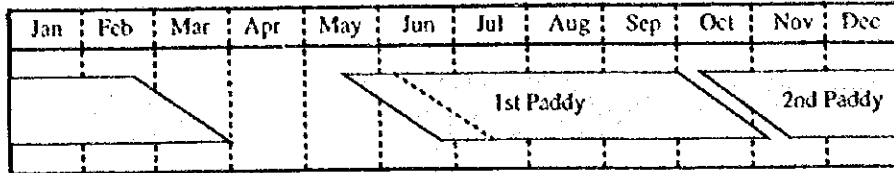
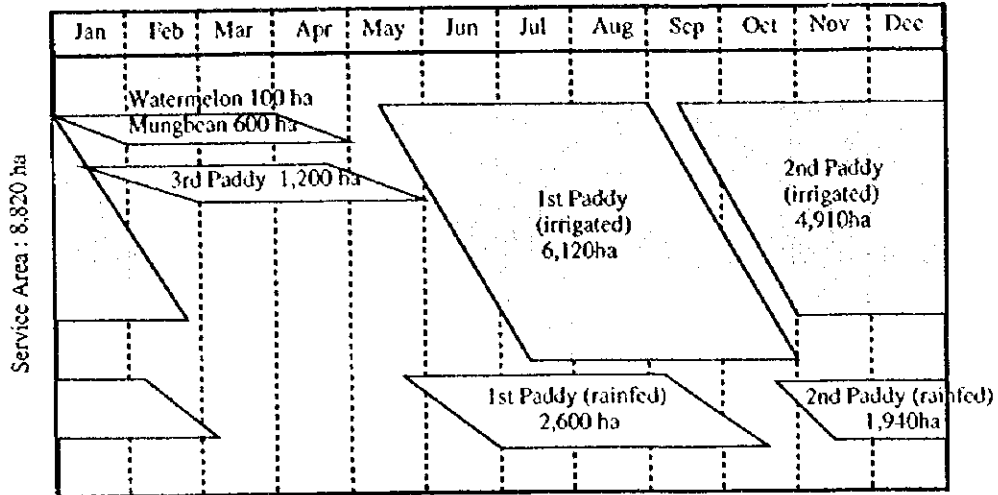


Figures

Jalaur Proper RIS

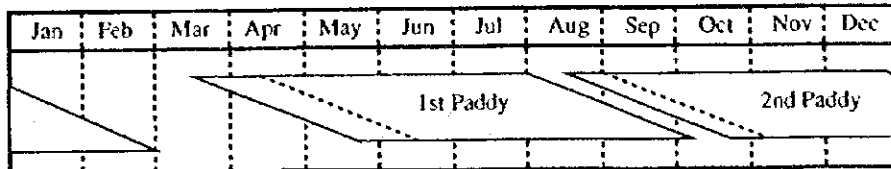


Cropping Calendar prepared by NIA

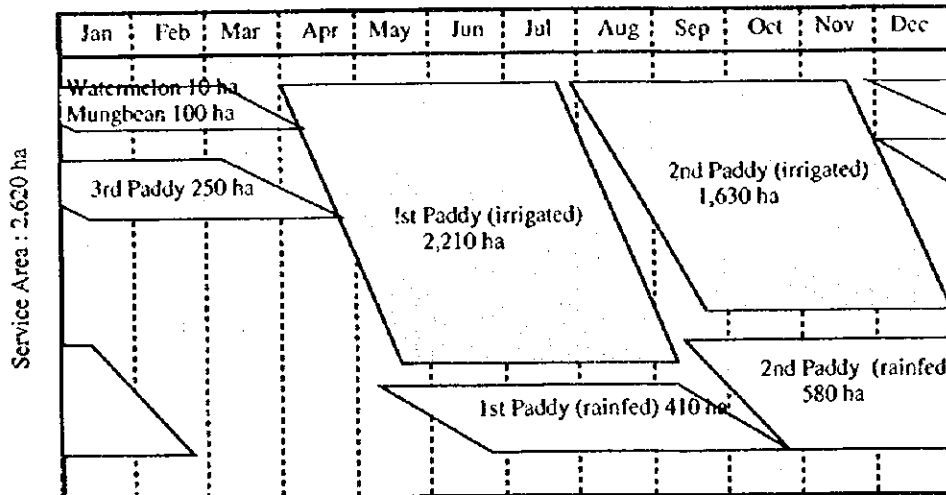


Actual Cropping Pattern

Jalaur Extension RIS



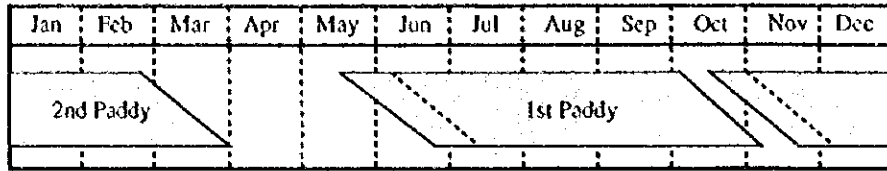
Cropping Calendar prepared by NIA



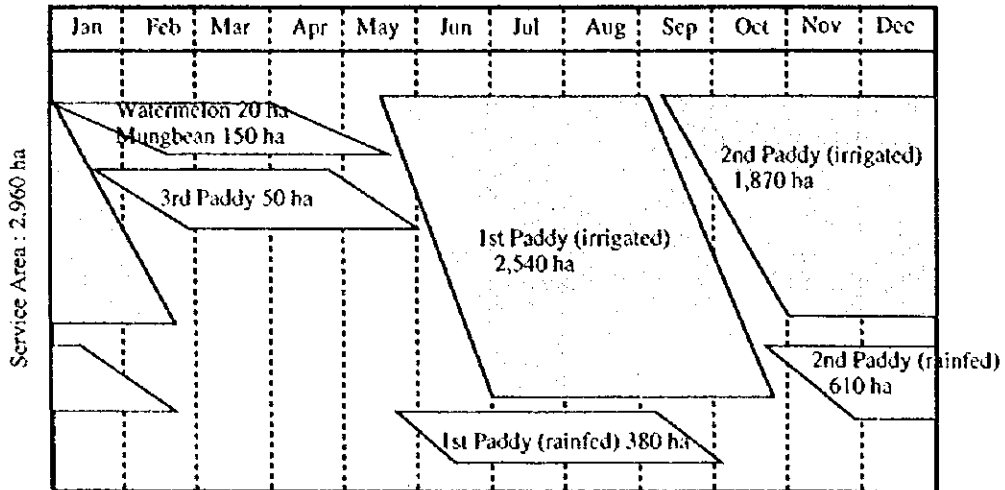
Actual Cropping Pattern

Figure 3.1.1 Present Cropping Pattern (1/3)

Suague RIS

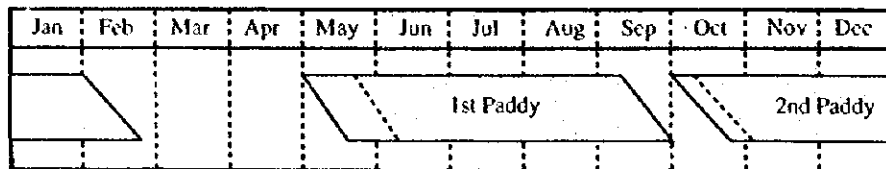


Cropping Calendar prepared by NIA

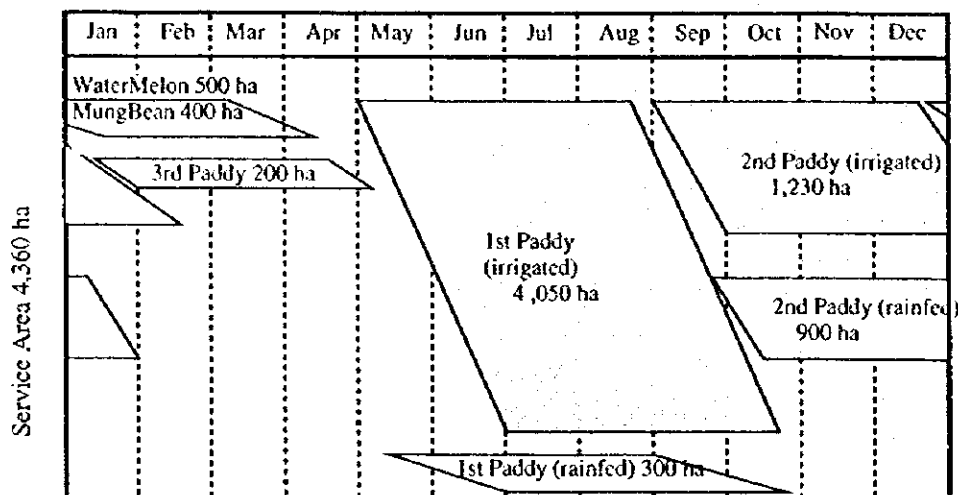


Actual Cropping Pattern

Aganan RIS



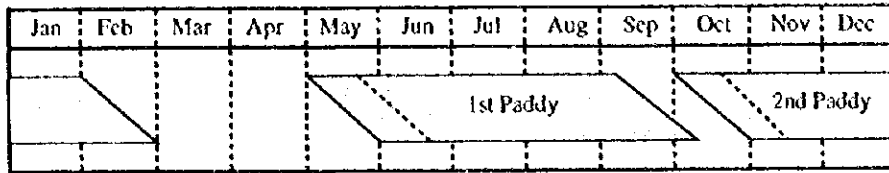
Cropping Calendar Prepared by NIA



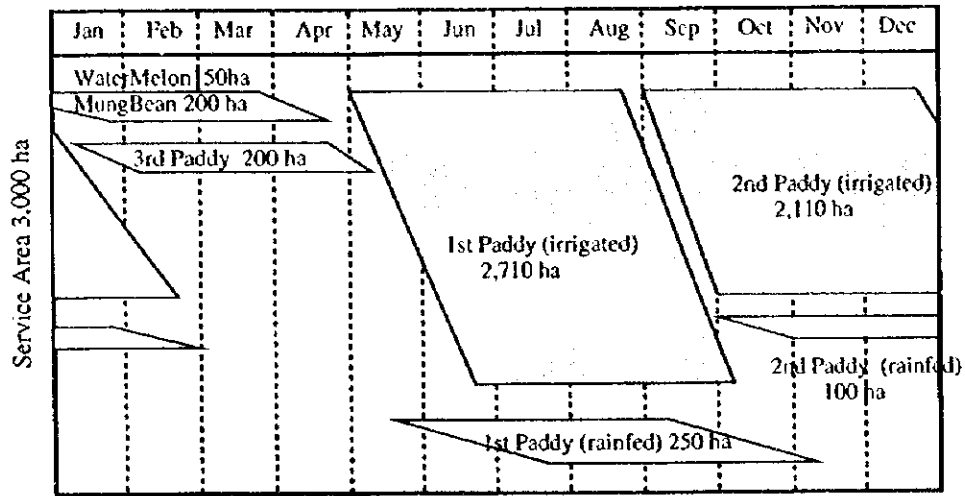
Actual Cropping Pattern

Figure 3.1.1 Present Cropping Pattern (2/3)

Sta. Barbara RIS



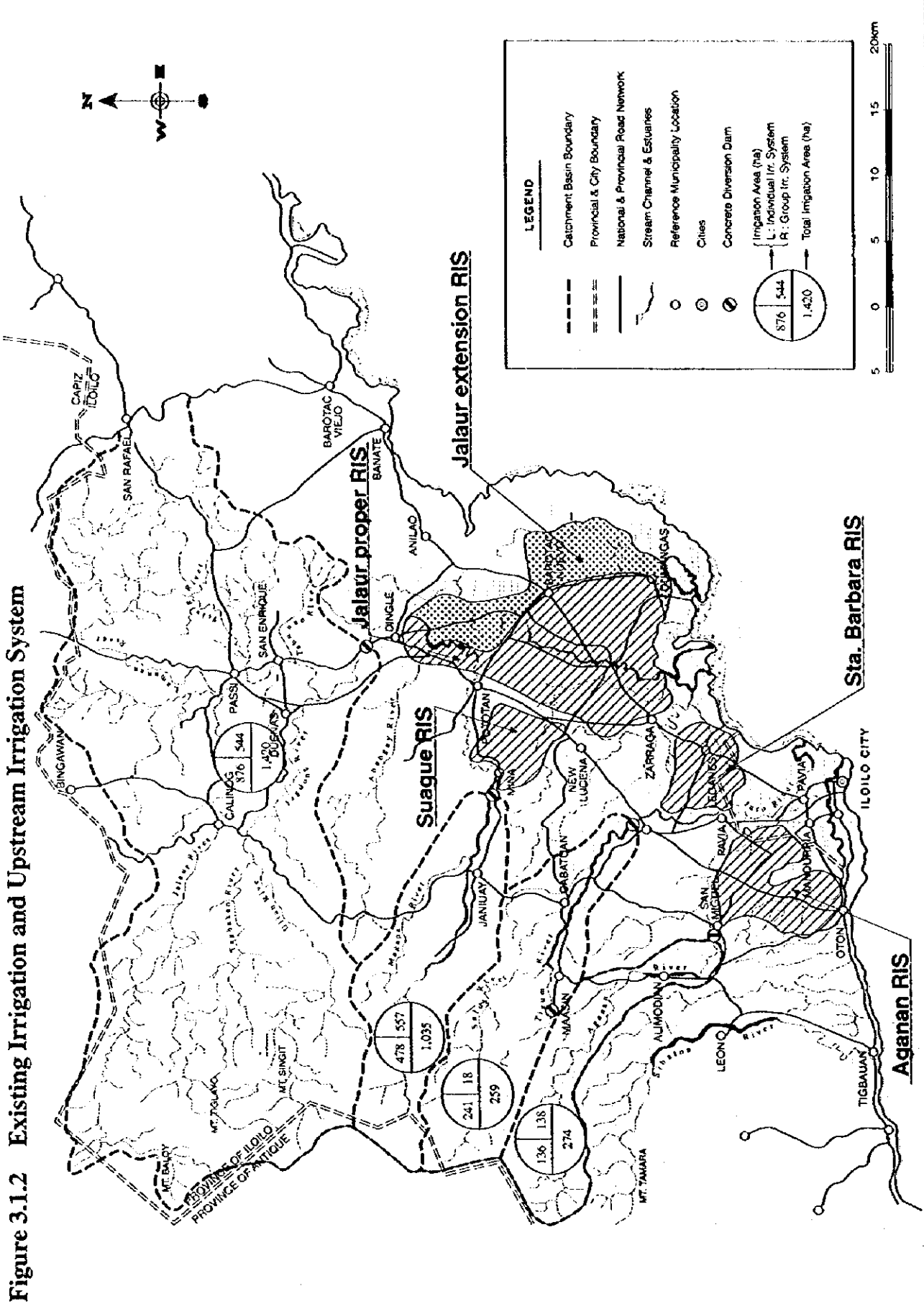
Cropping Calendar Prepared by NIA



Actual Cropping Pattern

Figure 3.1.1 Present Cropping Pattern (3/3)

Figure 3.1.2 Existing Irrigation and Upstream Irrigation System



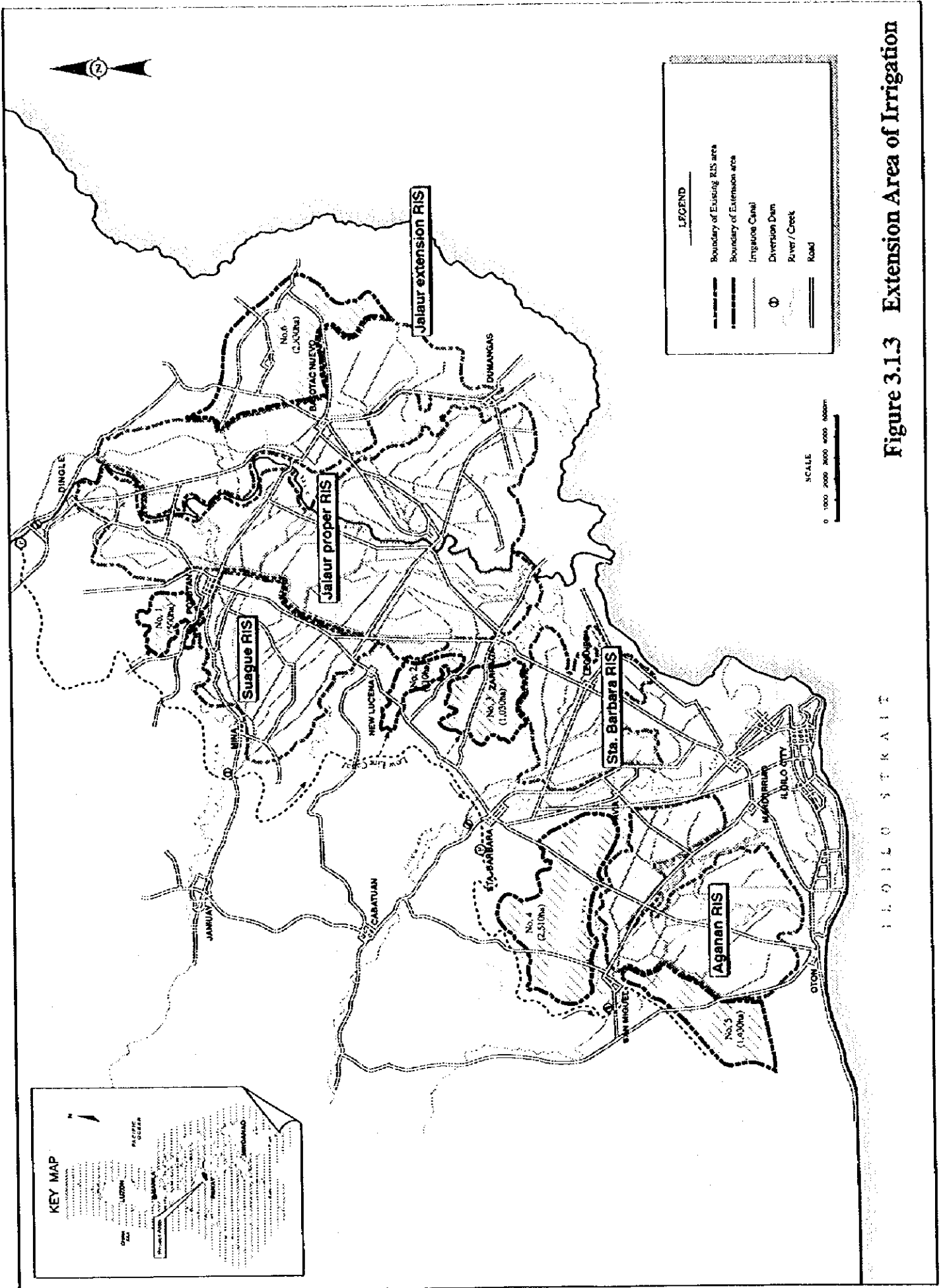


Figure 3.1.3 Extension Area of Irrigation

ILOILO STRAIT

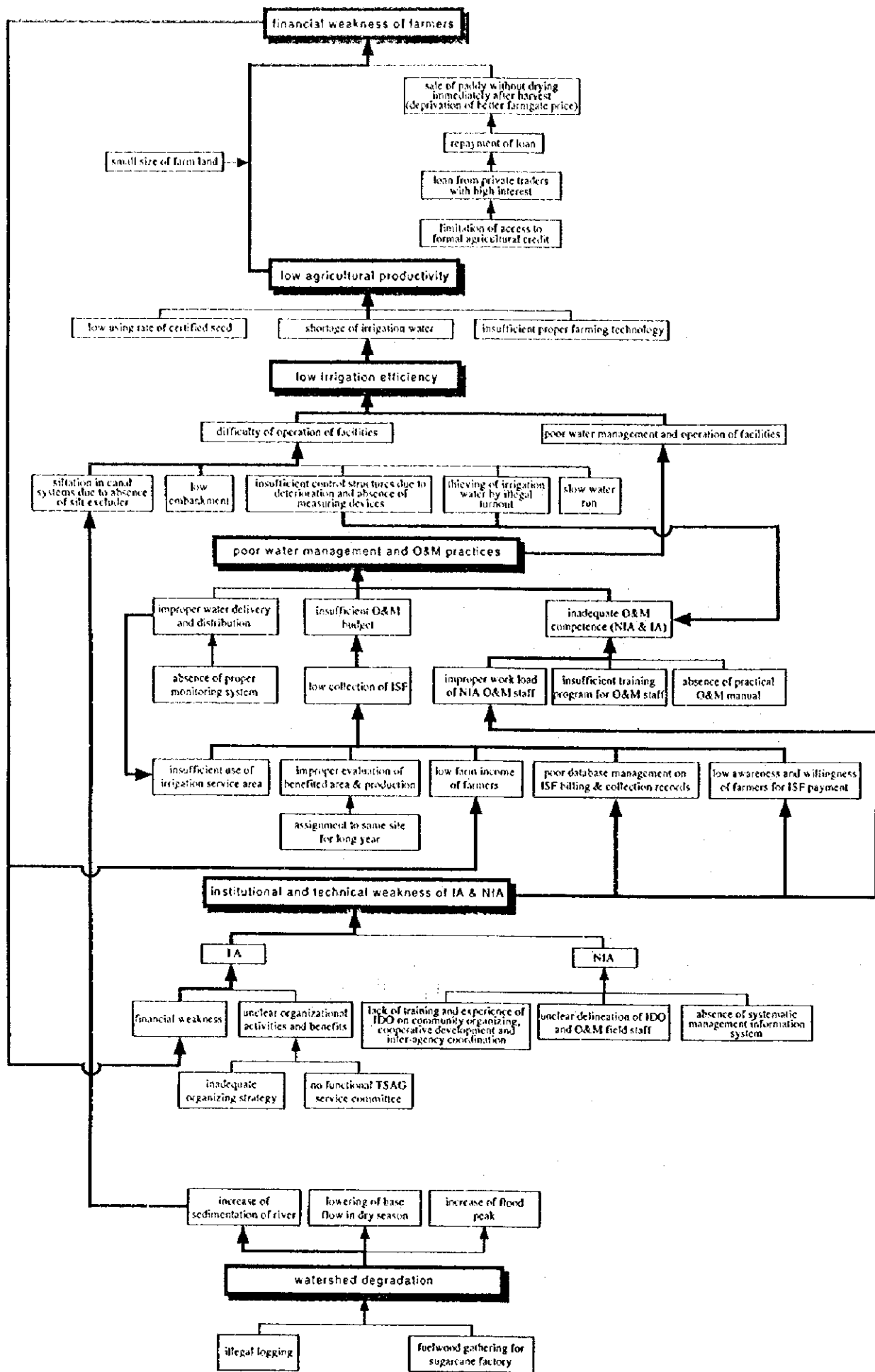


Figure 3.2.1 Relationship among Issues and Causes

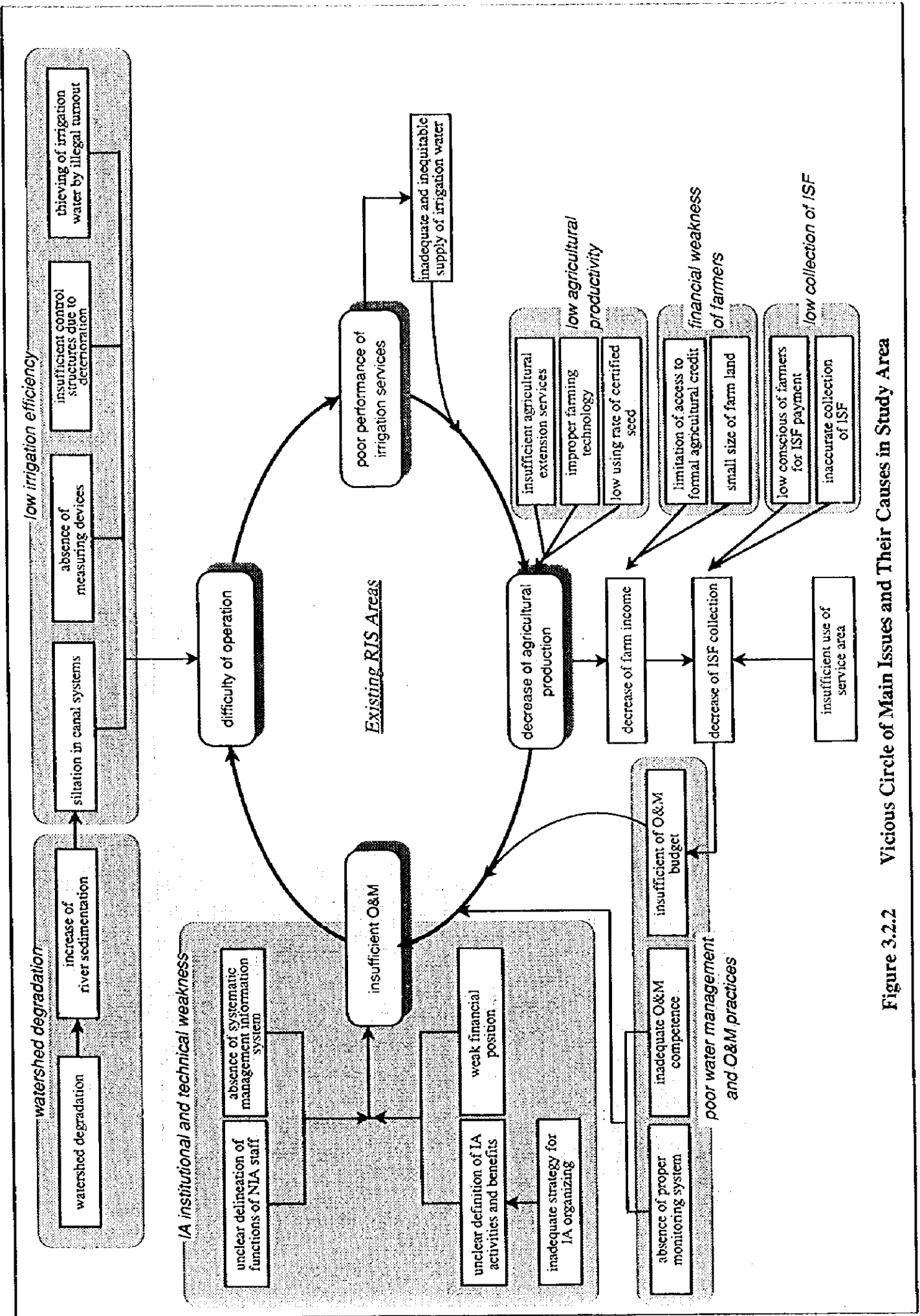
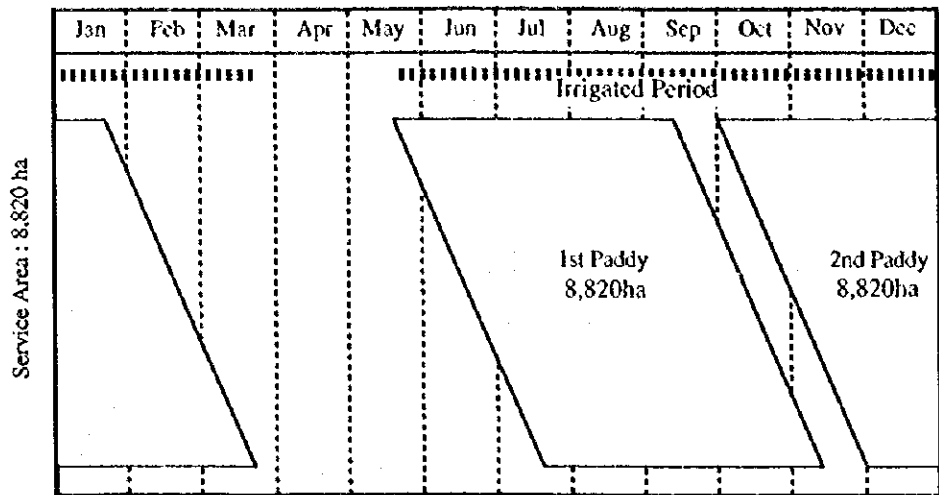
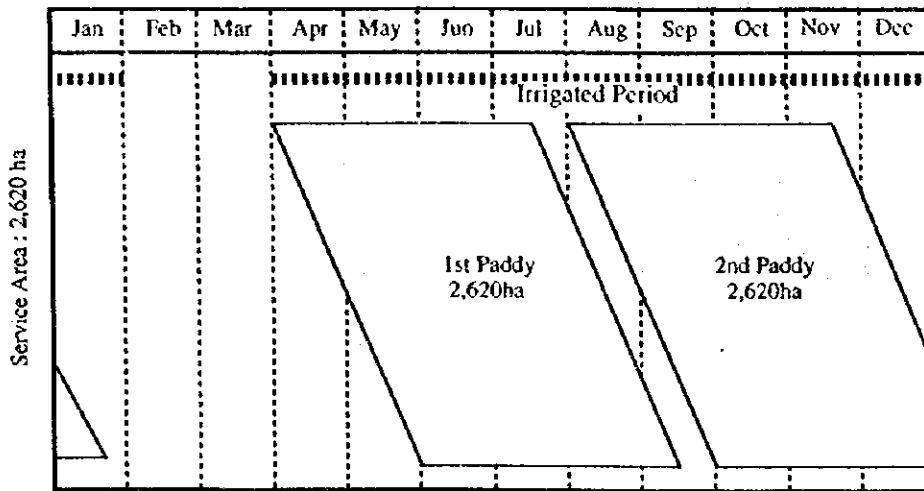


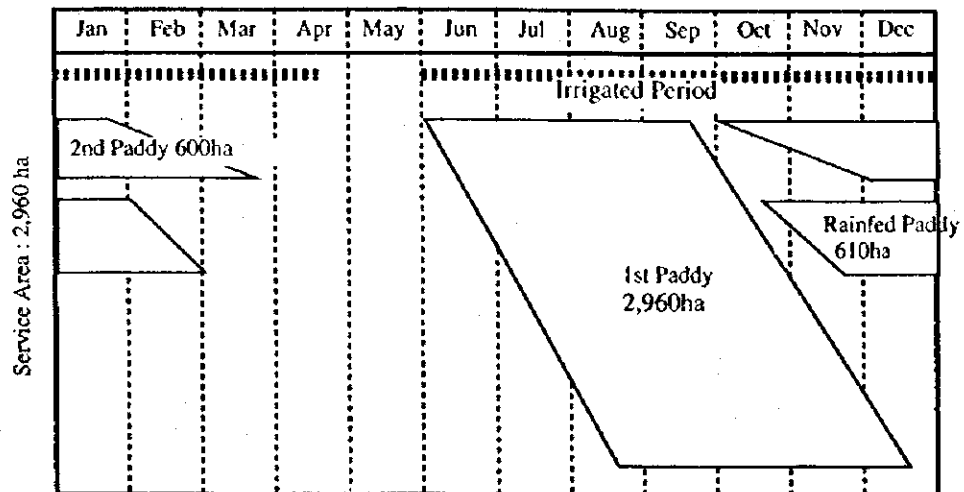
Figure 3.2.2 Vicious Circle of Main Issues and Their Causes in Study Area



Jalaur Proper RIS

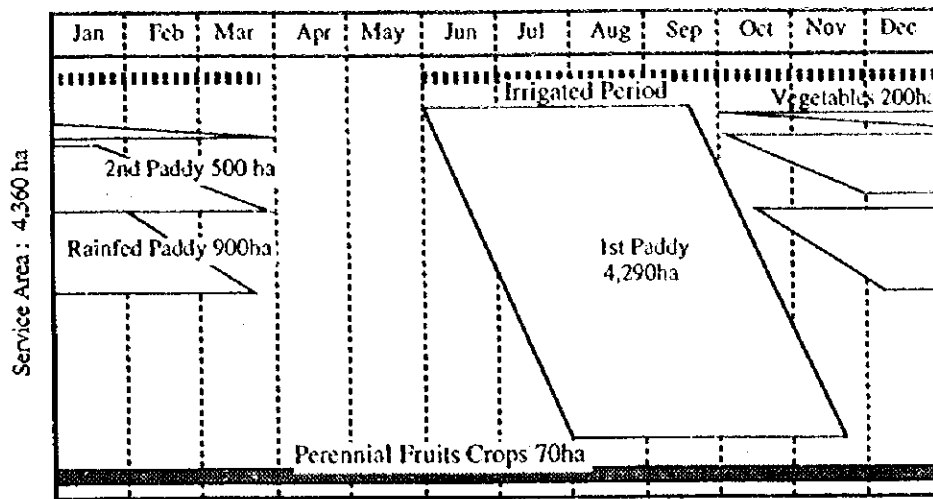


Jalaur Extension RIS

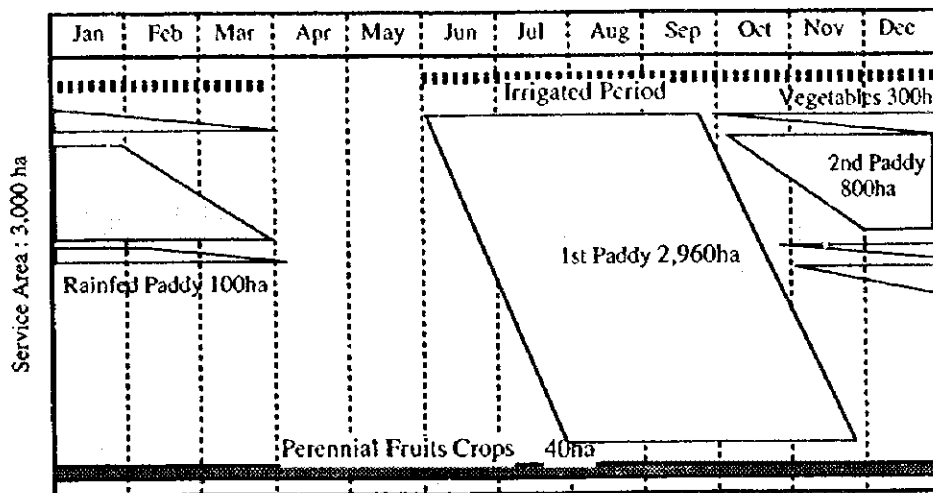


Suague RIS

Figure 3.2.3 Proposed Cropping Pattern (1/2)

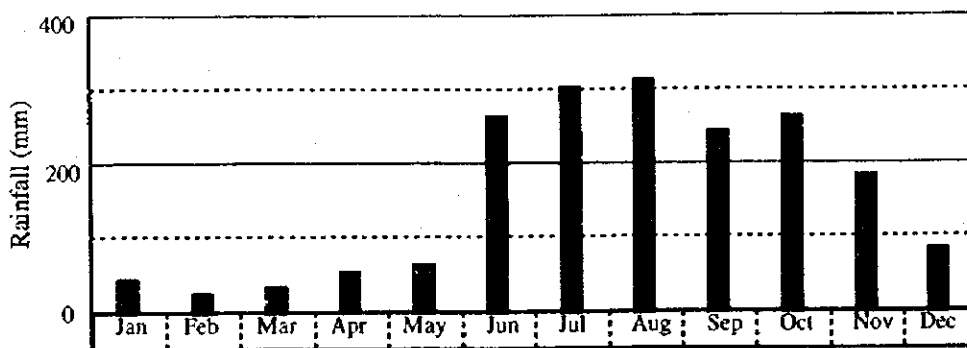


Aganan RIS



Sta. Barbara RIS

Watermelon: including Muskmelon
 Vegetables: Ampalaya, Cabbage, Cauliflower, Chili, Cucumber, Eggplant, Garlic, Okra, Onion, Squash, Stringbean, Sweet corn, Baby corn, Sweet pepper, Tomato, Cut flower
 Perennial Fruits Crops: Mango, Durian, Papaya, Mangosteen, Banana, Citrus, Rambutan,



Monthly Rainfall

Figure 3.2.3 Proposed Cropping Pattern (2/2)

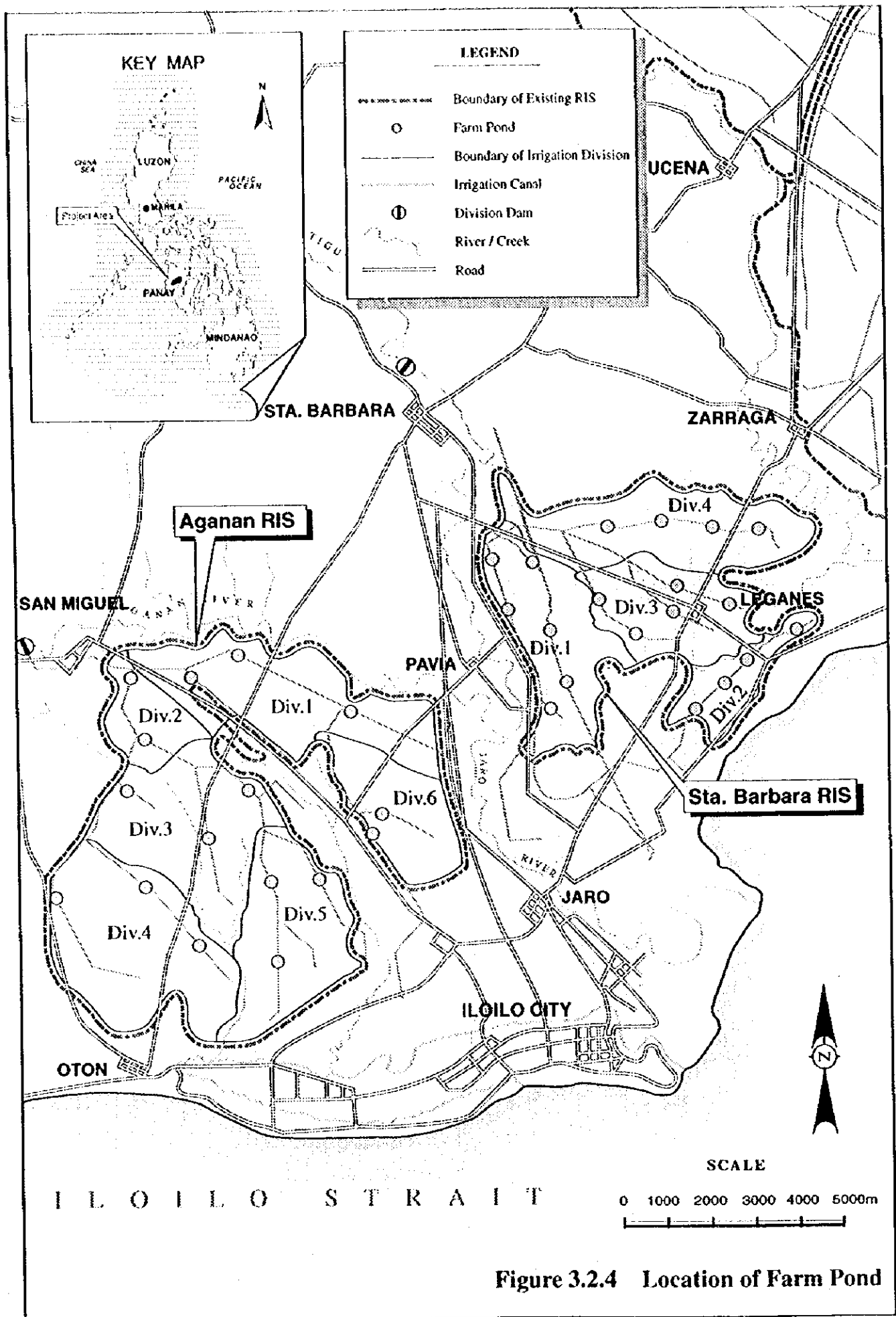
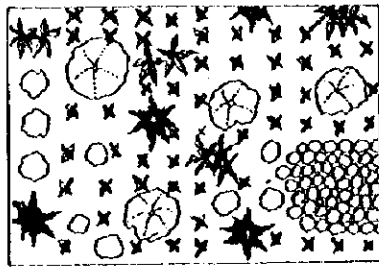
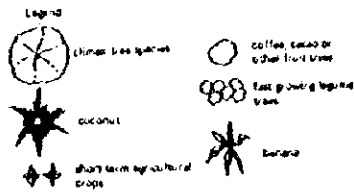


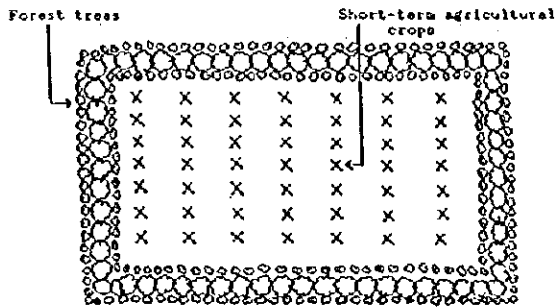
Figure 3.2.4 Location of Farm Pond



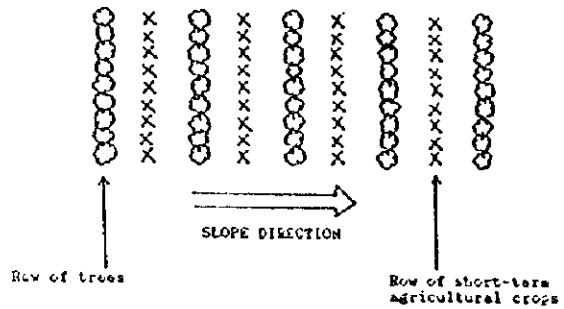
An illustrated example of a randomly mixed planting scheme (Based on Vargas, 1987, and Ramirez, 1988)



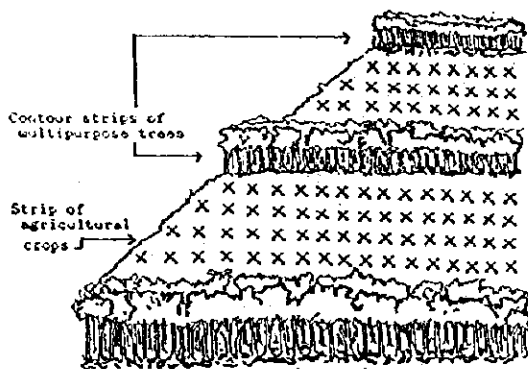
Randomized Mixed Planting



A illustrated example of a trees along border

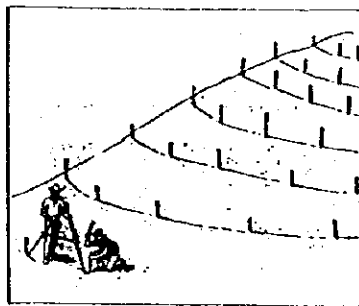


A illustrated example of an alternative row

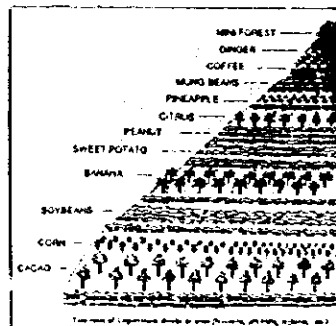


A illustrated example of an alternate strips

Row-inter crop agro forestry



Use of an A frame in laying out contour lines



The use of Leguminous shrubs in agro forestry, (Lynch, 1989, p. 103) (Lynch and Grace, 1990, p. 103) (Lynch and Grace, 1990, p. 103)

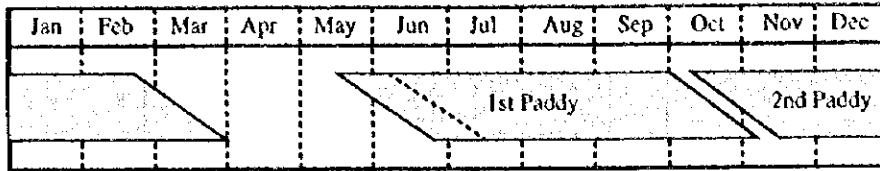
SALT (Sloping Agricultural Land Technology)

Figure 3.2.5 Recommended Agro-Forestry System

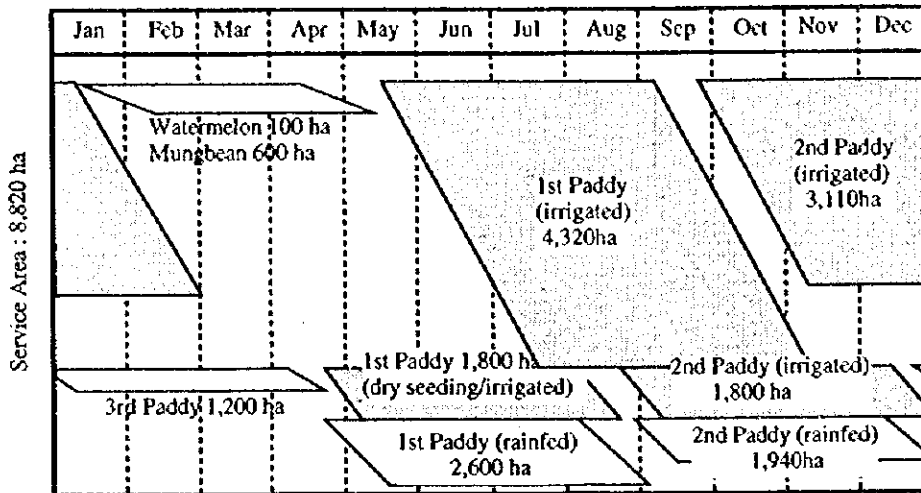
Figure 3.3.1 Tentative Implementation Schedule

Description	1	2	3	4	5	6	7
Pre-construction Stage							
Detailed Design	=====						
Tender and Evaluation	=====						
Construction Stage							
- Phase I							
<Improvement / Rehabilitation works>							
Jalaur proper RIS			=====				
Suague RIS			=====				
<Strengthening of Aganan Federation>			=====				
- Phase II							
<Improvement / Rehabilitation works>							
Sta. Barbara RIS					=====		
Aganan RIS					=====		
- Phase III							
<Improvement / Rehabilitation works>							
Jalaur extension RIS						=====	
Total							21,760

Jalaur Proper RIS

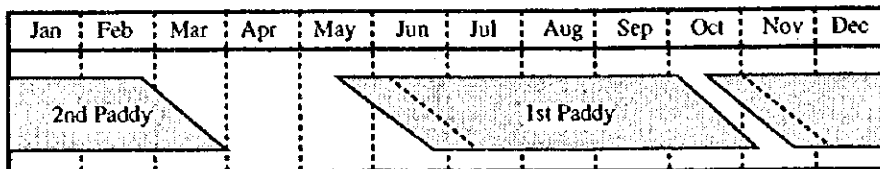


Cropping Calendar prepared by NIA

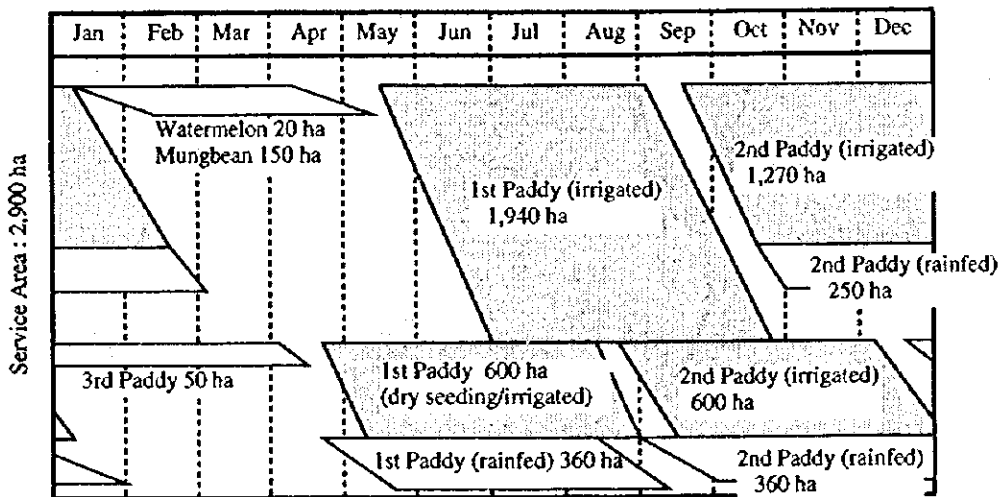


Actual Cropping Pattern

Suague RIS



Cropping Calendar prepared by NIA



Actual Cropping Pattern

Figure 4.3.1 Present Cropping Pattern

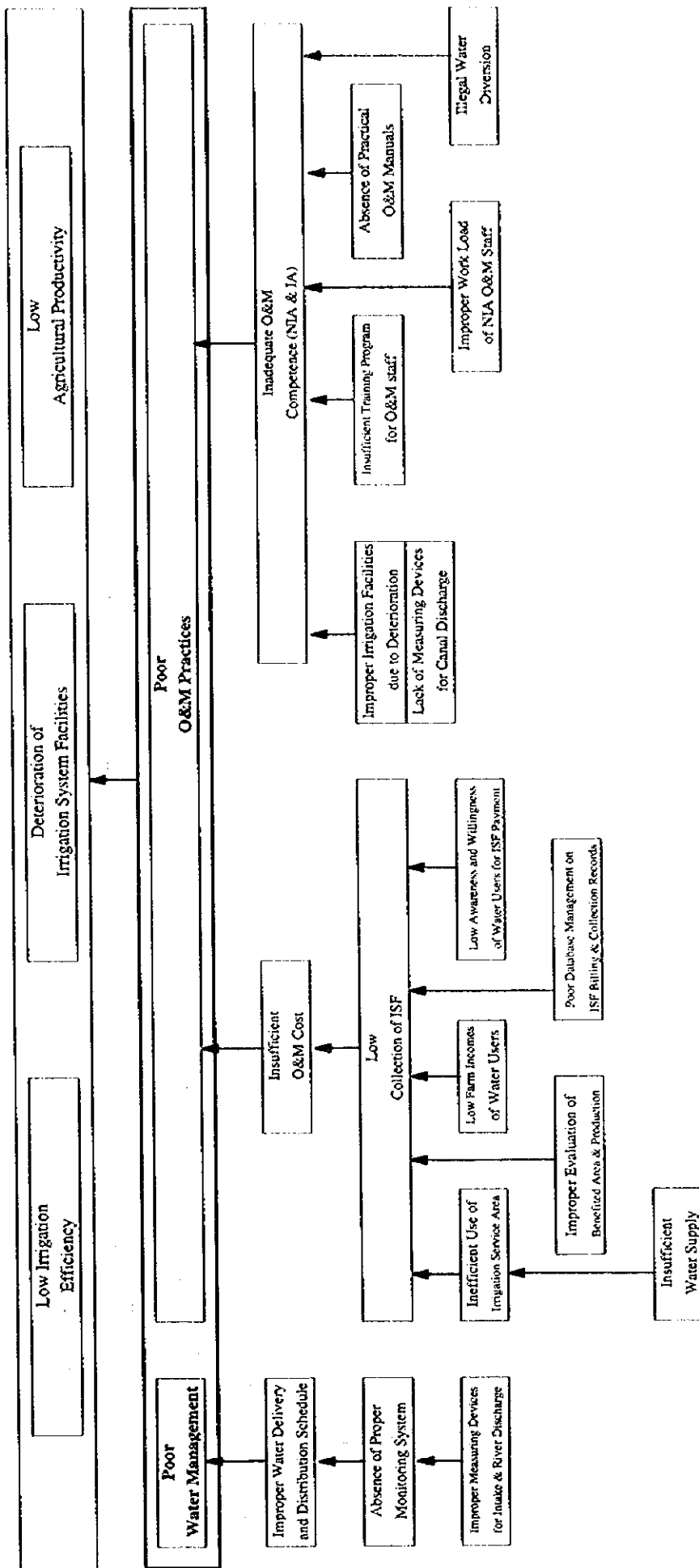


Figure 4.5.1 Main Causes of Poor Water Management and O&M Practices

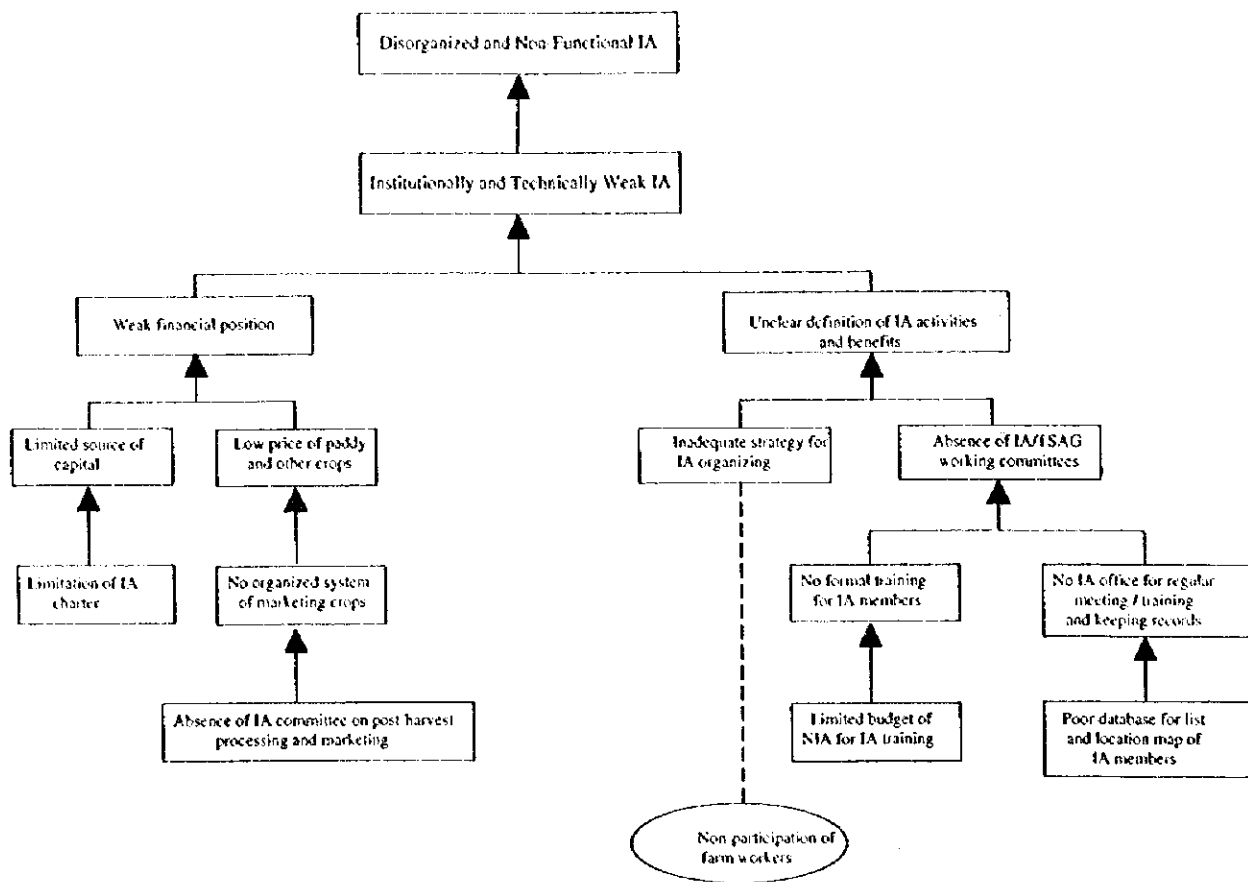
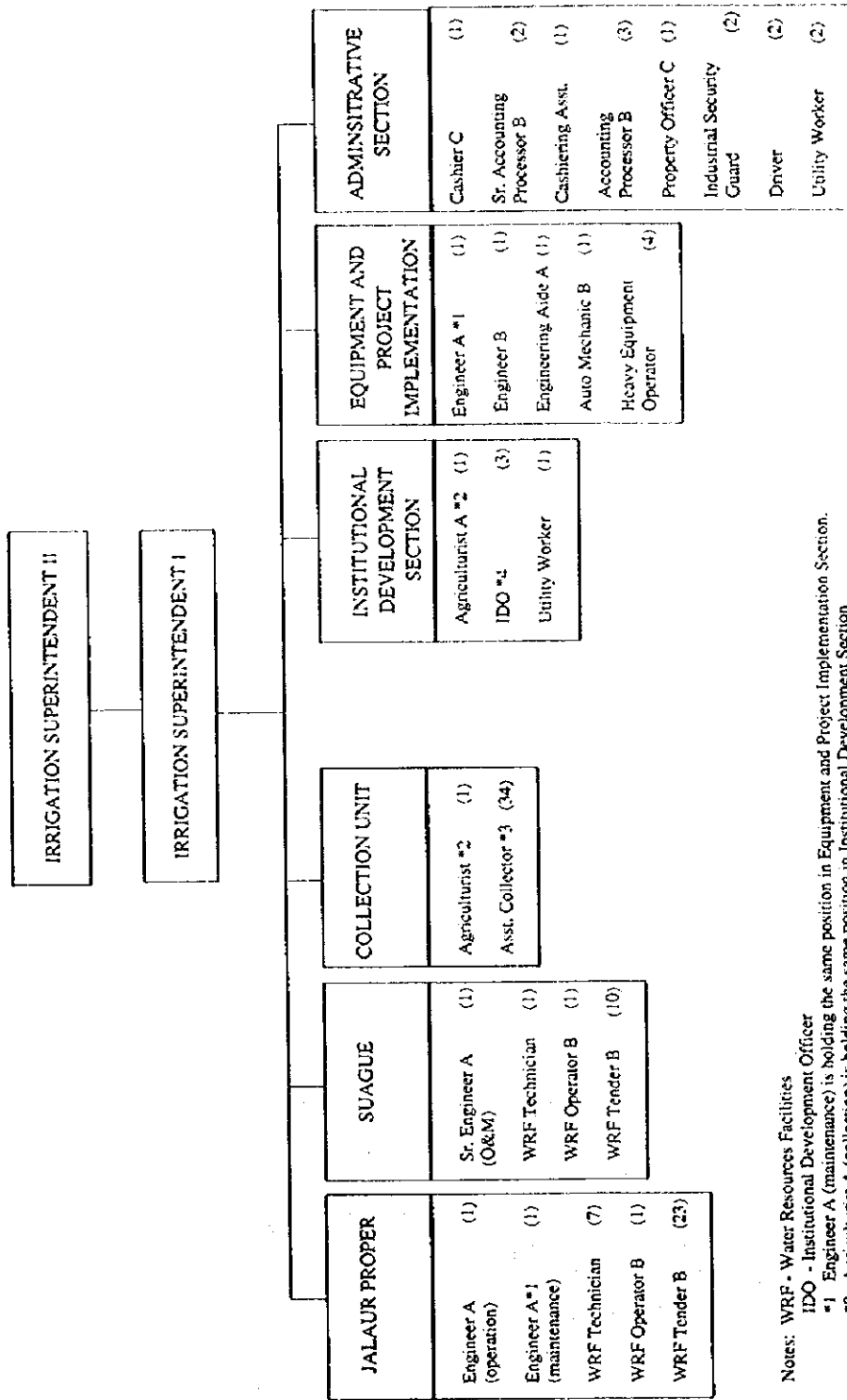
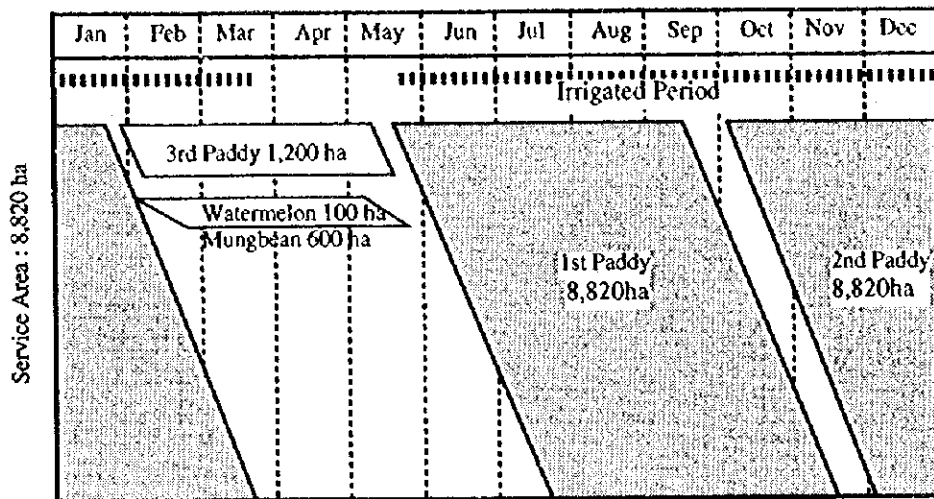


Figure 4.6.1 Main Causes of the IA Institutional and Technical Weakness

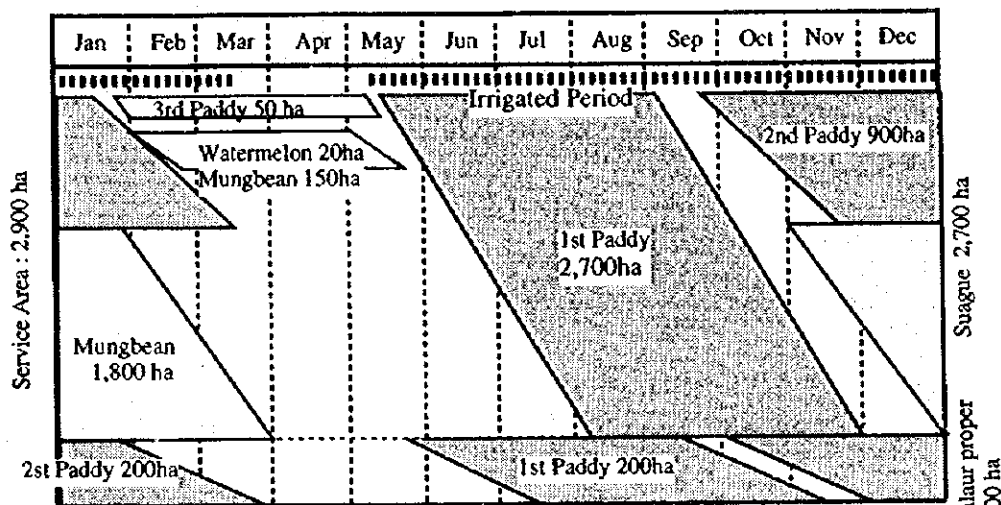


Notes: WRF - Water Resources Facilities
 IDO - Institutional Development Officer
 *1 Engineer A (maintenance) is holding the same position in Equipment and Project Implementation Section.
 *2 Agriculturist A (collection) is holding the same position in Institutional Development Section.
 *3 Assistant collectors are mainly the WRF Technicians and WRF Tenders, and one clerk.
 *4 Two IDOs are assigned in the Jalaur proper RIS and the other IDO is assigned in the Suague RIS.
 The Utility Worker in the Institutional Development Section is designated as IDO to augment the 2 IDOs in the Jalaur proper RIS.

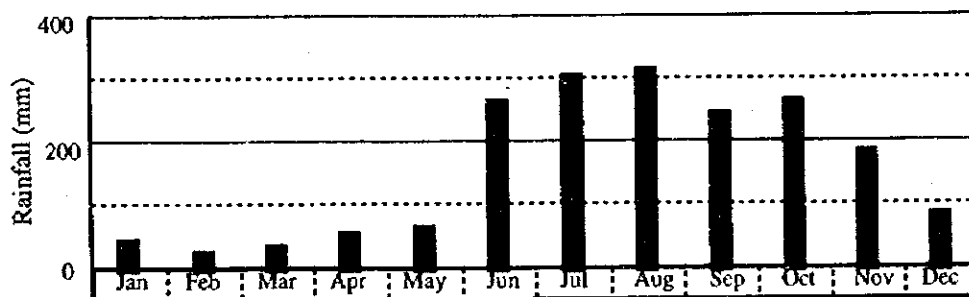
Figure 4.6.2 Present Organization Structure of the JSRIS Office (Office sections and Jalaur proper and Suague O&M units)



Jalaur Proper RIS



Suague RIS



Monthly Rainfall

Figure 5.2.1 Proposed Cropping Pattern

Figure 5.3.1 Proposed Improvement Plan on Irrigation Facilities

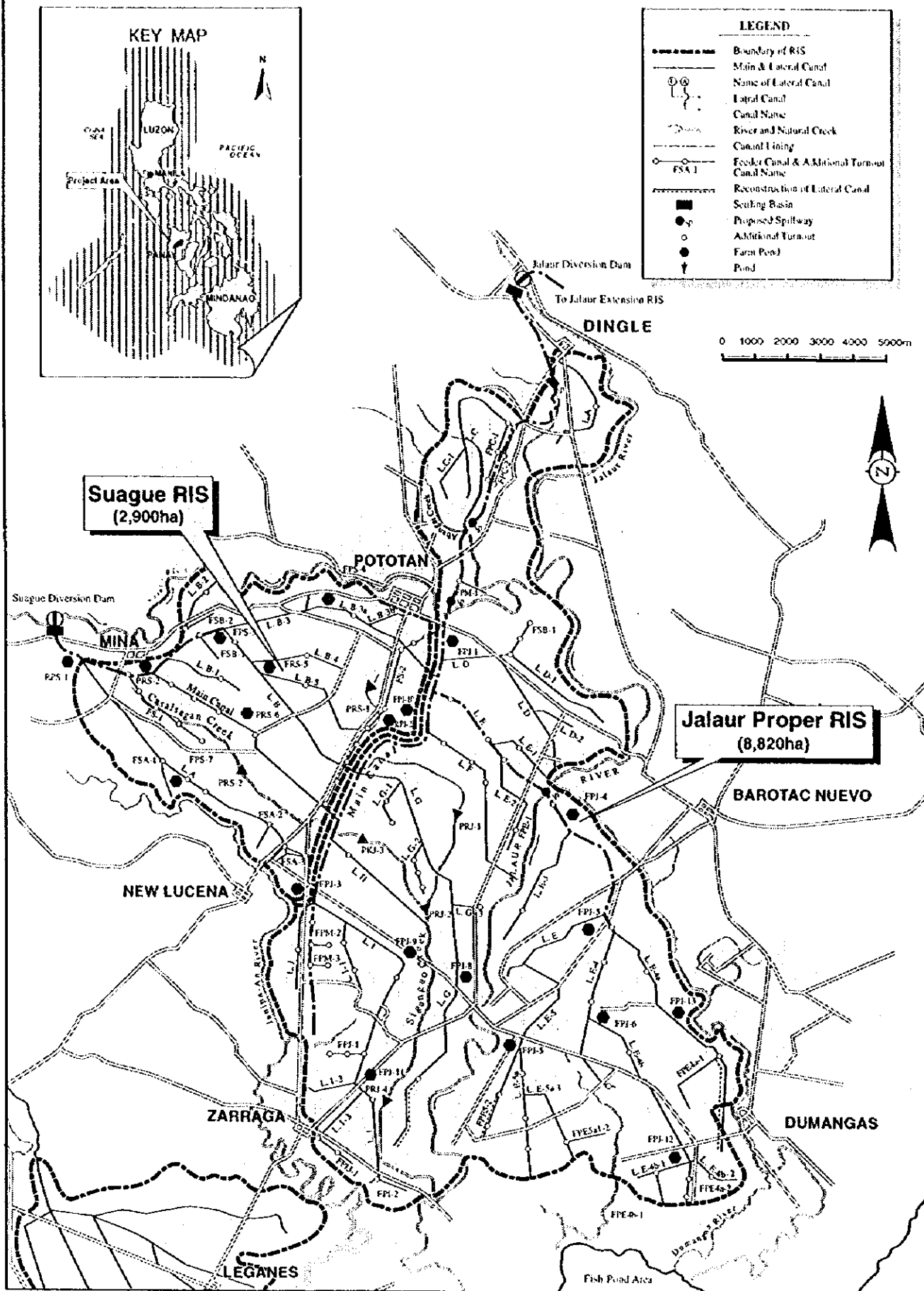
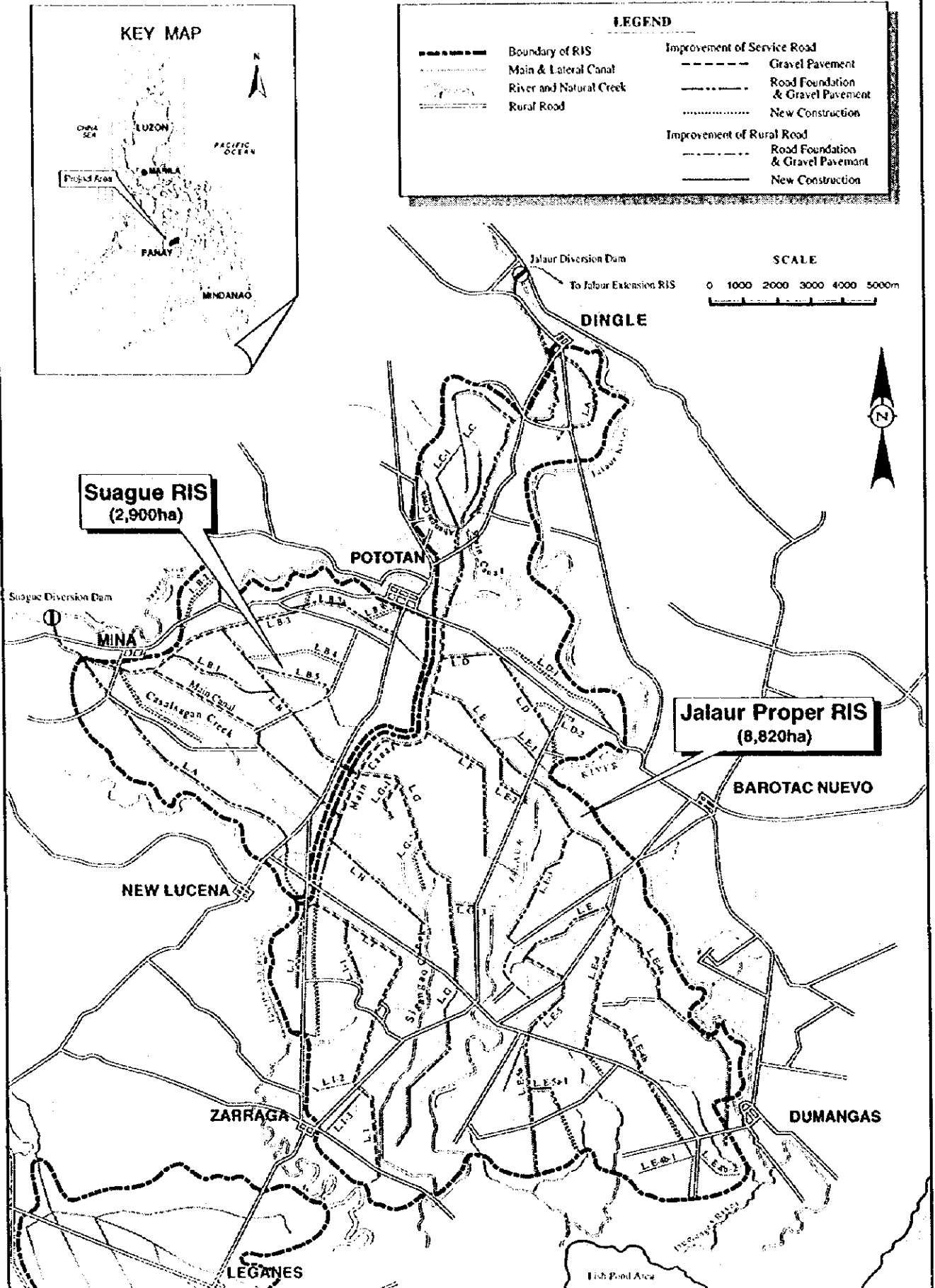
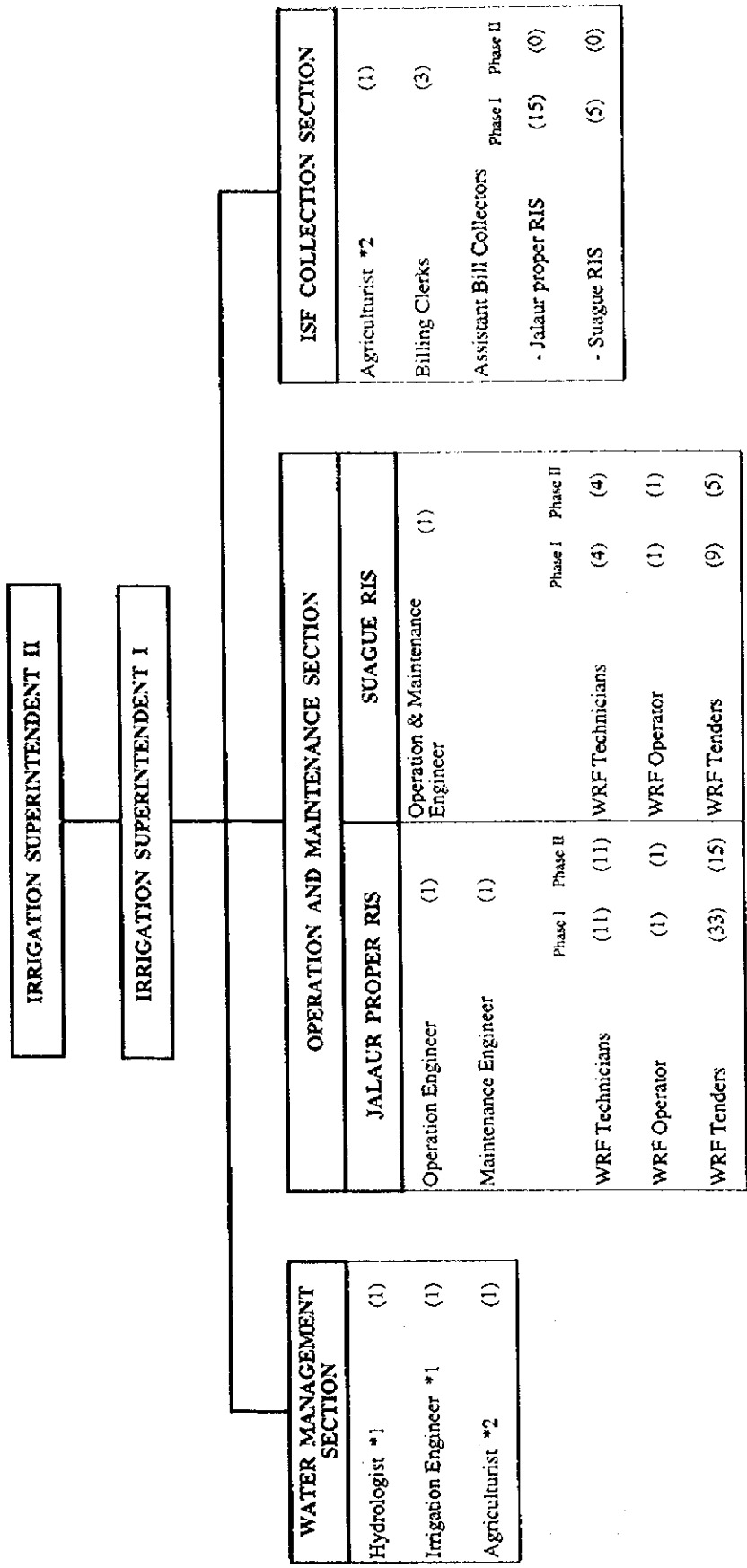


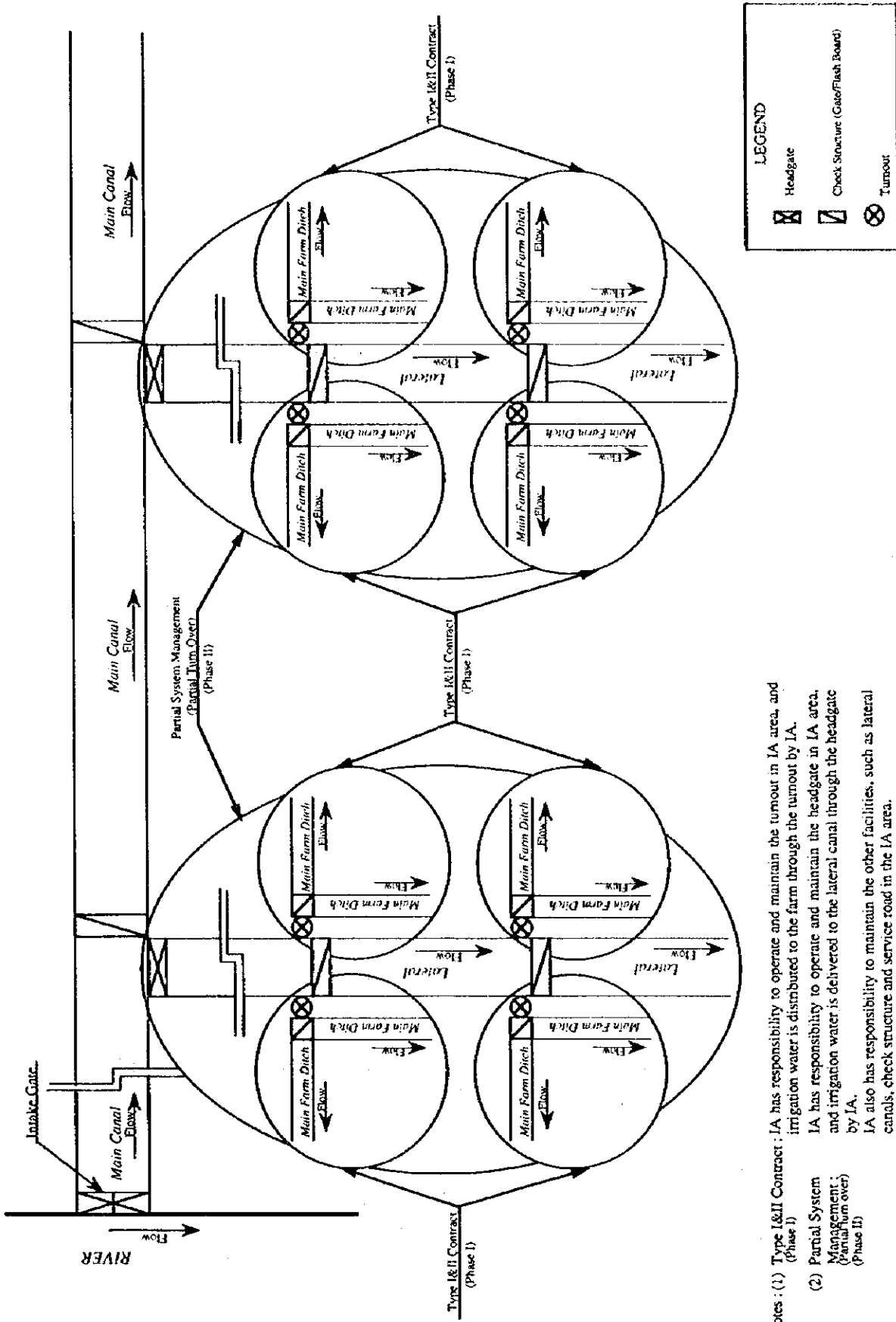
Figure 5.3.3 Improvement Plan of Service and Rural Roads





Notes : *1 : Hydrologist and Irrigation Engineer will be newly designated in the proposed plan.
 *2 : Agriculturist A in the Institutional Development Section is holding the same position

Figure 5.4.2 Proposed Organizational Chart of Water Management, O&M and ISF Collection Sections in Jalaur proper RIS and Suague RIS



Notes : (1) Type I&II Contract : IA has responsibility to operate and maintain the turnout in IA area, and irrigation water is distributed to the farm through the turnout by IA.
 (2) Partial System Management : (Partial turn over) IA has responsibility to operate and maintain the headgate in IA area, and irrigation water is delivered to the lateral canal through the headgate by IA.
 IA also has responsibility to maintain the other facilities, such as lateral canals, check structure and service road in the IA area.
 The contents of Phase I are also included.

Figure S.4.3 Proposed Area Concept to be covered by IA under Type I&II and Partial System Management

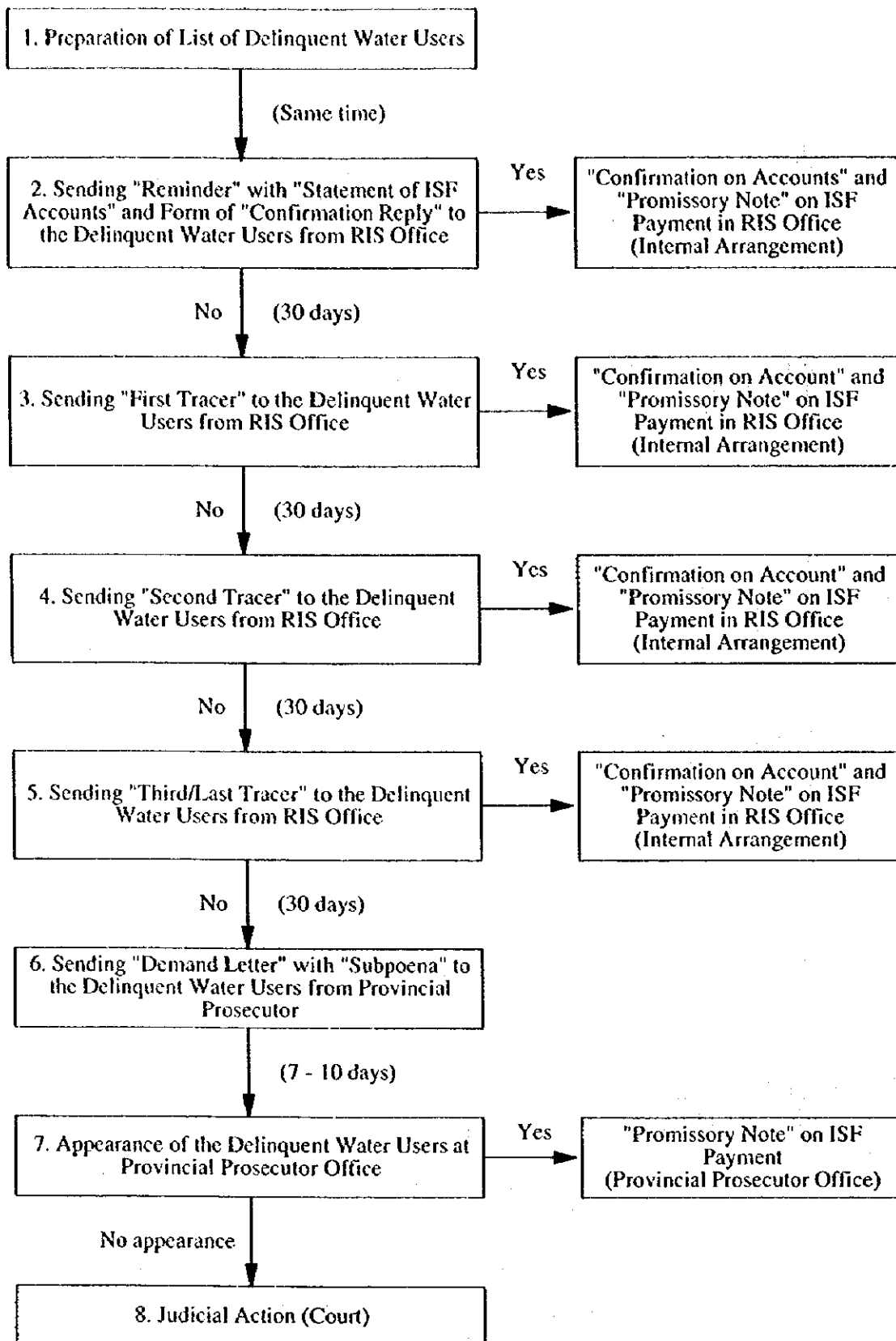


Figure 5.4.4 Present Legal Procedure on Non-Payment of ISF

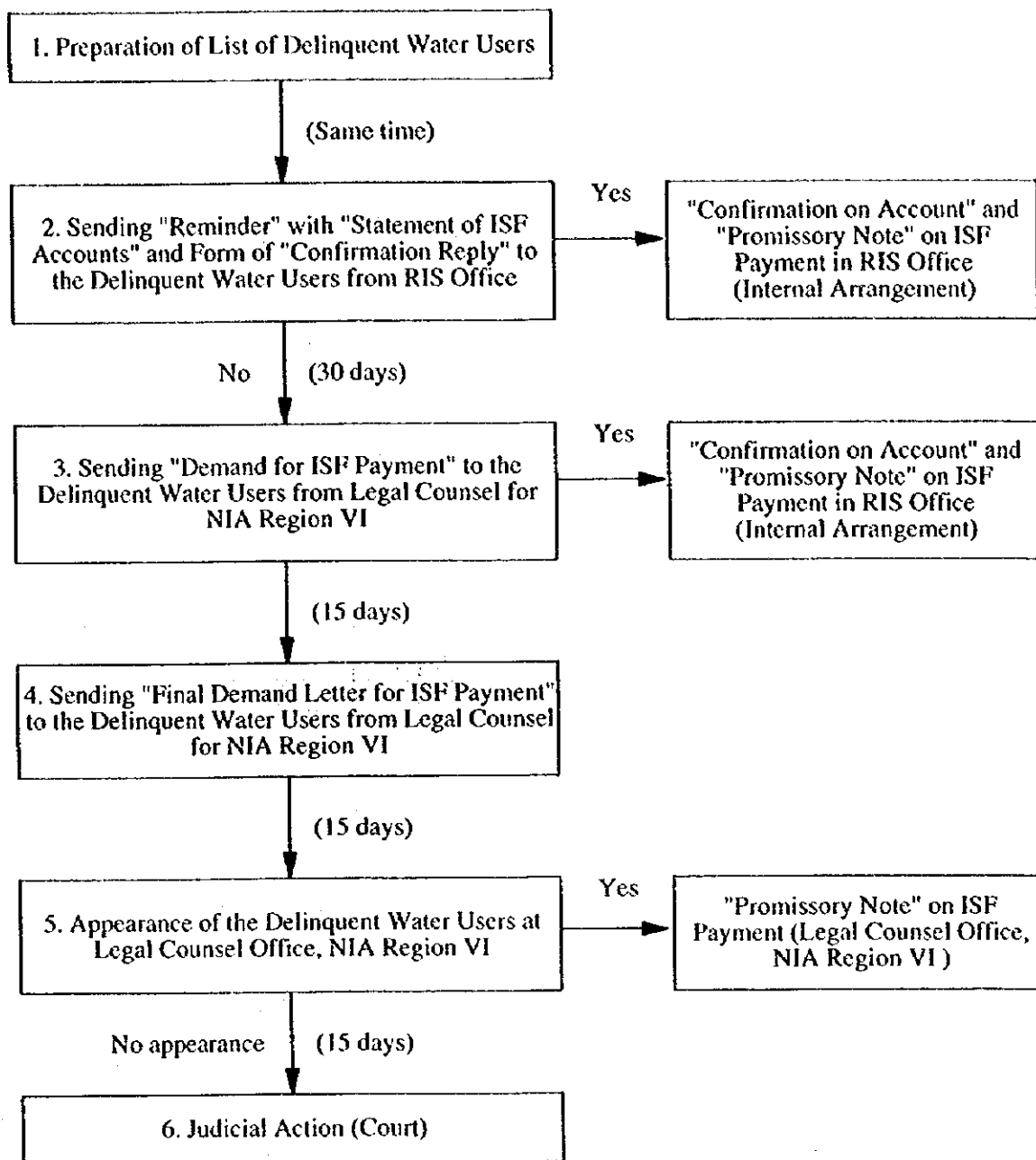


Figure 5.4.5 Proposed Legal Procedure on Non-Payment of ISF

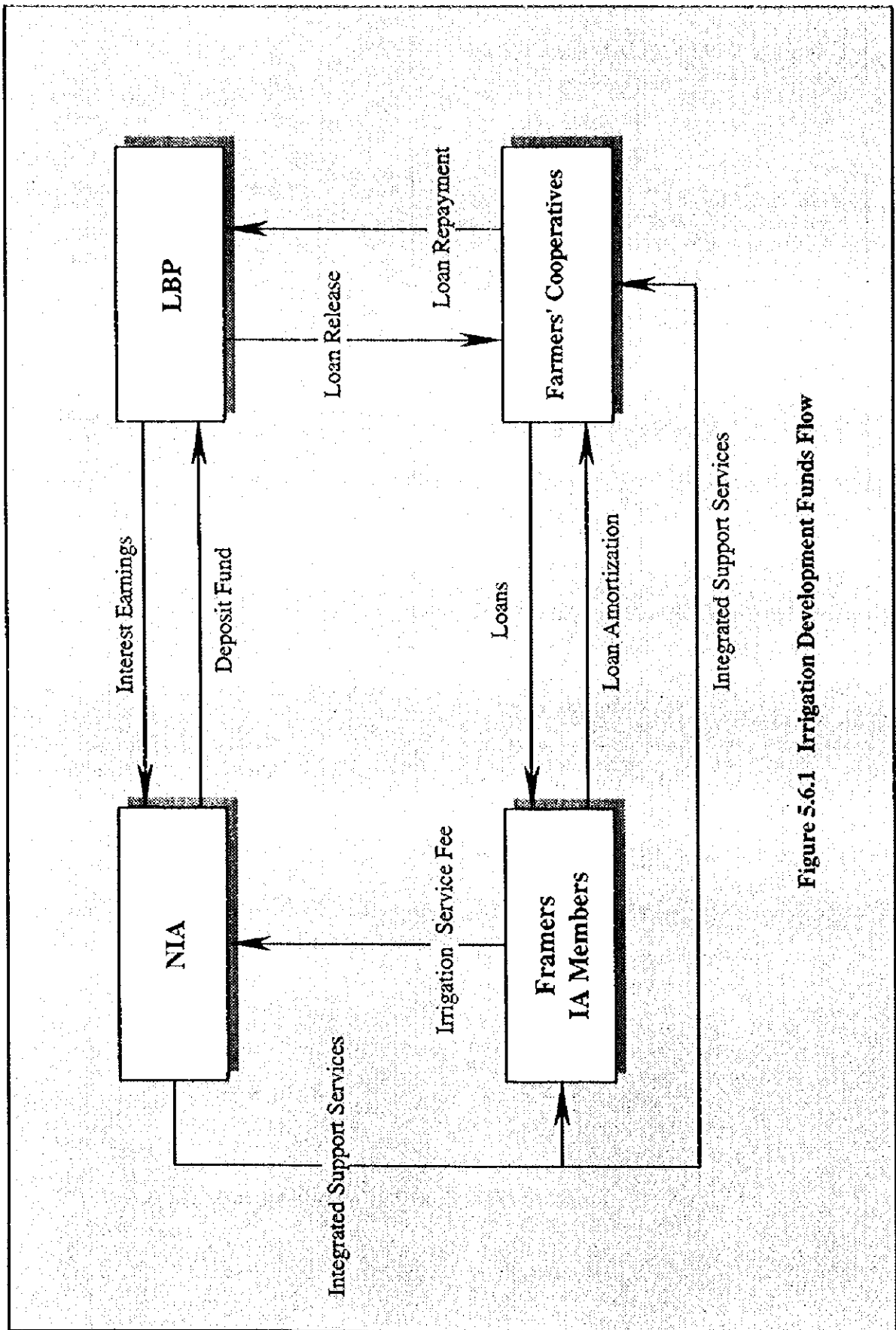


Figure 5.6.1 Irrigation Development Funds Flow

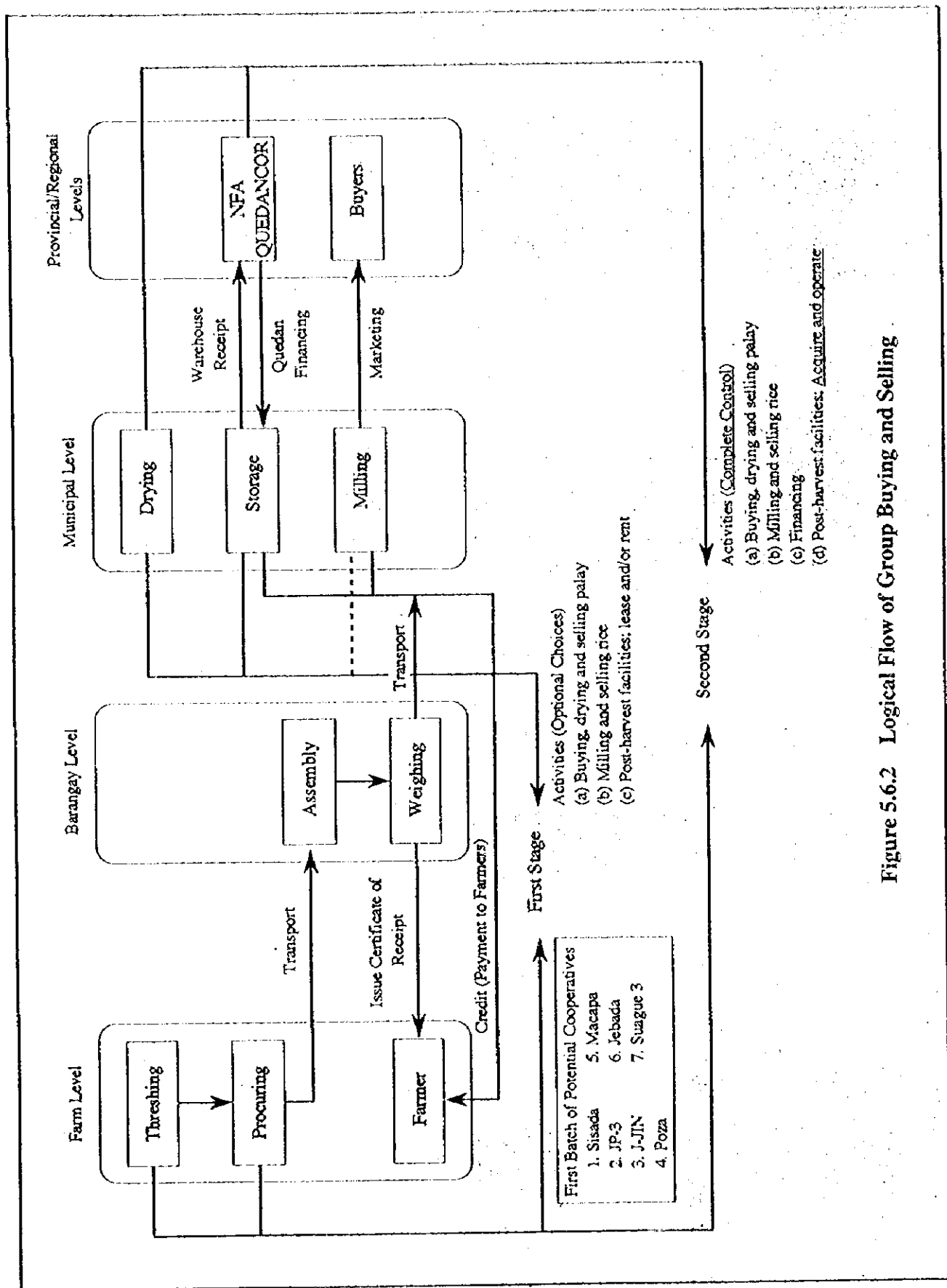


Figure 5.6.2 Logical Flow of Group Buying and Selling

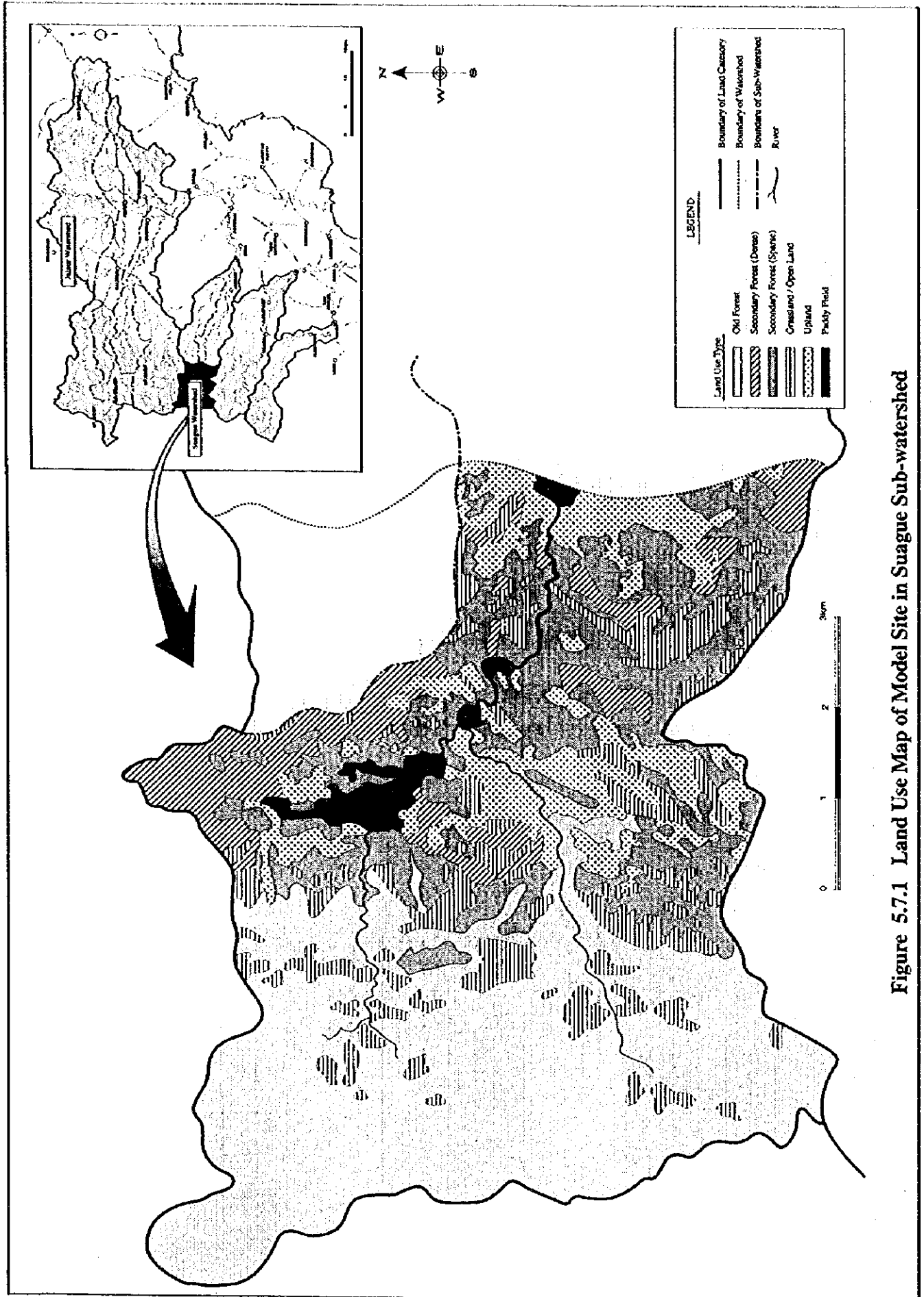


Figure 5.7.1 Land Use Map of Model Site in Suague Sub-watershed

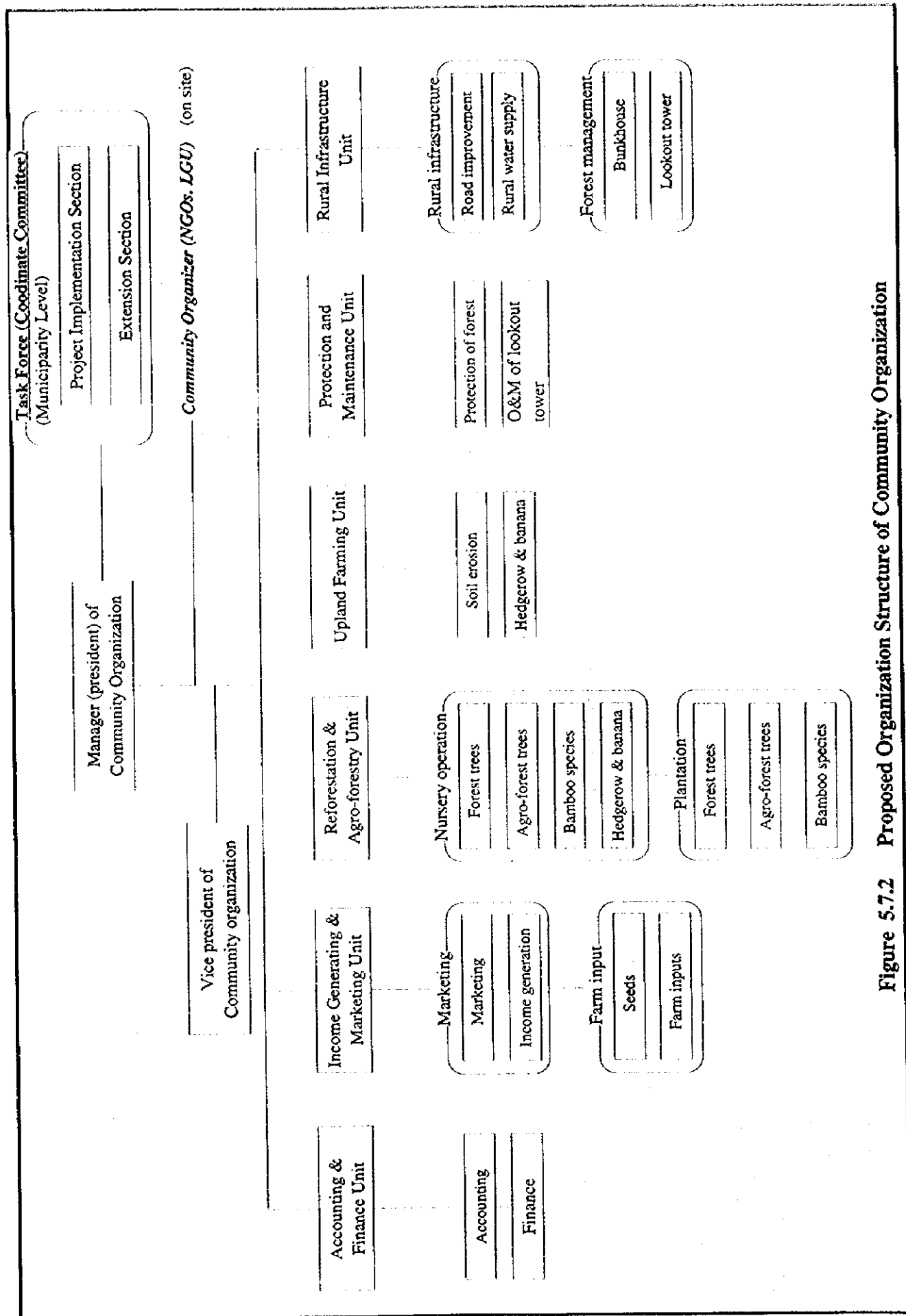
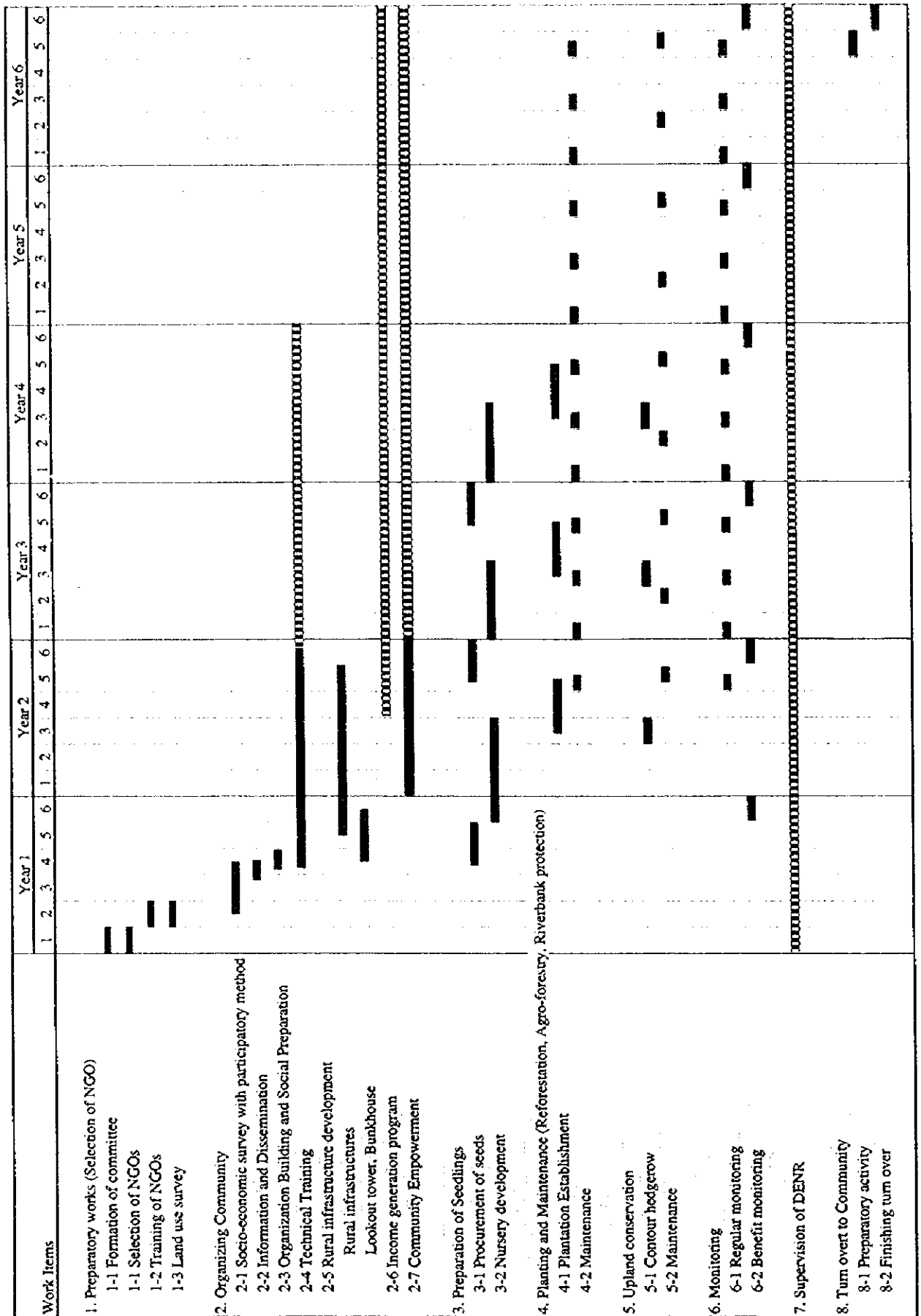
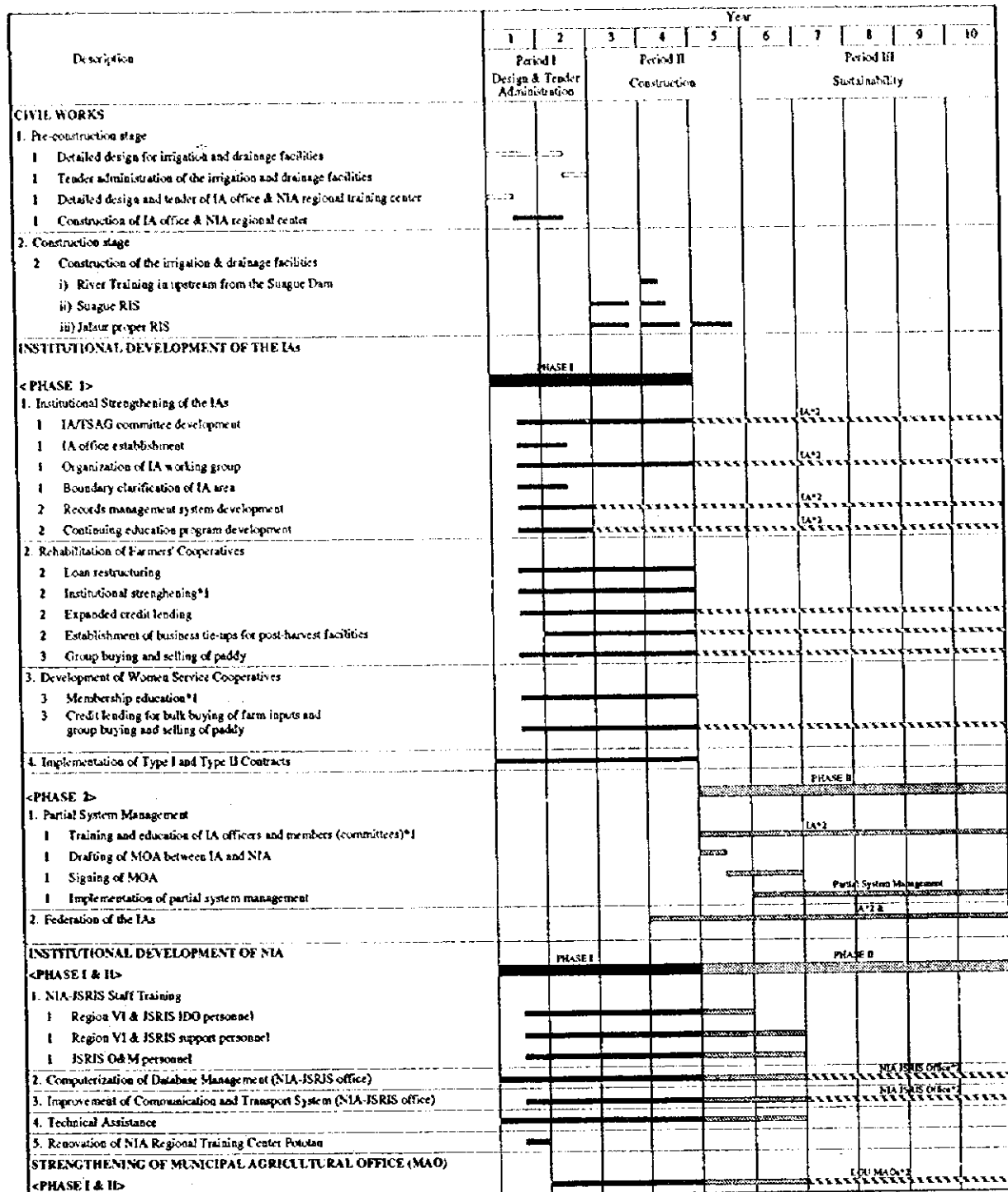


Figure 5.7.2 Proposed Organization Structure of Community Organization

Figure S.7.3 Tentative Implementation Schedule for Model Development of Watershed Management in Suague Sub-watershed





Notes: *1 This activity will be continued by the IA under the continuing education program development.
 *2 Leading agencies for the implementation.

Figure 6.1.1 Project Implementation Schedule

<u>PROSPECTIVE PLANS</u>	<u>IMPLEMENTING AGENCIES</u>	
	<u>Lead Agencies</u>	<u>Cooperating Agencies</u>
Irrigated Agriculture	Municipal Governments	Provincial Government of Iloilo DA Region VI Office NIA Region VI / JSRIS Office
Rural Infrastructure, Irrigation and Drainage	NIA Region VI / JSRIS Office	Provincial Government of Iloilo Municipal Governments
Water Management and O&M Practices	NIA Region VI / JSRIS Office	Municipal Governments
Institutional Strengthening of the Irrigators' Association*1	NIA Region VI / JSRIS Office Non-Government Organizations	Municipal Governments DAR Region VI Office
Rehabilitation of farmers' cooperatives/ Development of women service cooperatives	Municipal Governments Non-Government Organizations	NIA-JSRIS Office DA-CDA Office Land Bank of the Philippines
Institutional Strengthening of NIA Region VI / JSRIS Office*1	NIA Region VI / JSRIS Office	
Agricultural Support Services	NIA Region VI / JSRIS Office Non-Government Organizations	Municipal Governments DA Region VI / CDA Office Land Bank of the Philippines
Watershed Management	DENR Region VI Office	Municipal Governments NIA Region VI / JSRIS Office

Note: *1 Contained in the Institutional Development Plan

Figure 6.2.1 Proposed Prospective Plans and Implementing Agencies

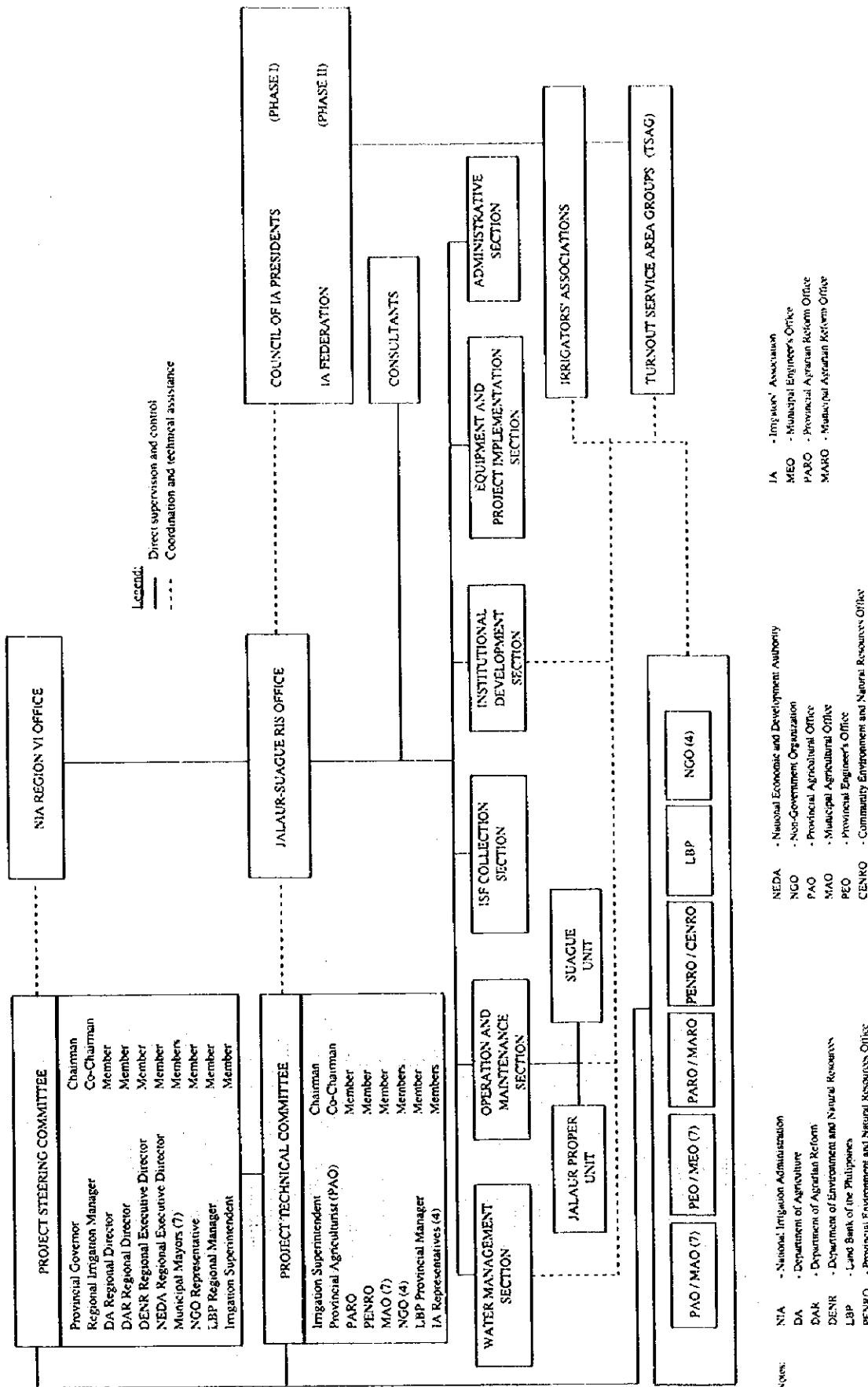


Figure 6.2.2 Proposed Project Organization

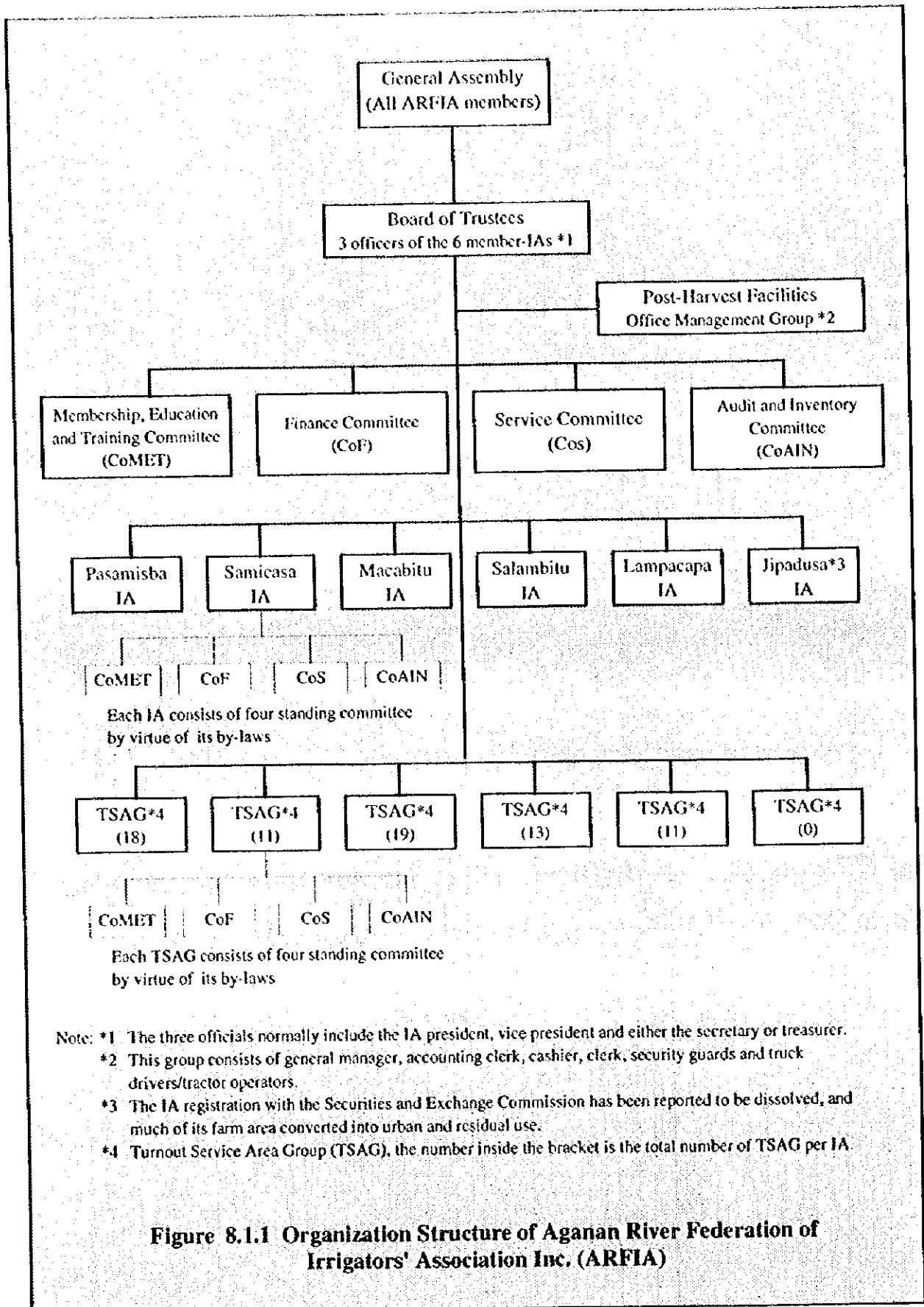


Figure 8.1.1 Organization Structure of Aganan River Federation of Irrigators' Association Inc. (ARFIA)

Attachments

Attachment-I Implementing Arrangement (I/A) and Minutes of Meeting on I/A

Attachment-II Minutes of Meeting on the Inception Report

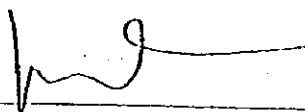
Attachment-III Minutes of Meeting on the Interim Report

Attachment-IV Minutes of Meeting on the Draft Final Report

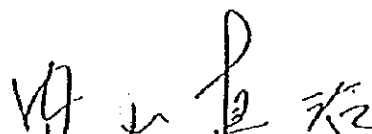
IMPLEMENTING ARRANGEMENT
ON
THE TECHNICAL COOPERATION
FOR
THE STUDY
ON
JALAUH IRRIGATION SYSTEMS
AND
RURAL AREA DEVELOPMENT PROJECT
IN
REPUBLIC OF THE PHILIPPINES

AGREED UPON
BETWEEN
NATIONAL IRRIGATION ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

MANILA, 8 AUGUST, 1996



Mr. RODOLFO C. UNLAN Ph.D.
Administrator,
National Irrigation Administration
Republic of the Philippines



Mr. NAOJI UCHIYAMA
Leader,
Preparatory Study Team,
Japan International
Cooperation Agency

I. INTRODUCTION

In response to the request of the Government of the Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan (hereinafter referred to as "GOJ") has decided to conduct the Study on Jalaur Irrigation Systems and Rural Area Development Project in The Republic of the Philippines (hereinafter referred to as "the Study"), and exchanged the Notes Verbales with GOP concerning the implementing of the Study.

Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the GOJ, shall undertake the Study in accordance with the relevant laws and regulations enforce in Japan.

On the part of GOP, National Irrigation Administration (hereinafter referred to as "NIA") shall act as the counterpart agencies to the Japanese study team (hereinafter referred to as "the Team") and also as the coordinating body in relation with other governmental organizations and non-governmental organizations concerned for smooth implementation of the Study.

The present document constitute the implementing arrangement between JICA and NIA under the above mentioned Notes Verbales exchanged between two governments.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are;

1. To improve the regional and farm economy through increasing agricultural production in both the existing and potential irrigation areas of some 36,000 ha located in the basins of Jalaur and adjacent rivers.
 - 1-1. To enhance efficiency in operation and maintenance through improving/rehabilitating existing system management and irrigation facilities.
 - 1-2. To secure irrigation water supply through constructing a series of small water impounding dams in the river basins.

WCH

2. To transfer technology, which is required on conducting the Study, to the counterpart personnel of GOP through on-the-job training in the course of the Study.

III. STUDY AREA

The Study covers in both the existing and potential irrigation areas of some 36,000 ha located in the basins of Jalaur and adjacent rivers. (See ANNEX I)

IV. SCOPE OF THE STUDY

In order to achieve above objectives, the Study will consist of following two phases:

1. Phase I

Preparation of a master plan for the Study area.

1-1. To collect and review relevant existing data and information including existing plan and projects.

1-2. To carry out field survey and investigation on following items;

(1) Aerophoto taking for the Study Area and proposed sites of small water impounding dams to rectify existing maps of 1/4,000 and 1/5,000 scale.

(2) Natural condition including;

- Location, area and topography
- Meteorology and hydrology
- Geology
- Soils
- Vegetation
- Others

(3) Socio-economic condition including;

- Economic indices
- Social infrastructure
- Demographic conditions
- National and regional development plan
- WID (Women In Development)
- Others

(4) Agricultural condition including;

- Present land use
- Farming practices
- Research activities
- Supporting services
- Farmer's organization
- Agricultural economy
- Postharvest
- Marketing
- Others

(5) Irrigation and drainage including;

- Present irrigation and drainage conditions in the study area
- Existing planning and design criteria and guidelines
- Operation and maintenance of the existing irrigation and drainage systems
- Irrigation practices of the existing irrigation systems
- Institutional activities

(6) Rural infrastructure

(7) Watershed management

(8) Environmental conditions

- 1-3. To analyze collected data and information.
- 1-4. To identify major constraints and development potential.
- 1-5. To prepare a master plan including formulation of improvement and rehabilitation plan of irrigation and drainage systems, improvement plan of water management, development plan of water resource and agriculture.
- 1-6. To select priority project(s) for following feasibility study.

2. Phase II

Execution of feasibility study for priority project(s).

- 2-1. To carry out topographic survey(s) for main facility(s) for feasibility study of priority project(s).
- 2-2. To collect detailed data and information through field surveys.
- 2-3. To formulate alternative plans including irrigation and drainage development plan, agricultural rural development plan, water management plan, institutional strengthening plan, operation and maintenance plan and watershed

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management plan.

2-4. To evaluate expected results in terms of technical soundness, financial viability, economic profitability, social changes, and environmental effects.

2-5 . To finalize feasibility study, including implementation schedule, based upon the above evaluation.

V. STUDY SCHEDULE

The Study will be carried out in accordance with the attached tentative schedule.

(See ANNEX II)

VI. REPORTS.

JICA shall prepare and submit the following reports in English to the GOP.

1. Inception Report

Twenty (20) copies at the commencement of the Phase I field Study.

2. Progress Report (1)

Twenty (20) copies at the end of the Phase I field study.

3. Interim Report

Twenty (20) copies at the commencement of the Phase II field study.

4. Progress Report (2)

Twenty (20) copies at the end of the Phase II field study.

5. Draft Final Report

Twenty (20) copies after the end of Phase II study. GOP shall provide JICA with its comments on the Draft Final Report within one (1) month after receipt of the Draft Final Report.

6. Final Report

Fifty (50) copies within two (2) months after receipt of GOP's comments on the Draft Final Report.

VII. UNDERTAKING OF GOP

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOP shall accord privileges, immunities and other assistance to the Team and, through the authorities concerned, take necessary measures to facilitate the smooth conduct of the Study.

1. GOP shall be responsible for dealing with claims which may be brought by third parties against the members of the Team and shall hold them harmless in receipt of claims and liabilities arising in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims or liabilities arise from gross negligence or willful misconduct of the above mentioned members.
2. NIA shall, at its own expense, provide the Team with the following, if necessary, in cooperation with other agencies concerned:
 - 2-1. Available data and information related to the Study.
 - 2-2. Counterpart personnel.
 - 2-3. Suitable office space with necessary equipment in Metro Manila and Iloilo city.
 - 2-4. Necessary number of drivers.
 - 2-5. Credentials or identification card to the members of the Team.
3. NIA shall make necessary arrangements with other governmental and non-governmental organizations concerned for the following:
 - 3-1. To secure the safety of the Japanese study team.
 - 3-2. To permit the members of the Team to enter, leave and sojourn in the Philippines for the duration of their assignment therein.
 - 3-3. To exempt the members of the Team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into the Philippines for the conduct of the Study.

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- 3-4. To exempt the members of the Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study.
- 3-5. To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into the Philippines from Japan in connection with the implementation of the Study.
- 3-6. To secure permission for entry into private properties or restricted areas for the conduct of the Study.
- 3-7. To secure permission for the Team to take all data and documents (including map and photographs) related to the Study out of the Philippines to Japan.
- 3-8. To provide medical services as needed. Its expense will be chargeable on members of the Team.

VIII. UNDERTAKING OF GOJ

In accordance with the Notes Verbales exchanged between GOJ and GOP, GOJ through JICA, shall take the following measures for implementation of the Study:

1. To dispatch, at its own expense, study teams to the Philippines.
2. To pursue technology transfer to the Philippines counterpart personnel in the course of the Study.

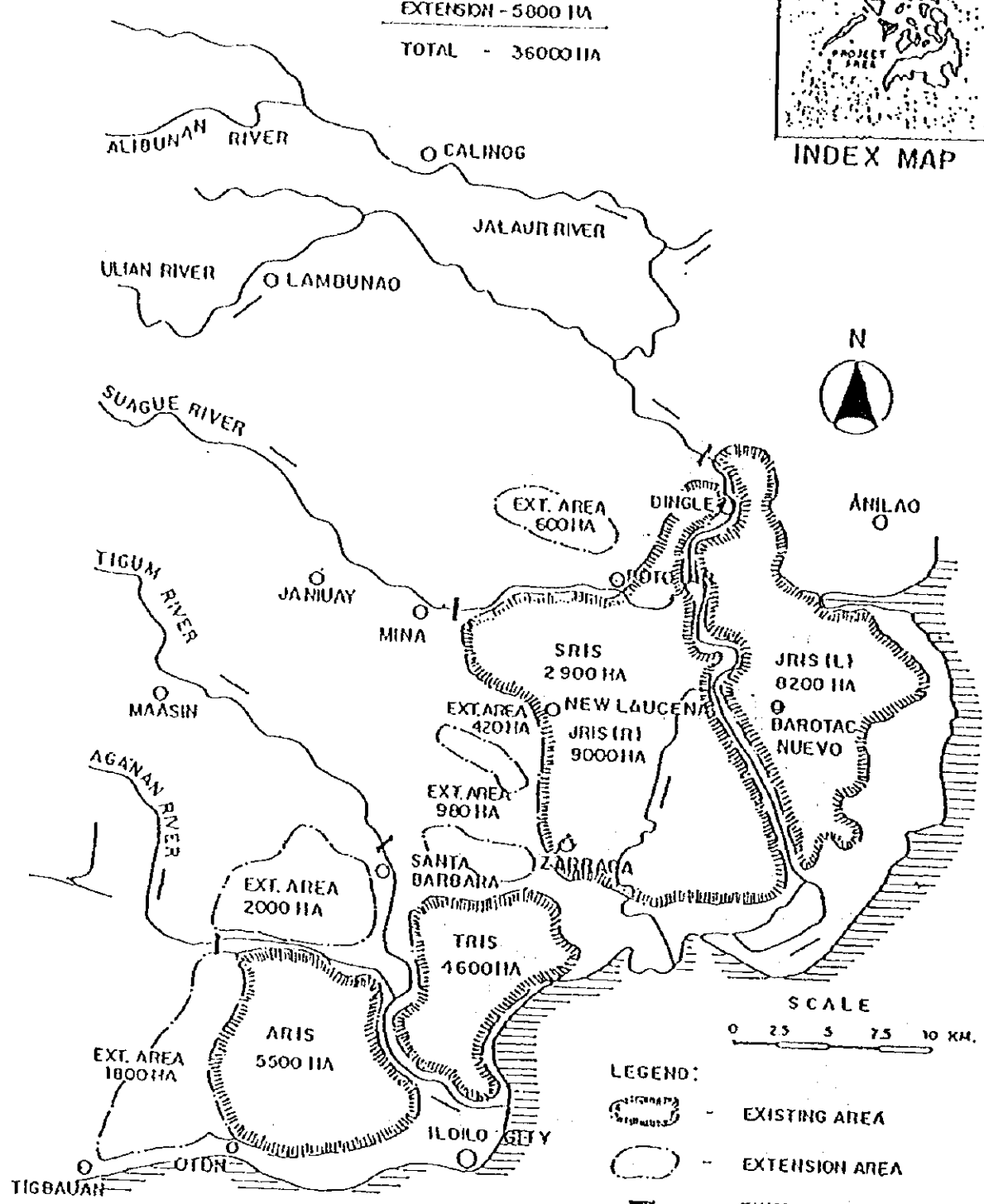
IX. CONSULTATION

JICA and NIA shall consult with each other in respect of any matter that may arise from or in connection with the Study.

JRIS (R)	- 9000 HA
JRIS (L)	- 8200 HA
SRIS	- 2900 HA
TRIS	- 4600 HA
ARIS	- 5500 HA
EXTENSION	- 5800 HA
TOTAL	- 36000 HA



INDEX MAP



LOCATION MAP

TENTATIVE SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ITEM																									
Works in the Philippines																									
Works in Japan																									
Phase	← PHASE I →												← PHASE II →												
Report	△ Ic/R	△ P/R(I)				△ Ic/R			△ P/R(II)					△ Df/R		△ F/R									

(Remarks)

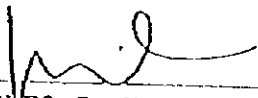
- Ic/R : Inception Report
- P/R(I) : Progress Report (I)
- Ic/R : Interim Report
- P/R(II) : Progress Report (II)
- Df/R : Draft Final Report
- F/R : Final Report
- © : Comments on Df/R by the Philippine side



MINUTES OF MEETING
ON
IMPLEMENTING ARRANGEMENT
FOR
THE STUDY
ON
JALOUR IRRIGATION SYSTEMS
AND
RURAL AREA DEVELOPMENT
IN
REPUBLIC OF THE PHILIPPINES


AGREED UPON
BETWEEN
NATIONAL IRRIGATION ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

MANILA, 8 AUGUST, 1996



Mr. RODOLFO C. UNDAN Ph.D.
Administrator,
National Irrigation Administration
Republic of the Philippines

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Mr. NAOKI UCHIYAMA
Leader,
Preparatory Study Team,
Japan International
Cooperation Agency

In response to the request of the Government of Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan decided to dispatch through Japan International Cooperation Agency (hereinafter referred to as "JICA"), which is responsible for the implementation of technical cooperation programs of the Government of Japan, the preparatory study team (hereinafter referred to as "the Team") headed by Mr. Naoji Uchiyama, to Republic of the Philippines from July 31 to August 16, 1996 so as to discuss and exchange views on The Study on Jalaur Irrigation Systems and Rural Area Development in Republic of the Philippine (hereinafter referred to as "the Study"), with the National Irrigation Administration (hereinafter referred to as "NIA") and officials concerned of the Government of Republic of the Philippines for the implementation of the Study.

NIA and the Team mutually agreed to the Implementing Arrangement on the Study.

The following minutes were prepared to confirm the main issues discussed and matters agreed upon by both sides;

1. Both side agreed that the Study will aim at optimum utilization of water resources by upgrading of existing irrigation system(s), improvement of water management and so on.
2. Main objective of the water resource development by the small impounding dams will be to secure irrigation water supply for the existing irrigation system(s).
3. The Team confirmed that there are some differences in the existing map of 1/4,000 and 1/5,000 scale regarding present land use in the study area. Aerophoto taking for the Study Area and proposed sites of small water impounding dams shall be taken to rectify existing maps.



4. The Agricultural Development Project for Aganan River Irrigation System shall be reviewed as a pilot project for this Study. The review shall be made during Phase I. In case, necessity of improving the facilities or systems is recognized, this will be studied during Phase II.
5. Both sides agreed that initial study area is about 36,000ha, however, the irrigation area will be finalized in the course of Study of Phase I.
6. At the beginning of Phase II, for the smooth implementation of the Study, both sides agreed on the necessity of holding Seminars/Workshops on the Project.
7. NIA shall prepare, at its own expense, the Project Description required according to Philippine laws and regulations and if necessary, the Environmental Impact Statements. Japanese study team shall provide NIA with basic data and information on environmental issues in the course of the Study.
8. NIA requested the following equipment and machineries which would be used for the smooth implementation of the Study. The Team promised to convey this request to the Government of Japan.
 - 1) Current meter, Water gage,
 - 2) Automatic rainfall recorder
Sunshine recorder, Evaporaion meter
 - 3) Vehicles
9. NIA requested the counterpart training in Japan. The Team promised to convey its request to the Government of Japan.

LIST OF PARTICIPANTS

Philippine Side

National Irrigation Administration

Mr. Rodolfo C. Undan	Administrator
Mr. Eduardo P. Corsiga	Deputy Administrator
Mr. Abelardo Y. Armentia	Division Manager, PFD, PDD
Mr. Clemente T. Alanano	Head Dam & Reservoir Section PFD PDD
Mr. Epifanio C. Gacusan	Division Manager LRUED, PDD
Mr. Yuji Sakamoto	JICA Expert

The Team

Preparatory Study Team

Mr. Naoji UCHIYAMA	Leader
Mr. Naofumi MORITA	Member
Mr. Makoto KAMBE	Member
Mr. Yasuhei AJIRO	Member
Mr. Kozo ITO	Member

MINUTES OF THE MEETING
ON
THE INCEPTION REPORT
THE STUDY ON JALOUR IRRIGATION SYSTEMS AND
RURAL AREA DEVELOPMENT PROJECT (JISRADP)

DATE : January 10, 1997
TIME : 9:15 - 11:00 A.M.
VENUE : National Irrigation Administration (NIA)
NIA Conference Room
Quezon City, Philippines

ATTENDANCE: As listed in Annex 1

PRESENTATION OF THE INCEPTION REPORT:

1. The meeting was primarily convened to discuss and agree on the Inception Report on the Study of JISRADP prepared by the JICA Study Team.
2. The JICA Study Team Leader presented that the final goal of the Project is to improve the regional economy through increasing agricultural products. To attain this, the Study will formulate plans for the rehabilitation/improvement of existing national irrigation systems focusing on both hard and soft aspects; agricultural development; the strengthening of farmers' organizations, agricultural support services, and operation and maintenance organization; water resources development and environment/watershed management.
3. With regard to the water resources development, the priority of the Study will be given to make maximum use of existing water resources through the improvement of irrigation efficiency of existing national irrigation service areas. If new water resources development through the small water impounding dams is feasible, it will be used first for existing national irrigation service areas and then for expansion areas, if possible.
4. It was also presented that the Study will be conducted in two phases. The first phase, from mid December 1996 to mid July 1997, will cover the formulation of the Master Plan for Irrigation and Rural Development and the selection of Priority Project(s). The second phase, from September 1997 to mid May 1998, will cover the Feasibility Study of Selected Priority Project(s).
5. It was stressed that the participation of local people will be ensured in the conduct of the Study through interview survey, participatory rural appraisal and seminar to reflect their wishes in the development plans. This is a major emphasis of the Study.

REQUEST FOR THE STUDY:

6. The JICA Study Team Leader requested NIA for a joint operation in inventory and monitoring surveys, and the provision of office space and counterparts for the Study Team.

ISSUES AND CLARIFICATIONS:

7. The following issues were raised and clarified:

- a) As for the issue on the Study area, NIA inquired if the area presently delineated would be the final boundary of the Study area. The JICA Study Team informed that the Study area is not yet fixed at present, but it will be determined in the initial stage of the Study.
- b) The issue on whether the Study will also cover other potential areas aside from those initially included was raised partly in view of the fact that land use changes have occurred in the said areas over the years and partly in view of the recent studies by NIA Region VI Office which has identified new other potential areas. The JICA Study Team informed that the Study will concentrate on the existing national irrigation service areas including the expansion areas as proposed originally.
- c) The question on whether the Study will cover the Multi-purpose Dam proposed for the Jalaur River Multi-purpose Project (JRMP) and the possibility of single purpose dam for irrigation was raised by NIA. The JICA Advisory and Study Team clarified that only a review of the previous study on the JRMP will be made and that the single purpose dam proposed by NIA will be studied as one of alternatives of small water impounding dam.
- d) The request from the JICA Study Team mentioned in item 6 was accepted by NIA. However, the question on joint inventory and monitoring surveys was raised to clarify the extent of NIA's involvement. The JICA Study Team clarified that this is part of the transfer of technology through on-the-job training. It was agreed to discuss this further with NIA's Region VI Officials.
- e) NIA suggested that the study results of the Water Resources Development Project funded by World Bank be reviewed to prevent potential overlaps and thus maximize benefits. NIA also suggested that the results of the Agricultural Development Project for Aganan River Irrigation Area be

reviewed and reflected to the Study. The JICA Study Team noted these suggestions.

- D) The question on who will prepare the Environmental Impact Assessment was raised in view of the nature of irrigation structures to be constructed. The JICA Study Team informed that it will provide necessary information to NIA for preparation of Project Description. The JICA Study Team will apply relevant Philippine and JICA/OECF guidelines on EIA.

- g) The issue on the involvement of other national government agencies i.e., the Departments of Agriculture (DA), Environment and Natural Resources (DENR), Agrarian Reform (DAR), and Public Works and Highways (DPWH), and the National Economic and Development Authority (NEDA); local government unit offices concerned such as the Provincial Planning and Development Office (PPDO); and Land Bank of the Philippines (LBP) as well as the Metro Iloilo Water District (MIWD) was raised to ensure their commitment and support for the sustainability of the Project. NIA assured that these agencies will be invited in regional meetings in Iloilo to be organized for the Study, as necessary.


CONCLUSION OF THE MEETING:

- 8. In general, the Inception Report was accepted by NIA including the JICA Study Team's request as mentioned in item 6.

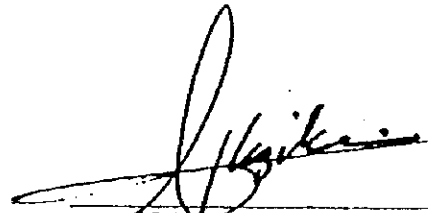
ADJOURNMENT:

- 9. The meeting was adjourned at 11:00 A.M.

CONFORME:




RODOLFO C. UNDAN
Administrator, NIA 1/14/97



ISAO AKIZUKI
Team Leader
JICA Study Team

SK



NOBUMASA HATCHO
Team Leader
JICA Advisory Team

ANNEX 1

List of Participants

NIA

Mr. Edilberto B. PUNZAL	Department Manager, Project Development Department (PDD)
Mr. Abelardo Y. ARMENTIA	Division Manager, Project Formulation Division (PFD), PDD
Mr. Epifanio C. GACUSAN	Division Manager, Land Resources Utilization and Economics Division (LRUED), PDD
Mr. Rogelio P. de la ROSA	Division Manager, Project Investigation Division (PID), PDD
Mr. Jovito A. NAVARRO	Officer-in-Charge, Water Resources Use Division (WRUD), PDD
Mr. Clemente T. ALANANO	Head, Dams and Reservoirs Section (DRS), PFD, PDD
Mr. Fernando E. ANTOLIN	Head, Economics Section, LRUED, PDD
Mr. Manuel U. ESTEFANIO	Supervising Engineer, DRS, PFD, PDD
Mr. Silvino B. HERNANDEZ, Jr.	Supervising Soil Technologist, Land Classification Section (LCS), LRUED, PDD
Mr. Conrado M. CARLOS	Environmentalist, Feasibility Studies and Environmental Section (FSES), PFD, PDD
Mr. Rudy R. JBABAO	Supervising Engineer, Region 6 Office
Mr. Yuji SAKAMOTO	JICA Expert, PDD

JICA Advisory Team

Mr. Nobumasa HATCHO	Team Leader
Mr. Tomoyuki TOMITA	Geology
Mr. Hideo OSAWA	Coordinator

JICA Study Team

Mr. Isao AKIZUKI	Team Leader
Mr. Shōdichiro BAN	Co-leader / Agricultural Infrastructure
Mr. Hisashi ISHIKAWA	Agriculture / Soil
Mr. Shinichi HAMADA	Water Management
Mr. Nobuo SAMBE	Water Resources Development
Mr. Luis P. ELEAZAR	Rural Sociology

MINUTES OF THE MEETING
ON
THE INTERIM REPORT

THE STUDY ON JALAU R IRRIGATION SYSTEMS AND
RURAL AREA DEVELOPMENT PROJECT (JISRADP)

DATE : July 23, 1997

TIME : 10:00 A.M. - 12:00 N.N.

VENUE : National Irrigation Administration (NIA)
NIA Project Development Department Conference Room
Quezon City, Philippines

ATTENDANCE: As listed in Annex 1

PRESENTATION OF THE INTERIM REPORT:

1. The meeting was convened to present and discuss the Interim Report on the Study of JISRADP prepared by the JICA Study Team.

2. The JICA Study Team Leader reported that the Project adopts an integrated development and improvement plan for the national irrigation systems to be consisting of the following components:

- i) improvement of irrigation and drainage facilities;
- ii) improvement of water management and O&M practice;
- iii) development of irrigated agriculture;
- iv) strengthening of farmers' organizations and NIA;
- v) improvement of rural infrastructure, agricultural support services, and marketing including post-harvest practices / facilities; and
- vi) watershed management.

3. The watershed management plan was reported as an important component of the Project to reduce the sedimentation of the rivers and hence stabilize water discharge in the study area through institutional development that involves the establishment of inter-government agency task force and the preparation of technical management plan that covers improvement of upland farming system on sloping land, promotion of social forestry program and development of alternative energy sources such as the introduction of biogas and improved stove. This plan will ensure the effective implementation of the other Project components especially the improvement plans for irrigation and drainage facilities, and water management and O&M practice.

4. It was stressed that the improvement plan for irrigation and drainage facilities will involve new strategies such as concrete lining of about 72 km of main canal, installation of measuring devices at each head gate and turnout, and development of 35 farm ponds. Moreover, the plan will also construct new 26 km-feeder canal, install 5 settling basins and 150 turnouts, and upgrade the canal layout. These strategies are

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expected to increase overall irrigation system efficiency from the present levels of 20-30% to the projected level of 50%.

5. Effective and proper water management and O&M practice would be achieved through provision of control structures such as intake gates, head gates and turnouts with measuring devices; development of a monitoring system through the use of computers and installation of communication system; preparation of practical and easy-to-use O&M manual and training of O&M staff; and improvement of ISF collection efficiency through computerization of ISF billing and collection documents and upgrading of record keeping system. This plan will also support to increase overall irrigation efficiency.

6. In the development plan for irrigated agriculture, it was stressed that the main goal is to increase crop yields through improved cropping patterns, proper fertilizer application and intensive agricultural extension services. Due to the limited water supply and rapid urbanization of Iloilo city, agriculture development in the Aganan and Sta. Barbara RIS would involve the introduction of diversified and high-valued crops. In the Jalaur proper, Jalaur extension and Suague RIS, the rural-type of agriculture focusing on paddy rice will be further developed.

7. It was also explained that the plan for strengthening of farmers' organizations will adopt different approaches for institutional and technical development in the Jalaur-Suague RIS and Aganan-Sta. Barbara RIS due to the different levels of IAs' capabilities. The low capabilities of the IAs in Jalaur-Suague RIS areas would involve the reorganization, federation and capability building of the IAs. In the Aganan-Sta. Barbara RIS areas, the federation of IAs have already been formed and the plan will strengthen this federation and train IA members in diversified crop production. In all the RISs, the main goal of the plan is to implement Type III contract within a ten-year period. In the first five years of the Project, the implementation of Types I & II contracts by the IAs is envisaged.

8. The improvement plan for rural infrastructure, agricultural support services, marketing and post-harvest practices will consider the establishment of farm-to-market road network by expanding the existing road system, the construction of IA offices, the promotion of basal fertilizer application, the training of extension workers, the upgrading of extension, communication and transport facilities / system, the establishment of microcredit, the strengthening of farmers' rice business by integrating production and processing/marketing system / facilities, and the setting up of farmers' market. This plan is envisaged to increase agricultural production and ISF collection efficiency, as well as expand the market outlets for paddy.

9. The JICA Study Team Leader also discussed the six criteria and three-point scoring system applied for the selection of priority project(s). The selection criteria consisted of (i) effectiveness of the model for revitalization of irrigation system, (ii) economic viability, (iii) advanced capability of the irrigators' associations, (iv) poverty alleviation, (v) less social problem and negative environmental impacts, and (vi) progress of the Comprehensive Agrarian Reform Program. The results of analysis showed that the Jalaur proper RIS is the priority project. However, the inclusion of the Suague RIS in the improvement of the Jalaur proper RIS is deemed necessary because

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of some factors that make them closely related to each other. These two RISs become the priority project(s) for the Feasibility Study.

10. The maximum utilization of the pre-Project post-harvest facilities constructed in the Aganan RIS area under the Japan's grant aid program is another priority concern of the Project. Hence, an improvement plan will be formulated in the Phase II study for the Aganan IA federation for the effective management of the facilities, consisting of the establishment of clear operation and management plan/procedures and upgrading plan of federation capability to manage the facilities.

11. The work plan for Phase II study was also briefly presented, consisting of field work from mid-September to mid-December 1997, home office work from January to mid-February 1998, and presentation of Draft Final Report to NIA and other government agencies concerned by the middle of March 1998. This Phase II study will basically focus on the feasibility study of the selected priority project(s).

ISSUES AND CLARIFICATIONS

12. The following issues were raised and clarified:

- (a) On the issue of non-inclusion of small water impounding dams in the Project, the NIA suggested to include the reasons for such exclusion in the Final Report. The JICA Study Team informed that the pertinent reasons are already mentioned in the Interim Report but agreed to highlight them in the Final Report.
- (b) On the low projected cropping intensity of 120% in the Suague RIS under "with project" condition arising mainly from the limited water supply, the NIA suggested to study the possibility of augmenting water in the Suague RIS to improve cropping intensity by supplying water from the Jalaur proper RIS. In addition, the possibility of introducing diversified crops in the Suague RIS was also suggested to cope with the limited water situation. The JICA Study Team informed that the Phase II study will examine the possibilities of these suggestions.
- (c) On irrigated agriculture development plan, the NIA suggested to include as a major activity the establishment of demonstration farm for fertilizer application trials in each RIS to encourage farmers to apply it properly on their farms. The JICA Study Team noted this suggestion.
- (d) On the issue of estimated present and future paddy yields, the JICA Expert suggested the JICA Study Team to further clarify the reasons behind the generally low yields of paddy in the study area compared with the average yield for the province of Iloilo, and the attainability of the targeted yield for paddy. Moreover, further clarification on the reasons for the low level of irrigation efficiency of 20-30% was suggested by the JICA Expert. These suggestions were noted by the JICA Study Team for further examination in the Feasibility Study.

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- (e) On the issue of the wide differences between the approved water right and original design discharge, the JICA Study Team clarified that the data presented were supplied by the RIS offices and assured that necessary clarification will be done in the Phase II study. The JICA Study Team also informed that the legalization of water rights for upstream water users has been included as a policy recommendation in the Project.
- (f) On the issue of the responsible agencies for the different Project components, it was suggested by the JICA Expert to delineate the duties and responsibilities of the government and non-government agencies concerned with the Project. The JICA Study Team noted this suggestion.
- (g) The NIA suggested to study the possibility of increasing the works for canal lining, farm ponds and water storage in the main canals with check structures. The JICA Study Team noted this suggestion.
- (h) On the issue of the distinct features of the Project compared to other irrigation projects, the JICA Study Team conformed to the NIA's suggestion to highlight new and innovative approaches / strategies which the Project will apply in implementing the development / improvement plan in order to obtain the full support of the National Economic and Development Authority (NEDA).

CONCLUSION OF THE MEETING:

13. In general, the Interim Report was accepted by the NIA based on an understanding that clarifications on the issues mentioned in item 12 will be made in the Final Report.

ADJOURNMENT:

13. The meeting was adjourned at 12:10 N.N.

CONFORME:



ORLANDO V. SORIANO
Administrator, NIA



JISAO AKIZUKI
Team Leader, JICA Study Team

List of Participants

NIA

Mr. Edilberto B. PUNZAL	Manager, Project Development Department (PDD)
Mr. Abelardo Y. ARMENTIA	Officer-in-Charge, CORPLAN
Mr. Epifanio C. GACUSAN	Manager, Land Resources Utilization and Economics Divisions (LRUED), PDD
Mr. Rogelio P. de la Rosa	Manager, Project Investigation Division (PID), PDD
Mr. Clemente T. ALANANO	Officer-in-Charge, Project Formulation Division (PFD), PDD
Mr. Fernando E. ANTOLIN	Head, Economics Section, LRUED, PDD
Mr. Manuel U. ESTEFANIO	Officer-in-Charge, Dams and Reservoirs Section, PFD, PDD
Mr. Silvino B. HERNANDEZ, Jr.	Supervising Soil Technologist, Land Classification Section (LCS), LRUED, PDD
Mr. Silvino A. ALONZO, Jr.	Supervising Engineer A (Hydrology), Water Resources Use Division (WRUD), PDD
Mr. Yuji SAKAMOTO	JICA Expert, PDD

JICA Study Team

Mr. Isao AKIZUKI	Team Leader
Mr. Shoichiro BAN	Co-Leader / Agricultural Infrastructure
Mr. Luis P. ELEAZAR	Rural Sociology

**MINUTES OF THE MEETING
ON
DRAFT FINAL REPORT**

**THE STUDY ON JALAU R IRRIGATION SYSTEMS AND
RURAL AREA DEVELOPMENT PROJECT (JISRADP)**

DATE : March 12, 1998
TIME : 9:30 A.M. - 12:00 N.N.
VENUE : National Irrigation Administration (NIA)
NIA Project Development Department Conference Room
Quezon City, Philippines
ATTENDANCE: As listed in *ANNEX-1*

PRESENTATION OF THE DRAFT FINAL REPORT:

1. The meeting was convened to present and discuss the Draft Final Report on the Study of JISRADP prepared by the JICA Study Team.

2. The JICA Study Team Leader explained the study results for JISRADP mainly emphasizing on the following :

- i) Issues and causes identified through the field survey ;
- ii) Cycle of issues and causes ;
- iii) Development concept and objectives of the Project ;
- iv) Plans proposed by the Study ;
- v) Project cost ;
- vi) Implementation schedule ;
- vii) Project evaluation ; and
- viii) Plan for strengthening of the Aganan River Federation of Irrigators' Association (ARFIA).

3. The JICA Study Team Leader reported that the Project adopts an integrated-phased development approach for strengthening and improvement plan of the two (2) national irrigation systems (NISs) such as Jalaur proper and Suague, consisting of the following components :

- i) Irrigated agriculture development ;
 - ii) Improvement of irrigation and drainage facilities, and road networks ;
 - iii) Improvement of water management and O&M practices ;
 - iv) Institutional development ;
 - v) Improvement of agricultural support services, such as agricultural extension, agricultural credit and post-harvest processing and marketing ; and
 - vi) Watershed management.
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ISSUES AND CLARIFICATION

4. The following issues were raised and clarified:

- (a) On the institutional development plan, the JICA Advisory Team confirmed NIA's emphasis on the strengthening of IAs. The NIA accepted the plan prepared by the JICA Study Team.
- (b) On the status of the Project as a model for the revitalization of other NISs, the JICA Advisory Team confirmed the possibility of replicating the Project at other NISs. The NIA informed that such replication would be very possible.
- (c) On the project cost estimation, the NIA suggested to the JICA Study Team to further clarify the reasons for such expensive cost compared with the project costs of the other rehabilitation projects. The JICA Study Team informed that the project cost could not be simply compared with the costs of the other rehabilitation projects, because the former includes the costs for the additional facilities such as settling basin, concrete canal lining, turnouts, measuring devices, feeder canals, etc. to improve and sustain the irrigation water delivery and conveyance as well as the training and procurement costs for such soft aspects as agricultural support services, water management and O & M practices, and institutional development. However, the JICA Study Team noted this suggestion for further review.
- (d) The JICA Advisory Team confirmed the possibility of cooperation with the Municipal Agriculture Officer (MAO) and other agencies concerned for strengthening of agricultural support services. The NIA informed that the cooperation is already existing at present, however, close cooperation could be further achieved under the implementation of the proposed improvement plan for agricultural support services in the Study.
- (e) The NIA suggested to the JICA Study Team to clarify the other issues and comments on the Draft Final Report which will be sent to JICA on or before April 14, 1998. The JICA Study Team informed that the Final Report would be prepared after the said issues and comments have been taken into consideration and clarified.

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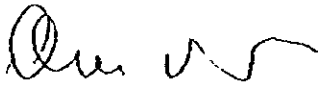
CONCLUSION OF THE MEETING:

5. The Draft Final Report was accepted in principle by the NIA with the understanding that the issues mentioned above would be incorporated in the Final Report.

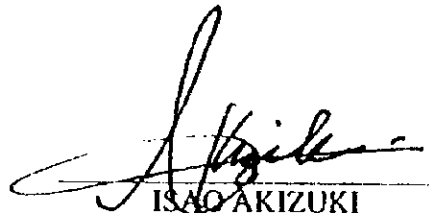
ADJOURNMENT:

6. The meeting was adjourned at 12:00 N.N.

CONFORME:

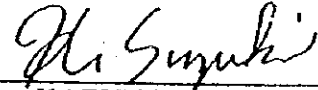


ORLANDO V. SORIANO
Administrator, NIA



ISAO AKIZUKI
Team Leader, JICA Study Team

WITNESS BY :



KAZUYA SUZUKI
Coordinator
JICA Advisory Team

**List of Participants
on
Presentation of Draft Final Report
in
NIA Head Office
March 12, 1998**

NIA

Mr. Edilberto B. PUNZAL	Manager, Project Development Department (PDD)
Mr. Abelardo Y. ARMENTIA	Officer-in-Charge, CORPLAN
Mr. Epifanio C. GACUSAN	Manager, Land Resources Utilization and Economics Divisions (LRUED), PDD
Mr. Rogelio P. de la Rosa	Manager, Project Investigation Division (PID), PDD
Mr. Clemente T. ALANANO	Officer-in-Charge, Plan Formulation Division (PFD), PDD
Mr. Fernando E. ANTOLIN	Head, Economics Section, LRUED, PDD
Mr. Manuel U. ESTEFANIO	Officer-in-Charge, Dams and Reservoirs Section, PFD, PDD
Mr. Silvino B. HERNANDEZ, Jr.	Supervising Soil Technologist, Land Classification Section (LCS), LRUED, PDD
Mr. Graicita C. LLAMOSO	Officer-in-Charge, Water Resources Use Division (WRUD), PDD
Mr. Conrado M. CARLOS	Environmentalist, Plan Formulation Division (PFD), PDD
Mr. Wilson L. LAYAOEN	Geology Section, Project Investigation Division (PID), PDD
Mr. Takashi FUJIMORI	JICA Expert, DA

JICA Advisory Team

Mr. Kazuya SUZUKI	Coordinator
-------------------	-------------

JICA Philippine Office

Mr. Tetsuji IIDA	Assistant Resident Representative
------------------	-----------------------------------

JICA Study Team

Mr. Isao AKIZUKI	Team Leader
Mr. Shoichiro BAN	Co-Leader / Agricultural Infrastructure
Mr. Luis P. ELEAZAR	Rural Sociology



**List of Participants
on
Presentation of Draft Final Report
at
Regional Meeting (Iloilo)
March 16, 1998**

NIA Head Office

Mr. Abelardo Y. ARMENTIA

Mr. Clemente T. ALANANO

NIA Region 6 Office

Mr. Samuel S. JAPITANA

Mr. Rudy R. IBABAO

Mr. Neri M. PEREZ

Mr. Arsenio C. SALANIO

Mr. Phridi C. MELENDEZ

Mr. Benjamin P. SANCHEZ

Mr. Carlos N. PAGUNTALAN

NIA Provincial Office

Mr. Florencio P. COLORADO

Mr. Isias C. MELENDEZ

NIA JSRIS Office

Mr. Orlando P. BELONIO

Mr. Lauro M. ASPERAS

NIA ASBRIS Office

Mr. Edilberto F. LOMIGO

DENR Region 6 Office

Mr. Yonilo F. FUNTILON

MIWD Region 6 Office

Mr. Andrew J. LUTON

DA Region 6 Office

Mr. Jose R. PAJARILLO

NEDA Region 6 Office

Mr. Arturo G. VALERO

Mr. Nicholas RIVAS

Mr. Melvin MADRIGUERA

DPWH Region 6 Office

Mr. Claro Sesario T. MOSCOSO

DAR Region 6 Office

Ms. Mercy A. LAGANTA

LAND BANK

Mr. Ibra M. ACENIO

JICA Advisory Team

Mr. Kazuya SUZUKI

JICA Philippine Office

Mr. Tetsuji HIDA

JICA Study Team

Mr. Isao AKIZUKI

Mr. Shoichiro BAN

Office-in-Charge, CORPLAN

Office-in-Charge, Plan Formulation Division

Office-in-Charge, Regional Manager, NIA
Region 6 Office

Office-in-Charge, Engineering Division

Division Manager, IDD

Division Manager, SMD

Division Manager, EMD

Office-in-Charge, Planning Section

Assistant PPDO

Office-in-Charge, IPIO, PIO

Engineer A, PIO

Agriculturist, JSRIS

Engineer A

Irrigation Superintendent, ASBRIS

EMS n/ EMPAS

Head, Water Maintenance

Office-in-Charge, ARD

Chief, Infrastructure Division

Infrastructure Division

Coordinator

Assistant Resident Representative

Team Leader

Co-Leader / Agricultural Infrastructure

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JICA