

824-TZM91-9886

UNITED REPUBLIC OF TANZANIA

REPUBLIC OF FINLAND

**MTWARA-LINDI WATER
SUPPLY PROJECT**

Phasing-out Phase VI 1991-1994

Project Document

Final Draft

January 1991

824-TZM91-9886

PROJECT DOCUMENT

Project title: Mtwara-Lindi Water Supply Project/
Phasing-out phase VI

Project number: 28202703-6

Sector: Water Supply

Duration: 48 months

Starting date: 1.1.1991

Project financing:

- Government of Tanzania	TAS	301,000,000
- Government of Finland/ FINNIDA (grant)	FIM	21,000,000

Competent authorities

- Tanzania: Ministry of Finance, the Planning
Commission of Tanzania
- Finland: Ministry for Foreign Affairs/FINNIDA

Institutional framework for project implementation:

- Tanzanian implementing agency:
Ministry of Energy, Minerals and Water
/ Mtwara and Lindi Regional Offices

- Consultant for development assistance services:

Finnwater

Arrangements for coordination of project implementation:

- Coordination committee of competent authorities:
Steering Committee
- Coordination on implementation level:
Management Committee

ABBREVIATIONS AND ACRONYMS

AFYA	Ministry of Health
CCM	Chama Cha Mapinduzi (the ruling political party)
CP	Community participation
CTP	Comprehensive Training Programme
DC	District Council
DED	District Executive Director
DWE	District Water Engineer
DWSC	District Water Sub-committee
E	Expatriate
ELIMU	Ministry of Education
FIM	Finnish Mark
FINNIDA	Finnish International Development Agency
lcd	Litre per Capita per Day
MAENDELEO	Community Development Office
MAJI	Ministry of Energy, Minerals and Water
MIS	Management Information System
O&M	Operation and Maintenance
RIPS	Rural Integrated Project Support
RWE	Regional Water Engineer
T	Tanzanian
TAS	Tanzanian Shilling
USD	United States Dollar
UWT	Umoja Wanawake Tanzania (women's organization)
VLOM	Village level Operation and Maintenance
VWSC	Village Water Sub-committee
W/S	Water Supply

Exchange rate: FIM 1 = TAS 48.00

KEY TO CORRECTIONS OF THE DRAFT PROJECT DOCUMENT, MAY 1990

1. Original text of the Draft Project Document, May 1990:

The non-availability of funds to pay for the local component as mutually agreed by the two governments has been a major problem during earlier phases.

2. Removed text of the Draft Project Document, May 1990:

~~In Phase VI the progress of the Project will be strongly dependent on the timely payment of the local component according to the project budget.~~

3. Additional text to the Draft Project Document, May 1990:

The timely payment of the local component according to the project budget strongly effects on the progress of the Project.

MANAGEMENT SUMMARY

Water supply has been chosen as one of the key sectors in the development cooperation programme of the governments of the United Republic of Tanzania and the Republic of Finland. As one of the first projects in this sector Mtwara-Lindi Rural Water Supply Project was started in 1972.

After a feasibility study and preparation of a Water Master Plan the actual implementation of water supplies in Mtwara and Lindi Regions was begun in 1978. It was continued in four phases until the end of 1987 with the objective of constructing as many water supplies as soon as possible. It was observed, however, that more than one half of these supplies eventually fell out of order because of lack of funds and skills for proper management, operation and maintenance. Thus the service coverage, which theoretically should have been about 69% of the population in Mtwara Region and 41% in Lindi Region, was in fact only 39% and 35%, respectively, at the end of 1989.

To improve sustainability of water supplies the construction oriented approach was abandoned and institution building emphasized in Phase V in 1988-1990. Evaluation of Phase V in the beginning of 1990 revealed that institution building would not be completed by the end of the phase and much work was still needed to make the owner communities capable of managing their water supplies. Thus, continuation of the Project in still another phase was found justified.

In Phase VI, the phasing-out phase, the targets will be consolidation of improved management procedures,

development of managerial and O&M skills and, especially, strong involvement of communities in the development of their water supplies so that they will be able to assume full responsibility for their continuous O&M.

The ultimate beneficiaries of the Project will be the population of the two Regions. The majority of the beneficiaries will belong to rural population living on small-scale farming in poor economic conditions. The regional and district MAJI organizations in Mtwara and Lindi will be direct target groups and mediators of the Project support to the ultimate beneficiaries.

Ministry of Energy, Minerals and Water of Tanzania and the Ministry for Foreign Affairs of Finland will be the competent authorities in the implementation of the Project. The MAJI regional and district offices will answer for the practical implementation work with the support of a FINNIDA employed consultant who will provide advisers to work together with the local personnel.

The Development objective of Phase VI will be:

Improvement of the water supply situation in Mtwara and Lindi Regions through consolidation of existing water supplies which are operating according to standards and through provision of additional safe and sustainable water supplies by rehabilitating existing non-operating or inadequate water supplies and by constructing new ones. The improvements are to be implemented in such a manner that they provide possibilities for improvement of the health of the population and, in the long term, for economic development and lead to reasonably equal standard of service in all parts of the project area. The improvements are to be implemented observing valid Tanzanian standards and guidelines.

The main strategy in Phase VI will be to ensure sustainability before starting any physical improvement, i.e. rehabilitation or new construction, of a water supply. The sustainability is believed to be achieved by strong and well organized community involvement, by providing funds for at least a part of O&M costs by beneficiary contributions through cost-sharing according to the Tanzanian Water Policy. Furthermore, development and consolidation of improved management and O&M procedures and extensive performance-oriented training will aim at improved sustainability.

The Project will consist of six sub-projects:

- Project Management and Institution Building
- Community Involvement
- Cost-sharing
- Operation and Maintenance
- Training and Manpower Development
- Physical Improvements to Increase Water Supply.

The Government of Tanzania will provide adequate personnel in the local MAJI offices to carry out the activities required for the implementation of the Project and bear all costs of this personnel. In addition, the Government of Tanzania will provide all funds, manpower, materials, transport, etc. necessary for the implementation and O&M of water supplies except for the material support by FINNIDA. This latter input together with some training and other costs is estimated to amount to TAS 301 million. It is expected that a part of this amount can be covered by beneficiary contributions according to cost-sharing principles.

The inputs of the Government of Finland consisting mainly of the costs of advisory services and material support will be FIM 21 million (appr. TAS 1,008 million).

The progress of Phase VI will depend strongly on the timely availability of the inputs of the Government of Tanzania. In the long run the continuation of the benefits, provided by the Project during more than 20 years of effort to improve the water supply situation in the project area, will depend of the capabilities of the owner communities to manage their water supplies in an effective and responsible manner.

MTWARA-LINDI WATER SUPPLY PROJECT

PHASING OUT PHASE VI 1991-1994

PROJECT DOCUMENT

FINAL DRAFT

January 1991

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1. BACKGROUND AND JUSTIFICATION

1.1 Background

The governments of the United Republic of Tanzania and the Republic of Finland have agreed that within their development cooperation programme one of the key sectors is water supply and sanitation. Based on this agreement a water supply project was identified in 1972 in Mtwara and Lindi Regions in Southern Tanzania.

The geographical area of the Project covers 82,753 km² of which 16,707 km² belong to the Mtwara and 66,046 km² to the Lindi Region. There are seven districts in the two regions, Mtwara, Newala and Masasi in Mtwara Region and Lindi, Nachingwea, Kilwa and Liwale in Lindi Region (Fig. 1.1.). In regard to hydrogeological conditions the area has been divided into four zones (Mtwara-Lindi Water Master Plan, Revision, April 1986):

- The narrow and relatively flat coast zone which is largely composed of fairly permeable sand and laterite layers forming generally good groundwater infiltration areas. To this zone belong parts of Mtwara, Lindi and Kilwa Districts.
- The wider and more uneven plateau zone which is composed of geological formations similar to those of the coast zone. Groundwater potential is theoretically good but the groundwater level is typically deep except in river valleys and lower edges of the plateau. Parts of Mtwara District, Newala District, and main parts of Kilwa and Lindi Districts belong to the plateau zone.
- The basement zone where the hard crystalline rock is, apart from some bedrock outcrops, covered

with relatively thin lateritic soil material. The occurrence of groundwater is generally poor, the best aquifers being found in the faults and in the porous weathered mantle covering the fresh rock. To the basement zone belong Masasi District, western parts of Kilwa and Lindi Districts, eastern parts of Liwale District and Nachingwea District.

- The Karroo zone comprising mainly sandstone sediments. Although not very well known, the groundwater potential is assumed to be good. To this zone belong the western parts of Liwale District.

The average annual rainfall ranges from 800 to 1,200 mm in the area. Most of it falls in the rainy season from November/December to April.

According to the 1988 census the population of the area was 1,536,044 with 889,494 inhabitants in Mtwara Region and 646,550 in Lindi Region. The average annual population growth rates are about 1.4 % and 1,7 % in Mtwara and Lindi Regions, respectively, the average being about 1,55 %.

The economy of the area is mostly based on small-scale agriculture. The primary cash crop is cashew nut, but due to a disease and the aging of the trees the yields have been low in recent years and the economic status of the population has declined.

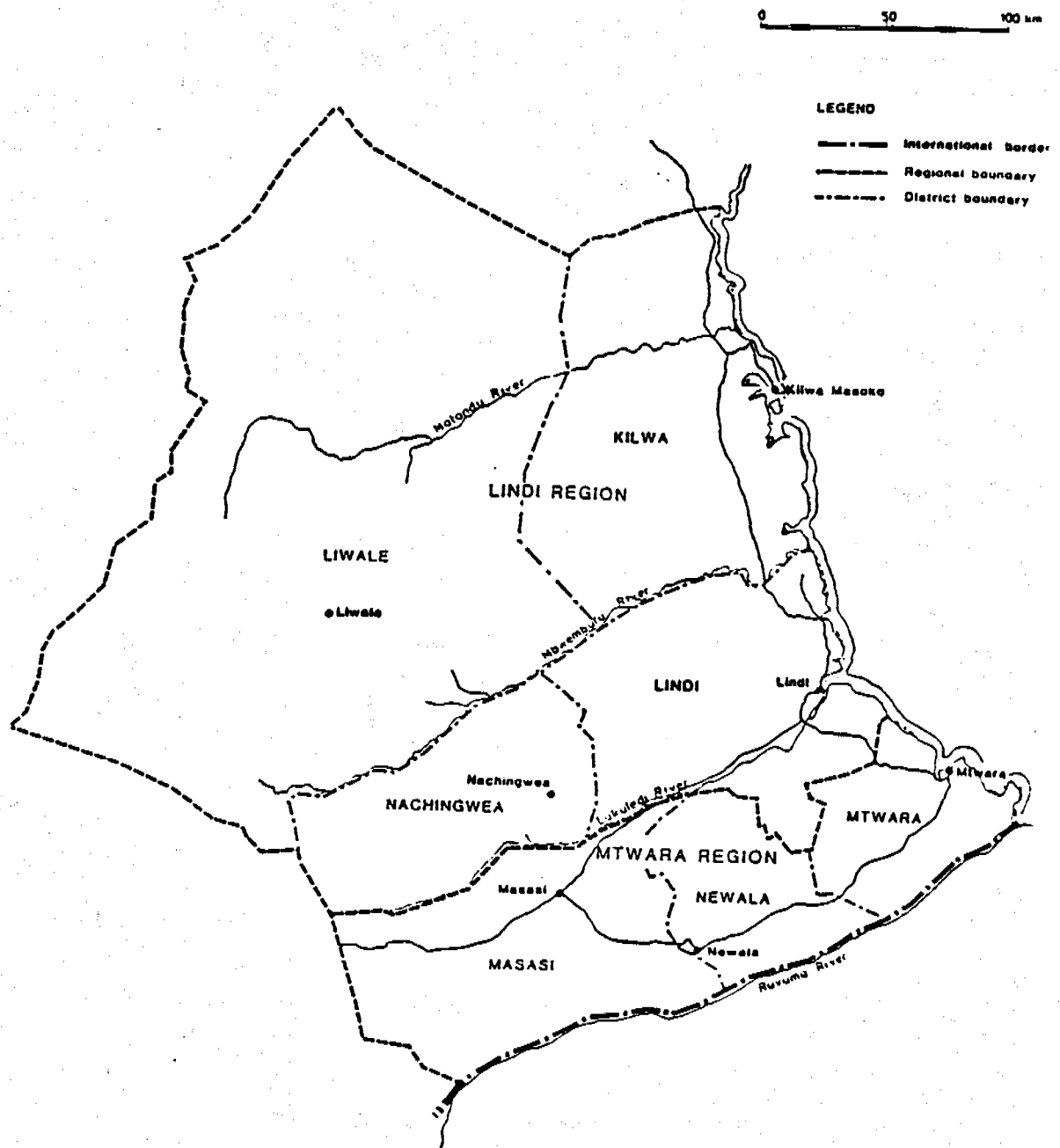


FIG. 1.1 PROJECT AREA

Since the beginning of the Project the water supply situation has improved considerably through the construction of 2,344 handpump wells and 13 piped water schemes by the Project by the end of 1989. Taking into account also water supply systems implemented by MAJI the theoretical sector coverage would be 69% in Mtwara and 41% in Lindi Region if the water supply systems were giving service according to standards, i.e. providing minimum 25 lcd water of acceptable quality at a maximum distance of 400 m. However, the actual service coverage are estimated to be only 39% in Mtwara region and 35% in Lindi Region because a high proportion of water supplies are not functioning as intended. There are many reasons for the poor operation the most important ones being the lack of local funds, resulting in lack of fuel and spareparts, the lack of O&M skills and the slow start of adequate community involvement. Because of poor management and maintenance, many water supply systems have deteriorated and need rehabilitation. The rehabilitations are, however, meaningless unless efficient management and O&M systems are simultaneously established to prevent future collapses of the systems.

Since its beginning the Mtwara-Lindi Rural Water Supply Project has proceeded through the following phases:

Feasibility Study	1972 - 1973
Housing Project	1973 - 1974
Water Master Plan	1974 - 1977
Implementation Phase I	1978 - 1980
Implementation Phase II	1980 - 1981
Implementation Phase III	1982 - 1984
Implementation Phase IV	1985 - 1987
Integration and Institution Building Phase V	1988 - 1990

The main target of Implementation Phases I, II and III was to create a minimum level water supply system to the project area as soon as possible. As severe problems regarding the sustainability of water supplies became evident, the approach of the Project was revised towards more institution building and participatory mode.

Implementation phase IV already was a transition phase in which the actual construction as well as operation and maintenance activities were gradually transferred to the local water authorities. The main target of the on-going Phase V is the promotion of the sustainability of the water supply systems in Mtwara and Lindi Regions. For that purpose development of management and O&M systems, human resources development and establishment of an effective system of community management for handpump wells are aimed at. Phase VI is designed to be a phasing-out phase during which construction of new supplies will be limited to the minimum and efforts will be concentrated on rehabilitation of existing supplies and on consolidation of management and O&M methods and procedures - particularly such which rely on beneficiary participation - that will ensure the sustainability of the water supply systems even without donor support.

The ultimate development objective of all phases of the Project has been and will be to provide possibilities for improvement of the health of the population and for economic development by providing adequate and safe water supply to the majority of inhabitants in the project area. The manpower resources of local MAJI organizations are fairly sufficient for the rehabilitation and construction works as well as for the provision of O&M support to community operated water supplies. However, the management and O&M skills of this manpower still need improving.

Training institutions are available in Tanzania for assisting in the development of these skills, but a sustainable training system to meet the specific requirements of the area and to offer continuous opportunity for on-the-job training needs to be consolidated. Support from local MAENDELEO and AFYA organizations is available for community participation promotion, health education and sanitation activities. It is obvious that the financial resources of the central government are inadequate for covering all development and O&M costs of the water supplies. Thus, the sustainability of water supplies will depend on adequate community participation and on the successful establishment of cost-sharing systems in accordance with the Water Policy of the Government of Tanzania.

The national target in the water supply sector is to provide safe potable water at a maximum distance of 400 m to the entire population of the country by the year 2002. It is estimated that by carrying out the activities set forth in this project document for Phase VI the service coverage according to the standards can be brought up to 60% of the population of Mtwara and Lindi regions and thus the contribution of the Project to the reaching of the national target level in the project area will be considerable.

1.2 Justification of the Project

As stated above, the emphasis of investments has in the previous phases been on the construction of water supplies and insufficient attention has been paid to the sustainability of the constructed supplies. As a result, the gap between theoretical and actual service coverage is wide, and more than one half of the investments are not productive. To avoid this waste of previously made

investments and to bring the actual service coverage to a reasonable level a consolidation and phasing-out phase of the Project is needed. During this phase effort shall be made to bring the water supply situation in the two regions to a sustainable level, i.e. rehabilitations and new constructions shall be undertaken only to such an extent that their upkeep will not exceed the financial and O&M capacities of the local communities and the central government. Although the development of management and O&M capacities of local institutions has been started in Phase V, much systems development and training are still required. Community involvement is a crucial factor in increasing the sustainability level. Intensified efforts are needed to involve beneficiary communities in the implementation of their water supplies in such a manner that there will be a definite, active and responsible owner group for each supply capable and willing to continuously manage, operate and maintain the supply and share the costs of these activities. A cost-sharing procedure according to the national Water Policy needs to be developed.

2. TARGET GROUPS AND INSTITUTIONAL FRAMEWORK

2.1 Target Groups

The water usage in Mtwara and Lindi regions is at present predominantly domestic. In addition, various institutions, such as schools, health centers, hospitals, offices, etc. belong to the water users. Thus, the direct recipients of the Project in Phase VI will be the population of Mtwara and Lindi regions. In the previous phases the rural population has been chosen as the main recipient, but because of the urgent need to improve the water supply in district centers and Lindi town the semi-urban and urban populations of these will also be included in the direct recipient groups of Phase VI. This extension, however, shall take place within the financial framework of the Project Budget and requires a local input to cover other than material costs.

Women of the regions as the main users of water will be a special recipient group, and the success of the Project will greatly depend on their attitudes and participation. Being responsible for the hygienic handling of water and for the hygienic habits in homes they play a decisive role in the achievement of the health related objectives of the Project. In the present situation, economic development that can be foreseen to result from the improved water supply situation will be achieved mainly by the release of women's energy and time from long-distance water fetching to more productive activities.

The economic status of the direct recipient groups is low especially in remote rural areas and their ability to pay for the improved water supply will be rather limited.

Leaders at all levels - regional, district, division, ward and village will be an important target group whose mobilization skills will be improved by training and utilized in community involvement.

The local MAJI organizations will be a key target group since they will be the intermediary of the technical and material support of the Project to the ultimate beneficiaries. Their personnel will benefit from the training provided by the Project for the development of management, engineering and O&M skills. These organizations will also benefit by provision of improved facilities and equipment by the Project.

What is mentioned above about MAJI organizations applies to some extent also to the local organizations of MAENDELEO and AFYA whose cooperation in the promotion of community participation, health education and sanitation is indispensable for the success of the Project.

2.2 Environmental Settings

As stated in chapter 1.1, the hydrogeological conditions vary greatly in the project area. While shallow groundwater is reasonably easily available in the major part of the area there are problem areas like the Rondo and Makonde Plateaus in Lindi and Newala Districts, respectively, and the basement zone areas in Masasi and Nachingwea Districts. In these areas the groundwater level often lies deep and its fluctuations are great. Also salinity problems are encountered in the basement zone. Dry or seasonally dry wells have been most common in Masasi district.

Long distances from the regional centers and from the Mtwara harbour to the western most districts and the poor condition of roads present problems in personnel, fuel and materials transportation and increase the cost of project implementation.

2.3 Institutional Framework

The Ministry of Finance of Tanzania and the Ministry for Foreign Affairs of Finland, Finnish International Development Agency (FINNIDA) shall represent the two Governments in respect of the Project. In matters pertaining to the substance of the Project the competent Tanzanian authority shall be the Ministry of Energy, Minerals and Water (MAJI).

The two regional and seven district MAJI offices in Mtwara and Lindi Regions shall be responsible for the implementation of the Project. A Finnish consulting company shall support these agencies by providing advisory services.

The duties of the local MAJI organizations shall include but not be limited to the following:

- Overall management of funds, manpower, facilities and materials, preparation of work plans, schedules, budgets, etc.
- Promotion of community participation:
 - *cooperation with community participation advisers to ensure mobilization and full participation of communities
 - *arrangement of sustained community participation promotion after withdrawal of FINNIDA.

- Establishing and follow-up of cost-sharing systems for all W/S.
- O&M support:
 - *establishing of O&M procedures for all new W/S
 - *provision of skilled O&M staff for each W/S
 - *procurement, storing and distribution of spare parts and consumables
 - *provision of cost-effective transportation
 - *provision of skilled staff to workshops and garages to provide technical O&M support to communities.
- Implementation of training:
 - *preparation of training programmes and schedules
 - *cooperation with training institutes
 - *employment of trainers
 - *provision of training materials
 - *facilitation of training events.
- Implementation of physical improvements:
 - *project preparation
 - *financing arrangements
 - *ensure of community involvement
 - *design
 - *construction
 - *quality control
 - *handing-over.
- Follow-up and reporting of project performance including follow-up of:
 - *production of outputs according to specifications
 - *costs
 - *O&M activities of handed-over W/S
 - *service coverage and water use
 - *control of the use of village water funds and water sector funds in districts
 - *training and manpower situation.

The Consultant shall be responsible for providing competent advisers to work at the project site and adequate home office back-up and short-term consultancies according to

an approved schedule. The duties of the advisers shall include but not be limited to the following:

- Participation in overall management and planning:
 - *advising MAJI staff in the use of the management and planning procedures developed in Phase V
 - *proposing revisions to these procedures if necessary.

- Participation in community participation promotion:
 - *preparing of a working approach
 - *mobilization of communities
 - *planning and facilitating community training
 - *advising MAJI organizations in the establishment of sustainable community participation promotion system after withdrawal of FINNIDA.

- Provision of expert (short-term consultant) advise on cost-sharing systems.

- Participation in O&M support:
 - *advising MAJI staff in the preparation of O&M systems for individual installations
 - *advising MAJI staff in the practical performance of work in workshops, garages and stores.

- Participation in training:
 - *advising MAJI staff in the establishment of a sustainable training delivery system
 - *advising MAJI staff in the preparation of a cost-sharing formula for training sector
 - *supporting MAJI staff in the preparation of performance-oriented training materials
 - *acting as trainers.

- Participation in the implementation of improvements of W/S:
 - *introduction of new design and construction methods
 - *preparation of procedures for quality control and advising MAJI staff in their use
 - *co-signing of final approval certificates.

- Participation in the follow-up of project performance:
 - *advising MAJI staff in the use of follow-up procedures
 - *advising MAJI staff in running the MIS.

The beneficiary communities shall be responsible for participating in all stages of the development to their W/S and to take over the responsibility for their O&M - totally or in part - according to the principles of the Water Policy. They shall pay at least a part of the implementation and O&M costs according to the cost-sharing principles of the Water Policy. The participation shall be organized through Village Water Sub-committees.

Coordination will be required with the local organizations of AFYA, MAENDELEO and ELIMU as well as with the local representatives of CCM and UWT. As already done in Phase V of the Project, members of these groups from region/district/ward level shall participate in the training for mobilization by the Project with the aim of becoming themselves trainers for groups at lower administrative levels.

Representatives of District Councils, MAJI, AFYA, MAENDELEO, CCM and UWT will form District Water Sub-committees which will continue to assume responsibility for the Village Water Sub-committees. Coordination between the Project and

District Councils and DEDs is required for the proper prioritizing of the implementation of water supplies and for arranging funds for the payment of the local component.

A tentative outline of the interactions of organizations which participate in the development of W/S from district to village level is presented in Fig. 2.1. It should, however, be observed that a detailed description of the roles and duties of these organizations shall be a part of the new Working Approach in Community Participation which is to be finalized by the end of April, 1991. Furthermore, the national Water Policy, not published yet, will have an influence on the planning of the work of coordinating organizations. For example, it may be necessary to have a Water Committee also at regional level. The principles of the Water Policy shall be fully taken into account in the integrated work of all concerned organizations.

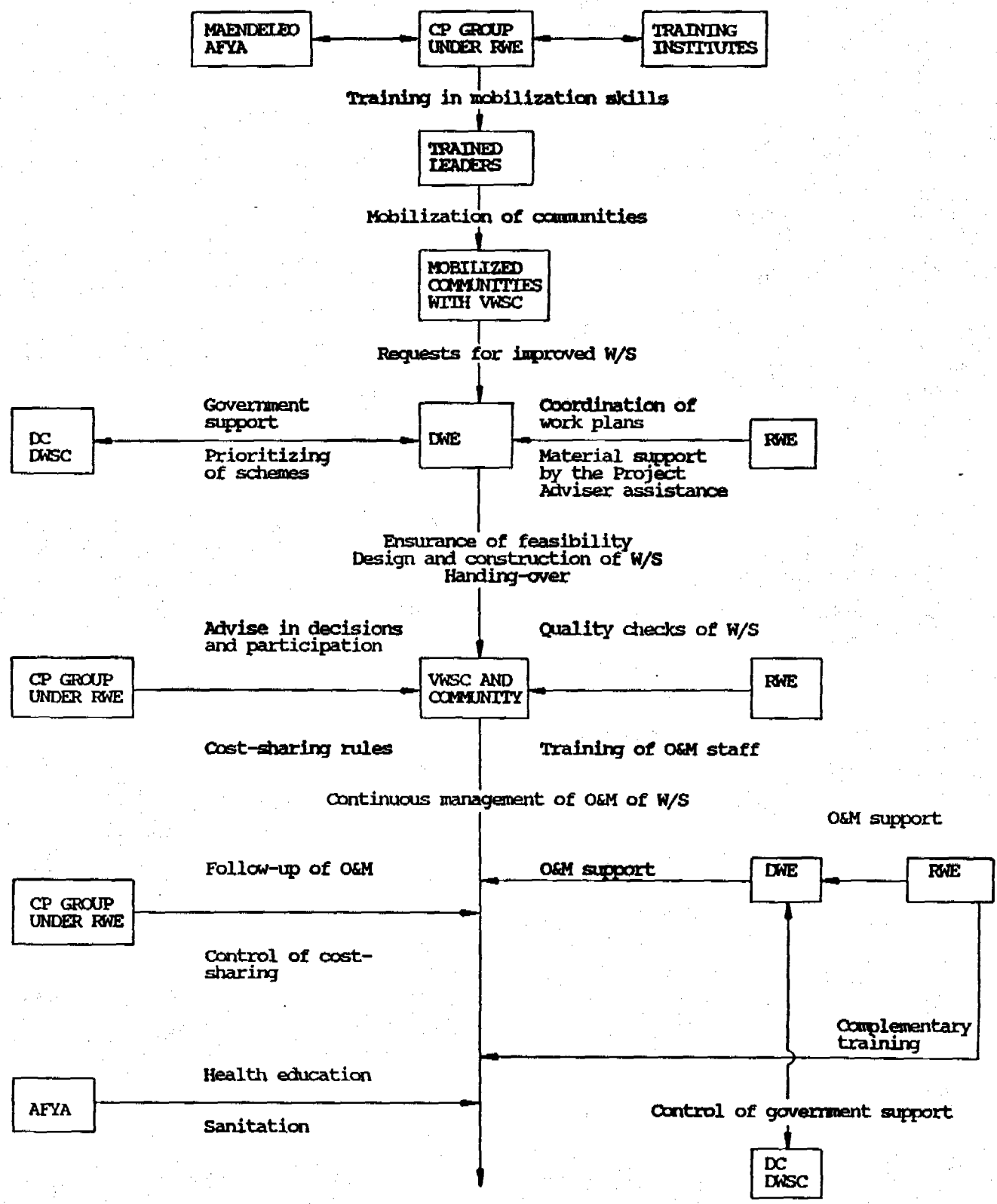


Fig. 2.1 Participatory organizations in the implementation and O&M community owned water supplies

3. OBJECTIVES AND DEVELOPMENT INDICATORS

3.1 Development Objectives and Development Indicators

The development objective of the Project is:

- The improvement of the water supply situation in Mtwara and Lindi regions through consolidation of the existing water supplies which are operating according to standards and through provision of additional safe and sustainable water supplies by rehabilitating existing non-operating or inadequate water supplies and by constructing new ones. The improvements are to be implemented in such a manner that they provide possibilities for improvement of the health of the population and, in the long term, for economic development and lead to reasonably equal standard of service in all parts of the project area. The improvements are to be implemented observing valid Tanzanian standards and guidelines.

The development indicators are:

- 60% of the population - an estimated approximate number of 1,052,000 people - in Mtwara and Lindi Regions are served by improved water supplies, which are reasonably equally distributed to all parts of the regions, by the end of 1994.
- Minimum 90% of all water supplies that were serving the users according to standards already in the beginning of Phase VI and of those rehabilitated or constructed during this phase function reliably and give service according to the standards at the end of 1994.

- Cost-sharing systems have been established and followed at all water supplies handed over to the owners by the end of 1994.
- Sufficient funds are continuously made available for the development and O&M of each handed-over water supply by beneficiaries' contributions and/or government subsidies according to the cost-sharing system.
- The beneficiaries are aware of the health impacts of water quality and are using available water sources accordingly.
- Structures and equipment of water supplies are compatible with Tanzanian standards and guidelines in regard to capacity, design, and quality of materials, equipment and workmanship.

3.2 Immediate Objectives and Their Indicators

The Project is divided into six sub-projects. The immediate objectives and achievement indicators of the sub-projects are the following.

Sub-project 1. Project Management and Institution Building

Immediate objectives:

- Consolidation of improved management systems and procedures developed during previous phases.
- Effective management of funds, facilities, manpower and materials.

- Provision of data on service levels, water use, actual costs of construction and O&M, cost-sharing, payment collection, etc. to aid planning of W/S development, O&M and financing.

Achievement indicators:

- Improved systems and procedures are followed in work planning, budgeting, progress follow-up, cost control, data handling and other management activities during Phase VI.
- Plans, budgets, reports and data for decisions are made available in time for approvals and resource allocations.
- Offices, transport system, stores, workshops, garages and other facilities are managed according to the improved methods developed during previous phases and provide satisfactory support services for project activities.
- Follow-up data on implemented water supplies is collected and analyzed according to an approved Management Information System and made available in a summarized form to facilitate the evaluation of the impacts of the Project and to provide a realistic basis for plans and designs.

Sub-project 2. Community Involvement

Immediate objectives:

- Promotion of the use of safe water and hygienic habits to make improvement of the health of population in the project area possible.
- Increase of reliable availability of safe water by community involvement in all stages of the development of water supplies and by cost-sharing.

Achievement indicators:

- Number of people using safe water sources for purposes in which the water quality has a health impact increases continuously during Phase VI reaching an approximate average value of 60% of the population by the end of 1994.
- The time of failure of any improved water supply to serve according to standards because of inadequate community participation is less than 10%.

Sub-project 3. Cost-Sharing

Immediate objective:

- Development of sustainable financial management systems which involve the beneficiaries in sharing the costs of O&M according to their capabilities and the national water policy.

Achievement indicators:

- Each water supply (excluding national schemes) has an adequate basic water fund on a bank account of the owner, i.e. Village Water Sub-committee or a corresponding organization, by the time of the handing-over of the scheme. The amount of the fund is as determined by a cost-structure study taking into account the type of supply and the financial capabilities of the beneficiaries.
- The water funds have been replenished according to the cost-sharing rules in 90% of cases at the end of 1994.
- Applications for government subsidies have been made according to approved official procedures and funds received according to the cost-sharing rules of the national Water Policy in 90% of cases at the end of 1994.

Sub-project 4. Operation and Maintenance**Immediate objective:**

- Increase of sustainability of water supplies by establishing a reliable O&M system for each water supply consisting of
 - adequate community involvement,
 - effective O&M procedures including preventive maintenance,
 - provision of skilled staff to operate and maintain the water supply,
 - availability of services of a support system at district and regional levels.

Achievement indicator:

- According to monthly O&M follow-up records less than 10% of water supplies have break-downs of service lasting more than 10 days for the following reasons or their combinations:
 - The Management (VWSC or corresponding organization) is neglecting its O&M duties such as acquisition of spare parts and consumables, recruiting of pump attendants/operators, making funds available, etc.
 - Adequate O&M manuals or preventive maintenance programmes are missing.
 - Pump attendants/scheme operators are not adequately skilled to carry out the O&M.
 - Spare parts and consumables are not made available in reasonable time and at reasonable cost by the regional and district O&M support system.

Sub-project 5. Training and Manpower Development**Immediate objective:**

- Provision of a sustainable system for continuous development of management, design, construction, operation and maintenance skills of MAJI regional and district personnel, community employed staff and personnel of cooperating agencies.

Achievement indicators:

- Relevant training is adequately provided according to an approved comprehensive training programme at all levels to local MAJI personnel, to trainees appointed by communities and to selected members of cooperating agencies by training institutions, project advisers and MAJI, MAENDELEO and AFYA personnel trained to act as in-service and on-the-job trainers.
- Less than 5% of trained persons fail to perform their duties satisfactorily according to the standards of an approved performance evaluation system.

Sub-project 6. Physical Improvements to Increase Water Supply**Immediate objectives:**

- Increase of water supply by rehabilitation of existing non-operating water supplies when
 - requested by the owner communities
 - found technically and economically feasible by studies of alternative water resources in regard to adequacy and quality, water demand, per capita construction and O&M costs, economy and income situation and willingness and ability to pay of the prospective users,
 - sustainability is ensured by adequate community participation,

- a cost-sharing system is established and
 - both local and donor funds are available.
- Increase of water supply by construction of new water supplies when
- the target coverage can not be achieved by rehabilitations,
 - requested by the communities,
 - technical and economical feasibility ensured as above,
 - sustainability is ensured by adequate community participation,
 - a cost-sharing system is established and
 - both local and donor funds are available.
- Provision of basic hydrometeorological, hydrogeological and geophysical data for planning and design of water supplies.

Achievement indicators:

- Rehabilitations and new constructions which fulfill the criteria of feasibility and sustainability are implemented according to approved plans within the limits of local and project budgets.
- Basic data on physical conditions influencing water supply are adequately available through results of special studies.
- Results of studies of new technologies are available to form a basis of realistic comparison of alternatives.

4. PROJECT STRATEGY

4.1 Overall Strategy

Phase VI of the Project is the phasing-out phase. This shall be clearly reflected in the project strategy. It shall be observed that the material support by FINNIDA will also phase out gradually during Phase VI, and arrangements shall be made to provide funds for the development and O&M of water supplies from other sources.

The MAJI regional and district offices shall be in full charge of all activities and bear the main responsibility for the achievements of the project objectives. The advisers provided by the Consultant shall have a supporting role in making proposals, advising and participating in all activities of the Project as required.

In previous phases the sustainability of water supplies has been a major problem. In Phase VI care must be taken that resources are not allocated to schemes which are not sustainable.

4.2 Strategies of Sub-projects

Management and Institution Building

The sustained use of the management procedures developed during the Project shall be consolidated by active participation of the advisers in their practical application and by ensuring that an adequate number of MAJI personnel is well versed in their use. The development will take place based on the existing structures, systems and personnel of the involved organizations.

The RWEs and the DWEs are the key persons to accommodate the new practices to the daily operations of their organizations. To ensure the success of this process the management procedures, developed during the previous phases of the Project, will be scrutinized and revised in collaboration and thereafter submitted to the Steering Committee for approval. This should take place straight in the beginning of the Phase.

Activities originating from the Project will be fully integrated to those of MAJI. Consequently they will become ordinary components included in the planning of MAJI. Timing of workplans, budgets and reports shall be synchronized with the Tanzanian fiscal year which comprises the time period from the 1st of July to the 30th of June in the following year.

The efficiency of the transportation and communication system is a critical factor for the success of the Project. Therefore, the procedures developed and used by the end of Phase V shall be carefully reviewed and revised, if necessary, to make the system sustainable in the situation where material support by the Project is decreasing. In this connection, consideration shall be given to the use of regular routes, to the utilization of most economic means of transport, i.e. tractors, bicycles etc., and to increased communication by radio phones.

After withdrawal of the Project no combined organizations will remain for procurement and material handling in the regions but both regions have to organize those activities separately. To strengthen the institutional readiness in Lindi to manage the situation, all materials and equipment imported for Lindi Region shall be ordered separately from those of Mtwara and forwarded straight to Lindi there without intermediate storing in Mtwara.

Measures shall be taken to ensure that decisions are based on facts. Therefore, the advisers and the MAJI staff shall work together to make full use of the management information system (MIS) in the planning and follow-up of project activities and in evaluation the performance of the different sectors of the Project. The MIS- system should be initiated as a manual system and completed computerized when the data collection has been fully developed and established.

Makonde Plateau Water Supply is a complicated and large system and therefore its management differs from that of smaller schemes. A special study of the institutional and administrative arrangements of the Makonde Plateau scheme shall be carried out as explained in the terms of reference presented in Annex 2.

Community Involvement

Strong community involvement is the most important factor influencing the sustainability of water supplies in the present situation. Therefore, it shall be strongly emphasized in Phase VI.

Repeating earlier failures shall be avoided by analyzing their reasons on the basis of facts. Thus, data collection from pilot areas and, if possible, from areas where community participation was attempted in Phase IV shall be continued.

The working approach in community participation shall be carefully planned on the basis of data and experiences before the full extension of activities to areas outside the pilots. In the working approach special attention shall be given to the involvement of beneficiaries of piped water

schemes since the experiences in this field are limited. Also, the sustainability of the whole community participation promotion, including community training, after the withdrawal of FINNIDA shall be considered when planning the working approach.

The role and the duties of the communities in the development and O&M of their water supplies shall be clearly defined in each case and recorded in formal initial and handing-over agreements signed by authorized representatives of the communities and the Project.

Cost-sharing

A system shall be developed for each water supply by which funds will be provided for the recurrent operating costs and for a fund which will be used for the purchase of spare parts, materials for the rehabilitation of structures, etc. when necessary. The system shall rely on cost-sharing between the owner communities and the government.

The requirement of funds shall be based on realistic estimates of O&M costs of each type of point source supply and of each piped scheme individually. When determining the share of the community, the ability to pay of the users shall be taken into account. The limited government subsidies should be directed to communities whose ability to pay is low and to areas where the costs of water supply are higher than the regional average or where the service coverage is lower than average.

Clear and simple procedures will be developed for facilitating the mobilization of the communities in connection to introduction of the cost-sharing which is

changing the present set-up for the participation. Flexibility shall be allowed for communities in defining their way to organize their water supply services. The cost-sharing system of the Makonde Plateau W/S shall be planned separately.

The principles of the Water Policy of Tanzania shall be strictly followed. Organizing the system shall, however, be initiated straight from the beginning of the Phase following the Policy approved by the Government of Tanzania and already applied by MAJI.

Operation and Maintenance

The strategy for operation and maintenance of water supplies shall be the following:

- The beneficiary communities shall be involved to the greatest possible extent in the O&M of their W/S.
- The communities shall be supported in their O&M activities by MAJI organizations who shall make spare parts and consumables easily available and provide equipment maintenance and repair services. However, local shopkeepers, private mechanics, etc. shall be encouraged to take over these activities if they can provide the services reliably and satisfactorily in regard to prices and delivery times.
- Financing of O&M shall be arranged on cost-sharing basis strictly according to the principles of the Water Policy. Clear rules of cost-sharing shall be written individually for each supply before starting implementation.

- To ensure sustainability of the O&M especially during the period of initial operation, existence of an adequate village water fund shall be a prerequisite for the development of any W/S.
- The sustainability and continuous O&M of Makonde Plateau W/S shall be dealt with separately.

Training and Manpower Development

In previous phases the sustainability of training has been dependent on FINNIDA inputs except for MAJI's regional training programmes consisting of courses in craftsmanship such as masonry, survey, auto mechanics, water laboratory work, pump mechanics, etc. In Phase VI the training delivery system shall be made sustainable also in the eventual absence of outside financial and personnel support. Every possibility of using the existing resources of other organizations, such as MAENDELEO, AFYA, ELIMU, etc., and permanent training institutes shall be utilized.

Training shall be relevant providing the trainees with knowledge and skills which will help them to deal with the actual every-day problems encountered in their work. It shall also be performance-oriented, i.e. the emphasis shall be on the improvement of the on-the-job performance of individual workers. The success of training shall be assessed on the basis of an evaluation system of this performance and not on the basis of mere attendance of training events.

All training shall be in accordance with the human resources development policies of Tanzania.

Physical Improvements to Increase Water Supply

An unacceptably high number of water supplies implemented during the previous phases has fallen out of operation for various reasons. These reasons shall be analyzed on the basis of reliable data and repetition of mistakes stopped. The following rules shall be followed in the efforts to increase water supply:

- No new construction of a W/S, either point source or piped, shall be carried out if rehabilitation of an existing one can give an equal or at least satisfactory result.
- Whenever possible, the increase in water supply shall be brought about by the use of a properly designed and constructed well (rehabilitated or new) equipped with a VLOM pump (replacement or new installation).
- No implementation of any type of W/S shall be started unless requested by the future beneficiaries and unless the community concerned is fully mobilized to participate in the implementation and prepared to take responsibility for the O&M of the completed supply.
- No implementation of any type of W/S shall be started unless both local and donor funding is ensured. Thus, the minimum fund component will determine the progress of implementation.

- Rehabilitations of piped schemes shall be implemented in a priority order which is based on thorough feasibility studies with reliable estimates of rehabilitation and O&M costs. Special consideration shall be given to the partial rehabilitations of the W/S of district centers and Lindi town.

- All implementation - field investigations, feasibility studies, design, construction, etc. - shall be carried out following MAJI guidelines and all equipment and materials shall meet the Tanzanian standards unless exemption is granted by a competent authority.

5. PROJECT COMPONENTS, OUTPUTS AND OUTPUT SPECIFICATIONS

5.1 Sub-project 1. Project Management and Institution Building

Immediate objectives:

- consolidation of improved management systems and procedures developed during previous phases,
- effective management of funds, facilities, communication and transportation system, manpower and material.

<u>Components</u>	<u>Outputs</u>	<u>Output specifications</u>
1. Work plans and budgets	<ul style="list-style-type: none"> • Sufficient work plans and budgets compatible with approved procedures 	<ul style="list-style-type: none"> • Annual work plans and budgets available three month before the beginning of each Tanzanian fiscal year • Monthly updating of work plans and budgets available one month before the beginning of the month concerned
2. Follow-up of progress	<ul style="list-style-type: none"> • Reporting of project progress • Cost control 	<ul style="list-style-type: none"> • Monthly briefs in approved format available two weeks after the end of the month concerned • Semi-annual progress reports available one month after the end of the half-year concerned • Monthly budget follow-up briefs in approved format available two weeks after the end of the month concerned • Semi-annual budget follow-up reports in approved format available one month after the end of the half-year concerned
3. Management of facilities and materials	<ul style="list-style-type: none"> • Effective storing and distribution of spares and materials 	<ul style="list-style-type: none"> • Procurement made acc. to approved procedures • Stores managed acc. to approved procedures • Realistic estimates of demands available for procurement programmes supplementing work plans

- Regional and district stores capable of supplying spares and materials to users as requested in 95% of cases without undue delay
- Monthly records of any store show negligible unaccounted for losses of stored items
- Effective maintenance and repair of vehicles and equipment
- Workshops and garages managed acc. to approved procedures
- Repair and maintenance times of vehicles and equipment reasonable as compared with those of well run workshops and garages elsewhere in the region
- Monthly inventories of tools and equipment as well as records of spares and materials handled in any garage workshop show negligible unaccounted for losses
- Satisfactory working and living conditions
- Offices and project housing facilities in good condition and properly equipped
- Kitangari staff houses constructed
- Shangani houses rehabilitated
- 4. Management of communications and transportation system
- Communication system
- Plan for communication system between districts and main W/S prepared by the end of March, 1991, and in use by the end of August, 1991
- Study of alternative means of transport carried out and report available by the end of April, 1991
- Appropriate use of different types of transport
- Cost-effective use of transportation system
- Inventory of present vehicle fleet, plan for selling old FINNIDA supplied vehicles and for purchasing new ones
- General transportation plan incl. consideration of regular routes, allocations of vehicles, etc. prepared and approved by the end of March, 1991, and followed thereafter
- Regulations concerning the use of all vehicles provided by the Project available and approved by the end of March, 1991, and followed thereafter

- Cost-control system for transportation developed and in use by the end of June, 1991
 - Detailed transportation plans prepared for each month as supplements to the monthly updating of work plans
 - Data on running hours, mileage, maintenance times, etc. available (as a part of MIS) and showing cost-effective use of transportation services

- 5. Running of management information system established in Phase V
 - Data collection
 - Data processing
 - Data reports

- 6. Supervision of implementation of W/S
 - Observation of valid standards
 - Acceptable quality

- Field data available acc. to the approved MIS system
- Data stored and processed acc. to approved MIS
- Data reports available to the management acc. to MIS

- Compliance of materials and equipment with Tanzanian standards ensured by regional store/workshop/garage managers before procurement
- Compliance of all equipment installations with manufacturers' instructions checked before test running by competent mechanical supervisors
- Acceptable workmanship and compliance with MAJI instructions of pipe installations checked before backfilling by competent construction supervisors
- Overall acceptability of completed W/S checked in a final inspection by representatives of owner community, constructor (RWE's or DWE's office, contractor) and the Project before handing over

7. Administration of Makonde Plateau W/S
- Management and cost-recovery system for Makonde Pl. W/S
 - Review study (1st phase) on management arrangements and cost-recovery made and results available by the end of June, 1991
 - Decision on type of administrative system reached by the end of August, 1991
 - Detailed study (2nd phase) carried out and proposals of organizational arrangement available by the end of October, 1991
 - Administration system approved and established by the end of 1991

5.2 Sub-project 2. Community Involvement

Immediate objectives:

- promotion of the use of safe water and hygienic habits to make improvement of health of the population in the project area possible,
- increase of reliable availability of safe water by community involvement in all stages of the development and O&M of water supplies.

Components

1. Appropriate working approach

Outputs

- Analysis of data from pilot areas

Output specifications

- Report on analysis and conclusions available by the end of March, 1991

- Revision of Concept and Working Approach in Community Participation, 1988

- A manual describing the revised and extended working approach available by the end of April, 1991

2. Community training

- Training of leaders from regional to village level in mobilization skills

- Leaders participating in the mobilization of communities

- Health education to beneficiaries
 - Increased preference of safe supplies to the traditional ones
 - Hygienic handling of water at the source and in homes
3. Mobilization of communities
- Initiation of W/S development
 - Request made to DWE by community
 - Establishment of VWSC
 - Official document of establishment available
 - Establishment of village water fund
 - Bank account established and at least the minimum sum required by the rules of cost-sharing deposited
 - Decision about implementation
 - Agreement signed on implementation showing duties of the community during implementation
 - Selection of pump attendant/candidates
 - Names of candidates submitted to DWE

5.3 Sub-project 3. Cost-sharing

Immediate objective:

- development of sustainable financial management system which involve the beneficiaries in sharing the costs of the O&M of their water supply according to their capabilities and the national water policy.

Components

Outputs

Output specifications

1. Studies

- Cost-structure study
- O&M and investment costs of different W/S systems analyzed
- Willingness-to-pay and capability study
- Cost-sharing capabilities (resources) analyzed in different areas of the regions
- Economic ability and social willingness to pay for the improved W/S analyzed in different areas of the regions
- Economic, social and institutional effects of cost-sharing analyzed

- | | | |
|-------------------------|---|---|
| 2. Cost-sharing systems | <ul style="list-style-type: none"> ● Alternative cost-sharing systems ● Institutionalized fund collection and financial management systems ● Monitoring system | <ul style="list-style-type: none"> ● Alternative cost-sharing systems developed according to studies to suit the local circumstances ● National water policy recommendations followed ● Roles and responsibilities of different parties (community, MAJI, etc.) defined for each cost-sharing model ● Agreements and procedures developed, documented and in use ● Appropriate monitoring systems for O&M costs and financial management developed at community, district and regional levels ● Monitoring documented properly ● Results of cost-sharing analyzed by the end of 1992 and revisions made as appropriate |
|-------------------------|---|---|

5.4 Sub-project 4. Operation and Maintenance

Immediate objectives:

- increase of sustainability of water supplies by establishment of a reliable O&M system consisting of
 - adequate community involvement,
 - effective O&M procedures including preventive maintenance,
 - provision of skilled staff to operate and maintain the water supplies,
 - availability of services of a support system at district and regional level.

Components

Outputs

Output specifications

- | | | |
|---|--|---|
| 1. O&M of water supplies by communities | <ul style="list-style-type: none"> ● Management systems for W/S | <ul style="list-style-type: none"> ● VWSC (or corresponding organization) at each W/S aware of its O&M duties, such as appointment of trainee candidates, employment of pump attendants and operators, procurement of spares and consumables, etc. and carrying them out without delay |
|---|--|---|

- O&M by skilled staff
 - O&M manuals
 - Preventive maintenance
- Each W/S operated and maintained by persons proved skilled for the job by a performance evaluation
 - Approved manuals dealing with the O&M and repair of the pump and with the maintenance and repair of the structures available in Kiswahili at each handpump well by the time of handing-over and used continuously thereafter
 - Approved manuals dealing with the O&M and repair of the pump, with the O&M of the pipeline network and with the maintenance and repair of other structures available in Kiswahili at each community operated piped scheme by the time of handing-over and used continuously thereafter
 - Copies of approved manuals dealing with the maintenance and repair of all equipment to be maintained and repaired by the workshops and garages such as vehicles, motor driven pumps, diesel engines, office equipment, air conditioners, etc. submitted to the MAJI regional office at the time of procurement
 - Preventive maintenance programmes prepared for each type of point source supply and for each piped scheme individually, available at each W/S by the time of handing-over and followed continuously thereafter
2. O&M of water supplies by MAJI
- O&M by skilled staff
 - O&M manuals
- Each W/S operated and maintained by personnel proved skilled for their jobs by performance evaluations
 - Approved manuals dealing with the O&M and repair of electrical and mechanical equipment available in Kiswahili at each W/S by the time of handing-over and used continuously thereafter

- Approved manuals dealing with the O&M of pipeline network and its appurtenances such as water reservoirs and tanks, valves, special fittings and couplings, etc. available in Kiswahili at each W/S by the time of handing-over and used continuously thereafter
- Copies of approved manuals dealing with the maintenance and repair of all equipment to be maintained and repaired by the workshops and garages such as vehicles, motor driven pumps, diesel engines, office equipment, air conditioners, etc. submitted to the MAJI regional offices at the time of procurement
- Preventive maintenance
- Preventive maintenance programmes prepared for each W/S individually and available in Kiswahili at each W/S by the time of handing-over and followed continuously thereafter
- 3. O&M of support facilities
 - O&M by skilled staff
 - All equipment of workshops and garages operated and maintained by personnel proved skilled for their jobs by performance evaluations
 - O&M manuals
 - Approved manuals dealing with the O&M and repair of each electrical and mechanical equipment in the district and regional workshops and garages available at the taking into use of the equipment

5.5 Sub-project 5. Training and Manpower Development

Immediate objective:

- provision of a sustainable system for the continuous development of management, design, construction, operation and maintenance skills of MAJI regional and district personnel, community employed staff and personnel of cooperating agencies.

Components

Outputs

Output specifications

- | | | |
|-----------------------------|--|---|
| 1. Training delivery system | • Elaboration of training and manpower development objective | • Object defined and recorded in report on sustainable training delivery system by the end of March, 1991 |
|-----------------------------|--|---|

- Establishment of a sustainable training delivery system
 - Report describing the proposed system available by the end of March, 1991
 - Implementation of training acc. to the system started after its approval
- Cost sharing formula (Tanzania - FINNIDA)
 - Formula presented in the report on sustainable training delivery system by the end of March, 1991
 - Application started after approval
2. Training programmes, materials and evaluation system
- Revision and extension of the Comprehensive Training Programme
 - Comprehensive training programme for Phase VI available by the end of April, 1991
 - Performance-oriented training materials
 - Training materials for each training event available before the beginning of the event
 - Review and revision of the performance evaluation system
 - Written instructions on the use of the performance evaluation system available by the end of March, 1991
 - System taken to use after approval
3. Trainer training
- Training for selected members of MAJI personnel and personnel of co-operating agencies in relevant skills and training methods
 - Competent trainers available for all training events including community training
 - Supervisory co-operation with training institutes to determine contents of courses and training materials
 - Training given by others is in accordance with the training policy of the Project

4. Management training

- In-service training in the use of appr. management procedures
- In-service training in the use of MIS
- Workshops for identification and solution of actual management problems
- Courses on relevant management theories and methods
- Procedures correctly applied in planning and follow-up
- Data reports used for decision making
- Managers aware of actual problems and solving them
- Sufficient number of management staff capable of applying correct theories and methods

5. Skills training

- Pump attendant and operator training
- On-the-job training in vehicle and equipment maintenance and repair
- On-the-job training in storekeeping
- Training in project preparation and design
- Training in construction supervision
- Sufficient number of persons in possession of the necessary skills acc. to evaluation
- Sufficient number of persons in possession of the necessary skills acc. to evaluation
- Sufficient number of persons in possession of the necessary skills acc. to evaluation
- Sufficient number of persons in possession of the necessary skills acc. to evaluation

- | | | |
|---------------------|--|--|
| 6. Special training | <ul style="list-style-type: none"> ● Training of selected members of MAJI and cooperating agencies personnel by participation in special courses, conferences and seminars in Tanzania and abroad | <ul style="list-style-type: none"> ● Relevant events attended by adequate number of persons |
| | <ul style="list-style-type: none"> ● In-service training by short-term consultants and advisers in the use of specific methods | <ul style="list-style-type: none"> ● Adequate number of local MAJI personnel capable of using newly introduced methods (data collection and processing for MIS, etc.) |

5.6 Sub-project 6. Physical Improvements to Increase Water Supply

Immediate objectives:

- increase of water supply by rehabilitations of existing non-operating water supplies when
 - requested by the owner communities,
 - technically and economically feasible,
 - sustainability ensured by adequate community participation and both local and donor funds available,
- increase of water supply by construction of new water supplies when
 - the target coverage can not be achieved by rehabilitations,
 - requested by communities,
 - technically and economically feasible,
 - sustainability ensured by adequate community participation and both local and donor fund available,
- provision of basic data for planning and design of water supplies and for introduction of alternative methods by special studies.

Components

Outputs

Output specifications

- | | | |
|--------------------------|---|---|
| 1. Handpump replacements | <ul style="list-style-type: none"> ● Ensured adequacy of community involvement | <ul style="list-style-type: none"> ● Community mobilized acc. to approved working approach community participation |
|--------------------------|---|---|

- Acceptable water supply
 - Adequacy of yield and quality of water checked and found acceptable
 - VLOM pump (NIRA AF 85 or equal) operating at the well
 - Community signed handing-over agreement
-
- Functional O&M system for each well
 - Minimum two pump attendants selected by the village, trained and performing their duties
 - Rules for sharing the O&M costs established and followed
 - O&M manuals and instructions for preventive maintenance available in village and used by pump attendants
 - Spare parts available from MAJI stores or free market reasonable time and at reasonable cost
-
2. New constructions of handpump wells
- Ensured adequacy of community participation
 - Community mobilized acc. to approved working approach in community participation
-
- Acceptable water supply
 - Field investigations, design and construction acc. to standards and guidelines and approved in final inspection by representatives of the village, the district and the Project
 - Yield and quality of water checked and found acceptable
 - VLOM pump (NIRA AF 85 or equal) installed and operating at the well
 - Community signed handing-over agreement
-
- Functional O&M system for each well
 - Minimum two pump attendants selected by the village, trained and performing their duties
 - Rules for sharing the O&M costs established and followed
 - O&M manuals and instructions for preventive maintenance available in village
 - Spare parts available from MAJI stores or free market in reasonable time and at reasonable cost

- Alternative well construction methods
 - Traditional well-lining methods studied and developed as appropriate
 - Brick/stone lining methods studied and developed as appropriate
 - Combination of methods studied and developed as appropriate
3. Rehabilitations of piped water schemes
- Ensured adequacy of community participation
 - Community mobilized acc. to approved working approach in community participation
 - Acceptable water supply
 - Technical and economical feasibility ascertained by study acc. to MAJI procedures
 - Field investigations, designs, construction and installations carried out acc. to MAJI guidelines and Tanzanian standards
 - Quality of work approved in a final inspection by representatives of all parties concerned
 - Handing-over agreement signed by community in case of supplies totally or partly operated by the communities
 - Functional O&M system for each piped scheme
 - Adequate number of operators trained and performing their duties
 - Rules for sharing O&M costs established and followed
 - Assistance in major repairs, spares and consumables available from MAJI workshops and stores or from free market in reasonable time and at reasonable cost
4. Studies
- Hydrogeological study
 - Plan for revision and supplementation of "General Hydrogeology" study (Annex E of Water Master Plan) available by the end of March, 1991
 - Plan implemented and report on results available by the end of 1991
 - Geophysical investigations
 - Plan for revision and supplementation of "Geophysical Investigations" study (Annex F of Water Master Plan) available by the end of March, 1991
 - Plan implemented and report on results available by the end of 1991

- Hydrometeorological investigations
- Present status of observation system reviewed and demand for upgrading determined
- Most urgently needed measures to bring the system into working condition taken within the limits of the project budget by the end of 1994
- Feasibility studies of alternative water sources
- Plan of pilot studies of rainwater harvesting prepared and approved by the end of June, 1991
- Pilot studies implemented and report available by the end of 1992
- Feasibility study of water supply from Ruwuma river to Nakopi and Nanyumbu divisions carried out by the end of 1991

6. ACTIVITIES

Preliminary the activities required for the production of the outputs of each sub-project can be estimated to be as shown in the tentative schedule in figures 6.1 to 6.5.

Final planning of project activities is the responsibility of the implementing agencies. The Consultant shall, together with the local MAJI organizations, prepare a framework work plan for the entire project period within one month from the signing of consultancy agreement and submit it for approval. The work plan shall include a concise written description of the working methods that are planned to be used as well as a procurement programme, a manpower schedule, a cash flow estimate and a time schedule. A detailed annual work plan for the first year shall be submitted simultaneously.

A master work plan giving the guidelines for work planning is shown in Annex 3.

Fig. 6.2
TENTATIVE SCHEDULE OF ACTIVITIES. SUB-PROJECT 2. COMMUNITY INVOLVEMENT

Activities	1991	1992	1993	1994
- Revision of the Concept and Working Approach in Community Participation (1989) on the basis of data from pilots	■			
- Training of leaders and beneficiaries in mobilization skills, W/S management and health related topics	■	■	■	■
- Mobilization of communities acc. to the new working approach	■	■	■	■
- Advising beneficiaries about participation in all stages of the development of their W/S	■	■	■	■
- Establishing of cost-sharing rules and fund-collection rules for each W/S acc. to developed systems	■	■	■	■
- Follow-up of the O&M activities of community operated W/S	■	■	■	■
- Training of sanitation supervisors	■	■	■	■
- Provision of supervision of construction and supply of locally non-available materials for family latrines acc. to requests	■	■	■	■

Fig. 6.3
TENTATIVE SCHEDULE OF ACTIVITIES. SUB-PROJECT 3. COST-SHARING

Activities	1991	1992	1993	1994
- Cost structure study	■			
- Willingness/ability-to-pay study	■			
- Development of alternative cost-sharing systems	■			
- Development of fund collection and financial management systems	■			
- Monitoring, analysis and revision of cost sharing systems	■	■	■	■

Fig. 6.4
TENTATIVE SCHEDULE OF ACTIVITIES. SUB-PROJECT 4. OPERATION AND MAINTENANCE

Activities	1991	1992	1993	1994
- Cooperation with WSCs and the training section of the Project to provide skilled attendants/operators for each W/S				
- Preparation of O&M manuals for each W/S				
- Preparation of preventive maintenance programmes for each W/S				
- Provision of on-the-job trainer services in O&M to the training section				
- Follow-up of O&M activities				

Fig. 6.5
TENTATIVE SCHEDULE OF ACTIVITIES. SUB-PROJECT 5. TRAINING AND MANPOWER DEVELOPMENT

Activities	1991	1992	1993	1994
- Planning of sustainable training delivery system				
- Preparation of Comprehensive Training Programme for Phase VI				
- Revision of performance evaluation system				
- Preparation of training materials				
- Training of trainers acc. to CTP				
- In-service training of managers				
- Workshops and courses on relevant management methods acc. to the Comprehensive Training Programme				
- Training of pump attendants and scheme operators acc. to CTP				
- On-the-job training in O&M skills				
- In-service training in project preparation and design of W/S systems				
- Arranging participation of selected individuals in relevant courses, conferences, etc. in Tanzania and abroad				
- In-service training in the use of specific methods				

Fig. 6.6
TENTATIVE SCHEDULE OF ACTIVITIES. SUB-PROJECT 6. PHYSICAL IMPROVEMENTS
TO IMPROVE WATER SUPPLY

Activities	1991	1992	1993	1994
<ul style="list-style-type: none"> - Replacement of old handpumps with VLOM pumps; Required activities for each replacement; <ul style="list-style-type: none"> • checking that the mobilization of community done • checking of yield and water quality • installation of VLOM pump • checking that O&M system established • handing-over 				
<ul style="list-style-type: none"> - Construction of new handpump wells; Required activities for each well: <ul style="list-style-type: none"> • checking that the mobilization of community done • checking that the mobilization of community done • field investigations • construction of well, installation of VLOM pump • checking that O&M system established • handing-over 				
<ul style="list-style-type: none"> - Rehabilitation of piped schemes; Required activities for each scheme: <ul style="list-style-type: none"> • feasibility study acc. to approved procedure • revision of prioritization of schemes • checking that the mobilization of community done • construction, equipment installation • checking that O&M system established • handing-over 				
<ul style="list-style-type: none"> - Revision of "Hydrogeological Study" 				
<ul style="list-style-type: none"> - Revision of "Geophysical Investigations" 				
<ul style="list-style-type: none"> - Review and upgrading of hydro-meteorological observation system 				
<ul style="list-style-type: none"> - Pilot study of rainwater harvesting 				
<ul style="list-style-type: none"> - Feasibility study of W/S from Ruwama River 				

7. INPUTS

7.1 Inputs of the Government of Tanzania

The inputs required from the relevant ministries and regional and district authorities are as follows:

- Adequate personnel shall be employed in the local MAJI offices to be responsible for the implementation of the Project and to work together with the advisers provided by FINNIDA. Since the project activities will reduce as compared with previous phases, the personnel requirement will probably be slightly less in Phase V. This requirement shall be estimated for each year when annual work plans will be prepared. It should be pointed out, however, that contrary to the general decreasing tendency of activities, they will be increasing in the field of community participation promotion. For this reason and for making transfer of all responsibilities for community involvement to MAJI possible, two Community Participation Officers, one for each region, shall be seconded from MAENDELEO ~~from July, 1992 to the end of the project period~~ to work together with the Community Participation Advisers of the Project. Likewise, two Training Coordinators shall be appointed to work together with the Training Adviser. This additional personnel should be appointed straight from the beginning of the Phase and their work should continue even after the Project is phased out.

It should be observed that the costs of this personnel are not included in the budget presented in Table 8.1.

- The Government of Tanzania shall provide all funds, manpower, materials, transport, etc. necessary for the implementation and O&M of water supplies except for the limited material support from FINNIDA. An estimation of the costs of this input is shown on budget lines 1, 2 and 3 in Table 8.1. A part of these costs can be expected to be recovered from the beneficiaries according to the cost-sharing principles.
- A proportion of the material support as well as training and community participation promotion costs shall be reimbursed as shown in Table 8.1.
- Training and other allowances and miscellaneous office costs shall be paid by the Government of Tanzania as shown in Table 8.1.

7.2 Inputs of the Government of Finland

The Government of Finland shall provide the following inputs:

- Advisory services as shown in Fig. 7.1.
- Material support to MAJI within the limits of the budget (Table 8.2.) Starting in 1992 MAJI shall reimburse an increasing proportion of the costs of this support as shown in the budget (Tables 8.1 and 8.2).

- Costs of training and community participation promotion activities within the limits of the project budget. Starting in 1993 MAJI shall reimburse an increasing proportion of these costs as shown in Tables 8.1 and 8.2.
- New vehicles within the limits of the project budget and as found necessary in a careful inventory of the condition of the present fleet. Funds from sales of used vehicles over 3 to 4 years old shall be used for the purchase of new ones and the budget figure decreased accordingly.
- Running costs of the project, office and other costs as shown in the budget (Table 8.2.).

All equipment and vehicles provided by the Project will remain the property of MAJI when the Project has phased out. The Project shall work out together with MAJI HQ a separate plan for division of this property between regions, district and the Makonde National Scheme.

7.3 Inputs of the Beneficiary Communities

The communities shall contribute to the development and O&M costs of their water supplies according to the cost-sharing principles of the Water Policy.

Fig. 7.1
SCHEDULE OF TECHNICAL ASSISTANCE

	1991	1992	1993	1994
1. MANAGEMENT ADVISER	[Solid bar]			
2. COMMUNITY PARTICIPATION ADVISER, MTWARA	[Solid bar]			
3. COMMUNITY PARTICIPATION ADVISER, LINDI	[Solid bar]			
4. OPERATION AND MAINTENANCE ADVISER	[Solid bar]			
5. TRAINING ADVISER	[Solid bar]			
6. WATER SUPPLY ADVISER	[Solid bar]			
7. CONSTRUCTION SUPERVISOR	[Dashed bar]			
Short-term consultancies needed in	[Dashed bar]			

~~— Electrical engineering~~
~~— Development of cost sharing systems~~
~~— Institutional and administrative arrangements of Makonde Plateau W/S~~
~~— Unspecified~~
~~TOTAL 15 MANMONTHS)~~

A manning schedule showing the working periods of the resident Project staff as well as the tentative working periods of the short term specialists is given in annex 5. This schedule shall be checked and revised in the beginning of 1993, if found necessary.

8. PROJECT BUDGET

A tentative project budget is presented in Tables 8.1 and 8.2. After preparing the work plan for the whole project period in the beginning of Phase VI, the project personnel shall revise the budget and divide it in two parts so that there will be a separate budget for both regions.

Simultaneously the FINNIDA and MAJI codings shall be taken into account.

Table 8.1. Contribution of the Government of Tanzania, TAS million
(excluding local MAJI personnel costs)

	1991	1992	1993	1994
1. Local component of handpump replacements	1.20	1.20	1.20	1.20
2. Local component of new handpump wells	3.20	3.20	3.20	3.20
3. Local component of piped scheme rehabilitations and improvements of W/S of rural centers	35.00	30.00	28.00	25.00
4. Reimbursement of material support, training and community participation costs	0.00	11.52	24.96	34.08
5. Training				
- allowances during training courses	1.00	1.00	1.00	1.00
- participation in seminars etc.	1.20	1.20	1.20	1.20
6. Other costs				
- office costs	0.30	0.30	0.30	0.30
- telecommunication	2.20	2.20	2.20	2.20
- electricity	0.40	0.40	0.40	0.40
- fuel	7.00	7.00	7.00	7.00
- allowances for the staff of other ministries	0.30	0.30	0.30	0.30
- other local costs	0.50	0.50	0.50	0.50
7. Contingencies	2.00	2.00	2.00	2.00
Price escalation 5%/year	2.72	6.08	10.84	15.68
Total	57.02	66.90	83.10	94.06

Table 8.2. Contribution of the Government of Finland,
FIM million

1. Technical assistance (price escalation 5% per year included)	1991	1992	1993	1994
- Resident	2.35	1.20	0.85	0.95
- Home office	0.30	0.30	0.20	0.20
- Short-term consultancies	0.42	0.24	0.12	0.12
- Travels	0.25	0.25	0.08	0.08
- Freights	0.15	0.10	0.05	0.05
	3.47	2.09	1.30	1.40
2. Material support				
- Handpumps for replacement	0.00*	0.00*	0.30	0.30
- Handpumps for new wells	0.00*	0.00*	0.20	0.20
- Equipment and materials for piped scheme rehabilitations and improvements of W/S in rural centers	1.00	1.00	0.80	0.60
- Spares for piped schemes	0.10	0.10	0.10	0.10
- Equipment for Kitangari	0.10	0.10	0.05	0.05
- Spares for Kitangari	0.10	0.10	0.05	0.05
- Vehicles	0.50	0.50	0.40	0.40
- Spares for vehicles and machinery	0.25	0.20	0.20	0.15
- Tools	0.05	0.05	0.00	0.00
- Kitangari staff houses	0.80	0.00	0.00	0.00
- Freights	0.40	0.30	0.20	0.20
- Reimbursements by MAJI	3.30	2.35	2.30	2.05
		10%	20%	30%
		-0.24	-0.46	-0.61
	3.30	2.11	1.84	1.44

Note:

* Handpump will be taken from stock
purchased already in Phase V

3. Training and community participation

- Materials	0.05	0.05	0.05	0.05
- Training courses, tuition, travels	0.15	0.15	0.15	0.10
- Community participation	<u>0.10</u>	<u>0.10</u>	<u>0.10</u>	<u>0.10</u>
	0.30	0.30	0.30	0.25
- Reimbursements by MAJI			20%	40%
			-0.6	-0.10
	0.30	0.30	0.24	0.15

4. Other costs

- Rent	0.10	0.10	0.10	0.10
- Office materials and equipment	0.10	0.05	0.05	0.05
- Materials & equipment for studies	0.05	0.05	0.00	0.00
- Miscellaneous	0.05	0.05	0.05	0.05
- Freights	0.02	0.02	0.01	0.01
	0.32	0.27	0.21	0.21

5. Reporting, monitoring, evaluation

	0.05	0.20	0.05	0.25
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6. Contingencies

	0.10	0.05	0.05	0.03
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7. Price escalation

(lines 2 to 6) 5%	0.20	0.29	0.36	0.42
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Total	7.74	5.31	4.05	3.90
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Grand Total				21.00
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9. **ASSUMPTIONS AND EXTERNAL FACTORS**

It has become obvious during the previous phases of the Project that sustainability of water supplies can not be achieved without adequate community involvement. Previous situation in which the policy of free water has been valid and pumps and other equipment repaired and replaced by the Project, has in many cases led to attitudes of indifference and even irresponsibility towards the water supplies. Although much foundation work has been done especially in Phase V, it may take time to change these attitudes to feelings of ownership and responsibility. The success of the Project in community involvement will depend on the availability of competent community participation advisers and officers. Delays in their recruitment can not be afforded.

The non-availability of funds to pay for the local component as mutually agreed by the two governments has been a major problem during earlier phases. It is evident that the targets of Phase VI can only be reached under conditions that the planned local financing by the government has materialized as budgeted in the Project Document. In Phase VI the progress of the Project will be strongly dependent on the timely payment of the local component according to the project budget. The timely payment of the local component according to the project budget strongly effects on the progress of the Project. To facilitate the allocation of necessary funds by the Central Government and the districts the Project shall prepare well-founded budget proposals in good time and submit them through appropriate channels to relevant authorities.

Establishing the sustainability of the existing and new water supply services and maintaining it after 1994, when the Project has ceased, calls for high reliability of the public funding. This is an absolute precondition for a successful implementation of the cost-sharing system as well.

Lack of manpower as such is not foreseen to present problems in Phase VI even though other fairly large projects will be implemented in the area simultaneously. If, however, considerable numbers of skilled personnel trained to work in the water supply field will be transferred to other projects or elsewhere in the country, the achievement of the objectives set for Phase VI will be jeopardized. Coordination between all projects in the area regarding use of skilled manpower and finding means of motivating the staff to stay in their jobs will be necessary.

10. PROJECT ORGANIZATION

There shall be no separate project organization on the regional and district levels. The tasks required for the production of the project outputs shall be assigned to the different sections of the local MAJI organizations. The implementation of the Project will, however, call for certain activities related to strongly emphasized community involvement, cost-sharing systems, data systems and training which have not traditionally played a very important role in the work of the local MAJI organizations. Therefore, the organizations of regions and districts shall be reviewed and revised by the REWs, DWEs and advisers to make personnel available for the new tasks and to improve the efficiency in general.

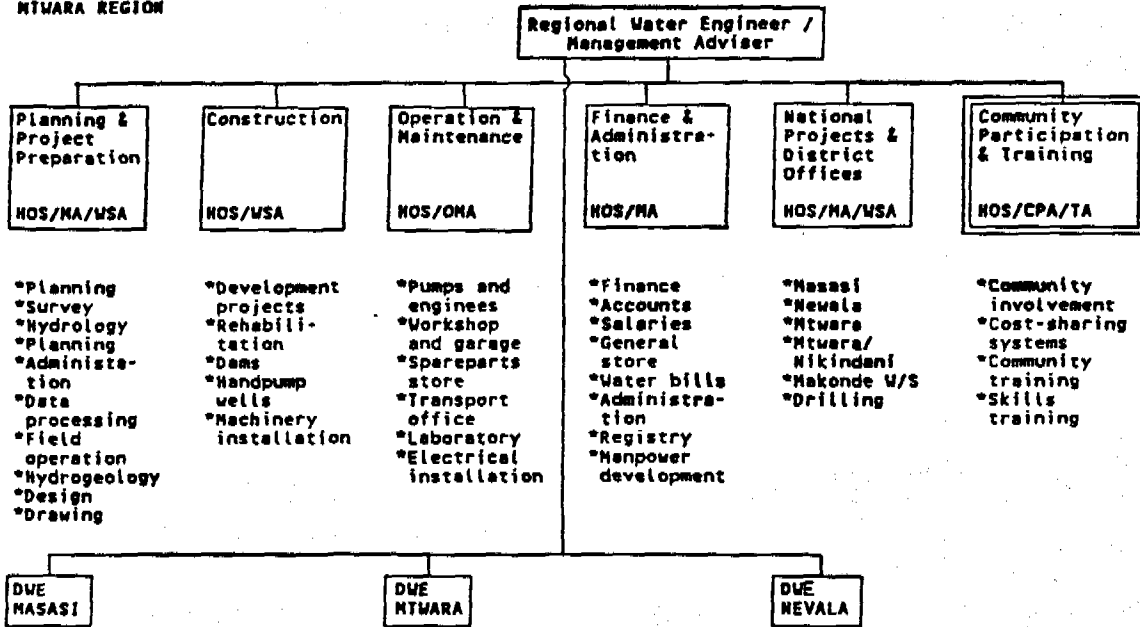
The advisers shall not form a separate team but shall be fully integrated into the MAJI organizations. Their day-to-day duties as well as the duties of Tanzanian personnel will be determined by jointly prepared work plans (annual and monthly) which are subject to the approval of the Management Committee.

Schematic organizations of the two regions and the positions of the advisers are presented in Fig. 10.1. Job descriptions of the advisers are presented in Annex 1.

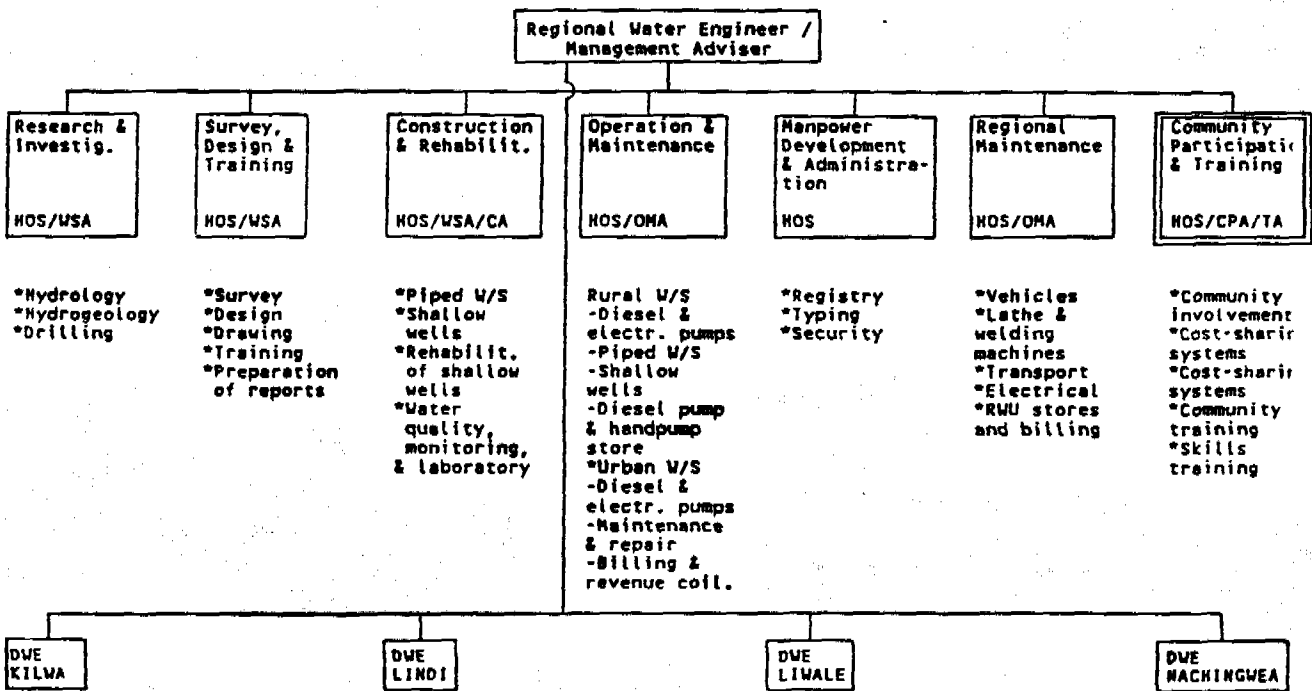
A Management Committee shall be established to oversee the implementation of the Project on the practical level. The Management Committee shall be responsible for ensuring that the project document and other agreements made by the parties concerned are followed in the day-to-day work of the Project. Problems and disputes that can not be solved within the Project shall be referred to the Management Committee.

Fig. 10.1 ORGANIZATION CHARTS OF NAJI REGION

NTWARA REGION



LINDI REGION



LEGEND:



existing section



proposed section

NOS = Head of Section
 WSA = Water Supply Adviser
 TA = Training Adviser
 MA = Management Adviser
 OMA = O&M Adviser
 CPA = Community Participation

The overseeing duty of the Management Board will to a great extent be carried out by careful study before approval of the plans, programmes and procedures proposed by the Project. These shall include but not be limited to the following:

Plans and programmes: *annual work plans and budgets
*communication plan *general transportation plan
*comprehensive training programme *plans for special studies and pilots.

Procedures: *formats of annual budget follow-up reports
*formats of monthly progress and follow-up briefs *working approach in community participation *formats of agreements with communities regarding implementation and handing-over of W/S *alternative cost-sharing, fund-collection and financial management systems *O&M manuals and maintenance programmes (types) *training delivery system *performance evaluation system (training).

By inspection of study reports, designs and other documents and by field visits the Management Committee shall ascertain that Tanzanian standards and guidelines are followed.

It shall be the responsibility of the RWEs and the Management Adviser to present the plans, procedures, and reports to be approved and the problems and disputes to be discussed at Management Committee meetings to the officers in charge of the Project both at MAJI headquarters and in FINNIDA for studying so that they can present them to the Committee and give recommendations on solutions. The Management Committee shall have the right to delegate its authority in matters of less importance directly to the two officers in charge of the Project.

The members of the Management Committee shall include:

- officer in charge of the Project, MAJI headquarters,
- officer in charge of the Project, Finnida,
- Regional Planning Officers,
- Regional Health Officers,
- District Executive Directors.

The RWEs and the Management Advisor shall act as referendaries at the meetings, and any member of the project personnel can be invited by the Committee to give expert opinions when necessary.

The Management Committee shall meet at least quarterly or when required by special reasons.

The Steering Committee active already in Phase V shall continue its work. This Committee can recommend actions to be taken and changes in procedures and decisions. The minutes of the meetings of the Management Committee shall be sent to the members of the Steering Committee and the Steering committee has the right to discuss the decisions of the Management Committee on matters influencing the economic, social or environmental situation of the project area. It shall also be the duty of the Steering Committee to see that matters which require the approval of other regional or national authorities are referred to those.

The members of the Steering Committee in Phase VI shall include:

- representative of MAJI headquarters,
- representative of FINNIDA,
- Regional Development Directors,
- representative of MAENDELEO,
- representative of AFYA,
- representative of RIPS.

The Steering Committee shall meet at least twice a year.

In order to guarantee a sufficient flow of information, the representative of the Water Project shall be included in the Steering Committee of RIPS as well.

11. REPORTING, MONITORING AND EVALUATION

11.1 Briefs and Reports

The progress reports of the Project shall consist of monthly briefs and semi-annual reports. The format of the monthly briefs shall be planned by the Project and approved by the Advisory Committee to ensure that all parties concerned will receive the information they need in a convenient form which is compatible with their other data systems. It is essential that the briefs are quick and easy to prepare and to draw information from. They shall consist of target curves of outputs and curves showing the monthly and cumulative achievements. The budget follow-up briefs shall be presented separately for each main vote and the break-down into votes shall be such that it will meet the requirements of both MAJI and FINNIDA. The format of the semi-annual reports shall follow the lines adopted for the quarterly and annual reports in the previous phases.

The briefs and reports shall be based on monitoring data collected and processed according to the Management Information System developed and approved in Phase V.

11.2 Reviews and Evaluations

The Project will be subject to reviews and evaluations at intervals defined and in a manner decided by MAJI and FINNIDA.

11.3 Professional Monitoring Team

The Professional Monitoring Team will monitor the progress of the Project proposing actions, necessary to guide the

development to the right direction. The team will be combined of the consultants' specialists of the following fields:

- community participation
- administration and management
- cost recovery
- training and human resources development
- water supply

The FINNIDA representative shall chair the meetings held with regular intervals (in Finland). The Project Coordinator is the secretary of the team.

The Team shall be provided with all relevant plans and reports prepared by the Project.

ANNEXES

JOB DESCRIPTIONS OF PROJECT ADVISERS

The Consultant shall recruit seven competent advisers for the Project. There shall be one Community Participation Adviser for each of the two regions. All the other advisers shall divide their working time between regions and the districts as required by the on-going activities at any time. The duties of the advisers shall include but not be limited to those presented below.

1. **Management Adviser (E)**
(posted in Mtwara)

Duties

To plan together with the relevant MAJI personnel changes to the existing regional and district MAJI organizations in Mtwara and Lindi Regions to take into account all activities required for the implementation of the Project and to ensure that adequate manpower will be allocated for these activities.

To advise the relevant MAJI personnel in the preparation of work plans, budgets, programmes, etc. according to the improved procedures.

To review the management procedures developed in previous phases and propose improvement to them when necessary.

To oversee the collection and processing of progress follow-up, cost-control and other data according to the MIS and advise relevant MAJI personnel in data handling and in the use of processed data in decision making.

To be responsible together with the RWEs for the timely submittal to the Management Committee for approval of all plans, programmes, proposals of procedures and systems, etc. which require such approval.

To cooperate with the short-term consultant and the Community Participation Advisers in the development of the cost-sharing systems.

To cooperate with the short-term consultant and relevant MAJI personnel and representatives of other relevant authorities in the studies of the administrative and system and financing of the Makonde Plateau W/S and in the preparation of a proposal for a new solution.

To cooperate with the Training Adviser in the preparation of the Comprehensive Training Programme for Phase VI.

To give courses and in-service training in management related topics according to the CTP.

To prepare terms of reference for short-term consultants in cooperation with FINNIDA and relevant MAJI personnel.

To act as administrative team leader of the expatriate advisers.

Duration of Assignment

January, 1991 - December, 1994

Qualifications

Civil engineer (M.Sc.) with at least five years of experience in one or more of the following fields:

- management of water supply systems in the capacity of Plant (System) Manager,
- construction of W/S in the capacity of Project Manager, Construction Manager or Project Engineer of an international construction contract,
- supervision of W/S implementation in the capacity of Resident Engineer (Supervisor) of an international contract,
- other experience providing theoretical knowledge of and practical skills to apply up-to-date management methods.

2.

Community Participation Advisers (T)

(Posted in Mtwara and Lindi)

Duties

To review and revise (both advisers jointly) the Working Approach in Community Participation on the basis of results obtained from the pilot areas in Phase 5, to discuss it with the Management Adviser and relevant MAJI personnel submittal to the Management Committee for approval.

To work together with the expert in cost-sharing systems (short-term consultant) and to cooperate with the Management Adviser, relevant MAJI personnel and representatives of other relevant authorities in carrying out cost-structure and willingness/ ability-to-pay studies and in development of cost-sharing systems.

To continue organizing mobilization training for leaders at different levels in cooperation with MAENDELEO and AFYA.

To advise communities in the establishment of VWSCs and water funds and in the selection of community employed staff for training.

To advise communities in their participation in all stages of the development of their W/S.

To oversee that the agreements are made between the communities and the Project and properly documented according to the approved Working Approach in Community Participation.

To arrange community training on village level according to the Working Approach in Community Participation.

To cooperate with AFYA in agreement of health education for communities provided with improved water supply be the project.

To coordinate with MAENDELEO, AFYA and other relevant organizations in matters concerning community participation.

To advise the relevant MAJI personnel in the collection of follow-up data on funding and O&M of community operated W/S, and on water usage, service coverage, etc. according to the approved MIS.

Duration of Assignment

January, 1991 - December, 1994

Qualifications

Degree in sociology or other relevant field and several years of experience in community participation work.

3. **Operation and Maintenance Adviser (E)** (posted in Hindi)

Duties

To advise the relevant MAJI personnel in the preparation of O&M manuals and preventive maintenance programmes for each W/S.

To advise the relevant MAJI personnel in the quality control and supervision of installations of mechanical and electrical equipment for W/S.

To advise workshop and garage personnel in the two regions and their districts in the application of management procedures, such as work programming, estimation of materials and spareparts demands, etc. in the day-to-day activities of the workshops and garages.

To advise the relevant MAJI personnel in the collection of follow-up data on the O&M activities of W/S according to the approved MIS and to propose improvements to the system when necessary.

To cooperate with the Training Adviser in the preparation of the Comprehensive Training Programme for Phase 4.

To give courses and on-the-job training to pump attendants/operators, workshop and garage personnel and others responsible for the O&M of mechanical and electrical equipment in the actual O&M and prepare work according to the approved CTP.

Duration of Assignment

January, 1991 - June, 1992 and a three month period both in 1993 and 1994 when required by the on-going activities.

Qualifications

Mechanical engineer (B.Sc.) with at least five years of experience in installation, operation and maintenance of W/S equipment and with knowledge of the normal O&M of the electrical equipment used in the Project. (For complicated electrical installations and establishment of O&M systems a short-term consultant in electrical engineering shall be employed).

4.

Training Adviser (E)

(posted in Mtwara)

Duties

To prepare with the relevant MAJI personnel a proposal for a sustainable delivery system including training facilities and training aids.

To prepare in cooperation with the relevant MAJI personnel and other advisers a Comprehensive Training Programme for Phase 4.

To advise the Training Coordinators of both regions in arrangement of individual training events according to the CTP.

To establish together with the relevant MAJI personnel cooperation with existing Tanzanian training institutes to obtain their assistance in carrying out the CTP.

To supervise the preparation of performance-oriented training materials by training institutes and individual trainers.

To prepare with the relevant MAJI personnel and other advisers a performance-oriented evaluation system of the results of training.

To instruct the MAJI personnel and advisers giving training to other in the use of the appropriate training methods.

To assist the relevant MAJI personnel in evaluating the results of training using the performance-oriented evaluation system.

To advise the relevant MAJI personnel in the collection and use of follow-up data on training.

Duration of Assignment

January - December, 1991

Qualifications

Degree (M.A. or B.M.) or other relevant field related to human resources development and good experience in arrangement of skills training for adults.

5. **Water Supply Adviser (E)**

(posted in Lindi)

Duties

To review and revise, if necessary, the field investigation and design methods used by the Project.

To get familiar with relevant Tanzanian standards, codes of practice and guidelines and to ensure that they are followed by the Project or to propose to relevant authorities exemptions from the standards, etc. when necessary.

To advise relevant MAJI personnel in project preparation including technical and economical feasibility studies and in design of W/S.

To advise relevant MAJI personnel in the carrying out of special studies, such as hydrometeorological, hydrogeological and geophysical studies and studies of alternative water sources and construction methods, and in analyzing and application of their results.

To advise relevant regional and district MAJI personnel in supervision of the implementation of W/S.

To advise relevant MAJI staff in water quality control and in solving problems related to water quality.

To cooperate with the Training Adviser in the preparation of the Comprehensive Training Programme for Phase 4.

To give training according to the CTP.

Duration and Assignment

January, 1991 - June, 1992

Qualifications

Water supply engineer (M.Sc. or B.Sc.) with minimum of five years of experience in the design of W/S systems, some experience in the supervision of W/S implementation and good familiarity with international project preparation and design methods, standards, standard specifications and codes of practice in the W/S field.

6. **Construction Adviser (E)** (posted in Mtwara and Kitangari)

Duties

To supervise the construction of Kitangari staff houses and the rehabilitation of Shangani houses.

To advise the Construction Supervisors of the MAJI regions in the construction and in the supervision of the construction of the W/S structures.

To review (if existing) and revise or prepare standard specifications for W/S structures commonly used by the Project.

The prepare written instructions for construction supervision.

To cooperate with the Training Adviser in the preparation of the Comprehensive Training programme for phase 6.

To give training according to the CTP.

Duration of Assignment

January - December, 1991, half-time, shared with RIPS.

Qualifications

Construction engineer (B.Sc.) or experienced technician.

MTWARA-LINDI WATER SUPPLY PROJECT**STUDY ON THE INSTITUTIONAL AND FINANCING AGREEMENTS OF
MAKONDE PLATEAU WATER SUPPLY****Outline of the Terms of Reference**Background

Makonde Plateau Water Supply is a national scheme which is managed, operated and financed by MAJI Headquarters. At the moment it comprises six water schemes serving about 300.000 people. Because of the nature of the area, where people live on a high plateau and the water sources are only found in lower areas, all schemes require extensive pumping and are therefore complicated and expensive to operate and maintain.

The first water supply scheme in Makonde Plateau (Mkunya-Makote W/S) was started in 1957 as a cooperative requiring buying of shares and payment of water charges by the consumer. In 1964 all water schemes were handed over to MAJI and collection of water charges was stopped following the policy of free water. Recently, the Government has faced increased difficulties in financing water supply and steps has been taken towards beneficiaries involvement in financing their water supply, at least the cost of operation and maintenance.

The question of cost recovery and water charges is particularly important in Makonde Plateau where the annual operation and maintenance are around TAS 50 million.

In introducing cost recovery in the Makonde Plateau several issues have been raised:

- level of cost recovery;
- type of tariff;
- type of water charge collection.

In connection with the cost recovery issue, opinions have been expressed that the organization and management of the water supply should also been reviewed.

Purpose of the Study

The purpose of the study is to review the management arrangements of the Makonde Plateau Water Supply and the methods and levels of possible cost recovery. The study should be carried out in two phases: the first phase should be a broad review of the administrative and financial issued

of Makonde W/S with proposals of the principles for arranging its future management and financing. The second phase should be carried out only after a decision has been made on the basis of the proposal made by the first phase of the study. The second study should come up with detailed organizational agreement, structures and responsibilities. It should also propose the system of cost recovery with a detailed plan for its application.

Contents of the Phase 1. of the Study

The Phase 1. of the Study should cover following aspects:

- Assessment of the organizations, administration and managerial system of Makonde W/S;
- Review of the present operation and maintenance costs of Makonde W/S;
- Estimate the future financing requirements;
- Define the approximate level of the cost of water separated in operation, maintenance and capital costs and present different scenarios for the cost recovery including the requirements for outside financing in each option;
- Study the different possibilities to organize Makonde W/S taking into consideration the prevailing situation and the present legislation and regulations. One specific alternative should be a cooperative;
- Formulate and compare different alternatives to manage and finance the Makonde Plateau Water Supply. Propose the alternative to be adopted.

Contents of the Phase 2. of the Study

After the proposals made by the Phase 1. of the study have been reviewed by the authorities and accepted for further consideration the Phase 2. of the study can be carried out. The detailed contents of Phase 2. will be defined after Phase 1. Phase 2. is envisaged to contain following elements:

- Definition of the institutional and administrative arrangements of the Makonde W/S;
- Definition of the organizational structure and manning schedule;
- Definition of the financing arrangements- short term and long term- of Makonde W/S;
- Proposal for cost recovery structure including tariff structure and collection system;
- Proposal for the schedule of reorganization and definition of further steps to be taken for its implementation.

Arrangement

The study is proposed to be carried out by short term consultants and financed as a part of the Mtwara-Lindi Water Supply Project. It is envisaged that the consultant team will comprise one local and one international expert, one specialized in institutional, administrative and manpower aspects and one in financial, cost recovery and tariff aspects. The project personnel can assist the consultants in certain areas of expertise. The consultants will be supervised by relevant MAJI personnel and the Management Adviser of the Project.

Timing

The study should be carried out as soon as possible, preferably already in Phase 5. of the Project. The duration of Phase 1. is about 3 weeks (6 manweeks), out of it 2 weeks in the field. The duration of the Phase 2. is estimated to be about 4 weeks.

MASTER WORK PLAN FOR VI PHASE

This Master Work Plan has been worked out to guide the further, detailed, planning of the activities which takes place in the beginning of Phase VI, when annual plans will be prepared according to the standard planning procedures of the regional and district organizations of MAJI.

In this plan the key operations have been high- lighted while the continuous activities, more of routine character, have been concluded under the title: "Detailed work plans for the routine activities" of each sub- project.

The plan emphasizes the preparation of the general outlines for each sub- project before initiating any activities within the sub- projects. This preparatory phase is incorporated in the Project Management and Institution Building component in the plan.

The plan, when implemented, is to produce the targeted outputs of the Project, i.e. a coverage of 60 % of the population with a sustaining supply up to the valid standards. Phase VI will form a first stage of a long term programme to cover all the population of Mtwara and Lindi regions. A prioritization of villages to be included in the first stage is required. Based on this the programming of the implementation in each district, has to be carried out.

There are two main streams in the Phase strongly emphasized in this Master Work Plan: To organize a cost sharing system and to prepare involved parties to manage with their responsibilities. Compared to these all others are of second priority. This must reflect in the annual work plans to be made during the Phase.

MASTER WORK PLAN FOR PHASE VI		YEARS OF PHASE VI			
PROJECT COMPONENTS	I	II	III	IV	
1. PROJECT MANAGEMENT AND INSTITUTION BUILDING					
Secondments of Community Participation Officers and the Training Coordinator; organizational preparations	****				
Documentation and development of management procedures	***** *	*	*	*	*
Incorporation of Project activities to MAJI planning, review of planning and reporting practices	***				
Introduction of the MIS-system; training on management level	*****				
Outlines for cost-sharing based on the Water Policy	**				
Review of manuals produced and working out guidelines for further preparation and documentation	*****				
Working out priorities for training activities	****				
Preparation of regional & district offices of MAJI for new duties originating from cost-sharing	*****				
Guidelines for working approach for community participation	***				
Definition of priorities to be used in case of failures in local funding	**				
Schedule for assignment of short term consultants	**				
Detailed work plans for the routine activities of the sub-project	***	***	***	***	***
Implementation of the routine work plans	*****	*****	*****	*****	*****

MASTER WORK PLAN FOR PHASE VI		YEARS OF PHASE VI			
PROJECT COMPONENTS	I	II	III	IV	
2. COMMUNITY INVOLVEMENT					
Revision of the working approach to fit with the new cost-sharing system	***				
Planning the training of within the concept of C P	***				
Informing villages of the new Water Policy; preparing villages to the new procedures	*****	*****			
Negotiations with each village on practical organization of the water supply		*****	*****	*****	*****
Coordinating the implementation of the negotiated improvements in the village		*****	*****	*****	*****
Training for MIS data collection on village level		*****	*	*	* * *
Detailed work plans for the routine activities of the sub-project	***	***	***	***	***
Implementation of the routine work plans	*****	*****	*****	*****	*****

MASTER WORK PLAN FOR PHASE VI		YEARS OF PHASE VI			
PROJECT COMPONENTS	I	II	III	IV	
3. COST- SHARING					
Preparation of the system according to the given outlines	*****				
Testing the system in selected villages with strong response		*****			
Improving MAJI organization to cope with the new tasks		*****			
Systematic introduction of the system		*****	*****	*****	*****
Detailed work plans for the routine activities of the sub-project	***	***	***	***	***
Implementation of the routine work plans	*****	*****	*****	*****	*****

MASTER WORK PLAN FOR PHASE VI		YEARS OF PHASE VI			
PROJECT COMPONENTS	I	II	III	IV	
4. OPERATION AND MAINTENANCE					
Review of O&M management systems emphasizing the preventive maintenance	*****				
Revision and preparation of O&M- manuals	***** * * *	* * * * * * *	* * * * * * *	* * * * * * *	* * * * * * *
Preparation of guidelines for training within the sub- project	***				
Estimate O&M costs of individual schemes and work out proposals for cost- sharing	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
Negotiation with communities on cost- sharing		*****	*****	*****	*****
Training for MIS data collection on W/S scheme level	*****	* * * * *	* * * * *	* * * * *	* * * * *
Detailed work plans for the routine activities of the sub- project	***	***	***	***	***
Implementation of the routine work plans	*****	*****	*****	*****	*****

MASTER WORK PLAN FOR PHASE VI		YEARS OF PHASE VI			
PROJECT COMPONENTS	I	II	III	IV	
5. TRAINING AND MANPOWER DEVELOPMENT					
Planning the training delivery system based on continuous assessment of training need through performance evaluation	*****	* * *	* * *	* * *	* * *
Revision of the comprehensive training programme to match with the targets of Project Document	*****				
Providing organized training within the training delivery system		*****	*****	*****	*****
Detailed work plans for the routine activities of the sub- project	***	***	***	***	***
Implementation of the routine work plans	*****	*****	*****	*****	*****

MASTER WORK PLAN FOR PHASE VI		YEARS OF PHASE VI			
PROJECT COMPONENTS	I	II	III	IV	
6. PHYSICAL IMPROVEMENTS TO INCREASE WATER SUPPLY					
Carry out feasibility studies on new and rehabilitated schemes	* * *	* * *	* * *	* * *	
Calculate costs of projects and work out proposals for cost-sharing	* * *	* * *	* * *	* * *	
Negotiation with communities on cost-sharing	*****				
Carry out studies on hydrogeology, geophysical investigations and hydro-meteorology	*****	* *	* *	* *	
Training for MIS data collection on W/S scheme level	*****	* * *	* * *	* * *	
Detailed work plans for the routine activities of the sub-project	***	***	***	***	***
Implementation of the routine work plans	*****				

STUDIES, REPORTS AND MANUALS**Management of Communication and Transportation Systems**

A inventory on the existing communications and transport available in the project area will be carried out. The feasibility of the organizing the basic service by combinations of MAJI owned and external transportation fleet, routing, shipping etc. will be assessed. The Transportation Plan including a proposal to improve the transport situation will be prepared including the control and monitoring systems.

The Management Adviser and Operation and Maintenance Adviser will carry out the study.

Report on Valid Standards and Technical Specifications

Preparation of a report on valid standards and technical specifications followed in Tanzania. Report ready till July 1991.

The Water Supply Adviser, together with the Design Engineers will be in charge of this task.

Administration Study on Makonde Plateau

A study of the institutional and administrative arrangements of Makonde Plateau Water Supply shall be prepared on short term consultancy basis using local, Tanzanian experts as far as possible.

Terms of Reference are given in Annex 2 of the Draft Project Document. The short term consultant(s) is responsible for preparation of the reports.

Revision of Working Approach for Community Participation

Based on the analyzed data from the pilot areas a report and a manual on the revised working approach will be prepared.

The community Participation Advisers are responsible to carry out the works.

Cost- Sharing System

Cost- sharing between MAJI and the communities will be introduced. The system to share costs caused by operation and maintenance of water supply systems will be worked out taking into the consideration the actual costs of operation and maintenance, willingness and ability to pay as well as other relevant factors. A short term Tanzanian consultant will be appointed to carry out the planning of the system.

Performance Evaluation System

Forms a part of the Training Delivery System and will worked out in that connection.

Review of Manuals

All manuals prepared by the project will be reviewed and the need for new manuals assessed. The manuals shall be documented in an approved standard form, preferably built up of modules common or typical for the various manuals. The work will continue scheduled through Phase VI as an MAJI activity assisted by the Advisers.

Review of Management Procedures

Management procedures developed by the Project will be revised and new ones developed where found missing. The procedures shall be documented in an approved standard form. The revision shall be carried out till the end of March 1991 in collaboration between MAJI and the Advisers in their respective fields.

Training Delivery System

Planning the training delivery system covers the entire system required to ensure the sustainable and cost-effective organization of the training. The system will provide training services which correspond the analyzed needs of MAJI. In this respect the system does not only to include the preparation of development objectives, organizations and cost- sharing systems but also to involve the repeated process of revising the Comprehensive Training Programme and running the Performance Evaluation System.

The planning will be carried out by the Training Adviser in collaboration with the training counterparts and consulting the local training institutions. Short term consultancy will be provided to support the Training Adviser.

Revision of the Comprehensive Training Programme

Forms a part of the Training Delivery System and will worked out in that connection.

Hydrogeological Study

Hydrogeological study will involve the updating the data of Annex E of the Water Master Plan from March 1977. The study will be prepared on short term consultancy basis. A Tanzanian expert will be in charge of the work. The Project will assist in the revision phase of the plan.

Geophysical Investigations

The plan will involve the updating the data of Annex F of the Water Master Plan from March 1977. The study will be prepared on short term consultancy basis. A Tanzanian expert will be in charge of the work. The Project will assist in the revision phase of the plan.

Hydrometeorological Observation System

Present hydrometeorological observation system will be reviewed and demand for upgrading determined. The assessment of the existing system will be carried out by Water Supply Adviser in collaboration with the Maji officers.

Feasibility of Rainwater Harvesting

Alternatives for rainwater harvesting will be elaborated. A scheduled plan for pilot studies with a programme for monitoring will be prepared and submitted for approval.

The work will be carried out by the MAJI personnel, together with the Water Supply Adviser.

Feasibility Study on Nakopi and Nanyumbu Water Supply

The feasibility of supplying water from Ruwama river to Nakopi and Nanyumbu divisions will be studied taking into consideration the technical, financial and community involvement aspects. The study will be worked out by the MAJI officers advised by Water Supply Adviser.

Revision of the Regional Organizations of MAJI

A proposal shall be worked out for arrangements to incorporate certain project activities to MAJI organization in order to facilitate the continuation of training and community involvement activities and to improve the efficiency in general. The proposal shall be elaborated by the RWEs, DWEs and the Adviser Team.

MANNING SCHEDULE

MANNING SCHEDULE FOR PHASE VI		YEARS OF PHASE VI				
		I	II	III	IV	TOTAL
A. RESIDENT STAFF						
1. Management Adviser		██████████	██████████	██████████	██████████	
2a. Community Participation Adviser		██████████	██████████	██████████	██████████	
2b. Community Participation Adviser		██████████	██████████	██████████	██████████	
3. Operation and Maintenance Adviser		██████████	██████████			
4. Training Adviser		██████████	██████████			
5. Water Supply Adviser		██████████	██████████			
6. Construction Supervisor		██████████	██████████			
7. Administrator/Accountant		██████████	██████████			
Total Resident m/m		83	54	33	33	207
B. SHORT TERM SPECIALISTS						
8. Electrical Engineer		██████████	██████████	██████████	██████████	
9. Community Participation and Socio-Economic Specialist		██████████	██████████	██████████	██████████	
10. Financial analyst		██████████	██████████	██████████	██████████	
11. Administration and Management Specialist		██████████	██████████	██████████	██████████	
12. Water Supply and Sanitation Specialist		██████████	██████████	██████████	██████████	
13. Purchasing Advisor		██████████				
14. Unspecified		██████████	██████████	██████████	██████████	
Total Short Term m/m		11.5	7.5	5.5	5.5	30
C. HOME OFFICE SERVICES						
15. Coordination, Procurement, Accounting, Secretarial Tasks		██████████	██████████	██████████	██████████	
Total Home Office m/m		10	10	6	6	32
						Total m/m 269