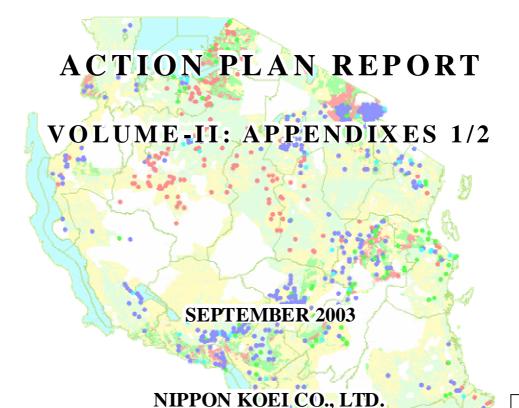
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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) MINISTRY OF AGRICULTURE AND FOOD SECURITY (MAFS)



THE NATIONAL IRRIGATION MASTER PLAN IN THE UNITED REPUBLIC OF TANZANIA



NIPPON GIKEN INC.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) MINISTRY OF AGRICULTURE AND FOOD SECURITY (MAFS)

THE STUDY ON THE NATIONAL IRRIGATION MASTER PLAN IN THE UNITED REPUBLIC OF TANZANIA

ACTION PLAN REPORT

VOLUME-II: APPENDIXES 1/2

SEPTEMBER 2003

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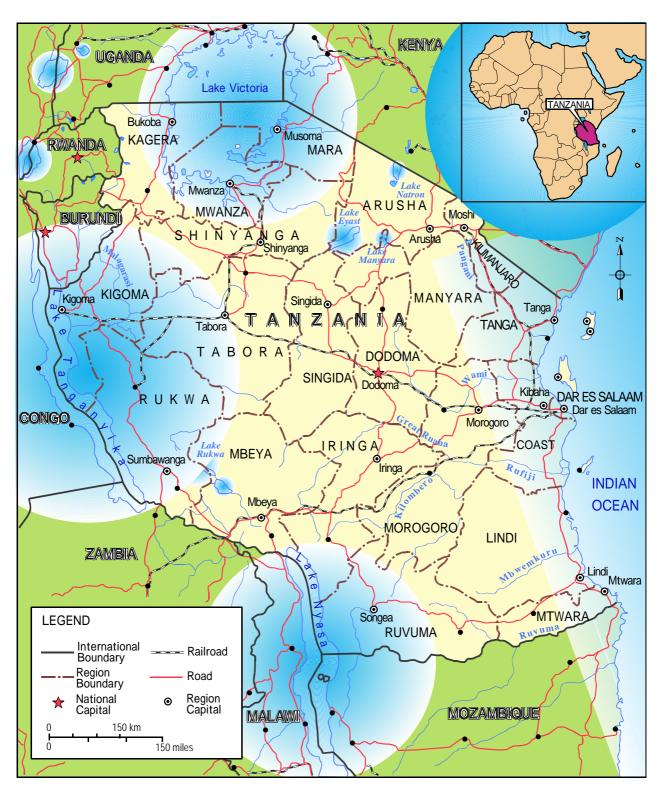
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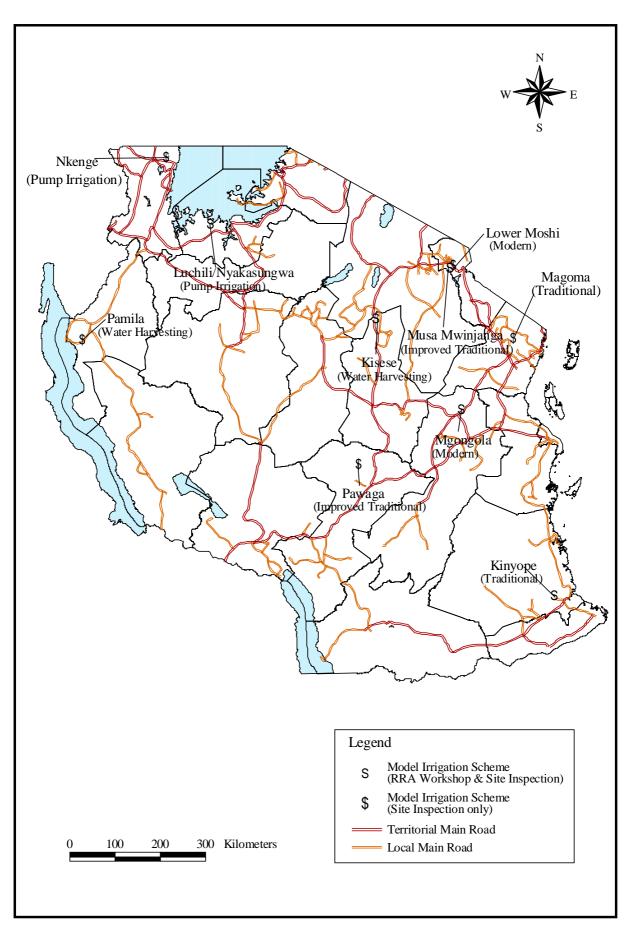
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Appendix A

Project Proposal and Project Design Matrix For Priority Programmes

THE STUDY

ON

THE NATIONAL IRRIGATION MASTER PLAN IN

THE UNITED REPUBLIC OF TANZANIA

Action Plan Report

Appendix A

Project Proposal and Project Design Matrix for Priority Programmes

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1. A1: DITS Institutional Improvement Programme

(1) Title of Programme	DITS Institutional Improvement Programme (Code No.A1)
(2) Location	Mainland
(3) Objectives	This programme aims to diagnose the organizational structure and management of the DITS, in particular, focusing on its appropriateness for implementation of NIMP, namely the realization of sustainable irrigation development, and then, based on the diagnosis, to implement the institutional improvement of the DITS so that it can execute its mandates successfully.
(4) Programme Description	The first step of the DITS institutional improvement began in 2002. The president approved the reform and promotion of the former Irrigation Services Unit (ISU) in November 2002. The old ISU was promoted to the new division consisting of the irrigation services, agricultural machinery and agricultural land use planning. However, this is still not enough. The organization of DITS as a whole must be reformed responding to the new movement of the LGRP and the bottom up approach. Further strengthening is necessary including the following subcomponents: - Establishment of Efficient Support Mechanism - Strengthening of the Monitoring Function - Reform of Zonal Irrigation Office conforming to the LGRP Therefore, the recommendations for DITS improvement mainly focus on the three components.
	(a) Establishment of an Efficient Support Mechanism The efficient support mechanism has n0t yet been well established institutionally and technically for the farmers' self-reliant irrigation development. First of all, the DITS does need a stronger role of inter-ministerial harmonization among the relevant governmental organizations and other major stakeholders, for instance, coordination of the water rights with the Ministry of Water and Live Stock. When a conflict of water for irrigation and other uses arises, there is seemingly no effective mediation mechanism at present.
	And also a new project selection procedure of the competitive bottom-up approach should be studied and introduced. In addition, upgrading the technical level of existing technical staff is also necessary. In particular, the training focus must be revised responding to the bottom up approach for the irrigation.
	(b) Strengthening of Monitoring Function
	The Monitoring and Evaluation Unit and the Environmental Unit are presently really understaffed, even though their expected roles at the national level are quite crucial to provision of effective feedback data to perform their demarcated roles and, moreover, to socio-economic effectiveness of irrigation development with environmental consideration. As a matter of fact, the DITS does not 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 two units should be included in the DITS institutional improvement programme.
	(c) Reform of Zonal Irrigation Office conforming to the LGRP
	Reform of Zonal Irrigation Office should be synchronized with the progress of LGRP. Presently the Zonal Irrigation Office has still very influential role in irrigation development, in particular, in new development schemes, because the LGAs are presently not yet capable enough to perform their demarcated

	roles and functions. At least in the first stage of the Master Plan up to 2007 the Zonal Office should maintain the present roles and functions. Gradually, however, their roles should focus on the inter-regional coordination in cooperation with the Regional Secretariat and provision of policy and technical guidance to the LGAs (DALDO) toward the end of third stage up to the year of 2017. Gradual withdrawal from direct supervision of irrigation schemes and transferring it to the LGAs should be undertaken step by step.
(5) PDM for the Programme	See the attached PDM.
(6) Contents of Report on Recommendation	The proposed contents of the report is as follows:
	Table of Contents 1. Introduction: Project Purpose and the Background 2. Review of the Division of Roles and Functions of the Irrigation Development among relevant Ministries and the LGAs. 2.1 DITS and MAFS 2.2 Other Ministries (Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing and PORALG) 2.3 LGAs 3. Diagnosis of the Organizational Structure and Management of the DITS 3.1 Overall Structure 3.2 Each Unit 3.3 Zonal Office 4. Improvement Plan of the DITS Organizational Structure 4.1 Goal and Strategy of Improvement Plan 4.2 Comparative Analysis of Alternative Plans 4.3 The Best Alternative Plan 4.4 Personnel Rotation System for the Improvement Plan 4.5 Capacity Building Plan for Senior Staffs 5. Implementation Plan 5.1 Phasing of Necessary Actions of Organizational Improvement 5.2 Implementation Schedule 5.3 Cost estimation 5.4 Monitoring and Follow-up Mechanism of the Implementation Plan
(7) Required Cost	US\$ 660 thousand
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for the study and one year for implementation of the Programme (July 2004 - June 2006)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	The division of responsibilities of the irrigation development among the relevant governmental organization needs to be authorized and recognized firmly by the government. This is the prerequisite for the programme. The good coordination among the relevant organizations is very crucial to the successful implementation of the programme. In addition, establishment of an efficient personnel rotation system and the capacity building of senior staffs (in particular, organization management skill) must be implemented in parallel. Otherwise, the improved structure won't work smoothly as expected.
(11) Special Arrangements	-

(DITS Institutional Improvement) under NIMP

 Project Name: National Irrigation Master Plan
 Duration: 2003 - 2017 (15 years)

 Project Area: Tanzania
 Target Agency: MAFS
 Date: August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The sustainable irrigation development is realized.	Implementation progress of the NIMP	 Monitoring and evaluation reports of the NIMP since 2003 	 ASDP is vigorously implemented as scheduled.
Project Purpose The DITS is institutionally strengthened to execute its mandates successfully for realization of sustainable irrigation development.	By 2007, institutional improvement of DITS is completed in line with the plan.	Completion report of the institutional improvement	 Necessary official backup is properly provided to the reformed organization of DITS so as to function properly by MAFS.
Outputs 1. Institutional improvement plan of the DITS is finalized. 2. Organizational structure of DITS is legitimately changed. 3. Personnel changes and, if necessary, recruitment of staff are done in the DITS in line with the institutional improvement plan.	By 2005, the institutional improvement plan is approved by the Government The institutional improvement of DITS is started in line with the Plan. Capability of each unit in the DITS is strengthened to execute its mandates.	Note of approval by the Government Progress report of institutional improvement of DITS Progress report of institutional improvement of DITS	 Other relevant projects for strengthening DITS such as the data base improvement project, the policy guidelines in irrigation development project are implemented in parallel.
Activities	Inputs		
 1-1 To review previous institutional improvement plans on the DITS. 1-2 To prepare a realistic and most effective plan of institutional improvement of DITS. 2-1 To make an implementation plan of legitimate change corresponding to the institutional improvement 2-2 To execute the implementation plan. 3-1 To make a personnel assignment plan corresponding to the institutional improvement. 3-2 To execute the personnel assignment plan. 	2) Organization 12 M/M 3) Management 10 M/M 4) Legal specialist 10 M/M Subject specialist for the subject of task duties	Personnel 1) Counterparts in each subject Equipment 1) Office L.S. 2) Others L.S. Budget 1) Salaries and necessary expenses for counterparts 2) Necessary expenditures in internal investigations.	 All necessary arrangement for institutional improvement of DITS is fulfilled by MAFS without substantial delay. The concerned organizations in the government such as the President Office and the LGAs support the project implementation and cooperate on it. Preconditions It is clearly confirmed the necessity of institutional improvement of DITS is recognized by MAFS. MAFS can provide necessary resources for the project. The mandate based on the roles and functions of DITS is clearly authorized by the government.

Component A1: DITS Institutional Improvement Programme

		Schedule 2004 2005 2006																												C4	
Activities	Expected results				20	004							20	05							2	2006				Persor		Implementer	Equipment	Cost	Remarks
	1	1	2 3	4	5 6	7	8 9 1	10 11	12	1 2	2 3	4 :	5 6	7	8 9	10	11 1	2 1	2	3 4	5	6 7	8	9 10	11 12	charg	charge		1.1	(Thousand US\$)	
									l																						
To review of the division of roles and functions of the irrigation development among relevant ministries and the LGAs.	Study report																									AD (DI	TS)	Consultants	as required	70	
To diagnose the organizational structure and management of the DITS	Study report																									AD (DI	TS)	Consultants	as required	70	
To Prepare the improvement plan of the DITS organizational structure	Study report																									AD (DI	TS)	DITS, Consultants	as required	141	
4 To prepare the personnel rotation system	Study report																									AD (DI	TS)	DITS, Consultants	as required	106	
To prepare the training plan of the DITS senior staffs for their management skill improvement.	Study report																									AD (DI	TS)	DITS, Consultants	as required	106	
6 Approval of the improvement plan of the DITS organizational structure	-																									AD (DI	TS)	DITS	as required	35	
7 Implementation of the plan	Follow-up report																									AD (DI	TS)	DITS, Consultants	as required	132	
																														660	Total

2. A2: LGA Institutional Strengthening Programme for Irrigation Development

(1) Title of Programme	LGA Institutional Strengthening Programme for Irrigation Development (Code No. A2)
(2) Location	Mainland
(3) Objectives	This programme aims to diagnose the organizational structure and management of the LGAs, mainly focusing on the appropriateness of DALDOs for implementation of NIMP, namely the realization of sustainable irrigation development, and then, based on the diagnosis, to implement the institutional improvement of the DALDOs so that they can execute their mandates successfully.
(4) Programme Description	In the LGAs the District Agriculture and Livestock Development Office (DALDO) is in charge of irrigation development. However, not all DALDOs have irrigation officers. As a matter of fact, some DALDOs are understaffed today. Although their expected roles and functions have expanded more, the LGAs presently face a lot of constraints that limit their capacity including: - Lack of a legal mandate, technical skills and facilities to enforce some roles Lack of expertise for strategic and financial planning and management Very limited resources for local level institutional building for community participation in the development process A shortage of competent personnel and, in some cases, technical equipment to manage and control the development process. The LGAs' role is quite important under the decentralization policy. A lot of constraints stated above must be solved one by one to perform their roles satisfactorily. Some of their main roles are based on the guidance from the Central Government to provide technically and financially appropriate and feasible 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. Therefore, this project consists of the following components: - To diagnose the appropriateness of the DALDOs' present organizational structure for implementation of NIMP - To recommend an improvement plan of the PALDOs' organizational structure To prepare the implementation plan of the recommendation To implement the institutional improvement plan so that the DALDOs can execute the mandates successfully for better performance of participatory irrigation development responding to the decentralization policy, i.e. the LGAs are presently being transformed under the decentralization with the progress of the LGRP.
(5) PDM for the Programme	See the attached PDM.

(6) Contents of Report on	The proposed contents of the report is as follows:										
Recommendation											
	Table of Contents										
	 Introduction: Project Purpose and the Background Review of the Division of Roles and Functions of the Irrigation Development 										
	among the LGAs and relevant Ministries.										
	2.1 The LGAs (DALDOs)										
	2.2 MAFS (DITS)										
	2.3 Other Ministries (Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing and PORALG)										
	3. Diagnosis of the Organizational Structure and Management of the DALDOs for Irrigation Development										
	3.1 Overall Structure										
	3.2 Each Unit										
	3.3 Relationship with Other Relevant Organizations such as Regional Commissioner's Office and the Zonal Office										
	4. Improvement Plan of the Organizational Structure of the DALDO										
	4.1 Goal and Strategy of Improvement Plan										
	4.2 Comparative Analysis of Alternative Plans 4.3 The Best Alternative Plan										
	4.3 The Best Alternative Plan 4.4 Personnel Rotation System for the Improvement Plan										
	4.4 Personnel Rotation System for the improvement Plan 4.5 Capacity Building Plan of Senior Staffs										
	5. Implementation Plan										
	5.1 Phasing of Necessary Actions of Organizational Improvement										
	5.2 Implementation Schedule										
	5.3 Cost estimation										
	5.4 Monitoring and Follow-up Mechanism of the Implementation Plan										
(7) Required Cost	US\$ 660 thousand										
(8) Executing Agency	The LGAs										
(9) Implementation Schedule	Two years for study and implementation of the Programme (January 2005 to December 2006)										
(10) Assessment of Possible Problems and Bottlenecks in Implementation	The division of responsibilities of the irrigation development among the relevant governmental organizations needs to be authorized and recognized firmly by the government. This is the prerequisite for the programme. Therefore, the good coordination among the relevant organizations is very crucial to the successful implementation of the programme. In addition, establishment of an efficient personnel rotation system and the capacity building of senior staffs (in particular,										
	organization management skill) must be implemented in parallel. Otherwise, the improved structure won't work as expected										
(11) Special Arrangements	The A1 programme should precede the A2 programme.										

(LGA Institutional Strengthening Programme for Irrigation Development) under NIMP

Project Name: National Irrigation Master Plan

Duration: 2003 - 2017 (15 years)

Project Area: Tanzania

Target Agency: LGAs

Date: August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The sustainable irrigation development is realized.	Implementation progress of the NIMP	Monitoring and evaluation reports of the NIMP since 2003	ASDP is vigorously implemented as scheduled.
Project Purpose Support to irrigation farming by the LGAs is improved.	By 2007, institutional strengthening of the IS district is completed in more than 90 % of districts holding irrigation schemes.	 Completion report of the institutional strengthening of the IS district Report of DALDO in each district 	Necessary official backup is properly provided to the reformed organization of IS district by the LGAs so as to function properly.
Outputs 1. Institutional strengthening plan of the irrigation sector in the LGA (referred to as the IS district, hereafter) is finalized. 2. Organizational structure of the IS district is legally changed by district in line with the plan 3. Personnel changes and if necessary recruitment of staff are done in the IS district in line with the plan by district.	By 2005 the plan is approved by the Central and Local Governments. By 2005 implementation of the plan is started by district. By 2007 the efficient personnel rotation mechanism works properly in line with the plan.	Note of approval by the Governments Progress report of institutional strengthening of the IS district Progress report of institutional strengthening of the IS district	 Other relevant projects for institutional strengthening such as the DITS improvement project, the policy guidelines in irrigation development project are implemented in parallel. Technical training for the staff of IS district is implemented in parallel.
Activities 1-1 To review previous institutional strengthening plans on the IS district. 1-2 To prepare a realistic and effective plan of institutional strengthening of IS district. 1-3 To finalize the plan of institutional strengthening of the IS district. 2-1To make an implementation plan of district's legitimate change corresponding to the institutional strengthening. 2-2 To execute the implementation plan of district's legitimate change. 3-1 To make a district's personnel assignment plan in line with the strengthening plan. 3-2 To execute the district's personnel assignment plan.	Inputs Donor Task Force 1) Local Government Institution 12 M/M 2) Local Government Organization 12 M/M 3) Local Government Management 10 M/M 4) Legal specialist 10 M/M Subject specialist for the subject of task duties (as required) Equipment 1) Computer system L.S. 2) Office equipment L.S. 3) Others L.S. Budget Some part of expenditures of local activities related to the	Personnel 1) Counterparts in each subject in DITS 2) Counterpart in each district Equipment 1) Office L.S. 2) Others L.S. Budget 1) Salaries and necessary expenses for counterparts 2) Necessary expenditures in internal investigations.	 All necessary arrangement for institutional improvement of IS district is fulfilled by the LGAs and MAFS without substantial delay. Preconditions It is clearly confirmed the necessity of institutional improvement of IS district is recognized by the LGAs and MAFS. The LGAs and MASF can provide necessary resources for the project. The mandate based on the roles and functions of IS district is clearly authorized by the government.

Component A2: LGA Institutional Strengthening Programme for Irrigation Development

					Schedule													Person			Cost								
	Activities	Expected results			20	004							200	5						2	006				in	Implementer	Equipment		Remarks
		•	1 2	3 4	5 6	5 7	8 9 1	0 11	1 12	1 2	. 3	4 5	6	7 8	9 1	0 11	12	1 2	3 4	5	6 7	8 9	10	11 12	charge			(Thousand US\$)	
1	To review of the division of roles and functions of the irrigation development among the LGAs and relevant ministries.	Study report																							AD (DITS)	Consultants	as required	70	
2	To diagnose the organizational structure and management of the DALDOs	Study report																							AD (DITS)	Consultants	as required	70	
3	To Prepare the improvement plan of organizational structure of the DALDOs	Study report																							AD (DITS)	DITS, Consultants	as required	141	
4	To prepare the personnel rotation system	Study report																							AD (DITS)	Consultants	as required	106	
5	To prepare the training plan of the DALDO senior staffs for their management skill improvement.	Study report																							AD (DITS)	Consultants	as required	106	
6	Approval of the improvement plan of organizational structure of the DALDOs	-																							AD (DITS)	DITS	as required	35	
7	Implementation of the plan	Follow-up report																							AD (DITS)	DITS, Consultants		132	
																												660	Total

3. A3.1: New Legal Framework for IA Establishment Study

(1) Title of Duognosses	Now Local Enemouseds for IA Establishment Study (Code No. A2.1)							
(1) Title of Programme	New Legal Framework for IA Establishment Study (Code No. A3.1)							
(2) Location	Mainland							
(3) Objectives	The IA is a basic private organization and a principal actor for irrigation development. A well-organized IA is one of crucial factors for its success. As for the registration of the IA, there are generally two alternatives: cooperative or association. However, neither of them is necessarily an optimum organizational form for the IA. Therefore, the objective of the study is to make a recommendation of a new legal framework for the IA, which bestows an appropriate legal status on the IA and defines its rights and liability for irrigation development.							
(4) Programme Description	A new legal framework exclusively for the IA should be established, as it is necessary for securing their ownership and self-reliable irrigation development. The study includes the following issues which should be clearly defined in the new framework:							
	 The compulsory participation of all irrigators in the IA is a prerequisite of irrigation development. MAFS must become a competent authority of the IA, that is to say, the registrar of the IA. Otherwise irrigation development can hardly be implemented consistently and smoothly. MAFS should hold an appropriate coordination function of the water right for irrigation development with the Ministry of Water and Livestock Development. 							
	The study consists of the following items:							
	 A review of the existing legal framework for the IA and irrigation development Field survey of the existing IAs in the country Analysis of the IAs' roles and liabilities for irrigation development (registration, organizational structure, membership, licensee of water right, water charge collection and payment, land tenure ownership, by-law and regulations, operation and maintenance activities, management of organization, ownership of the facilities, dissolution, and so forth.) Recommendations for a new legal framework for the IA Implementation plan for a new legal framework for the IA 							
	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 the IA, land tenure and water right, as well as ownership of and responsibility for irrigation facilities should be clearly defined for irrigation development through the new legal framework.							
(5) PDM for the Programme	See the attached PDM.							
(6) Contents of Report on	The proposed contents of the report is as follows:							
Recommendation	Table of Contents							
	1. Introduction: Project Purpose and the Background 2. A Review of the Existing Legal Framework for the IA and Irrigation Development 2.1 Cooperative Societies Act 2.2 Societies Ordinance							
	2.3 Others3. Diagnosis of the existing IAs in the country							

	3.1 Overall Review
	3.2 Unregistered IA
	3.3 Registered IA as cooperative
	3.4 Registered IA as association
	3.5 Other types of IA
	3.6 Problems to be tackled
	4. Analysis of the IAs' roles and liability for irrigation development
	4.1 Overview of Roles and Liability
	4.2 Registration
	4.3 Organizational Structure
	4.4 Membership
	4.5 Water right, Water charge, Land tenure
	4.6 Ownership of the Facilities
	4.7 Bylaw and Regulations
	4.8 Operation and Maintenance of the Facilities
	4.9 Management of Organization
	4.10 Dissolution
	4.11 Others
	5. Recommendation for a New Legal Framework for the IA
	6. Implementation Plan for a New Legal Framework
	6.1 Phasing of Necessary Actions for a New Legal Framework
	6.2 Implementation Schedule
	6.3 Cost estimation
	6.4 Monitoring and Follow-up Mechanism of the Implementation Plan
(7) Required Cost	US\$ 525 thousand
•	
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for the study and one year for implementation of the Programme
-	(July 2004 - June 2006)
(10) Assessment of Possible	A good coordination of the relevant ministries is crucial to the success of the
Problems and Bottlenecks	study, such as PO-RALG, the Ministry of Cooperatives and Marketing,
in Implementation	Ministry of Home affairs, Ministry of Water and Livestock Development, and
	so forth.
(11) Special Arrangements	The Preparation of Legal Framework for the Development of Irrigation in
	Tanzania under the Agricultural Sector Programme Support (ASPS) –
	Irrigation Component has been implemented. The result of the study should be
	utilized for this programme A3.1.

(New Legal Framework for IA Establishment Study) under NIMP

Project Name: National Irrigation Maste	er Plan	<u>Duration:</u>	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The sustainable irrigation development is realized.	Implementation progress of the NIMP	Monitoring and evaluation reports of the NIMP since 2003	ASDP is vigorously implemented as scheduled.
Project Purpose A new legal framework for the IA is established.	- By 2007, the new legal framework of IA is approved by the Parliament and enacted.	- The Parliament record - Follow-up survey of the project	 Necessary official backup is properly provided to organize and register the IAs under the new legal framework. New IAs become capable of operating and maintaining the irrigation schemes at the same time.
The Outputs			
 Recommendation of Irrigators' Association Act and its draft is finalized. Public awareness of importance of the new legal framework for the IA among stakeholders is promoted. 	By 2005, establishing the new legal framework for the IA starts in line with the recommendation. Workshop on the new legal framework is held in every Region.	Progress report of the new legal framework Record of workshop for the stakeholders Report of the extension officers in each district.	MAFS executes the recommendation as planned.
Activities	Inputs		
 1-1 To review existing statutory framework relevant to the establishment and functions of IA. 1-2 To execute a comparative study of existing IAs focusing on registered cooperative societies, registered associations and non-registered irrigators' groups. 	Task Force 1) Institution 10 M/M 2) Irrigation 10 M/M 3) Legal specialist 15 M/M Subject specialist for the subject of task duties (as required)	Personnel 1) Counterparts in each subject Equipment 1) Office L.S. 2) Others L.S. Budget	Consensus of opinion on the necessity of a new legal framework for the IA is attained among the stakeholders: Irrigators, MAFS, relevant Ministries, LGAs, NGOs and so forth.
2-1 To draft legislation for the	Equipment	1) Salaries and necessary	
establishment and functions of the IA.	1) Computer system L.S. 2) Office equipment L.S.	expenses for counterparts 2) Necessary expenditures in	Preconditions
 2-2 To submit a recommendation of IA act establishment. 3-1 To promote the public awareness of importance of the IA for the irrigation development among stakeholders through workshops for them. 	3) Others L.S. Budget Some part of expenditures of local activities related to the Project.	internal investigations.	 It is clearly confirmed the necessity of new legal framework for the IA by MAFS. MAFS provides necessary resources (manpower, budget, technical support) for the project.

Component A3.1: New Legal Framework for IA Establishment Study

		Schedule													Ct										
Activities	Expected results				2004						2005	5					200)6		Pers		Implementer	Equipment	Cost	Remarks
		1 2	3	4 5	6 7	8 9 1	0 11 1	12 1	2 3	4 5	6 7	7 8	9 10	11 12	1 2	3 4	5 6	7 8	9 10 11 1	cha	rge			(Thousand US\$)	
																								.,	
To review the existing legal framework for the IA and irrigation development	Study report																			AD (I	OITS)	Consultants	as required	70	
To carry out a field survey of the existing IAs in the country	Study report																			AD (I	OITS)	DITS, Consultants	as required	105	
To analize the IAs' roles and liability for irrigation development	Study report																			AD (I	OITS)	DITS, Consultants	as required	105	
To prepare the recommendation of a new legal framework for the IA	Study report																			AD (I	OITS)	DITS, Consultants	as required	105	
To prepare the implementation plan of a new legal framework for the IA	Study report																			AD (l	OITS)	DITS, Consultants	as required	35	
6 Preparation of the new legal framework	Study report																			AD (l	OITS)	DITS, Consultants	as required	98	
7 Enactment of the new legal framework	Follow-up report																			AD (I	OITS)	DITS	as required	7	
																								525	Total

4. A3.2: IA Organizing and Registration Support Manual

(1) Title of Programme	IA Organizing and Registration Support Manual (Code No. A3.2)
(2) Location	Mainland
(3) Objectives	For the time being, registration of IA as cooperative or association should be promoted, until the new legal framework has been established. A registered IA is essentially much preferable to non-registered one even in the present situation, because a legal status as cooperative or association may bestow social credibility to the IA filled with the prerequisites for the registration and may make the management of IA more smoothly and easy for the farmers. Registration of IA can be regarded as the necessary initial step toward the self-reliant irrigation development. The main objective of the programme is to make a support manual for organizing and registration of IA, so that the extension service officers of the LGAs can provide the farmers with necessary information on organizing and registration of IA and guide them properly. The programme also includes a training programme of the extension service officers.
(4) Programme Description	The local governments need to provide the farmers with sufficient information on the application procedures, the differences between cooperative and association and other necessary relevant issues, such as standard organization chart for IA, model bylaws and regulations and etc., so that the farmers can properly select an appropriate organizational form from cooperative and association based on their needs. Therefore, the central government, namely DITS, needs to prepare the standard guidelines and manual for the Local Governments to encourage the farmers to properly organize and to register the IA without biased intervention of the government officials. The programme consists of the following two parts: To prepare a support manual for the LGA extension service officers To train the LGA extension service officers The preparation of the manual includes the following activities:
	 To review the existing organizing and registration procedure of the IA To create the support manual of organizing and registration of the IA under the present legal framework. Training of the LGA extension service officers includes the following
	 activities: To hold seminars for explanation of the support manual to the LGAs' staffs and other stakeholders. To train staffs of governmental offices concerned with the procedures of organizing and registration of the IA.
(5) PDM for the Programme	See the attached PDM.
(6) Contents of Manual	The proposed contents of the Manual are as follows:
	Table of Contents 1. Introduction: Project Purpose and Background 2. A Review of the Existing Organizing and Registration Procedure of the IA 2.1 Cooperative Societies Act 2.2 Societies Ordinance 2.3 Others 3. Overview of the IAs' roles and liabilities for irrigation development 3.1 Overview of Roles and Liabilities

	3.2 Registration
	3.3 Organizational Structure
	 Executive Committee, Sub Committee, Field Canal Subgroup
	3.4 Membership
	3.5 Water right, Water charge, Land tenure
	3.6 Ownership of the Facilities
	3.7 Bylaw and Regulations
	 Necessity of Compulsory Participation of Irrigators
	3.8 Operation and Maintenance of the Facilities
	3.9 Management of Organization
	3.10 Dissolution
	3.11 Others
	4. Differences between Cooperative and Association
	5. Standard Procedure of Organizing the IA
	6. Standard Procedure of Registration
	6.1 Cooperative
	6.2 Association
	6.3 Others
	7. Movement of a New Legal Framework for the IA
(7) Required Cost	US\$ 780 thousand
•	
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for preparation of the manual and one year for training the extension
	officers (January 2005 - December 2006)
(10) Assessment of Possible	The manual should be applied to the all concerned IAs without biased
Problems and Bottlenecks	intervention of the government officials, such as district cooperative officer.
in Implementation	The LGA staffs must be neutral to the farmers' selection of their appropriate
	legal entity. Unnecessary intervention is surely harmful to promoting the
	farmers' ownership for irrigation development.
	Also, efforts are required to popularize the manual especially LGAs' staff
	concerned with irrigation development.
(11) 6	
(11) Special Arrangements	The manual must be modified after the enactment of the new legal framework.
	Besides, the programmes A3.2 and A3.3 can share and utilize the study results
	together. Therefore, unnecessary overlap of the study should be removed.

(Organizing and Registration Support Manual) under NIMP

 Project Name: National Irrigation Master Plan
 Duration: 2003 - 2017 (15 years)

 Project Area: Tanzania
 Target Agency: MAFS
 Date: August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption				
Overall Goal The sustainable irrigation development is realized.	Implementation progress of the NIMP	Monitoring and evaluation reports of the NIMP since 2003	ASDP is vigorously implemented as scheduled.				
Project Purpose The Government establishes the backstop mechanism for the farmers' participatory bottom up movement for organizing and registration of the IAs.	 By the end of 2005, the support manual is prepared. By the mid 2007, the registration ratio of the IAs is improved at over 50% compared with 2002. 	 Statistical data based on the reports of the extension officers Annual sampling survey by the zonal office. 	 The organizing and registration of IA continue successfully. Modality and method of registration of IA don't change drastically. 				
Outputs 1. The support manual for organizing and registration of IA is prepared and provided for the LGAs (DALDOs). 2. The new support manual is expanded to and utilized by every concerned governmental staffs, in particular extension service officers.	The support manual for organizing and registration of IA is approved officially. Relevant staffs in DITS and the LGAs recognize the support manual. All extension service officers concerned with irrigation development utilize the support manual.	Report of the follow-up study on expansion of the support manual Report of the follow-up study on organizing and registration of IA. Record of extension service officers	MAFS makes necessary institutional arrangements for introduction and utilization of the support manual successfully without substantial delay. The other relevant ministries and the LGAs are cooperative for introduction of the support manual				
Activities 1-1 To review the existing organizing and registration procedure of the IA 1-2 To make the support manual of organizing and registration of the IA under the present legal framework. 1-3 To prepare a model by	Inputs Donor Study Team 1) Legal specialist 8 M/M 2) Institution 8 M/M 3) Management 10 M/M 4) Irrigation 8 M/M 5) Facilitator 18 M/M Equipment	GOT Personnel 1) Counterparts in each subject Equipment 1) Office L.S. 2) Others L.S.	MAFS (DITS) and the LGAs (DALDO) will fulfill all necessary arrangements for introduction and utilization of the support manual on schedule.				
compulsory participation of the members and other necessary items. 2-1 To train staffs of governmental offices concerned with the procedures of organizing and registration of the IA. 2-2 To hold seminars for explanation of the support manual to the LGAs' staffs and other stakeholders.	1) Vehicles L.S. 2) Office equipment L.S. 3) Others L.S. Budget Some part of expenditures of local activities related to the Project.	Budget 1) Salaries and necessary expenses for counterparts 2) Allowances and expenses of governmental staff training 3) Some portion of the budget for the backstop mechanism.	Preconditions - It is clearly confirmed the necessity of the support manual of organizing and registration of the IA by MAFS, the LGAs and irrigators. - MAFS and the LGAs assign necessary resources (manpower, budget, technical support) to the project.				

Component A3.2: IA Organizing and Registration Support Manual

			Schedule											Cost																	
	Activities	Expected results		1 1	_	200)5	Н				1 1		200	6						_	20	07				Person in charge	Implementer	Equipment		Remarks
			1	2 3	4 5	5 6	7 8	9	10 11	12	1 2	3	4 5	6	7 8	9	10 11	12	1 2	3	4 5	6	7	8 9	10	11 12	charge			(Thotsand US\$)	
																		Ц													
1	To review the existing organizing and registration procedure of the IA	Study report																									AD (DITS)	Consultants	as required	71	
2	To sum up the IAs' roles and liability for irrigation	Study report																									AD (DITS)	DITS, Consultants	as required	71	
3	To prepare a model bylaw and regulations of the IA, which defines the compulsory participation of the members and other necessary items.	Study report						1																			AD (DITS)	DITS, Consultants	as required	142	
4	To make the support manual of organizing and registration of the IA under the present legal framework.	Study report																									AD (DITS)	DITS, Consultants	as required	71	
5	Approvement of the manual by the MAFS	Approved Manual																									AD (DITS)	DITS	as required	35	
6	To hold seminars for explanation of the support manual to the LGAs' staffs and other stakeholders.	Follow-up report																									AD (DITS)	DITS, Consultants	as required	106	
7	To train staffs of governmental offices concerned with the procedures of organizing and registration of the IA.	Follow-up report																									AD (DITS)	DITS, Consultants	as required	284	
																														780	Total

5. A3.3: IA Management Training for Farmers

(1) Title of Programme	IA Management Training for Farmers (Code No. A3.3)
(2) Location	Mainland
(3) Objectives	Judging from the RRA done by the NIMP study team, the management of existing IAs should be improved. The following problems have been identified: - Poor participation of members in the IA activities such as operation and maintenance activities of irrigation facilities, meeting and etc. - Lack of leadership of the IA executive committee and necessity of leadership training - Poor awareness of the IA's importance and roles by farmers for self-reliant irrigation development and necessity of enlightenment of farmers for better understanding of the IA - Insufficient financial management ability The objectives are to prepare a training programme for the IA management and to provide IA leaders with the training services, so that they can improve their management skills and manage their organizations successfully for realization of the sustainable self-reliant irrigation development.
(4) Programme Description	The programme focuses on issues concerning management of the IA. Technical issues concerning operation and maintenance are dealt with in the other programme (C6).
	The programme consists of the following items:
	 To review the present performance of IA management and the problems. To confirm the roles and functions of the IA for irrigation development. To identify necessary items for the training programme. To prepare model bylaw and regulations of the IA, which defines the compulsory participation of the members and other necessary items. To prepare the training manual and programme for the IA management for IA leaders. To design an organizational setup for implementation of the training program. To provide IA leaders with the training services through the setup
(5) PDM for the Programme	See the attached PDM.
(6) Contents of Training Programme	The proposed contents of the training for the IA leaders are as follows:
	Table of Contents (a) Overview of Roles and Liabilities of the IA (b) Registration (c) Organizational Structure (Executive Committee, Sub-Committee, Field Canal Group) (d) Bylaw and Regulations - Necessity of Compulsory Participation of Irrigators (e) Selection of Leaders (Chairperson, Secretary, Treasurer) (f) Membership (g) Water right, Water charge, Land tenure (h) Operation of General Meeting and Other Meetings (i) Financial Management (Registration Fee, Membership Fee, Budget (j) Plan, Financial Report, Bank Account, Audit, and etc.)

	 (k) Dissolution (l) Enlightenment of Members' Active Participation in the IA Activities (m) Leadership Training (n) Others
(7) Required Cost	US\$ 765 thousand
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for preparation of the manual and the program and one year and a half for training the IA leaders (January 2005 - June 2007)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	Good cooperation of DITS and the LGAs (DALDOs) is a necessary condition for successful implementation of the programme. DITS is mainly responsible for preparing the manual and the training programme. The LGAs are mainly responsible for implementing the training programme for the IA leaders.
(11) Special Arrangements	The programmes A3.2 and A3.3 can share and utilize the study results together. Therefore, unnecessary overlap of the study should be removed.

(Management Training for Farmers) under NIMP

Project Area: Tanzania Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal The sustainable irrigation development is realized.	Implementation progress of the NIMP	Monitoring and evaluation reports of the NIMP since 2003	ASDP is vigorously implemented as scheduled.
Project Purpose The IAs are well managed by the farmers themselves and function well for operation and maintenance of the irrigation schemes	Well documented record of meetings Audited financial reports Improved participation ratio of irrigators in the IAs	 Follow-up survey of the project Statistical data based on reports of the extension officers in each district. 	MASF and the LGAs continuously put the high priority on the project and the NIMP.
Outputs 1. The government prepares the training programme of the IA management for the IA leaders. 2. IA leaders take the training courses based on the programme.	By 2006 the training programme for the IA leaders is prepared by the Government. By the mid 2007 more than 50% of the registered IA leaders take the training courses.	The final report of the training program formation study. Record of the training program: the number of the successfully completed participants in the training courses.	 Trained leaders continue to work for their IAs. The training program is implemented without substantial delay. IA leaders are also well prepared to operate and to maintain the irrigation schemes efficiently.
Activities 1-1. To review the present performance of IA management and the problems. 1-2. To identify necessary items	Donor Consultant Team 1) IA Management 14 M/M 2) Institution 10 M/M 3) Irrigation 6 M/M	GOT Personnel 1) Counterparts in each subject 2) Training Staffs	Good coordination of MAFS, the LGAs and other relevant institutions are attained for the project.
for the training programme. 1-3. To prepare the training programme for the IA management for IA leaders. 2-1.To design an organizational setup for implementation of the training program.	4) Training Plan 6 M/M 5) Facilitator 15 M/M Subject specialist for the subject of task duties (as required) Equipment 1) Office equipment L.S.	Equipment 1) Office L.S. 2) Others L.S. Budget 1) Salaries and necessary expenses for counterparts 2) Cost of the project	Preconditions - It is clearly confirmed the necessity of IA management training for the IA leaders by MAFS, the LGAs and irrigators. - MAFS and the LGAs assign necessary resources
2-2.To provide IA leaders with the training services through the setup.	2) Others L.S. Budget Some part of expenditures of local activities related to the Project.	management. Facilities 1) Training facilities	(manpower, budget, technical support) to the project.

A - 20

Component A3.3: IA Management Training for Farmers

			Schedule										Person			a																	
	Activities	Expected results				2	200:	5							200)6								2007	7				in	Implementer	Equipment	Cost	Remarks
				2 3	3 4	5	6	7 8	9 1	0 11	12	1 2	3	4 5	6	7	8 9	10 1	11 12	1	2 3	3 4	5	6	7 8	9 1	10 11	1 12	_		-11	(Thousand US\$)	
																								1									
1	To review the present performance of IA management and the problems.	Study report																											AD (DITS)	Consultants	as required	53	•
2	To confirm the roles and functions of the IA for irrigation development.	Study report																											AD (DITS)	DITS, Consultants	as required	53	i
3	To identify necessary items for the training programme.	Study report																											AD (DITS)	DITS, Consultants	as required	26	5
4	To prepare a model bylaw and regulations of the IA	Study report																											AD (DITS)	Consultants	as required	53	;
5	To prepare the training manual and programme for the IA management for IA leaders.	Study report																											AD (DITS)	Consultants	as required	106	5
6	To design an organizational setup for implementation of the training program.	Study report																											AD (DITS)	Consultants	as required	53	;
7	Approval of the training manual and programme for the IA management and the organizational setup.	-																											AD (DITS)	LGAs, DITS	-	26	5
8	To provide IA leaders with the training services through the setup	Follow-up report																											AD (DITS)	LGAs, DITS, Consultants	as required	396	5
																																765	Total

6. B1: Regularization of Irrigation Administration and DITS Working Mandate Formulation Programme

(1) Title of Programme	Regularization of I Formulation Program	_	inistration and DITS W :B1)	Vorking Mandate
(2) Location	Mainland and Zanzil	oar		
(3) Objectives	standardize the mand The DITS's mandate implementation proc Through properly ex	date of DITS in e should clarify esses in collaboration the pro- ecuting the pro- ing of irrigation	rrigation administration of accordance with the irrig scheme selection procedoration with LGAs. gramme, DITS will prope development. It is expect	ation regulations. lures and scheme rly initiate works
(4) Programme Description	Tanzania. Progress ASDP is a most influto such movement, or irrigation administration of irrigation administration of irrigation administration of the promotion of the the DITS, has to be or The ASDP is undergin particular, the de LGAs. Irrigation decentralization. No collaboration of the programme is to answer.	of the agricumential movemed decentralization. The GO distration from the endation made a former IS, the clarified immed by nation the endation administration administration few formation and the LGAs needs wer those urgential movements.	nal policies which are stro of many public sector ratios is positioned in the of the irrigation administration to be established. Further	t represented by Corresponding seen brought into petent authorities (S) to the DITS accordance with ation authority as ongly supporting, esponsibilities to turmoil of the stration with the
(5) PDM for the Programme (6) Contents of Programme	See the attached PDI The proposed conten		amme are as follows:	
	Activities	Procurement	Providing of manpower	Remarks
	To review previous laws and rules concerning to the irrigation administration. To prepare a draft of	Not specified Not specified	- Consultants having required ability and faculty - Consultants having	
	regulations of irrigation administration.		required ability and faculty	
	To adjust inconsistencies of the draft of the regulations with other related regulations and irrigation development policy.	Not specified	- Consultants having required ability and faculty	Certain committee collaborating other concerned authorities should be organized.
	To finalize the draft of regulations of irrigation administration.	Not specified	- Consultants having required ability and faculty	

	To review the	Not specified	- Consultants having							
	previous missions for the DITS.	Not specified	required ability and faculty							
	To prepare a plan for the new mission statement of DITS.	Not specified	- Consultants having required ability and faculty	Link to the Subject-wise programme A1						
	To finalize the plan of mission	Not specified	- Consultants having required ability and faculty							
	To study demands to be included into the new duties standard of DITS.	Not specified	- Consultants having required ability and faculty							
	To review previous duties of DITS.	Not specified	- Consultants having required ability and faculty							
	To finalize a plan of task duty standards of DITS.	Not specified	- Consultants having required ability and faculty							
	To conceptualize official procedures of schemes selection and implementation.	Not specified	- Consultants having required ability and faculty							
	To formalize each process of the scheme implementation in consideration of the finalized feature of DITS and other related organizations and regulations.	Not specified	- Consultants having required ability and faculty							
	To prepare written rule on the formalities on scheme implementation.	Not specified	- Consultants having required ability and faculty							
(7) Required Cost	US\$ 540 thousand									
(8) Executing Agency	Division of Irrigation	and Technical	Services, MAFS							
(9) Implementation Schedule	One year for study a 2005)	and implementa	ntion of the Programme (.	July 2004 – June						
(10) Assessment of Possible	At this moment s	pecial attentio	n should be given to	farmer-managed						
Problems and Bottlenecks	small-scale irrigation schemes. Those small-scale irrigation schemes are									
in Implementation	intended to be managed on the basis of farmers' participation and initiatives. LGAs are expected to play an important role in promotion of the small-scale irrigation developments. Irrigation administration of DITS of MAFS, is essential for irrigation development, but has undergone a complete change in consideration of the decentralization. All personnel concerned in irrigation administration should recognize such needs and embody ideal management of irrigation development in their duties.									
(11) Special Arrangements	A Subject-wise Development Programme for institutional improvement of government authorities concerning irrigation development is proposed in Programme A1 together with implementation of this programme. Both programmes have close connections with each other. The two programmes should be implemented together.									

(Regularization of Irrigation Administration and DITS Working Mandate Formulation) under NIMP

Project Name: National Irrigation Master	Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal The sustainable irrigation development is realized by means of well performance of Division of Irrigation and Technical Services (DITS) in accordance with the regulations of irrigation and DITS mandate	Performance of DITS is improved. NIMP is fulfilled almost on schedule.	Progress Reports of MINP since 2004	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose			
Irrigation administration of Tanzania is regulated. And proper waking mandate of DITS is regulated and started to apply.	By January 2006, regulations of irrigation administration are made effective.	Application notice of Tanzanian Government	Irrigation development is progressed obeying those irrigation regulations.
	By January 2006, the DITS working mandate is approved by the Government.	Note of approval by the Government	Organization of DITS is re-structured as proposed in other institutional improvement programme.
	By January 2006, the DITS start to work fully under the working regulation.	Result of work investigation for DITS	Necessary official back-up is properly provided to DITS so as to maintain the application of the mandate.
Outputs			
Regulations of irrigation administration are established. Mission statement of DITS is	The mission statement of DITS is approved and proclaimed by the Government. The mission statement of DITS	Concerned Tanzanian Government Circular Record of official proclamation	Concerned personnel and organizations in irrigation administration become familiar with the regulations
established.	is approved and proclaimed by the Government.	Record of official proclamation	Staff of DITS is filled up or replaced to meet the requirement in the Mission
3. Task duties of DITS is established in line with the Mission statement of DITS.	By January 2006, the task duties of DITS is in effective.	Report on-the-spot investigation.	statement.
Procedures on scheme implementation are systemized and formalized.			The systemized formalities of scheme implementation will become a rule for common use to the related actors.
Activities	Inputs		
1-1 Review previous lows and rules.1-2 Prepare a draft of regulations	Preparation Team 1) Task management 6 months 2) System operation 6 months	GOT Personnel 1) Counterparts in each subject	All necessary arrangement for installation of databases will be fulfilled on schedule by concerned section in MAFS.
of irrigation administration.	3) Institution 6 months 4) Juristic specialist 6 months		

			т — — — — — — — — — — — — — — — — — — —
1-3 Adjust inconsistencies of the draft of the regulations with other related regulations and irrigation development policy.	Subject specialist for the subject of task duties (as required)	Equipment 1) Office L.S. d) 2) Others L.S.	Preconditions It is clearly confirmed the needs of establishment of certain task duties standard
1-4 Finalize the draft of regulations of irrigation administration.	Equipment 1) Computer system L.:	Budget S. 1) Salaries and necessary	of DITS is recognized in MAFS. MASF can provide necessary
2-1 Review previous mission for the DITS.	2) Office equipment L.: 3) Others L.:	S. expenses for counterparts	resources to DITS so that DITS works as required in new mission statement.
2-2 Prepare a plan of new mission statement of DITS.	Budget Some part of expenditures in local activities related to the		
2-3 Finalize the plan of mission statement of DITS.	Project.		
3-1 Study demands to be included into the new duties standard of DITS.			
3-2 Review previous duties of DITS.			
3-3 Finalize a plan of task duties standard of DITS.			
4-1 Conceptualize official procedures of schemes selection and implementation.			
4-2 Formalize each process of the scheme implementation in consideration with the finalized feature of DITS and other related organizations and regulations.			
4-3 Prepare a written rule on the formalities on scheme implementation.			

Programme B1: Reguralization of Irrigation Administration and DITS Working Mandate Formulation Programme

		Schedule					Τ.	D in			Cost													
Activities	Expected results					2004								200		1	1 1			Person in charge	Implementer	Equipment		Remarks
		1 :	2 3	3 4	5	6 7	8	9 10	11	12 1	2	3 4	5	6	7 8	3 9	10	11 1	12	charge			(Thousand US\$)	
						F																		
1-1 Review previous lows and rules on irrigation administration.	Review note																		,	DITS) D(IS)	Consultants		50	
1-2 Prepare a draft of regulations of irrigation administration.	Plan of Regulations (Draft)																		,	DITS) D(IS)	Consultants		55	
Adjust inconsistencies of the draft of the 1-3 regulations with other related regulations and irrigation development policy.	Study report (implied)																			DITS) D(IS)	Consultants		55	
1-4 Finalize the draft of regulations of irrigation administration.	Plan of Regulations (Final)																		,	DITS) D(IS)	Consultants		25	
2-1 Review previous mission for the DITS.	Review note																			DITS) D(IS)	Consultants		60	
2-2 Prepare a plan of new mission statement of DITS.	Mission Statement (Draft)																		,	DITS) D(IS)	Consultants		25	
2-3 Finalize the plan of mission	Mission Statement (Final)																		PS	(MAFS)	DITS		20	
3-1 Study demands to be included into the new duties standard of DITS.	Study report(implied)																			DITS) D(IS)	Consultants		30	
3-2 Review previous duties of DITS.	Review note																			DITS) D(IS)	Consultants		30	
3-3 Finalize a plan of task duties standard of DITS.	Plan of task Duties Standard																		PS	(MAFS)	DITS		20	
4-1 Conceptualize official procedures of schemes selection and implementation.	Concept note																			DITS) D(IS)	Consultants		55	
Formalize each process of the scheme implementation in consideration with the finalized feature of DITS and other related organizations and regulations.	Regular Forms for Scheme Implementation																		1	· / I	DITS, Consultants		80	
4-3 Prepare a written rules on the formalities on scheme implementation.	Rules on the formalities on scheme implementation																		PS	(MAFS)	Consultants		35	
																							540	

7. B2: Contract Management System Improvement Programme

(1) Title of Programme	Contract Management	t System Impro	vement Programme (Code N	(o.:B2)						
(2) Location	Mainland and Zanzibar									
(3) Objectives	This programme aims to establish or improve the management system for contracts, which covers contract works and sub-contract tasks on irrigation development. Fulfillment of improvement of the contract management system would ultimately further improve the private sector through stimulating contractors' motivation for business. Through effective utilization of established contract management systems for irrigation development, it is expected to attain the overall objectives of NIMP.									
(4) Programme Description	Outsourcing and entrusting public tasks to the private sector has been encouraged in terms of privatization in Tanzania, especially in the agriculture sector of the country. LGAs as well as central government become important players in contract order and management. Privatization and decentralization are important trends in irrigation development in Tanzania. Current contract management systems for irrigation development in the MAFS are still of the old order, and applicable for specified contract tasks. The contract management system particularly relating to farmer-managed irrigation scheme implementation needs to be improved so as to meet the recent trend of outsourcing. The programme consists of three major significant tasks. The first important task is to review the present contract system and to identify shortcomings and insufficiencies of the old system. The second imperative task is to design new modalities for the contract system, which meet the actual demands of the contracts. The third important task is to build up certain management system operations, maintaining and updating the established contract modalities, so that they can be maintained appropriately. The programme should fulfill these important tasks successfully through assigning staffs, pursuing specified									
(5) PDM for the Programme	See the attached PDM	<u>.</u>								
(6) Contents of Programme	The proposed contents	s of the Progran	nme are as follows:							
	Activities To review the existing contract system	Procurement Not specified	Providing of manpower and training - Consultants on contract works	Remarks						
	To plan proper contract procedures for irrigation scheme implementation not only for the central government but also LGAs. To prepare necessary Not specified - Consultants on contract									
	documents on the new contract methods	110t specified	works							

	I m	F '11'.' C	G. It						
	To arrange the circumstances of governmental offices concerning to contract management so as to introduce the new contract system.	Facilities of office for contract management	- Consultants on contract works	Executing Programme D4 in Parallel					
	To train staffs of governmental offices concerned the procedures of the new contract methods.	Not specified	- Consultants on contract works - Training specialist						
	To prepare an explanatory paper on the new contract methods.	Not specified	- Consultants on contract works						
	To deliver the explanatory paper on the new contract methods to contractors.	Not specified	- Concerned governmental staff						
	To hold several seminars for explanation of applying the new contract methods to contractors in several times. (To start periodical seminars holding)	Not specified	Concerned governmental staff Permanent trainer						
(7) Required Cost	US\$ 420 thousand								
(8) Executing Agency	Division of Irrigation	and Technical S	Services, MAFS						
(9) Implementation Schedule	One year for study at 2006)	nd implementat	tion of the Programme (Jul	y 2005 – June					
(10) Assessment of Possible Problems and Bottlenecks in Implementation	The need for improvement of the contract system is very high in Tanzania. Once the contract system is established for small irrigation scheme implementation, the contract system could not always direct other irrigation scheme developments. The contract system should be designed assuming various conditions and situations focusable in the whole of Tanzania. In implementation of small-scaled irrigation schemes, farmer's participation is								
	tasks and participants	should be giver							
	Also, efforts are required to popularize the outcomes of the programme, especially for LGAs' local staffs concerned with irrigation development.								
(11) Special Arrangements	Farmers contributions in the physical works of the irrigation scheme are still in the mid course of arguments, as to when and how farmers participating are to be managed, although a special study was executed in this Action Plan. And it is also unclear what is the relation between such farmers contribution and the contract works. Before discussing methods of contract, clear allotment of works in scheme implementation for the contractors should be studied in detail.								
	for the situation of t	he Mainland. be contrived	ed modalities in outsourcin However, it is useful eve to be convenient for both	n in Zanzibar.					

(Contract Management System Improvement) under NIMP

Project Name: National Irrigation Master	r Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	
Overall Goal The sustainable irrigation development is realized by means of good performance of contractors	a) By the mid 2006, number of certified contractor for the work of irrigation development increases at 50 % compared to 2002.	List of contractors for the tender of the works in irrigation development	Other related programmes of NIMP are animatedly implemented as scheduled.	
	b) Complains for the contractors' performance are decreased. Clients satisfy contractors' performance in more than 80 % of implemented irrigation schemes.	Reply of clients of implemented irrigation schemes to the question of contractors' performance.		
Project Purpose				
Contract management system for the works on irrigation development is improved.	a) By the mid 2005, the new contract system is prepared.	Completed documents for the regulations on new contract system	The contract system will continue its procedure in suitable manner.	
New contract management system is started to be applied. b) By the mid 2005, new irrigation scheme implementation obeys the ne contract system.		Report on the contract procedures of new irrigation scheme since 2002	Modality and method of contract for irrigation schem implementation will not changed drastically.	
Outputs				
Guidelines of contract procedures are prepared.	The prepared guidelines of contract procedures are approved officially.	Result of interview survey to contractors on the needs of contractors training	Association of contractors or other reliable organization is cooperative for introduction of new contract system.	
2. The new guideline is expanded to every concerned governmental staff.	Every offices and personnel in MAFS dealing with contract works recognize the new guideline.	Report of the Follow-up study on expansion of the new contract system	Institutional arrangement for the establishment of the new contract system is	
3. The new guideline is expanded to contractors and organization concerned.	Almost all contractors who are possible tenderers for the contract works of irrigation scheme implementation recognize the new guideline.	Report of the Follow-up study on expansion of the new contract system	successfully given without any delay.	

Activities	Inputs		
1-1 Review of existing contract system	Donor Study Team	GOT Personnel	All necessary arrangement for introduction of the new contract system will be fulfilled on schedule by any
1-2 Plan proper contract procedures for irrigation scheme implementation for not only central government but also LGAs.	1) Contract specialist 10 months 2) Legal specialist 3) Documentation 4) Construction 5) Institution 10 months 6 months 6 months 3 months	Equipment 1) Office L.S. 2) Others L.S.	reliable parties concerned. Preconditions
1-3 Prepare necessary documents on new contract method	Equipment	Budget	A contract system exist for irrigation scheme
2-1 Arrange circumstance of governmental offices concerning to contract so as to introduce the new contract system.	1) Vehicles L.S. 2) Office equipment L.S. 3) Others L.S. Budget Some part of expenditures in	 Salaries and necessary expenses for counterparts Allowances and expenses of governmental staff training Some portion of the budget for establishment of new contract system 	implementation. An association of the contractors exists and functioning substantially.
2-2 Train staffs of governmental offices concerned the procedures of new contract method.	local activities related to the Project.	contract system	It is clearly confirmed the needs of improvement previous contract system for irrigation scheme implementation by central government, local
3-1 Prepare an explanatory paper on the new contract method.			government agencies and contractors.
3-2 Deliver the explanatory paper on the new contract method to contractors.			
3-3 Hold seminars for explanation of applying new contract method to contractors in several times.			

Component B2: Contract Management System Improvement Programme

Г													Sche	dule	е								I				Cost	
	Activities	Expected results						200	4									200	5					Person in	Implementer	Equipment		Remarks
		1	1	2	3	4	5	6	7	8	9 10	11	12	1	2 3	3 4	5	6	7 8	8 9	10	11 1	12	charge	r · · · · ·		(Thousand US\$)	
													}															
1-	Review of existing contract system	Reviewed note																					A	AD(IS)	Consultants		75	
1-	Also heme implementation for not only central	Plan of Contract Procedures																					A	AD(IS)	Consultants		75	
1-	31 *	Forms of Contract Document																					A	AD(IS)	Consultants		50	
	new contract system.	New Contract System																			l			D(ITSD) AD(IS)	IS, ITSD		60	
2-	Train staffs of governmental offices concerned the procedures of new contract method.	Trained Staffs for New Contract Method																					A	AD(IS)	Consultants		50	
3-		Explanatory Paper on the New Contract Method																		ı			A	AD(IS)	Consultants		50	
3-	1	Delivery of the Explanatory paper																					- A	AD(IS)	Consultants		30	
3-	Hold seminars for explanation of applying new contract method to contractors in several times. (Start periodical holding of the seminars)	enough number of Trained Contractors																					- A	AD(IS)	Consultants		30	
																											420	

8. C1: Survey and Investigation Guideline Establishment Programme

Survey and Investigation Guideline Establishment Programme
(Code No.:C1)
Mainland and Zanzibar
This programme aims to establish practical Survey and Investigation Guidelines which are convenient for conducting necessary site survey and investigation for the sake of fulfilling high-quality planning and designing of new irrigation schemes and rehabilitation irrigation schemes. One copy of the established Survey and Investigation Guidelines should be kept by each District Office and Agency related to irrigation development, to provide them with adequate instruction of the required survey and investigation and those operations. Besides, it could provide the improvement of the planning capability of relevant staff in irrigation development. Through the establishment of the guidelines, it is expected to attain the overall objectives of NIMP.
In irrigation development, planning and designing are generally fundamental factors for successful projects. Planning and designing should be based upon reliable information and data, which are collected through proper surveys and investigations. There are many projects which failed due to lack of important information and data. Preparation of necessary information and data for the project site is an urgent requirement. In order to reinforce planning skills by preparing necessary information and data, preparation and full utilization of a proper survey and investigation guidelines are essential. In Tanzania, irrigation development should be promoted in various manners corresponding to the variations of scheme sites. Sometimes it might be implemented by LGAs' staffs. Pursuing of optimum irrigation development for each target area with its own constraints and locality, requires an overall guideline of survey and investigation for irrigation development, in which proper alternatives could be also provided in the case of LGA initiative schemes.
See the attached PDM.
The proposed contents of the Guidelines are as follows:
Table of Contents 1. Introduction 2. Topography 2.1 Topo-map and topo-equipment 2.2 Topographic survey 2.2.1 Plain survey 2.2.2 River and route survey 2.2.3 Profile leveling survey 2.2.4 Specified survey 2.3 GIS mapping 2.3.1 GIS instrument 2.3.2 GIS system and softwear 2.3.3 GIS data 3. Geology 3.1 Geologic survey 3.2 Boring and soundings 3.3 Physical prospecting 3.4 Geophysical analysis

- 3.5 Survey for erosion and land slide
- 4. Soil and Land
 - 4.1 Needs for soil and land suitability studies
 - 4.2 Exploratory surveys
 - 4.3 Reconnaissance surveys
 - 4.4 Semi-detailed surveys
 - 4.5 Soil sampling
 - 4.6 Field laboratories
 - 4.7 Classification and soil mapping
 - 4.8 Land evaluation
 - 4.9 Present land use surveys
- 5. Water resources
 - 5.1 River water
 - 5.1.1 River system and morphology
 - 5.1.2 River discharge
 - 5.1.3 Sediment transportation
 - 5.1.4 River water quantity and living in the water
 - 5.1.5 Aquatic environment
 - 5.1.6 Water abstraction, swage and water navigation
 - 5.1.7 Discharge measurement
 - 5.2 Ground water
 - 5.2.1 Aquifers and water yield
 - 5.2.2 Boring and physical prospecting
 - 5.2.3 Uplifting tests
 - 5.2.4 Studies for uplifting affects against present boreholes
 - 5.2.5 Groundwater quality
 - 5.3 Lakes
 - 5.3.1 Water availability studies
 - 5.3.2 Lake water uses
 - 5.3.3 Water contamination and water quality
 - 5.4 Other water sources
 - 5.5 Water quality tests
 - 5.6 Surveys for water uses
 - 5.7 Water rights
 - 5.7.1 Registration on water uses
 - 5.7.2 Acquisitive procedures of water rights
 - 5.7.3 Maintaining and updating of obtained water rights
 - 5.8 Drainage
- 6. Socio-economy
 - 6.1 Demography
 - 6.2 Sociology
 - 6.3 Rural economy
 - 6.4 Rural appraisal
 - 6.5 Marketing
 - 6.6 RRA and other rural society surveys
 - 6.7 PRA
- 7. Environment
 - 7.1 Environmental hazards in irrigated agriculture
 - 7.2 Regulations on environmental safeguards
 - 7.3 IEE
 - 7.4 EIA
 - 7.5 Countermeasures for environmental problems
- 8. Execution of field investigations and surveys
 - 8.1 Executing organizations
 - 8.2 Operation and services
 - 8.3 Executing costs
 - 8.4 Reporting of field investigations and surveys
 - 8.5 Evaluation of the results
- 9. Additional Information and Data for Irrigation Planning

ANNEX

(7) Required Cost	US\$ 450 thousand
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for study and implementation of the Programme (July 2004 – June 2005)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	After preparation of these survey and investigation guidelines, it is proposed that they be applied to all concerned irrigation projects/programs with attentive training, and updating the guidelines periodically. Also, efforts are required to popularize the general guidelines, especially for LGAs' local staffs concerned with irrigation development.
(11) Special Arrangements	The survey and investigation guidelines for irrigation development are prepared for irrigation planning in collaboration with the Mainland and Zanzibar. The guidelines should be contrived to be convenient for both users in the Mainland and Zanzibar.

(Survey and Investigation Guideline Establishment) under NIMP

Project Name: National Irrigation Master	Duration: 2003 - 2017 (15 years)				
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003		

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption		
Overall Goal The sustainable irrigation development is realized by means of well utilizing of the survey guideline.	By the mid 2006, the survey guideline is utilized at the stage of survey and investigation for 80 % of irrigation schemes newly planned by IS and districts since 2002.	Investigation Reports for new irrigation scheme from 2002 to 2005	Other related programmes of NIMP are animatedly implemented as scheduled.		
Project Purpose Survey and Investigation(S&I) Guideline which is convenient for survey and investigation of new irrigation planning is completed	a) By May 2005, completed S&I Guideline is approved by officials concerned.	Official document on approval of the S&I Guideline.	Good circumstance for utilization of the S&I Guideline is maintained.		
A copy of the S&I Guideline is placed in each district and section related irrigation development.	b) In June 2005, delivered copies of the S&I Guideline are confirmed popularity in their sections (positive for more than 80 %).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	When revised the S&I Guideline, delivered one should be replaced smoothly.		
Outputs					
Fields and its level of survey and investigation to meet requirement for the S&I Guideline are decided.	All fields and survey items contained into previous similar instructions are included in the S&I Guideline.	Result of interview survey to personnel concerned to on the needs of preparation of S&I Guideline for irrigation development	Districts and concerned agencies have technical capability and financial resource to fully conduct survey and/or investigation designated into the &I		
2. A S&I Guideline is prepared.	By April 2005, the S&I Guideline is completed for its preparation.	S&I Guideline	Guideline. Management system of the &I Guideline exists and		
3. Handling manual for the S&I Guideline is prepared.	By June 2005 or before starting of guideline delivering, the handling manual is completed for its preparation.	Handling manual	function properly in every concerned agencies.		
4. Copy of the S&I Guideline is delivered to each district and section related irrigation development.	By the mid 2005, the guideline is completely delivered.	Record of delivery of the S&I Guideline			
Activities	Inputs		A 11		
1-1 Study previous failures in planning and designing due to lack of necessary survey and investigation.	Preparation Team 1) Coordinator 6 months 2) Irrigation 3 months 3) Meteo-hydrology 3 months	GOT Personnel 1) Counterparts in each subject	All necessary arrangement for the stationing of the system will be fulfilled on schedule by any reliable parties concerned.		
1-2 Study requirement for survey and investigation for irrigation development.	4) Topo-survey 3 months 5) Hydraulics 3 months 6) Geology 3 months	Equipment 1) Office L.S. 2) Others L.S.			

	7) Land use, GIS	3 months		Preconditions
2. Prepare the S&I Guideline reflecting identified requirement for the guideline.	8) Agronomy 9) Environment	3 months 3 months	Budget 1) Salaries and necessary expenses for counterparts 2) Some portion of the budget	It is clearly confirmed the needs of preparation of the S&I Guideline is recognized
3-1 Plan a management and utilizing system of the guideline	Equipment (if necess 1) Vehicles 2) GIS 3) Survey equipmen	L.S. L.S.	for publication of the Guideline 3) Necessary expenditures in operation of the system	in local government agencies and private groups.
3-2 Prepare the handling manual in line with the management plan	4) Others Budget	L.S.		
4-1 Hold workshops in several times on the topic of the S&I Guideline and its utilization for the purpose of training of concerned personnel.	Some part of expend local activities relate Project.			
4-2 Transport copies of the S&I Guideline to the agencies designated in the				

management plan.

Component C1: Survey and Investigation Guideline Establishment Programme

											Sc	hedu	ule													Cost	
Activities	Expected results				_	2	2004										200	_			-		Person in charge	Implementer	Equipment	Cost	Remarks
		1	2	3	4 5	5 6	5 7	8	9	10 1	1 1	2 1	1 2	3	4	5	6 ′	7 8	9	10	11	12	charge			(Thousand US\$)	
							F																				
Study previous failures in planning and 1-1 designing due to lack of necessary survey and investigation.	Study report																						AD(IS)	Consultants		90)
1-2 Study requirement for survey and investigation for irrigation development.	Study report																						AD(IS)	Consultants		60)
2-1 Prepare the S&I Guideline reflecting identified requirement for the guideline.	S&I Guideline																							IS, Consultants		130)
3-1 Plan a management and utilizing system of the guideline	Plan of management and utilizing system																						AD(IS)	Consultants	Survey and GIS equipment	120)
3-2 Prepare the handling manual in line with the management plan	Handling rules														-								AD(IS)	Consultants		30)
4-1 Transport copies of the S&I Guideline to the agencies designated in the management plan.	Placement of S&I Guideline																						AD(IS)	IS		20)
																										450)

9. C2.1: Planning Guideline Establishment Programme

(1) Title of Programme	Planning Guideline Establishment Programme (Code No.:C2.1)								
(2) Location	Mainland and Zanzibar								
(3) Objectives	This programme aims to establish a set of comprehensive and practical Planning Guidelines that are convenient for planning of both new irrigation schemes and rehabilitation irrigation schemes. One set of the Planning Guidelines should be distributed to and kept by each District Office related to irrigation development, to implant district staff with a unified understanding on planning of irrigation developments. The establishment of the guidelines, is expected to attain the overall objectives of NIMP.								
(4) Programme Description	In irrigation development, a planning is the fundamental activity controlling the fate of the project. There find many irrigation projects which failed due to improper planning. Strengthening of skills in irrigation planning is an urgent need and establishment and full utilization of a proper set of planning guidelines is essential accordingly. In Tanzania, irrigation development should be promoted in various manners corresponding to the variations of the project sites. And from now on, irrigation development should be implemented by LGAs' staffs under the decentralization policy. Optimum irrigation development for each target area having its own constraints and locality, requires an overall irrigation planning guideline, in which proper alternatives could be provided for all schemes including LGA initiative schemes. For the preparation of planning guidelines, it is required to consider conceptual soundness and logical correctness as well as technical reliability.								
(5) PDM for the Programme	See the attached PDM.								
(6) Contents of Guidelines	The proposed contents of the Guidelines are as follows:								
	Table of Contents 1. Introduction 2. Irrigation Purpose 2.1 Benefit of Irrigation 2.2 Advantages and Disadvantages of Irrigation 2.3 Risks for Irrigation Practice 3. Irrigation Area 3.1 Land Potential 3.2 Climate 3.3 Farmers Potential 3.4 Social Capital related to Irrigation 4. Irrigated Agriculture 4.1 Applicable Crops for Irrigation 4.2 Cultivation in Irrigated Agriculture 4.3 Post-harvesting 4.4 Marketing 4.5 Other Related Issues 5. Crop Water Requirements 5.1 Estimation Procedure of Crop Water Requirement 5.2 Water Requirement for Land Preparation and Sowing 5.3 Estimation of Reference Evapo-transpiration (ETo) 5.3.1 Estimation Method of Reference Evapo-transpiration 5.3.2 Necessary data and Information 5.3.3 Practical Calculation of ETo								

- 5.4 Other Additional Water Requirement
- 6. Water Resources
 - 6.1 Variation of Water Sources for Irrigation
 - 6.2 Characteristics by water Sources
 - 6.3 Water Resources Development for Irrigation
 - 6.4 Legislation System of Water Use
 - 6.5 Obtaining and Maintaining of Water Rights for Irrigation
- 7. Irrigation Methods and Irrigation Systems
 - 7.1 Introduction on Irrigation Type
 - 7.2 Irrigation Methods
 - 7.2.1 Surface Gravity Method
 - 7.2.2 Sub-surface Method
 - 7.2.3 Splay and Drip Method
 - 7.2.4 Other Methods
 - 7.3 Irrigation Categories
 - 7.3.1 Canal Irrigation
 - 7.3.2 Pump Irrigation
 - 7.3.3 Water Harvesting
 - 7.3.4 Watering
 - 7.4 Classification of Irrigation Scheme
 - 7.4.1 Traditional Irrigation Scheme
 - 7.4.2 Water harvesting Scheme
 - 7.4.3 Modern Irrigation Scheme
 - 7.4.4 Improved Traditional Irrigation Scheme
 - 7.5 Irrigation System
 - 7.5.1 Intake Structures
 - 7.5.2 Canal System
 - 7.5.3 On-Farm Facilities
 - 7.5.4 Dam and Reservoir
 - 7.5.5 Pump System
 - 7.5.6 Others
- 8. Irrigation Development Levels
 - 8.1 Definition of Irrigation Development Levels
 - 8.2 Classification of Irrigation
 - 8.3 Indicators of Irrigation Development Levels
 - 8.4 General Features of the Indicators
 - 8.5 References for Adoption of the Indicators
 - 8.6 Additional Remarks
- 9. Project Evaluation
 - 9.1 Technical Appropriation
 - 9.2 Economical Soundness
 - 9.3 Financial Dependability
 - 9.4 Social Sustainability
 - 9.5 Environmental Harmoniousness
- 10. Operation and Maintenance of Irrigation Systems
 - 10.1 Importance of O&M
 - 10.2 Necessary Activities for O&M
 - 10.3 Irrigators Association (IA)
 - 10.4 Establishment and Maintaining of IA
 - 10.5 Relating Organizations
 - 10.6 Arbitration of Conflicts within IA and with Outsiders
- 11. Participation in Irrigation
 - 11.1 Target
 - 11.2 Method
 - 11.3 Relating Partners
 - 11.4 Monitoring and Support
 - 11.5 Related Issues
- 12. Project Cycle Management
 - 12.1 Concept
 - 12.2 Method

	12.3 Execution
	12.4 Monitoring and Evaluation
	13. Considerations in the Environment
	13.1 Environmental Issues
	13.2 Environmental Impacts caused by Irrigation
	13.3 Mitigating Measures
	13.4 Necessary Considerations
	14. River-basin Management in Irrigation
	14.1 Concept
	14.2 Establishment of Management Organization of Irrigators
	14.3 Activities of River-basin Management in Irrigation
	14.4 Negotiation with River-basin Offices
	14.5 Protecting Measures of Existing Irrigation Water Use
	15. Additional Information and Data for Irrigation Planning
	ANNEX
(7) Required Cost	US\$ 680 thousand
(9) Emporating A company	Division of Imigation and Technical Comises MACC
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for study and implementation of the Programme (July 2004 – June
	2005)
(10) Assessment of Possible	Programmes aim to prepare their own criteria and guidelines. The planning
Problems and Bottlenecks	guidelines should be applied to all concerned irrigation projects/programmes.
in Implementation	Thereby, discord in the contents between these general guidelines and the
	individual guidelines belonging to the specified project should be excluded.
	Also, efforts are required to popularize the general guidelines especially to
	LGAs' staff concerned with irrigation development.
(11) Special Arrangements	The planning guidelines for irrigation development are prepared for irrigation
	planning in collaboration with the Mainland and Zanzibar. The guidelines
	should be contrived to be convenient for both users in Mainland and Zanzibar.

(Planning Guideline Establishment) under NIMP

Project Name: National Irrigation Master	Duration: 2003 - 2017 (15 years)				
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003		

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption			
Overall Goal						
The sustainable irrigation development is realized by means of well utilizing of the planning guideline.	By the mid 2006, the planning guideline is utilized at the stage of planning for 80 % of irrigation schemes newly planned by IS and districts since 2002.	Planning Reports for new irrigation scheme from 2002 to 2005	Other related programmes of NIMP are animatedly implemented as scheduled.			
Project Purpose						
Planning Guideline which is convenient for planning of new irrigation scheme is completed	a) By May 2005, completed Planning Guideline is approved by officials concerned.	Official document on approval of the Planning Guideline.	Good circumstance for utilization of the Planning Guideline is maintained.			
A copy of the Planning Guideline is placed in each district and section related irrigation development.	b) By the mid 2005, delivered copies of the Planning Guideline are confirmed popularity in their sections (positive for more than 80 %).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	When revised the Planning Guideline, delivered one should be replaced smoothly.			
Outputs						
Fields and its level of planning and decision making to meet requirement for the Planning Guideline are decided.	All fields and technical items contained into previous similar instructions are included in the Planning Guideline.	Result of interview survey to personnel concerned on the needs of preparation of Planning Guideline for irrigation development	Districts and concerned agencies have technical capability and financial resource to fully conduct planning and/or decision making designated into the			
2. A Planning Guideline is prepared.	By May 2005, the Planning Guideline is completed for its preparation.	Planning Guideline	Planning Guideline.			
3. Handling manual for the Planning Guideline is prepared.			Management system of the Planning Guideline exists and functions properly in every concerned agencies.			
4. Copy of the Planning Guideline is delivered to each district and section related irrigation development.	By the mid 2005, the guideline is completely delivered.	Record of delivery of the Planning Guideline				

Activities Inputs All necessary arrangement GOT 1-1 Study previous failures in Donor for the stationing of the planning and designing due to management system of the Personnel lack of necessary technology Preparation Team guideline will be fulfilled on 1) Counterparts in each 6 months in planning. 1) Planning schedule by any reliable subject 2) Irrigation 6 months parties concerned. 1-2 Study requirement for 3) Meteo-hydrology 6 months 4) River/Watershed 6 months planning and decision making Equipment for irrigation development. 4) Topo-survey 3 months L.S. 1) Office 5) Hydraulics 6 months 2) Others L.S. 2 Prepare the Planning 3 months 6) Geology Guideline reflecting identified 7) Land use, GIS 6 months requirement for the guideline. 8) Agronomy 6 months Budget 9) Environment 3 months 1) Salaries and necessary 3-1 Plan a management and 6 months 10)Participation **Preconditions** expenses for counterparts utilizing system of the 2) Some portion of the guideline.. Equipment It is clearly confirmed the budget for publication of 1) Vehicles L.S. needs of preparation of the the Guideline 2) GIS L.S. 3-2 Prepare the handling manual Planning Guideline is 3) Necessary expenditures in in line with the management 3) Others L.S. recognized in local operation of the system plan. government agencies and Budget private groups. 4-1 Hold workshops in several Some part of expenditures times on the topic of the in local activities related to Planning Guideline and its the Project. utilization for the purpose of training of concerned personnel. 4-2 Transport copies of the Planning Guideline to the agencies designated in the management plan.

Component C2.1: Planning Guideline Establishment Programme

			Schedule								D .			Cost											
Activities	Expected results	1	2	3 4	4 :	\neg	004 5 7	1	9	10	11 1	2	1 2	2 3	4	 6	\neg	8	9 10	11	Person in charge	Implementer	Implementer Equipment (Thotsan US\$)		Remarks
																								СБФ)	
Study previous failures in planning and 1-1 designing due to lack of necessary technology in planning.	Study report																				AD(IS)	Consultants		170	To be referred the result of Action Plan Study
1-2 Study requirement for planning and decision making for irrigation development.	Study report																				AD(IS)	Consultants		115	
2-1 Prepare the Planning Guideline reflecting identified requirement for the guideline.	Planning Guideline											-									AD(IS)	IS, Consultants		220	
3-1 Plan a management and utilizing system of the guideline.	Plan of management and utilizing system														-						AD(IS)	Consultants		60	
3-2 Prepare the handling manual in line with the management plan.	Handling rules																				AD(IS)	Consultants		60	
Transport copies of the Planning Guideline to 4-1 the agencies designated in the management plan.	Placement of Planning Guideline																				AD(IS)	IS		55	
																								680	

10. C2.2: Designing Guideline Establishment Programme

(1) Title of Programme	Designing Guideline Establishment Programme (Code No.:C2.2)
(2) Location	Mainland and Zanzibar
(3) Objectives	This programme aims to establish practical Design Guidelines which are convenient for creating designs appropriate to the site conditions for new irrigation schemes and rehabilitation irrigation schemes. One set of the Design Guidelines should be distributed to and kept by each District Office related irrigation development, to provide them with adequate instructions on how to make successful designs. Besides, it could provide the improvement of design capability of relevant staff in irrigation development. Through the establishment of the guidelines, it is expected to attain the overall objectives of NIMP.
(4) Programme Description	In irrigation development, designing as well as planning are the fundamental activities controlling the fate of projects. There are many projects that were executed with great difficulty or sometimes failed due to low skills in designing. Proper designing to meet the actual conditions of the project site is an urgent requirement for successful irrigation development. In order to reinforce designing skills, preparation and full utilization of proper design guidelines is essential. In Tanzania, irrigation development should be promoted in various manners corresponding to the variations of project sites. From now, it might be mostly implemented by LGAs' staffs. To pursue optimum irrigation development for each target area that has its own constraints and locality, requires overall irrigation design guidelines, in which proper alternatives in designing could also be provided in the case of LGA initiative schemes. For the preparation of Design Guidelines, conceptual soundness and logical correctness are to be held in addition to technical reliability.
(5) PDM for the Programme	See the attached PDM.
(6) Contents of Guidelines	The proposed contents of the Guidelines are as follows:
	Table of Contents
	1. Introduction 2. Irrigation systems 2.1 Water source systems 2.2 Irrigation system layout 2.2.1 Main canal 2.2.2 Secondary canal 2.2.3 Tertiary canal 2.2.4 Distribution canal 2.3 On-farm facilities and equipment 2.3.1 Gravity surface irrigation 2.3.2 Pressured irrigation 2.4 Drainage systems 2.4.1 Drainage system layout 2.4.2 Drainage canal for surface drainage system 2.4.3 Sub-surface drainage 2.4.4 Pump drainage

- 3. Canal structures
 - 3.1 Irrigation channels
 - 3.1.1 Canal cross-section
 - 3.1.2 Hydraulic design
 - 3.1.3 Sectional properties of canal section
 - 3.1.4Bed gradient and longitudinal profile
 - 3.1.5 Canal alignment
 - 3.2 Canal lining
 - 3.2.1 Selection of type of lining
 - 3.2.2 Cast in situ concrete lining
 - 3.2.3 Precast concrete tile lining
 - 3.2.4Lining in expansive soils
 - 3.3 Conveyance structures
 - 3.3.1 Inverted canal siphons
 - 3.3.2 Elevated flumes
 - 3.3.3 Road crossings
 - 3.3.4 Drops/chutes
 - 3.4 Protective structures
 - 3.4.1 Culverts
 - 3.4.2 Overchutes
 - 3.4.3 Drain inlets
 - 3.4.4 Wasteways
 - 3.5 Regulating structures
 - 3.5.1 Head regulators
 - 3.5.2 Checks
 - 3.5.3 Silt control devices
 - 3.6 Water measurement structures
 - 3.6.1 Parshall flumes
 - 3.6.2 Constant head orifice
 - 3.7 Other related structures
- 4. Diversion weirs
 - 4.1 Type of weirs and layout of a diversion weir
 - 4.2 Hydraulic design
 - 4.2.1 Hydraulic jump
 - 4.2.2 Design against seepage
 - 4.2.3 Hydraulic design of other weirs portion
 - 4.3 Design of weir structures
 - 4.4 Gate structures
 - 4.5 Other related structures
- 5. Dams and Reservoirs
 - 5.1 Dam types and its layouts
 - 5.2 Gravity dams
 - 5.2.1 Cross-section of dam body
 - 5.2.2 Related structures
 - 5.2.3 Reservoir protection
 - 5.3 Fill dams
 - 5.3.1 Embanking materials
 - 5.3.2 Cross-section of dam body
 - 5.3.3 Related structures
 - 5.3.4 Reservoir protection
 - 5.4 Water impounding
- 6. Boreholes and Wells
 - 6.1 Evaluation of water demand and aquifer
 - 6.2 Drilling methods
 - 6.3 Design of boreholes
 - 6.4 Power source of wells
 - 6.5 Design of wells
 - 6.6 Water delivery
 - 6.7 Related equipment of boreholes and wells

	7. Pump stations
	7.1 Design of pump equipment
	7.1.1 Design of suction and delivery water level and pumping head
	7.1.2Design pumping discharge
	7.1.3 Design of pump equipment
	7.1.4 Design of power source
	7.1.5 Design of related equipment
	7.1.6Countermeasures against water hammer
	7.2 Design of suction and delivery basins
	7.3 Designing of pump houses
	7.4 Design of pump operation systems
	8. Farm irrigation structures
	8.1 Structures for surface irrigation methods
	8.2 Structures for sub-surface irrigation methods
	8.3 Structures for pressurized irrigation methods 8.4 Watering devices
	8.5 Water lifting devices
	9. Drainage facilities
	9.1 Measures for reclamation of waterlogged and inundated soils
	9.1 Measures for rectamation of waterlogged and inundated sons 9.2 Designs for sub-surface drainage
	9.2.1 Designs for sub-surface dramage 9.2.1 Design of under-drain
	9.2.2 Design of drain system
	9.2.3 Design of vertical drainage
	9.3 Designs for surface drainage
	9.3.1 Designs of surface drain
	9.3.2 Design of open-channel drainage
	9.3.3 Design of outlet system
	9.4 By force drainage
	10. Water harvesting
	10.1 Selection of methods for rain water harvesting
	10.2 Implicate water harvesting methods
	10.3 Explicate water harvesting methods
	10.4 Dynamic water harvesting methods
	10.5 Related information on water harvesting
	11. Land consolidation
	11.1 Design of field lots
	11.2 Design of farm roads
	11.3 Design of on-farm irrigation and drainage
	11.4 Sub-soil improvement works
	11.5 Design of land re-plotting
	12. River control and training
	12.1 River training works
	12.2 Design of river control structures
	12.3 Bank revetment works
	12.4 Sediment control works
	12.5 Temporary works
	13. Other references
	ANNEX
(5) D (6)	1100 can d
(7) Required Cost	US\$ 620 thousand
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for study and implementation of the Programme (July 2004 – June
	2005)

(10) Assessment of Possible Problems and Bottlenecks in Implementation	After preparation of these Design Guidelines, it is recommended that they be applied to all concerned irrigation projects/programs, thereby, discords in the contents between these general guidelines and the individual guidelines belonging to the specified projects should be excluded. Also, efforts are required to popularize the general guidelines especially to LGAs' local staffs concerned with irrigation development.
(11) Special Arrangements	The design guidelines for irrigation development are prepared for irrigation planning in collaboration with the Mainland and Zanzibar. The guidelines should be contrived to be convenient for users both in the Mainland and Zanzibar.

(Designing Guideline Establishment) under NIMP

Project Name: National Irrigation Master	Duration: 2003 - 2017 (15 years)				
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003		

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption			
Overall Goal	maioatoi o					
The sustainable irrigation development is realized by means of well utilizing of the Designing guideline.	By the mid 2006, the designing guideline is utilized at the stage of planning for 80 % of irrigation schemes newly planned by IS and districts since 2002.	Design Reports for new irrigation scheme from 2002 to 2005	Other related programmes of NIMP are animatedly implemented as scheduled.			
Project Purpose						
Designing Guideline which is convenient for designing of new irrigation scheme is completed	a) By May 2005, completed Designing Guideline is approved by officials concerned.	Official document on approval of the Designing Guideline.	Good circumstance for utilization of the Designing Guideline is maintained.			
A copy of the Designing Guideline is placed in each district and section related irrigation development.	b) By the mid 2005, delivered copies of the Designing Guideline is confirmed popularity in their sections (positive for more than 80 %).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	When revised the Designing Guideline, delivered one should be replaced smoothly.			
Outputs						
Fields and its level of designing of irrigation system to meet requirement for the Designing Guideline are decided.	All fields and technical items contained into previous similar instructions are included in Designing Guideline.	Result of interview survey to personnel concerned on the needs of preparation Designing Guideline for irrigation development	Districts and concerned agencies have technical capability and financial resource to fully conduct designing designated into the Designing Guideline.			
A Designing Guideline is prepared.	By May 2005, the Designing Guideline is completed for its preparation.	Designing Guideline	Management system of the Designing Guideline exists and function properly in every concerned agencies.			
3. Handling manual for the Designing Guideline is prepared.	By June 2005 or before starting of guideline delivering, the handling manual is completed for its preparation.	Handling manual				
4. Copy of the Designing Guideline is delivered to each district and section related irrigation development.	By the mid 2005, the guideline is completely delivered.	Record of delivery of the Designing Guideline				
Activities	Inputs					
 1-1 Study previous failures in designing and construction due to lack of necessary technology in designing. 1-2 Study requirement for designing for irrigation development. 1-3 Review previous designing guidelines prepared by any 	Preparation Team 1) Irrigation system 2) Structure 3) Hydraulics 4) River/Watershed 5) Structure design 6) Geology 7) Land use, GIS 8) Agronomy 9) Environment 3 months 3 months 3 months 3 months	Personnel 1) Counterparts in each subject Equipment 1) Office L.S. 2) Others L.S.	All necessary arrangement for the stationing of the management system of the guideline will be fulfilled on schedule by any reliable parties concerned.			
other projects/programmes.	10)participation 4 months					

 2 Prepare the Designing Guideline reflecting identified requirement for the guideline. 3-1 Plan a management and utilizing system of the guideline. 3-2 Prepare the handling manual in line with the management plan. 	Equipment 1) Vehicles 2) GIS 3) Others Budget Some part of expenditure local activities related to Project.	expenses for counterparts	Preconditions It is clearly confirmed the needs of preparation of the Designing Guideline is recognized in local government agencies and private groups.
plan 4-1 Hold workshops in several times on the topic of the Designing Guideline and its utilization for the purpose of training of concerned personnel. 4-2 Transport copies of the			
4-2 Transport copies of the Designing Guideline to the agencies designated in the management plan.			

Component C2.2: Designing Guideline Establishment Programme

											Sc	chec	lule											Person in		Cost	Cost	
Activities	Expected results	1	2	3	4	5	7	8	9	10	11	12	1	2 3	3 4	4 5	т —	7	8	9	10	11 1		charge	Implementer	nenter Equipment (Thousand US\$)		Remarks
													 			<u> </u>												
Study previous failures in designing and 1-1 construction due to lack of necessary technology in designing.	Study report																						1	AD(IS)	Consultants		120	
1-2 Study requirement for designing for irrigation development.	Study report																						1	AD(IS)	Consultants		80	
1-3 Review previous designing guidelines prepared by any other projects/programmes.	Review note																						1	AD(IS)	Consultants		120	
2-1 Prepare the Designing Guideline reflecting identified requirement for the guideline.	Designing Guideline											-											1		IS, Consultants		220	
3-1 Plan a management and utilizing system of the guideline	Plan of management and utilizing system																						1	AD(IS)	Consultants		30	
3-2 Prepare the handling manual in line with the management plan	Handling rules															•							1	AD(IS)	Consultants		30	
Transport copies of the Designing Guideline to 4-1 the agencies designated in the management plan.	Placement of Designing Guideline																						1	AD(IS)	IS		20	
																											620	

11. C3.1: Operation and Maintenance (O&M) Guideline Establishment Programme

(1) Title of Programme	Operation and Maintenance (O&M) Guideline Establishment Programme (Code No.:C3.1)										
(2) Location	Mainland and Zanzibar										
(3) Objectives	This programme aims to establish practical Operation and Maintenance Guidelines which are convenient for conducting proper operation and maintenance of existing irrigation systems for sustainable achievement of effective irrigation in new irrigation schemes and rehabilitation irrigation schemes. One copy of the established Operation and Maintenance Guidelines is openly kept in each District Office and Agency related to irrigation development and also in a working place of the farmers' organization, to provide them with adequate instruction on how to conduct activities in O&M. Furthermore it improves the capability in irrigation practice of concerned members under proper maintenance. Through the preparation of the guidelines, it is expected to attain the overall objectives of NIMP.										
In irrigation practice, operation and maintenance activities affect the success of schemes. There are many irrigation schemes that were to lack of adequate operation and maintenance. In order to reinform and/or farmers groups' skill in operation and maintenance of irrigate preparation and full utilization of proper Operation and I Guidelines is essential. For the preparation of Operation and Guidelines, consideration should be given to ease of application and for beneficiaries in addition to technical reliability.											
(5) PDM for the Programme	See the attached PDM.										
(6) Contents of Guidelines	The proposed contents of the Guidelines are as follows:										
	Table of Contents										
	2. Irrigation water management 2.1 Irrigation practices in Tanzania 2.2 Government policy and strategies in irrigation development 2.3 Participants of irrigation 2.3.1 Farmers 2.3.2 LGAs 2.3.2 Central government 2.4 Water rights 2.4.1 Registration system of water right 2.4.2 Obtaining procedure of irrigation water right 2.4.3 Maintain of irrigation water right 2.4.4 Water right and river basin management 2.5 Role of water management 2.5.1 Activities in surface irrigation 2.5.2 Activities in sub-surface irrigation 2.5.3 Conjunctive use of surface and ground water 3. Water users organizations 3.1 Playing the role of water users organizations 3.2 Juristical system of irrigation organizations 3.3 Typical model of irrigation organizations 3.4 Formation of irrigation organizations										

	4.0											
	4. Source of water											
	4.1 Preservation of water sources											
	4.1.1 River water											
	4.1.2 Groundwater											
	4.1.3Lake water											
	4.1.4 Rainwater harvesting											
	4.1.5 Others											
	4.2 Preservation of River Basins											
	4.3 Preservation of aquifers											
	5. Irrigation water delivery											
	5.1 Basic soil-water plant relationships											
	5.2 Crop water requirements											
	5.3 Irrigation systems and water application methods											
	5.4 Measurement of irrigation water											
	6. Operation of irrigation facilities and structures											
	6.1 Dams and reservoirs											
	6.2 Intake structures											
	6.3 Irrigation channels											
	6.4 Water delivering structures											
	6.5 Watering and water spreading facilities											
	6.6 Pump facilities											
	6.7 Boreholes											
	6.8 Water harvesting facilities											
	7. Maintenance, repair and rehabilitation of irrigation and structures											
	7.1 Dams and reservoirs											
	7.2 Intake structures											
	7.3 Irrigation channels											
	7.4 Water delivering structures											
	7.5 Watering and water spreading facilities											
	7.6 Pump facilities											
	7.7 Boreholes											
	7.7 Borcholds 7.8 Water harvesting facilities											
	8. Drainage											
	8.1 Sub-surface drainage facilities											
	8.2 Drainage channels											
	8.3 Others											
	9. Environmental issues in irrigation systems											
	9.1 Environmental hazards on river water regime											
	9.2 Environmental hazards like waterlogging											
	9.3 Environmental hazards on biological aspects											
	9.4 Environmental hazards on human health											
	9.5 Environmental hazards on natural conditions											
	10. Information for urgent remedies against draught											
	10.1 Characteristics of draught occurrences											
	10.2 Water stress effects on crops by draught occurrences											
	10.3 Remedies on agronomic aspects											
	10.4 Physical remedies											
	10.5 Remedies by saving water											
	10.6 Monitoring of draught damages											
	10.7 Evaluation of draught damages											
	11. Additional Information and Data for Operation and Maintenance											
	ANNEX											
	1 Related information on O&M											
	2 Concerned agencies and organization in irrigation											
	3 Applicable existing training courses of irrigation management											
	4 Laws and regulations concerning about irrigation											
(7) Required Cost	US\$ 820 thousand											

(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for study and implementation of the Programme (July 2005 – June 2006)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	Since experience in adequate execution of Operation and Maintenance are superficial in Tanzania, it is hardly expected to deal with the completed guidelines with a practiced hand in the early stage. After preparation of these Operation and Maintenance Guidelines, it is proposed to apply the guidelines to all concerned irrigation projects/programs, and if necessary properly giving attentive training. Also, efforts are required to popularize the general guidelines especially to LGAs' local staffs concerned with irrigation development.
(11) Special Arrangements	The Operation and Maintenance Guidelines for irrigation systems are prepared in collaboration with the Mainland and Zanzibar. The guidelines should be contrived to be convenient for both users in the Mainland and Zanzibar.

(Operation and Maintenance (O&M) Guideline Establishment) under NIMP

Project Name: National Irrigation Maste	Duration: 2003 - 2017 (15 years)				
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003		

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption		
Overall Goal					
The sustainable irrigation development is realized by means of well utilizing of the O&M guideline.	By the mid 2007, the O&M guideline is utilized at the stage of operation for 80 % of irrigation schemes newly planned by IS and districts since 2002.	Operation Reports for new irrigation scheme from 2002 to 2006	Other related programmes of NIMP are animatedly implemented as scheduled.		
Project Purpose					
O&M Guideline which is convenient for the works of operation and maintenance of any irrigation schemes is completed.	a) By June 2006, completed O&M Guideline is approved by officials concerned.	Official document on approval of the O&M Guideline.	Good circumstance for utilization of the O&M Guideline is maintained.		
A copy of the O&M Guideline is placed in each district and section related irrigation development.	b) In June 2006, delivered copies of the O&M Guideline are confirmed popularity in their sections (positive for more than 80 %).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	When revised the O&M Guideline, delivered one should be replaced smoothly.		
Outputs					
Fields and its level of works in O&M of irrigation system to meet requirement for the O&M Guideline are decided.	All technical and sociological items contained into previous similar instructions are included in O&M Guideline.	Result of interview survey to personnel concerned on the needs of preparation O&M Guideline for irrigation development	Districts and concerned farmers groups have technical capability and financial resource to fully conduct O&M designated into the O&M Guideline. Management system of the O&M Guideline exists and function properly in every		
2. A O&M Guideline is prepared.	By June 2006, the O&M Guideline is completed for its preparation.	O&M Guideline			
3. Handling manual for the O&M Guideline is prepared.	By June 2006 or before starting of guideline delivering, the handling manual is completed for its preparation.	Handling manual	concerned agencies.		
Copy of the O&M Guideline is delivered to each district and section related irrigation development.	By the mid 2007, the guideline is completely delivered.	Record of delivery of the O&M Guideline			
Activities	Inputs				
1-1 Study previous failures in operation and maintenance due to lack of necessary	Donor Preparation Team 1) Irrigation system 6 months	GOT Personnel 1) Counterparts in each subject	All necessary arrangement for the stationing of the management system of the guideline will be fulfilled on schedule by any reliable.		
technology in O&M. 1-2 Study requirement for operation and maintenance for irrigation development.	1) Irrigation system 6 months 2) Structure 6 months 3) Water management 6 months 4) River/Watershed 6 months 5) Structure design 6 months 6) Farmers group 6 months	Counterparts in each subject Equipment	schedule by any reliable parties concerned.		
1-3 Review previous O&M guidelines prepared by any other projects/programmes.	7) Accounting 6 months 8) Agronomy 6 months 9) Environment 3 months 10) participation 4 months	1) Office L.S. 2) Others L.S.			

- 2 Prepare the O&M Guideline reflecting identified requirement for the guideline.
- 3-1 Plan a management and utilizing system of the guideline.
- 3-2 Prepare the handling manual in line with the management plan..
- 4-1 Hold workshops in several times on the topic of the O&M Guideline and its utilization for the purpose of training of concerned personnel.
- 4-2 Transport copies of the O&M Guideline to the agencies designated in the management plan.

Equipment

- Vehicles L.S.
 Office equipment L.S.
- 3) Others

Budget Some part of expenditures in local activities related to the Project. Budget

- 1) Salaries and necessary expenses for counterparts
- 2) Some portion of the budget for publication of the Guideline
- 3) Necessary expenditures in operation of the management system of the guideline

Preconditions

It is clearly confirmed the needs of preparation of the O&M Guideline is recognized in local government agencies and farmers groups.

Component C3.1: O&M Guideline Establishment Programme

									So	chedu	ıle											Cost	
Activities	Expected results	1	2 3	4	\neg	005 5 7	8	9 10	11	12 1	1 2	3	4 5	20	 8 9	9 10	11 12	Person charge	Implement		Equipment	(Thousand US\$)	Remarks
																						,	
Study previous failures in operation and maintenance due to lack of necessary technology in O&M.	Study report																	AD(IS)	(Consultants		150	
1-2 Study requirement for operation and maintenance for irrigation development.	Study report																	AD(IS)	(Consultants		150	
Review previous O&M guidelines prepared by any other projects/programmes	Review note																	AD(IS)	(Consultants		200	
2-1 Prepare the O&M Guideline reflecting identified requirement for the guideline.	O&M Guideline																	AD(IS)		IS, Consultants		240	
3-1 Plan a management and utilizing system of the guideline.	Plan of management and utilizing system												-					AD(IS)	(Consultants		30	
3-2 Prepare the handling manual in line with the management plan.	Handling rules												•					AD(IS)	(Consultants		30	
Transport copies of the O&M Guideline to the agencies designated in the management plan.	Placement of O&M Guideline																	AD(IS)	I	IS		20	
																						820	

12. C4: Farmers' Participation in Irrigation Development Programme

(1) Title of Programme	Farmers' Participation in Irrigation Development Programme (Code No.:C4)
	(Code NoC4)
(2) Location	Mainland and Zanzibar
(3) Objectives	This programme aims to enhance farmers' participation in irrigation, so that irrigation schemes are properly and continuously managed by farmers' themselves. The programme is to review the current situation of farmers' participation in irrigation schemes, and to focus on the needs of farmers' participation in irrigation development. A set of proper guidelines for farmers' participation will be prepared based on the review results. The guidelines are intended to be fully applicable and manageable for the LGAs' staff and leaders of farmers. The farmers' participation should be discussed for the planning, designing, construction and operation and maintenance stages. In particular, farmers' contribution for construction work and operation and maintenance activities should be clearly mentioned in the guidelines. Furthermore, a few pilot model irrigation schemes for farmers' participation will be established, in which replicable effects of the pilot models for farmers' participation are expanded to other areas. A leaflet on this programme showing the results and necessary instruction of farmers' participation in irrigation development will be prepared, and its copies will be distributed to relevant offices/IAs. Through properly utilization of result of the programme, it is expected to attain the overall objectives of NIMP.
(4) Programme Description	Due to periodic food insecurity in Tanzania, there is a keen need to develop farming under irrigation in order to exploit the existing irrigation potential so as to complement weak rainfed farming. However, some of the implemented irrigation schemes are disappointedly deteriorated in operation due to poor farmers' participation. Food security is attainable through irrigation development with adequate farmers' participation. On the examination and evaluation of current irrigation initiatives carried out under the ASDP preparation, special attention is giving to small-scale farmer-managed irrigation development. Such small-scale irrigation activities generally form a small-scale irrigation scheme which requires intensified farmers' participation. Furthermore, putting forward the decentralization in agriculture including irrigated agriculture, LGAs and irrigating farmers' themselves are about to play an important role for small-scale farmer-managed irrigation strengthening of the irrigation development under enthusiastic farmers' participation at the center of the movement. In these respects, it should be said that farmers' participation is essential in irrigation development.
(5) PDM for the Programme	See the attached PDM.

(6) Contents of Programme	The proposed contents o	e are as follows:		
	Activities	Procurement	Providing of	Remarks
			manpower and training	
	To review previous similar references on farmers' participation.	Not specified	- Consultants having required ability and faculty	
	To study on the contents of the guideline for farmers' participation.	Not specified	- Consultants having required ability and faculty	To be related with the study results on Programme C2.1 and C3.1
	To prepare the Farmers' participation Guideline reflecting identified requirement for the guideline.	Not specified	- Consultants having required ability and faculty	To be related with the study results on Programme C2.1 and C3.1
	To prepare an inventory of irrigation schemes for farmers' participation in consideration of the irrigation scheme inventory prepared in NIMP Study.	Not specified	- Consultants having required ability and faculty	To be referred the Irrigation Scheme Inventory prepared within NIMP
	To make a criteria of scheme selection for the pilot model for strengthening farmers' participation.	Required parts of equipment and additional necessary equipment	- Consultants having required ability and faculty	
	To select pilot model schemes among possible schemes listed in the inventory.	Not specified	- Consultants having required ability and faculty	
	To prepare the Strengthening Plan for farmers participation in the selected pilot schemes.	Not specified	- Consultants having required ability and faculty	
	To arrange necessary resources for implementation of the Strengthening Plan.	Equipment for farmers' activities	Not specified	To be related with the study results on Programme C5 and C7
	To implement the Strengthening Plan as planned.	Not specified	Consultants having required ability and facultyTraining specialists	
	To monitor the performance of farmers' participation in the pilot schemes.	Not specified		To be related with the study results on Programme D3
	To support O&M of the pilot schemes as required.	Equipment for supporting activities		
	To arrange necessary resources for implementation of villagers tour to the pilot scheme.	Not specified	Not specified	
	To plan tours for visiting pilot schemes.	Not specified	Not specified	
	To conduct the tours as scheduled. To draft leaflet for the effect	Not specified Not specified	Not specified - Consultants having	
	of strengthening farmers' participation.		required ability and faculty	
	To finalize the draft of leaflet. To print leaflets at required	Not specified Not specified	Not specified Not specified	
	sheets	110t specified	Tot specified	
(7) Required Cost	US\$ 720 thousand			

(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for study and implementation of the Programme (July 2004 – June 2005)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	At this moment special attention should be given to farmers-managing irrigation schemes which are duly dependent on proper farmers' participation. Farmers' participation should be led under proper support of the LGAs. However, strengthening of LGAs' organization and capacity building of LGAs' personnel in charge might be done in parallel with or slightly behind the schedule of implementation of this programme. Taking the importance of village farmers managed irrigation development into consideration, mutual linkage between this programme and other related programmes should be kept.
(11) Special Arrangements	As discussed in Chapter 6 of this report, farmers' participation should be discussed from the viewpoint of farmers' contribution to implant their ownership to the irrigation schemes. This programme should be implemented in collaboration with the Mainland and Zanzibar. The results of the programme should be contrived to be convenient for both users in the Mainland and Zanzibar.

(Farmers' Participation in Irrigation Development) under NIMP

Project Name: National Irrigation Maste	r Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption					
Overall Goal								
The sustainable irrigation development is realized by means of well participation of farmers in irrigation development.	By the mid 2007, for new irrigation schemes of more than 80 % of the schemes started since 2002, PRA is properly conducted. And, all village irrigation schemes are progressed by self-determination and self-reliance of farmers.	Investigation Reports for new irrigation schemes including village irrigation schemes from 2002 to 2006						
Project Purpose								
A Guideline for farmers' participation is prepared.	a) By November 2005, completed Farmers' Participation Guideline is approved by officials concerned.	Official document on approval of the Guideline.	Districts (or LGA) are strengthened their capability so as to backstop farmers' participation in irrigation development independently.					
Some numbers of pilot model irrigation schemes for farmers' participation are established, and replicable effects of the pilot models for farmers' participation is expanded to other areas.	b) Special and appropriate supports for farmers' participation are given in more than 10 irrigation schemes	Report on-the-spot investigation (An on-the spot investigation shall be taken)	Necessary resources are adequately given in order to implement the pilot model strengthening.					
	c) Totally and annually more than 2 times of farmers' visiting for learning form other areas to the pilot model schemes are taken.	Follow-up Report of the special support to the pilot model schemes	The Guideline for farmers' participation is utilized and maintained properly.					
	d) More than 500 sheets of the leaflet are provided and spread in all over the country.	Record of preparation and treatment of the leaflet	Several opportunities of other villagers to visit to the pilot model irrigation scheme for farmers' participation.					

Outputs			
1-1 Contents for the Farmers' Participation Guideline are decided.	All fields and items contained into previous similar instructions are included in the Farmers' Participation Guideline.	Result of interview survey to personnel concerned on contentment of the Farmers' Participation Guideline for their requirement.	Districts and concerned agencies have technical capability and financial resource to fully support farmers participation in irrigation development.
1-2 The Farmers' Participation Guideline is prepared.	By December 2005, the Farmers' Participation Guideline is completed for its preparation.	Farmers' Participation Guideline	Management system of the Farmers' Participation Guideline exists and
2-1 Typical irrigation schemes for good farmers' participation are selected as the pilot models.		Completion Report for the Strengthening Plan	function properly in every concerned agencies.
2-2 Strengthening Plan for farmers' participation to the selected pilot schemes are made.	F		
2-3 The Strengthening Plan for farmers' participation is executed in the pilot schemes.			
3-1 Good farmers' participation is maintained in the pilot schemes.	Good farmers participation continues	Follow-up Report of the Strengthening Plan	Villagers participated the tours will soundly reflect the lesson learned through the tours to their own life.
3-2 Tours of other villagers to the pilot schemes are prepared and executed often.	By May 2006, several times tours are scheduled and executed.	Record of Tours	Prepared leaflet will be spread effectively.
4. Leaflet propagating pilot model effects for strengthening farmers' participation is prepared as being effective.	By the mid 2006, the leaflet is completed its preparation.	Memorandum on the preparation of the leaflet	

Activ	rities	Inputs				
1.1.1	Review previous similar	Donor		GOT		All necessary arrangement for acceptance and utilization of the Farmers'
	references on farmers' participation.	Preparation Team 1) Participation 2) Irrigation	12 months 12 months	Personnel 1) Counterparts in each subject		Participation Guideline are completed in every districts and organizations
1.1.2	Study on the contents of the guideline for farmers' participation.	3) Rural develop't4) Extension5) Agriculture6) Coordinator	6 months 12 months 6 months 12 months	Equipment		concerned.
1.2	Prepare the Farmers'			Equipment 1) Office	L.S.	
	participation Guideline reflecting identified requirement for the	Field workers	L.S.	2) Others	L.S.	
	guideline.	Equipment 1) Vehicles 2) GIS	L.S. L.S.	Budget 1) Salaries and necessary		
2.1.1	Prepare an inventory of irrigation schemes for	3) Others	L.S.	expenses for counterpart 2) Some portion of the bud		
	farmers' participation in consideration with the irrigation scheme inventory prepared in NIMP Study.	Budget Some part of expend local activities relate Project.		for publication of the Guideline 3) Necessary expenditures operation of the system	in	
2.1.2	Make criteria of scheme selection for the pilot model for strengthening farmers' participation.					
2.1.3	Select pilot model schemes among possible schemes listed in the inventory.					
2.2	Prepare the Strengthening Plan for farmers participation to the selected pilot schemes.					
2.3.1	Arrange necessary resources for implementation of the Strengthening Plan.					
2.3.2	Implement the Strengthening Plan as planned.					
3.1.1	Monitor the performance of farmers' participation in the pilot schemes.					
3.1.2	Support in O&M of the pilot schemes as required.					
3.2.1	Arrange necessary resources for implementation of villagers tour to the pilot scheme.					

		Preconditions
3.2.2	Plan tours of visiting pilot schemes.	It is clearly confirmed the needs of strengthening farmers participation is
3.2.3	Conduct the tours as scheduled.	recognized in local government agencies and private groups.
4.1	Draft leaflet for the effect of strengthening farmers' participation.	
4.2	Finalize the draft of leaflet.	
4.3	Print leaflet at required sheets.	

Component C4: Farmers' Participation in Irrigation Development Programme

Schedule																						
	Activities	Expected results					200	04	School	uic			200)5				Person in	Implementer	Equipment	Cost	Remarks
		2.hpeeted results	1	2	3 4	5	6	7 8 9 10	11 12	1 2	2 3	4 :	5 6	7 8	9 1	0 11	12	charge	Imprementer	Equipment	(Thousand US\$)	Ttomarks
							ŀ						\pm									
1-1-1	Review previous similar references on farmers' participation.	Review note																AD(IS)	Consultants		40	
1-1-2	Study on the contents of the guideline for farmers' participation.	Plan of Contents of Guideline																AD(IS)	Consultants		40	
1-2	Prepare the Farmers' participation Guideline reflecting identified requirement for the guideline.	Farmer's Participation Guideline																D(DITS) AD(IS)	Consultants		120	
2-1-1	Prepare an inventory of irrigation schemes for farmers' participation in consideration with the irrigation scheme inventory prepared in NIMP																	AD(IS)	IS, Consultants		40	
2-1-2	Make a criteria of scheme selection for the pilot model for strengthening farmers' participation.	Criteria of Scheme Selection																AD(IS)	IS, Consultants		40	
2-1-3	Select pilot model schemes among possible schemes listed in the inventory.	List of Selected Schemes																D(DITS) AD(IS)	IS, Consultants		20	
2-2	Prepare the Strengthening Plan for farmers participation to the selected pilot schemes.	Strengthening Plan for Farmers' Participation																AD(IS)	Consultants		40	
2-3-1	Arrange necessary resources for implementation of the Strengthening Plan.	-																AD(IS)	IS, Consultants	Equipment for farmers' activities	20	
2-3-2	Implement the Strengthening Plan as planned.	Execution report of the Strengthening Plan								-								AD(IS)	Consultants		120	
3-1-1	Montor the performance of farmers' participation in the pilot schemes.	Monitoring report																AD(IS)	Consultants		40	
3-1-2	Support in O&M of the pilot schemes as required.	-																AD(IS)	IS, Consultants	Equipment for supporting activities	20	
3-2-1	Arrange necessary resources for implementation of villagers tour to the pilot scheme.	-																AD(IS)	IS, Consultants		20	
3-2-2	Plan tours of visiting pilot schemes.	Tour Plan																AD(IS)	IS, Consultants		20	
3-2-3	Conduct the tours as scheduled.	Tour report										ı						AD(IS)	IS, Consultants		50	
4-1	Draft leaflet for the effect of strengthening farmers' participation.	Leaflet of Farmers' Participation (Draft)																AD(IS)	IS, Consultants		20	
4-2	Finalize the draft of leaflet.	Leaflet of Farmers' Participation (Final)																D(DITS) AD(IS)	IS		20	
4-3	Print leaflet at required sheets	Copies of Leaflet of Farmers' Participation																AD(IS)	IS		50	
																					720	

13. C5: Village Irrigation Development Guideline Establishment Programme

(1) Title of Programme	Village Irrigation Development Guideline Establishment Programme (Code No.:C5)								
(2) Location	Mainland								
(3) Objectives	This programme aims to establish proper guidelines for village irrigated development like small-scale farmer-managed irrigation development so a be easier for LGAs to use. The programme is to conduct investigation studies to clarify problems farmers managed village irrigation schemes, and to focus on the needs irrigation development at village the farmers level. The results of investigations will conceive proper modalities of village irrigation schemes implementation. Also imperative remedial measures against immediate draught crisis will be developed through necessary investigation. The result be compiled in the form of guidelines for village irrigation development. The compiled guidelines are intended to be fully applicable and manageable the LGAs' staff too. Proper application methods for the guidelines establishment of a proper handling system for the guidelines will be discussed in the programme. Through proper use of results of the programme to the village-level irrigated development, it is expected to attain the overall objectives of NIMP.								
(4) Programme Description	Due to periodic food insecurity in Tanzania, there is keen need to develop irrigated farming by exploiting the existing irrigation potential so as to complement weak rainfed farming. The ASDP, which currently struggles notwithstanding the full support of the GOT, is a part of the operational response to a set of policies, strategies and initiatives designed to re-orientate and re-invigorate the national economy. On the examination and evaluation of current irrigation initiatives carried out under the ASDP implementation, a special attention is given to small-scale farmer-managed irrigation development. Such small-scale irrigation activities generally form a small-scale irrigation scheme which involves facility construction. However, unlike scheme implementation, irrigation improvement without involvement of facility construction gives immediate effect to village farmers' irrigation development. Sometimes farmers require immediate technical guidance and information for remedial action against the immediate crisis. Village irrigation development includes such technical support activities without facility construction.								
(5) PDM for the Programme	See the attached PDM.								

(6) Contents of Programme

The proposed contents of the Programme are as follows:

Table of Contents

- 1. Introduction
- 2. Definition of Village Irrigation Development
 - 2.1 Effective Use of Rain-water
 - 2.2 Watering Crops by Natural Water Sources
 - 2.3 Irrigation by Easy Tools
 - 2.4 Irrigation by Permanent Facilities
- 3. Cultivation and Water
 - 3.1 Land Potential
 - 3.2 Crops and Cultivation
 - 3.3 Climate
 - 3.4 Crop Water Requirements
 - 3.5 Water Stress and Decrease of Crop Production
 - 3.6 Impact of Draught on Agriculture
 - 3.7 Other Related Water Requirement in Agriculture
 - 3.8 Water Sources
- 4. Improvement of Rain-water Use for Agriculture
 - 4.1 Easy Estimation of Crop Water Requirements
 - 4.2 Effect of Rainfall Fluctuation on Crop Cultivation
 - 4.3 Allowable Limit of Water Shortage
 - 4.4 Easy Rain-water Management
- 5. Measures against Draughts
 - 5.1 Frequency of Draught Occurrences in Tanzania
 - 5.2 Damages by Draught in Tanzania
 - 5.3 Forecasting of Draught Occurrences
 - 5.3.1 Easy Method of Draught Forecasting
 - 5.3.2 Available Data about Draught Occurrences
 - 5.4.3 Accessible Organizations Concerning to Draught Forecasting
 - 5.4 Village Communication for Draught Crisis
 - 5.5 Preventive Measures for Draught Damages
 - 5.5.1 Preventive Measures by Farmers' Individual Efforts
 - 5.5.2 Preventive Measures for Collective Efforts of Farmers' Group
 - 5.5.3 Preventive Measures by Physical Arrangement
 - 5.5.4 Preventive Measures through External Supporting
 - 5.6 Remedial Measures against Draught Crisis
 - 5.6.1Remedial Measures by Farmers' Individual Efforts
 - 5.6.2Remedial Measures for Collective Efforts of Farmers' Group
 - 5.6.3 Remedial Measures by Physical Arrangement
 - 5.6.4 Remedial Measures through External Supporting
 - 5.7 Monitoring of Draught Occurrences
- 6. Improvement of Watering Practices
 - 6.1 Categories of Watering
 - 6.2 Improvement of Water Conveyance and Water Spreading
 - 6.3 Improvement of Water Sources of Watering
 - 6.4 Improvement of Watering Management
 - 6.4.1 Improvement in Agronomic Aspects
 - 6.4.2 Improvement in Physical Aspects
 - 6.4.3 Improvement in Labouring Works
 - 6.4.4 Improvement in of Watering Methods
 - 6.4.5 Improvement in Scheduling of Watering
- 7. Village Irrigation Scheme
 - 7.1 Purpose of Village Irrigation Scheme
 - 7.1.1 Benefit of Village Irrigation
 - 7.1.2 Advantages and Disadvantages of Village Irrigation
 - 7.1.3 Risks for Village Irrigation Scheme Implementation

- 7.2 Area of Village Irrigation Scheme
 - 7.2.1 Land Potential
 - 7.2.2 Climate Characteristics
 - 7.2.3 Villagers Potential
 - 7.2.4 Social Capital related to Village Irrigation
- 7.3 Irrigated Agriculture in Village Irrigation Scheme
 - 7.3.1 Applicable Crops for Village Irrigation
 - 7.3.2 Cultivation in Village Irrigation Scheme
 - 7.3.3 Post-harvesting in Village Irrigation Scheme
 - 7.3.4 Marketing for Village Irrigation Scheme
 - 7.3.5 Other Related Issues
- 7.4 Crop Water Requirement for Village Irrigation Scheme
- 7.5 Water Source for Village Irrigation Scheme
 - 7.5.1 Variation of Water Source for Village Irrigation
 - 7.5.2 Characteristics by water Sources
 - 7.5.3 Water Resources Development for Village Irrigation
 - 7.5.4 Arrangement of Water Right for Village Irrigation
- 7.6 Irrigation Method and Irrigation System
 - 7.6.1 Introduction on Irrigation Type
 - 7.6.2 Irrigation Method
- 7.7 Irrigation Category
 - 7.7.1 Canal Irrigation
 - 7.7.2 Pump Irrigation
 - 7.7.3 Water Harvesting
 - 7.7.4 Others
- 7.8 Construction of Village Irrigation System
 - 7.8.1 Intake Structures
 - 7.8.2 Canal System
 - 7.8.3 On-Farm Facilities
 - 7.8.4 Small Dam and Reservoir
 - 7.8.5 Pump System
 - 7.8.6 Others
- 8. Operation and Maintenance of Village Irrigation System
 - 8.1 Importance of O&M
 - 8.2 Necessary Activities for O&M
 - 8.3 Water Users Group
 - 8.4 Establishment and Maintaining of Legal Entity for O&M
 - 8.5 Relating Organizations
 - 8.6 Arbitration of Conflicts within Water Users Group and with Outsiders
- 9. Participation in Village Irrigation
 - 9.1 Target for Participation
 - 9.2 Method of Participation
 - 9.3 Relating Partners for Participation
 - 9.4 Monitoring and Support for Participation
 - 9.5 Relating Issues for Participation
- 10. Consideration in Environment
 - 10.1 Environmental Issues
 - 10.2 Environmental Impacts caused by Irrigation
 - 10.3 Mitigating Measures
 - 10.4 Necessary Considerations
- 11. Access to and continued involvement with Supporting Organizations
 - 11.1Central and Local Governmental Organization Relating to Irrigated Agriculture
 - 11.2 Available Supports
 - 11.3 Accessing Channel to the Related Organizations
 - 11.4 Farmers Duties and Responsibilities
- 12. Additional Information and Data for Village Irrigation

ANNEX

(7) Required Cost	US\$ 760 thousand
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	One year for study and implementation of the Programme (July 2004 – July 2005)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	Role of LGAs in irrigated agriculture development has been more and more vital in line with the decentralization policy. It should be made under proper support of the MAFS. Taking the importance of village farmers managed irrigation development into consideration, a comprehensive support programme for promoting village irrigation development including achievement of tasks proposed in this programme could launch independent implementation.
(11) Special Arrangements	This programme implementation aims at reliable preparation of the guidelines that is a first attempt at perfection of the guidelines. Taking into consideration a great variety of village situations over the country, the outcomes of the programme should be examined and revised over and over even after phasing out of the programme. In this respect, it is more favorable to implement a special project to verify the guidelines and improve them based on the results.

(Village Irrigation Development (VID) Guideline Establishment) under NIMP

Project Name: National Irrigation Maste	Duration: 2003 - 2017 (15 years)						
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003				

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal			
The sustainable irrigation development is realized by means of well utilizing of the Village Irrigation Development (VID) Guideline	By the mid 2007, the VID guideline is utilized for planning, designing, construction and O&M of more than 80 % of village irrigation schemes newly implemented by districts and farmers' groups since 2002.	Investigation Reports for new village irrigation schemes from 2002 to 2006	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose			
Village Irrigation Development (VID) Guideline which is convenient for planning, designing, construction and O&M of new village irrigation is completed.	a) By May 2006, completed VID Guideline is approved by officials concerned.	Official document on approval of the VID Guideline.	Districts (or LGA) are strengthened their capability so as to fulfill village irrigation development independently.
A copy of the VID Guideline is placed in each district and organization related irrigation development including NGOs.	b) In June 2006, delivered copies of the VID Guideline are confirmed popularity in their areas (positive for more than 80%).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	Good circumstance for utilization of the DIV Guideline is maintained.
	, in the second		When revised the Survey Guideline, delivered one should be replaced smoothly.
Outputs			
Fields and its level of contents for the VID Guideline are decided.	All fields and items contained into previous similar instructions are included in the VID Guideline.	Result of interview survey to personnel concerned on contentment of the VID Guideline for their requirement.	Districts and concerned agencies have technical capability and financial resource to fully conduct survey and/or investigation
2. A VID Guideline is prepared.	By May 2006, the VID Guideline is completed for its preparation.	VID Guideline	designated into the Survey Guideline.
3. Handling manual for the VID Guideline is prepared.	By June 2006 or before starting of guideline delivering, the handling manual is completed for its preparation.	Handling manual	Management system of the Survey Guideline exists and function properly in every concerned agencies.
4. Copy of the VID Guideline is delivered to each district and organization related irrigation development including NGOs.	By the mid 2006, the guideline is completely delivered.	Record of delivery of the VID Guideline	
Activities	Inputs	<u> </u>	A 11
1-1 Study previous remarkable efforts of farmers' groups and districts for village irrigation.	Donor Preparation Team 1) Rural Develop't 6 months	GOT Personnel 1) Counterparts in each subject	All necessary arrangement for acceptance and utilization of the VID Guideline are completed in every districts and organizations concerned.
1-2 Study previous failures in village irrigation due to lack of technical (e.g. micro-irrigation etc.) and socio-economical considerations.	2) Irrigation 6 months 3) Meteo-hydrology 3 months 4) Topo-survey 3 months 5) Hydraulics 3 months 6) Geology 3 months 7) Land use, GIS 3 months	Equipment 1) Office L.S. 2) Others L.S.	

1-3 Identify requirement for planning, designing, construction and O&M of village irrigation development.
2-1 Investigate needs for improvement in irrigation and/or watering activities of villagers' irrigation practices.

- 2-2 Study appropriate remedial measures of farmers against draught crisis
- 2-3 Prepare the VID Guideline reflecting identified requirement for the guideline.
- 3-1 Plan a management and utilizing system of the guideline..
- 3-2 Prepare the handling manual in line with the management plan..
- 4-1 Hold workshops in several times on the topic of the VID Guideline and its utilization for the purpose of training of concerned personnel.
- 4-2 Transport copies of the VID Guideline to the organizations designated in the management plan.

8) Agronomy	3 months
Environment	3 months
10) Structure design	6 months
11) Construction	6 months
12) Farmers group	6 months

13) Participation 6 months 14) O&M 6 months

Equipment

1) Vehicles L.S. 2) GIS L.S. 3) Others L.S.

Budget Some part of expenditures in local activities related to the Project.

Preconditions

It is clearly confirmed the needs of preparation of the VID Guideline is recognized in local government agencies and private groups.

3) Necessary expenditures in operation of the system

Guideline

1) Salaries and necessary

expenses for counterparts

2) Some portion of the budget

for publication of the

Budget

Component C5: Village Irrigation Development Guideline Establishment Programme

				Schedule								ъ .		Cost														
	Activities	Expected results						200	\neg				-					005	_					Person in charge	Implementer	Equipment		Remarks
			1	2	3	4	5	6	7	8 9	10	11 1	12]	1 2	3	4	5	6 7	8	9	10	11	12	charge			(Thousand US\$)	
								Ė					<u> </u>															
1-1	Study previous remarkable efforts of farmers' groups and districts for village irrigation schemes and practices.	Study report																						AD(IS)	Consultants		120	
1-2	Study previous failures in village irrigation schemes due to lack of technical (e.g. micro- irrigation etc.) and socio-economical	Study report																						AD(IS)	Consultants		80	
1-3	scheme development.	Study report																						AD(IS)	Consultants		120	
2-1	Investigate needs for improvement in irrigation and/or watering activities of villagers' irrigation practices.	Study report																						AD(IS)	IS, Consultants		80	
2-2	Study appropriate remedial measures of farmers against draught crisis .	Study report																						AD(IS)	IS, Consultants		80	
3-1	Prepare the VID Guideline reflecting identified requirement for the guideline.	Guideline																						AD(IS)	IS, Consultants		200	
4-1	Plan a management and utilizing system of the guideline	Plan of management and utilizing system															ı							AD(IS)	Consultants		30	
4-2	Prepare the handling manual in line with the management plan	Handling rules															•							AD(IS)	Consultants		30	
5-1	Transport copies of the VID Guideline to the organizations designated in the management plan.	Placement of Guideline															-							AD(IS)	IS		20	
																											760	

14. C7: Establishment of DADP Formulation Guideline for Irrigated Agriculture Development Programme

(1) Title of Programme	Establishment of DAI Development Programm			ted Agriculture									
(2) Location	Mainland												
(3) Objectives	This programme aims to irrigated agriculture in conduct an investigation of the focus on the needs of planning methods and publication of the schemes will be conceresults will be compiled development.	terms of techn on study to clar velopment, to sel of irrigation developments of dis- ived based on the ed into guideling	ical aspects. This prify problems confror ect appropriate irrigative lopment at the district trict manageable smaller results of the inverses for village and descriptions.	rogramme is to nted by District on schemes, and et level. Proper l-scale irrigation stigations. The istrict irrigation									
	The compiled guidelines are intended to be fully applicable and manageable for the LGAs' staff. Deployment of the guidelines in good order and establishment of a proper handling system for the guidelines will also be mentioned in the programme. If necessary, proper training of districts staff could be optionally inclusive within the programme.												
	Through properly utilizing of results of the programme, it is expected to attain the overall objectives of NIMP.												
(4) Programme Description	The ASDS, which curre GOT, is a part of the contralization of the decentralization of LGAs will increasingly District Agricultural Emodalities of the DA decentralization in agric DADP formulation has establish proper guide agriculture. As the DADP Guideline another channel, guidel programme implemental irrigated agriculture device.	pperational response re-orientate and erpinned by national many public so be involved through the period of the pe	nse to a set of policie re-invigorate the national policies supporting cotor responsibilities rough the participatory in (DADP). Presenthighlighted. Putting irrigated agriculture, and urgently. This proper formulation concerprocedures are going to called as DADP-IA)	s, strategies and tional economy. In particular, to LGAs. The reformulation of the formulating and forward the guideline of t									
(5) PDM for the Programme	See the attached PDM.												
(6) Contents of Programme	The proposed contents of	of the Programme	are as follows:										
	Activities	Procurement	Providing of manpower and training	Remarks									
	To study problems and constraints faced by districts when planning irrigation development independently. Not specified - Consultants having required ability and faculty												

	I m . 1 ·	NT . 'C' 1	G to	m 1 1 1									
	To study previous failures in irrigation schemes planned by districts due to lack of technical and socio-economical considerations.	Not specified	- Consultants having required ability and faculty	To be related with the study results on Programme C2.1									
	To identify requirements for districts in planning of irrigation scheme developments.	Not specified	- Consultants having required ability and faculty										
	To prepare the DADP-IA Guidelines reflecting identified requirements for the guidelines.	Not specified	- Consultants having required ability and faculty										
	To plan a management and utilization system for the guideline.	Required parts of equipment and additional necessary equipment	- Consultants having required ability and faculty										
	To prepare the handling manual in line with the management plan.	Not specified	- Consultants having required ability and faculty	A manual for general handling the guideline will be prepared in Programme D2									
	To transport copies of the DADP-IA Guidelines to the organizations designated in the management plan.	Not specified	- Training specialists										
(7) Required Cost	US\$ 830 thousand												
(8) Executing Agency	Division of Irrigation an	d Technical Serv	ices, MAFS										
(9) Implementation Schedule	One year for study and 2005)	implementation	of the Programme (J	Tuly 2004 – June									
(10) Assessment of Possible Problems and Bottlenecks in Implementation	At this moment special schemes with a view to in some cases, simple at therefore it should maintroduced irrigation tectory. Earmers sometimes do not be schemed as the second sec	introduce a varied and low-cost irrigates sure of the chnology under the	ety of simple technologation may not be alve applicability and ne qualified technical	ogies. However, ways sustainable, sustainability of support from the									
	Farmers sometimes do not require implementation of an irrigation scheme, but ask for technical support for their irrigation practices without any facility construction. Also farmers do not desire to make their irrigation development as merely a single small-scale irrigation scheme, but desire to fulfill the integrated irrigation development involving other sub-sector works. Upon preparing DADP in irrigation development, LGA's staff should consider these farmers' desires, not being biased toward creation of solely a district manageable small-scale irrigation scheme.												
(11) Special Arrangements	Working Group 2 under proper modality of informulation. The programmer their work.	rigation develop		ncerning DADP									

Establishment of DADP Formulation Guideline for Irrigated Agriculture Development (DADP-IA) under NIMP

Project Name: National Irrigation Master	Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal			
The sustainable irrigation development is realized by means of well utilizing of the DADP-IA formulation Guideline which indicate proper know-how to formulate successfully the part for irrigated agriculture development within DADP.	By the mid 2006, the DADP-IA Guideline for is utilized for planning, designing, construction and after-care of more than 80 % of small-scale irrigation schemes and village irrigation schemes newly implemented by districts and farmers' groups since 2002.	Investigation Reports for new irrigation schemes promoted by LGAs from 2002 to 2005	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose			
DADP-IA Guideline which is convenient for planning of new irrigation scheme dealt with Districts is completed.	a) By May 2005, completed DADP-IA Guideline is approved by officials concerned.	Official document on approval of the DADP-IA Guideline.	Districts (or LGAs) are strengthened their capability so as to fulfill irrigation development independently.
A copy of the DADP-IA Guideline is placed in each district and organization related irrigation development (including NGOs).	b) In June 2005, delivered copies of the DADP-IA Guideline is confirmed popularity in their districts (positive for more than 80 %).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	Good circumstance for utilization of the DADP-IA Guideline is maintained.
			When revised the DADP-IA Guideline, delivered one should be replaced smoothly.
Outputs			•
Fields and its level of contents for the DADP-IA Guideline are decided.	All fields and items contained into previous and on-going similar instructions are included in the DADP-IA Guideline.	Result of interview survey to personnel concerned on contentment of the DADP-IA Guideline for their requirement.	Districts have technical capability and financial resource to fully prepare DADP designated into the DADP-IA Guideline.
2. A DADP-IA Guideline is prepared.	By May 2005, the DADP-IA Guideline is completed for its preparation.	DADP Guideline	Management system of the DADP-IA Guideline exists and function properly in
3. Handling manual for the DADP-IA Guideline is prepared.	By June 2005 or before starting of guideline delivering, the handling manual is completed for its preparation.	Handling manual	every concerned agencies.
4. Copy of the DADP-IA Guideline is delivered to each district and organization related irrigation development (including NGOs).	By the mid 2005, the guideline is completely delivered.	Record of delivery of the DADP-IA Guideline	
Activities	Inputs		A 11
1-1 Study problems and constraints of districts faced when planning irrigation development independently.	Preparation Team 1) Rural Develop't 6 months 2) Irrigation 6 months 3) Meteo-hydrology 3 months 4) Topo-survey 3 months	GOT Personnel 1) Counterparts in each subject	All necessary arrangement for acceptance and utilization of the DADP-IA Guideline are completed in every districts and organizations concerned.

1-2 Study previous failures in	5) Hydraulics	3 months			Preconditions
irrigation schemes planned by	6) Geology	3 months	Equipment		
districts due to lack of	7) Land use, GIS	3 months	1) Office	L.S.	It is clearly confirmed the
technical and socio-economical	8) Agronomy	3 months	2) Others	L.S.	needs of preparation of the
considerations.	Environment	3 months			DADP-IA Guideline is
	10) Structure design	6 months			recognized in central
1-3 Identify requirement for	11) Construction	6 months			government, local
districts in planning of	12) Farmers group	6 months	Budget		government agencies and
irrigation scheme development.	Participation	6 months	 Salaries and necessa 	-	private groups.
	14) O&M	6 months	expenses for counter		
2 Prepare the DADP-IA	15) Institution	6 months	2) Some portion of the		
Guideline reflecting identified			for publication of the	•	
requirement for the guideline.			Guideline		
1			Necessary expenditu		
3-1 Plan a management and	Equipment		operation of the syst	em	
utilizing system of the	1) Vehicles	L.S.			
guideline.	2) GIS	L.S.			
guidenne.	3) Others	L.S.			
3-2 Prepare the handling manual in					
line with the management plan.	D 1. 4				
inte with the management plant	Budget	., .			
4. Transport copies of the	Some part of expendi				
DADP-IA Guideline to the	local activities related	a to the			
organizations designated in the	Project.				
management plan.					
management plan.					

Component C7: Establishment of DADP Formulation Guideline for Irrigated Agriculture Development (DADP-IA) Programme

			1						Ç,	chedu	ula								_					1
	Activities	Expected results				7	2004		30	Heut	uie			200)5					Person in	Implementer	Equipment	Cost	Remarks
	redvides	Expected results	1 2	2 3	4			3 9 10 11 12 1 2 3										11 1:	2	charge	- Imprementer	Equipment	(Thousand US\$)	Remarks
1-1	Study problems and constraints of districts when districts plan irrigation development independently.	Study report (implied)																	A	AD(IS)	Consultants		180	
1-2	Study previous failures in irrigation schemes planned by districts due to lack of technical and socio-economical considerations.	Study report (implied)																	Α	AD(IS)	Consultants		120	
1-3	Identify requirement for districts in planning of irrigation scheme development (including identicication of possible circomstance of LGAs in execution of irrigation schemes)	Review note																	A	AD(IS)	Consultants		60	
2-1	Prepare the DADP-IA Guideline reflecting identified requirement for the guideline (including formulatong of implementation procedure of irrigation schemes)	DADP-IA Guideline																		D(DITS) AD(IS)	IS, Consultants		350	
3-1	Plan a management and utilizing system of the guideline.	Plan of management and utilizing system																	A	AD(IS)	Consultants		60	
3-2	Prepare the handling manual in line with the management plan.	Handling rules																	A	AD(IS)	Consultants		40	
4-1	Transport copies of the DADP-IA Guideline to the organizations designated in the management plan.	Placement of DADP-IA Guideline																	A	AD(IS)	IS		20	
																							830	

15. D2: Technical Manuals Handling Guidelines Establishment Programme

(1) Title of Programme	Technical Manuals Handling Guideline Establishment Programme (Code No.:D2)
(2) Location	Mainland and Zanzibar
(3) Objectives	This programme aims to establish a teaching source for properly handling all technical references and information that are definitely important for improving and heightening irrigation technology. Formerly, technical manuals for engineering in irrigation had been prepared by the MAFS. However, it was not satisfactorily used due to improper handling and managing.
	Technical information and knowledge are essential for making capacity building for persons relevant to irrigation development. In order to provide necessary technical information and knowledge, establishment of practical technical manuals and guidelines are required. Those technical manuals and guidelines could make available necessary technical information and knowledge through good management and proper updating. The guidelines to be prepared in this programme are to provide important skills for proper management and handling of technical manuals and guidelines. Through appropriate application of the
(4) Programme Description	In accordance with the findings of technical failures through problem analysis during the Master Plan study, a number of technical guidelines are proposed to be prepared in the Subject-wise Improvement Programme. Those guidelines would be prepared by fully reflecting these findings. However, after the completion of those guidelines, it should be avoided to leave the guidelines unused or to be lost without purpose or to leave them un-revised when needing updating.
	It can be said that the manner of handling the technical guidelines directly results in success or failure of improving and heightening irrigation technology, which is essential for irrigation development. Technical Manuals Handling Guidelines to be prepared under this programme are to instruct how to utilize the technical manuals concerned, how to keep them, how to maintain them, and how to revise when the current version is revised.
(5) PDM for the Programme	See the attached PDM.
(6) Contents of Programme	The proposed contents of the Guidelines are as follows:
	Table of Contents 1 Introduction 2 Technical information and manuals 2.1 Technical references 2.2 Technical reports 2.3 News on irrigation 2.4 Survey and investigation guidelines 2.5 Planning guidelines 2.6 Designing guidelines 2.7 O&M guidelines 2.8 Others 2.9 Monitoring of draught damages 2.10 Evaluation of draught damages

(7) Pagwined Cost	3 Distribution and maintenance of technical manuals 3.1 Organizations and places for distribution 3.2 Managing staff 3.3 Managing process 4 Open use of technical manuals 4.1 System for public inspection 4.2 Method of public inspection 4.3 Monitoring of performance of public inspection 4.4 Improvement of public inspection system 5 Revision of technical manuals 5.1 Periodic revision of technical manuals 5.2 Revising and disposing procedure 5.3 Management of updating 6 Monitoring system for technical manuals 6.1 Need of monitoring of technical manuals 6.2 Monitoring system 6.3 Reflection of monitored results to updating 6.4 Maintenance of monitoring system ANNEX
(7) Required Cost	US\$ 180 thousand
(8) Executing Agency	Division of Irrigation and Technical Services, MAFS
(9) Implementation Schedule	Six months for study and implementation of the Programme (January 2005 – June 2005)
(10) Assessment of Possible Problems and Bottlenecks in Implementation	Preparation of technical manual handling guidelines is strongly requested. Even though a lot of technical manuals and guidelines are going to be provided within implementation of other programmes, it is of no use unless those are kept and used properly. After preparation of these guidelines, it is proposed to give all concerned irrigation projects/programmes proper training on application of the guidelines. Also, efforts are required to popularize the general guidelines especially to LGAs' staffs concerned with irrigation development.
(11) Special Arrangements	The technical manual handling guidelines on irrigation are prepared targeting the Mainland and Zanzibar. The guidelines should be contrived to be convenient for both users in the Mainland and Zanzibar.

(Technical Manuals Handling Guideline Establishment) under NIMP

Project Name: National Irrigation Master	r Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal			
The sustainable irrigation development is realized by means of well utilizing of the technical manuals as regulated in the technical manuals handling guideline (TMH Guideline).	By the mid 2005 Parson in charge of the every concerned offices can answer where delivered technical guidelines and manuals are stationed in their office for open use.	Report of interview survey for utilization of technical references	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose			
Technical Manuals Handling TMH Guideline which is convenient for handling and managing all technical references is completed.	a) By June 2005, completed TMH Guideline is approved by officials concerned.	Official document on approval of the TMH Guideline.	Circumstances for utilization of technical references are improved and maintained as regulated by the TMH Guideline.
A copy of the TMH Guideline is placed in each section related irrigation development in central government and districts.	b) In June 2005, delivered copies of the TMH Guideline are confirmed popularity in their sections (positive for more than 80 %).	Report on-the-spot investigation (An on-the spot investigation shall be taken)	When revised the TMH Guideline, delivered one should be replaced smoothly.
Outputs			
Realistic utilization system for technical references is drawn up.	All issues on utilization of technical references which are prevailed in PCM workshop are considered anyhow.	Result of PCM problem analysis on utilization of technical references	Districts and concerned agencies have technical capability and financial resource to fully manage
2. A TMH Guideline is prepared.	By May 2005, the TMH Guideline is completed for its preparation.	TMH Guideline	technical references in accordance with the TMH Guideline.
Copy of the TMH Guideline is delivered to each section related irrigation development in central government and districts.	By the mid 2005, the guideline is completely delivered.	Record of delivery of the TMH Guideline	
Activities	Inputs		All necessary arrangement
1-1 Study previous malfunction of technology management which caused scheme's failure.1-2 Contrive improvement plan of	Donor Preparation Team 1) Knowledge Management 3 months	Personnel 1) Counterparts in each subject	for the stationing of the management system of the guideline will be fulfilled on schedule.
management system for	2) Technology training 3 months	343,000	

	technical references			Equipment		Preconditions
	utilization.	3) Irrigation	3 months	1) Office	L.S.	
		4) Institution	3 months	2) Others	L.S.	It is clearly confirmed the
2	Prepare the TMH Guideline					needs of preparation of the
	reflecting improvement idea	Equipment		Budget		TMH Guideline is
	for technical references	1) Office equipment	L.S.	 Salaries and ne 	ecessary	recognized in local
	handling.	2) Others	L.S.	expenses for co		government agencies.
				2) Some portion of	of the budget	
3.	Transport copies of the TMH	Budget		for publication	of the	
	Guideline to the agencies	Some part of expendi	itures in	Guideline		
	designated in the management	local activities related	d to the	3) Necessary expe	enditures in	
	plan.	Project.		operation of th	e system	
	•	•		_	-	

Component D2: Technical Manuals Handling Guideline Establishment Programme

Г									Sch	edul	e								T				~	
	Activities	Expected results	1	2 3	4	\neg	6 7	9				3 4	4 5		05 7	8	9 10	11 1		Person in charge	Implementer	Equipment	Cost (Thousand US\$)	Remarks
	management which caused scheme's failure.	Review note																	A	AD(IS)	Consultants		75	
1-	2 Contrive improvement plan of management system for technical references utilization.	Plan document									-								A	(1)/(10)	IS, Consultants		45	
2-	handling.	Guideline												I						` /	IS, Consultants		45	
3-	Transport copies of the TMH Guideline to the agencies designated in the management plan.	Placement of Guideline												_					A	AD(IS)	IS		15	
																							180	

16. D3: Information and Database Improvement Programme

(1) Title of Programme	Information and Dat	abase Improvem	ent Programme (Code No.	:: D3)								
(2) Location	Mainland and Zanzil	bar										
(3) Objectives	databases related to monitoring the prog	irrigation develo gress of irrigati on concerning ir	h or improve information pment. These are definite on development. Even rigation development exist	ely necessary for now, useful and								
	information and data maps prepared unde clear success of his	a are required for the Master Play gh-qualified utiled the said that lea	rrigation development, r many related fields. Irn study are a good exampization of existing data aving useful data and infor	rigation potential ble for indicating and information.								
			olished databases conce the objectives of NIMP.	rning irrigation								
(4) Programme Description	The GOT has promoted the competent authorities of irrigation administration from the Irrigation Section to the Division of Irrigation and Technical Service (DITS). This fact provides clear proof that the GOT attaches great importance to irrigation development while LGAs' initiatives are to be encouraged more.											
	One major mission of the DITS is to "Promote the use of information communication technology and develop an irrigation data bank". This mission is still more highlighted corresponding to enhancing government's attention to irrigation development. The programme is to contribute to this important DITS mission directly.											
	task is to properly d needs now and in th real information sys important task is to established database programme should f	esign an informate near future. It is tem and databate build up a rece on time, so fulfill these important.	ajor significant tasks. The ation system and database The second important task see as it is designed. Moeliable operation system, that it is maintained aportant tasks successfully the staffs, pursuing specifie	that meet actual is to establish a preover, the third and update the propriately. The prough procuring								
	information, and to	compile them	are to start the collecti using the computer syste n each District, shall be co	m. The data on								
(5) PDM for the Programme	See the attached PD	M.										
(6) Contents of Programme	The proposed conter											
	Activities	Procurement	Providing of manpower and training	Remarks								
	To identify necessary kinds and modality of databases to be required for the purpose of irrigation	Not specified	Database specialist (outsider) -Database specialist (in-house)									
	development and management											

	To prepare all required databases so as to utilize necessary data or GIS information To identify types of computer systems by which established databases are accessed. To prepare an operation manual for the databases so as to	-Required instrument for building databases -Computer system -Related equipment for opening of the network Not specified	-Database (outsider) -Database (in-house) -Manpower of system installat -Instructor for operation -Database (outsider) -Database	tion	Suitable space for computer system installation should be provided
	be operational for the specified computer systems. To investigate possible resources to be mobilized for database updating under the present institutional	Not specified	-Database (outsider) -Database (in-house)	specialist specialist	
	conditions. To make a cycle plan for updating databases by utilizing possible resources in MAFS.	Not specified	-Database (outsider) -Database (in-house)	specialist specialist	
(7) Required Cost	US\$ 720 thousand				
(8) Executing Agency	Division of Irrigation	n and Technical S	Services, MAFS	3	
(9) Implementation Schedule	One and half years f – December 2005)	for study and imp	plementation of	the Progra	amme (July 2004
(10) Assessment of Possible Problems and Bottlenecks in Implementation	New establishment though some datable implementation of pother and unknown to it is proposed to protraining on data exchalso, efforts are refespecially to LGAs'.	pases have alreated revious projects/ to the public. A vide all concerned ange. Equired to populations are properties.	dy been prov programmes, the fter preparation and irrigation pro- ularize the out-	rided in s nose are no n of the pro- pjects/programmed comes of	ome manner in of related to each oposed databases, rams with proper the programme
(11) Special Arrangements	The information sys Mainland. However contrived to be conv	er, it is useful ev	en in Zanzibar.	The dat	abases should be

(Information and Database Improvement Programme) under NIMP

Project Name: National Irrigation Master	Duration: 2	2003 - 2017 (15 years)	
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal The sustainable irrigation development is realized by means of well facilitation of necessary Information and Database System (I&D) related to irrigation development and management.	By the mid 2007, the I&D system built up by this programme is utilized at any stages for 80 % of irrigation schemes newly planned by IS and districts since 2002.	Progress Reports for new irrigation scheme from 2002 to 2006	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose			
Databases related to irrigation development and management are completed and started for its services.	In January 2006, the databases are in condition for open use to personnel of IS and others.	Report on-the-spot inspection for operational condition of the databases (An on-the-spot inspection shall be taken)	Good circumstance for utilization of the databases and its management system is maintained. When revised the system and database itself, the former ones should be replaced smoothly.
Outputs			
Databases related to irrigation development and management are constructed.	The constructed databases are confirmed its workability and demonstrated for commonly use.	Report of Briefing Session on utilization of the databases (Several briefing Session for IS personnel and others shall be held)	Districts and concerned agencies have technical capability and financial resource to manage and operate the constructed databases and its system
Operation manual for the databases are prepared.	By October 2006, the operation manual for the databases is completed for its preparation.	Operational Manual	properly.
3. Up-dating system for the databases is structured.	In the year of passing 3 years after inaugurating of the databases, the up-dating system will be confirmed its function by means of confirming the fact of databases updating.	Report on-the-spot investigation for updating of databases.	
Activities	Inputs		
1-1 Identify necessary kind and modality of database to be required for the purpose of irrigation development and management.	Preparation Team 1) Database 6 months 2) Computer system 6 months 3) Data processor 6 months 4) GIS specialist 6 months	GOT Personnel 1) Counterparts in each subject Equipment	All necessary arrangement for installation of databases will be fulfilled on schedule by concerned section in MAFS.
1-2 Prepare all required kinds of databases so as to utilize necessary data either GIS	Computer operator (as required)	1) Office L.S. 2) Others L.S.	

information.			Preconditions
2-1 Identify types of computer system by which constructed databases are accessed.	Subject specialist for the subject of database (as required)	Budget 1) Salaries and necessary expenses for counterparts 2) Some portion of the budget for installation of databases.	It is clearly confirmed the needs of preparation of the databases and its operation system is recognized in
2-2 Prepare operation manual for the databases so as to be operational for the identified computer systems.	Equipment 1) Computer system 2) Office equipment 3) Others L.S. L.S.	Necessary expenditures in operation of the databases.	MAFS and local government agencies concerning to irrigation development. MAFS can provide necessary
3-1 Investigate possible resources to be mobilized for database up-dating under the present institutional conditions.	Budget Some part of expenditures in local activities related to the		resources for operation of database updating, otherwise, strengthen organization of IS so that IS can deal with the updating tasks.
3-2 Make a cycle plan for updating databases by utilizing possible resources in MAFS.	Project.		

Component D3: Information and Database Improvement Programme

Г										Sche	edule											Cost	
	Activities	Expected results	1	2	3 4	4 5	200	 9	10 11	1 12	1	2 3	4	 6	_	9	10 1	1 12	Person in charge	Implementer	Equipment	(Thousand US\$)	Remarks
																						CSW1	
1-	Identify necessary kind and modality of database to be required for the purpose of irrigation development and management.	Review note																	AD(IS)	IS, Consultants		75	
1-2	Prepare all required kinds of databases so as to utilize necessary data either GIS information.	Several series of databases (e.g. scheme inventory, O&M condition of schemes, GIS data concerning irrigation development, parsonnel data of irrigation engineers and technicians, etc.)																		specialists	as required	460	Utilizing existing databases avaiable
2-	Identify types of computer system by which constructed databases are accessed.	Specification of computer system																	system	Computer system specialists		25	
2-2	Prepare operation manual for the databases so 2 as to be operational for the identified computer systems.	Operation manual																	Cell managers	Database specialists		80	
3-	Investigate possible resources to be mobilized for database up-dating under the present institutional conditions.	Investigation report																	AD(IS)	Cell managers		10	
3-2	Make a cycle plan for updating databases by utilizing possible resources in MAFS.	Plan report																	•	Database specialists	as required	70	
																						720	

17. E1.5: Environmental Assessment Study for Irrigation Practice in Tanzania

(1) Title of Programme	Environmental Asso No.:E1.5)	essment Study	for Irrigation Practice in	n Tanzania (Code								
(2) Location	Mainland and Zanzi	bar										
(3) Objectives	justify causal relation on water and land. natural environment programme, the post delineated in the scott Appropriate applicates schemes and enhant conservation manage.	This programme is to conduct an environmental assessment study to correctly justify causal relations between irrigation water use and environmental issues on water and land. Proper methods of irrigation management friendly to the natural environment are to be conceived. Through implementation of this programme, the possibilities and limitations of irrigation development could be delineated in the scope of the environment. Appropriate application of the outcomes of the programme to the familiar schemes and enhancement of awareness of the importance of environmental conservation management in irrigation, are expected to contribute to attainment of the overall objectives of NIMP.										
(4) Programme Description	Irrigation water use may effect the natural environment in the vicinity of the irrigated site, because no irrigated area can be separated from surrounding environment in connection with a global hydrologic chain. Though some may cause obvious degradation in the environment, others do not lead to serious problems and are sometimes manageable without significant difficulties.											
	irrigation causes enviseason e.g. an issue environmental degra	e e e e e e e e e e e e e e e e e e e										
	should be brought water use is conspic controlled in an adecorder to correctly juenvironmental issue affecting small en	to a close. If cuous despite b quate manner so stify causal rel so, and to developing to the stify causal i	causes serious environmental effects releing manageable, such ir of as to suppress environmentationships between irrigation managempacts, a comprehensitice is to be implemented.	elated to irrigation rigation should be ental hazards. In tion water use and gement technology								
	scientific fields rela	ated to the stu	requires a number of spendy scope, proper assigns of the programme.									
(5) PDM for the Programme	See the attached PD	M.										
(6) Contents of Programme	The proposed conter	nts of the Progra	amme are as follows:									
	Activities	Procurement	Providing of manpower and training	Remarks								
	To select study areas where substantial environmental issues related to the irrigated agriculture occur. Not specified - Consultants having required ability and faculty topics relating to irrigation into consideration											

	To investigate the actual environmental situation of the study areas.	Not specified	- Consultants having required ability and faculty						
	To investigate the effects of irrigation practice in the environment.	Not specified	- Consultants having required ability and faculty						
	To clarify causes and mechanisms of the environmental issues	Not specified	- Consultants having required ability and faculty						
	To conceive countermeasures so as to avoid or lighten the environmental hazards.	Not specified	- Consultants having required ability and faculty						
	To devise procedures for the countermeasures to ensure that they are feasible.	Not specified	- Consultants having required ability and faculty						
	To formulate improvement measures to reverse the environmental deterioration that irrigators can deal with.	Not specified	- Consultants having required ability and faculty						
	To select study areas where occur substantial environmental issues related to the irrigated agriculture.	Not specified	- Consultants having required ability and faculty	To take previous environmental topics relating to irrigation into consideration					
(7) Required Cost	US\$ 900 thousand								
(8) Executing Agency	Division of Irrigation	n and Technical	Services, MAFS						
(9) Implementation Schedule	Two years for study 2006)	and implemen	tation of the Programme	(July 2004 – June					
(10) Assessment of Possible Problems and Bottlenecks in Implementation	scientific viewpoints irrigation and enviro for the programme is study.	s are essential inmental phenomental phenomentation.	etimes profoundly ranging to uncover the real causa mena. Proper specialists to provide any available	al relation between s are to be assigned data related to the					
	Conservation of the environment is occasionally contradictory to developm intention. However, concealment and distortion of facts identified in development intention are strictly forbidden. To discover real causes indispensable to establish sustainable irrigated agriculture systems.								
(11) Special Arrangements		gramme which	o be conducted in the Ma are in common with the Zanzibar.						

(Environmental Assessment Study for Irrigation Practice in Tanzania) under NIMP

Project Name: National Irrigation Master	Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal The sustainable irrigation development is realized fulfilling irrigation development as being environmental friendly.	By the mid 2007, no substantial environmental issues are occurred in existing irrigation schemes.	Result environmental study for existing irrigation schemes in 2006	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose Environmental issues affected presently in and by irrigation practice in Tanzania are elucidated. Measures of avoiding environmental deterioration by irrigation practice are worked out.	All highlighted irrigated areas having some environmental issues are studied within this Study.	Previous record on environmental issues related to irrigation practice	Stakeholders of irrigated agriculture continuously recognize the importance of consideration in environmental aspect, and carry out their duty properly.
1. Environmental issues presented are scientifically analyzed, and causes and mechanism of the issues are found out. 2. Alternatives of improvement measures to the environmental deterioration for which irrigators can deal with, are proposed. 3. The alternatives of improvement measures are finalized so as to be manageable.	The result of the analysis is announced. Several workshops for irrigators are held. In the workshops, the alternatives of improvement measures are discussed and finalized.	Announcement of the study result Record of the workshop for irrigators	Good cooperation is given for the implementation of this Study from any concerned agencies. A series of the technical discussion is held timely and adequately with proper attendance environmentalists concerned.
Activities 1-1 Select study areas where occur substantial environmental issues related to the irrigated agriculture. 1-2 Investigate actual environmental situation of the study areas. 1-3 Investigate effects of	Inputs Donor Study Team 1) Leader 1 year 2) Irrigated agriculture	Fersonnel 1) Counterparts in each subject Equipment 1) Office L.S. 2) Furniture and Acces. L.S. 3) Tel. and business eq. L.S.	IS of DITS holds adequate power for technical coordination within the concerned environmental studies. Participation of beneficiaries in concerned schemes or areas should be given.

irrigation practice in	Supporters			Preconditions
environment.	 field investigator 	-	Budget	
1-4 Clarify causes and mechanism of the environmental issues	2) farmers moderator Equipment 1) Vehicles	L.S.	 Salaries and necessary expenses for counterparts Allowances and expenses of field trips 	IS of DITS and MAFS admit the necessity of substantial research pursuing actual causes of existing
2-1 Make ideas of countermeasures so as to avoid or lighten the environmental hazards.	2) Environmental testing equipment 3) GIS equipment.	L.S. L.S.		environmental issues in which irrigation is regarded as a major contributor of the issues.
2-2 Devise procedures of the countermeasures as being feasible	Budget Some part of expenditures local activities related to t Project.			
3. Formulate improvement measures to the environmental deterioration for which irrigators can deal with.	Training in other countrie Training opportunities in abroad for several numbe counterparts in related subjects.			

Component E1.5: Environmental Assessment Study for Irrigation Practice in Tanzania

								Sch	nedul	e									Cost	
Activities	Expected results	7 8	9 1	 12	1 2	2 3	4		005 5 7	8	9 10	11 12	2 1	 006	5 6	Person in charge	Implementer	Equipment	(Thousand US\$)	Remarks
																			<i>υ</i> , συν	
Select study areas where occur substantial 1-1 environmental issues related to the irrigated agriculture.	Study report (implied)															AD(IS)	Consultants,		75	
1-2 Investigate actual environmental situation of the study areas.	Study report (implied)															AD(IS)	Consultants, IS		225	
Investigate effects of irrigation practice in environment.	Study report (implied)															AD(IS)	Consultants,		150	
1-4 Clarify causes and mechanism of the environmental issues	Study report (implied)															AD(IS)	Consultants, IS		150	
2-1 Make ideas of countermeasures so as to avoid or lighten the environmental hazards.	Study report (implied)															AD(IS)	Consultants, IS		120	
Devise procedures of the countermeasures as being feasible.	Study report (implied)															AD(IS)	Consultants, IS		120	
Formulate improvement measures to the 3-1 environmental deterioration for which irrigators can deal with.	Study report (implied) Executive document															D(DITS) AD(IS)	Consultants, IS		60	
																			900	

18. E1.6: Study of River-Basin Approach in Irrigation Development

(1) Title of Programme	Study of River-Basin	n Approach in I	rrigation Development (C	ode No.:E1.6)									
(2) Location	Mainland and Zanzi	bar											
(3) Objectives	introduce river-basin	n approach for i	planning study to correctivities of the planning study to correct the planning study to conceive the planning study to conceive the planning study to conceive the planning study to correct the planning study study the planning study the planning study the planning study the planning study study the planning study study the planning study	nd proper methods									
	with other users in rights management, of irrigation water u	Water rights for irrigation are the roots of water management to be collaborated with other users in a river basin. The study will clarify routines of water rights management, and formulate how to organize and manage an organization of irrigation water users which is a major body to systematically negotiate with other powers by unifying concerned beneficiary farmers.											
	Through use of the outcomes of the programme and enhancement of awareness on the importance of river-basin management in irrigation, it is expected to attain the overall objectives of NIMP.												
(4) Programme Description	No irrigated area could be separated from the surrounding environment in connection with a grave hydrologic chain. Generally such water environment could be delineated as a unit of a river basin. Water resources, including groundwater, may balance the quantity of water within a river basin. Water uses should also consider such water balance in the unit of a river basin.												
	new water resources the newly established river-basin approach to say, irrigation water the same river basing obtaining water right This programme is	s management sed National Wan. On the counter users have n. Participation its is essential to find a prope	has been soundly endorse ystem has been launched ter Policy on the assump rese of new policy, every we to work to accommodate in into water management for irrigation water users or water management progon of river-basin management	in accordance with bition of applying a vater user, needless each other within t and authorization for their survival. gramme as a water									
(5) PDM for the Programme	See the attached PD	M.											
(6) Contents of Programme	The proposed conter	nts of the Progr	amme are as follows:										
			Providing of manpower and training	Remarks									
	To investigate the present situation of obtaining water rights for irrigators Not specified - Consultants having required ability and faculty studies carried out by the river-basin offices												
	To clarify difficulties Not specified - Consultants having and problems for obtaining water rights for irrigators - Consultants having required ability and faculty												
	To devise systematic procedures to handle water right easily for irrigators	Not specified	- Consultants having required ability and faculty										

	To study technical skills to increase the amount of allowable water for irrigation increase To study technical skills to reduce irrigation water demand To study proper organizational	Not specified Not specified Not specified	- Consultants having required ability and faculty - Consultants having required ability and faculty - Consultants having required ability and faculty	
(7) Required Cost	arrangement towards negotiation between water users. To prepare a guideline for the river-basin approach for irrigation sector. US\$ 360 thousand	Not specified	- Consultants having required ability and faculty	
(8) Executing Agency		vivision of Irriga	ation and Technical Service	ces, MAFS
(9) Implementation Schedule	One year for study 2005)	and implement	tation of the Programme	(July 2004 – June
(10) Assessment of Possible Problems and Bottlenecks in Implementation	water users and diversiver basin. In ord	erse information ler to make thi cory cooperativ	basin-wide data including on natural conditions for is required data available to relation among river-	the corresponding e, it is essential to
	Furthermore, self-av	vareness of irrig ward success of rrigation sector	relations with other releve gators on a sense of river- f introduction of the river- r. Wide enlightenment	basin management basin management
	of irrigation water organization of a leare important preco	rights rather the gal entity of im- onditions for the	iary farmers is very desira- nan individual farmers. rigators and the proper fu- ne successful management rigators is indispensable e	Therefore, proper unctioning of them nt of water rights.
(11) Special Arrangements	be conducted in the	Mainland. The	ntroduction of river-basin lough scale of the river baser management on a ri	sins is rather small

(Study of River-Basin Approach in Irrigation Development) under NIMP

Project Name: National Irrigation Master	r Plan	Duration: 2	2003 - 2017 (15 years)
Project Area: Tanzania	Target Agency: MAFS	Date:	August 2003

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal The sustainable irrigation development is realized taking appropriate river-basin approach in irrigation development	By the mid 2008, conflicts between irrigators and other water users decrease at less than 50 % comparing to 2002 in number.	Report about water conflict prepared by water-basin offices.	Other related programmes of NIMP are animatedly implemented as scheduled.
Project Purpose Proper river-basin approach for irrigation sector is established as a form of guideline. And the proper river-basin approach for irrigation sector is expanded for irrigators.	a) The river-basin approach for irrigation sector is circulated to MOW and related water users.b) Several times of seminars on the proper river-basin approach are held.	Letter of circulation Report of the seminars	Irrigation engineers concerned and irrigators will follow the river-basin approach for irrigation sector appropriately.
1. Procedures of obtaining and/or renewing water right for irrigation water use are routinized within irrigation sector. 2. Technical skills to make allowable water for irrigation increase are developed. 3. Technical skills to make demanding water for irrigation reduce are developed. 4. Organizational arrangement towards negotiation between water users is proposed.	The proposed procedure on water right is confirmed to be consistent with the revised Water Accord.	Revised Water Accord	There are no obstacles for this programme implementation from other actors who have different interesting. A series of the technical discussion is held timely and adequately with proper attendance of engineers concerned.
5. A guideline of river-basin approach for irrigation sector is prepared.	By June 2005, a guideline will be completed.	Booklet of the guideline	Handling of the guide-book should be orderly managed by IS of DITS.
Activities 1-1 Investigate present situation of water right obtaining for irrigators 1-2 Clarify difficulties and problems for obtaining water right for irrigators 1-3 Devise systematic procedures to handle water right easily for	Inputs Donor Study Team 1) River basin development 6 months 2) Irrigation 6 months 3) Water management 6 months 4) Legal specialist 6 months	GOT Personnel 1) Counterparts in each subject	Concerned parsons and organizations in irrigation sector should fully cooperate to this programme. IS of DITS holds adequate power for technical coordination within the concerned organization.
irrigators 2-1 Study technical skills to make allowable water for irrigation increase	Equipment 1) Vehicles 2) Office equipment 3) GIS equipment. L.S. L.S.	Equipment 1) Office L.S. 2) Furniture and Acces. L.S. 3) Tel. and business eq. L.S.	

			Preconditions	ı
3-1 Study technical skills to make demanding water for irrigation reduce.	Budget Some part of expenditures in local activities related to the Project.	Budget 1) Salaries and necessary expenses for counterparts 2) Allowances and expenses of	MAFS admits the necessity of applying river-basin approach in irrigation sector.	
4-1 Study proper organizational arrangement towards negotiation between water users.	·	field investigations		
5-1 Prepare a guideline of river-basin approach for irrigation sector.				

Component E1.6: Study of River-Basin Approach in Irrigation Development

Г											Sche	edul	le											Cost	
	Activities	Expected results					20	04							20	005					erson in	Implementer	Equipment		Remarks
		•	1	2	3 4	4 5	6	7	8 9	10	11 12	1	2 3	4	5 6	7	8	9 10	11 13	2 C.	harge	•		(Thousand US\$)	
1-	Investigate present situation of water right obtaining for irrigators	Study report (implied)																		AD	(IS) I	Consultants, IS		60	Utilization of latest data available in the River-Basin Offices
1-2	Clarify difficulties and problems for obtaining water right for irrigators	Study report (implied)																		AD	((21))	Consultants, IS		60	
1-3	Devise systematic procedures to handle water right easily for irrigators	Study report (implied)																		,		Consultants, IS		60	
2-	Study technical skills to make allowable water for irrigation increase	Study report (implied)																		AD	MIS) I	Consultants, IS		40	
3-	Study technical skills to make demanding water for irrigation reduce.	Study report (implied)																		AD	W167 I	Consultants, IS		40	
4-	Study proper organizational arrangement towards negotiation between water users.	Study report (implied)																		AD	(121)	Consultants, IS		40	
5-1	Prepare a guideline of river-basin approach for irrigation sector.	Study report (implied) Guideline for reiver-basin management for irrigation sector														l						Consultants, IS		60	
																								360	