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DANISH INTERNATIONAL DEVELOPMENT AGENCY

WATER MASTER PLANS  
FOR  
IRINGA, MBEYA & RUVUMA REGIONS

REVISED HANDBOOK  
ON  
VILLAGE PARTICIPATION

Danida Steering Unit  
Dar es Salaam

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2092(2)

*[Faint, illegible text]*

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## 1.1

Step 1: Starting the Procedure in the Village by the VPCPurpose:

To inform village leaders about the scheme and the procedures about to start.

Time:

Survey of mainline is ongoing or about to start. Preliminary Time Schedule has been drawn up together with engineer in charge.

Participants:

Village leaders present on day of visit. SEC (Socio-Economist, i.e. Village Participation Coordinator or his/her assistant).

Preparations:

Check information on the scheme in the WMP. Discuss the main features and overall time schedule of the scheme with engineer in charge. Make time schedule for the next few steps.

Tasks in Village:

1. Be introduced to village leaders present on the day of visit (and ward/divisional secretaries and "diwani" (District Councillor) if appropriate).
2. Explain about the proposed project (intake, villages involved, village participation).
3. Arrange for collection of information (who and when).

Duration in Village:

One or two hours.

Documentation:

None

Practical Hints:

This step may often conveniently be immediately followed by Step 2.

2.1

Step 2: Collect Information on Village by VPC

Purpose:

To collect information on:

- . Size of population and population movements;
- . Settlement pattern, location and names of sub villages and number of people in each sub village;
- . Names of all "balozis", and which sub village they belong to;
- . Existing water supply;
- . Existing or potential conflicts concerned with water (livestock, watering, irrigation, etc);
- . Village economy;
- . Ongoing or planned self help projects;
- . Institutions in the village.

Time:

Before any design takes place.

Participants:

Village Chairman and Secretary, SEC

Preparations:

Bring Form 2 a "Village Information"; Check map materials available at MAJI office.

Tasks in Village:

1. Draw sketch map of village;
2. Fill in Form 2 a.

Duration in Village:

One day.

## 2.2

Documentation:

Form 2 a - "Village Information" completed.

Form 2 b - "Village Population Estimates" completed with copy to engineer.

Sketch map completed.

Practical Hints:

1. Start filling in Form 2 a. If some information is not immediately available leave it for the secretary to go through books and files to find it while the sketch map is drawn, walking around the village with the Chairman.
2. The sketch map should as far as possible be to scale. Use topographical map as basis, or trip counter on car, or count steps. It should give names of sub villages, existing water sources, village roads, important institutions (CCM office, church, mosque, school, godown, 'duka', etc.)
3. Population figures are not always correct. Try to get as many different ones as possible, i.e. from different years, different break-downs (hh - household, men, women, children, able bodied, etc.) Make sure what figures given really cover e.g. a total population figure may actually exclude children. When back in the office compare the different figures obtained, and compare them with 1978 census and WMP figures, and make your own final estimate of the present population - to the nearest 100. e.g. a total population figure of 1800 and a household figure of 600 are very unlikely both to be correct as the average hh size would then be only 3.
4. Try to get at least a rough estimate of surplus retained by the village from different economic undertakings, as that is what interest us in connection with possible sources to cover Operation and Maintenance costs.
5. If all information is not immediately available agree on a date to come back and get it.

## 2.3

6. When back in office fill in Form 2 b. The Village Participation Coordinator's estimate of present population may often be "the best possible guesstimate" and should be used for calculation of future (design) population for year 2006.
7. As a first estimate of revised design population apply the growth rate used in WMP for that particular village as follows:

$$RDP = PP \times \frac{A \xrightarrow{2006}}{B \downarrow} \times \frac{(2006 - \text{Year of PP})}{26}$$

Present      Present pop.1980

- . RDP = Revised Design Population
- . PP = VPC's guesstimate of present population
- . A = WMP design population (village data sheet, Vol.5)
- . B = WMP present population (village data sheet, Vol.5)

The design population arrived at should be critically reviewed with due regard to development potential of the village, settlement pattern, population movements (ref. form 2 a p.7) etc.

In cases where the WMP population estimates indicate an increase of more than 2½ by the year 2006, special investigations should be carried out in each individual case.

8. The 10 year population figure is used for estimating the appropriate minimum number of DPs for initial construction.

The 10 year population is calculated as follows:

$$10 \text{ year population} = PP + \frac{RDP - PP}{(2006 - \text{year of PP})} \times 10$$

To get the initial minimum number of DPs divide the 10 year population with 400. (Maximum number of people per DP is 400).

MAJI/DANIDA

..... Region

Form 2 a - Village Information

Village : .....

Reg. No. : .....

Ward : .....

Division : .....

Village Chairman : .....

Village Secretary : .....

Ward Secretary : .....

Division Secretary : .....

Village Address : .....

Compiled By : .....

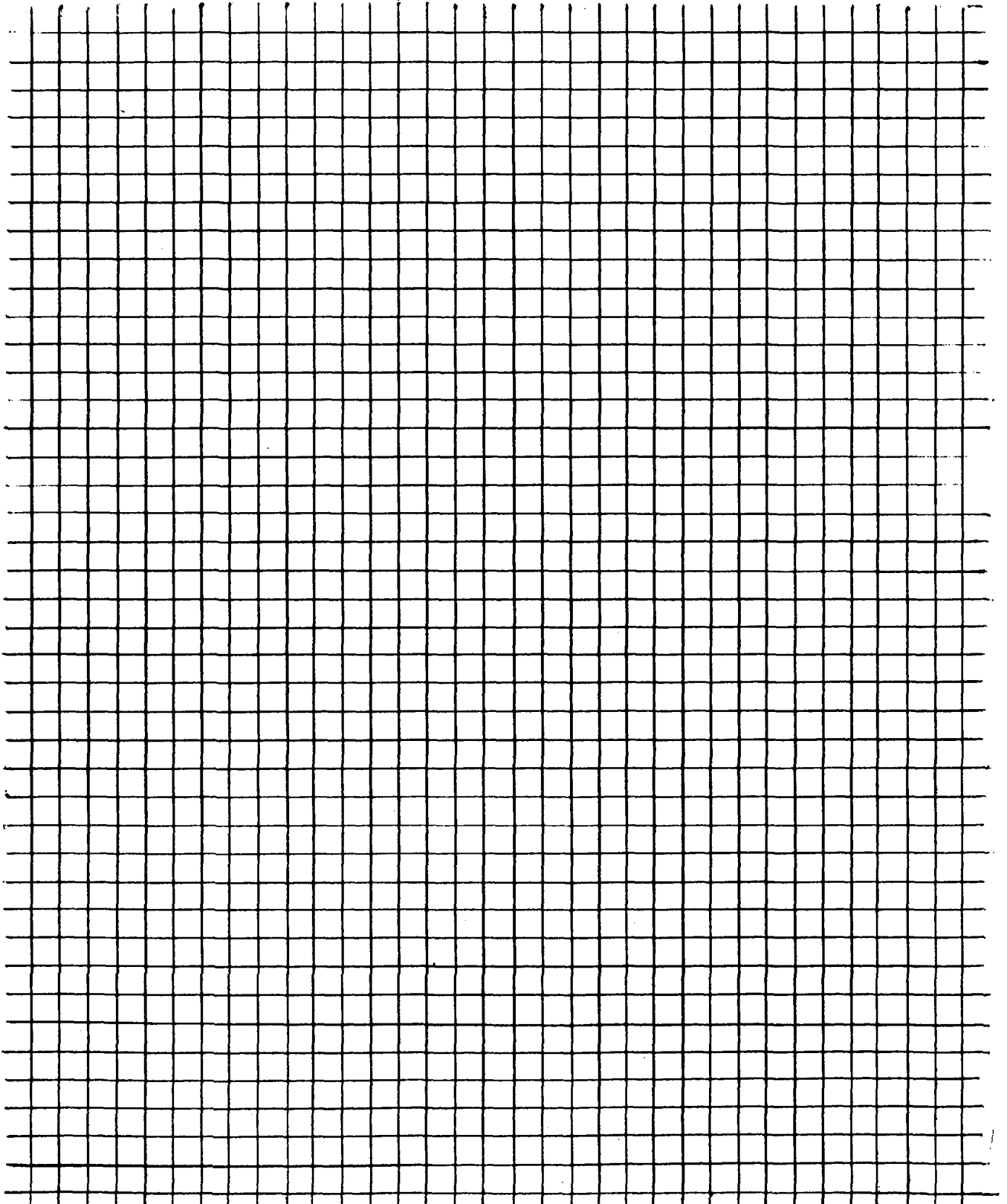
Date : .....



2.

SKETCH OF VILLAGE

Show: Main roads/main populated areas/main settlement for cattle owners/  
rivers/streams/springs/water holes/schools/dispensary/COM office/  
church/mosque/and name and location of all sub villages. Write  
main distances. (Back in office draw to scale on squared paper).







5

Institutions in the Village

What types of schools do the village have: .....

How many pupils in each: .....

Does the village have: Dispensary ....., Health Centre ....., Hospital .....,  
Mission ....., Milling Machine ....., Godown ....., Cattle Dip .....,  
Is there a central shopping area with more than 5 shops: .....

Does any of these institutions have a water supply? Which: .....

.....

How many UWT members: ..... Name of Chairwoman: .....

Village Government Economy (Try to get at least rough estimates of village net income)

Source of Income	Estimated net income to <u>village</u> last year if any
Village Shamba	Shs. ....
Milling Machine	Shs. ....
Duka	Shs. ....
.....	Shs. ....
.....	Shs. ....
Fees & levies (e.g. slaughtering, pombe, etc).	Shs. ....
Michango e.g. CCM office, per hh ..... shs, or per person ..... shs.	
Total	Shs. ....
School per hh ..... shs., or per person ..... shs.      Total	Shs. ....
.....	Shs. ....
Development Levy returned from DC	Shs. ....
Any other income	Shs. ....

6

Collections for purposes outside villages:

Purpose	Shs. per person or hh. or village	Total
.....	..... shs. per .....	Shs. ....
.....	..... shs. per .....	Shs. ....
.....	..... shs. per .....	Shs. ....
.....	..... shs. per .....	Shs. ....

Villagers getting payment/posho from the village

Designation	Payment/Posho
.....	.....
.....	.....
.....	.....
.....	.....

Ongoing or planned self-help projects in the village:

Type of Project	Self-help work in Project		
	What period	Which Days	People per day
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

7

Population Movements:

Have many people moved to this village during the last two years?

Don't Know .....

No .....

Yes ..... How many? .....

From where? .....

Why? .....

Have many people moved away from this village during the last two years?

Don't Know .....

No .....

Yes ..... How many? .....

To where? .....

Why? .....

Have many people from this village resettled within the village boundaries during the last two years?

Don't Know .....

No .....

Yes ..... How many? .....

To where? .....

Why? .....

Does village have plans for expansion of plots (location of new houses)?

Don't Know .....

No .....

Yes ..... How many plots? .....

Which sub-villages? .....

VFC:

How many villagers moved away from the area populated at present, due to soil fertility, overgrazing, changing climate, etc? Give your opinion.

8

Existing Water Supply:

Type of Scheme : Gravity   
 Shallow Well   
 Pumped   
 Others

Source (if surface water): : River   
 Small Stream   
 Spring

Name of Water Source : .....

Does the source dry up : Yes  No

Is the source acceptable to the vil-  
 lagers : Yes  No

If "No", state why?  
 .....  
 .....

Nos. of DPs or handpumps : .....

Nos. of individual connections : .....

Nos. of cattle troughs : .....

Nos. of cattle dips : .....

Is there a water tank : Yes  No

Year of construction of water supply : .....

Constructed By : MAJI  
 Mission  
 Others

8 (Cont'd...)

Is the water supply functioning : Yes  No

If "No", state why?

.....  
.....

How many of the villagers are served : More than 90%   
60% to 90%   
30% to 60%   
Less than 30%

Remarks:

.....  
.....  
.....

(Back in the office compare the information with computer print out)



Potential conflict over water use:

Irrigation:

How many households irrigate their fields or gardens?

Don't Know .....

Number .....

In total how many acres are irrigated during the dry season?

Don't Know .....

Acres .....

Which crops are mainly irrigated?

Don't Know .....

Crops .....

Where is the irrigation water taken from (name river(s) )?

.....

(VPC:

Is the proposed intake on the same river as listed above?

N.A. .... Yes ..... No .....

Is proposed intake above or below irrigated fields/gardens?

N.A. .... Yes ..... No .....

Do you think that irrigators will complain when some of the water from the river is used for the water scheme?

N.A. .... Yes ..... No .....

If you think that there is a potential conflict over water use then discuss the problem with MAJI /DANIDA.

10

Livestock:

Number of Cattle: .....

Where is livestock normally watered? N.A. ....  
 Dry season? .....  
 Wet season? .....

(VPC:

Is livestock watering done above the proposed intake? N.A. .... No ..... Yes .....

Is livestock watering done very far away from the village? N.A. .... No ..... Yes .....

If you think that there is a potential conflict over water use then discuss the problem with MAJI.

Village Acceptance of Proposed Water Source:

	Village Chairman.	Secretary	Others
Is taste of water from source acceptable?			
Is smell of water from source acceptable?			
Is appearance of water from source acceptable?			
Has source ever run dry?			
When?			
Is there a better source around this village (which?)			

(VPC: If any villager you speak to express reservations about the proposed source, then discuss this with MAJI. Consider alternative sources.)

If the village people do not know the source, they should be encouraged to express their opinion - the first village near the proposed source.

MAJI/DANIDA

..... Region

.././19..

Form 2 b - Village Population Estimates

Scheme : .....

Village	Available Population Figures			Present/Future Population			No. DF
	WMP yr.	Census	19 ..	VPC's esti	2000 yr. design pop. year 2006	App.10 year pop.	Acco ding 10 y pop.

Comments: .....  
.....  
.....  
.....

cc: Implementation/Design Engineers

## 3.1

Step 3: Send Information letter to VillagePurpose:

To inform village leaders about the scheme and its conditions and to call meeting of village assembly.

Time:

Survey, design and materials order for transmission mains finalised. No construction started. Survey for distribution system not started.

Preparations:

Fill in Form 3, and send it to the village with copies to Ward and Divisional Secretary, as well as DWE.

Tasks in Village:

None- unless the letter is delivered directly in which case date and time for Village Assembly meeting may be agreed on the spot.

Duration in Village:

Nil

Documentation:

Copy of the letter

Practical Hints:

In order to avoid too much paper in group schemes, the copies to Ward and Divisional Secretaries, DWE and file may consist of one unfilled form, with a letter indicating which villages it has been sent to and what has been filled into the empty spaces for each village, e.g.: x DPs for village A, y DPs for village B, etc. n shs. for village A, p shs. for village B etc. and the date and time of meetings in all villages concerned.

3.i

Form 3

Regional Water Engineer  
P O Box .....  
.....

Chairman

..... Village

..... District

P O Box .....

.....

INFORMATION ON THE CONSTRUCTION OF A  
WATER SCHEME IN .....  
VILLAGE

I am glad to inform you that it has been decided to provide .....  
..... village with water with the assistance of the Danish International  
Development Agency (DANIDA) during the period 19 ../19 ..

Since it is expected that on completing the construction activities the  
scheme will be the property of the village, it was found appropriate to involve  
this village in the planning, implementation and supervision of all activities  
involving scheme development so that the scheme can be a success. Great impor-  
tance is attached to the conditions which must be accepted before government in-  
cooperation with DANIDA can offer that assistance. The conditions are as  
follows:

1. .... village will get water from .....  
river which will also supply water to the following villages:

- 1) ..... 4) ..... 7) .....
- 2) ..... 5) ..... 8) .....
- 3) ..... 6) ..... 9) .....

2. In accordance with the size of its population .....  
village is promised to get at least ..... Domestic Points (DPs).

Location of the DPs will be suggested by the Village Water Committee  
on behalf of all the villagers.

No individual is allowed to have a private house connection.

## 3.ii

3. Since on completion of the construction activity the scheme will be handed over to the village, the village will own it and will be responsible for its maintenance.

RESPONSIBILITIES OF THE VILLAGE

1. To work on the scheme in the spirit of self-help.
  - . To dig the trenches and backfill them after laying the pipes;
  - . To cooperate with the technicians in laying the pipes and construct DPS;
  - . To collect stones and sand for the construction of camp, intake, tanks and DPS;
  - . To assist technicians in other works such as in survey, camp construction, making of access roads to the intake and the tanks, tank construction, etc.

2. To elect a Village Water Committee which should have six members as follows:

- . three men to be elected by the village assembly;
- . three women to be elected by the village assembly.

The village water committee will perform the following:

- . to decide and suggest the location of DPS;
- . select two village scheme attendants and the village will be responsible for their remuneration;
- . the village water committee in cooperation with the village government will take disciplinary action against those who will contravene scheme regulations (The committee will ensure that by-laws are made to protect the scheme);
- . the committee will cooperate with other organs such as the RWE office/Community Development in making the scheme a success;
- . to inform the village government of all the problems which the committee cannot solve on its own;
- . to appoint a tap attendant (a woman whose residence is near the DP) who will report on damage or malfunction and make sure the surroundings are kept tidy.

3. The village is expected to set aside sufficient funds for Operation and Maintenance of the scheme.
4. The village is fully responsible for Operation and Maintenance of the scheme within the village area.

3.iii

5. The village will send one representative i.e. the Village Water Committee, Chairman to the scheme committee which will deal with problems concerning the scheme as a whole. (Applicable only to group schemes).
6. The village will have to report to MAJI or the Scheme Committee for repair work immediately when damage occurs which is outside the ability of the village itself. (Applicable only to group schemes).

#### RESPONSIBILITIES OF MAJI

1. To help the village in scheme construction works by:
  - . providing artisans;
  - . providing all construction materials such as cement, pipes, etc.;
  - . mobilizing villagers;
  - . training village scheme attendants.
2. To assist the village with repair work which the scheme attendants have failed to carry out.
3. To assist village water committee in:
  - . making preparations for communal activities;
  - . making by-laws.
4. To inform the village government on aspects of scheme technology and to allow the village to participate in discussions concerning scheme development.
5. To make spareparts available so that the village can get them whenever needed.

The purpose of this letter is to inform the village government on the proposals of the aid donors, so that the village can discuss in detail the government proposal and finally decide whether to accept or reject the scheme. If the village will accept the scheme, the following should be adhered to:

- . involve the villagers in the spirit of self-help during the construction phase;
- . the importance of setting aside sufficient funds every year for Operation and Maintenance;

The village is requested to communicate its decision on the scheme to the undersigned as soon as possible.

3.iv

After all issues related to the acceptance of the scheme are finalised, an agreement between the village and the Regional Water Engineer (RWE) must be signed. The village is informed that the construction of the scheme is expected to commence during the month of ..... 19 ..

Representatives from MAJI will arrive in the village on ..... time ..... to discuss the proposals with the village assembly. The village leadership is therefore requested to call a village assembly meeting on that day, to discuss the water project and select a village water committee.

We wish you the best for getting a new water scheme.

Yours in Nation Building,

.....  
 Regional Water Engineer

- c c Divisional Secretary
- c c Ward Secretary
- c c District Council



## 4.1

Step 4: Inform Village Assembly about project and elect Village Water Committee

Purpose:

To inform all villagers about the project and procedures about to start; and to select Village Water Committee.

Time:

Before survey of distribution lines. Survey and design of transmission may, however, be underway or finalised and order placed for materials.

Participants:

All villagers;  
 SEC;  
 (Water Engineer);  
 (MAENDELEO);  
 (AFYA);  
 (Ward/Divisional Secretary/"Diwani")

Preparations:

- . Check village information (form 2) and information letter (form 3);
- . Check general scheme layout;
- . Check time schedule and discuss with engineer whether it still holds;
- . Brief thoroughly anybody who is going to speak about project;
- . Bring form 4, Village Water Committee duties.

Tasks in Village:

1. Inform the villagers about the project and the procedures about to start.
2. Invite and discuss questions and views from the villagers.
3. Explain why VWC is needed, its tasks, and composition.
4. Village assembly propose and select 3 female and 3 male members of VWC.
5. Distribute form 4 to VWC members and village secretary and arrange time for first VWC meeting - possibly immediately after the village assembly.

## 4.2

Duration in Village:

Half day

Documentation:

Minutes of Meeting, including approximate number of people present. List of VWC members.

Practical Hints:

- 1) It is extremely important that all major features of the project are explained systematically and in some detail so that the villagers get a chance really to understand what it is all about. Logical reasons for conditions, limitations and rules should be given not just rules themselves.
- 2) Some of the major features which must be explained are:
  - . General scheme layout, including location of intake and names of village involved, phasing if any and the water's way from intake via mainlines, tanks (for each village), and distribution lines to DPs.
  - . Number and distribution of DPs (population and distance criteria).
  - . House connections not allowed.
  - . Distribution of responsibilities between MAJI/DANIDA and villagers during construction, i.e. MAJI/DANIDA provides materials, transport and fundis, including a few labourers to assist fundis, while the village-s have to help with: survey for distribution system, construction of camp, access roads, intake, tanks and DPs, collection of sand and stones and all trench digging, pipe ferrying (where lorry cannot reach), pipe laying and back-filling - all self help basis.
  - . Time schedule, including surveys, ordering of materials, different construction tasks etc. (Let us be realistic! It is better to tell the truth right from the beginning!).
  - . Scheme ownership and operation and maintenance i.e. that once it is constructed the beneficiaries must own, operate and maintain the scheme themselves. They will be required to select and employ (remunerate) their own scheme attendants and buy spareparts needed.

## 4.3

Each village will be fully responsible for at least that part of the scheme which is within the village boundaries. DANIDA/MAJI(M) will provide villages with an initial stock of spares and tools.

- . Scheme attendants should be selected before construction starts, and will be trained ~~on-the-job~~ during construction. Where local labourers are hired, preference will be given to the scheme attendants.
- . Before any construction starts, the village government and MAJI must sign an agreement to the effect that they both agree on the main features of the project and the conditions for its implementation.
- . To execute all these village responsibilities on behalf of the village government the Village Assembly must elect a village water committee, consisting of three female and three male members.
- . It must be made crystal clear that until the agreement is signed at a later stage, the village has the opportunity to discuss the project, weigh its potential benefits and costs, and in the final analysis is free to say "no thank you - we have other priorities" - in which case the village must be bypassed.

## 3) Some reasons for conditions/rules:

- . Gravity scheme - because it is more reliable under Tanzanian conditions.
- . Tanks in each village - so that all DPs get water from village tank, which only receives a certain amount per day. Consequently misuse of water will harm only the villagers in the same village.
- . Limitations on number of DPs and prohibition of house connections and water use for irrigation - the extra costs of these are not only the individual installation itself, but, because they lead to increased water use/waste the capacity of the whole system right from the intake would have to be increased with subsequent higher costs - thus depriving other villages of the possibility of getting any water at all.
- . Village responsibility for operation and maintenance - experience shows that MAJI responsibility works very slowly and inefficiently. It is supposed that if the beneficiaries themselves are responsible and given the ability, repairs and maintenance will be carried out faster and villagers will treat the scheme with more care.

## 4.4

- 4) It is probably a good idea to divide the meeting in two parts. First giving and discussing the general aspects of the scheme, then proceeding to election of Village Water Committee.

If more than one person (e.g. VPC/SEC assistant plus water engineer) take part in the general introduction, make sure that all are well versed with scheme details.

When discussions/questions are finished, but, before proceeding to the actual election of VWC members, repeat the explanation of VWC tasks and duties (see form 4).

- 5) Unless they are completely at a loss on what to do, the election procedures should be left to the Assembly itself to decide, as different areas have different traditions. However, the importance of representation from different parts of the village may be mentioned. Similarly the women should be encouraged to propose female candidates.

4.i

MAJI/DANIDA

..... Region

Form 4 - Village Water Committee - Membership  
and Terms of Reference

Membership:

The committee consists of:

- . 3 women chosen by the Village Assembly;
- . 3 men chosen by the Village Assembly.

The committee elects its own Chairman among its members. In the future, it is preferable that elections for VWC should take place at the same time as elections for village government. Any vacant post on the VWC should be filled immediately by someone elected by the Village Assembly.

Terms of Reference:

- 1) To represent the village government in all discussions and negotiations with District Council, Government and other outside agencies concerning the village water supply.
- 2) To keep the village government and fellow villagers informed on all aspects of the planning, construction, operation and maintenance of the village water supply as well as other water related activities.
- 3) To propose location of domestic points in accordance with project criteria, and to discuss the possible need for washing slabs.
- 4) To organise and supervise self-help labour during all construction activities.
- 5) To manage village responsibilities for operation and maintenance of the village water supply, including supervision of the scheme attendants and tap attendants work, approval of use of money from village water supply account for buying spareparts etc. and collection of money for the same account.

## 4.ii

- 6) Propose to village government, candidates for employment as scheme attendants and their terms of employment.
- 7) Appoint a tap attendant for each DP.
- 8) To propose to the village government by-laws for the use and protection of the water scheme and protection of the environment.
- 9) To supervise and support improvements in sanitary conditions and health education efforts in connection with the water supply.

5.1

Step 5: Select VWC Chairman and Propose Location of Domestic Points (DPs)

Purpose:

To select VWC Chairman and to discuss how to locate DPs.

Time:

Before survey of distribution system.

Participants:

Village Water Committee;  
SEC

Preparation:

Check for the number of DPs the village should be allocated according to population. Ref. Form 26

Bring illustrating material.

Tasks in Village:

1. WC chooses its chairman among its members.
2. Explain the criteria for allocation of DPs (population and distance).
3. Discuss other factors to consider when locating DPs.
4. Ask the Village Water Committee to walk around the whole village and mark proposed DP sites.
5. Agree on date when proposed DP sites will be inspected by VWC, VPC and design engineer.

Duration in Village:

½ - 1 hour

Documentations:

Indicate on list of VWC members who is the chairman.

## 5.2

Practical Hints:

1. This meeting may be held in direct continuation of the meeting where VWC is elected (step 4).
2. Start by repeating the responsibilities of the VWC (form 4), then go to selection of chairman, and finally discuss how to locate DPs.
3. Location of DPs may be explained while walking around in the village or in the office using illustrating material (e.g. display 5).

First explain that the VWC are to propose location of DPs, but that they cannot get an unlimited number, so certain criteria have been established:

- . A village has the right to get as a minimum, one DP for each 400 people it is estimated to have in 10 years time, which we have calculated to be X number of DPs (X is the number calculated in form 2 b).
- . But as people should not live more than 400 m. from a DP it may be necessary to increase this number if the X DPs cannot cover the whole village according to this criterion.

If the VWC finds this is the case it must propose more DPs, but these will not be accepted if there are less than 600 - 800 metres between DPs or if a DP is proposed to serve less than 10 - 15 households.

- . In case of rehabilitation schemes existing DPs which can be used at no extra costs may be allowed to remain, even if they are "too close" to each other.

In deciding on the exact location of a DP consider:

- . the risk of theft and vandalism:-
  - Locate near a house of a reliable person, who should then preferably be the tap attendant.
  - Avoid location right along major roads.
- . drainage possibilities:-
  - Avoid location in depressions.
  - Avoid locations where water from domestic point can run down on roads or paths.



## 5.3

- . crossing dangerous roads with many vehicles passing:-
  - Avoid locations right next to the road. Select behind the first row of houses, or further back from the road if possible.
  - Locate domestic points along road opposite each other if possible.
- . keeping away from pollution activities:-
  - Avoid locations next to cattle bomas/slaughter houses/vilabu/pit latrines.
- . Locate along existing paths and walk-ways:-
  - Such location along existing paths "traffic" to the domestic point, and do not disturb land use pattern.
- . Intercept presently used traditional sources:-
  - Select locations which are nearer to the houses than the traditional sources if possible.
  - It is normally the wet season sources which are important to intercept.
- . Future expansion of village:-
  - Prefer domestic point locations at places where settlement pattern is scattered. This allows for "filling-in" of new houses (everything else equal).
  - Consider most likely areas of expansion given village plans for future plot allocation and topography.
- . Length of connecting pipe (piped supply only):-
  - Locations far away from distribution line are very expensive.
- . Sufficient water pressure (piped supply only):-
  - Long connecting pipes and uphill locations reduce pressure. It might be impossible to supply the highest points in the village with water.

## 5.4

- Primary school/Dispensary/Hospital/Butcher/etc.:-
  - Domestic points serving such institutions (existing or planned) should be located so that they can serve surrounding houses as well (if possible).
  - Village/Ward/Divisional offices do not need a domestic point.

## 6.1

Step 6: Approve Location of Domestic PointsPurpose:

To agree with village on locations of domestic points.

Participants:

All village water committee members;  
Design Engineer;  
SEC i.e. VPC

Preparations:

Bring sketch of village (see form 2 a)  
Check minimum number of DPs according to population (form 2 b).

Tasks in Village:

1. Walk around to each proposed location and reach agreement with village water committee if possible.
2. Make sure that the agreed locations can be identified later (see below).

Duration in Village:

Half to one day.

Documentation:

Sketch (from step 2a) showing agreed locations.  
Description of each location (form 6), one copy to village, one to file.

Practical Hints:

1. The VWC and VPC should agree on each particular location.
2. Consider if locations are distributed fairly considering 400 m criteria and the population served by each DP.
3. For economic reasons DPs closer than some 700 metres to each other cannot be accepted, unless very dense population (more than 400 people per DP) or some other special reason justifies it. Similarly distant groups of people should exceed some 10 - 15 households to justify a DP. Distances can be checked roughly with car speedometer or by counting steps.

## 6.2

4. Also check location with respect to drainage; dangerous roads; polluting activities; interception of traditional source; etc.
5. You should be careful when overruling a proposal made by the village water committee. Only when a location is clearly technically or economically unfeasible you should overrule the committee. Use persuasion if you think that a proposed location is wrong. But be prepared to accept locations that you would not yourself have chosen.
6. The relevant locations should be clearly marked so that they can be located later.  
  
MAJI/SEC should mark each location on their maps. Furthermore, form 6 should be filled in, and markers placed at each approved spot.
7. Final decision on number of DPs should be made now, but if there are any problems with the exact location, e.g. if MAJI need to do more survey/calculations, or the village to have more discussions, finalisation may be done later between SEC and VWC.
8. Design engineer should be given copy of sketch map showing location and number of approved DPs.
9. Give one copy of form 6 to village.

MAJI/DANIDA  
..... Region

Form 6 - Location of DPs ..... Village  
Total No. of DPs approved: .....

DP No.	Sub-Village	Name of Owner of nearest House	Tap Attendant (see step 14)

- c c VWC
- c c MAJI Survey Team
- c c SEC

## 7.1

Step 7: Survey of Distribution SystemPurpose:

To survey distribution system from village tank site to approved DP locations.

Time:

Before any construction work on distribution system has started.

Participants:

Survey Team

SEC

5-10 villagers, incl. one VWC member per day.

Preparations:

Surveyors have been instructed by design engineer and given sketch map showing approved DP locations.

Tasks in Village:

1. Arrange village participation in survey work.
2. Survey all distribution lines.

Duration in Village:

A few days to a week or more, depending on size and terrain of village.

Documentation:

List of names and dates of participating Balozis.

(All necessary survey notes)

(Map showing overall village distribution layout to scale)

Practical Hints:

- 1) Start with meeting with VWC, explain survey work, make plan for what balozi(s) should take part on which days, and what VWC member. Make sure that Balozi(s) are informed accordingly.

## 7.2

- 2) Surveyors and SEC assistants are not supposed to make changes in the approved DP locations. If there are any proposed changes or other problems at this stage, they must be reported to VPC and design engineer and then discussed with the VWC.
- 3) Surveyors should clearly indicate location of main housing areas, institutions and roads in relation to their surveyed pipelines.
- 4) If feasible steps 6 and 7 may be done in one process, but, it must be remembered that surveyors have nothing to do with decisions on location of DPs.

8.1

Step 8: Signing of Agreement between village and MAJI/DANIDAPurpose:

To discuss and sign agreement on water scheme between the village government and MAJI/DANIDA.

Time:

Design of distribution system finalised. No construction work has started.

Participants:

All members of the Village Government (25);  
 All members of the VWC;  
 (Ward/Divisional Secretaries/Diwani);  
 SEC (preferably VPC);  
 (MAJI).

Preparations:

- . Prepare the Agreement (Form 8);
- . Arrange date for meeting with Village Government and give/send copy of the proposed agreement to the village;
- . Inform Ward/Divisional Secretaries/Diwani about the meeting with copy of the proposed agreement;
- . Get RWE to sign 3 copies of the agreement.

Tasks in Village:

1. Explain scheme layout, time schedule etc.
2. Explain meaning and contents of proposed agreement.
3. Village chairman and VPC signs agreement.

Duration in Village:

Half day.

Documentation:

Signed agreement (one for the village; one for the region; one for DANIDA).



## 8.2

Practical Hints:

- 1) Make sure that more than half of the Village Government members are present and in favour of the agreement.
- 2) Do not be afraid of repeating long explanations from earlier meetings.
- 3) Leave enough time for questions and answers.
- 4) Read the whole agreement out to the meeting.
- 5) If the VPC is not present he/she should have signed in advance like the RWE.
- 6) Make sure that it is understood that the estimated O & M costs are only estimates, and depends primarily on the villagers themselves. The estimate given is based on 5 shs/capita/year.

MAJI/DANIDA  
..... Region

Form 8

AGREEMENT BETWEEN MAJI/DANIDA AND  
..... VILLAGE CONCERNING  
WATER SUPPLY SCHEME

This agreement deals with the Danida sponsored village water supply. The agreement is entered into between ..... village and MAJI/DANIDA. .... village accepts all the scheme conditions before the construction of the scheme commences in the village.

The village is also informed that it will be supplied with water from ..... river which is near ..... village; and that all necessary scheme construction will be made to enable the village people to get improved water supply services.

..... village will be supplied with a total of ..... Domestic Points (DPs) which will be distributed throughout the village including the following sub-villages:

- 1) .....
- 2) .....
- 3) .....
- 4) .....

The location of these DPs has been suggested and approved by the village water committee on behalf of the village people.

No private connections will be allowed for anybody.

On completion of scheme construction, the scheme will be handed over to the village as its property.

RESPONSIBILITIES OF THE VILLAGE:

- 1. To work on the scheme in the spirit of self-help as follows:
  - . to dig the trenches and backfill them after laying the pipes;
  - . to cooperate with the technicians in laying the pipes and construct the DPs;

- . to collect stones and sand for the construction of DPs, tanks, etc.;
  - . to assist technicians in other works such as in survey, camp construction, making of access roads to the intake and the tanks, tank construction, etc.
2. To elect and form a Village Water Committee which will perform the following tasks:
- . to suggest and decide on the location of DPs;
  - . to select two village scheme attendants. The village will be responsible for the remuneration of the scheme attendants;
  - . to ensure that by-laws are made to protect the scheme;
  - . to cooperate with other organs such as MAJI/Community Development in making the scheme a success;
  - . to inform the village government of all problems which the committee cannot solve on its own;
  - . to appoint tap attendants (preferably women whose residences are near the DP), who will report on damage or malfunction. The duties of the Tap Attendants are to keep the DP surroundings clean, to check on the use of the DP and to report damage or malfunction to VWC;
3. The village is prepared to set aside not less than TAS ..... for Operation and Maintenance of the scheme.
4. The village is fully responsible for operation and maintenance of the scheme.

RESPONSIBILITIES OF MAJI:

1. To help the village in scheme construction by:
- . providing artisans;
  - . providing all construction materials such as cement, pipes, and others;
  - . mobilising villagers;
  - . training village scheme attendants.
2. To assist the village with repair work which the scheme attendant has failed to carry out.

- 3. To assist Village Water Committee in:
  - . making preparations for communal activities;
  - . making by-laws.
  
- 4. To inform the village government and VWC on aspects of the scheme technology and to allow the village to participate in discussions concerning the scheme development.
  
- 5. To make spareparts available so that the village can get them whenever needed.

The village is reminded of the importance of reserving funds every year for maintenance of the scheme.

Danish International Development Agency (DANIDA) wishes you success in implementation of this agreement which involves MAJI and your village and emphasises that everything mentioned here is of importance and should be adhered to by all parties concerned.

Regional Water Engineer : Signature : .....

Name : .....

Village Chairman : Signature : .....

Name : .....

Witness to both Parties : Signature : .....

VPC : Name : .....

9.1

Step 9: Establish Group Scheme Committee and start preparation of construction work

Purpose:

To establish group scheme committee, to inform it about the construction work about to start, and to discuss the division of work between villages on such parts which are shared by all villages in scheme such as intake, camp and mainline.

Time:

Construction work is about to start.

Participants:

Chairmen of all Village Water Committees in a group scheme;  
 Ward/Divisional Secretaries;  
 Diwani(s);  
 Site Engineer/Design Engineer;  
 SEC

Preparations:

- . Prepare activities chart together with site engineer/design engineer;
- . Discuss "Group Scheme Committee" with Ward/Divisional Secretaries and/or Diwani and call the meeting jointly with them;
- . Bring sufficient copies of Form 9.

Tasks:

1. Explain the terms of reference of the group scheme committee (Form 9);
2. Select chairman and secretary (Ward/Divisional Secretaries);
3. Inform about the construction work about to start;
4. Discuss and agree upon division of work between the villages on common facilities such as intake, camp, mainline from intake, etc.

Duration:

Half day.

## 9.2

Documentation:

List of agreed work division.

Practical Hints:

1. If all villages are within a Ward or a Division and most villages in that Ward/Division are covered by the scheme, it may be more practical to use the Ward/Divisional Development Committee instead of establishing a separate Group Scheme Committee.
2. Work on common facilities must be divided in a way which is both practical and equitable.
3. Of course step 9 is left out in single village schemes.
4. As construction work is now just about to start here are some "hints" which may be useful to discuss with site engineer/design engineer before this step is taken:
  - . Local materials may take as long to acquire as imported ones. It is therefore advisable to start collecting locally available materials as early as possible;
  - . The camp need not be finished before any other activity can start: As soon as the area is cleaned and fenced, and there is a shed, collection of local materials and production of aggregates and blocks may start. Access road to intake can also be built;
  - . Hopefully, materials for mainlines were ordered much earlier and will therefore arrive soon. However, before they arrive as much as possible of the work on intake, and tank construction should be finalised, beginning actually with the tanks as this will relieve the villagers of this work once trench digging is to start;
  - . Construction of mainline should preferably be finalised before work starts on the distribution line;
  - . If at all possible, the distribution system should be completed village by village, finishing one before starting on the next.
    - No water should start running from the taps before both 'fundis' and villagers have finished all their tasks in the village.

Form 9: Composition and Terms of Reference of  
Group Scheme Committee

MAJI/DANIDA

..... Region

Membership:

All chairmen of VWCs within the Group Scheme;  
The Diwani(s), (District Councillors), representing villages in the scheme;  
Ward and Divisional Secretaries, as observers;  
The Group Scheme Committee elects its own Chairman among its members and a Secretary among the Ward/Divisional Secretaries.

Terms of Reference:

1. The Group Scheme Committee discusses and decides on all matters of common interest for all villages in the scheme;
2. During construction the Group Scheme Committee divides self-help work on common facilities, e.g. intake, camp, between the villages;
3. When construction is finished, and the scheme is handed over to village responsibility for operation and maintenance, the Group Scheme Committee, must do the following:
  - . Decide on responsibility for operation and maintenance of scheme facilities, which are outside the boundaries of any scheme village;
  - . Supervise and support the villages in their implementation of operation and maintenance responsibilities.

10.1

Step 10: Select Scheme AttendantsPurpose:

To select at least one, preferably two, scheme attendants.

Time:

Construction work is about to start.

Participants:

All WVC members;

SEC

Preparations:

Bring Form 10, Scheme Attendants' tasks.

Tasks in Village:

1. Explain the tasks of scheme attendants;
2. Discuss the qualities of a good scheme attendant;
3. Discuss the terms of employment of scheme attendants;
4. Ask WVC to propose scheme attendants and their terms of employment to village government before date set for step 11.

Duration in the Village:

1 - 2 hours

Documentation:

None

Practical Hints:

1. Explain the Operation and Maintenance work to be done by the scheme attendants (form 10 and );
2. Discuss what is important for being a good scheme attendant: e.g. reliable person, settled with family in village, not travelling on business or other, literate, interest in water supply (woman?) and hardworking, maybe already with some technical abilities.



## 10.2

3. Explain how scheme attendants will be trained during the construction work. That they will, if possible, be employed by MAJI/DANIDA as casual labourers during the construction period;
4. After construction is finished they must be compensated by the village. Discuss which form, e.g. per month, per day, in cash, in kind or through exemption from other "Maendeleo" work.
5. Before construction starts a work/training programme for scheme attendants must be worked out with site engineer/foreman.

10.i

Form 10: Scheme Attendants' Tasks

MAJI/DANIDA

..... Region

- 1) Under the direction of the VWC to make every effort to keep the water scheme working;
- 2) To make weekly and monthly routine checks as required for all the different parts of the scheme;
- 3) To repair any defects that occur on the water scheme as soon as they are reported to him/her, or they are discovered through the routine checks.
- 4) To take care of and protect all tools and spares provided to scheme attendant by the village.
- 5) To advise the VWC on the need for spareparts and tools and assist in the purchase of these.
- 6) To supervise and advise tap attendants' on upkeep of DPs.
- 7) To participate in all VWC meetings and report on his/her work as well as any problem arising to the VWC.

## 11.1

Step 11: Prepare Start of ConstructionPurpose:

To mobilise the village and make overall plan for participation in construction work.

Time:

Construction work is just about to start.

Participants:

All Village Government members;  
 All Balozis;  
 VWC;  
 Ward/Divisional Secretaries/Diwani;  
 Site Engineer/Forman;  
 SEC;  
 Scheme Attendants;  
 Trench Supervisors (site assistants).

Preparations:

Check activity chart with implementation office, if possible, agree on more details and dates;

For group schemes, check work division between villages as agreed by Group Scheme Committee;

Site engineer/Foreman should have a rough idea about what manpower he requires to hire locally.

Tasks in Village:

1. Explain what construction activities are going to take place, and when;
2. Explain what self-help labour will be needed, and when;
3. Discuss what kind of work organisation is preferred for the different activities, what kind of supervision and control is needed, and what sanctions the village may use;
4. Reach an agreement on these points and on the WVCs responsibility for organising it in detail and informing the Balozis;

## 11.2

5. VWC propose and village government approves scheme attendants and their terms of employment.

Duration in Village:

Half day.

Documentation:

Names of scheme attendants.

Minutes summarising the principles of work organisation agreed upon.

Practical Hints:

1. Preparatory meeting with VWC;
2. Mention all the different types of tasks on which self-help work is required, how many people are needed and whether they are needed everyday;
3. Explain the division of work agreed upon by Group Scheme Committee;
4. There are many possible forms of work organisation:
  - . On common group scheme facilities each of say 4 villages may be required to send say 40 people one day a week, who will be transported by the project lorry. 4 Balozis could then be assigned each time;
  - . The mainline from the intake may be divided in equal portions between several villages;
  - . Tanks, surveying and other tasks need only a small group of people but everyday;
  - . Trench digging may be organised so that the whole length of mainline in a village is divided between all Balozis who are then given a deadline when they have to finish and are responsible for organising that work themselves. Or it is divided between Balozis but they are given certain dates they have to turn up. Or Balozis are given dates but the line is then divided between those who actually turn up, while those who do not are fined;

The same ways of dividing work may take place for distribution lines but these may also first be divided between sub villages or groups of Balozis whom they serve, and then sub-divided between Balozis.

## 11.3

- . It must also be discussed if work should be divided equally between Balozis; on the basis of numbers of households; or on the basis of numbers of able bodied persons for each Balози.
- . What reporting should there be, who should do it, and what are the sanctions.

12.1

Step 12: Work Planning during ConstructionPurpose:

To plan the construction work involving villagers.

Time:

Regularly during the whole construction period, e.g. once a week or once every fortnight.

Participants:

VWC;

Scheme Attendants;

Site Engineer and Foremen;

SEC;

(Trench supervisors).

Preparations:

Site meetings are held regularly at least once a month between implementation/ construction engineer, VPC, site engineer and foreman, SEC assistant, to review and plan construction work.

Materials have arrived on site.

Before the first meeting a list of Balozis with number of able bodied must be drawn up.

Tasks in Village:

1. To review work performance since the last meeting;
2. To plan villagers' participation during the next 1 - 2 weeks;
3. To divide responsibilities for mobilising, supervising and reporting on participation;
4. To discuss scheme attendants' work and training programme.

Duration in Village:

2 hours.

## 12.2

Documentation:

Form 12 a or 12 b filled in for the coming 1 - 2 weeks and for the last 1 - 2 weeks.

Practical Hints:

1. It is a good idea to have these meetings on a fixed day, say every Saturday;
2. First go through work plans/work reporting sheets for last 1 - 2 weeks, check that they are properly filled in with number of people actually attending or work actually done. Discuss what should be done if attendance is regularly declining below say 75%. Site engineer/foreman must comment on quality of work;
3. Site engineer/foreman explains the coming 1 - 2 weeks work;
4. The work plan and organisation is discussed, and when agreement is reached form 12 a or b is filled in. One for each VWC member, one for SEC/trench supervisor;
5. Form 12 a is for use when certain tasks are planned for certain days, Form 12 b when a deadline is given, but no specific date, for a certain task. Work planned may be e.g. tank building, or trench digging. For trench digging, pipelaying and back filling it should be specified how many metres are planned per Balozis, per able bodied in the planned 10 house-cells, or per person actually attending, according to the work organisation chosen.
6. Discuss and decide who will be responsible for mobilizing people for the work planned, for reporting, and for taking steps against people who do not attend (including noting their names). In general it seems preferable if mobilising Balozis and reporting on overall attendance is done by VWC members. (initially helped by SEC/trench supervisor). Individual villagers participation should be the responsibility of the Balozis;
7. There must always be a MAJI foreman, fundi or trench supervisor present to direct the villagers on what to do and how best to do it, preferably by demonstration;
8. The very first of these meetings as well as meetings just before new major construction tasks start may need very careful preparation, explanation and discussion;

## 12.3

9. It may be useful for the VWC every now and then to repeat step 11 and to discuss the work performance so far;
10. Scheme attendants work and training programme should be discussed at these meetings.







13.1

Step 13: Discuss Need for Washing SlabsPurpose:

VWC agrees whether to request construction of washing slabs at each DP.

Time:

Before construction of DPs.

Participants:

VWC;

SEC

Preparations:

None

Tasks in Village:

1. To explain the advantages and disadvantages of washing slabs;
2. VWC agrees whether to request washing slabs.

Duration in Village:

One hour.

Documentation:

Request from VWC for construction of washing slabs.

Practical Hints:

1. This step may be carried out during one of the regular construction planning meetings;
2. Explain the layout of washing slabs, as well as advantages and disadvantages of having slabs;

Advantages:

1. Washing slabs are convenient for washing clothes, and reduce environmental pollution at DP.

## 13.2

Disadvantages:

- . Even if there are washing slabs, any washing at the DP brings some pollution, and drainage of dirty water is more difficult. Discouraging people from any washing at DP at all, and encouragement of washing at home cannot be done if there are washing slabs - on the contrary these might well bring more people to wash at DPs.
  - . The villagers themselves have to work more to bring sand, stones, or bricks needed, to clear the area, make drainage and maintain environmental cleanliness.
3. This is a point which should be specifically dealt with by the female members. It might be good to give them time between two meetings to discuss it with other women.

14.1

Step 14: Select Tap AttendantsPurpose:

VWC appoints tap attendants

Time:

During construction of DPs

Participants:

VWC;

SEC

Preparation:

Bring Form 14, one for each DP

Tasks in Village:

To explain tasks of tap attendants and get VWC to appoint one tap attendant for each DP.

Duration in Village:

One hour

Documentation:

None

Practical Hints:

1. This step may be carried out during one of the regular construction planning meetings;
2. Go through Form 14;
3. Ask VWC to select tap attendants before next meeting. The whole committee alone may do it, or e.g. each VWC member by conferring with his/her Balozis for the DPs within their area;
4. Each VWC member must be responsible for explaining the tasks to some of the tap attendants;
5. At next meeting fill in tap attendants in form 6.

15.1

Step 15: Training of Scheme Attendants in their  
Duties related to Operation and Maintenance

Purpose:

To make sure that the scheme attendants know the position of all installations within the village boundaries, and to make them aware of the need of preventive maintenance of the scheme.

Furthermore, to instruct the scheme attendants in the carrying out of their duties as specified in the scheme attendants "Check-list" and "Fault finding procedures".

Time:

When construction is practically completed in the village, water has reached the storage tank and the distribution system is ready for being filled up with water.

Participants:

Scheme Attendants;  
MAJI Plumber or Foreman;  
Representative of Implementation Office or Regional Maintenance;  
SEC.

Preparations:

Agree on timing with the Implementation Office and the site engineer/foreman and make sure that the scheme attendants are available, otherwise return to Step 10. Bring at least three copies in Kiswahili and one copy in English of:

- . Scheme Attendant's Check-list;
- . Scheme Attendant's Fault finding procedures.

Furthermore, one copy of the layout of distribution system and transmission line within village boundaries should be available.

## 15.2

The Scheme Attendants should be instructed to bring their tools. If no tools have been issued a set must be made available by the Implementation Office for use only during the training.

Tasks in Village:

1. Assemble all participants and explain the purpose of the training in operation and maintenance;
2. Go to the start point of transmission main (at village boundary or at intake and walk along the pipeline checking for leakages and for the functioning of break pressure tanks, wash-outs and air valves.
3. Demonstrate the flushing and cleaning of the intake (if applicable);
4. Demonstrate the opening up and cleaning of an air-valve and the flushing of wash-outs. Let the scheme attendants clean an air valve under supervision of the other participants;
5. Check the water tank and go through the procedures for flushing and cleaning the tank. Open the valve on the outlet so water can start flowing into the distribution system.
6. Walk along distribution pipelines and perform the monthly routine checks.
7. Check the functioning of all DPs both in respect of what is mentioned under weekly and monthly routine checks. When you are satisfied with the function of the DP close the gate valve next to the DP and remove the taps (if fitted) and insert the plug to prevent use of DP until under step 16.
8. Demonstrate the use of the fault finding procedures by arranging one or two typical examples (closing of a gate valve or similar).
9. Agree with participants about when the next step can be made with due regard to possible shortcomings found during this step.

## 15.3

Duration in Village:

Depends on size of village and length of transmission line, but, minimum 1 full day and most likely 2 days per village.

Documentation:

Recording of participants and date.

Practical Hints:

1. The purpose of this step is training of the scheme attendants, so let them do all the work if at all possible. When necessary the MAJI people can step in to show details, but, in that case the scheme attendants must do the whole thing again on their own.
2. By starting at the intake or at the village boundary and go along the transmission main it is hoped that the scheme attendants can get a better understanding of the function of the system.
3. For the distribution system, it would be best to start with all valves closed, so that the scheme attendants can see the consequences when they operate the valves, and also can get accustomed to listening to the sound of water when opening or closing the valves. By that method they can also follow the flow of water through the system.
4. It is recommended that all DPs are closed with plugs only, so that the scheme attendants can be trained in how to fix and replace a tap at a DP. No taps should be fitted before everything is ready for step 16.



16.1

Step 16: Let the Water Flow

Purpose:

To celebrate the finalisation of construction work and demonstrate and explain use of DPs after opening for the flow of water.

Time:

All construction work in the village is finalised, but, water has not yet been allowed to start flowing.

Participants:

Every perceivable person with relation to the village.

Preparations:

The WVC must have planned the celebration.

Tasks in Village:

1. To celebrate the finalisation of construction work and thank everybody involved;
2. To let the water flow;
3. To sneak into the festivities some explanations of village responsibilities for Operation and Maintenance and demonstrate proper use of DP.

Duration in Village:

A day?

Documentation:

None

Practical Hints:

Let fantasy blossom!!

17.1

Step 17: Finalisation of Training of Village Water Committee  
Scheme Attendants and Tap Attendants in Operation  
and Maintenance

Purpose:

To ensure that

- . all village water committee members are aware of their responsibilities concerning future operation and maintenance;
- . each village has at least one scheme attendant, who has been trained by MAJI, particularly in using the scheme attendants check list and fault finding procedures;
- . all DPs have tap attendants, who must know what to do in relation to keeping tap surroundings clean;
- . village tasks in finalising construction, e.g. backfilling and digging of soak pits/trenches, have been properly carried out;
- . minor repairs needed are actually carried out as part of the routine check and fault finding training.

Time:

Water has been flowing for some time - say 2 weeks to a month.

Participants:

VWC;

Scheme Attendants;

Tap Attendants (first and second tasks only);

SEC;

MAJI (Plumber or Foreman).

Preparations:

Check that the village has at least one scheme attendant and tap attendant for the DPs, otherwise return to steps 10 and 14 respectively.

This step must be arranged some time in advance, so as to ensure participation throughout the step.

Bring scheme attendants' tools for demonstration purposes.

Bring jammed tap.

17.2

Tasks in Village:

1. Meeting with all participants to explain the above purposes, and reiterate village responsibility for operation and maintenance;
2. Discuss and demonstrate operation and maintenance concerning DPs;
3. Discuss and demonstrate operation and maintenance concerning the rest of system;
4. Discuss and agree on procedures concerning scheme attendants' work, reporting, accounting, acquiring money for scheme account, buying spares, etc.

Duration in Village:

At least 2 days.

Documentation:

None

Practical Hints:

1. Start with tasks 1 and 2 on the first day;
2. Followed by tasks 3 and 4 on the second day;
3. The meeting should include the following:
  - . ensure that the committee still has six members. If not, take steps to have additional members chosen at next village assembly meeting. If the committee does not have a chairman, ask them to choose one.
  - . explain about the handover and the future operation and maintenance responsibilities of the village. That the village will get tool kit and initial stock of spares free. Afterwards, the village will have to pay for replacements.
  - . explain the purpose of this visit (see above) and the plan for this and the following day(s).
  - . make sure that the village and the scheme attendants agree on the "terms of employment". Suggest that they might want to have a formal contract.

## 17.3

- ensure that each DP has a tap attendant and that each one is under one VWC.
  - stress the importance of everybody participating in demonstration of operation and maintenance of DPs (task 2) - go straight to this.
- 4. Demonstration for VWC and Tap Attendants concerning DP (task 2) should be done at a DP and include the following:
  - Tap must be opened and closed gently -  
 Show how to open and close tap gently.  
 Explain that a new tap costs shs ..... and that the village must pay this amount to get a new one.
  - Tap cannot be opened -  
 Bring jammed tap. Explain that it should not be opened by force. Then it will not be possible to repair it. Instead the Tap Attendant should do the following:
    - Tie a piece of string around tap so that nobody will use it;
    - Report the case to the scheme attendant;
    - Find out who jammed the tap. Go and talk with this person. If it is vandalism then report to the village water committee.
  - Tap cannot be closed -  
 Bring jammed tap. Explain that it should not be closed by force. then it will not be possible to repair it. Instead the tap attendant should do the following:
    - stop water from flowing with a piece of wood;
    - report the case to the scheme attendant;
    - find out who jammed the tap. Go and talk with this person and show how to operate tap properly. If it is vandalism then report to village water committee.
  - Children playing around domestic point -  
 Tap/Scheme Attendant should tell children to stop playing around DPs. If that does not help, parents should be informed. It might also be necessary to report to the VWC/Balozi.

17.4

- Bathing done at domestic point -

Tap/Scheme Attendant should tell people not to bathe at DPs. Explain that bathing at domestic points could spread diseases to other people.

It might also be necessary to report people bathing at DPs to the WVC/Balozi.

- Livestock watering at domestic points -

Tap/Scheme Attendant should tell herdmen not to water livestock at DPs. Livestock watering make surrounding dirty and muddy. In this way some diseases can spread from the livestock to the people.

It may be necessary to report livestock owners to the WVC/Balozi.

- No water in tap -

Close gate valve to illustrate the case. Tap Attendant reports to Scheme Attendant if water is not flowing the same day then tap attendant is to report to WVC. The village water committee contacts scheme attendant. May be it is necessary to buy sparesparts, or call MAJI/DANIDA.

Explain village responsibilities for maintenance and explain when MAJI/DANIDA should be called.

- Domestic Point surroundings are muddy or there is tall grass -

Explain that mud and tall grass facilitate the breeding of mosquitoes (if you are in a mosquito area).

Tap Attendants to organise people to cut grass (or do it themselves).

Tap Attendants to organise people to cover holes and make drainage (or do it themselves). Demonstrate how this is done, either with a soak pit or drainage trench. If scheme attendant sees tall grass and mud around domestic point he/she should ask the tap attendant to do something about it.

It might be necessary to report to the WVC/Balozi.

- Build fences around Domestic Points -

Encourage tap attendants to organise people to build fences around the domestic points. This will prevent livestock from making surroundings dirty.

17.5

- Encourage people to use the washing slabs or wash at home -

Washing lothes in rivers, stream and dug holes is dangerous to the health. For children to play in such water is also risky. Explain which diseases one might get from this. Washing at DPs create pollution. Encourage people to use the slabs or wash at home and encourage tap attendants and scheme attendants to talk to people who use the DPs or traditional sources for bathing and washing.
- Soak-away is dirty or clogged -

Explain that dirty water from washing slabs or DPs can cause diseases to everybody. Tap Attendant should organise people to clean up (or to do it themselves). If soak-away is clogged, the Scheme Attendants should be called. It might be necessary to remove all stones and clean up the hole (people should be asked to participate in this).

If the ground water level is high, then it might be necessary to dig a trench to lead the water away.

It may be necessary to report to the WWC/Balozi.
- Gardens are irrigated with running water from Domestic Points -

Explain that if people let the water run to their gardens then there will not be enough water in all the domestic points for drinking water, washing and laundry.

No gardens must be irrigated with the help of trenches. However if people want to carry water in buckets to their gardens, they are allowed to do so. Tap/Scheme Attendants who observe gardens irrigated by trenches should tell the owners to stop irrigating in that way.

It may be necessary to report to the WWC/Balozi.
- Planting on the trench lines -

When people till around the trench lines they may cut the pipes, water will stop flowing and the village must pay for the repair. There should be a two metres wide area on either side of the pipeline where no cultivating is done.

Tap/Scheme Attendants must ask people who cultivate on top of pipeline to refrain from doing so.

It may be necessary to report to WWC/Balozi.

## 17.6

- Pipe leaks - water is coming out of the ground -

Tap Attendant should report this to the Scheme Attendant immediately. Scheme Attendant may ask people to help to dig up the pipe, so that it can be repaired.

It may be necessary to report to the VWC/Balozi.

If somebody cut the pipe on purpose, he/she should be fined.

- Pipes are exposed to the sun -

In some places PVC/POLY pipes may not be covered with soil. The reason is that the trench is not deep enough, or that the trench has not been properly backfilled. Maybe the rain has washed the soil away.

When PVC/POLY pipes are exposed to the sun they will lose their strength. After a while they will break and water will stop coming to the domestic point.

Anybody who sees an exposed PVC/POLY pipe should therefore report the case to the scheme attendant or the VWC.

People should be organised immediately to cover the pipe or to dig the trench deeper and backfill properly.

The Scheme Attendant should decide what to do.

- (When all relevant cases have been discussed then let VWC members and selected Tap Attendants repeat them, so that they can explain the case to fellow villagers).

5. Go through Scheme Attendants' routine check list and fault finding list concerning DPs.
6. Go through remaining parts of Scheme Attendants' routine and fault finding lists and demonstrate how things are done.
7. In relation to task 4 Scheme Attendants should always keep record on all repairs and routine checks made as well as spareparts used. VWC should keep scheme accounts and spareparts ledger. DANIDA/MAJI may provide the village with stationary for this purpose.
8. If there are any repairs needed that the village cannot manage, it must report immediately to group scheme committee (if applicable) and/or to MAJI/DANIDA for help.

## 17.7

9. Step 17 may be expanded with a short training course for Scheme Attendants at MAJI, in order to:
  - . enhance cooperation between scheme attendants;
  - . strengthen their position in the village;
  - . acquaint them with MAJI/DANIDA and operation and maintenance procedures there;
  - . repeat Scheme Attendants duties.
10. At the end of the step 17, the Scheme Attendants may be provided with a certificate - or better - the village is officially informed, that their Scheme Attendant has been through the whole training programme and is now ready to be employed by the village.



18.i

Form 18 - Draft By-Laws for the Use of the Water Scheme

The by-laws could contain the following:

1. All domestic points/pipes/slabs are under the protection of all villagers. The Village Water Committee assures that the scheme is properly operated and maintained.
2. Villagers who through vandalism break taps/slabs/aprons/pipes will be fined shs ..... (or other measure)
3. Villagers who water cattle above the intake will be fined shs.....  
..... (or other measure)
4. Villagers who divert water from the intake will be fined shs .....  
..... (or other measure)
5. No bathing, washing or cattle watering is allowed directly around the domestic point.
6. Every villager who observes a breakage or a misuse of the scheme should report this to the Scheme Attendant/Village Water Committee (VWC).
7. No private connections are allowed.
8. Tap and Scheme Attendants can ask users to help clean surroundings, dig trenches, backfill trenches, etc.
9. No-one must cultivate on top of the trench lines. A 2 metre wide area should be left untouched on all lines.
10. No-one must irrigate gardens by making trenches from the domestic point to the garden.

18.1

Step 18: To Help Establish Village By-laws for the  
Protection of the Scheme

Purpose:

To make village able to administer its responsibility with respect to operation and maintenance of the water scheme.

Participants:

All Village Water Committee members;  
Scheme Attendants;  
SEC.

Preparation:

Bring Form 18.

Tasks in Village:

1. Discuss the use of and need for by-laws;
2. Discuss content of by-laws (example - form 18);
3. Agree on by-laws to be proposed to village government.

Duration in Village:

Half day

Documentation:

Agreed set of by-laws.

Practical Hints:

1. Ask village secretary to make copies of the agreed by-laws to be put on the wall in the CCM office, grinding mills, churches, and to be given to Tap Attendants.

19.1

Step 19: Agree on Group Scheme Committee's Role in  
Operation and Maintenance

Purpose:

To discuss and agree on procedures for the involvement of the Group Scheme Committee in operation and maintenance.

Time:

Before handing over of the scheme.

Participants:

Group Scheme Committee;  
SEC;  
MAJI/DANIDA Maintenance Unit

Preparations:

Agreement has been reached with MAJI/DANIDA on maintenance tasks and District Council's contribution to scheme fund.

Tasks:

1. Explain the operation and maintenance responsibilities of the villages;
2. Explain the operation and maintenance responsibilities of MAJI/DANIDA including contribution to scheme fund by District Council;
3. Discuss and agree on responsibilities and procedures of the Group Scheme Committee.

Duration:

Half a day

Documentation:

Minutes, copied to all scheme villages and MAJI/DANIDA.

Practical Hints:

The procedures agreed upon must include village contributions to scheme funds, how this is to be kept and disbursed, how villages are to apply for support from scheme funds, regular meetings by the committee, reporting etc.

20.1

Step 20: Inspection of Scheme from Intake to last DP

Purpose:

To assess completion of construction, work quality, and ensure that village receives a well functioning water supply.

Time:

Before handover of completed scheme.

Participants:

VWC;

Scheme Attendants;

Group Scheme Committee Chairman;

DWE;

Site/Implementation Engineer;

SEC;

DSU/or their appointed representative.

Preparations:

None

Tasks:

1. Inspect all parts of the scheme;
2. Agree on the satisfactory completion of all parts or;
3. include them in list of parts still needing completion, with deadline, responsibility for completion, and who is to inspect repairs done.

Documentation:

List of parts still needing completion, with deadline and responsibility for completion and for inspection.

Practical Hints:

SEC should be particularly interested in anything which may give problems for operation and maintenance.

21.1

Step 21: Hand-Over of Scheme to VillagePurpose:

To hand over the scheme to the village and to stress the village's responsibility for operation and maintenance.

Time:

When all steps 1 - 20 have been carried out, tools and initial stock of spareparts are available, and District has accepted its financial responsibility.

Participants:

MAJI/DANIDA;

Village Government;

VWC;

Scheme Attendants;

District Council;

Site Engineer;

SEC;

Any other persons as agreed (e.g. Group Scheme Committee)

Preparations:

Arrange with village, Group Scheme Committee and District Council the form and participants of the hand-over ceremony.

Tasks:

Carry out hand-over as agreed.

Duration:

½ day

Documentation:

Hand-Over Certificate. List of tools and spares received, signed by village chairman and VWC chairman.