

Appendix G
Institution, Organization and Management

**THE STUDY
ON
THE ZANZIBAR IRRIGATION MASTER PLAN
IN
THE UNITED REPUBLIC OF TANZANIA**

MASTER PLAN

APPENDIX G

INSTITUTION, ORGANIZATION AND MANAGEMENT

Table of Contents

	<u>Page</u>
CHAPTER 1 INSTITUTION.....	G-1
1.1 Problems Identified in the Recent Programme and Policy	G-1
1.2 Priority Institutional Issues Identified in the ZIDP	G-1
1.3 Obstacles for Self-Sustainability of Irrigation Development	G-3
1.4 Necessary Changes at the National and Policy Levels.....	G-4
CHAPTER 2 ORGANIZATION	G-5
2.1 Overall Organizational Structure for Irrigation Development.....	G-5
2.2 National Level.....	G-5
2.3 Local Level	G-7
2.4 Present Performance of the Governmental Organization	G-7
CHAPTER 3 BASIC PLAN FOR INSTITUTIONAL DEVELOPMENT.....	G-10
3.1 Basic Concept	G-10
3.2 Roles of the Central Government, the Local Government Authorities and Farmers' Organizations	G-10
3.3 Institutional Development Components	G-12
CHAPTER 4 INSTITUTIONAL SUPPORTING PROGRAMME.....	G-14
4.1 Strengthening of the Irrigation Sector	G-14
4.2 Strengthening of Legal Framework for Irrigation Development.....	G-16
4.2.1 Background.....	G-16
4.2.2 Establishment of Legal Framework for the Irrigators' Organization	G-17
4.2.3 PPP (Public Private Partnership): Privatization Promotion	G-17
4.3 Smallholder Supporting for Self-reliance.....	G-18
4.4 Monitoring and Evaluation of ZIMP at each Development Stage.....	G-19

APPENDIX G

INSTITUTION, ORGANIZATION AND MANAGEMENT

CHAPTER 1 INSTITUTION

1.1 Problems Identified in the Recent Programme and Policy

The Zanzibar Irrigation Development Programme (ZIDP) drawn up in 1997 states: "the current operational state of Zanzibar's irrigation sector and the rates of irrigation scheme implementation which are currently achievable would suggest that existing institutions are inadequate. Marginalization, inadequate training of its professionals, inadequate and unsupervised professional experience and general under-equipping or under-resource of the institutions could all be blamed for the inadequate levels of performance." Since then, however, the concrete and remarkable institutional strengthening hasn't been achieved yet. The problem situation has basically remained unchanged.

Furthermore, the Agricultural Sector Policy, February 2000 states: "Since the role of the MALNR will be confined to public support functions, structural changes aiming at increasing productivity, developing new technology and producing new products will be required. The current institutional structure of the MALNR does not conform to the demands of the new agricultural policy."

As the two above-mentioned statements are still applicable to the present institutional setting of the irrigation development, the Master Plan should properly respond to them.

1.2 Priority Institutional Issues Identified in the ZIDP

Consequently, the priority issues identified in the ZIDP have essentially remained under the similar situation at that time. They still may have a higher priority than the other issues. They are as follows:

- (a) All irrigating communities should be required to form Water Users Associations (WUAs) according to the legal framework. In addition, the possibilities of the WUAs' function as cooperatives should be investigated along with any associated legal implications.
- (b) The extension services will require strengthening, viz. the ability to train farmers in sound on-farm water management and irrigation scheme operation and maintenance.

- (c) Reforming and strengthening of the Irrigation Section of the Ministry of Agriculture will be necessary according to:
- The role that it could usefully fulfill during the building up of the potential irrigable areas on the two islands,
 - The role that it could usefully fulfill once the scheme is fully developed, at least with the first generation infrastructure,
 - The role that the private sector could play in respect of irrigation scheme planning, design, implementation and operation,
 - Increasingly significant participation by the communities in every phase of their project cycle.
- (d) Current strengths and weaknesses of private sector consultants, contractors and manufacturers as regards their participation in Zanzibar's irrigation development should be evaluated and where necessary training programmes designed and imparted.
- (e) Marketing institutions (and infrastructure) should be facilitated and upgraded in line with other reforms.
- (f) A comprehensive review of gender issues as they pertain to the practice (and indeed development) of irrigation farming on Zanzibar should be carried out and any institutional shortcomings made good.
- (g) Credit needs of irrigating communities should be assessed, and workable delivery and recovery mechanisms should be designed.
- (h) An institution for monitoring should be established, ideally within the Irrigation Section but drawing on relevant subject matter specialists from other sections or Ministries, to monitor the performance of the sector in the broadest sense. Furthermore, the monitoring unit should be mandated and authorized to allow follow-up activities and even sectoral management, at least in an advisory sense. Key parameters or indicators that should be monitored include:
- The state of groundwater reserves in terms of quality, availability and water levels,
 - Irrigation water use efficiencies,
 - The environment both upstream and down stream of irrigation schemes
 - Yield trends,
 - Pest and disease incidence,
 - Prices, both input and output,
 - State of repair of irrigation infrastructure,
 - The performance of the sector as a whole,
 - Rural health,
 - Gender issues,

- WUAs operations.

1.3 Obstacles for Self-Sustainability of Irrigation Development

The ZIDP raised a fundamental issue of very little sense of ownership or responsibility of the beneficiaries in irrigation development: "Many schemes are implemented with little internal or National financing and little, if any, community participation or consultation, in other words with insignificant contributions from the beneficiaries. Equally, there is often no charge made for the abstraction of irrigation water supplies. Thus there is very little sense of ownership or responsibility engendered amongst the benefiting community. ---- As a result, little or no maintenance takes place and causes dilapidation of the infrastructure. This is then rehabilitated in due course, again with virtually no institutionalization of responsibility."

The reasons why this seemingly nonsensical situation arises time after time are pointed out as follows:

- (a) Political consideration: To impose costs on poor peasant farmers is often seen by the government as potential political suicide in largely agrarian economies. However, if the government leaves the situation as it is, the public awareness of ownership or responsibility will not be fostered in future.
- (b) Lack of sense of cost: Peasant farmers seldom view water as anything other than a gift of God. Therefore, unless they have been taught through an active and consultative training programme that even water has economic value, water is not only paid for but also easily wasted. This may often bring about more costs in environmental terms.

They result in a complete lack of understanding or commitment on the role of the farmers towards regular, timely and strategic maintenance/repairs of their schemes. This vicious spiral must be overcome. Otherwise the sustainability of the irrigation development can never be achieved.

The ZIDP proposed the following three steps to engender the sense of ownership and responsibility among farmers. First, a community requiring assistance with an irrigation scheme has to be organized into a body such as a water user association (WUA) which could serve as a vehicle for accepting the responsibility for scheme "Ownership".

The second step is often called community sensitization or conscientisation. It is a crucial step and can be carried out while the WUA is under the process of formation/registration. It has a following multi-faceted objective:

- (a) to ensure that the potential beneficiaries are fully informed as to the changes in lifestyle that irrigation will bring about, in particular, the difficulties to be faced and the discipline to be expected of them
- (b) to work with the community in drawing up the basic project concept, and
- (c) to make absolutely sure that the beneficiaries realize that they will contribute to both capital and running costs associated with their scheme. Such contributions through cash and labor can be equally appropriate.

The two above-stated steps may take a long time. However, only once an acceptable level of understanding and agreement is reached between the planners and the community, the step 3, that is, actual implementation, should take place. The community should be involved as much as possible during the scheme implementation. An obvious possibility would be their participation as labourers during actual construction. Through the three steps, the beneficiaries will be more inclined to make it work by accepting the responsibilities of ownership.

However, it is still not enough to have soundly established, well-regulated WUAs. A necessity of systematic study of operation and maintenance issues is also stressed by the ZIDP. On the basis of the study a manual or series of manuals should be prepared to guide the WUAs members and their leaders in the successful operation and maintenance of their schemes.

1.4 Necessary Changes at the National and Policy Levels

Furthermore, the ZIDP states: "Successful transition to self-management and scheme sustainability will require more than just conscientisation and well-organized water user associations. Changes will be required at National or policy level."

"Thus, in terms of policy at least five changes have to be made:

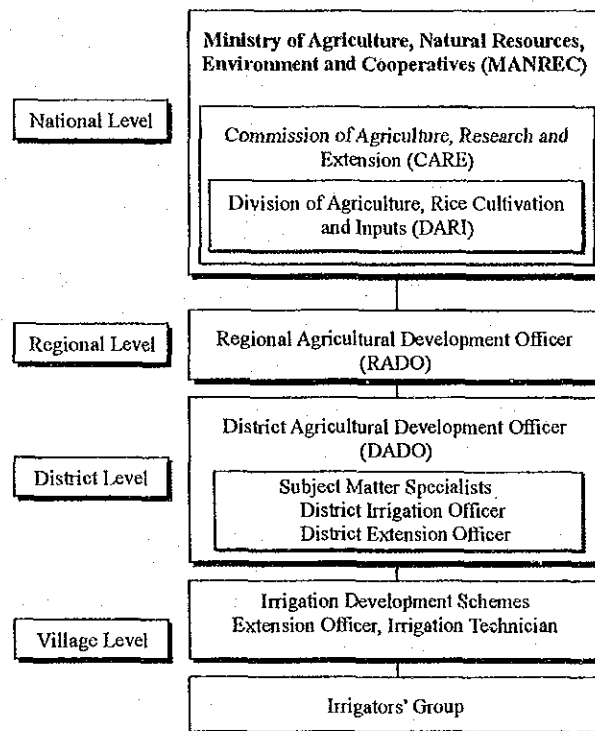
- (a) The markets for agricultural products should be totally liberalized,
- (b) Farmers should be given more options as regards their cropping systems,
- (c) More development activities and hence responsibility should be devolved to the communities,
- (d) Reasonable charges should be levied through the WUAs for the use of irrigation water, and,
- (e) Land tenure conditions should be redefined to increase a farmer's sense of security."

CHAPTER 2 ORGANIZATION

2.1 Overall Organizational Structure for Irrigation Development

The administrative organization structure for irrigation development in Zanzibar is divided into the national and local levels. Furthermore, the local level has a hierarchical three-tier structure: regional, district and village levels. However, the Central Government functionally covers and supervises all of the levels, i.e. from the central to village levels.

Simplified Organogram of the Central and Local Governments relevant to Irrigation Farming in Zanzibar



Source: JICA Study Team

2.2 National Level

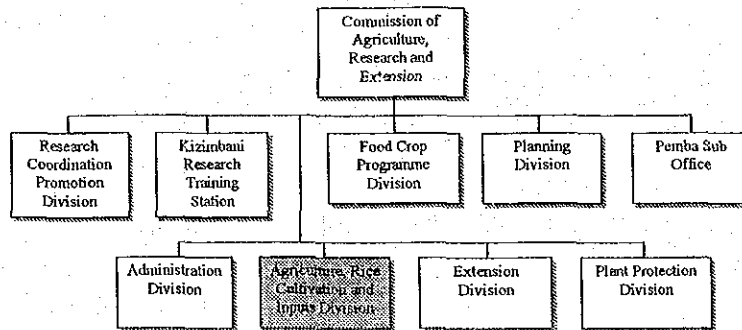
The Commission of Agriculture, Research and Extension (CARE) is now responsible for all matters pertaining to irrigation development, through the Division of Agriculture, Rice Cultivation and Inputs Supply (DARI). The responsibility for Zanzibar irrigation development is vested in the assistant head of division and under his or her supervision. According to the ZIDP, unlike the situation of the Mainland, poor coordination of activities within the irrigation sector has not been identified as a significant constraint. Four possible reasons were cited. First, the areas involved are small. Secondly, the two islands are rather

discrete units in themselves. Thirdly, the pace of irrigation development has been extremely slow. Fourthly, only two main donors (FAO and UNDP) have driven activities in the sector.

However, two potential problems are pointed out in the ZIDP.

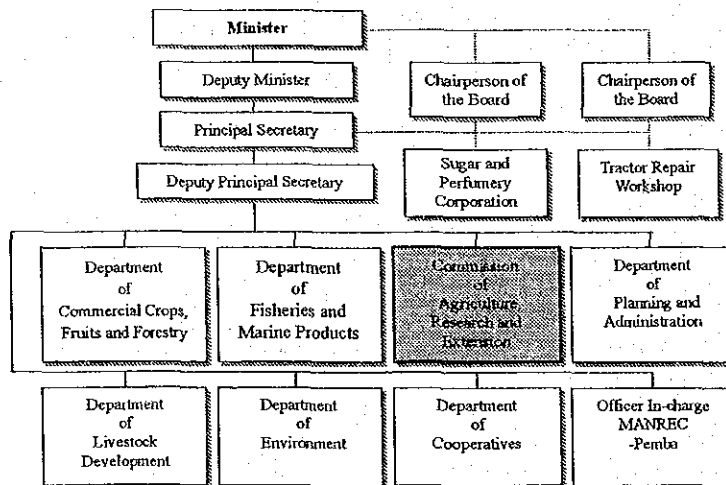
- Uncoordinated donor activities could result in the introduction of different levels of irrigation technology at different locations, thereby leading to confusion, that is, unnecessarily accelerated strengthening requirements in the extension services.
- Poor coordination of the sector could also result in competition between smallholder schemes and private sector commercial farms.

Present Organizational Position of Agriculture, Rice Cultivation and Inputs Division in MANREC



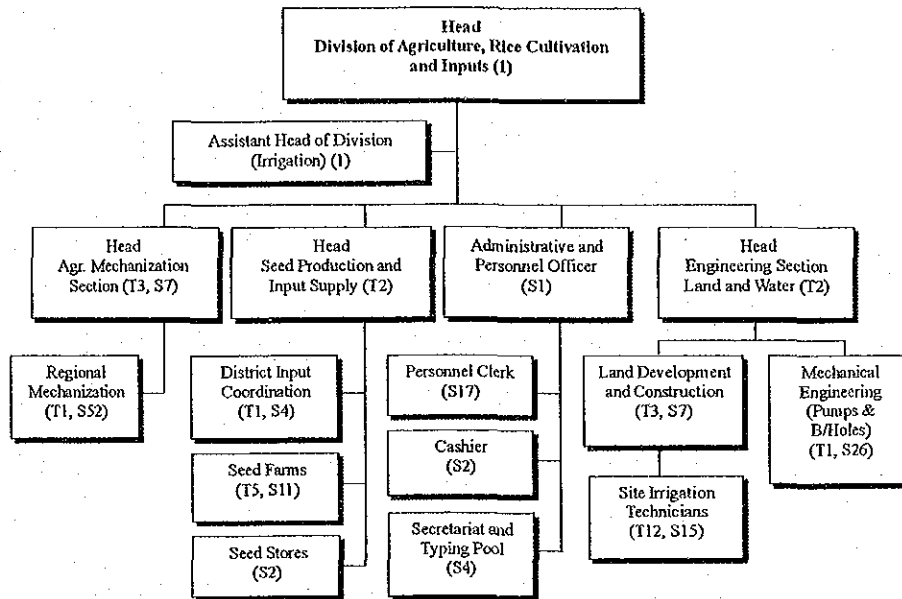
Source: MANREC

Present Institutional Structure of Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC)



Source: MANREC

Division of Agriculture, Rice Cultivation and Inputs Supply



Remarks: Number in the Parenthesis is number of the staff (T: Technical staff, S: Supporting staff)

Source: MANREC

2.3 Local Level

At the regional level, the RADO (Regional Agricultural Development Officer) supervises and coordinates the DADOs (District Agricultural Development Officer). The RADO is a local officer of the Central Government and, however, doesn't have any technical staffs. On the other hand, at the district level the DADO (District Agricultural Development Officer) has technical staffs, i.e. subject matter specialists, and supervises and assists directly the irrigation schemes. At the district level, there is the District Council elected by the general election and supervising and auditing the District Administrative Office including the DADO.

2.4 Present Performance of the Governmental Organization

The next table shows the present performance and strengthening priority of roles and functions demarcated to the governmental organizations pertaining to irrigation development. The demarcation was modified and adjusted to the situation of Zanzibar from "the Division of Responsibilities of the Roles and Functions of the Agricultural Sector among the Ministry of Agriculture and Food Security, Ministry of Co-Operatives and Marketing, Ministry of Water and Livestock Development, President's Office - Regional Administration and Local Governments, June 2001".

Present Performance and Priority of Strengthening of Roles and Functions

Organization	Roles and Functions	Present Performance	Priority of Strengthening
MANREC	a To formulate and review policy, laws, procedures, regulations and guidelines on irrigation farming.	Good	High
	b To mobilize and give advice to farmers and livestock keepers on rain water harvesting.	Poor	Medium
CARE (Commission of Agriculture, Research & Extension)	c To supervise in the preparation of irrigation farming projects before they are implemented.	Good	Medium
	d To receive, coordinate and prepare reports on irrigation farming and to give guidance needed.	Fair	High
DARI (Division of Agriculture, Rice Cultivation and Inputs)	e To interpret and give advice on the policy of irrigation farming.	Poor	High
	f To investigate and identify areas suitable for irrigation farming.	Fair	Medium
	g To set criteria for sound/appropriate irrigation projects.	Poor	High
	h To coordinate and evaluate irrigation schemes.	Fair	Medium
	i To prepare guidelines for the formation of groups that intend to use water for irrigation farming.	Poor	High
	j To coordinate identification of suitable land for irrigation farming.	Fair	Medium
	k To give advice on how to undertake evaluation of irrigation procedures.	Poor	High
	l To give advice on irrigation procedures.	Fair	Medium
RADO (Regional Agricultural Development Office)	a To coordinate the use of resources in irrigation areas.	Poor	High
	b To coordinate projects that promote irrigation farming through cooperation with MANREC (DARI)	Poor	High
DADO (District Agricultural Development Office)	a To implement policy of irrigation farming.	Poor	High
	b To investigate and specify areas suitable for irrigation farming.	Fair	Medium
	c To evaluate irrigation projects.	Poor	Medium
	d To ensure that irrigation techniques and practices are properly carried out.	Fair	Medium
	e To ascertain the proper use of resources in irrigation areas.	Poor	Medium
	f To involve non-governmental organizations and donors in planning and execution of irrigation projects.	Poor	High
	g To supervise the construction of irrigation farming.	Fair	Medium
	h To give advice to the people on irrigation farming.	Fair	High
	i To mobilize and advice farmers on formation and management of water users associations.	Fair	Medium
	j To prepare reports on the progress of irrigation farming.	Fair	Medium
	k To maintain resources that sustain irrigation schemes in general.	Fair	High
l To mobilize farmers to contribute resources in the planning and implementation of irrigation projects.	Poor	High	

Source: Modified Information by the JICA Study Team from the Division of Responsibilities of the Roles and Functions of the Agricultural Sector among the Ministry of Agriculture and Food Security, Ministry of Co-Operatives and Marketing, Ministry of Water

Remarks: The present performance and priority are evaluated by the JICA Study Team based on the hearing from MANREC. Grades used are "Good", "Fair", "Poor" and "High", "Medium", "Low" respectively.

As for the present performance, only two roles deserve to be rated as “Good”. They are one role of the MANREC to formulate and review policy, laws, procedures, regulations and guidelines on irrigation farming and another role of the CARE to supervise in the preparation of irrigation farming projects before they are implemented. The remained majority of the roles and functions are unfortunately rated as “Fair” or “Poor”.

The presently weak but important roles, i.e. “Poor” present performance and “High” priority of strengthening roles are listed below:

Roles and Functions with Poor Performance but High Strengthening Priority

Organization	Roles and Functions with Poor Performance but High Strengthening Priority
DARI (Division of Agriculture, Rice Cultivation and Inputs)	To interpret and give advice on the policy of irrigation farming.
	To set criteria for sound/appropriate irrigation projects.
	To prepare guidelines for the formation of groups that intend to use water for irrigation farming.
	To give advice on how to undertake evaluation of irrigation procedures.
RADO (Regional Agricultural Development Office)	To coordinate the use of resources in irrigation areas.
	To coordinate projects that promote irrigation farming through cooperation with MANREC (DARI)
DADO (District Agricultural Development Office)	To implement policy of irrigation farming.
	To involve non-governmental organizations and donors in planning and execution of irrigation projects.
	To mobilize farmers to contribute resources in the planning and implementation of irrigation projects.

Source: *ditto*

According to the above table, the DARI, the RADO and the DADO have relatively higher priority than the other organizations for institutional strengthening. The DARI generally needs to strengthen its supervision function through establishing evaluation criteria for irrigation projects and preparing guidelines for formation of irrigators’ groups. The RADO basically needs strengthening of coordination function with relevant organizations at regional level. The DADO needs to strengthen, in particular, its implementation capability of irrigation farming technically and institutionally and, moreover, of farmer mobilization through participatory approach.

CHAPTER 3 BASIC PLAN FOR INSTITUTIONAL DEVELOPMENT

3.1 Basic Concept

The basic concept of the institutional development for the ZIMP is to realize a practical and reliable institutional setting for the sustainable and self-reliant irrigation development. The institutional setting is, in other words, a kind of engine to operate smoothly the irrigation development procedure and mechanism composed of the various participants, that is, the Central Government, the Local Government Authorities, the Irrigators' Organizations, Private Companies, NGOs, Donors and etc.

Without the engine, i.e. the practical and reliable institutional setting, the irrigation development projects/programs will definitely lose their momentum and control. Consequently they must again encounter the persistent constraints already identified in the ZIDP in 1997 and other documents. The smoothly and harmoniously achieved institutional development among the various players will definitely become a crucial prerequisite for successful achievement of sustainable and self-reliant irrigation development, i.e. the ZIMP

For the institutional development stage-wise programs are basically appropriate for the long time span of the planning period to the target year of 2020, conforming to changing socio-economic conditions around and planning objectives of the irrigation development. The programs basically have three steps for the short, medium and long terms based on the stage-wise development scenario. The basic objective of the institutional development for each term is as follows:

- Short term (2003-2007): To reform the existing institutional setting for better performance of participatory irrigation.
- Medium Term (by 2012): To support actualizing farmers-oriented irrigation development through the Local Government Authorities' initiatives and assistance to the farmers.
- Long Term (by 2020): To support realizing self-reliant irrigation development through the PPP (Public Private Partnership).

3.2 Roles of the Central Government, the Local Government Authorities and Farmers' Organizations

The roles and functions of irrigation farming among the relating governmental organizations were reviewed in the previous chapter. The harmonization of them is essential to achieve sustainable self-reliant irrigation development. Although

they were well defined, the assigned roles and functions are, however, presently not necessarily well performed yet by each organization, as reviewed in Chapter 2.4.

The main objective of institutional development in the ZIMP is to provide the more effective and more fitting institutional framework for the various participants of irrigation development and to support them achieving good performances of their demarcated roles and functions.

The MANREC, including the CARE and the DARI, will be basically responsible for formulating and reviewing policy, laws, procedures, regulations and guidelines on irrigation farming, in other words, determining the national minimum standards (NMS) of service, safeguarding professionalism, and determining the qualifications and numbers of staff required to meet the NMS. As for the DARI, a top priority is given to the following roles for strengthening among the demarcated roles:

- To interpret and give advice on the policy of irrigation farming
- To set criteria for sound/appropriate irrigation projects
- To prepare guidelines for the formation of groups that intend to use water for irrigation farming
- To give advice on how to undertake evaluation of irrigation procedures

These roles are quite essential for the DARI to give the firm policy and technical guidance to the RADO and the Local Government Authorities (the DADOs).

The RADO has basically supervision functions for the DADOs and inter- and intra-regional coordination, in particular to coordinate irrigation development with other development activities. The RADO basically needs strengthening of following coordination functions with relevant organizations at regional level:

- To coordinate the use of resources in irrigation areas
- To coordinate projects that promote irrigation farming through cooperation with the MANREC (DARI)

The LGAs' role, in fact the DADOs' role, is of critical importance for actualization of self-reliant irrigation development. One of their main roles is based on the guidance from the Central Government to provide technically and financially feasible and replicable models and/or methods of irrigation development to the irrigators' organizations (farmers) and, in addition, to assist and encourage the irrigators' organizations to operate and maintain the irrigation scheme by themselves. The DADO needs to strengthen the following roles and functions with a higher priority:

- To implement policy of irrigation farming
- To involve non-governmental organizations and donors in planning and execution of irrigation projects
- To mobilize farmers to contribute resources in the planning and implementation of irrigation projects

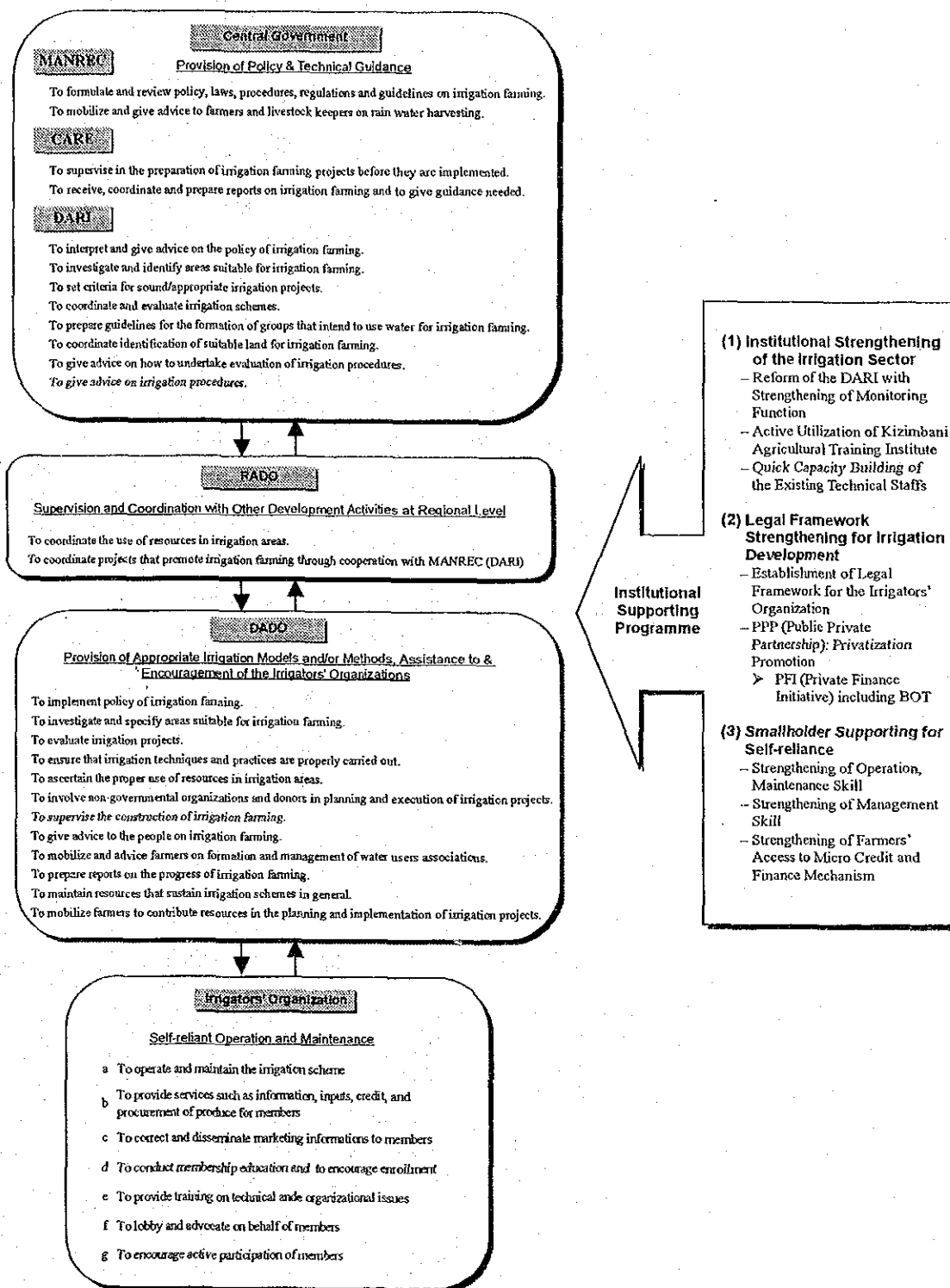
The role of irrigators' organizations will become crucially very important toward the farmers-oriented irrigation development. They will play a main role in operating and maintaining the irrigation schemes and achieving self-reliance. However, they surely need backstopping from the DARI, the RADOs and DADOs at least for the short and medium terms.

3.3 Institutional Development Components

The following three groups of the institutional development components are identified for the ZIMP and they will support the participants of irrigation development to achieve good performances of their demarcated roles and functions. The details will be discussed in Chapter 4.

- (1) Institutional Strengthening of the Irrigation Sector including the DARI, the RADOs and the DADOs
 - Reform of the DARI with Strengthening of Monitoring Function
 - Active Utilization of Kizimbani Agricultural Training Institute
 - Quick Capacity Building of the Existing Technical Staffs
- (2) Legal Framework Strengthening for Irrigation Development
 - Establishment of Legal Framework for the Irrigators' Organization
 - PPP (Public Private Partnership): Privatization Promotion
 - PFI (Private Finance Initiative) including BOT
- (3) Smallholder Supporting for Self-reliance
 - Strengthening of Operation, Maintenance Skill
 - Strengthening of Management Skill
 - Strengthening of Farmers' Access to Micro Credit and Finance Mechanism

**Institutional Development Components and Demarcated Roles of the Central Government,
the RADOs, the DADOs, and Irrigators' Groups**



Source: JICA Study Team

CHAPTER 4 INSTITUTIONAL SUPPORTING PROGRAMME

4.1 Strengthening of the Irrigation Sector

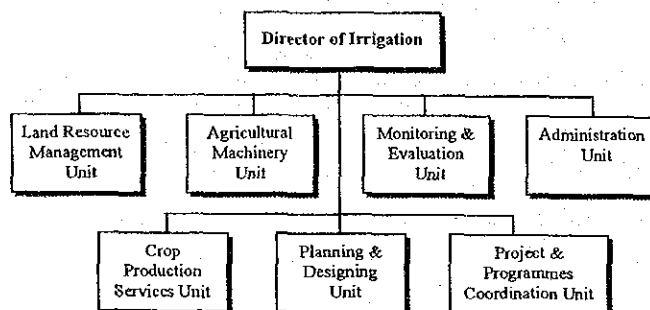
The demarcation of roles and functions of irrigation farming among the relating governmental organizations discussed in Chapter 3.2 is prerequisites for the institutional strengthening. MANREC as a whole should be responsible for formulating and reviewing policy, laws, procedures, regulations and guidelines on irrigation farming. This is, needless to say, one of most fundamental roles for irrigation farming at the central level. The preparatory and practical work of this is in fact undertaken by the DARI except authorization work. However, the present position of the DARI in MANREC unfortunately seems insufficient to achieve the role, which surely needs to coordinate and harmonize the different organizations pertaining to irrigation development and, furthermore, to make prompt decisions. The Section also needs stronger mandates of the personnel administration and budget allocation. It consequently requires a stronger institutional and organizational position of the DARI in MANREC.

The Institutional Strengthening of the DARI has the following three subcomponents:

- Reform of the DARI with Strengthening of Monitoring Function
- Active Utilization of Kizimbani Agricultural Training Institute (KATI)
- Quick Capacity Building of the Existing Technical Staffs

Presently a possible reform plan is informally under consideration in the CARE. It is to promote the DARI to a new department, i.e. the Department of Irrigation. Strengthening of the DARI including this idea should be given serious consideration.

Possible Institutional Reform Plan of the DARI



Source: DARI

In addition, monitoring and evaluation functions in the DARI presently are very weak, even though provision of effective feedback data is quite crucial to evaluate and achieve socio-economic effectiveness of irrigation development with environmental consideration. As a matter of fact, the DARI doesn't have established a firm monitoring mechanism yet and hasn't even selected a list of necessary socio-economic, technical and environmental indicators to monitor and evaluate the irrigation development activities. Strengthening of those functions should be included in the strengthening of the DARI.

The second subcomponent, "Active Utilization of Kizimbani Agricultural Training Institute (KATI)" should be regarded as one of main pillars for capacity building of the governmental staffs in the future. At present, the KATI has four academic departments: Crop Science and Natural resources, Animal Science, Agro-mechanization, and Agricultural Extension and Farmers Training, and provides agricultural education and training through long and short-term courses. Through reviewing and reshuffling the present curriculum including irrigation farming, programmes for senior and junior technical staffs of the governments including the DARI, the RADO, the DADO should be strengthened and provide them training opportunities of irrigation farming responding to their educational levels and necessities.

However, the KATI has to overcome the following several constraints prior to providing the above-mentioned educational services:

- Insufficient provision of training equipment and facilities
- Necessity of capacity building for the KATI staffs (mainly tutors) to upgrade their technical and managerial skills
- Insufficient budget allocation from the government, etc.

In order to avoid the over-dependency on the central government financially, it is presently suggested to make the KATI a semi-autonomous organization through strengthening its income generation activities including tuitions and its own production activities on crops and livestock projects. Strengthening of its financial background and upgrading of its technical level are prerequisites of the second subcomponent implementation.

The KATI will play a major role in capacity building of the staffs in the long-term. However, the second subcomponent may take time before actualization, as it surely needs a preparatory work for implementation. Therefore, the third subcomponent, "Quick Capacity Building of the Existing Technical Staffs" is a short-term programme to respond urgent necessity of upgrading the technical level of existing technical staffs of the DARI, the RADO and the DADO. It should be

implemented immediately.

The next table indicates the educational background of present technical staff engaged in irrigation development in the DARI. Only two of 29 staffs hold master's degrees and eight staffs hold Bachelor of Science, Post Graduate Diploma or Advanced Diploma, which are almost equivalent degrees one another. The others hold only National Diploma, which is generally granted to completion of two-year technical education after senior high school.

The quick capacity building programme for the DARI, the RADO, the DADO technical staffs through providing long and short-term training opportunities, seminars and workshops in-country and abroad to upgrade their technical and project management skills should be prepared in the next five years.

Educational Background of Technical Staff of the DARI

Field of Specialization	Professional Level	No. of Staff
Irrigation Engineering	MSc.	1
Soil & Water Engineering	P.G.Diploma	1
Agricultural Engineering	BSc.	1
Land Resource Management	P.G.Diploma	2
Mechanical Engineering	Adv. Diploma	2
Irrigation & Drainage Engineering	National Diploma	12
Agricultural Mechanization	National Diploma	5
Land Use Planning	National Diploma	2
Agromony	MSc.	1
Irrigation Water Management	P.G.Diploma	1
Agriculture	BSc.	1
	Total	29

Remarks P.G. Diploma: Post Graduate Diploma

Adv. Diploma: Advanced Diploma

Source: DARI

A task force of the experts should be organized to make a strengthening plan of the Irrigation Sector focusing on the three subcomponents. The plan for the first and second subcomponents should be a stage-wise program responding to the short term (2003-2007), the medium term (by 2012) and the long term (by 2020). The promotion of the DARI to the Department should be actualized in the short term, because it must be the important first step toward sustainable and self-reliant irrigation development and a trigger of other institutional developments.

4.2 Strengthening of Legal Framework for Irrigation Development

4.2.1 Background

A reliable legal framework is a prerequisite for successful farmers-oriented irrigation development. It should provide a secure legal environment for farmers and other private stakeholders to participate and invest in irrigation development.

Legal status of irrigators' group, land tenure and water right, as well as ownership of and responsibility for irrigation infrastructure should be clearly defined for irrigation development. Presently these items are defined disconnectedly by a number of separate laws or regulations.

It has become important to establish a sound legal framework to empower farmers and the other private sectors to enable them to secure their ownership, i.e. to take full responsibility for all decisions and matters involved in development, operation and management of the irrigation schemes.

4.2.2 Establishment of Legal Framework for the Irrigators' Organization

The irrigators' group (IG) is a basic private organization and a principal actor for irrigation development. Needless to say, a well-organized IG is one of crucial factors for its success. Presently the IGs are generally classified into three categories, (i) registered irrigators' cooperative society (ICS), (ii) registered irrigators' association (IA), and (iii) non-registered group.

Presently, according to the inventory survey, there are 21 irrigators' groups, which have their own group names and operate as IG, in 57 irrigation sites of Zanzibar. In addition, only 11 IGs are registered groups: 7 as cooperative and 4 as association among the 21 IGs. The status of the others is not clear.

Neither cooperative nor association is necessarily an optimum organizational form for the IG. The cooperative is primarily a business-oriented organization and the association can be applicable to any type of social activities. The rights and obligations of the irrigators' group members can't be always clearly and uniformly defined under the present legal framework. A new legal framework exclusively for the irrigators' groups seems to be very important and necessary for securing their ownership and self-reliable irrigation development.

A consultancy work for establishment of the legal framework, possibly a new Act, Ordinance or Regulations, should be undertaken through the initiative of the DARI in cooperation with the relevant governmental agencies, lawyers and technical specialists.

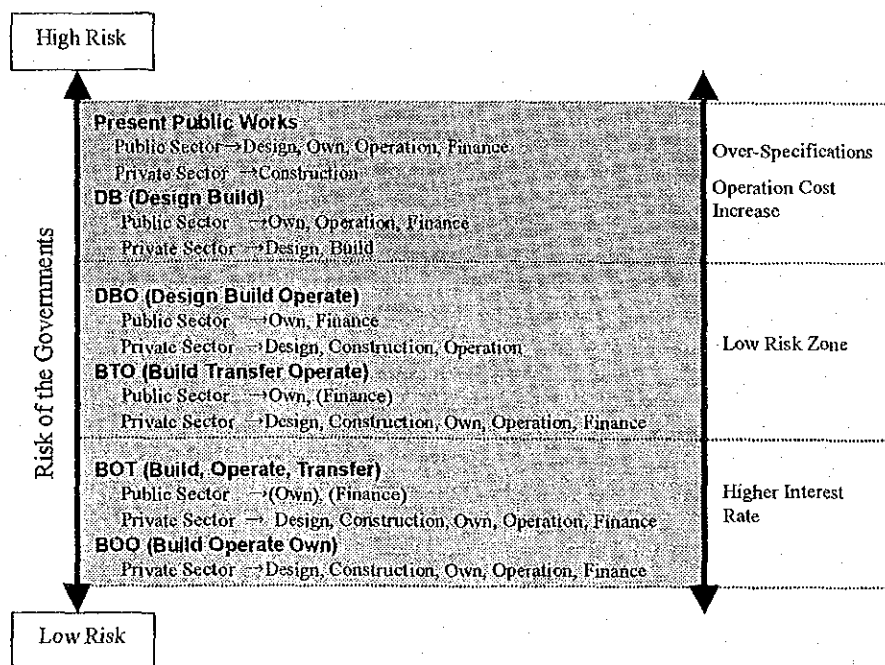
4.2.3 PPP (Public Private Partnership): Privatization Promotion

The institutional development target at the third stage of the ZIMP is to support realizing self-reliant irrigation development through the PPP (Public Private Partnership). The investment by the private sector (farmers' organizations and private companies) in irrigated farming will be one of important alternatives in the

future and play an important role for irrigation development. The MANREC in cooperation with relevant governmental agencies need to prepare favorable and attractive legal and institutional framework for the private investors.

For the PPP, there are several possible schemes. The applicability and feasibility of each privatization scheme such as DBO, BTO as well as BOT (see the next chart) should be carefully explored and compared based on the present situation of the private sector. Furthermore, the investment guidelines for the private sector should be established for direct private investment for irrigation development.

Typical Development Schemes of PPP



Source: Original source written in Japanese is, Motoji Muraoka, "Outline of the PFI Business in Japan", Business Research Institute of NTT DATA.

4.3 Smallholder Supporting for Self-reliance

Extension services for the irrigators' groups through the DADO should be continuously given a high priority for actualization of self-reliant irrigation development. The following subcomponents should be put emphasis on in the training programs for them.

- Strengthening of Operation and Maintenance Skills
- Strengthening of Administrative, Financial and Technical Management Skills

"Strengthening of Farmers' Access to Micro Credit and Finance Mechanism" is also pointed out as an important subcomponent of smallholder supporting activities. This subcomponent, however, should be integrated into a

comprehensive rural development strategy and plan for effective actualization. Therefore, the ZIMP recommends the relevant agencies to explore this in integrated manner.

The institutional reform should begin from a feasible point, then several reformed points will delineate new lines, and consequently several reformed lines will create new institutional dimensions. Each step should be carefully monitored and evaluated by a neutral third-party organization. The results have to be promptly reflected to the reform program for better performance of the future steps.

4.4 Monitoring and Evaluation of ZIMP at each Development Stage

The ZIMP itself should be carefully monitored and evaluated by its performance at each development stage, just the same as an irrigation development scheme, *which needs good operation and maintenance for satisfactory performance*. In other words, necessary feedback through a reliable monitoring and evaluation mechanism should be promptly given to the ZIMP for revision in future. For that purpose, the role of monitoring and evaluation of the ZIMP should be assigned to the DARI.

Appendix H
Website for the Study on
the Zanzibar Irrigation Master Plan

**THE STUDY
ON
THE ZANZIBAR IRRIGATION MASTER PLAN
IN
THE UNITED REPUBLIC OF TANZANIA**

MASTER PLAN

APPENDIX H

**WEBSITE FOR THE STUDY ON
THE ZANZIBAR IRRIGATION MASTER PLAN**

Table of Contents

	<u>Page</u>
1.1 Objectives of Establishment of the Website	H-1
1.2 Contents of the Website as of August 2002	H-1
1.3 Necessity and Future Plan of Update	H-2

List of Figures

	<u>Page</u>
Figure 1.2.1 Detailed Structure of the Website	HF-1

Attachment

	<u>Page</u>
Selected Pages of NIMP Website	HAT-1

APPENDIX H

WEBSITE FOR THE STUDY ON THE ZANZIBAR IRRIGATION MASTER PLAN

1.1 Objectives of Establishment of the Website

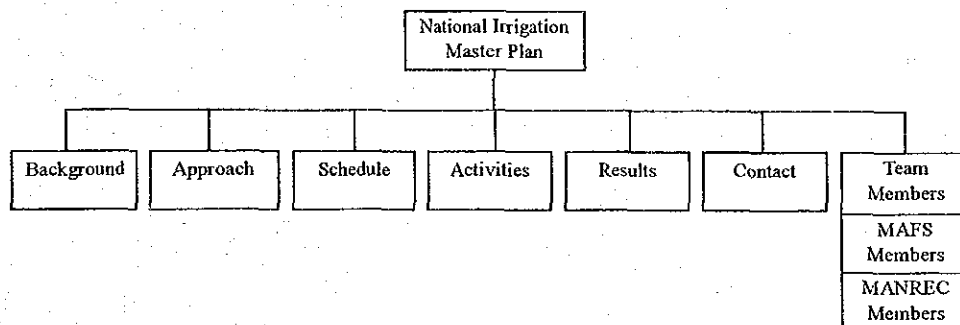
The JICA Study Team established the website of the Study aiming at sharing of information of the Study. Considering the merit of easy-access of website, it is also expected to collect useful opinions to the Study widely from other stakeholders and also the others. The URL of the website is as shown below:

URL: <http://www.kilimo.go.tz/projects/nimp/nimp.htm>

1.2 Contents of the Website as of August 2002

The website of the Study as of August 2002 consists of 29 web pages. The schematic and detailed figure for structure of the homepage is as shown in next page and Figure 1.2.1, respectively.

Schematic Structure of Website



The website is designed under the concept of “*Shearing of information about Study*” and “*Viewer-friendly*”. Through the website, the viewers are able to access the information such as concept and approach of the JICA Study Team, intermittent results of Study, etc., with enjoying a lot of beautiful photographs of irrigation and the Study. In addition, the contact address and sending form are also provided to send the viewers’ comments/opinions to the JICA Study Team, so that the Study is able to be reflected the any kind of good opinions from stakeholders. The feature of each page is as described below.

(1) National Irrigation Master Plan

“National Irrigation Master Plan” is the top page of the website. This page

gives the summarized explanation about the Study, and links to the lower components of the website.

(2) Background

This page provides the general information about the background of the Study.

(3) Approach

This page illustrates the basic approach concept of JICA Study Team to the Study.

(4) Schedule

This page has links to the lower components. With these lower components, this page gives the information about schedule of the Study.

(5) Activities

In this page, the major activities of the JICA Study Team are presented. It is also helpful to the viewers to know the present stage of the Study.

(6) Results

This page gives the information about the result of the Study per each phase.

(7) Contact

This page shows the contact address of the JICA Study Team, and also has the link to sending form provided for viewers to send their comments.

(8) Members (Team Members, MAFS Members, MANREC Members)

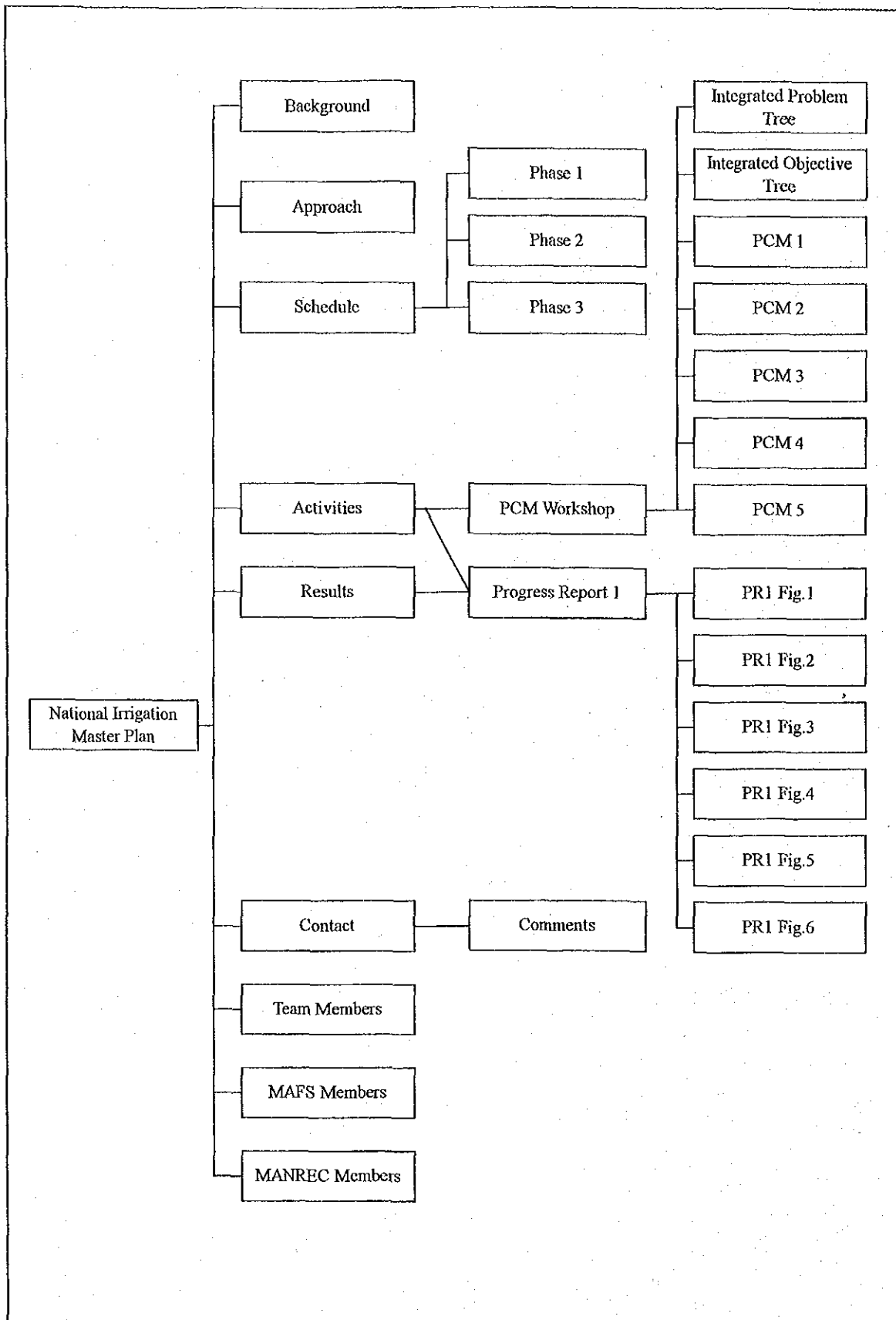
This page introduces the JICA Study Team experts and their counterparts in MAFS and MANREC.

Some of essential pages of the website, which are selected from the pages explained in the above, are presented in the Attachment.

1.3 Necessity and Future Plan of Update

In order to provide the latest information and intermittent results of the Study timely, the website shall be updated in each Study Phase. The expected update is scheduled after the approval of Master Plan Report. Further update will be carried after the approval of Progress Report 2 and Implementation Plan Report in Phase 2.

Figure



The Study on the National Irrigation Master Plan in the United Republic of Tanzania

Japan International Cooperation Agency

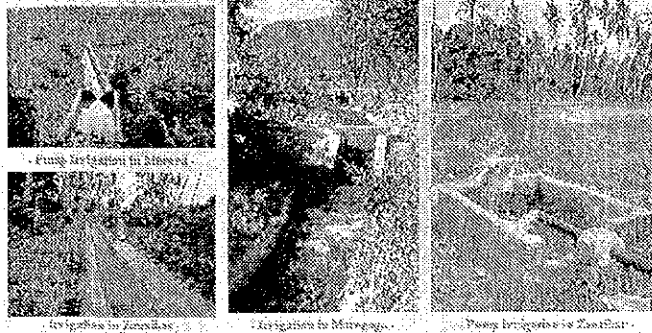
Figure 1.2.1
Detailed Structure of the Website

Attachment

WEL.COM.KI



National Irrigation Master Plan



You are 's visitor from 01/07/2002

National Irrigation Master Plan (NIMP) has been formulated under the technical assistance of Japan International Cooperation Agency (JICA), of which target area includes all areas of the United Republic of Tanzania. The Study for NIMP started from October 2001 and is scheduled to be completed in March 2004.

The objectives of the Study are;

- to formulate the Master Plan for irrigation development at national level with target year of 2017 for main land and 2020 for Zanzibar,
- to prepare the Implementation Plan for the priority irrigation schemes and subjects selected through the Master Plan,
- to conduct the Verification Study for the bottleneck items for successful implementation of the schemes; and
- to carry out technology transfer to counterpart personnel through on-the-job training in the course of the Study.

For more information.....

[Background of Study](#)

[Basic Approach to the Study](#)

[Schedule of the Study](#)

[Our Major Activities](#)

[Study Results](#)

[Contact Us! \(Send Comments!\)](#)

[JICA Study Team Members](#)

[MAFS Members \(Counterpart for Mainland\)](#)

[MANREC Members \(Counterpart for Zanzibar\)](#)

[Results of PCM Workshops \(June 2002\)](#)

[Return to Development Projects](#)



Background of the Study

Background of the Study

Agriculture in Tanzania plays the most important role in its economy. In 1998, it absorbed over 70 % of the total labor population and generates 48 % of GDP and 65% of export exchange earnings. In the main land, 10.1 million ha have been cultivated to present although agricultural potential area would be estimated at 44 million ha equivalent to about 47 % of 94.2 million ha of main land area. Out of 10.1 million of cultivated area, 1.0 million ha is assessed as area suitable for irrigation, of which 0.2 million ha only is currently irrigated. It means that land and water resources are not effectively utilized so far.



Mtwara Irrigation Scheme, Mtwara

Cereals in Tanzania are maize, sorghum, paddy and wheat. These, especially maize and paddy are mostly cultivated by smallholder farmers, and their production are remarkably low due mainly to limited cultivation in recent 7 years from 1992/93 to 1998/99, cultivated areas and crop production of maize and paddy, which are main foodstuffs in Tanzania, have largely fluctuated year by year depending on weather condition.

The Household Budget Survey executed in 1991/2 showed the lower income in rural areas than that in urban areas, resulting in severe poverty situation in rural area. Over 87 % of all poor people live in rural area where agriculture is the mainstay in livelihood. Forty one % and 23 % of population in rural areas were below the poverty line of basic needs and food requirement standards, respectively. The recent House Hold Survey in 2000/01 also presents the similar poverty situation although 2 % to 3 % have been improved. The Food Security Department, MAFS analyzes that cereals deficit would attain at 820,000 tons at national level in 2001/02. In addition to the expansion of cultivated area, increasing in crop yield is thus an indispensable issue for agriculture in Tanzania.

In 1994, the National Irrigation Development Plan (NIDP) was prepared aiming at stability and increase in food production. The NIDP proposed implementation of 147 irrigation schemes and alleviation of many constraints such as lack of resources. Since 1994, some constraints have been alleviated by the external support. However, lots of constraints have still remained. On the other hand, some government policies such as the "Tanzania Development Vision 2025", and "Agricultural and Livestock Policy, 1997" after 1994, which affects direction of irrigation development in Tanzania. Such current situations led to the recognition on need of revision of the NIDP.

The GOT requested the Government of Japan (GOJ) to extend the technical assistance for the revision of the NIDP. In response to this request, the GOJ dispatched the Preliminary Study Team from March 2001 to April 2001, to hold a series of discussions with the GOT, and both sides agreed on the Scope of Work (SOW).



Mwanza Irrigation Scheme, Mwanza

NIDP has come to include Zanzibar

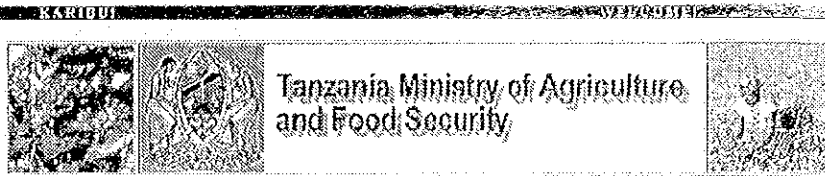
The Government of Zanzibar requested JICA through MAFS to include Zanzibar in the study area of NIDP. JICA, with consent of MAFS agreed to this request, and JICA and Government of Zanzibar exchanged the Minutes of Meeting on May 9, 2002.

In accordance with this Minutes of Meeting, the JICA Study Team submitted to the Ministry of Agriculture, Natural Resources, Environment and Cooperatives (MANREC), 20 copies of Inception Report 1. The meeting on the Report was held with the Steering Committee on May 15, 2002. In the meeting, the JICA Study Team explained the contents of the Report and further highlighted the basic concept and basic approaches of the Study. As a result of discussions on the Report among the participants, it was accepted by the Steering Committee chaired by Mr. Ali Kahumukamusu, Deputy Principal Secretary of MANREC. The Minutes of Meeting for the Inception Report 1 was exchanged by the Steering Committee and the JICA Study Team.

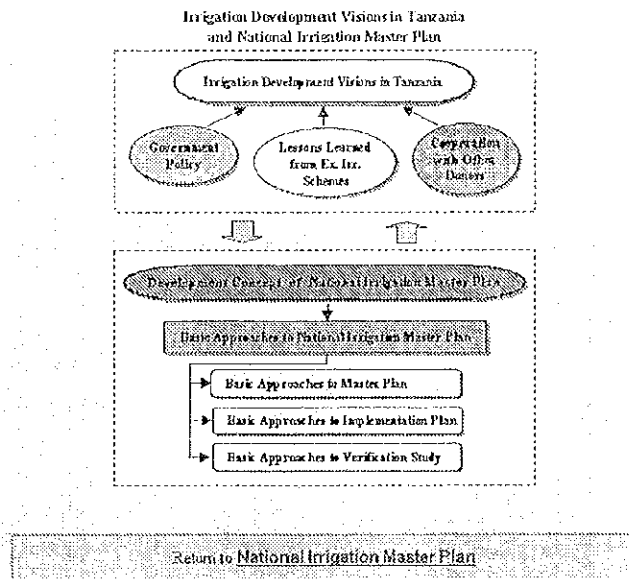


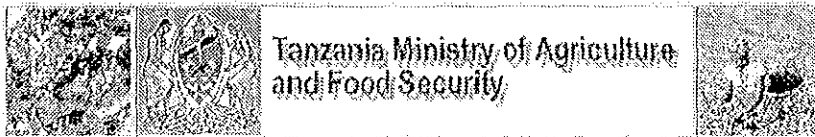
Exchange of Inception Report 1 in Zanzibar

Return to National Irrigation Master Plan



Basic Approach to the Study





Schedule of the Study

The Study has been carried out for 30 months from October 2001 to March 2004 in the following 3 phases:

Objective	2001	2002	2003	2004
Phase 1: Formulation of Master Plan	10	10		
Phase 2: Preparation of Implementation Plan		12	9	
Phase 3: Execution of Verification Study			10	5

Phase 1 : Oct 2001 - Oct 2002

Phase 2 : Dec 2002 - Sep 2003

Phase 3 : Oct 2003 - Mar 2004



Field visit in Iganga, Mwanza

[Return to National Irrigation Master Plan](#)



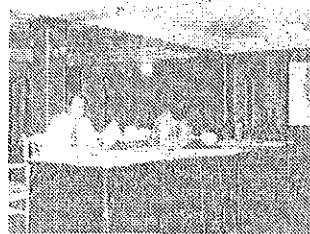
Our Major Activities

Phase 1 : Oct 2001 - Oct 2002

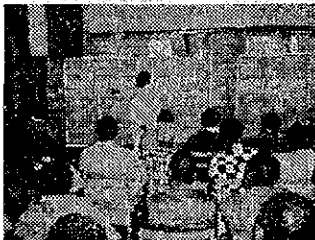
First Field Work

- 05/11/2001 : Arrival of JICA Study Team at Tanzania
- 06/11/2001 : Steering Committee Meeting
- 08/11/2001 : Stakeholder Meeting 29/11/2001 : Workshop
- 24/01/2002 : Steering Committee Meeting
- 28/01/2002 : Stakeholder Meeting
- 28/01/2002 : Workshop
- 30/01/2002 : Departure of JICA Study Team to Japan

(Report : Progress Report 1)



Second Field Work



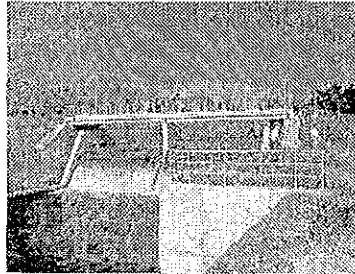
PCM Workshop in Mbeya

- 12/05/2002 : Arrival of JICA Study Team at Tanzania
- 15/05/2002 : Steering Committee Meeting in Zanzibar
- 14/06/2002 : PCM Workshop in Mbeya
- 20/06/2002 : PCM Workshop in Dar es Salaam
- 21/06/2002 : PCM Workshop in Dar es Salaam
- 24/06/2002 : PCM Workshop in Moshi
- 28/06/2002 : PCM Workshop in Morogoro

(Report : Draft Master Plan Report)



Study Results



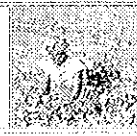
Manga Irrigation Scheme, Morogoro

Report	Major Contents
PHASE 1	
<ul style="list-style-type: none"> Progress Report 1 (Jan. 2001) 	Study Result of First Field Work (Oct. 2001 - Feb. 2002) <ul style="list-style-type: none"> Prevailing Related Government Policies Natural Conditions and Socio-economic Background Foreign Development Assistance Background and Constraints in Irrigation Development Development Concept for Formulation of NIMP Preliminary Study on Irrigation Development Potential Need of Strengthening the Irrigation Section
<ul style="list-style-type: none"> Master Plan Report (Oct. 2002) 	Study Result of Phase 1 (Oct. 2001 - Oct. 2002) <ul style="list-style-type: none"> Analysis and of Inventory Survey Results Potential of Irrigation Development Framework and Scenarios for Irrigation Development Irrigation Development Level Development Plan of Irrigation Schemes Improvement Plan of Subjects for Sustainable Irrigation Development Development program Institutional and Organizational Strategies for Implementation Selection of The Priority Areas and Subjects
PHASE 2	
<ul style="list-style-type: none"> Progress Report 2 (Feb. 2003) 	Study Result of Third Field Work (Dec. 2001 - Mar. 2002) <ul style="list-style-type: none"> Execution of Initial Environmental Evaluation Preparation of Draft Implementation Plan
<ul style="list-style-type: none"> Implementation Plan Report (Sep. 2003) 	Study Result of Phase 2 (Dec. 2002 - Sep. 2003) <ul style="list-style-type: none"> Outline of the Implementation Plan Summary of the Implementation Plan (PDM and the project proposal) Discussion of the Verification Study items Verification Study execution schedule
PHASE 3	
<ul style="list-style-type: none"> Progress Report 3 (Jan. 2004) 	Study Result of Fifth Field Work (Dec. 2001 - Mar. 2002) <ul style="list-style-type: none"> Contents of Verification Study Organization, administration and role assignment concerned with the execution and management of the Verification Study Result of the Verification Study Evaluation of the Verification Study
<ul style="list-style-type: none"> Verification Study Report (Mar. 2004) 	Study Result of Phase 3 (Oct. 2003 - Mar. 2004) <ul style="list-style-type: none"> Contents of Verification Study Organization, administration and role assignment concerned with the execution and management of the Verification Study Result of the Verification Study Evaluation of the Verification Study Feedback of the result of Verification Study

[Return to National Irrigation Master Plan](#)



Tanzania Ministry of Agriculture
and Food Security



Contact Address



Field Survey in Nyaluki Village, Mwanza

Kilimo House 2, Temeke

P.O.Box 9192, Dar es Salaam

TEL / FAX : 022-2865645

[Send Your Comments to Us!](#)

E-mail: shimazaki@kilimo.go.tz

[Return to National Irrigation Master Plan](#)

JICA