 National Level

The Ministry of Works and Housing will be the lead agency of the project. No overall steering committee is proposed, but close cooperation and liaison will be maintained in Accra between the Ministry of Works and Housing, the Danish Embassy/Danida and the other involved line ministries - the Ministry of Health and the Ministry of Local Government (Department of Community Development).

GWSC will be the Executing Agency within the Ministry, and its regional office for the Volta Region in Ho will comprise project management in cooperation with a Danida appointed consultancy company. The Director of Rural Water Development in the GWSC headquarters will act as the Project Director (PD) to whom project management will report (as well as reporting to the Danish Embassy).

GWSC does not yet have a Rural Water Division as a separate entity in its dominantly urban orientated structure. Such a new structure is contained in the rural water and sanitation strategy adopted in early 1991. The Appraisal Team considers it essential for such a Division to be established if GWSC is to have a long term role in rural water supply, for example in technical support to the District Assemblies in planning, monitoring and maintenance activities. Institutional support to GWSC would be conditional on GWSC:

- establishing a separate Rural Water Division at headquarters, with staff posted in the Volta Region who will work closely with the project.
- appointing District Managers in all of the districts the project enters (there are presently 7 Districts Managers in the 12 districts of the Volta Region). GWSC has not yet been decentralised like government ministries, but the District Managers must be instructed to have a dual operational responsibility in matters regarding rural water supply - both to the District Assembly and to GWSC.

The Ministry of Health will be involved through the secondment of Environmental Health Assistants to the project to act as extension agents regarding community mobilisation, health and hygiene education and sanitation promotion. The Ministry of Local Government will be involved through the Department of Community Development in collaborating with the project on extension matters and has proposed to second approximately four extension officers per district to supplement the EHAs provided by MoH.

Danida will recruit a Project Coordinator (PC) preferably to be attached to the Danish Embassy, but failing this, to be located

within the Ministry of Works and Housing. The PC will in general assist and act on behalf of project management and Danida where required. The duties of the PC will include:

- Liaison with the Project Director on policy issues.
- Liaison with involved ministries, international organisations and national NGO's. Attend meetings of the Inter-Agency Coordinating Committee on rural water supply and sanitation.
- In cooperation with other donors, define and promote institutional support for GWSC regarding community management of rural water supply.
- Liaison, contract matters and reporting from TNC.
- Disbursement of funds to the project and TNC.
- Assist project management to promote private sector involvement in supply of pumps and spare parts, and in maintenance and repair activities.
- Review of project monitoring, reports and accounts.
- Overall accounting.
- Short term consultancies.
- Arranging annual joint reviews of the project.
- The PC and the PD should attend meetings in the region at least on a quarterly basis.

TNC will provide all project training, apart from on-the-job training. TNC will also assist in arranging regional and district workshops. Planning and implementation of the training and workshop activities will be in close collaboration with the RPO. Institutional support to TNC, including an expatriate senior training adviser, will be provided by Danida under separate funding.

5.2 Regional Level

A **Regional Project Office (RPO)** will be responsible for project implementation, and will be managed by a Danish consulting engineering company to be selected through competitive bidding. The RPO will be headed by a Project Manager appointed by the company in collaboration with a Co-Manager appointed by GWSC. These two persons will constitute project management. The office will be located at the regional GWSC office. The Co-Manager will be the head of the Rural Water Division in the region. In the initial project stages, possibly before the Rural Water Division is staffed, the Co-Manager can be the existing Rural Water Supply Engineer in the region.

The RPO will not be a parallel structure to GWSC's existing regional organisation. It is envisaged that after GWSC has established a Rural Water Division, the RPO will support the institutional development of the Rural Water Division at regional and district level. During the project period GWSC will gradually replace contract and expatriate staff on the RPO with its own staff to the extent that they will be needed on a continuous basis after project completion. This strategy will

be elaborated by project management during Phase 1. Institutional support at the regional level will involve renovation of office facilities and equipment for the Rural Water Division and 2 vehicles, including one for the Co-Manager.

Close liaison will be maintained with the Regional Secretary, the Regional Director and Regional Engineer of GWSC, the Regional Director for Health Services and the Regional Director of the Department of Community Development. These persons will receive copies of project progress reports and annual work plans.

Working meetings between the above parties will take place as and when required, while a Regional Project Committee comprising the above persons, project management and the Project Coordinator will meet semi-annually to review progress and work plans. The Regional Secretary or his designate will chair the meetings, while the Co-Manager will act as Secretary.

The RPO will undertake the following tasks:

- Community mobilisation and information activities.
- Feasibility studies of each community asking for assistance.
- Tendering of contracts and supervision of work done by contractors.
- Supervision of implementation of water supplies.
- Health and hygiene education.
- Sanitation activities.
- Establishment of an operation and maintenance system for water supply installations.
- Establishment of a district structure for planning, mobilising and monitoring activities regarding water supply and sanitation.
- Liaison with the District Management Committees for Water Supply and Sanitation.
- Support to the private sector regarding maintenance, repair and spare parts supply activities.
- Project monitoring.
- Project accounting.

Implementation of physical works will be done either through the regular GWSC staff and structures, direct labour, or by contractors, whichever is appropriate for the task.

Staffing of the RPO should include expertise in the above fields, and should at least include the following:

- Project Manager
- Project Co-Manager
- Administrative Officer
- Water Supply Engineer
- Mechanical Engineer
- Hydrogeologist (short term)

- Community Mobilisation Specialist
- Health and Sanitation Specialist
- Local Engineering Assistants
- Extension Supervisors
- Environmental Health Assistants (seconded from Ministry of Health) and extension agents seconded from DCD
- Monitoring staff
- Administrative and Accounting Assistants

Provision will be made for short term specialists to be hired as and when required. Auditing can be done by a locally based company.

It is expected that the Project Manager, the Administrative Officer, the Water Supply Engineer, and the Community Mobilisation Specialist will be expatriates in Phase 1.

The Local Engineering Assistants will be hired by the project from the university and trained on-the-job. The Extension Supervisors will be hired by the project after their recruitment and training by TNC. The staff hired locally by the project will be on contract terms which cease on completion of the project.

5.3 District Level

In conformity with government's decentralisation policies, the project will relate closely to the District Assembly in each district.

Where no committee exists, the project will promote the establishment of **District Management Committees for Water Supply and Sanitation** (to be referred to in short as District Management Committees - DMC) under the District Assembly. The DMC would report to the District Secretary.

It is envisaged that the chairman of the DMC would be designated by the District Assembly from among its members. Relevant persons may be the Presiding Member of the District Assembly, the chairman of the Technical Infrastructure Sub-Committee or the chairman of the Social Services Sub-Committee. Membership of the DMC can be decided by each District Assembly, but the following persons are recommended:

- Chairman, District Assembly Member
- Secretary, District Planning Officer
- District Administrative Officer
- District Manager, GWSC
- District Medical Officer of Health
- District Community Development Officer
- CDR District Organising Assistant
- District Project Liaison Officer

In addition, it should be considered whether it is possible to

increase women's representation on the DMC through nomination, as it is not very likely that many women will be found holding any of the above-mentioned positions.

The CDR District Organising Assistant would represent the CDR Zonal and Unit (community) Committees through which contact to the communities will be arranged.

Special efforts should be made by the chairman to ensure representation of women on the DMC.

The DMC should itself decide the frequency of its meetings and its procedures. For instance, the chairman and secretary could be authorised to take daily decisions while the full committee deals within issues of policy and coordination.

Members of the DMC will be paid allowances by the project during the time the project functions in the district in the same manner as for sub-committees of the District Assembly. Steps will need to be taken by the districts to continue these allowances after the departure of the project.

It is envisaged that the DMC is a permanent body that will continue its functions after completion of the project in any one district. The functions of the DMC would include the following:

- Coordinate water supply and sanitation activities in the district.
- Act as the channel (with the members of the District Assembly) for the spreading of information to communities about the project and for receiving requests for assistance.
- If necessary, prioritise the requests to ensure optimum use of resources.
- Approve the project annual work plans for the district.
- Keep records and monitor the functioning of all water supply installations in the district.
- Monitor the operation and maintenance system with regard to the availability of spare parts and the timely repair of installations. If necessary, act as a link between the communities and the relevant bodies in this regard.

GWSC has District Managers in 7 of the 12 districts in the Volta Region, but they are largely concerned with piped water supply. It is important that GWSC is represented at district level in the interests of a sustainable maintenance system. Therefore, it should be a pre-condition for the project to start in a district that GWSC has appointed a District Manager and that the District Manager's responsibilities include the monitoring of all water supply installations in the district and the smooth functioning of the GWSC maintenance activities. It is also important that the District Manager is answerable to the District Assembly (as well as GWSC) through the District

Secretary and the DMC for operational matters regarding rural water supply.

Project management, in cooperation with GWSC, will work out Terms of Reference for the District Managers to include the above aspects, and assistance to office furniture and equipment.

Project support to the District Managers would be the supply of one vehicle per district when the project moves into a district.

The Regional Project Office will appoint a **District Project Liaison Officer** who will liaise with all relevant bodies in the district, and coordinate and assist all project activities. The Liaison Officer could be taken from the pool of Extension Supervisors, and his/her duties would include the supervision and coordination of the work of the other Extension Supervisors and the Field Assistants. The RPO can write his/her Terms of Reference when deciding which implementation functions are best directed from the district level.

The **Community Development Department** will provide support to the project through assistance from the locally based Assistant Community Development Officers, Community Development Assistants and Mass Education Assistants. Although the Department is understaffed, the Department has expressed an interest in seconding a number of staff members per district to the project. CD staff are expected to assist in the initial contact to the community and in spreading information about the project. Such a role fits to two of the four main programmes of the Department, viz. self-help projects, and dissemination of government policies to rural people. The RPO should formulate an agreement with the Regional Director of Community Development to this effect.

The Ministry of Health will second all **Environmental Health Assistants** (EHA) in the district to the project for the time that the project works in the district. They will be trained by the project and will be the main extension agents. They will continue to be employed by the Ministry of Health, and will receive allowances from the project. They will thus be technically responsible to the project through the Extension Supervisors and administratively responsible to the District Medical Officer of Health. The Terms of Reference of the EHA's should be worked out by the RPO in cooperation with the Regional Medical Director and TNC.

The project will provide bicycles to all Environmental Health Assistants and the Community Development extension staff. Motorbikes will be supplied to supervisory staff.

5.4 Community Level

The project will promote the establishment of community Watsan committees, or the incorporation of water and sanitation aspects within the scope of an existing community committee. The existing Unit Committees of the CDR are the basic structures of community participation, and already have various sub-committees dealing with aspects of community development. Many of the same people would be active in water and sanitation, so it may not be necessary to establish a separate committee for this. The project should be flexible in its approach in this regard.

The project's entry point to the communities would be the Chiefs as well as the Unit Committees.

5.5 Financial Aspects

Financial Flows

Project funds will be disbursed in the following ways:

1. Funds for consultancy services by the Danish company chosen to manage the RPO will be made by Danida, Copenhagen to the company, following the normal procedures.
2. Funds for the TNC, Kumasi will be disbursed directly by the Danish Embassy. Advances will be made quarterly on the basis on agreed plans and budgets. The first disbursement will be equal to the planned reimbursable expenditures for six months. Subsequently, advances will be reconciled with actual expenditures as shown in quarterly statements submitted by TNC to the Project Coordinator for approval before sent to the Embassy.
3. Funds for implementation will be disbursed by the Danish Embassy to a Project account in Ho, on the basis of quarterly work plans and budgets approved by the Project Coordinator. The first disbursement will be equal to the planned expenditures for six months. Subsequent disbursements will be reconciled with the actual expenditures as shown in the monthly accounts. The RPO will be responsible for this account.
4. The Project Manager and the Co-Manager of the RPO will be the joint signatories. Payments to local suppliers or contractors will be based on inspection and quality control by the RPO of suppliers and works, and in turn bills or statements approved and certified by the Project Manager.

Accounting

The TNC will provide quarterly statements to the Project Coordinator.

The TNC will also provide annual financial reports, certified by a CPA (Certified Public Accountant) to the Project Coordinator.

The RPO will be responsible to Danida for the accounting of the project implementation funds. The RPO will prepare monthly accounts following the Danida rules and guidelines on decentralized accounting, and submit them to the Danish Embassy via the Project Coordinator and the GWSC. The Project Coordinator and the GWSC will check, question and approve these monthly accounts.

Auditing

The TNC and RPO accounts will be audited annually by a local firm of chartered accountants appointed by the Danish Embassy.

The firm will also be responsible for unannounced audits of TNC and the RPO when required, and at least once a year.

5.6 Planning

The Government of Ghana's financial and planning year is 1st January to 31st December, and the project should adhere to this. Annual work plans and budgets should begin to be prepared about October of each year, and should be approved in December by GWSC, the Danish Embassy and the Regional Project Committee. The annual work plan would be divided into district work plans, each of which would be approved by the respective District Management Committee. The planning process should start at the district level.

If possible the planning process should tie in with the World Bank's annual project implementation review mission on the water sector, which takes place about September/October each year.

The first full-scale planning exercise should take place in late 1993. Planning of project activities from project start until the end of 1993 would be outlined in the consultancy companies' proposals and be detailed by project management as one of the first activities.

6. PROJECT OUTPUTS.

6.1. Water Supply

The project strategy as described in chapter 4 will allow the project personnel to co-ordinate inputs delivery such that the project activities during Phase 1 will produce the following outputs.

- Depending on the community demand, appropriate and cost efficient water supply systems have been built or rehabilitated in villages covering an estimated 195,000 people during Phase 1 (see Annexes 3 and 4).

The technologies to be provided are:

- Boreholes equipped with handpumps;
- Boreholes with electrical pumping on national VRA/-ECG grid;
- Boreholes with solar pumping;
- Hand dug wells equipped with hand pumps;
- Hand dug wells with top cover, windlass and a fixed bucket;
- Piped gravity schemes;
- Spring protection;
- Roof catchment with storage tanks.

(See Annexes 1 and 2).

- A multi-disciplinary project team has put in place appropriate mechanisms to improve the delivery of water supply and sanitation services to the rural population of Volta Region.
- Mechanisms for the promotion of dialogue between the District Assembly water supply and sanitation personnel (including the project team) and the villages requiring improved sector facilities are put in place. Functioning procedures which assist sector personnel and village recipients to assess the technology options selection process are established
- Standard procedures are established to allow for the participation of private sector firms in the implementation of water supply and sanitation facilities
- Private sector firms are in place satisfying the demand for sector construction and operation and maintenance services.
- All potential villages have been reached by the project's awareness campaign.

6.2. Health, Hygiene and Sanitation

- Extension messages on the importance of improved sanitation have been disseminated in the communities, where water supplies have either been constructed or rehabilitated.
- Sanitary latrine slabs for improvement of household latrines are for sale through commercial outlets (including an installation manual) and some households have installed these. Two hundred slabs per district (800 slabs during Phase 1) will be produced by local contractors for sale through the local commercial market. The mechanics and logistics of this exercise will need to be worked out as part of project implementation.

6.3. Training ²

The outputs below specify the numbers and categories of target groups at community and zonal/district levels which have been trained during the PPP as well as Phase 1.

- Six district workshops have been conducted. Five as part of the implementation of Phase 1 and one as preparation for Phase 2.
- Extension supervisors (about 16) have been trained (8 - 10 of these have been trained during the PPP), and 60 Field Assistants trained (20 during PPP).
- The following personnel in Government has been trained:
 - Eight District Planning and Budgeting personnel
 - DCD extension personnel have been reoriented towards project strategy
 - GWSC management at regional and district level
 - Private mechanics (if there has been a need identified)
 - GWSC workshop and stores personnel
 - Private distributors/agents of hardware and spare parts
- With regard to the final beneficiaries, the following number have been trained by the ESs and FAs:
 - 100 Watsan committees established and trained

² The training component has been designed and prepared during the Pre-Project Period (PPP) and the first groups have been trained as part of the PPP. The outputs of the PPP and Phase 1 have therefore overlapped to a certain extent.

- 300 Representatives of Women's Groups trained

Training of women's group representatives have comprised a minimum of two and a maximum of four women per village; on average three women will have been trained from each village making the total to 300 during Phase 1 of the project.

- The main categories of training materials and documentation produced are:
 - Guide to mobilization of village communities to be used by ESS and FAs including visual aids, hand-outs, etc.
 - Tested, revised and documented training programmes for ESS, EHAs, DCD personnel and district planning and budgeting personnel
 - Monitoring and evaluation guidelines at ES, FA and community level tested and revised

The activities and inputs from the PPP mainly constitute draft training materials and documentation of the training programmes which have been further tested, revised and finalised and provide the outputs of Phase 1.

6.4. Management, Extension System and O&M.

6.4.1. Management and Extension System.

- At district level the multidisciplinary District Management Committee is established, functions and coordinates water and sanitation activities.
- In those communities where there have been project activities the communities have established a committee dealing with the operation of the water supplies and spearheading that improved health, hygiene and sanitation activities are continuously emphasised and disseminated to the households.
- The extension system has a sustained functioning because the Field Assistants, who have been seconded to the project in those districts where activities are undertaken, continue to be based in their respective areas of a district after project activities have stopped. They continue to disseminate and monitor health and sanitation as part of their duties within Ministry of Health.
- The Community Development Department has taken over part of the role, which during the project activities were carried out by the Extension Supervisors. More specifically this covers the linkages between committees at community and district level.

6.4.2. Operation and Maintenance.

The operation and maintenance (O&M) system is a key component in the overall project strategy. The project has been directed towards the re-orientation of O&M away from the current GWSC centralised approach towards a more community based O&M structure for a majority of the O&M activities. The following are the outputs reached in pursuit of this strategy.

- Community based O&M system is established in completed districts with linkages to district assembly extension staff and regional GWSC technical support staff;
- GWSC scaled down regional O&M workshops (three or less) re-oriented towards the provision of major O&M repair services are in place;
- Private sector firms/individuals are established to provide O&M services to the community managed water supply in the completed districts;
- Detailed plan of action to allow transition from current GWSC centralised O&M system towards the community based system is made.

7. PROJECT ACTIVITIES.

The detailed sequence of activities has not been dealt with in this section. This will be worked out by the project management in the annual plans of action.

7.1. Water Supply.

Through the extension staff associated with the project those villages with an expressed need for interventions/improvements in their water supply situation will be identified for their potential inclusion in the project.

Once a particular village has been preliminarily identified as a participating village within the project a multi-disciplinary team will visit the village. The team will assess the current water supply situation. Through dialogue with the village leadership, the team will present the options for intervention together with the associated cost implications, highlighting the operation and maintenance costs and eventual replacement costs to the village. Through ongoing dialogue an option will be selected with the implications for the village clearly defined.

The selection of the technical option for a particular village will be based upon overall consideration of the following technical possibilities:

- Improved (lined) hand-dug well
- Improved hand-dug well with handpump installed
- Drilled borehole with handpump installed
- Drilled borehole with either solar pumping or electrically driven pump - possible reticulation
- Spring protection for central collection
- Surface source development with gravity conveyance and reticulation
- Roof catchment/storage (supplementary option)

To the greatest extent possible the actual construction activities associated with water supply improvements should incorporate village level activities such as the digging of the wells and digging of trenches for pipelines where feasible. The national rural water supply policy guidelines will be adhered to as closely as possible and in that respect construction activities should be planned and monitored by the project team/GWSC, but the actual construction itself should be tendered and implemented by the private sector.

The Nira AF-85 direct action handpump (or equivalent) will be the pump option for low lift applications, i.e. 12 metres or less. The Ghana Modified India Mark II handpump will be the option for groundwater sources with depths of greater than 12 metres.

Local manufacture and/or supply of these pumps will be encouraged through this project. One model involving the private sector which appears to have potential would be: to tender the handpump procurement procedures based upon the supply, the installation, training at village level, and the long-term supply of spare parts on a commercial basis; rather than the standard tendering procedure based solely upon import to Tema. Following this model, the project would not have to become directly involved with installation of the handpumps.

In relation to the activities associated with the provision of boreholes the mechanism by which boreholes are to be drilled is not finalised at this time. In following the national RWS/S strategy local business interests should be encouraged to become involved in the sector. The possibility of importing a drilling rig under the project funding and leasing it out to the private sector is one possible mechanism which will need further investigation at the early stages of the project. Other possibilities, such as assisting with credit facilities for interested firms, do also exist.

7.2. Health, Hygiene and Sanitation.

The health and hygiene activities will be centred on delivery of extension messages to the communities, who have fulfilled the project requirements for intervention. (The TNC will train the extension staff as part of their initial training programme). The TNC will supplement their own training resources in this field with materials and trainers from the Ministry of Health and the Department of Community Development in MLG and other relevant resource persons.

The Project Community Mobilisation Specialist and the Health & Sanitation Specialist will, assisted by the technical staff, relevant line ministry staff in the region and the extension supervisors make up a programme for intervention in the communities in these fields. This mediation will in reality be an integrated part of the community mobilization for water supplies.

Because of the roles of the supporting line ministry staff, the project will, through a special budget line, be able to provide officers from these ministries with incentives to take an interest and active part in project activities. The project staff should also review the ministerial programmes and, through consultation with the District Management Committee, the project can provide limited financial support to relevant ongoing extension programmes carried out by these ministries within the region.

In relation to sanitation activities considerable effort is required in order to put in place the proper mechanisms which will promote the adoption of improved sanitation measures.

For Phase 1 activities it is proposed that the project team investigate ways of identifying local merchants in each of the project district centres, who would be willing to participate as the retailers of improved latrine slabs. Through discussions with people experienced with rural sanitation in Ghana the project team will decide on the design of such a slab and prepare local tender documents for the production of 200 slabs at each of the participating district centres during Phase 1. These slabs will then be handed over to the selected local merchant who will display and sell them at a project determined price. A sales fee will be paid by the project to the merchant for each slab sold with the project's District Liaison Officer keeping inventory and making periodic (possibly quarterly) payments to the merchant. The sale of the latrine slab will include a "how to install and properly use" manual which will be prepared by the project through TNC.

The project activities in the context of sanitation during Phase 1 will involve:

- dissemination of latrines usage health messages through the project extension staff;
- investigation of an appropriate slab design for a simple, hygienic, low-cost rural latrine;
- preparation of tender documents for manufacturing these slabs;
- identification of and negotiations with one local merchant in each district centre where the sanitation efforts will be operationalised;
- production through private construction firms (or individual artisans) of 200 latrine slabs per district (800 slabs for Phase 1 activities);
- preparation of a "how to" manual to accompany sale of slab;
- follow-up software efforts by project extension staff to those who purchase slabs.

Under no circumstances should the project be directly involved with the construction of latrines. All construction activities should be implemented by either the household or a private construction company.

It is not at this time recommended that the Danida activities in Phase 1 of the project include construction of public latrines.

During Phase 1 of the project activities it will be necessary that further investigations be conducted to determine the wisdom of embarking upon a public latrines programme. The real demand for such facilities needs to be much better understood as well as the communities' willingness to pay for such services and maintain them in a hygienic manner.

7.3. Training.

A number of training activities such as design and testing of the training component as well as training of the first group of extension agents will be carried out during the PPP by the TNC.

During Phase 1 the main activities will comprise:

- Finalisation of Terms of Reference and contracts for 8-10 ESs; recruitment of additional 8 ESs and selection of additional 40 FAs;

Organisation of courses and workshops for new extension officers as well as refresher courses and regular workshops for already trained field workers; an evaluation of the effect of the initial training programmes for ESs and FAs will provide input for a revision and finalisation of these training programmes;

- The guidelines for monitoring the performance of the FAs will be tested and revised.
- On-the-job training and short workshops will be organised for District Planning and Budgeting personnel of districts undergoing project intervention as well as for GWSC management and personnel at regional and district level.
- Re-orientation seminars will be conducted for DCD extension personnel.

If found feasible as part of the O&M activities, training programmes will be designed for private artisans aiming at providing them with technical skills within O&M as well as basic business management skills such as store management, distribution, costing and pricing, etc. A similar training of local merchants/agents of hardware and spare parts suppliers will be sought organised through the supplier of equipment if relevant.

A number of draft training materials produced during the PPP will be field tested, revised and finalised in Phase 1. The type of required training materials and the media selected for a general information dissemination will depend on the outcome of an assessment to be conducted in the PPP.

Courses will be carried out mainly to give in-depth instruction, while workshops will be designed to foster team relationships, develop common procedures, exchange experiences and evaluate the effectiveness of previous training sessions.

In order to prepare the districts for the implementation of the project, Regional and District workshops will be held for key personnel within the rural water and sanitation sector. These activities will be planned by TNC with the assistance of

the Project. The first of these workshops will be held during Year 1 - see: **Section 12. PROJECT IMPLEMENTATION SCHEDULE.**

The training activities to be undertaken during Phase 2 of the project will be planned as an activity during Phase 1 by the TNC together with the Project.

7.4. District and Community Management

7.4.1. Establishment of District Management Structures

Initially the project will stage a regional workshop with representation from each district of the relevant cadres. This includes representatives from the 12 District Assemblies, key regional Governmental staff, and representatives from the Regional Coordinating Council. The project will inform about the project concepts, strategy and the implementation schedule.

At this stage considerations for the sequence of choosing districts should be introduced. This means for instance that districts and GWSC must have filled certain staff positions prior to project implementation in their district as well as different technical and logistic reasons could be given for the sequence of implementation. However, the district representatives will be informed about the choice of Ho and Hohoe for the initial implementation, but other districts will only be decided upon following dialogue with the districts and the considerations made above.

Two district workshops will then be held in year one (in Ho and Hohoe districts). Participants should be drawn from both appointed officials/representatives within the sector as well as assemblymen and representatives from the women's groups.

The district-level management structures piloted under the UNDP-project are recommended as the basis for the Danida-project. The Danida project will have more human resources available than the UNDP project and activities may get off the ground and expand rapidly because the project can benefit from the lessons learned by the UNDP project.

In line with the UNDP pilot project a District Management Committee (DMC) in a district will be established after the project has been introduced at a District Workshop. Guided by the project a membership will be drawn and the DMC will then set up its own operational procedures (described in more detail in section 5.3.).

The establishment or the continuation (in Hohoe District, where the UNDP project has been implemented) of a District Management Committee) will provide a district forum, which will assist the project in the departmental and interdisci-

plinary support in particular to the project extension system. The DMC will also establish direct contact to Assembly men and encourage these to disseminate information to their communities.

7.4.2. Establishment of Community Management Structures

Through the intervention of the project's extension agents, villages which have requested for assistance from the project and accepted their obligations, will establish a village Watsan committee which is a sub-committee of the Unit Committee. The project's approach to the establishment of this sub-committee should be flexible. It is known that one sub-committee in a village simply might take on additional duties, instead of creating a new sub-committee. The project should ensure that the community elects women to sit on the committee.

The Watsan committee will collect the deposit requested by the project, it will undergo training in O&M, health and sanitation messages and subsequently it will monitor the functioning of the water system, ensure its functioning, collect funds when needed, and educate and promote better hygiene and sanitary facilities in the community. Finally the committee will liaise with the project staff (particularly the extension agents) and the district management committee. All Unit Committee members should be exposed to the extension messages during this process.

7.4.3. Village Selection.

The activities of village selection will basically be village self-selection guided by certain criteria. The criteria, which villages/communities have to meet, will be defined and administered through the project. The most important criteria/-activities will be the formation of a village committee for water and sanitation activities - a Watsan committee as described above - and the depositing of collected funds onto a bank account.

It is proposed that the first activity in the selection of communities will be through an information campaign using the District Assembly, its elected representatives - the Assemblymen - and the DMC. It is proposed that project management brief the full District Assembly, after the culmination of the district workshop. The district assembly members have a key role in the community mobilization process at this stage as they are elected and keen to promote service delivery in their respective communities.

Following this, the Assemblymen should go among their people to discuss the project and facilitate reactions. Depending on

the response, this will give an indication as to where the extension workers should go first.

The first formal contact in the village should be through the chief and the Department of Community Development should be part of the extension team on this occasion. The clan system is an important sub-division within villages and is often used for mobilisation activities of various kinds. Public works, fund collection, etc., may all be facilitated using the clan system, and the first formal contact may in reality be a series of meetings with clan leaders.

The response from the community/village to the project initiatives conveyed through the District Assembly and the assemblymen, sets the basis for communication between the project and the community. The responses also allow for a prioritization of communities based on willingness to participate. With an initial list of communities ready to fulfil the basic criteria, a process of information gathering will need to be initiated by the project; in addition, a technical feasibility study should be undertaken in each village.

These activities will be the responsibility of the Project Community Mobilization Specialist, assisted by the Extension Supervisors.

During the initial stages, communities will need frequent contact with project extension staff to maintain community spirit. The initial high-level of extension staff support will tail-off to more infrequent visits as community initiatives become more sustainable.

7.5. Operation and Maintenance

A major consideration in the technology option selection should, and will be, the operation and maintenance (O&M) implications for the users (village) and the government as well. The national rural water supply policy requires that the water supply option of choice for a village take into consideration the willingness and ability of the users to pay for the operation and maintenance costs of the chosen technology. Movement away from the current GWSC heavily centralised operation and maintenance system towards more village (users) involvement in the normal day-to-day O&M activities and cost sharing will be a key element in the project delivery activities.

GWSC will still remain involved in the O&M activities and the GWSC workshops will continue to operate, but they will be limited to more technically difficult aspects of O&M such as desilting and re-developing of boreholes, "fishing out" dropped components in boreholes; and other activities which the communities themselves are unable or have not been trained

to carry out. During the first year of implementation, the RPO and GWSC will work out a detailed plan for the continued functioning of the GWSC workshops.

GWSC has proposed and the Appraisal team agrees that in the first year of project implementation the current GWSC tariff system for handpumps should be abandoned throughout the region. This will require a very concerted effort by GWSC and the project staff to disseminate the new community management and O&M concepts throughout the region.

Operation and maintenance activities should be guided towards the private sector. Two possibilities for the private sector involvement will be investigated during the course of Phase 1 project activities. In consideration of the handpump manufacturer/supplier, the option of tendering on the basis of supply, installation, training, and spare parts distribution (sales) rather than the traditional CIF cost only basis presents clear benefits in relation to follow up O&M and spare parts considerations. Alternatively, identification of auto and bicycle mechanics in and around the villages who would be willing and able to repair (with associated training) hand-pumps for a fee will be pursued.

7.6. Recruitment and Activities of the Extension staff

The extension staff will consist of 3-4 project recruited and trained Extension Supervisors (ES) per district. The project management will appoint one of the extension supervisors as District Project Liaison Officer (DPLO). The Extension Supervisors will supervise the lower cadre of extension staff, made up of the Environmental Health Assistants (EHA) and seconded staff from DCD. Staff on secondment to the project will be retrained by the project (TNC). At present one EHA covers a zone in a district, this system will continue and the Extension Supervisors oversees and coordinates the work of 4-5 EHA's depending on the number of zones in the district.

The activity focus for the extension agents, covers:

- information dissemination to the communities
- community mobilization and community management training.
- health, hygiene and sanitation education.
- (self-) management of facilities by the community, i.e.
 - * water points
 - * sanitation facilities

The extension agents will be assisted by the DCD staff. Their tasks will be defined in detail by the project management and the Regional Director of DCD.

8. PROJECT INPUTS.

8.1. Water Supply

The following inputs will be required to implement the water supply project activities.

- Ghana Water and Sewerage Corporation (GWSC) provision of office space at the regional level to accommodate the project team;
- GWSC provision of the Project Co-Manager to co-ordinate the Project from Ho;
- District Assemblies provision of office space for the District Liaison Officer of the project;
- District Assemblies provision of extension staff within the participating districts;
- Danida provision of a multi-disciplinary Project Team to implement the project design;
- Danida provision of hardware required to implement water supply facilities for the target population as per the demand expressed. The particular technology option selected will dictate the hardware required, i.e. well casings, handpumps, borehole construction, solar pumps, electrical pumps, gravity system components, hand-drilling survey equipment and production equipment, borehole drilling rig (?) etc;
- Danida provision of general logistical support for the regional project team, district project teams, and extension staff. Logistical support will include, but not be limited to, transport facilities and travelling allowances;
- Private sector involvement in the delivery of services.

8.2 Health, Hygiene and Sanitation.

- The project will have 8-10 Environmental Health Assistants per district seconded to the project from the Ministry of Health; plus 4 CD cadres per district seconded from DCD. The financial input will be payment of allowances, training programme and bicycles for the Field Assistants.
- There will be one project employed Extension Supervisor per 4 Field Assistants. The Extension Supervisors will be project employees and also be provided with motor-cycles.

- Support staff from Ministry of Health and Department of Community Development. Financial input will be payment of allowances and transport assistance.
- Provision of a fund for support to existing health education efforts carried out at village level by the Ministry of Health and Department of Community Development. The fund will be managed by the District Management Committee in conjunction with the Project Community Development Specialist, who will draw up regulations with regard to use of the fund.

The following inputs will be required to implement the sanitation project activities as described above in order to achieve the project outputs required for a successful project delivery.

- Latrine slab design;
- Private sector involvement in the production of 800 latrine slabs;
- Inputs listed in section 8.1. above have same basic application to sanitation as they do to water supply. One project staff member at regional level will be specifically responsible for the sanitation related activities.

8.3. Training

As the main coordinator of the training component, the TNC will require certain inputs to increase its capability to support the project. The main input will be financial, personnel (one expatriate training adviser, short term consultancies), and possibly additional equipment.

For the TNC to meet its expanded responsibilities under the project, one qualified administrative assistant will be required to take the load off the professionals. In view of the importance attached to the role of women in the project, one additional staff, preferably a woman will be required to reach this target group.

Inputs from recipient government/institution:

- GWSC personnel
- Secondment of qualified Field Assistants (Environmental Health Assistants and Community Development cadres) to the project.

Other sources:

- TNC personnel funded by Danida

Danida:

- Training adviser, short term consultants, scholarships to TNC.
- Funds for training activities to be carried out by TNC.
- General support to TNC in terms of equipment, materials.
- Materials and Equipment for the Regional Project Office, Training/extension component.
 - a. Slide-sound equipment with accessories (2)
 - b. Video camera with accessories, one per district (7, i.e. the five districts of Phase 1 and two districts of Phase two)
 - c. Camera, one per district (7)
 - d. TV/VCR one per district (7)
 - e. Stationery
 - f. Over head projectors (4)

8.4. Management, O&M, and Extension System

The input needed for the RWS/S management at district level is provision of DMC committee representatives from the district assembly and the relevant line ministries at district level. The project will pay for basic equipment for these committees i.e. stationary, a typewriter, a filing cabinet, office desk and chair. The project also provides sitting allowances. If committee office bearers or members need to travel in connection with their duties the project will assist with transport and allowances.

The input needed for the community management activities is a regular dialogue between the community and the project extension staff, and training of the community by the extension staff.

The communities will provide human resources for a Watsan committee and funds for operation and maintenance.

8.5 Operation and Maintenance

The following inputs will be required in order to ensure that the operation and maintenance activities of the water supply and sanitation components as described above are implemented.

- All inputs to the water supply component of the project as listed under section 8.1 generally apply to the delivery of operation and maintenance (O&M)

services as well.

- Community contributions towards the O&M requirements;
- GWSC's continued recurrent support to the 3000 Wells Project's three O&M workshops throughout the Volta Region.
- Danida support to the 3000 Wells Project O&M workshops in the region during the transition to community O&M systems.

9. ASSUMPTIONS AND RISKS.

9.1 Government Commitments.

With regard to the project start there are a number of commitments which need to be fulfilled by the Government of Ghana.

- Government commitment (MoH and DCD) to the establishment of a district-based team of extension staff who will be seconded from health and community development personnel.
- GWSC should post a co-manager to be part of the project team.
- Office facilities in Ho will be made available by GWSC to be re-novated by Danida during the autumn of 1992, in order to be ready for use by the project team upon arrival.
- GWSC will propose a workable solution to the issue of arrears in tariff payments.
- The project will be exempted from duties and taxes on all materials and other inputs to the project.

9.2. Assumptions

Following the Logical Framework, the assumptions to be made between the level of activities and **outputs** are:

- Establishment by Government of a more autonomous Rural Water Supply Division within GWSC (national level and regional levels) with the Deputy Managing Director, Rural Water Supply Division reporting directly to the Managing Director of GWSC
- Commitment by participating communities to the community management and O&M approach to their water supply and sanitation facilities

The following assumptions are found between the levels of **inputs** and **activities**

- Communities will articulate their demand to the project for being included in the services. And subsequently fulfil the requirements for being included in the project activities.

- GWSC will place a district manager in a district prior to the project starting activities in a district.

9.3. Risks

All the preconditions and assumptions listed above are likely to be fulfilled according to the discussions held during the planning process. However, availability and posting of staff by GWSC, MOH and DCD at district level could delay project implementation.

The community mobilization must start off in full strength in order to be able to start implementation shortly after the arrival of the project team. To some extent the project has been designed to offset this possible delay, because there are a number of village applications on file with the DMC in Hohoe district. These applications have been forwarded to the DMC under the UNDP pilot project in the area, and can be taken over by the project because the project's planned information and mobilization campaign is very similar to the UNDP campaign.

10. ORGANISATIONAL AND FINANCIAL SUSTAINABILITY

Organisational and financial sustainability will be assured through the continuous functioning of the community Watsan committees, the District Management Committees and the various back-up organisations: regional GWSC Maintenance Units for heavy repairs, private sector provision of spare parts and mechanics, the Department of Community Development for advisory support to communities, and the Ministry of Health extension service for health and hygiene education.

10.1. Community Watsan Committees

These committees will continue to exist if they represent a genuine demand and understanding of their role. As they are not completely new organisations, but part of the village Unit committee which is also concerned with other aspects of community self-reliance, it is likely that the Watsan committees will continue to exist in some form or another within the Unit committee structure.

Their effectiveness in managing themselves and mobilizing funds for operation and maintenance will be supported by advice from Community Development Assistants and by the continuing activities of the Environmental Health Assistants in health and hygiene information. Understanding of the relation between health and clean water and sanitation should create a willingness to continue to pay for the water supply service.

In general, the continued economic progress in Ghana will create rising living standards which will make it easier for rural people to pay for water. At the present time, affordability is not a key constraint except possibly for some poor communities in the north. Operation and maintenance is affordable and will continue to be affordable, but major repairs will probably need to be subsidised for a number of years. Whether or not the communities can afford to take up rural credit loans for replacement of pumps and improvement to systems, will be the subject of a rural credit study in the first phase.

10.2. District Management Committees

It is expected that the DMC's will continue to exist after project completion, but as new infrastructure activities will cease for some time, it may be that the DMC's will be merged into the Social Services Sub-Committee of the District Assembly. The project, as long as it is still active in the region, should continue to advise the districts on the operation and functions of water

supply and sanitation management. The districts should continue to monitor installations, plan new development and coordinate and stimulate maintenance activities.

If government continues with its decentralisation policies it is expected that the District Assemblies will continue to increase their administrative competence, with among other things raising more local revenue. Some district revenue in the future may be used for capital investments in water supply, and it is expected that the project's activities will have had the effect of the operation and maintenance aspects being sufficiently considered when districts plan new investments.

10.3. GWSC Maintenance Units and Offices

The three existing GWSC O&M Units will have their roles reduced during the project period. Routine repairs and maintenance will be taken care of by private mechanics. The units will be scaled down and left to take care of major repairs that the private sector cannot handle.

The capital and recurrent costs of these units will be quite heavy, and it is not expected that the communities will be able to bear the whole cost of the repairs. That is, it is doubtful if the units can be self-supporting through payment for their services. (At the moment, 35% of the O&M Units' costs are covered by tariffs collected from communities). It will therefore be necessary for central government through GWSC to subsidise the operations of these units. This can be done by the project until the end of the 10 year period in 2003, but it should be on a decreasing scale with GWSC gradually taking over. Project management should assist GWSC in the planning and budgeting of this activity.

The regional office of GWSC's Rural Water Division will continue to exist. Its role will primarily be concerned with the technical inputs required for planning of future water supply systems, coordinating the monitoring data of water supply installations that is collected at the district level, collecting water resources information, supervising the work of the District Managers concerning rural water supply, and supervising the O&M Units.

The District Managers will continue to monitor water supply installations, advise and assist the District Assembly on planning and maintenance activities, advise local communities on technical aspects of repair and maintenance, and plan the work of the GWSC O&M Units in the district.

It is expected that GWSC will be able to bear the finan-

cial cost of operating the regional and district offices from central government funds.

10.4. Private Sector

It is expected that the provision of pumps and spare parts can be effected through one or more large companies which can ensure a distribution network in the region. It is not expected that the distribution network will be very wide in the first few years after project completion. Demand for spare parts will probably be low in the first years because of the newness of the installations, and demand for pumps will be non-existent. However, demand will pick up. Production of latrine slabs locally will be sustained if sufficient demand has been created through the project's information activities and through the force of example.

Private mechanics, such as existing car, motorcycle and bicycle mechanics will have been trained by the time the project completes a district. Their continued willingness to repair pumps and installations will be dependent on demand, which may not be great in the first few years, but should increase later.

The project will still be active in year 10, which will be six years after having completed the first districts. Therefore, it will be possible for project management to monitor, advise and assist the private sector to become established on a continuous footing, and it can be expected that the districts completed in the first phase will have a functioning private sector involvement before final project completion. It is, however, doubtful if the private sector can be stimulated equally successfully in the districts started in Phase 2.

10.5. Department of Community Development

The Department of Community Development is expected to carry out its national programmes of support to self-help projects and dissemination of government policies to rural communities. After project completion in a district, the Community Development staff will continue spreading information about the District Assembly's role in water and sanitation, and they will have a special responsibility in continuing to advise community Watsan committees on the organisational aspects of community management of water and sanitation activities.

It is not expected that the Department of Community Development will be under any further financial constraints than it is at present, so approximately the present level

of staffing can be expected to continue after project completion.

Project management should enter into an agreement with the Department of Community Development about its role after the project has completed work in a district. The project should continue support until the end of the 10 year project period to the department where necessary in aspects such as transport and information materials.

10.6. Ministry of Health

It is expected that the Environmental Health Assistants will continue in their posts after the projects complete a district. The new orientation of their work, which the project will have helped to create through training and a different job description from what they had before the project start, should continue in a modified form after project completion. They need not continue in the community mobilisation activities related to Watsan committees (which will be handled by the Department of Community Development), but should continue and strengthen MOH's extension activities in regards to health and hygiene education, including the promotion of sanitation.

Project management should enter into an agreement with the Ministry of Health to this effect when completing a district, and should continue to support the activities where necessary in aspects such as transport and information materials until the end of the 10 year project period.

It is not expected that the Ministry of Health will have any greater financial constraints after project completion than it has at present, so the present level of staffing may be expected to be continued.

11. PROJECT MONITORING, REPORTING AND REVIEWS

Monitoring

The RPO must set up a monitoring system to measure project implementation in relation to outputs and objectives. The system must include procedures for utilisation of monitoring data in terms of review of data, corrective measures and follow-up to them.

It can be expected that the monitoring system will involve one full-time local specialist in monitoring, who will be supervised by the Project Manager or the Community Mobilisation Specialist. A computer literate secretary may also be required. The monitoring section should have its own computer.

Formats will be developed in simple forms for the field staff to use, and these will be accompanied by an information campaign to project staff to explain the purpose of monitoring and how it can help them in their work. This ought to help avoid the situation of project staff not being cooperative in monitoring activities because they see it as an extra burden of no use to themselves.

Monitoring data should be collected on a monthly basis, and quarterly monitoring reports should be sent to the Project Coordinator.

Project management can identify issues which need detailed investigation, and these can be the subject of special studies which the Project Coordinator will contract locally or arrange for external inputs.

TNC should set up a simple monitoring system to observe the effects of the training on the job performance of the trainees in the field. TNC should submit quarterly monitoring reports to the Project Coordinator.

In addition to the monitoring implemented by the project itself, and by the TNC, the WRI will be involved in a separate monitoring programme. Already, WRI has been involved, at the request of Danida, in making an "Inventory and assessment of Perennial Springs and Streams in the Volta Region" and an "Assessment of the Potential for Hand-dug Wells in the Volta Region". In future, WRI will carry out a regular monitoring programme within the Volta Region which will include low flow measurements in small streams and a more general water resources monitoring related to changes in land use. There will be a separate budget line for these activities included in the overall project allocation.

Some indicators that can be used in project monitoring

are found in section 11.1.

Reporting

The project should submit quarterly progress reports, including the monitoring report, to the Danish Embassy and the Project Director in GWSC.

Accounts should be submitted monthly.

Reviews

Joint Danida/Ghana Government reviews should take place on an annual basis, and should be linked to the annual planning exercise. The first one would take place in October/November 1993. The first review will be primarily concerned with planning for 1994 and reviewing training and extension activities. It need not be a large team as not many other activities will have taken place.

An internal review of the work of TNC should be conducted before the arrival of the Review team by the Community Mobilization specialist assisted by the ESS/EHAs.

11.1. Project Indicators.

The project management will develop a set of indicators in connection with setting targets in the annual plans of action. Additionally, overall project indicators are suggested as follows:

Outputs to Objectives

A baseline survey should be carried out in two village communities with a high incidence of guinea worm prior to project intervention. The selected communities should use different types of water sources. An impact study one year after completion of the water supply will determine the immediate effects of the project. For ex-post evaluation purposes the same two villages can be chosen for study some years after project completion. This will give some indication with regard to the sustained effects of the project intervention.

Number of Watsan Committees established and maintaining their supplies and spearheading improved health and hygiene information in their villages as a percentage of the number of communities which have requested project support and actually received support. The project target is that 50% of the village communities in any district have responded positively to mobilisation and have es-

established Watsan committees, bank accounts, etc.

Activities to Outputs

- For the sanitation component the number of latrine slabs sold through commercial outlets will be relevant project indicators.
- An indicator with regard to the functioning of the DMC's could be to assess the number of actions taken by the committee in monitoring the project activities.
- Village inventories have been carried out by the extension staff prior to intervention. The following baseline information both for planning and evaluation have been gathered:
 - Population (size and language)
 - Community type (scattered, nucleated)
 - Health indicators - guinea worm, bilharzia, river blindness, etc.
 - Assessment of number of households improving their domestic water.
 - Sanitation. Existing sanitation solutions and experience with previous projects.
 - Main water source (NB; both present and former - in the case of broken down pumps and inoperative piped schemes). Type of water point, distance to it, and water quality (dry season and wet season)
 - (Hydro-)geology.
 - Hand dug wells (presence and suitability for upgrading)
 - Possible new water supply installations
 - Indications of need
 - Location map

These inventories may be used by the project monitoring unit for statistical purposes as well assessment of project outputs, when relevant. A further assessment of the project outputs in selected communities are:

- Rate of revenue collection in the community
- Number of households using improved water for domestic purposes increased to ...
- Time-lag between system break-downs and action requested
- Frequency of maintenance check-ups of water points
- Women representatives trained and active.
- Number of Watsan committees trained
- Quality and continuity of financial record-

12.

PROJECT IMPLEMENTATION SCHEDULES

- Table 12.1: Project Implementation Schedule - Phase 1.

- Table 12.2: Project Implementation Schedule - Phases 1, 2 and 3.

12.1 PROJECT IMPLEMENTATION SCHEDULE - Phase I

	PPP	1	2	3	4
I GENERAL					
I.1 Posting of Project Coordinator		■			
I.2 Establishment of R.P.O.		■			
I.3 GWSC abolition of tariffs campaign		■	■		
II. TRAINING					
II.1 Recruitment and training of ES	■			■	
II.2 Recruitment and training of EHA	■	■	■	■	■
II.3 District workshops		■	■	■	■
II.4 Regional workshop		■			
II.5 Other training	
II.6 Material production
II.7 Training programme for women
III. COMMUNITY MOBILIZATION					
III.1 District Management Committees		■	■	■	■
III.2 Information dissemination	
III.3 WATSAN Committees	
III.4 Community training	
IV. WATER SUPPLY					
IV.1 Village feasibility studies	
IV.2 Constructions and rehabilitations	
IV.3 Support to O&M units	
IV.4 Support to private sector in pump production and distribution, drilling and O&M	
IV.5 Water resources data collection
IV.6 Hydrogeological studies		■			
V. SANITATION					
V.1 Study		■			
V.2 Latrine slab production		■	■	■	■
V.3 Hygiene education	
VI. CONSULTANCIES					
VI.1 Computer systems design		■			
VI.2 Rural credit study				■	
VI.3 Local consultancies		■
VII. REVIEWS					
VII.1 Joint reviews		■	■	■	

TABLE 12.2 IMPLEMENTATION SCHEDULE

	PHASE 1				PHASE 2			PHASE 3		
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Ho	■									
Hohoe	■									
District 3		■								
District 4			■		■					
District 5				■						
District 6					■					
District 7					■					
District 8						■		■		
District 9						■		■		
District 10							■		■	
District 11								■		
District 12								■		

- keeping by Watsan committees
- Number, frequency and quality of visits to communities
- Frequency and quality of reporting (visit log-books)

Effect of training on GWSC workshop personnel, private artisans and local distributors of spare parts:

- Time of delivery of spare parts
- Time-lag between request for repair and actual repair work implemented

Annex 1

PROPOSED TECHNOLOGY MIX - WATER SUPPLY OUTPUTS (all phases)

TECHNOLOGY MIX	NUMBER SYSTEMS	USERS/ SYSTEM	PEOPLE SERVED	PERCENT %
Hand-dug wells	300	200	60,000	11
Hand-dug wells (with handpump)	500	300	150,000	27
Boreholes/handpumps (new construction)	300	300	90,000	17
Boreholes/handpumps (rehabilitation)**	300	300	90,000	17
Spring protection systems	100	300	30,000	6
Piped gravity systems	30	1,500	45,000	8
Solar Pumping systems	30	1,200	36,000	7
Electrical pumping systems	30	1,200	36,000	7
Roof catchment	100	20	2,000	< 1
T O T A L			539,000	100

** Rehabilitation estimates based upon a total of 932 boreholes in the region minus 336 KfW boreholes in good condition equals 596 as potential rehabilitations. Assuming a 50% demand for rehabilitations will allow for roughly 300.

Annex 2

PROPOSED TECHNOLOGY MIX - WATER SUPPLY OUTPUTS (Phase 1)

TECHNOLOGY MIX	NUMBER SYSTEMS	USERS/ SYSTEM	PEOPLE SERVED	PERCENT %
Hand-dug wells	100	200	20,000	11
Hand-dug wells (with handpump)	150	300	45,000	25
Boreholes/handpumps (new construction)	100	300	30,000	13
Boreholes/handpumps (rehabilitation)**	100	300	30,000	13
Spring protection systems	50	300	15,000	7
Piped gravity systems	20	1,500	30,000	21
Solar Pumping systems	10	1,200	12,000	5
Electrical pumping systems	10	1,200	12,000	5
Roof catchment	30	20	600	< 1
T O T A L			194,600	100

ANNEX 3

WATER SUPPLY OUTPUTS (Phase 1) --- BUDGET

TECHNOLOGY	NUMBER SYSTEMS	PEOPLE SERVED	COST PER CAPITA (DRC)	TOTAL COST (DRC x 1,000)
Hand-dug wells	100	20,000	130	2,600
Hand-dug wells (with handpump)	150	45,000	120	5,400
Boreholes/handpumps (new construction)	100	30,000	340	10,200
Boreholes/handpumps (rehabilitation)**	100	30,000	100	3,000
Spring protection systems	50	15,000	70	1,050
Piped gravity systems	20	30,000	340	10,200
Solar Pumping systems	10	12,000	460	5,520
Electrical pumping systems	10	12,000	460	5,520
Roof catchment	30	600	120	70
TOTAL		194,600		43,560

ANNEX 4

WATER SUPPLY OUTPUTS (all phases) --- BUDGET

TECHNOLOGY	NUMBER SYSTEMS	PEOPLE SERVED	COST PER CAPITA (DICK)	TOTAL COST (DICK x 1,000)
Hand-dug wells	300	60,000	130	7,800
Hand-dug wells (with handpump)	500	150,000	120	18,000
Boreholes/handpumps (new construction)	300	90,000	340	30,600
Boreholes/handpumps (rehabilitation)	300	90,000	100	9,000
Spring protection systems	100	30,000	70	2,100
Piped gravity systems	30	45,000	340	15,300
Solar Pumping systems	30	36,000	460	16,560
Electrical pumping systems	30	36,000	460	16,560
Roof catchment	100	2,000	120	240
TOTAL		539,000		116,160

ANNEX 5

LOGICAL FRAMEWORK

Rural Drinking Water Supply and Sanitation Project in Volta
Region.

Phase 1: 1993 - 1997.

Assumptions

activities and outputs are:

- Establishment by Government of a more autonomous Rural Water Supply Division within GWSC (national level and regional levels) with the Deputy Managing Director, Rural Water Supply Division reporting directly to the Managing Director of GWSC
- Commitment by participating communities to the community management and O&M approach to their water supply and sanitation facilities

inputs and activities

- Communities will articulate their demand to the project for being included in the services. And subsequently fulfil the requirements for being included in the project activities.
- GWSC will place a district manager in a district prior to the project starting activities in a district.

Government Commitments.

- Government commitment (MoH and DCD) to the establishment of a district-based team of extension staff who will be seconded from the health and community dev. personnel.
- GWSC should post a co-manager to be part of the project team.
- Office facilities in Ho will be made available by GWSC to be re-novated by Danida during the autumn of 1992, in order to be ready for use by the project team upon arrival.
- GWSC will propose a workable solution to the issue of arrears in tariff payments.
- The project will be exempted from duties and taxes on all materials and other inputs to the project.

Activities to Outputs

- For the sanitation component the number of latrine slabs sold through commercial outlets will be relevant project indicators.
- An indicator with regard to the functioning of the DMC's could be to assess the number of actions taken by the committee in monitoring the project activities.
- Village inventories have been carried out by the extension staff prior to intervention. The following baseline information both for planning and evaluation have been gathered:
 - Population (size and language)
 - Community type (scattered, nucleated)
 - Health indicators - guinea worm, bilharzia, river blindness, etc.
 - Assessment of number of households improving their domestic water.
 - Sanitation. Existing sanitation solutions and experience with previous projects.
 - Main water source (NB; both present and former - in the case of broken down pumps and inoperative piped schemes). Type of water point, distance to it, and water quality (dry season and wet season)
 - (Hydro-)geology.
 - Hand dug wells (presence and suitability for upgrading)
 - Possible new water supply installations
 - Indications of need
 - Location map

These inventories may be used by the project monitoring unit for statistical purposes as well as assessment of project outputs, when relevant. A further assessment of the project outputs in selected communities are:

- Rate of revenue collection in the community
- Number of households using improved water for domestic purposes increased to ... *
- Time-lag between system break-downs and action requested
- Frequency of maintenance check-ups of water points
- Women representatives trained and active.
- Number of Watsan committees trained
- Quality and continuity of financial record-keeping by Watsan committees
- Number, frequency and quality of visits to communities
- Frequency and quality of reporting (visit logbooks)

Effect of training on GWSC workshop personnel, private artisans and local distributors of spare parts:

- Time of delivery of spare parts
- Time-lag between request for repair and actual repair work implemented

be carried out in two village communities with a high incidence of
ject intervention. The selected communities should use different types
act study one year after completion of the water supply will determine
the project. For ex-post evaluation purposes the same two villages
some years after project completion. This will give some indication
ined effects of the project intervention.

ees established and maintaining their supplies and spearheading
one information in their villages as a percentage of the number of
equested project support and actually received support. The project
e village communities in any district have responded positively to
tablished Watsan committees, bank accounts, etc.

DEVELOPMENT OBJECTIVE

- Better living and health conditions of the target population in the project area. This situation will be arrived at through provision of reliable and easily accessible sources of safe drinking water which are managed and sustained by the communities.
- These conditions will have been further enhanced by a reduction in water and excreta related diseases through health education and household adoption of improved latrines.

IMMEDIATE OBJECTIVES

- In the communities which have been reached by the project, reliable and sustainable safe drinking water supply installations and systems are functioning through community management, which is supported by institutional structures at district level.
- Improved knowledge of hygienic and sanitary practices is applied in the communities reached by the project.
- Improved sanitary conditions function in some of the target communities.

PROJECT OUTPUTS.

1. Water Supply

- Depending on the community demand, appropriate and cost efficient water supply systems have been built or rehabilitated in villages covering and estimated 195,000 people during Phase 1
- A multi-disciplinary project team has put in place appropriate mechanisms to improve the delivery of water supply and sanitation services to the rural population of Volta Region.
- Mechanisms for the promotion of dialogue between the District Assembly water supply and sanitation personnel (including the project team) and the villages requiring improved sector facilities are put in place. Functioning procedures which assist sector personnel and village recipients to assess the technology options selection process are established
- Standard procedures are established to allow for the participation of private sector firms in the implementation of water supply and sanitation facilities.
- Private sector firms are in place satisfying the demand for sector construction and operation and maintenance services.
- All potential villages have been reached by the project's awareness campaign.

2. Health, Hygiene and Sanitation

- Extension messages on the importance of improved sanitation have been disseminated in the communities, where water supplies have either been constructed or rehabilitated.
- Sanitary latrine slabs for improvement of household latrines are for sale through commercial outlets (including an installation manual) and some households have installed these. Two hundred slabs per district (800 slabs during Phase 1) will be produced by local contractors for sale through the local commercial market.

3. Training

- Six district workshops have been conducted.
- Five as part of the implementation of phase 1 and one as preparation for phase 2.
- Extension supervisors (about 16) have been trained (8 - 10 of these have been trained during the PPP), and 60 Field Assistants trained (20 during PPP).
- The following personnel in Government has been trained:
 - Eight District Planning and Budgeting personnel
 - DCO extension personnel have been reoriented towards project strategy
 - GWSC management at regional and district level
 - Private mechanics (if there has been a need identified)
 - GWSC workshop and stores personnel
 - Private distributors/agents of hardware and spare parts
- With regard to the final beneficiaries, the following number have been trained by the ESs and EHAs:
 - 100 Watsan committees established and trained
 - 300 Representatives of Women's Groups trained
- Training of women's group representatives have comprised a minimum of two and a maximum of four women per village; on average three women will have been trained from each village making the total to 300 during Phase 1 of the project.
- The main categories of training materials and documentation produced are:

- Guide to mobilization of village communities to be used by ESs and EHAs including visual aids, handouts, etc.
- Tested, revised and documented training programmes for ESs, EHAs, DCO personnel and district planning and budgeting personnel
- Monitoring and evaluation guidelines at ES, FA and community level tested and revised

4. Management and Extension System.

- At district level the multidisciplinary District Management Committee is established, functions and Coordinates water and sanitation activities.
- In those communities where there have been project activities the communities have established a committee dealing with the operation of the water supplies and spearheading that improved health, hygiene and sanitation activities are continuously emphasised and disseminated to the households.
- The extension system has a sustained functioning because the Field Assistants (EHAs), who have been seconded to the project in those districts where activities are undertaken, continue to be based in their respective areas of a district after project activities have stopped. They continue to disseminate and monitor health and sanitation as part of their duties within Ministry of Health.
- The Community Development Department has taken over part of the role, which during the project activities were carried out by the Extension Supervisors. More specifically this covers the linkages between committees at community and district level.

5. Operation and Maintenance.

- Community based O&M system is established in completed districts with linkages to district assembly extension staff and regional GWSC technical support staff;
- GWSC scaled down regional O&M workshops (three or less) re-oriented towards the provision of major O&M repair services are in place;
- Private sector firms/individuals are established to provide O&M services to the community managed water supply in the completed districts;
- Detailed plan of action to allow transition from current GWSC centralised O&M system towards the community based system is made.

PROJECT ACTIVITIES.

1. Water Supply.

identification of villages for potential inclusion in the project.

Selection of the appropriate technical option for a particular village.

Construction activities associated with water supply improvements incorporate village level activities such as the digging of the wells and digging of trenches for pipelines where feasible. Construction activities planned and monitored by the project team/GWSC, but the actual construction should be tendered and implemented by the private sector.

2. Health, Hygiene and Sanitation.

Delivery of extension messages to the communities, who have fulfilled the project requirements for intervention.

Project activities sanitation during phase 1 will involve:

- dissemination of latrines usage health messages through the project extension staff;
- investigation of an appropriate slab design for a simple, hygienic, low-cost rural latrine;
- preparation of tender documents for manufacturing these slabs;
- identification of and negotiations with one local merchant in each district centre where the sanitation efforts will be operationalised;
- production through private construction firms (or individual artisans) of 200 latrine slabs per district (800 slabs for phase 1 activities);
- preparation of a "how to" manual to accompany sale of slabs;
- follow-up software efforts by project extension staff to those who purchase slabs.

Further investigations should be conducted to determine the wisdom of embarking upon a public latrines programme.

3. Training.

- Finalisation of Terms of Reference and contracts for 8-10 ESs; recruitment of additional 8 ESs and selection of additional 40 PAs;
- The guidelines for monitoring the performance of the PAs will be tested and revised.
- On-the-job training and short workshops will be organised for District Planning and Budgeting personnel of districts undergoing project intervention as well as for GWSC management and personnel at regional and district level.
- Re-orientation seminars will be conducted for DCD extension personnel.

Field-testing, revision and finalisation of a number of draft training materials produced during the PPP.

Regional and District workshops will be held for key personnel within the rural water and sanitation sector.

4. Management and Extension System

Establishment of District Management Structures

The project will stage a regional workshop with representation from each district of the relevant cadres.

Two district workshops will be held in year one (in Bo and Bohoe districts).

A District Management Committee (DMC) will be established in each district after the project has been introduced at a District Workshop.

Establishment of Community Management Structures

Villages which have requested for assistance from the project and accepted their obligations, will establish a village Watsan committee.

Village Selection.

The activities of village selection will basically be village self-selection guided by project-defined criteria.

Implementation of an information campaign using the District Assembly, its elected representatives - the Assemblymen - and the DMC.

With an initial list of communities ready to fulfil the basic criteria, a process of information gathering will be initiated by the project including a technical feasibility study.

Recruitment and Activities of the Extension staff

The activity focus for the extension agents, covers:

- information dissemination to the communities
- community mobilization and community management training.
- health, hygiene and sanitation education.
- (self-) management of facilities by the community, i.e.
 - * water points
 - * sanitation facilities

5. Operation and Maintenance

During the first year of implementation, the RPO and GWSC will work out a detailed plan for the continued functioning of the GWSC workshops.

During the first year of project implementation the current GWSC tariff system for handpumps will be abandoned throughout the region. This will require a concerted effort by GWSC and the project staff to disseminate the new community management and O&M concepts throughout the region.

Investigations ways of involving the private sector in O&M activities.

PROJECT INPUTS.

1. Water Supply

- GWSC provision of office space at the regional level to accommodate the project team;
- GWSC provision of the Project Co-Manager to co-ordinate the Project from Mo;
- District Assemblies provision of office space for the District Liaison Officer of the project;
- District Assemblies provision of extension staff within the participating districts;
- Danida provision of a multi-disciplinary Project Team to implement the project design;
- Danida provision of hardware required to implement water supply facilities for the target population as per the demand expressed. The particular technology option selected will dictate the hardware required, i.e. well casings, handpumps, borehole construction, solar pumps, electrical pumps, gravity system components, hand-drilling survey equipment and production equipment, borehole drilling rig (?) etc;
- Danida provision of general logistical support for the regional project team, district project teams, and extension staff. Logistical support will include, but not be limited to, transport facilities and travelling allowances;
- Private sector involvement in the delivery of services.

2. Health, Hygiene and Sanitation.

- The project will have 8-10 Field Assistants per district seconded to the project from the MoH and DCD. The financial input will be payment of allowances, training programme and bicycles for the Environmental Health Assistants.
- There will be one project employed Extension Supervisor per 4 Field Assistants. The Extension Supervisors will be project employees and also be provided with motorcycles.
- Support staff from Ministry of Health and Department of Community Development. Financial input will be payment of allowances and transport assistance.
- Provision of a fund for support to existing health education efforts carried out at village level by the Ministry of Health and Department of Community Development.

- Latrine slab design;

- Private sector involvement in the production of 800 latrine slabs;

3. Training

Inputs to strengthen the TNC's capacity to support the project:

Inputs from recipient government/institution:

- GWSC personnel
- Secondment of qualified Field assistants (Environmental Health Assistants and Community Development cadres) to the project

Other sources:

- TNC personnel funded by Danida

Danida:

- Training adviser, short term consultants, scholarships to TNC.
- Funds for training activities to be carried out by TNC.
- General support to TNC in terms of equipment, materials.
- Materials and equipment for the Regional Project Office, Training/extension component.

4. Management and Extension System

Basic equipment for these DMC committees i.e. stationary, a typewriter, a filing cabinet, office desk and chair. Provision of allowances and transport.

The communities will provide human resources for a Watsan committee, and funds for operation and maintenance.

5. Operation and Maintenance

- Community contributions towards the O&M requirements;
- GWSC's continued recurrent support to the 3000 Wells Project's three O&M workshops throughout the Volta Region.
- Danida support to the 3000 Wells Project O&M workshops in the region during the transition to community O&M systems.

... the community based system is made.