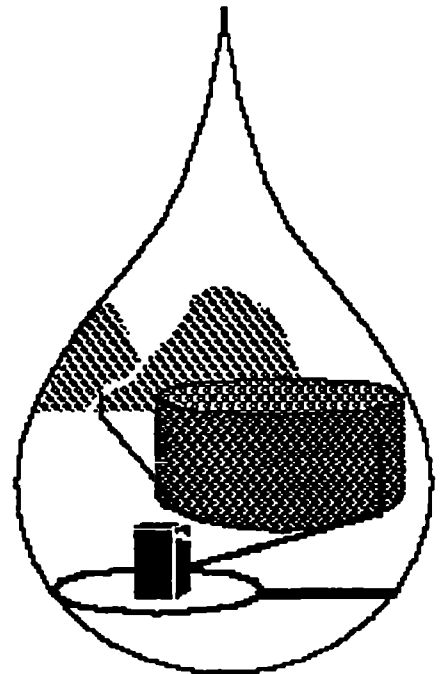
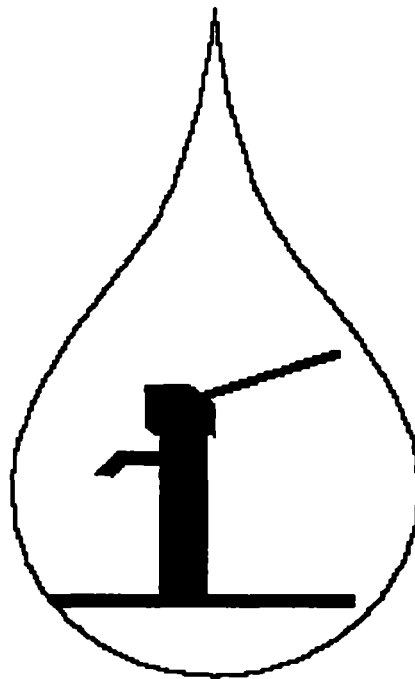


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A Framework for Village Managed Operation and Maintenance of Water Schemes.

FIRST DRAFT-1. Dec. 1992



DANIDA Water Project
Iringa, Ruvuma and Mbeya Regions
Operation and Maintenance Task Force

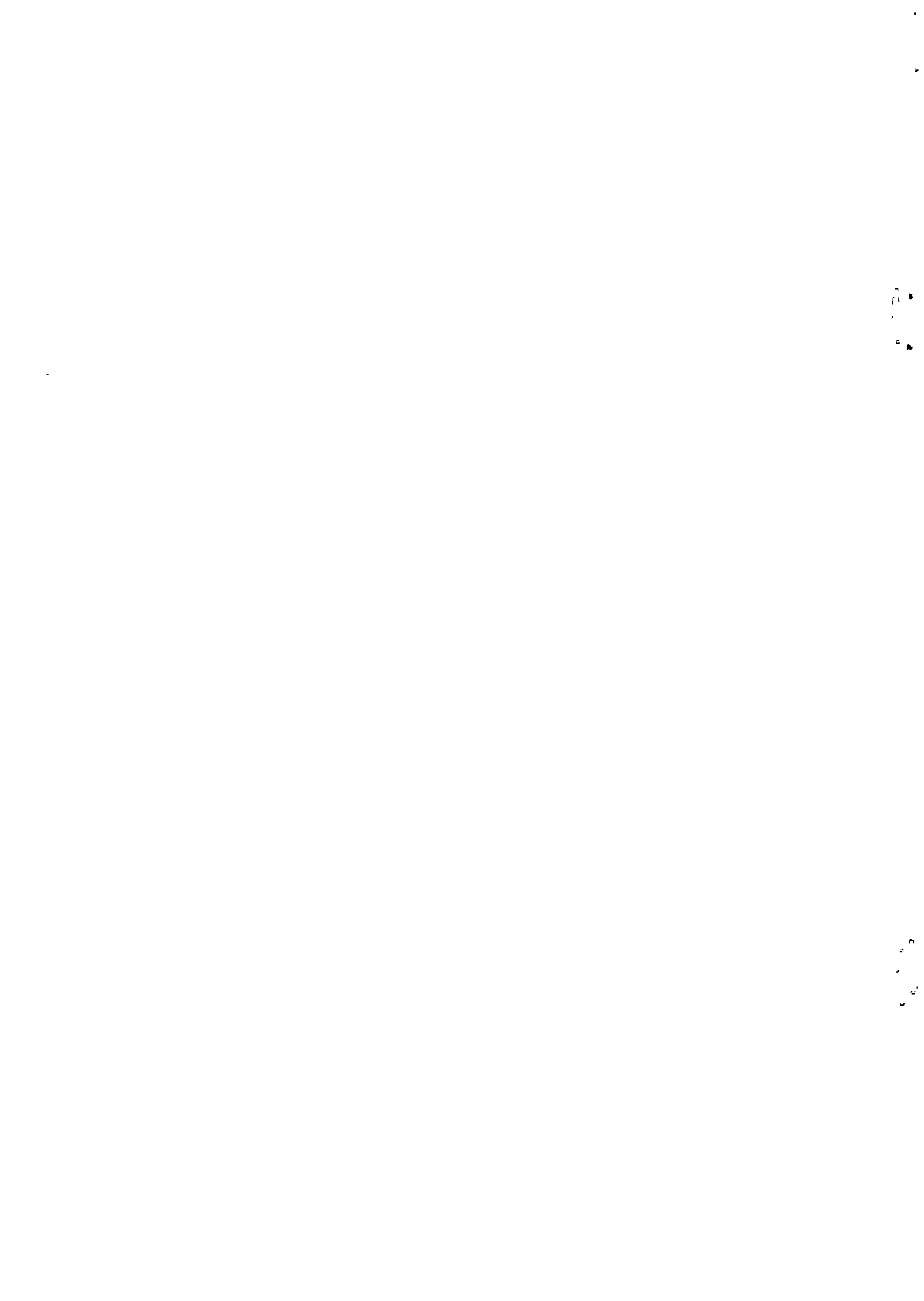


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1.0 SYNOPSIS

1.1 OVERALL OBJECTIVE OF FRAMEWORK

In Tanzania all water projects are aiming at the same goal; to make the water supplies sustainable. Several factors play a crucial role, and operation and maintenance may be the most important. The different projects are having the same goal, but the approach used may differ.

This framework is meant to be a guiding document in order to give the various water projects a similar approach towards their common objective. The overall objective of the framework is formulated in the following:

To guide the operation and maintenance processes of village water supplies.

To achieve sustainable water supplies will take time. The key factor will be to start up the process with the necessary outside input and make it, after a while, going with a minimum of input.

1.2 USER GROUPS

The users of this framework is divided into two groups:

- primary users
- secondary users

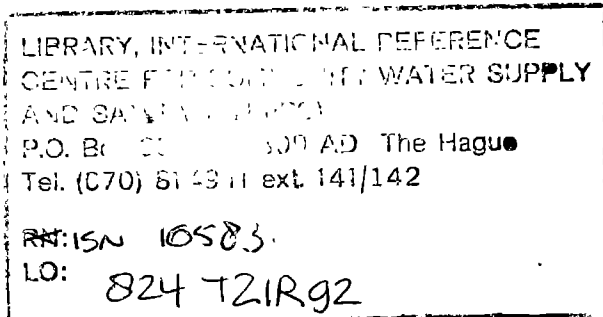
*- Involvement
VWC?
and direct beneficiaries
should be in focus!*

Primary users are defined to be all relevant personnel in district administration. These are District Planning Officer, District Water Engineer, District Community Development Officer and at ward level Assistant Executive Officers and Community Development Assistants.

Secondary users are all others involved in the development of the water sector in the country. These are government, non government, parastatals and private organizations and individuals.

The implementors of the framework will be the mentioned personnel at district and ward level (primary users). The necessary support to do this implementation has to come from the secondary group in form of:

- economical support, and
- development of necessary skills



1.3 FRAMEWORK UTILIZATION

The uses of the framework are explained in the following:

- as a guide to enable the primary users to introduce Operation and Maintenance set up at village level.
- to implement the water policy on Operation and Maintenance matters.
- to guide in finding the optimal Operation and Maintenance set up for a scheme.

The actual use of the framework is as a tool for the ^{village support staff to help villagers} implementors in finding the best way of making a Operation and Maintenance set up for a scheme. It is meant to be flexible enough to give room for the variation in management both financially and administration wise one finds from one village to another.

(hereafter called 'facilitation')

1.4 INTRODUCTION OF FRAMEWORK TO USERS

In general the introduction of the framework to the ^{facilitators} users will be through information, communication and education. More specific that is to say for primary users through workshops, seminars, meetings and site visits. For secondary users through information by distributing the document.

The way to combine the actual situation in a village (scheme) with the ideas outlined in the framework will be an essential topic of a workshop for primary users.

Through site visits and practical implementation training of the framework the Operation and Maintenance set up can be implemented with a minimum of outside support after an intensive training period.

2.0 GUIDING PRINCIPLES

2.1 WATER POLICY AND LOCAL GOVERNMENT ACT

In the framework, Local Government Act 1981 and Water Policy 1991 have been fully considered at both Village and District levels and are guiding documents. However, as guiding in the development of this framework has also been the donor's (DANIDA) intent spelled out in the general guidelines on the Water and Sanitation Sector policies. This is the provision of support to strengthen capacity through institutional and human resources development with view to improve reliability and sustainability of installed facilities. Taking into consideration the present set up and the project in particular some practical changes have been incorporated.

This has been necessary because Local Government Act is mainly dealing with administrative and management structure at all levels in a district, while some practical issues in implementing the Water Policy would require interventions from levels higher than the district, i.e. regional and national. However, it should be emphasized that the main purpose of this document is to guide the development of the Operation and Maintenance activities largely to be managed at village level.

The Water Policy emphasizes on the three following key issues.

- 1) Division of responsibility between sector agents.**
- 2) Participation of village councils and villagers in planning and management of water supply and their environment.**
- 3) Cost recovery/cost sharing through user contribution to construction, and operation and maintenance of the water supply.**

To operationalize the framework some interventions from the ward and district levels are deemed necessary. The interventions will be in the form of the following:

- 1. An information campaign is introduced to create awareness among leaders and beneficiaries of the Operation and Maintenance features.**
- 2. To make the Village Governments/Village Water Committees understand Financial and Management Procedures by providing necessary training.**
- 3. Appropriate organizational structures and financial and management systems are developed and used for group schemes.**

4. **Scheme Attendants and other Scheme Staff are appropriately trained, and paid.**
5. **Spare Parts are made available either through the private market or from District Water Engineer for purchase by the schemes.**
6. **Appropriate scheme Manuals are developed.**
7. **Private connections are allowed where design can accommodate it.**
8. **An appropriate monitoring and evaluation system is developed and used.**
9. **District Water Engineers and District Community Development Officers are made to be a consultative group to schemes and villages.**

Furthermore, since full achievement of the sectoral objectives envisages involvement of other sectors and organizations, the need to coordinate efforts of these institutions/organizations will be of utmost importance.

This framework is in conformity with the general guidelines of the water supply & sanitation.

2.2 DIVISION OF RESPONSIBILITIES

The division of responsibilities at different levels are given in Annex II as stipulated in the Water Policy. These responsibilities are given as a guide. The long term objective is for the villages to perform most of the Operation and Maintenance functions and the government institutions will remain with functions of monitoring, and giving advice.

2.3 VILLAGE INVOLVEMENT

The Water Policy directs that Village Water Committees are formed as management bodies for the schemes. **These Water Committees have to be part of the Village Government set up so that it can benefit from the support of the Village Government and is responsible to the Village Government.**

OK!

2.4 COST RECOVERY

The idea of the framework is that rural water supplies should be run on a cost recovery basis. This indicates that the villagers will have to meet the operation, maintenance and expansion costs. The villages will have to determine the means of collecting funds for this purpose.

2.5 REHABILITATION OF EXISTING SCHEMES

One of the assumptions in order to make the Operation and Maintenance Framework function is that:

- **Schemes are properly designed and constructed according to set requirements and standards.**

It is a fact that a number of schemes constructed during Phase I and II need to be rehabilitated. Rehabilitation activities mainly required on intakes and storage tanks but also minor realignments and enlargements of transmission lines may be required in order to supply the designed demand. *why?*

2.6 GENDER ISSUES

Although the Water Policy stipulates women to constitute 50% of the members of the water Committee experience shows that this is not always observed and where it is implemented it does not guarantee active participation of the women in decision making.

It is envisaged that specific efforts by way of awareness raising and training will be made by focusing at women to guarantee smooth operation and maintenance of water supply schemes.

2.7 LEGAL ASPECTS

In order for the villages to be able to implement the framework legally they will have to formulate **By Laws** which will safeguard smooth Operation and Maintenance of Water Supply. The District Councils and wards will advise the villages in formulation of **By Laws**. Villages will own rights for the sources of the schemes.

3.0 ASSUMPTIONS

In order to make the Operation and Maintenance framework function some assumptions are deemed necessary, and they are categorized as follows:

- policy
- social
- technical
- management
- financial

3.1 POLICY MATTERS

- The Government policy will remain favourable to the water sector.
- The categorization of schemes in the water policy will not affect the validity of the framework.

3.2 SOCIAL CONSIDERATIONS

- The need and utilization of the scheme is accepted by the villagers.
- Gender issues are promoted, but not imposed.

3.3 TECHNICAL CONDITIONS

- Spare parts will be available for the villagers to purchase.
 - Schemes will be properly designed and constructed according to set requirements and standards.
 - All existing schemes will be rehabilitated where required in order to bring them up to acceptable standard.
 - Existence of a functioning supportive mechanism.
(not only for technical, but also
pradm & social issues - eg
conflict management)
- Problemer efter overdragelse har Danida
hæppe betjølser til at
bruge midler her til.*

3.4 MANAGEMENT

- Village Government must accept and acknowledge the establishment of a Village Water Committee.
- That the existing reporting system from village to ward and to district will be further developed to include water.
- The candidates needed for the Operation and Maintenance set up should preferably come from the village.
- The set up is promoted by leaders involved at all levels (ward, district, regional and national).

3.5 FINANCIAL

- Accepted among rural population that they will have to cover the cost of Operation and Maintenance of their schemes.

*fundsetting for Village Agreement
og bps reference herbil.*

4.0 O&M SET UP FOR VILLAGE WATER SCHEMES

4.1 SINGLE GRAVITY SCHEMES

Management

- Organization

The Village Water Committee will be at the same level as other village committees. Members of the Village Water Committee are elected among the villagers and will be the basis for the Operation and Maintenance of the water supply.

The main tasks of the Committee will be:

1. Act as coordinator on water related issues between the villagers and Village Government.
2. Prepare in collaboration with Village Accountant annual budget for Operation and Maintenance activities and present to Village Government.
3. Awareness raising through information and meetings with villagers.
4. Support Scheme Attendants in the purchase of tools/spareparts/equipment.
5. Monitor the collection and use of Village Water Fund, and report to the Village Government.
6. Hold regular internal meetings and keep minutes of the meetings. Preferably in a Village Water Committees meeting book which can easily be checked by Village Government, Ward Community Development Assistants, etc. for the monitoring purpose.
7. Monitor the Scheme Attendants performance, and report to Village Government.
8. Assist Scheme Attendants in securing their payment i.e. by contract with Village Government.
9. Ensure that Scheme Attendants have received and obtained necessary skills.

Clear cut Task Analysis or Job Descriptions for the Scheme Attendants, Accountants, members of the Village Water Committees and Ward Community Development Assistants have to be developed. As an overall description of duties, Scheme Attendants will be responsible for all technical matters.

Village Water Committees will be responsible for coordination, management and budgeting, while the Accountants will be responsible for the correct use and maintenance of Village Water Funds.

The Ward Community Development Assistants will have duties of monitoring and assist the Water Committees/Village Governments in matters related to management, training and problem solving.

Finance

In this respect finance means Village Water Fund. It is necessary for a village based Operation and Maintenance system that this fund is properly managed.

There are several ways of managing a Village Water Fund, but one appropriate solution could be to utilize the existing system of contribution, book-keeping and monitoring within the village.

As of today, the Ten-Cell leaders are collecting the revenue, and they are also the key persons regarding mobilization.

If there will be a change in the village structure, it is envisaged that the collection of Village Water Fund should follow the government routines for collection of funds.

The way of contribution, either it is done per household, family or able bodied person, has to be decided and agreed upon by each individual village. Then the Ten Cell leaders (Balozis), who are familiar with everybody within their cell could be in charge of the fund-collection and keeping the record of the payers and non-payers.

After collection, which should not take more than 2-3 days, the funds should be handed over to the Village Accountant who will have to sign for it in the Balozis or the ones in charge record books and enter it into the Village Water Account.

✓ The amount to be collected will depend on the budget prepared by the Village Water Committee, and the frequency of collection may differ from village to village.

2) However, it is envisaged that the fund-collection should be done regularly, and is announced throughout the village by the Village Water Committee. Collection on a monthly basis is probably the best alternative, because it follows a known routine and is easy to understand.

harvest time!

Technical Aspects

The Operation and Maintenance Activities are divided into three categories:

1. Operational - Water production
2. Preventive - Minimize or prevent breakdown
3. Corrective - Repair of breakdown

Scheme Components	Works to be carried out	Responsible
Intake/Water Source	Routine cleaning of Water source Periodic repairs of intake structure Replacement of screens Improvement of embankments Improvement of catchment area Repair of valves Reading of water meter - finds et sadant ?	Scheme Attendants
Gravity Main Pipelines	Backfilling of eroded areas Routine opening of wash-outs Air-valves and stop-valves Change of gaskets Repair of bursts Clean/repair valve chambers Cleaning of pipeline areas Water flow reading ?	Scheme Attendants
Storage Tanks and Break Pressure Tanks	Routine cleaning Repair leakage Repair/change float valves Repair/change inlet and outlet valves Repair of concrete structures Water flow reading ?	Scheme Attendants
Distribution Pipelines	Backfilling of eroded areas Repair of bursts Regular opening of valves Cleaning and repair of Valve chambers Cleaning of pipeline area	Scheme Attendants
Domestic Points and Washing Slabs	Change/repair bib cocks Cleaning/repair of aprons Cleaning of surroundings Regular measurement of water flow ?	Scheme Attendants

Environmental protection ?

Water consumption in relation to scheme capacity?

Spareparts and Equipment

The Operation and Maintenance Scheme Manual will clearly indicate the range and basic quantity of spareparts and equipment which may be required.

However, the exact quantity to be bought of a certain sparepart can only be determined by experience.

Scheme Attendants shall be responsible for procurement of required spareparts/tools and equipment.

The operation and Maintenance Scheme Manual will also indicate approved outside agents !
which can carry out repairs or provide services to the Scheme Attendants if requested.
private sectm

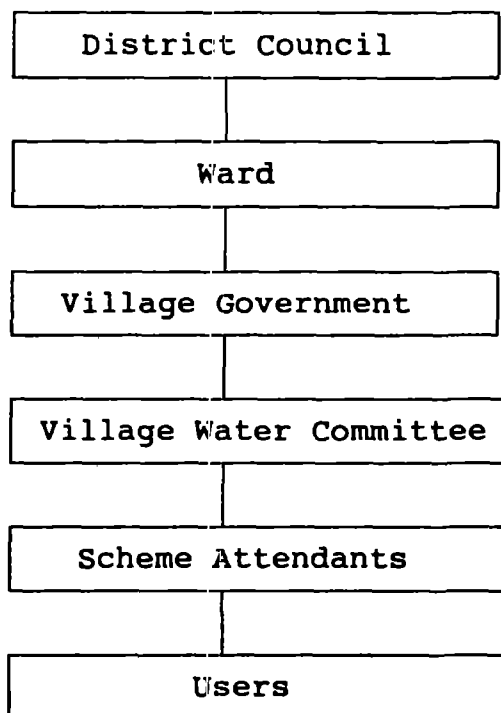
Reporting

- Scheme Attendants to report problem(s) to Village Water Committee.
- Village Water Committee to report to village government for action (Action could be financial or mobilization).
- Village government to report unsolved problem(s) to Ward Community Development Assistant who in turn either solves them or forward to District Planning Officer/District Water Engineer.
- Where applicable problems could be solved at Ward/Division level.

✓ The existing reporting system from the villages through the wards and up to district level should be further developed to include water issues.

Necessary information and training must be given to the Ward Community Development Assistants who will actually do the reporting.

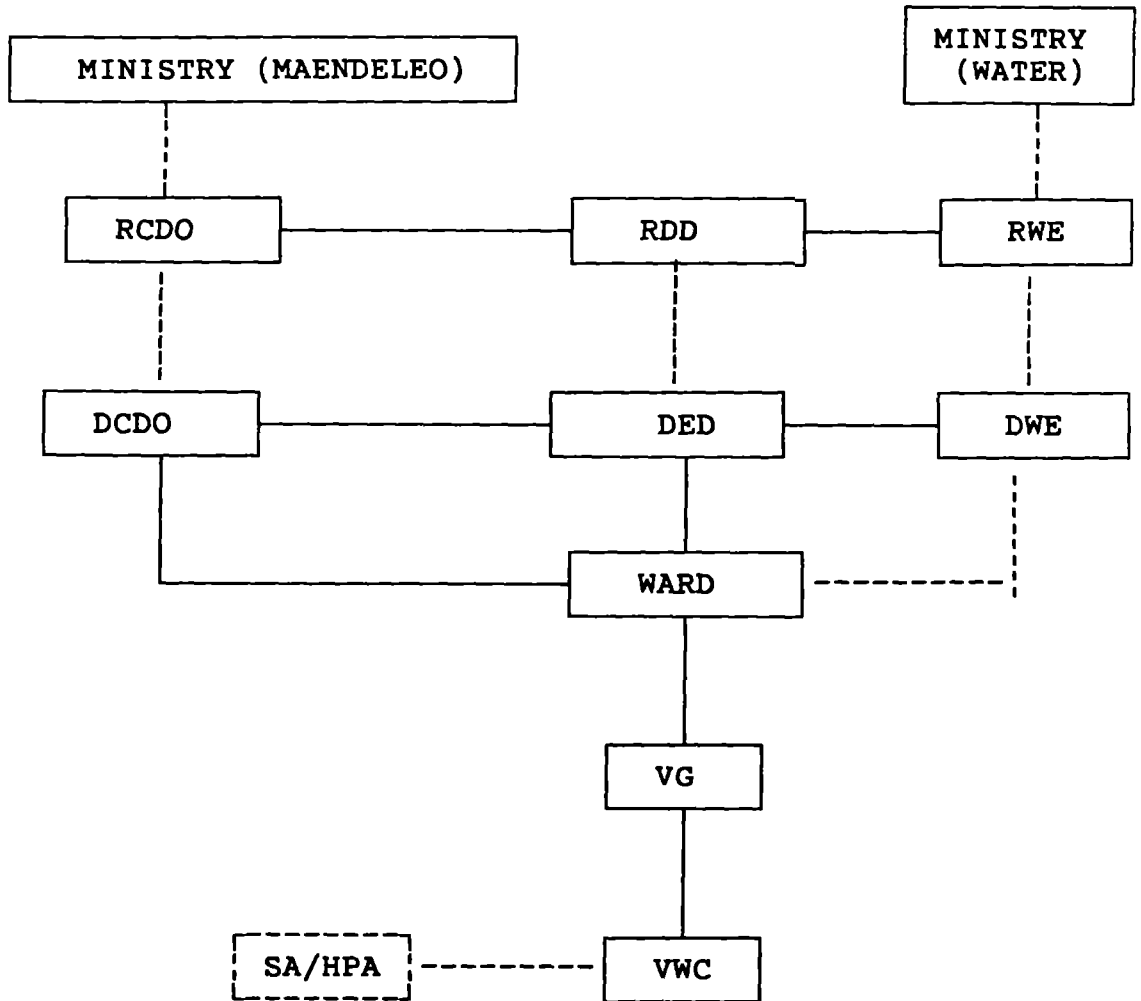
Reporting from Village to District



Private Connections

Private connections should be allowed and encouraged where the design can accommodate it. This recommendation is based on the fact that a scheme has got a greater chance of being sustainable where private interests are present. That will create a pressure to those who are responsible for the actual running of the scheme. It is not likely to believe that private connections will be so many in a village, since these connections will have to be paid for by the individuals. However, there are a number of schemes where the design and the actual water amount available cannot allow private connections. Information on this issue will be available for the villagers from District Water Engineer's offices.

Organization Chart



Environmental Aspects

The maintenance of the Water Source is of utmost importance. A poorly maintained or degraded catchment area or source may greatly reduce the water production. It is therefore one of the duties of the Village Water Committee to make sure that the water source and its catchment area is kept and maintained according to set standards. These standards will be described in details in each scheme

manual. Reinstatement of the environment and protection against cultivation, livestock and human settlement may be necessary. By-laws may therefore be necessary to establish.

One part of the overall objective of the water supply is to improve the health. It is therefore necessary that the Village Water Committees the aspects of cleanliness of domestic points and washing slabs.

5th March 2010

The following are issues which may be required to focus and take action upon:

Maintenance of Intakes/Catchment Area Surroundings

<u>Issues</u>	<u>Means</u>
- Prevent burning	- Info by Village Government,
- Prevent cutting of trees	- By-laws

Reinstate Environment

- To establish tree nurseries	- Demonstration,
- To establish good Veg. cover	- Training, Seeds etc.
- To prevent erosion	- By-law
- Plant trees/grass	- Demo/training

Protection from Outside Disturbance

- Necessary fencing	- Mobilization
- To avoid cultivation/livestock and settlements within 3 km distance from the source (intake) or 100M from stream/river.	- Info of Existing Laws

Keep Structure/Surroundings etc. Clean

- Drainage	- Info/Mobilization
- Fencing	

- Washing

Promote Use of Latrines

- Latrine types/cost
- Technical knowhow

- Demo/Info
- Advice

Promote Health Education

- Adult Education & Schools, Meetings

4.2 GROUPED GRAVITY SCHEMES

Management Aspects

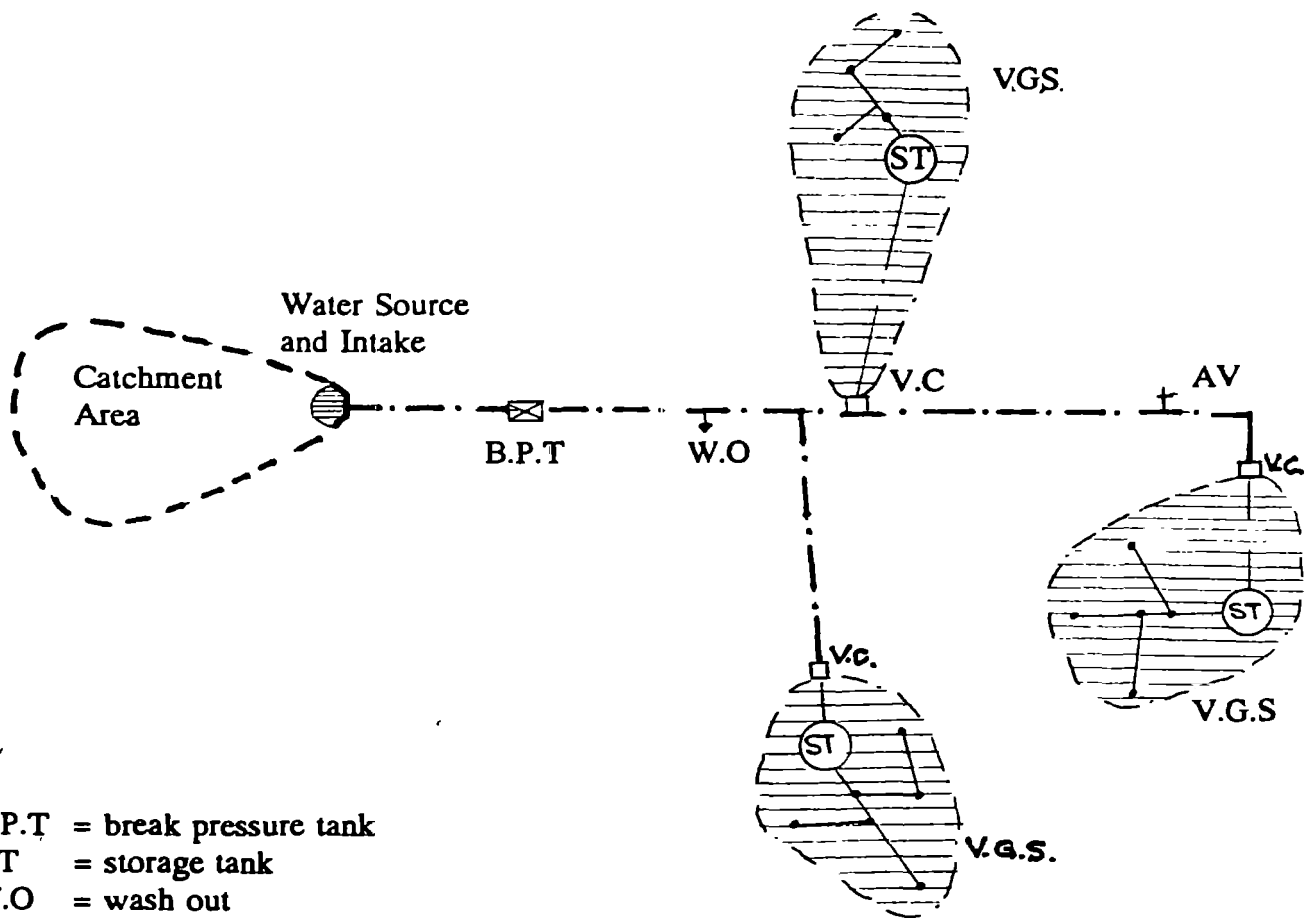
4.2

Grouped Gravity Schemes

Management Aspects

A grouped scheme is defined to consist of two or more village gravity schemes which are utilizing and are connected to commonly ``owned'' facilities, i.e. water source(s) and the intake(s), transmission pipelines and any other structure constructed on the transmission pipelines as shown below:

Grouped Village Schemes



- B.P.T = break pressure tank
- S.T = storage tank
- W.O = wash out
- A.V = air valve
- V.C = valve chamber
- V.G.S = village gravity scheme

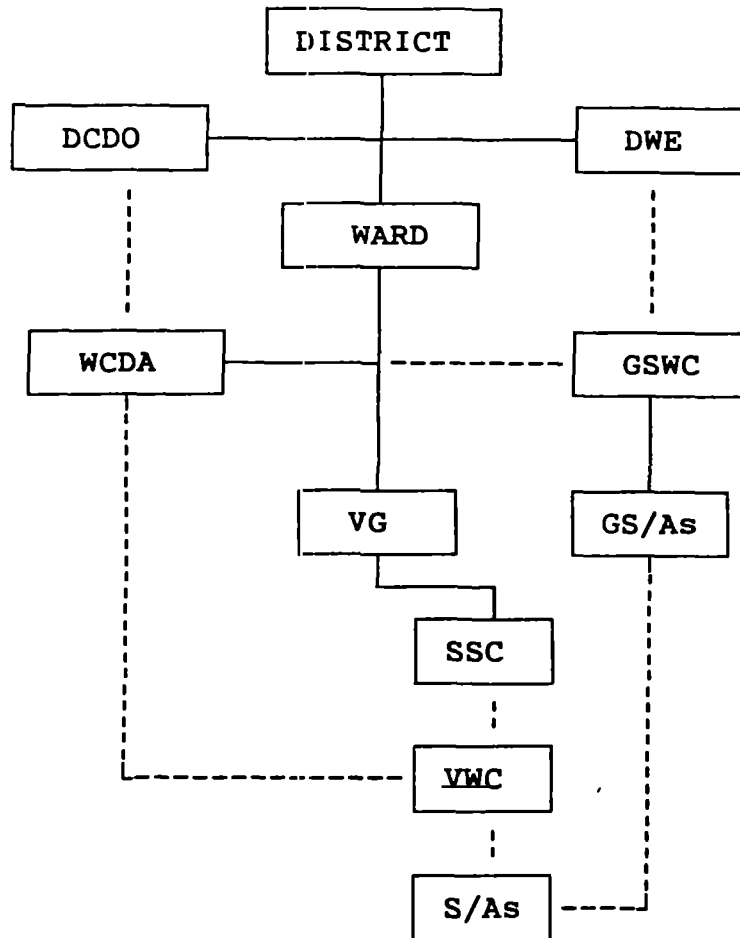
Organizational Set-ups

The Organizational Set-up of Grouped Schemes will differ in its composition and extent depending on the number of village schemes, wards and divisions which are involved. For a Grouped Village Schemes there are however a need to create an overall body i.e. a Grouped Scheme Water Committee (GSWC) with representatives from the villages, wards and, if necessary, divisions concerned. The GSWC will have as a main task to coordinate the O & M activities of the commonly owned facilities and between the VG/VWCs on water related issues. For larger Grouped Schemes where a GSWC may become too a large body, there may be a need to create a smaller group which will have the day-to-day responsibilities for O&M activities of the commonly owned facilities. It is therefore necessary that the Organizational Set-up of each grouped scheme is considered on its features and complexity. A grouped scheme which includes only two villages located in one ward will of course have a different a less complicated Organizational Structure than a Grouped Scheme with several villages located in different wards and divisions. However, the overall Organizational Model for grouped Scheme will be as follows:

requires
changes in already signed hand over agreements

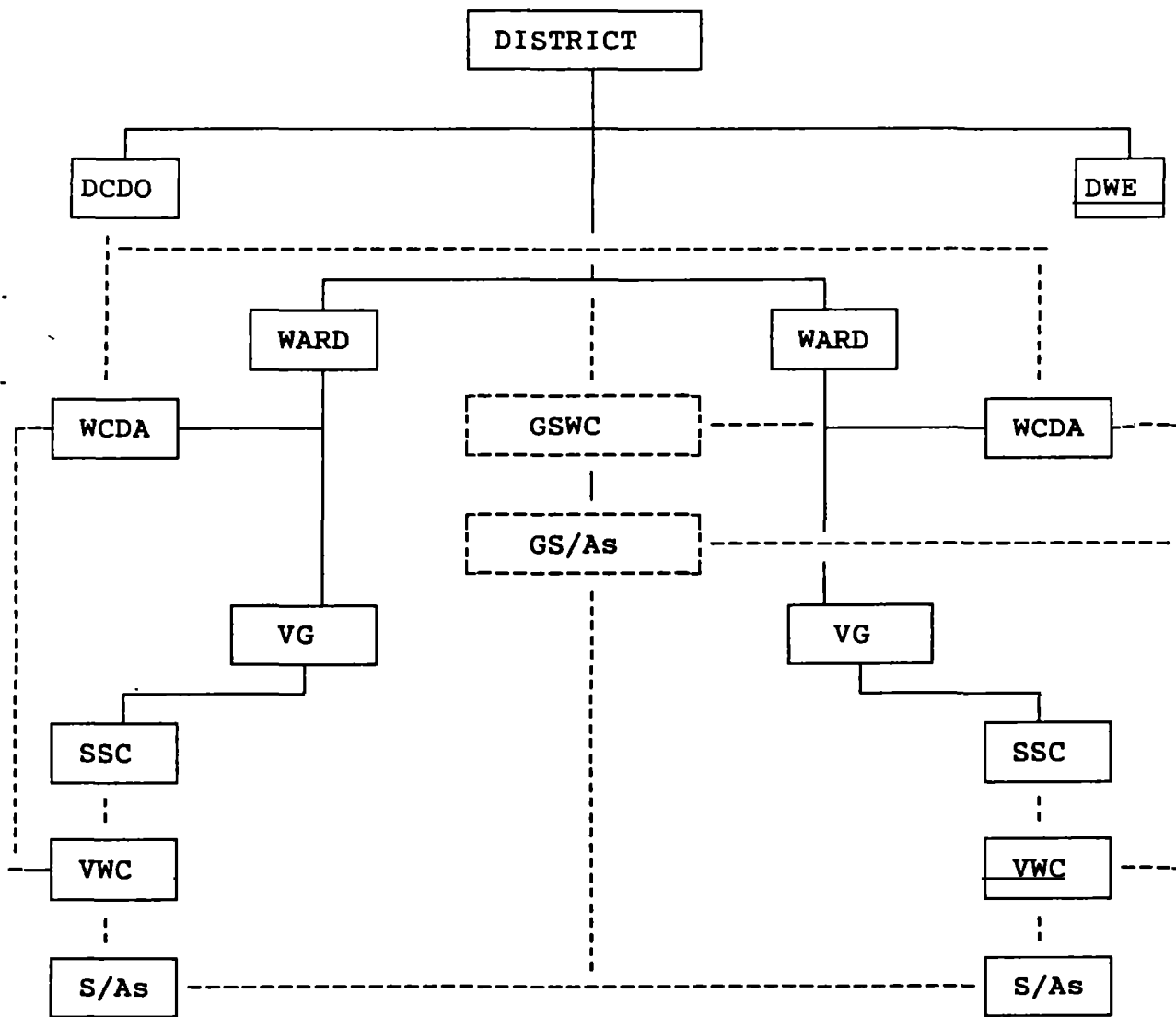
Organization Set-up where only one ward is concerned:

Organization Set-up where only one ward is concerned:

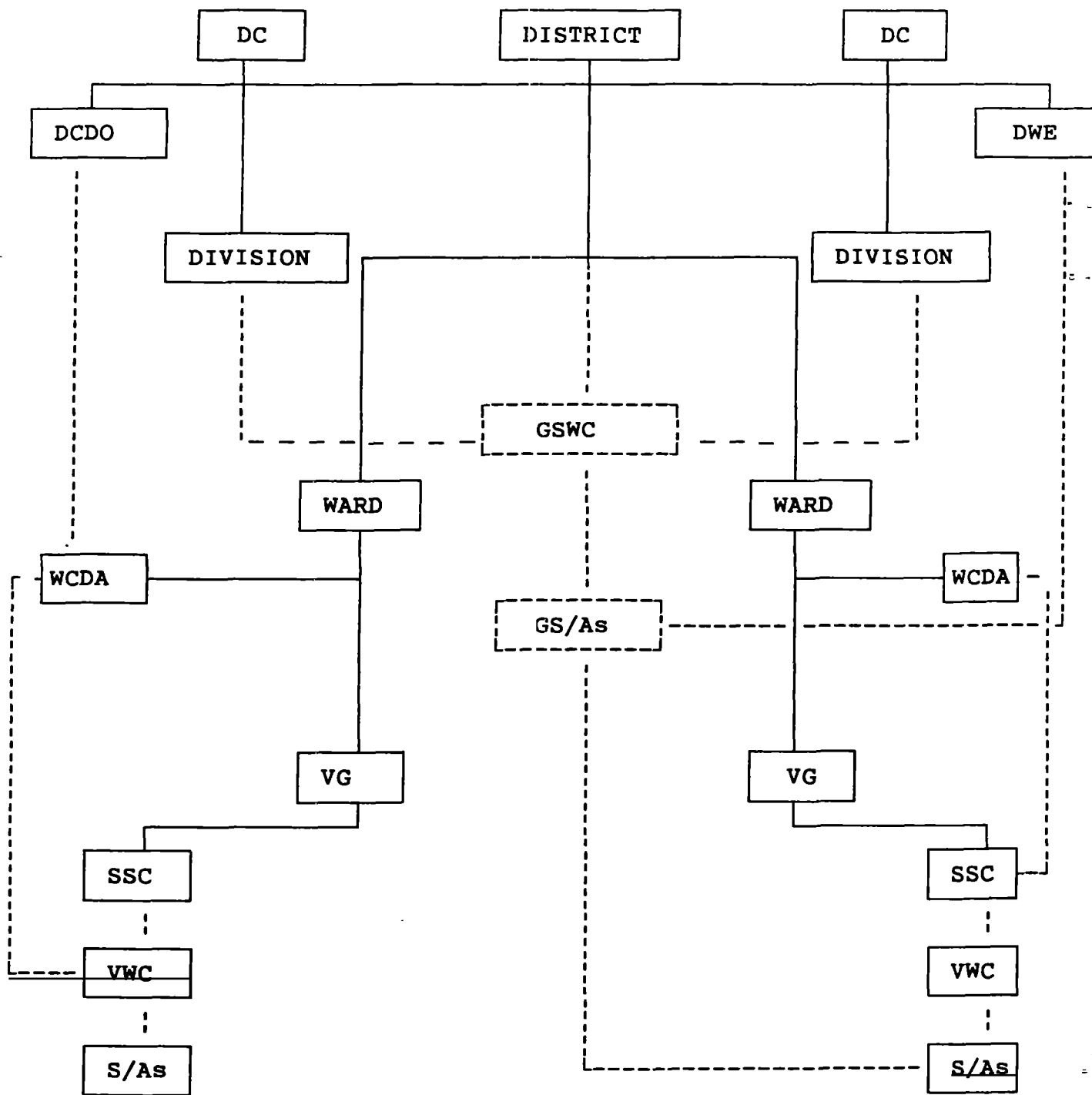


- DCDO = District Community Development Officer
- DWE = District Water Engineer
- WCDA = Ward Community Development Assistant
- WARD = Ward Development Committee/Ward Executive Officer
- GSWC = Group Scheme Water Committee
- VG = Village Government
- SSC = Social Scheme Committee
- VWC = Village Water Committee
- S/As = Scheme Attendants
- GS/As = Group Scheme Attendants

Organization Set-up where two or more wards are concerned



Organization Set-up where two or more wards and divisions are concerned.



The management groupings in a Grouped Village Scheme are:

1. Grouped Schemes Water Committee (GSWC)

2. Village Water Committee (VWC)

The main tasks of the Committees are:

<u>Village Water Committee</u>	<u>Grouped Scheme Water Committee</u>
1. Act as a Coordinator on water related issues between villagers and Village Government.	1. Act as a Coordinator between Ward(s) and Village Governments on Operation and Maintenance related matters of commonly owned facilities.
2. Prepare in collaboration with Village Accountant annual budgets for Operation and Maintenance activities and present to Village Government.	2. Prepare annual budgets for Operation and Maintenance activities and present to the Ward Development Committees (WDC).
3. Awareness raising through information and meetings with villagers.	3. Awareness raising through information and meetings with Village Ward Committees.
4. Support village Scheme Attendants in procurement spare parts/tools/equipments.	4. Support Group Scheme Attendant in procurement of spare parts/tools/equipment.
5. Monitor the collection and use of Water Fund and report to the Village Government.	5. Monitor the collection and use of Group Scheme Fund and report to Ward Development Committee.
6. Hold regular Village Ward Committee meetings and keep minutes of the meeting. Copy to be submitted to Group Scheme Water Committee.	6. Hold regular GSWC meetings and keep minutes of the meetings. Copy to be submitted to District.
7. Monitor the Village Scheme Attendants performance and report to Village Government.	7. Monitor the Group Scheme Attendants performance and report to Ward Development Committee.
8. Assist Village Scheme Attendants in securing their payment i.e. by contract with Village Government.	8. Ensure that Group Scheme Attendants receives their payments i.e. through a contract arrangement.
9. Ensure that Scheme Attendants have received and obtained necessary skills.	9. Ensure that Group Scheme Attendants have received and obtained necessary skills.

Clear cut Task Analysis or Job Descriptions for the Scheme Attendants, Group Scheme Attendants, Accountants, members of the Water Committees, Ward Community Development Assistants have to be developed. As an overall description of duties, Scheme Attendants will be responsible for all technical matters. Water Committees responsible for coordination, management and budgeting, while the Accountants will be responsible for the correct use and maintenance of Water Funds. The Ward Community Development Assistants will have duties of monitoring and assist the Water Committee Village Government in matters related to management, training and problem solving.

Financial Issues

In the context of a Grouped Village Schemes there will be a necessity to establish Water Funds. The basic Water Fund will be the Village Water Fund (VWF). The VWF will be used for all incomes and expenditures which are related to the Village Gravity Schemes. The second Water Fund will be the Group Scheme Water Fund. The fund will be used for all incomes and expenditures which are related to the commonly owned facilities so called the Group Scheme.

While the Village Water Fund may receive their incomes through payments by households, able bodied people, levies from "pombe" brewing etc, the GSWF will receive this income from respective Village Governments.

The ways and means of collecting the payments has to be decided upon by each village and group scheme. However, it is important to establish a smooth cash flow based on annual Operation and Maintenance budgets. Scheme Attendants and Group Scheme Attendants will need this regularly remunerations, and funds should be available for emergency repairs, cost of transport and scheduled meetings should be met when required. It is envisaged that the collection of Village Water Fund follows the government routines, and a regular monthly collection seems to be the most appropriate method.

Funds collected and spent at village level shall be properly accounted for by the Village Accountant and entered into the Village water Account. Receipts shall be issued to payers and obtained from suppliers or payees. The status of the Village Water Fund shall be made available to villagers through Village Assembly meetings, at the Village Government Office information notice board etc.

Funds collected and spent at group scheme level shall be properly accounted for by the appointed Group Scheme Accountant and entered into the Group Scheme Water Account. The Group Scheme Accountant does not exist as a function within the existing Local Government set-up. However, the Group Scheme water Committee may decide to select one of the Village Accountants as the Group Scheme Accountant. Receipts shall be issued to payers (i.e. Village Governments) and obtained from suppliers or payees. The status of the Group Scheme Water Fund shall be made available to all Village Governments through Ward Development Committee Meetings at the office of the Ward Secretary notice board etc.

Based on the annual prepared Budgets, the Group Scheme Water Committee after approval by the respective Ward Development Committee shall submit to the District Council a combined Group Scheme Annual Operation and Maintenance Budget. If such budget indicates deficits, it will be the duty of the District Council to make arrangements to obtain necessary funds.

Administration

It is recommended that a small store for consumable spares is established within the scheme area, either at each village or group scheme or at a central place with easy access by all concerned. For a grouped scheme such store could be managed by the appointed Group Scheme Accountant. Arrangement(s) like this will reduce the dependance on transport availability and reduce the time to acquire spares. However, proper stores procedures will be required. Depending on the extent of a Grouped Village Scheme and the economic status in the scheme area the necessity and type of transport required by the scheme functional staff have to be agreed upon and budgeted for.

Any legal matter concerning water rights, by-laws etc. which are of concern to all village schemes within a grouped scheme need to be raised by the Grouped Scheme water Committee and solved by the District Authorities.

Capacity Building (HRD)

It will be the responsibility of the Village Water Committee/Group Scheme Water Committee to enhance the awareness among beneficiaries of their need of the water scheme and their obligation toward sustaining it. It is therefore a need to increase the capacity of VWCs/GSWC members to fulfil their role. The ultimate objective of raising the capacity at the village level (either the management capacity, financial capacity or technical capacity) is self-sustainability. VWC/GSWC shall be able to make necessary decisions within this Operation and Maintenance framework.

Technical Aspects

The Operation and Maintenance Activities are divided into three categories:

1. Operational - Water production
2. Preventive - Minimize or prevent breakdown
3. Corrective - Repair of breakdowns

Within a Grouped Water Scheme the responsibilities of the Operation and Maintenance activities are divided up between the Group Scheme and the separate Village Scheme. The day-to-day Operation and Maintenance activities will be carried out by either Village Scheme Attendants or Group Scheme Attendants or by the users themselves. However, even if there is a need to develop separate Operation and Maintenance guidelines or manuals for each Grouped Village Scheme depending on its extent and complex features of Operation and Maintenance activities will remain the same. The following list can be used as a guideline for expected ways which shall be carried out:

Scheme Components	Works to be carries out	Responsible
Intake/Water Source	Routine cleaning of water source Periodic repairs of intake structure Replacement of screens, Improvement of embarkments, Improvement of catchment area, Repair of valves, Reading of master meter	Group Scheme Attendant
Gravity Transmission Main Pipes	Backfilling of eroded areas Routine opening and repair of W/Os, A/Vs and S/Vs, Change of gaskets, Repair of bursts, Water flow reading, Clean and repair v/chambers, Cleaning of pipeline area.	Group Scheme Attendants
Storage Tanks and Break Pressure Tanks	Routine cleaning, Repair leakage, Repair change float valves, Repair and change inlet & outlet valves, Repair of concrete structures, Water flow readings.	Group Scheme Attendants and village Scheme Attendants
Distribution Pipelines	Backfilling of eroded areas, repair of bursts, Regular opening of valves, Cleaning and repair of v/chambers, Cleaning of pipeline area	Village Scheme Attendants
Domestic Points and Washing Slabs	Change/repair bib cocks, Cleaning/repair of aprons, Cleaning of surroundings, Regular water flow,	Village Scheme Attendants

Spareparts and Equipment

The Operation and Maintenance Scheme Manual will clearly indicate the range and basic quantity of spareparts and equipment which may be required at a particular Grouped Village Scheme. The exact quantity to be bought of a certain sparepart can only be determined by experience.

Scheme Attendants shall be responsible for procurement of required spareparts and equipment.

The Operation and Maintenance Scheme Manual will also indicate approved outside agents which can carry out repairs or provide services to the Scheme Attendants, if requested.

Reporting

The Grouped Scheme Attendant will report any problem to the Chairman of the Group Scheme Water Committee while the Village Scheme Attendant reports to the Chairman of the Village Ward Committee. It is then up to the GSWC and VWC to find a solution or to put forward such problems to the District Council, Ward secretary or Village Government as appropriate.

The Scheme Attendant shall keep records of breakdown, repairs carried out and spares used.

Environmental Aspects

The management of the Water Scheme is of utmost importance. A poorly managed or degraded catchment or source may greatly reduce the water production. It is therefore one of the duties of the Group Scheme Water Committee to make sure that the water source and its catchment area is kept and maintained according to set standards. These standards will be described in details in each scheme manual. Reinstatement of the environment and protection against cultivation, livestock and human settlement may be necessary. By-laws may therefore be necessary to be established.

One part of the overall objective of the water supply is to improve the health. It is therefore necessary that the VWCs/or GSWC enforces the aspects of cleanliness of domestic points and washing slabs.

The following are issues which may be required to focus and take action upon:

Maintenance of Intakes/Catchment Area Surroundings

<u>Issues</u>	<u>Means</u>
- Prevent burning	- Info by VG,
- Prevent cutting of trees	- By-laws

Reinstate Environment

- To establish tree nurseries	- Demonstration,
- To establish good Veg. cover	- Training, Seeds etc.
- To prevent erosion	- By-law
- Plant trees/grass	- Demo/training

Protection from Outside Disturbance

- Necessary fencing	- Mobilization
- To avoid cultivation/livestock and settlements within 3 km distance from the source (intake) or 100M from stream/river.	- Info of Existing Laws

Keep Structure/Surroundings etc Clean

- Drainage	- Info/Mobilization
- Fencing	
- Washing	

Promote Use of Latrines

- Latrine types/cost	- Demo/Info
- Technical knowhow	- Advice

Promote Health Education

-	- Adult Education & Schools, Meetings
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4.3 HAND PUMP SCHEMES

Management

- Organization

The Village Water Committee, which will be on an equal level with the other village committees, and whose members are elected among the villages will be the basis for the O&M of the water supply.

The main tasks of the Committee will be:

1. Act as coordinator on water related issues between the villagers and Village Government.
2. Prepare in collaboration with Village Accountant annual budgets for Operation and Maintenance activities and present to Village Government.
3. Awareness raising through information and meetings with villagers.
4. Support Scheme Attendants in purchase of tools/spareparts/equipment.
5. Monitor the collection and use of Village Water Fund, and report to the Village Government.
6. Hold regular Village Water Committee meetings and keep minutes of the meetings. Preferably in a Village Water Committees meeting book which can easily be checked by Village Government, Ward Community Development Assistants, etc. for the monitoring purpose.
7. Monitor the Scheme Attendants performance, and report to the Village Government.
8. Assist Scheme Attendants in securing their payment i.e. by contract with Village Government.
9. Ensure that Scheme Attendants have received and obtained necessary skills.

Clear cut Task Analysis or Job Description for Scheme Attendants, Accountants, members of the Village Water Committees, Ward Community Development Assistants have to be developed. As an overall description of duties, Scheme Attendants will be responsible for all technical matters. Village Water Committees responsible for coordination, management and budgeting, while the Accountants will be responsible for the correct use and maintenance of Village Water Funds.

The Ward Community Development Assistants will have duties of monitoring and assist the Water Committees/Village Governments in matters related to management, training and problem solving.

Finance

In this respect finance means Village Water Fund. It is a must for a village based Operation and Maintenance system that this fund is properly managed.

There are several ways of managing a Village Water Fund, but one appropriate solution could be to utilize the existing system on contribution, book-keeping and monitoring within the village.

The way of contribution, either it is done per household, family or able bodied person, has to be decided and agreed upon by each individual village. Then the Ten Cell leaders (Balozis), who are familiar with everybody within their cell could be in charge of the fund-collection and keeping of record of the payers and non-payers.

As of today, the Ten-Cell leaders are collecting the revenue, and they are also the key persons regarding mobilization.

If there will be a change in the village structure, it is envisaged that the collection of Village Water Fund should follow the government routines for collection of funds.

After collection, which should not take more than 2-3 days, the funds should be handed over to the Village Accountant who will have to sign for it in the Balozis are the ones in charge record books and enter it into the Village Water Account.

The amount to be collected will depend on the budget prepared by the Village Water Committee, and the frequency of collection may differ from village to village.

However, it is envisaged that the fund-collection should be done regularly, and is announced throughout the village by the Village Water Committee. Collection on a monthly basis is probably the best alternative, because it follows a known routine and is easy understandable.

Technical Aspects

O & M Activities

Scheme Attendants duties:

- Regular scheme check/inspection by attendants.
- Regular cleaning of Hand Pump slabs and surroundings.
- Regular greasing of bearings.
- Replacement of worn out parts e.g. pump cylinders, bearings, pump rods, rising mains, pump heads, bolts and nuts etc.
- Repair of parts such as concrete structures and pump cylinders.

Spare parts and equipment

- Procurement of spare parts and equipment by SA's.
- Identification of tools and equipment to be used on day to day activities as well as during repair work.
- Identification of outside agent to do special repair when needed.
- Inform on quantity and quality of spares to be replaced.

The Operation and Maintenance Scheme Manual will clearly indicate the range and basic quantity of spareparts and equipment which may be required.

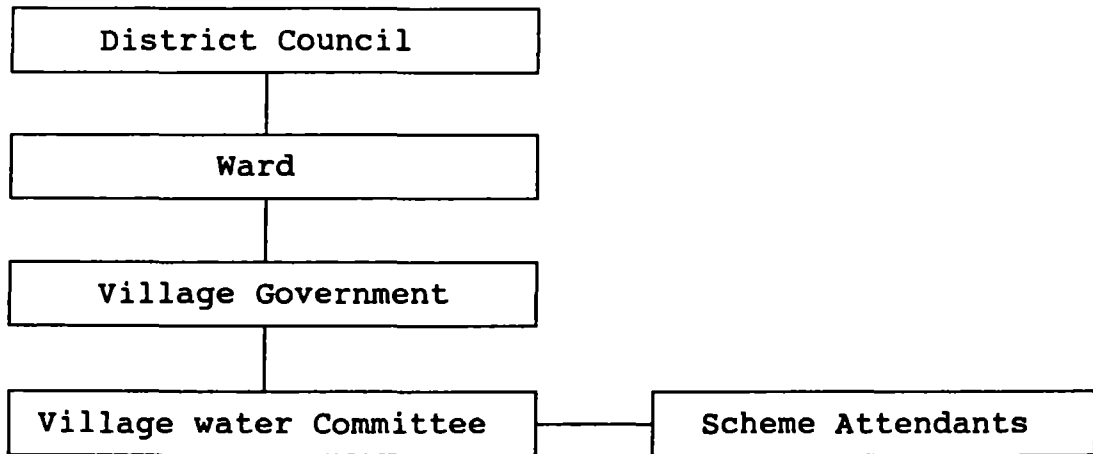
However, the exact quantity to be bought of a certain sparepart can only be determined by experience.

Scheme Attendants shall be responsible for procurement of required spareparts/tools and equipment.

The Operation and Maintenance Scheme Manual will also indicate approved outside agents which can carry out repairs or provide services to the Scheme Attendants, if requested.

Reporting

Reporting from Village to District



- Scheme Attendants to report problems to Village Water Committee.
- Village Water Committee to report to Village Government for action (Action could be financial or mobilization)
- Village Government to report unsolved problems to Ward Community Development Assistant who in turn either solves them or forward to District Community Development Officer/District Water Engineer.
- Where applicable problems could be solved at Ward/Division level.
- Keep records of repairs done at village level.

The existing reporting system from the village through the wards and up to district level should be further developed to include water issues.

Necessary information and training must be given to the Ward Community Development Assistants who will physically do the reporting.

Environmental aspects

The management of the Water Scheme is of utmost importance. A poorly managed or degraded catchment or source may greatly reduce the water production. It is therefore one of the duties of the Village Water Committee to make sure that the water source and its catchment area is kept and maintained according to set standards. These standards will be described in details in each scheme manual. Reinstatement of the environment and protection against cultivation, livestock and human settlement may be necessary. Therefore By-laws may have to be established.

One part of the overall objective of water supply is to improve health. It is therefore necessary that the Village Water Committee enforces the aspects of cleanliness of Hand Pump and washing slabs.

The following are issues which may be required to focus and take action upon.

- Keep structures and surroundings of Hand Pumps, troughs and washing slabs clean and neat.
- Prevent burning.
- Prevent cutting of trees.
- Reinstatement of the environment through establishment of tree nurseries and planting of trees and grass.
- Protection from outside disturbance, i.e. cultivation, livestock, human beings.
- Promote the use of latrines and make sure the distance criteria between latrine and Hand Pump are being held.
- Give information on types and cost of latrines.

4.4 **OTHER PUMPED SCHEMES**

Other Pumped Schemes means, in this case, Hydrant and Diesel Driven Pump Units.

Management

- Organization

The Village Water Committee, and whose members are elected among the villages will be the basis for the O&M of the water supply.

The main tasks of the Committee will be:

1. Act as coordinator on water related issues between the villagers and Village Government.
2. Prepare in collaboration with Village Accountant annual budget for Operation and Maintenance activities and present to Village Government.
3. Awareness raising through information and meetings with villagers.
4. Support Scheme Attendants in purchase of tools/spareparts/equipment.
5. Monitor the collection and use of Village Water Fund, and report to the Village Government.
6. Hold regular internal meetings and keep minutes. Preferably in a VWC's meeting book which can easily be checked by VG, Ward CDA's, etc. for the monitoring purpose.
7. Monitor the SA's performance, and report to Village Government.
8. Assist SA's in securing their payment i.e. by contract with Village Government.
9. Ensure that Scheme Attendants have received and obtained necessary skills.

Clear cut Task Analysis or Job Descriptions for the Scheme Attendants, Accountants, members of the Village Water Committee, Ward Community Development Assistants have to be developed.

As an overall description of duties, Scheme Attendants will be responsible for all technical matter.

Village Water Committees responsible for coordination, management and budgeting, while the Accountants will be responsible for the correct use and maintenance of Village Water Funds.

The Ward Community Development Assistants will have duties of monitoring and assist the Water Committees/Village Governments in matters related to management, training and problem solving.

Finance

In this respect finance means Village Water Fund. It is a must for a village based O&M system that this fund is properly managed.

These are several ways of managing a VWF, but one appropriate solution could be to utilize the existing system on contribution, book-keeping and monitoring within the village.

For diesel driven pumps funds for regular procurement and supply of diesel need to be specially considered.

The way of contribution, either it is done per household, family or able bodied person, has to be decided and agreed upon by each individual village. Then the Ten Cell leaders (Balozis), who are familiar with everybody within their cell could be in charge of the fund-collection and keeping of record of the payers and non-payers.

As of today, the Ten-Cell leaders are collecting the revenue, and they are also they key persons regarding mobilization. If there will be a change in the village structure, it is envisaged that the collection of Village Water F^Und should follow the government routines for collection of funds.

After collection, the funds are handed over to the village accountant who will have to sign for it in the balozis record books and enter it into the Village Water Account.

The amount to be collected will depend on the budget prepared by the Village Water Committee, and the frequency of collection may differ from village to village.

However, it is envisaged that the fund-collection should be done regularly, and is announced throughout the village by the Village Water Committee. Collection on a monthly basis is probably the best alternative, because it follows a known routine and is easy understandable.

Technical Aspects

Operation and Maintenance Activities

Operational:

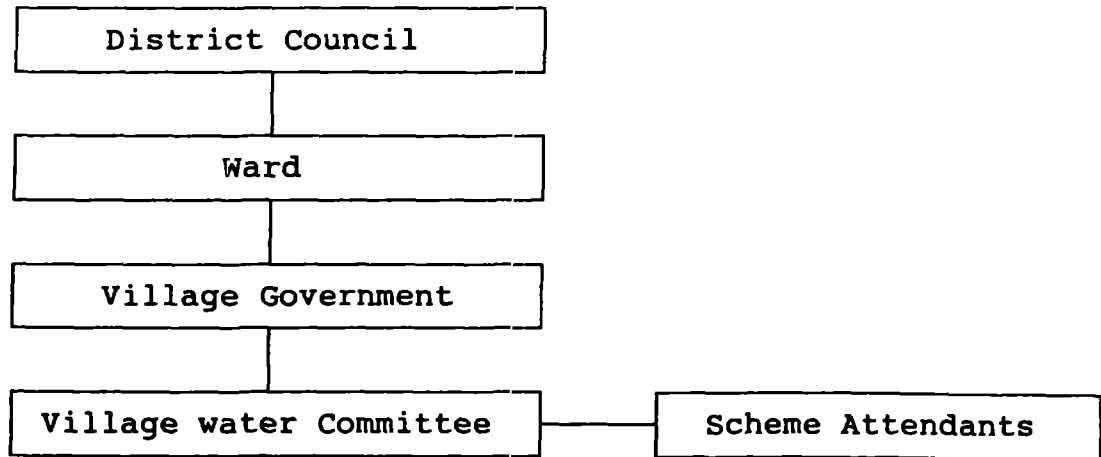
- Regular scheme check/inspection by attendants.
- Regular cleaning of pump house and surroundings.
- Regular greasing of bearings.
- Replacement of worn out parts e.g. pump impellers, pump membrane, bearings, pump rods, rising mains, fuel pump, nozzles, bolts and nuts etc.
- Repair of concrete structures etc.
- Change of oil, filters, etc.
- Ensure steady supply of fuel.

Spare parts and equipment

- Procurement of spare parts and equipment by Scheme Attendants.
- Identification of tools and equipment to be used on day to day activities as well as during repair work.
- Identification of outside agent to do special repair when needed.

Reporting

Reporting from Village to District



- Scheme Attendant to report problems to Village Water Committee.
- Village Water Committee to report to Village Government for action (Action could be financial or mobilization)
- Village Government to report unsolved problems to Ward Community Development Assistant who in turn either solves them or forward to District Community Development Officer/District Water Engineer.
- Where applicable problems could be solved at Ward/Division level.
- Keep records of repairs done at village level.

The existing reporting system from the village through the wards and up to district level should be further developed to include water issues.

Necessary information and training must be given to the Ward Community Development Assistants who will physically do the reporting.

Environment Aspects

The maintenance of the Water Source is of utmost importance. A poorly maintained or degraded catchment area or source may greatly reduce the water production. It is therefore one of the duties of the Village Water Committee to make sure that the water source and its catchment area is kept and maintained according to set standards.

These standards will be described in details in each scheme manual. Reinstatement of the environment and protection against cultivation, livestock and human settlement may be necessary. By Laws may therefore be necessary to establish.

One part of the overall objective of the water supply is to improve the health. it is therefore necessary that the Village Water Committee enforces the aspects of cleanliness of domestic points and washing slabs.

The following are issues which may be required to focus and take action upon.

Maintenance of Intakes/Catchment Area Surroundings

<u>Issues</u>		<u>Means</u>
Prevent burning	-	Info by Village Government
Prevent cutting of trees		By Laws

Reinstate Environment

To establish tree nurseries	-	Demonstration
To establish good Veg. cover	-	Training, Seeds etc.
To prevent erosion	-	By Law
Plant trees/grass	-	Demo/training

Protection from Outside Disturbance

Necessary fencing	-	Mobilization
To avoid cultivation/livestock and settlements within 3 km distance from the source (intake) or 100M from stream/river.	-	Info of Existing Laws

Keep Structure/Surroundings etc. Clean

Draina	-	Info/Mobilization
Fencing		
Washing		

Promote use of Latrines

Latrine types/cost	-	Demo/Info
Technical knowhow	-	Advice

Promote Health Education

-	Adult Education and
-	Schools, Meetings

4.5 OPERATION AND MAINTENANCE COST ESTIMATES

ANNUAL MAINTENANCE COSTS

The determination of funds and material requirements for maintenance and repairs should be based on statistics of actual experiences from projects. Unfortunately, this statistics are not readily available. The major reasons beings the overall lack of records and emphasis or interests in Operation and Maintenance.

The amount of repair works required on a scheme are directly related to the quality of the design and construction supervision, even if the degree of preventive maintenance carried out also have an impact on the frequency of repair works.

In order to determine the Annual Operation and Maintenance funds required for general preventive and corrective maintenance activities commonly accepted cost-factors based on the initial capital costs of each scheme component may be used for estimate purposes of the annual Operation and Maintenance costs. The following list of accepted factors can be used for expected works to be carried out:

MAINTENANCE COST FACTORS

COMPONENTS	COST FACTOR % OF INITIAL CAPITAL COST	WORKS TO BE CARRIED OUT
INTAKE	3.0	Routine cleaning and periodic repairs of intake structure. Replacement of screen. Improvement of embarkment repair of valves.
GRAVITY MAINPIPE	0.5	Backfilling of eroded areas. W/Os, A/Vs, and S.Vs to be opened twice/year. Change of gaskets, ballvalves, meter-reading once per month, meter repairs etc. Repair of 10 bursts/year.
STORAGE TANKS AND BREAK PRESSURE TANKS	3.0	Routine cleaning, repair leakages, repair, change float valves, repair and change inlet and outlet valves, repair of concrete structure.
DISTRIBUTION PIPES	1.0	Backfilling of eroded areas, repair of 2 burst/5km pipe/year, valves to be opened twice/year.
DOMESTIC POINTS AND WASHING SLABS	1.0	Change 1 bibcock/DP/year, Maintenance and repair of aprons, routine cleaning or surroundings.
VALVE CHAMBERS	1.0	Repair of concrete works, Opening of valves twice/year, change valve gaskets or replace valves, routine cleaning of valve surroundings.
PIPEMARKERS	1.0	Routine cleaning of surroundings, repair or replace pipemarkers.
HANDPUMPS	10% of cost of handpump	Routine cleaning of surroundings, repair or replace cylinders, rnsing main, bearings, pump head, etc.

GUIDING ANNUAL MAINTENANCE TARIFFS*

Group Scheme 150 Tshs/household/year or 2.2 Tshs/cu.m or 30 Tshs/person year
(Commonly owned facilities)

Village Schemes 160-220 Tshs/household/year or 32-44 Tshs/person year.
(Distribution system)

Private Connections Existing tariff for urban areas is 400 Tshs/month.
The rural water supplies have no treatment plants, and
less overhead costs for administration. Therefore the
tariff should be less, maybe 200-300 Tshs/month.

Hand Pumped Scheme 300 Tshs/h.h/year or 60 Tshs/person/year

The above would mean for an average household in a Grouped Scheme that the monthly cost will become $(150+220)/.12 = 22,50$ Tshs/h.h/month or 74 Tshs/person/year.

* Note: Tariffs are based on using the above mentioned cost factors and the investment costs (1992 prices) for two grouped schemes including a total of 9 village schemes.

5.0 O&M MONITORING

Monitoring of O&M activities will be aimed to satisfy both the Primary Users and the Secondary Users. It is well known that complicated Monitoring Systems will never give the result it is expected to do. It is therefore important that the Monitoring System is simple, but incorporates the indicators necessary for the Primary users of the Framework to decide on remedies and for the Secondary Users to support any overall decisions or information as far as water supply status is concerned.

A monitoring systems requires basic data originating from the Scheme Attendants, passing the existing local government reporting routines and up to the national level. The data collected must be of a kind that can lead to an action which will assist the villages in running the schemes.

Monitoring is an important aspect of Operation and Maintenance of water schemes and especially for two basic reasons:

1. To determine what kind of support is required by the beneficiary community to effectively and efficiently operationalize the service rendered by a scheme. This support could be in the form of training, supply of spares etc.
2. For record keeping purposes in order to determine soundness of the rendered services and at higher levels maintaining statistics of those who receive the service and hence additional developments in the sector.

It is imperative therefore that some indicator(s) would have to be developed and/or adopted in order to facilitate a monitoring system. Secondly since this is supposed to be a village managed operation and maintenance system, it is important that those responsible for the service are able to understand and give correct interpretation of the data/information generated. Only a small amount of data/information will have to be passed on to higher levels for the purposes of keeping statistics and as well for determining what kind of support is required at community level.

In many villages and especially in two of the DANIDA Supported Water Programme regions of: Iringa and Ruvuma where there is also a CSD programme, some form of monitoring system is already in place. MAJI could look into incorporating sectoral specific indicators into the existing system with the assistance of the Bureau of Statistics. However, it needed, the existing system may have to be strengthened.

The data to be collected will fall under two different categories: Management and Technical. The following table shows the data to be collected:

Management Aspects	Indicating	Technical Aspects	Indicating
Village Water Fund Status, income and expenditure	Overall performance management of Operation and Maintenance	3 All repairs done	Efficiency of Scheme Attendants and status of scheme
Number of meetings held by Village Water Committee	Importance of Operation and Maintenance in the village	4 Time lap from breakdown to repair	Efficiency of Village Water Committee and Village Water Fund Performance of the scheme
Monthly Ward Community Development Assistants Reports to Ward Development Committee and District Community Development Officer	Supportive action	5 Water production by regular measurement	Performance of the scheme
		6 Water flows measurement from DPs/Gravity scheme (gravity scheme)	
		7 Regular measurement of all Hand Pumps	Performance of the scheme (aquifers)

6.0 SUPPORTIVE INSTITUTIONS

Even though the framework aims at village managed O&M of water supplies, capacities of villagers to carry out the envisaged Operation and Maintenance activities will need to be developed some back up support will be required from different supportive institutions.

The needs for support are categorized in two groups. Technical and administrative/social/management/financial. Further, since it is the first time that village managed Operation and Maintenance activities for improved water supplies are formerly being proposed to be put in place, supportive institutions may not readily have tailored activities to effectively fulfil their envisaged roles and responsibilities. To this end some support/actions to the supportive institutions are being outlined. For the purpose of this Framework, supportive institutions for village managed Operation and Maintenance of water supplies are broadly categorized as Governmental and others which include Non Government Organizations and the Private Sector.

- 4) Strengthening of the existing district monitoring capacity (through quarterly reports).
- 5) Facilitate the districts to put in place a village managed Operation and Maintenance system for water supplies, where strengthening of Kurasini Central Stores will be essential.

6.2 OTHER INSTITUTIONS

Other institutions essentially are divided into Private sector and Non Government Organizations.

- Local hardware stores
- Private workshops
- Parastatals
- Non Government Organizations

6.2.1 Private and Parastatal Institutions

Expectations from the private and parastatal institutions to assist a village managed O&M system will be in a form of production and sale of spares together with provision of technical skills at a cost.

Support to private institutions:

The Government must promote and encourage private entrepreneurs to catch interest in the water sector.

6.2.2 Non Governmental Institutions

To a large extent same functions as mentioned for ward and district level. NGOs have always filled in gaps where Governmental efforts have lacked or sometimes worked to complement each other.

- An inventory of Non Government Organizations dealing in the development of the water and sanitation should be made, especially in the three regions of this programme.

7.0 BUDGET AND ACTION PLAN

Considering the Guiding Principles in Section 2.0 and the Assumptions in Section 3.0 there is a need for the MAJI/DANIDA Programme to assist the Local Authorities to introduce the Operation and Maintenance Framework. The objective behind assisting the Local Authorities financially and professionally is that by June, 1995 all handed-over schemes will be managed and financed as far as Operation and Maintenance activities are concerned by Village Governments and/or Grouped Scheme Organizations. It is further assumed that by so doing the scarce resources made available to the District Water Engineer/District Community Development Officer as recurrent funds can be utilized to support their supportive functions. The Budget and Action Plan described herein and in detailed Annex 8.IV includes costs which take care of all personnel involved in the preparation for and the installing of the Operation and Maintenance Framework at the local (scheme) level. This also refers to both technical and software personnel within the MAJI/DANIDA Programme Set-up.

The total budget required for the Regions during the period 1/1/93 to 30/6/95 is estimated to DKK 29.4 million distributed as follows:

Iringa Region	9.661.700 DKK
Mbeya Region	11.711.500 DKK
Ruvuma Region	7.662.200 DKK
PICU	<u>323.000 DKK</u>
	29.358.400 DKK

This includes 5.3 million for Rehabilitation activities and 0.9 for Source Protection. The total net budget for O&M support only excluding Rehabilitation and Source Protection would be about 23 million DKK.

The Cost Estimates for scenario 3 (126 villages to be constructed) in the 1992 Review Mission's report includes a sum of DKK 22.9 for O&M support, excluding costs for rehabilitation and source protection. Costs for source protection are provided for elsewhere in the budget. No provision has been made for Rehabilitation of Phase I & II schemes because of the scope of the work involved. This is expected to form the subject of a separate consultancy to define the extent of the problem and identify a separate project.

The budget presented in this draft report should be considered as one of many scenarios to allocate the amount of 23Mill DKK. For example, in another scenario, one could include a provisional sum of 33Mill. DKK for rehabilitation, increase infrastructure support to DWE/DCDO's offices and reduce some other items. The final budget will be made after receiving comments from the regions.

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**Table 7 MAJI/DANIDA PROGRAMME O&M ACTION AND BUDGET PLAN
FOR THE PERIOD 01/93 -**

MAIN ACTIVITY	SUB-ACTIVITY	RESP. SECTION	ACTION PLAN BY QUARTER										ESTIMATED COST 1000 DKK
			1/93	2/93	3/93	4/93	1/94	2/94	3/94	4/94	1/95	2/95	
1. INFORMATION CAMPAIGN	1.1 Information Workshop to Primary Users	O&M											146.4
	1.2 Design of District based information campaign to beneficiaries												
	1.3 Support to a District based information campaign	CP											25.2
	1.4 Translation of O&M Framework into Kiswahili	DCDO/CP											373.0
	1.5 Support for printing and distribution of O&M Framework	PICU											63.0
	Sub-Total	PICU											50.0
			284.6	93.0	93.5	93.5	93.0	-	-	-	-	-	657.6
2. REHABILITATION	2.1 Assessment of Rehabilitation needs	O&M											390.0
		PICU/CONSULTANT											831.0
	2.2 Rehabilitation												
	Sub-Total	DWE/O&M											4,057.0
			-	610.5	610.5	700.0	700.0	700.0	700.0	700.0	557.0	-	5,278.0
MAIN ACTIVITY	SUB-ACTIVITY	RESP. SECTION	1/93	2/93	3/93	4/93	1/94	2/94	3/94	4/94	1/95	2/96	
3. FINANCIAL AND MANAGEMENT PROCEDURES	3.1 Development of F&M Procedures/Consultants	PICU											84.0
	3.2 Information/Training of Primary Users	CP											
	3.3 Introduction of the Procedures at Scheme Levels												146.4
	Sub-Total	DCDO/CP											373.0
			84.0	146.4	93.5	93.5	93.0	93.0	-	-	-	-	603.4

MAIN ACTIVITY	SUB-ACTIVITY	RESP. SECTION	ACTION PLAN BY QUARTER										ESTIMATED COST 1000 DKK
			1/93	2/93	3/93	4/93	1/94	2/94	3/94	4/94	1/95	2/95	
4. BENEFICIARY TRAINING	4.1 Training/Retraining of S/As	O&M/BSU											412.0
	4.2 Training/Retraining of VG/VWC and GSWC	CP											1.568.2
	4.3 Training/Retraining of Accountants	CP											63.0
	Sub-Total		180.0	26.3	200.0	245	240.2	245.0	200.0	200.0	180.0	90	2.043.2
5. SCHEME MANUALS	5.1 Development of Prototype Manuals	O&M											37.8
	5.2 Preparation of Scheme Manuals	PICU											63.0
		O&M											243.5
	Sub-Total		100.8	33.5	35.0	35.0	35.0	35.0	35.0	35.0	-	-	344.3
6. SPARE PARTS	6.1 Development of O&M Revolving Fund at DWEs	O&M											37.8
	6.2 Procurement of Initial Spare Parts	PICU/CONSULTANT											63.0
	6.3 Training of Stores Personnel	O&M											2.100.0
		O&M											235.2
	Sub-Total		100.8	583.8	583.8	583.8	583.8	-	-	-	-	-	2.436.0

MAIN ACTIVITY	SUB-ACTIVITY	RESP. SECTION	ACTION PLAN BY QUARTER										ESTIMATED COST 1000 DKK
			1/93	2/93	3/93	4/93	1/94	2/94	3/94	4/94	1/95	2/95	
7. MONITORING & EVALUATION	7.1 Develop a Monitoring System	O&M/CP											40.5
	7.2 Develop an Evaluating System	CP/O&M											40.5
	7.3 Introduction of the Monitoring System	PMU/O&M											84.6
	7.4 Production and Distribution of First Set of Monitoring Forms	PMU/O&M											42.0
	Sub-Total			40.5	103.0	63.0	-	-	-	-	-	-	-
8. IMPROVE DWE/ CDO SUPPORTIVE ROLE	8.1 Improvement/Construction of DWE/DCDOs office	O&M											5.620.0
	8.2 Procurement of Transport facilities to DWE/DCDO	O&M											2.100.0
	8.3 Procurement of Transport facilities to Ward CDAs	CP											1.504.0
	Sub-Total		2.200.0	2.200.0	1.804.0	600.0	600.0	600.0	500.0	450.0	270.0	-	9.224.0

MAIN ACTIVITY	SUB-ACTIVITY	RESP. SECTION	ACTION PLAN BY QUARTER										ESTIMATED COST 1000 DKK
			1/93	2/93	3/93	4/93	1/94	2/94	3/94	4/94	1/95	2/95	
9. PROGRAMME ASSISTANCE	9.1-9.6 General Support Cost	O&M											4 425
	9.7 Evaluation	O&M											225
	9.8 O&M Establishment at RCDOs office	CP											3 000
	Sub-Total												
			742.5	742.5	742.5	742.5	742.5	742.5	742.5	742.5	967.5	742.5	7.650 0
10. SOURCE PROTECTION	10.1 Nursery Material	O&M/CP											139 0
	10.2-10.3 General Support Cost	O&M/CP											738 0
	10.4 Information Material	O&M/CP											37.3
	Sub-Total												
			111.1	123.8	123.8	73.8	73.8	93.8	92.8	73.8	73.8	73.8	914.3
	TOTAL QUARTERLY BUDGET REQUIREMENTS		3.884.3	4.900.3	4.349.4	3.167.1	3.161.8	2.500.3	2.279.3	2.201.3	1 823.3	1 131.3	29 358.4
			REGIONAL QUARTERLY BUDGET REQUIREMENTS										
	IRINGA		1.120.7	1.558.8	1.413.0	1.016.6	1.077.1	864.6	757.1	751.6	714.1	388.1	9 661.7
	MBEYA		1.365.3	1.991.9	1.671.6	1.222.3	1.325.4	1.049.6	996.6	934.1	718.6	436.1	11.711.5
	RUVUMA		1.035.3	1.349.6	1.264.8	928.2	759.3	595.1	516.6	515.6	390.6	307.1	7.662.2
	PICU		323.0										
			3.844.3	4.900.3	4.349.4	3.167.1	3.161.8	2.509.3	2.270.3	2.201.3	1 828.3	1.131.3	29 358.4

O&M BUDGET ACCORDING TO PLANOP ACTIVITY NUMBER

BUDGET X 1000 DKK

<u>ACT NO.</u>	<u>DESCRIPTION</u>	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
1.1	O&M establishment at RCDO offices	1.075.0	1.075.0	850.0	-	3.000.0
1.2	O&M establishment at District office including rehabilitation	6.873.8	8.228.0	5.189.0	63.0	20.375.4
1.3	O&M establishment at village level	1.376.6	2.072.0	1.340.0	260.0	5,068.7
1.5	Catchment area Protection (for H.D sources only)	<u>296.0</u>	<u>335.7</u>	<u>282.3</u>	<u>-</u>	<u>914.3</u>
	Total	<u>9.661.7</u>	<u>11.711.5</u>	<u>7.112.2</u>	<u>323.0</u>	<u>29.358.4</u>

ANNEXES

I EXTRACT OF LOCAL GOVERNMENT ACT

VILLAGE ASSEMBLY:

Tasks:

A village assembly is the supreme authority on all matters of general policy-making that directly affects the village as such. The assembly is responsible for:

- * election of village council,
- * removal of any or all council members,
- * see also "Meetings" above.

VILLAGE COUNCIL:

Task of Village Council:

A VC has all executive powers for all affairs and business of the village. It shall:

- * Do whatever is necessary and expedient for the social and economic development of the village,
- * Initiate and undertake any task or enterprise that will ensure the welfare of the villagers,
- * Plan and coordinate the activities and the advice given to villagers on agriculture, horticulture, forestry or other activities of any kind,
- * Encourage villagers to engage in communal enterprises,
- * Participate in economic enterprises with other village councils,
- * Protect people and property in the village that (but it is not the justice of peace).
- * Deal with land allocations within village boundaries,
- * Deal with employment of people (the Human Deployment Act of 1983).

WARD DEVELOPMENT COMMITTEE

- * Ensure the implementation of decisions and policies of the district council,
- * Ensure the implementation of all other development schemes in the ward,
- * Supervise and coordinate the implementation of district council projects and programmes in the ward,
- * Promotes cooperative activities,
- * Collates and discusses village council development plans and forwards these to the district council together with plans proposed by the Ward Development Committee itself,
- * Proposed by-laws to the village councils and/or district council.

DISTRICT DEVELOPMENT COMMITTEE

Task of the District Development Committee

- * To consider and advice on all economic and developmental affairs in the district,
- * To assist and advice the district council on the preparation of budget estimates,
- * To consider reports and advice on the activities of parastatals and of cooperation societies operating in the district,
- * To consider reports and advice on the implementation within the district of plans, projects and by-laws of the district council, the township authorities and the village councils,
- * To do whatever is deemed necessary or desirable for economic development and maintenance or order and good government in the district.

DISTRICT COUNCIL AND ITS STANDING COMMITTEES

Tasks of District Council:

The general tasks of the council are listed in the section 118 (i) of Act No. 7 of 1982. They are:

- * To formulate, coordinate and supervise the implementation of all plans for the economic, commercial, industrial and social development in its area of jurisdiction,
- * To monitor and control the performance of the duties and functions of the council by departments of the council and its offices and staff,
- * To ensure the collection and proper utilization of the revenues of the council.

- * To make by-laws applicable throughout its area of jurisdiction, and to consider and approve by-laws made by village councils within its area of jurisdiction so as to ensure the more beneficial,
- * To consider, regulate and coordinate development plans, projects and programmes of villages and township authorities within its area of jurisdiction so as to ensure the more beneficial development and mobilization of productive forces in the village and township authorities and their application towards:
 - The enhancement of productivity,
 - The acceleration of social and economic development of village, and
 - The amelioration of rural life.
- * To regulate and monitor the collection and utilization of revenue of village councils,
- * Subject of laws in force, national policies and programmes and to directive of the party, to do all such acts and things as may be done by a people's government at the district level.

REGIONAL DEVELOPMENT COMMITTEE

Tasks of the Regional Development Committee

- * To interpret for local government authorities Central Government policies on any matter in any sector,
- * To advice local government authorities on their development plans and to monitor that the targets of their plans and programmes are met,
- * To advice on all economic and developmental affairs in the region,
- * To make recommendations on the local government authorities, development budgets to these and to the appropriate proper officer,
- * To consider and advice central government on ministerial development projects, programmes and activities within the region,
- * To promote and supervise the implementation of projects and plans of central government within the region,
- * To do whatever is directed by the minister (PMO) to improve the affairs of district and urban councils.

II EXTRACT OF THE WATER POLICY

The Water Policy focusses on three key issues:

- 1) Division of responsibilities between sector agents,
- 2) Participation of village councils and villagers in the planning and management of water supplies and their improvement,
- 3) Cost-sharing through user contribution to construction, operation and maintenance.

1.0 Division of Responsibilities

Division of responsibilities in the water sector is basically determined by the type of water schemes (in terms of cost or coverage and activity in question)(construction or Operation and Maintenance). The various types are shown below:

Large Projects:	Pipes schemes supplying more than 3000 people, or more than two villages (WP \$ 38)
Medium Projects:	Piped schemes in one or two villages not exceeding 3000 people (WP \$ 37)
Minor Projects:	All villages with a hand pumped well (WP \$ 36)
National Projects:	(i) a number of minor, medium or large projects that required extensive expertise in its implementation (WP \$ 39) (ii) projects with special technology/high cost.

Responsibility in construction overlap on several project types. The determining factor are finance and staff. Thus, a project of a given size (say medium) may be constructed at the higher level if the lower has insufficiently qualified manpower of limited funds, or if project costs exceed the investment budget ceiling of the lower level as stipulated by the Planning Commission. No operational procedures on how to administer these criteria in practice have yet been worked out.

Responsibilities are outlined below:

Responsibilities for the Construction of water Supplies:

Central Government		Local Government	
Ministry	Regional Administration	District	Village
National Project -	Most cases - taken over construction		Self-help (Labour)
Large Scale	Large Projects		Self-help (aggregate/sand/timber)
Urban water Supplies	Urban water supplies		
District town water supply	District town water supply		
	Medium projects	Medium projects Minor projects	Self help Minor projects

Responsibility for the Operation and Maintenance of Water Supplies:

Central Government		Local Government	
Ministry	Regional Administration	District Council	Village Council
National Projects All repairs		National Projects: No Contribution	Distr system taken care of District
	Urban water supply		
	District town water supply		
	Large projects Major repairs		Large Projects: Minor repairs
	Medium projects: Major repairs	Medium projects: Major repairs	Minor repairs
			Minor Projects All repairs
			HP-schemes

No operational guidelines have yet been worked out to deal with the overlapping responsibilities for, say, medium sized projects. Thus the sharing of tasks and costs of O&M between village councils and the district council/regional administration is not precisely defined.

The responsibilities listed below are those stated in the policy paper:

1.1 Responsibilities of the Ministries.

According to the policy paper the **Ministry of Water** will have the following tasks (WP \$ 71).

- o Develop and supervise the implementation of water policies, strategies and long-term plans.
 - o Prepare technical standards.
 - o Approve all regional project designs.
 - o Direct and advice regional and district council staff on planning, construction, management and maintenance of projects.
 - o Do research and run pilot projects.
 - o Supervise and run soil and water laboratories, hydrological and by hydrogeological services.
 - o Drill deep wells.

 - o Construct "National" and large scale projects and urban and district town water supplies (which may also be done by the RWE).
 - o Operate and maintain national projects.
 - o Supervise and coordinate all donor projects.
 - o Run a central store and workshop.
 - o Plan for and train technical staff in the ministry, the regions and district councils.
 - o Transfer and discipline of all such staff. (This contravenes LGSC responsibilities).
 - o Co-operate with other ministries and the party in the implementation of water projects.
- 1.2 The Ministry of Health will be responsible for (WP \$ 72):**
- o Public health education on the use of water.
 - o Rural environmental cleanliness.

- o Latrine construction in rural areas.

- o Coordinate the safety of drinking water (not specified).

1.3 The Community Development Department in the Ministry of Local Government will be responsible for (WP \$ 73):

- o Planning and implementing strategies to motivate users for self help activities.

- o Train users in above.

- o Train Ministry of Water staff on how to motivate users.

1.4 The Ministry of Local Government will (WP \$ 74)

- o Allocate sufficient funds to run district water services.

- o Train and employ sufficient technical staff.

1.5 Responsibilities of the Regional Administration: (WP \$ 81)

The Regional Water Engineer will be responsible for:

- o Researching, mapping and designing all types of water projects (including national projects in certain cases).

- o Construction of national, large scale, urban and district town water supplies (which may also be done by the ministry).

- o Construction of medium sized projects (which may also be done by the district council).

- o Maintain and operate urban and district town water supplies.

- o Do major repairs on some "medium sized" and all "large" projects (division of responsibility on medium projects unclear, since also DWE and village councils are involved).

- o Supervise projects (unclear which types).

- o Monitor all water supply service activities.

- o Train certain regional and district technicians.

- o Make spare parts, tools and machinery available at district level (relation to district council spare supply is unclear).

The relationship between the RWE and DWE with respect to tasks and responsibilities is not specified.

A Regional Water Committee shall be established.

1.6 Responsibilities of District Councils (WP \$ 82):

District Councils are to "Plan and develop the village water programmes in cooperation with villagers". The RWE is to be responsible for water supplies in urban areas administrated under town and district councils.

Specifically the councils shall build rainwater catchments, charcos and hand-pumped wells (i.e "Minor projects") and some medium sized projects. Furthermore, the councils shall help to maintain schemes by:

- o Ensuring availability of spares etc.
- o Providing advice to villagers.
- o Executing and paying for certain repairs on certain - mainly "medium sized" projects.
- o Controlling expenditures from Village Water Fund (District Water Engineer is compulsory signatory, district Treasurer audits Water Funds accounts).
- o Issue ownership certificates to villages.
- o Providing on the job training of scheme attendants on projects build by the council.

A District Water Committee shall oversee these activities. Its membership and relations to the district standing committees is unclear.

1.7 Responsibilities of Village Councils (WP \$ 83):

Village councils shall be "owners" of water supply schemes and obtain water rights for the water source according to the Water Policy. Precisely what this means in a legal and practical sense has not yet been spelled out.

Moreover, the village council will:

- * Participate in planning and management of schemes.
- * Contribute self-help labour during construction of all types of schemes.
- * Contribute in cash and kind to the operation of all large and medium projects (minor repairs).

- * Pay the full cost of running minor projects.
- * Establish a Water Fund and ensure that the Water Committee is working satisfactorily.
- * Collect, use and account for user contributions to the Water Fund.
- * Protect and maintain water sources.
- * Establish By-laws to ensure proper protection and maintenance of the scheme and Water Source.

Provision of House connections are emphasized even if public taps are the main feature.

A village water committee will manage the above. The committee is to be selected by the village council in conjunction with among either the CCM. This contravenes the local government acts.

1.8 Responsibility of Users:

Tanzania has had a long tradition for user self-help contribution of labour to construction of new schemes. This policy continues.

Likewise, the declared policy of user participation of planning, implementation and maintenance of schemes continues, although practice has often been different. However, MAJI clearly emphasizes participation throughout the policy paper.

The involvement of women is emphasized, however, their involvement should not increase the burden to women (WP \$ 65).

"Free water has been a key feature of the previous water sector policy. So far, rural users without house connections have only paid for water on an ad hoc, village organized, basis - most in emergence cases.

The policy advocates user payment (cost recovery), but in a rather ambiguous way. In some parts of the policy paper it is stated that users should pay the cost of "the construction and running of projects". In other parts it is stipulated that users should pay into a village "Water Fund" that would help to finance part of the cost of construction and running projects.

A third version relates to the degree of cost recovery to scheme technology and size.

These ambiguities in cost recovery policies probably reflect the controversy involved in moving away from the "free" water supply policy. However, the thrust of the policy paper is clearly that users must contribute to funding to a much larger extent than in the past.

1.9 Responsibility of the private sector (WP \$ 84):

The policy emphasizes the participation of the private sector in provision of services to the water sector.

ANNEX III

O&M COST ESTIMATE SUMMARY

NO DESCRIPTION	BUDGET X 1000 DKK				PLANOP NO	COMPLETION TARGET DATE BY QUARTER	RESPONSIBLE SECTION
	IRINGA	MBEYA	RUVUMA	TOTAL			
1 INFORMATION							
1.1 Information Workshop to Primary Users	43.2	68.4	34.8	146.4	1.2.4	1/93	O&M
1.2 Design of District based information campaign to beneficiaries	8.4	8.4	8.4	25.2	1.3.4	1/93	CP
1.3 Support to a District based information campaign to beneficiaries:							
H/P Schemes	23.0	32.0	39.0	94.0	1.3.4	1/94	DCDO/CP
Single Gravity Schemes	3.0	14.0	14.0	31.0	1.3.4	1/94	DCDO/CP
Grouped Gravity Schemes	77.0	131.0	40.0	248.0	1.3.4	1/94	DCDO/CP
1.4 Translation of O&M Framework into Kiswahili	-	-	-	63.0	1.3.4	1/93	PICU
1.5 Support for printing and distribution of O & M Framework	-	-	-	50.0	1.3.4	1/93	PICU
Sub-total	154.6	253.8	136.2	657.6			
2 REHABILITATION							
2.1 Assessment of Rehabilitation needs for Phase I and II Schemes:							
H/P Schemes	90.0	162.0	138.0	390.0	1.2.10	3/93	O&M
Gravity Schemes	250.0	403.0	178.0	831.0	1.2.10	3/93	PICU/CONSULT
2.2 Rehabilitation (part)							
H/P Schemes	201.0	165.0	191.0	557.0	1.2.10	1/94	O&M
Gravity Schemes	1,000.0	1,500.0	1,000.0	3,500.0	1.2.10	1/95	DWE/O&M
Sub-total	1,541.0	2,230.0	1,507.0	5,278.0			

NO	DESCRIPTION	BUDGET X 1000 DKK				PLANOP NO	COMPLETION TARGET DATE BY QUARTER	RESPONSIBLE SECTION
		IRINGA	MBEYA	RUVUMA	TOTAL			
3. FINANCIAL & MANAGEMENT PROCEDURES								
3.1	Development of F&M Procedures	-	-	-	84.0	1.3.1	1/93	PICU
3.2	Information/Training of Primary Users	43.2	68.4	34.8	146.4	1.3.1	2/93	CP
3.3	Introduction of the Procedures at Schemes levels	23.0	32.0	39.0	94.0	1.3.1	3/93	DCDO/CP
	H/P Schemes	3.0	14.0	14.0	31.0	1.3.1	3/93	DCDO/CP
	Simple Gravity Schemes	77.0	131.0	40.0	248.0	1.3.1	3/93	DCDO/CP
	Grouped Gravity Schemes							
	Sub-total	146.2	245.4	127.8	603.4			
4. BENEFICIARY TRAINING								
4.1	Training/Retraining of Scheme Attendants	23.0	32.0	39.0	94.0	1.3.2	2/94	BSU
	H/P Schemes	3.0	14.0	14.0	31.0	1.3.2	4/93	BSU
	Single Gravity Schemes	80.0	154.0	53.0	287.0	1.3.2	2/95	BSU
	Grouped Gravity Scheme							
4.2	Training/Retraining of VG/VWC & GSWC	86.0	120.0	146.3	352.6	1.3.1	2/94	CP
	H/P Schemes	11.3	52.5	52.5	116.3	1.3.1	4/94	CP
	Single Gravity Schemes	328.4	574.1	196.8	1,099.3	1.3.1	2/95	CP
	Grouped Gravity Scheme							
	Sub-total	17.1	30.0	15.9	63.0	1.3.2	2/93	CP
4.3	Training/Retraining of Village (Scheme) Accountants	549.1	976.6	517.5	2,043.2			
	Sub-total							

NO. DESCRIPTION	BUDGET X 1000 DKK				PLANOP NO.	COMPLETION TARGET DATE BY QUARTER AC NO.	RESPONSIBLE SECTION
	IRINGA	MBEYA	RUVUMA	TOTAL			
5. SCHEME MANUALS							
5.1 Development of Prototype Manuals	12.6	12.6	12.6	37.8	1.3.4	1/93	O&M
-	-	-	-	63.0	1.3.4	1/93	PICU
5.2 Preparation of Scheme Manuals H/P Schemes							
Single Gravity Scheme	11.5	16.0	19.5	47.0	1.3.2	4/93	O&M
Grouped Gravity Scheme	1.5	7.0	7.0	15.5	1.3.2	2/94	O&M
	49.5	88.5	43.0	181.0	1.3.2	4/94	O&M
Sub-total	75.1	124.1	82.1	344.3			
6. SPARE PARTS							
6.1 Development of a Revolving Fund and Store System at District level	12.6	12.6	12.6	37.8	1.2.7	1/93	O&M
-	-	-	-	63.0	1.2.7	1/93	PICU
6.2 Procurement of Initial Spare Parts for the Revolving Store	750.0	900.0	450.0	2,100.0	1.2.6	1/94	O&M
6.3 Training of Stores Personnel	84.0	100.8	50.4	235.2	1.2.6	1/94	O&M
Sub-total	846.6	1,013.4	513.0	2,436.0			
7. MONITORING & EVALUATION SYSTEM							
7.1 Develop a Monitoring System	13.5	13.5	13.5	40.5	1.2.8	1/93	O&M/CP
7.2 Develop an Evaluation System	13.5	13.5	13.5	40.5	1.2.8	2/93	CP/O&M
7.3 Introduction of the Monitoring System	23.4	40.5	20.7	84.6	1.3.3	3/93	PMU
7.4 Production and Distribution of First set of Monitoring Forms	11.4	20.0	10.6	42.0	1.3.3	3/93	PMU
Sub-total	61.8	87.5	58.3	207.6			

NO	DESCRIPTION	BUDGET X 1000 DKK				PLANOP NO	A/C NO	SECT
		IRINGA	MBEYA	RUVUMA	TOTAL			
8. IMPROVE DWE/DCDO SUPPORTIVE ROLE								
8.1	Improvement/construction of DWE/DCDO's office, store and workshop	1.000.0	1.000.0	500.0	2.500.0	1.2.2/1.2.3	1/95	O&M
	Office equipment	500.0	500.0	300.0	1.300.0	1.2.2/1.2.3	1/95	O&M
	Workshop equipment	700.0	700.0	420.0	1.820.0	1.2.2/1.2.3	1/95	O&M
8.2	Procurement of Transport facilities to DWE/DCDO	750.0	900.0	450.0	2.100.0	1.2.2/1.2.3	3/93	O&M
8.3	Procurement of Transport facilities to Ward CDA's	416.0	720.0	368.0	1.504.0	1.2.3	3/93	CP
	Sub-total	3.366.0	3.820.0	2.038.0	9.224.0			
9. PROGRAMME ASSISTANCE								
9.1	Transport Cost Advisers	200.0	200.0	200.0	600.0	1.2.8	2/95	O&M
	PMU's	300.0	300.0	300.0	900.0	1.2.8	2/95	O&M
	BSU's	300.0	300.0	300.0	900.0	1.3.2	2/95	O&M
9.2	PMU Teams	240.0	240.0	240.0	720.0	1.2.8	2/95	PMU
9.3	BSU Teams	180.0	180.0	180.0	540.0	1.3.2	2/95	BSU
9.4	Meetings, Workshops & Seminars	103.0	103.0	103.0	309.0	1.2.4	2/95	O&M
9.5	Study Tours	72.0	72.0	72.0	216.0	1.2.4	2/95	O&M
9.6	Stationery/Office Equipment	80.0	80.0	80.0	240.0	1.2.4	2/95	O&M
9.7	Evaluations	75.0	75.0	75.0	225.0	1.2.9	2/95	O&M
9.8	O&M establishment at RCDO's office	1.075.0	1.075.0	850.0	3.000.0	1.1	2/95	CP
	Sub-total	2.625.0	2.625.0	2.400.0	7.650.0			
10. SOURCE PROTECTION								
10.1	Nursery materials	40.0	72.0	27.0	139.0	1.5.3	3/94	OMP
10.2	Transport	120.0	120.0	120.0	360.0	1.5.3	2/95	OMP
10.3	Allowance	126.0	126.0	126.0	378.0	1.5.3	2/95	OMP
10.4	Information materials	10.3	17.7	9.3	37.3	1.5.4	1/92	CP
	Sub-total	296.3	335.7	282.3	914.3			
	Grand Total	9.661.7	11.711.5	7.662.2	29.035.4			
	- Regions				323.0			
	- PICU				29.358.4			

O&M COST ESTIMATES

1. Information Campaign

The uses of the O&M Framework have been identified as:

- a) Primary users - defined to be all relevant personnel in the district administration i.e. DPLO, DWE, DCDO, WAEO's and CDA's.
- b) Secondary - defined as all others involved in the development of the water sector i.e. government ministries, NGO's, parastatals, donors, private organizations and individuals.

The MAJI/DANIDA WATER PROGRAMME, as a secondary user in the three Regions of Iringa, Mbeya and Ruvuma has the obligation to support an information campaign to create the awareness among the primary user group and beneficiaries of the O&M framework. Similarly, limited support for distribution of the O&M Framework to secondary users is foreseen.

It is therefore suggested that the following activities shall be supported:

	1000 DKK			PICU	TOTAL
	IRINGA	MBEYA	RUVUMA		
1.1 Information Workshop to Primary Users					
IR (5 Districts x 4 people + 26 Wards x 2 people)x 300 DKK/Day x 2 day					
MB (6 Districts x 4 people + 45 Wards x 2 people)x 300 DKK/Day x 2 day					
RU (3 Districts x 4 people + 23 Wards x 2 people)x 300 DKK/Day x 2 day	43.2	68.4	34.8	-	146.4
1.2 Design of an appropriate District based information campaign to beneficiaries					
3 regions x 4 persons x 7 days x 300 DKK/day	8.4	8.4	8.4	-	25.2
1.3 Design of an appropriate District based information campaign to beneficiaries					
H/P Village Schemes					
IR 23 x 5 people x 2 days x 100 DKK/day					
MB 32 x 5 people x 2 days x 100 DKK/day					
RU 39 x 5 people x 2 days x 100 DKK/day	23.0	32.0	39.0	-	94.0
Simple Gravity Scheme Villages					
IR 3 x 5 people x 2 days x 100 DKK/day					
MB 14 x 5 people x 2 days x 100 DKK/day					
RU 14 x 5 people x 2 days x 100 DKK/day	3.0	14.0	14.0	-	31.0
Group Gravity Scheme Villages					
IR 77 x 5 people x 2 days x 100 DKK/day					
MB 131 x 5 people x 2 days x 100 DKK/day					
RU 10 x 5 people x 2 days x 100 DKK/day	77.0	131.0	40.0	-	248.0
1.4 Translation of the O&M Framework into Kiswahili					
1 consultant x 21 days x 3000 DKK/day	-	-	-	63.0	63.0
1.5 Support for printing and distribution of the O&M Framework to Secondary Users					
500 copies x 100 DKK/copy	-	-	-	50.0	50.0
Sub-total	<u>154.6</u>	<u>253.8</u>	<u>136.2</u>	<u>113.0</u>	<u>657.6</u>

2. Rehabilitation

One of the assumptions, in order to make the O&M Framework function, is that:

- Schemes are properly designed and constructed according to set requirements and standards.

It is a fact that a number of schemes constructed during phase I and II needs to be rehabilitated. Rehabilitation activities mainly required on intakes and storage tanks but also minor realignments and enlargement of transmission lines may be required in order to supply the designed demand.

It is therefore suggested that a consultant is engaged to carry out an evaluation of the rehabilitation needs of schemes constructed during phase I and II. Such an evaluation should also include an assessment of the entire scheme and production of useful maps which could be incorporated into Scheme Manuals.

	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
2.1 Assessment of Rehabilitation and needs Phases I & II Schemes					
<u>H/P Village Schemes</u> 100%					
IR 15 x 5 days x 2 people x 3000 DKK/day (201 HP)					
MB 27 x 1 day x 2 people x 3000 DKK/day (165 HP)					
RU 23 x 1 day x 2 people x 3000 DKK/day (191 HP)	90	162	138	-	390
<u>Simple and Grouped Gravity Schemes</u> (40%)					
IR 15 x 5 days x 2 people x 3000 DKK/day (201 HP)					
MB 27 x 1 day x 2 people x 3000 DKK/day (165 HP)					
RU 23 x 1 day x 2 people x 3000 DKK/day (191 HP)	250	403	178	-	831

2.2 Rehabilitation

H/P Village Schemes - For costing purposes, it is assumed that 50% of all H/Pump cylinders need to be changed and 50% of all wells cleaned. No new drilly activities is foreseen to take place where H/P wells have dried.

IR 15 x 5 days x 2 people x 3000 DKK/day (201 HP)					
MB 27 x 1 day x 2 people x 3000 DKK/day (165 HP)					
RU 23 x 1 day x 2 people x 3000 DKK/day (191 HP)	2010	1650	1910	-	5570

Gravity Village Schemes - For costing purposes it is assumed that 10% of the present average per capita cost of 300 DKK/person will be required for rehabilitation of part of the villages.

IR 15 x 5 days x 2 people x 3000 DKK/day (201 HP)					
MB 27 x 1 day x 2 people x 3000 DKK/day (165 HP)					
RU 23 x 1 day x 2 people x 3000 DKK/day (191 HP)	<u>1,000</u>	<u>1,500</u>	<u>1,000</u>	-	<u>3,500</u>
Sub-total	<u>1,541.0</u>	<u>2,230.0</u>	<u>1,507.0</u>	-	<u>5,278.0</u>

3. Financial and Management Procedures and Routines

In order for the Framework to be operationalized it is a need that appropriate financial and management procedures and organizational set-ups are developed and used for each scheme. The Programme will therefore assist the Primary Users to establish such and in the training of VG/VWC and GSWCs for their implementation of the F&M Procedures.

	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
3.1 <u>Development of appropriate F&M Procedures & Routines</u> will be done for H/P schemes, Single Gravity Scheme and Grouped Gravity Schemes. It is prepared that these procedures are developed by a group of local selected consultant with the knowledge of L.G. procedures. 4 people x 21 days x 1000 DKK/day	-	-	-	84.0	84.0
3.2 <u>Information/Training Primary Users</u> of the F&M Procedures & Routines will be carried out during regionalwise workshops IR (5 District x 4people+26 Wards x 2people)x3000DKK/day x 2days MB (6 District x 4people+45 Wards x 2people)x3000DKK/day x 2days RU (3 District x 4people+23 wards x 2people)x3000DKK/day x 2days	43.2	68.4	34.8	-	146.4
3.3 <u>Introduction of the Procedure/Routines</u> at scheme level will be carried out by the Primary Users. The Programme will assist them in facilitating this.					
<u>H/P Village Schemes</u> IR (5 District x 4people+26 Wards x 2people)x3000DKK/day x 2days MB (6 District x 4people+45 Wards x 2people)x3000DKK/day x 2days RU (3 District x 4people+23 wards x 2people)x3000DKK/day x 2days	23.0	32.0	39.0	-	94.0
<u>Simple Gravity Scheme Villages</u> IR (5 District x 4people+26 Wards x 2people)x3000DKK/day x 2days MB (6 District x 4people+45 Wards x 2people)x3000DKK/day x 2days RU (3 District x 4people+23 wards x 2people)x3000DKK/day x 2days	3.0	14.0	14.0	-	31.0
<u>Group Gravity Scheme Villages</u> IR (5 District x 4people+26 Wards x 2people)x3000DKK/day x 2days MB (6 District x 4people+45 Wards x 2people)x3000DKK/day x 2days RU (3 District x 4people+23 wards x 2people)x3000DKK/day x 2days Sub-total	<u>77.0</u> <u>146.2</u>	<u>131.0</u> <u>245.4</u>	<u>40.0</u> <u>127.8</u>	= <u>84.0</u>	<u>248.0</u> <u>603.4</u>

4. Beneficiary Training

One of the necessities to enable the framework to be operationalized is appropriately trained Scheme Attendants and other Scheme Staff. It is therefore suggested that the Programme shall continue the technical training or re-training of Scheme Attendants, management training of VWC/GSWC and accounting training of Accountant.

4.1	<u>Training/Retraining of Scheme Attendants</u>	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
	<u>H/P Village Schemes</u>					
	IR 23 x 2 people x 5 days x 100 DKK/day					
	MB 32 x 2 people x 5 days x 100 DKK/day					
	RU 39 x 2 people x 5 days x 100 DKK/day	23.0	32.0	39.0	-	94.0
	<u>Simple Gravity Scheme</u>					
	IR 3 x 2 people x 5 days x 100 DKK/day					
	MB 14 x 2 people x 5 days x 100 DKK/day					
	RU 39 x 2 people x 5 days x 100 DKK/day	3.0	14.0	14.0	-	31.0
	<u>Group Gravity Schemes</u>					
	IR (77 x 2 + 11 x 2) x 5 days x 100 DKK/day					
	MB (131 x 2 + 23 x 2) x 5 days x 100 DKK/day					
	RU (40 x 2 + 13 x 2) x 5 days x 100 DKK/day	80.0	154.0	53.0	-	287.0
4.2	<u>Training/Retraining of VG/VWC/GSWCs</u>					
	<u>H/P Village Scheme</u>					
	IR 23 x 25 people x 3 days x 50 DKK/day					
	MB 32 x 25 people x 3 days x 50 DKK/day					
	RU 39 x 25 people x 3 days x 50 DKK/day	86.3	120.0	146.3	-	352.6
	<u>Simple Gravity Scheme</u>					
	IR 3 x 25 people x 5 days x 50 DKK/day					
	MB 14 x 25 people x 5 days x 50 DKK/day					
	RU 14 x 25 people x 5 days x 50 DKK/day	11.3	52.5	52.5	-	116.3
	<u>Group Gravity Scheme</u>					
	IR (77 x 25 people x 3 days x 50 DKK/day + 11 x 12 people x 3 days x 100 DKK/day)					
	MB 131 x 25 people x 3 days x 50 DKK/day + 23 x 12 people x 3 days x 100 DKK/day					
	RU 40 x 25 people x 3 days x 50 DKK/day + 13 x 12 people x 3 days x 100 DKK/day	328.4	574.1	196.8	-	1.099.3
4.3	<u>Training/Retraining of Village (Scheme) Accountants</u>					
	IR (103 + 11) x 1 people x 3 days x 50 DKK/day					
	MB (177 + 23) x 1 people x 3 days x 50 DKK/day					
	RU (93 + 13) x 1 people x 3 days x 50 DKK/day	171.0	30.0	15.9	-	63.0
	Sub-total	<u>549.1</u>	<u>976.6</u>	<u>517.5</u>	<u>-</u>	<u>2.043.2</u>

5. Scheme Manuals

The Framework emphasises that a manual shall be developed for each scheme which will support the scheme staff in managing the scheme. Input to the manual will come from original design reports, and activities 2 and 3 above. It is assumed that Prototypes of Scheme Manuals for H/P, Simple Gravity Schemes and Grouped Gravity Schemes shall be developed prior to development of individual scheme manuals.

5.1 Development of Prototype manuals will be carried out using assistance from a consultant.

	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
3 Regions x 3 people x 14 days x 300 DKK/day	12.6	12.6	12.6	-	37.8
1 consultant x 21 days x 3000 DKK/day	-	-	-	63.0	63.0

5.2 Preparation of Scheme Manuals will mainly be carried out as a day-day activity by the Programme. However, it is assumed that meetings etc. will be held in addition to priority of the manuals.

H/P Schemes

IR 23 x 500 DKK/manual					
MB 32 x 500 DKK/manual					
RU 39 x 500 DKK/manual	11.5	16.0	19.5	-	47.0

Simple Gravity Scheme

IR 3 x 500 DKK/manual					
MB 14 x 500 DKK/manual					
RU 14 x 500 DKK/manual	1.5	7.0	7.0	-	15.5

Group Gravity Schemes

IR 77 x 500 DKK/manual					
11 x 1000 DKK/manual					
MB 131 x 500 DKK/manual					
23 x 1000 DKK/manual					
RU 40 x 500 DKK/manual					
23 x 1000 DKK/manual	<u>49.5</u>	<u>88.0</u>	<u>43.0</u>	-	<u>181.0</u>
Sub-total	<u>75.1</u>	<u>124.1</u>	<u>82.1</u>	<u>63.0</u>	<u>344.3</u>

6. Spare Parts

A precondition for a functioning O&M set-up is the availability of spareparts. The O&M framework stressed, therefore, the importance that spareparts are made available either through the private market or at District Water Engineer for purchase by the schemes. It is the belief that the reliance on the DWE will for a long period be a reality. It is therefore suggested that the Programme should assist the DWE's in the development of this responsibility.

6.1 Development of a Revolving Fund/Store System at DWE's office will be facilitated by using local expertise on a consultancy basis.

	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
3 Regions x 3 people x 14 days x 300 DKK/day	12.6	12.6	12.6	-	37.8
1 consultant x 21 days x 3000 DKK/day	-	-	-	63.0	63.0

6.2 Procurement of Initial Spare parts. The Programme will the DWE in procurement of Initial Spare Parts for the Revolving Fund/Store. (see separate list)

IR 23 x 500 DKK/district					
MB 32 x 500 DKK/district					
RU 39 x 500 DKK/district	750	900.0	450	-	2100.0

6.3 Train Stores Personnel. There will be a need to train stores personnel in managing the Revolving Fund/Store.

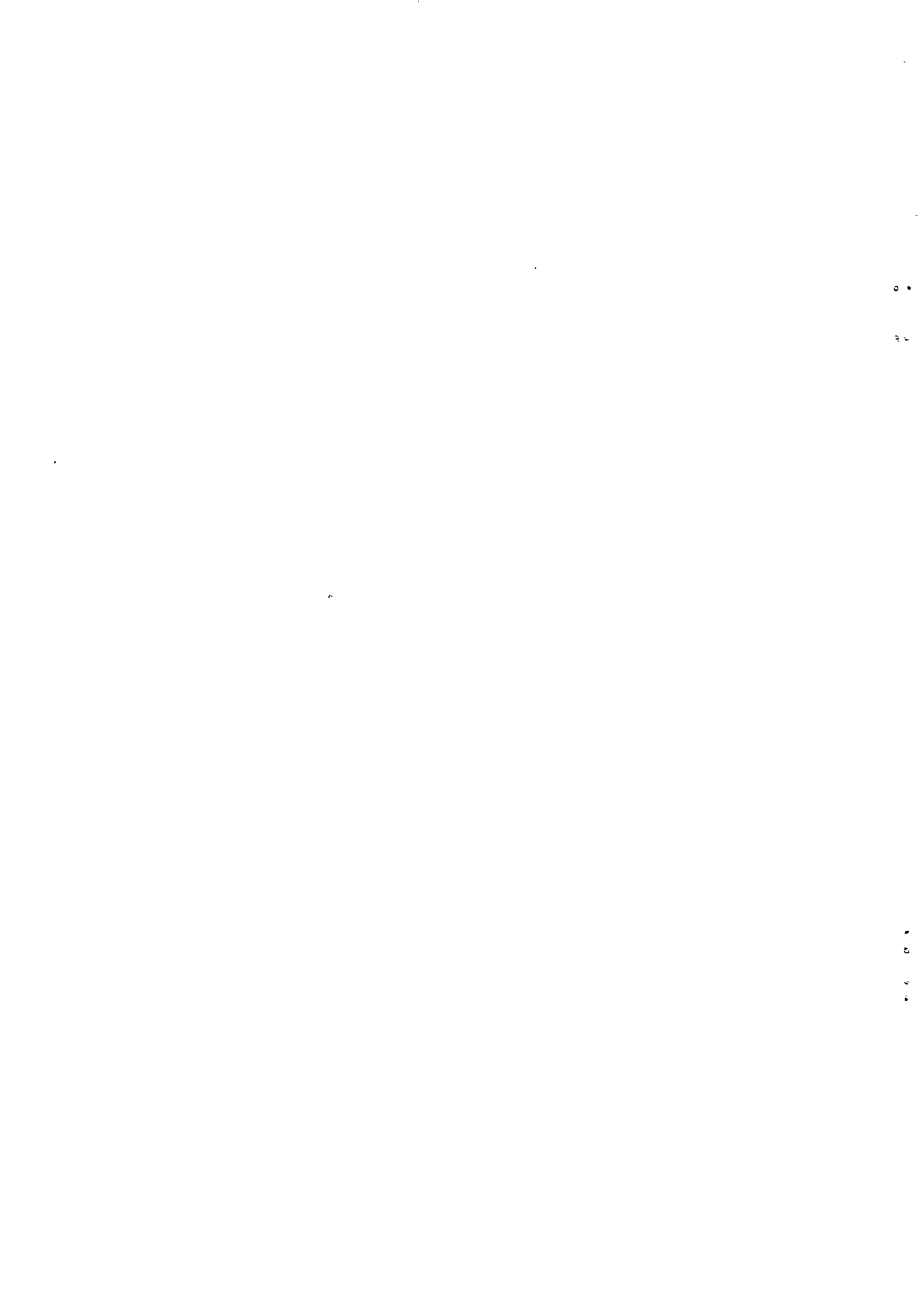
IR 5 x 4 x 14 days x 300 DKK/day					
MB 6 x 4 x 14 days x 300 DKK/day					
RU 3 x 4 x 14 days x 300 DKK/day	<u>84</u>	<u>100.8</u>	<u>50.4</u>	<u>-</u>	<u>235.2</u>
Sub-Total	<u>846.6</u>	<u>1,013.4</u>	<u>513.0</u>	<u>63.0</u>	<u>2,436.0</u>

7. Monitoring and Evaluation System. The Framework emphasises that a simple but appropriate monitoring routine needs to be developed and introduced, in order to assist the primary users in deciding supportive actions and in fulfilling their monitoring requirements at large, of the O&M achievements. Equally important is the development and introduction of an Evaluation routine to be carried out by the primary and secondary users.

	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
7.1 <u>Develop a Monitoring System</u>					
3 Regions x 3 people x 15 days x 300 DKK/day	13.5	13.5	13.5	-	40.5
7.2 <u>Develop a Evaluation System</u>					
3 Regions x 3 people x 15 days x 300 DKK/day	13.5	13.5	13.5	-	40.5
7.3 <u>Introduction of the Monitoring System</u> to WCDAAs					
IR 26 Wards x 1 person x 3 days DKK/day					
MB 45 Wards x 1 person x 3 days DKK/day					
RU 23 Wards x 1 person x 3 days DKK/day	23.4	40.5	20.7	-	84.6
7.4 <u>Production and Distribution of the Monitoring Forms</u>					
IR (103 + 11) x 100 DKK					
MB (177 + 23) x 100 DKK					
RU (93 + 13) x 100 DKK	11.4	20.0	10.6	-	42.0
Sub-Total	<u>61.8</u>	<u>87.5</u>	<u>58.3</u>	<u>-</u>	<u>207.6</u>
8. <u>Improve DWE/DCDO Supportive Role</u>					
8.1 Improvement/Consultant of DWE/DCDOs office					
Store and Workshop facilities	1.000	1.000	500	-	2.500
Office equipment	500	500	300	-	1.300
Workshop equipment	700	700	420	-	1.820
8.2 Provide Transport facilities to DWE/DCDOs. It is assumed that DWE will be provided with one L/Rover, Pickups while DCDO will be provided with a M/C.					
IR 5 x 150.000 DKK					
MB 6 x 150.000 DKK					
RU 3 x 150.000 DKK	750	900	450	-	2.100
8.3 Provide Transport facilities to WCDAAs. It is assumed that WCDAAs will be provided with a M/C each.					
IR 26 x 16.000 DKK					
MB 45 x 16.000 DKK					
RU 23 x 16.000 DKK	416	720	3.688	-	1.504
Sub-total	<u>3.366.0</u>	<u>3.820</u>	<u>2.038</u>	<u>-</u>	<u>9.224</u>

9. Programme Assistance It is envisaged that the Programme O&M and VIPA advisers and that existing PMU's and BSU's will continue their supportive functions during Phase III.

	<u>IRINGA</u>	<u>MBEYA</u>	<u>RUVUMA</u>	<u>PICU</u>	<u>TOTAL</u>
9.1 <u>Transport costs</u>					
3 Regions x 2 Advisers x 26 000km/year x 2.5 years x 30 DKK/km	200	200	200	-	600
3 Regions x 1 PMU x 40 000km/year x 2.5 year x 30 DKK/km	300	300	300	-	900
3 Regions x 1 BSU x 40 000km/year x 2.5 year x 30 DKK/km	300	300	300	-	900
9.2 <u>PMU teams</u>					
3 Regions x 4 people x 20 days/month x 30 months x 100DKK/day	240	240	240	-	720
9.3 <u>BSU teams</u>					
3 Regions x 3 people x 20 days/month x 30 months x 100DKK/day	180	180	180	-	540
9.4 <u>Meetings, Seminars, Workshop</u>					
3 Regions x 10 meetings x 300 DKK/meetings	3.0	3.0	3.0	-	9.0
3 Regions x 4 workshops x 20.000 DKK/workshops	40.0	40.0	40.0	-	120.0
3 Regions x 2 seminars x 30 000 DKK/seminars	60.0	60.0	60.0	-	180.0
9.5 <u>Study tours</u>					
External 3 regions x 4 people x 10.000 DKK/person	40.0	40.0	40.0	-	120.0
Internal 3 regions x 2 people x 30.000 DKK/person	32.0	32.0	32.0	-	96.0
9.6 <u>Stationery/Office Equipment</u>					
Office Equipment 3 regions x 50.000 DKK/region	50.0	50.0	50.0	-	150.0
Stationeries 3 regions x 1.000 DKK/month x 30 months	30.0	30.0	30.0	-	90.0
Sub-total	1.650.0	1.650.0	1.650.0	-	4 950.0
10. <u>Source Protection</u> It is assumed that the Programme will assist the VWC/GSWC to set-up nurseries to protect water sources. Also minor important materials will be purchased.					
10.1 <u>Nursery material (50% of all sources)</u>					
IR 80 x 0.5 x 1000 DKK/source					
MB 144 x 0.5 x 1000 DKK/source					
RU 54 x 0.5 x 1000 DKK/source	40.0	72.0	27.0	-	139.0
10.2 <u>Transport</u>					
3 regions x 3 people x 30.000 h/year x 4 DKK/year	120.0	120.0	120.0	-	360.0
10.3 <u>Allowances</u>					
3 regions x 3 people x 14 day/month x 30 months x 100 DKK/day	126.0	126.0	126.0	-	378.0
10.4 <u>Important materials</u>					
IR 103 x 100 DKK/village	10.3	17.7	9.3	-	37.3
MB 177 x 100 DKK/village					
RU 93 x 100 DKK/village					
Sub-total	<u>296.3</u>	<u>296.3</u>	<u>335.7</u>	<u>-</u>	<u>914.3</u>



ANNEX IV

INFORMATION COLLECTED FROM VARIOUS VILLAGES BY PMU's IN IRINGA, MBEYA & RUVUMA REGIONS

QUESTIONS		DANIDA GR. SCHEME			DANIDA HP SCHEME			GOVERNMENT SCHEME		
		ANSWERS	M%	F%	ANSWERS	M%	F%	ANSWERS	M%	F%
1.	Who is regarded as the owner of the scheme	Villagers Danida Government Don't know	90 6 2 2	89 7 2 2	Villagers Danida Government Don't know	70 15 5 10	65 20 5 10	Don't know	100	100
2.	Do you know the duties of: (a) SA/HPA (b) VWC (c) VG	Some knowledge don't know good knowledge	28 41 30	18 23 49	Some knowledge don't know good knowledge	55 25 20	70 15 15	don't know -do- -do-	100	100
3.	Are SA/HPA's paid?	Yes don't know	10 90	5 95	don't know	100	100	don't know	100	100
4.	Are the female members included in the water affairs?	No	100	100	No	100	100	No	100	100
5.	Are there any other water sources apart from village water scheme?	No	100	100	No	100	100	No	100	100
6.	Do you know your next village SA?	Yes No	69 31	34 66	No	100	100	No	100	100
7.	To whom do you communicate/report problems?	SA VWC V. Chairman	41 56 3	34 56 10	HPA VWC V. Chairman	45 55 -	75 25 -	SA don't know	85 15	100 -
8.	Do you know all the members of VWC?	No Some by names	65 35	25 75	No	100	100	No	100	100
9.	If there is a need of increasing the No. of DPs/HPs are you willing to contribute?	Yes No	85 15	90 10	Yes No	85 15	100	Yes No	100	100
TOTAL SAMPLE SIZE FROM 23 VILLAGES			140	140		70	70		20	20

QUESTIONS		DANIDA GR. SCHEME			DANIDA HP SCHEME			GOVERNMENT SCHEME		
		ANSWERS	M%	F%	ANSWERS	M%	F%	ANSWERS	M%	F%
10.	Do you know the village included in this water scheme (if it is a group scheme)?	Yes don't know	49 51	65 35	No	100	100	No	100	
11.	Are there any other projects in the village?	No	100	100	No	100	100	Yes	100	100
12.	Do you have a village water fund?	Yes don't know	39 60	56 43	Yes don't know	30 70	60 40	No	100	100
13.	Do you know the amount?	No Yes	75 25	85 15	No	100	100	No	100	100
14.	Do you know the purpose of the VWC?	Yes No	33 67	55 45	No	100	100	No	100	100
15.	Do you believe in the system of funding collection?	No	100	100	No	100	100	No	100	100
16.	Do you know who takes care of the VWF?	No	100	100	No	100	100	No	100	100
17.	Who contributes regularly towards VWF?	Men/Women don't know	49 51	75 25	Men & Women don't know	45 55	75 25	don't know	100	100
18.	Is there any mismanagement of VWF?	Yes don't know	63 37	70 30	Yes don't know	55 45	85 15	don't know	100	100
19.	Do you get receipts acknowledging your contributions?	Yes don't know	33 67	40 60	Yes don't know	10 90	30 70	don't know	100	100

QUESTIONS		DANIDA GR. SCHEME			DANIDA HP SCHEME			GOVERNMENT SCHEME		
MANAGEMENT		ANSWERS	M%	F%	ANSWERS	M%	F%	ANSWERS	M%	F%
20.	Do you know anything about budgeting?	No	100	100	No	100	100	No	100	100
21.	Do you get feedback of income and expenditure of VWF?	No	100	100	No	100	100	No		

11

12

13

14

15

16

INFORMATION COLLECTED FROM VARIOUS VILLAGES BY PMU's IN IRINGA, MBEYA & RUVUMA REGIONS

QUESTIONS		DANIDA GR. SCHEME			DANIDA IIP SCHEME			GOVERNMENT SCHEME		
		ANSWERS	M%	F%	ANSWERS	M%	F%	ANSWERS	M%	F%
1.	Any technical support needed from outside for maintaining the scheme?	Yes (spares)	25	77	Yes (spares)	20	90	Yes (spares)	43	86
		don't know	75	23	don't know	80	10	don't know	57	14
2.	How often have this type of support been needed?	When necessary	22	83	when necessary	50	80	don't know	100	100
		don't know	78	17	don't know	50	20			
3.	Are you satisfied by SA's/HIPA's performance?	Yes	81	88	Yes	95	100	Yes	100	100
		No	19	12	No	5				
4.	Who do you think should pay for maintenance of the water scheme?	Villagers	79	86	Villagers	45	100	don't know	100	100
		don't know	21	15	don't know	55				
5.	Do you get enough water?	Yes	100	100	Yes	100	100	Yes	100	100
6.	Is the technology used appropriate?	Yes	39	88	Yes	10	85	don't know	100	100
		don't know	61	12	don't know	90	15			

INFORMATION COLLECTED FROM VARIOUS VILLAGES BY PMU's IN MBEYA, IRINGA & RUVUMA REGIONS

QUESTIONS		DANIDA GR. SCHEME			DANIDA HP SCHEME			GOVERNMENT SCHEME		
		ANSWERS	M%	F%	ANSWERS	M%	F%	ANSWERS	M%	F%
1.	Do you know how much water you use per day?	No	100	100	No	100	100	No	100	100
2.	Does men collect water?	No	100	100	No	100	100	No	100	100
3.	Is there any changes in work routine after the water supply was constructed in the village?	Yes No	72 28	45 55	Yes No	80 20	100	Yes	100	100
4.	Any migration from neighbouring villages?	No Yes	14 86	19 81	No Yes	60 40	70 30	Yes No	57 43	72 28
5.	Do you pay for your treatment and how much?	200/= - 500/= 500/= - 800/= more than 1000/= No.	9 7 3 79	18 11 3 66	No	100	100	200/= - 500/= 500/= - 800/= more than 1000/=	28 28 14	100
6.	How much money do you approximately use for Pombe per week?	200/= - 500/= 500/= - 800/= more than 1000/=	57 19 24	86 14	200/= - 500/= 500/= - 800/= more than 1000/=	70 20 10	70 30	200/= - 500/= 500/= - 800/= more than 1000/=	28 42 28	28 72
7.	How much money do you use for transport per year?	500/= - 800/= 800/= - 1000/= more than 1000/= No	9 3 56 30	3 18 30 47	500/= - 800/= 800/= - 1000/= more than 1000/= No	10 10 35 55	5 25 70	600/= - 1000/= 1000/= - 2000/= more than 2000/=	14 57 28	71 28
8.	Do you normally buy any kind of foodstuff?	No	100	100	No	100	100	No	100	100
9.	Is there any cash crops in your village?	No Yes	16 84	44 56	Yes No	70 30	35 65	Yes	100	100
10.	Do you sell your extra food crops?	Yes	100	100	Yes	100	100	Yes	100	100



22
23



24
25



6.1 GOVERNMENT INSTITUTIONS

In facilitating a Village managed Operation and Maintenance System, the Ward level is expected to perform the following functions and activities:

WARD LEVEL	
Administration/Social/Management/Finance	Technical
<ul style="list-style-type: none"> - Assist in capacity building of village leadership (training). - Assist village in planning processes by giving them necessary skills and knowledge for planning. - Coordinate between villages (grouped schemes). Through investigations on who should constitute membership of group schemes management through Operation and Maintenance may be necessary. - Assist in creating By Laws. - Building awareness through meetings. - Assist in communication from village to district by putting place or strengthening existing monitoring systems(s) 	<p>Reporting (monitoring)</p>

Support to Ward Level:

Logistical and personnel input to the wards is necessary. Some wards are still not having a Community Development Assistants.

Taking into consideration the number of villages a Ward Community Development Assistant has to supervise, (11-24), it is of great importance that some kind of transport is provided. The most realistic would be a small motorcycle, however some wards already have such a facility from different programmes.

DISTRICT LEVEL	
Administration/Social/Management/Finance	Technical
<ul style="list-style-type: none">- Coordinate activities at Ward level.- Approval of By Laws.- Placement of necessary personnel at ward level and facilitate them.- Motivation of extension at ward level.- Monitoring of schemes and keeping records.	<ul style="list-style-type: none">- Technical advice in field and at office.- Some repairs.- Provision of training to make scheme running.- Assist in procurement of spares.- Assist in budgeting.

Support to districts:

Support to the district is needed in form of:

- 1) Capacity building
- 2) Employing key staff centrally (Ministry of Central Government).
- 3) Improvement of working environment for District Water Engineer's and District Community Development Officers.