

Fig. 5.1.1 Existing Telemetry System in Kerian Scheme

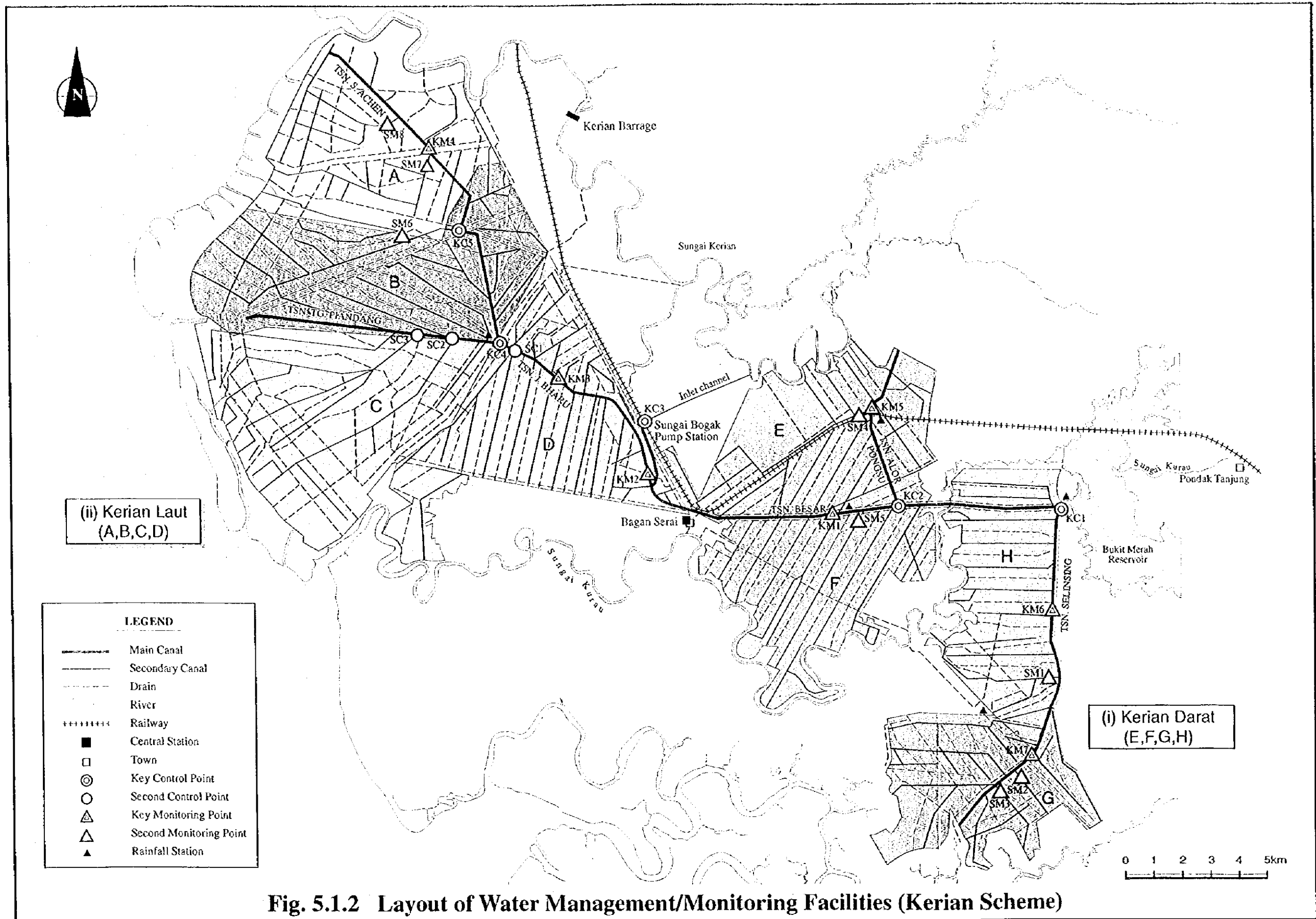


Fig. 5.1.2 Layout of Water Management/Monitoring Facilities (Kerian Scheme)

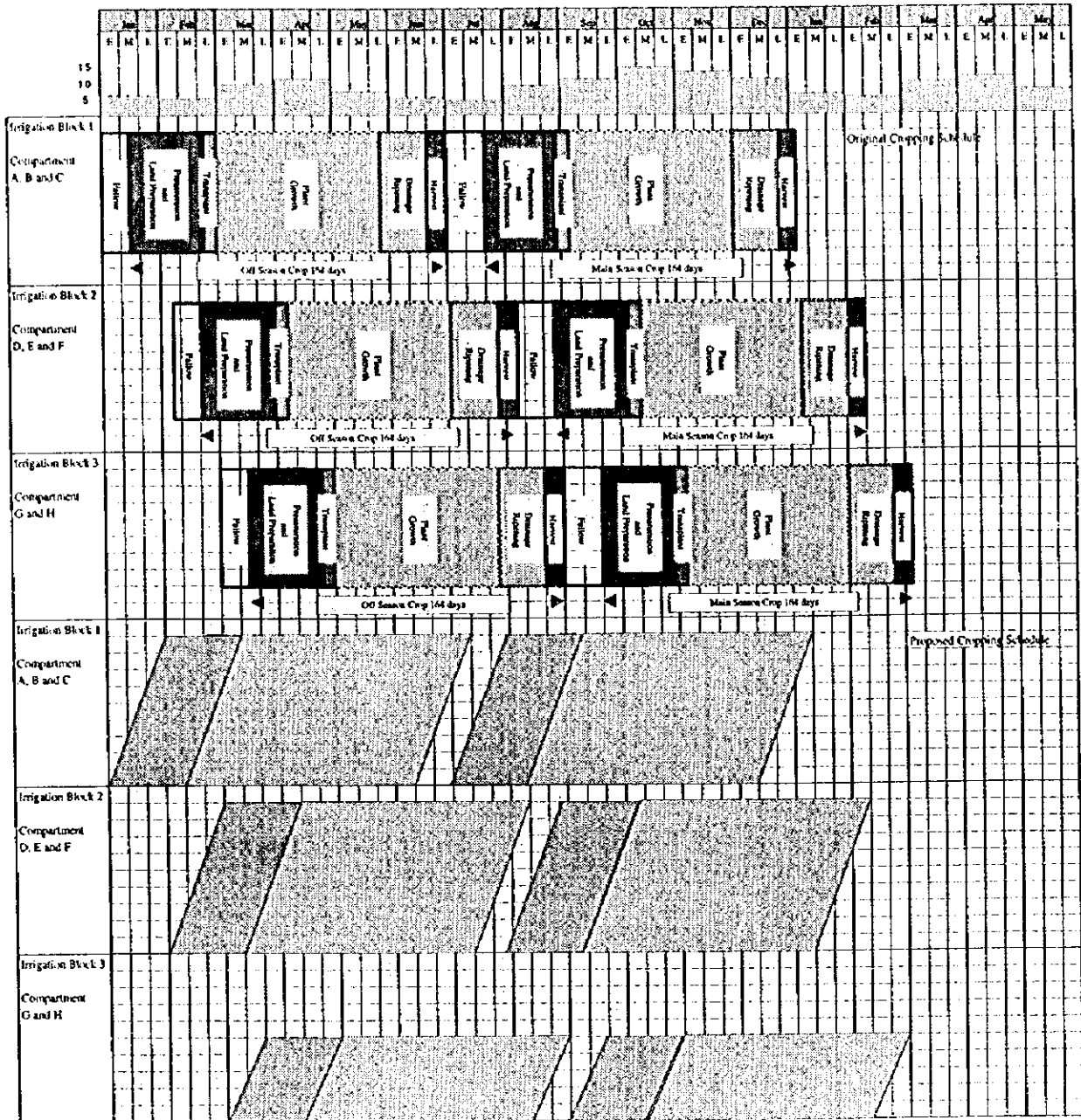
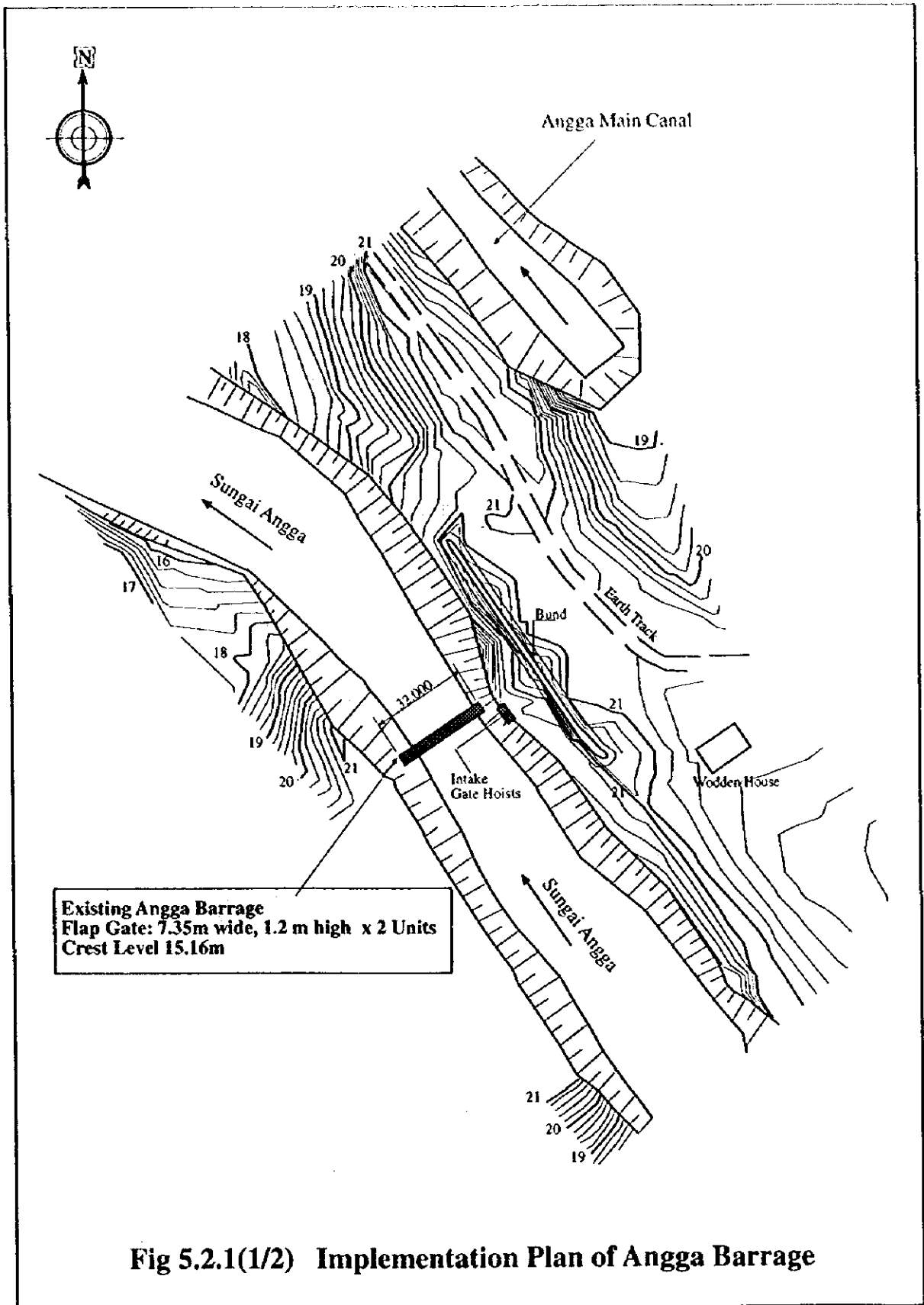


Fig. 5.1.3 Original and Proposed Cropping Schedule in Kerian

Fig. 5.1.4 Implementation Schedule (Kerian Scheme)

Work Item	Year	7th Malaysian Plan					8th Malaysian Plan					9th Malaysian Plan				
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
I. Improvement of System Infrastructures																
1. Concrete lining of canals																
2. Improvement of drainage facilities																
3. Improvement of farm road																
4. Improvement of related structures																
II. Improvement of In-field Infrastructures																
1. Land leveling																
2. In-field structures																
III. Water Management / Monitoring System																
1. Telemetry and telecontrol system																
2. Feedback system																
IV. Training of Water Users Group																



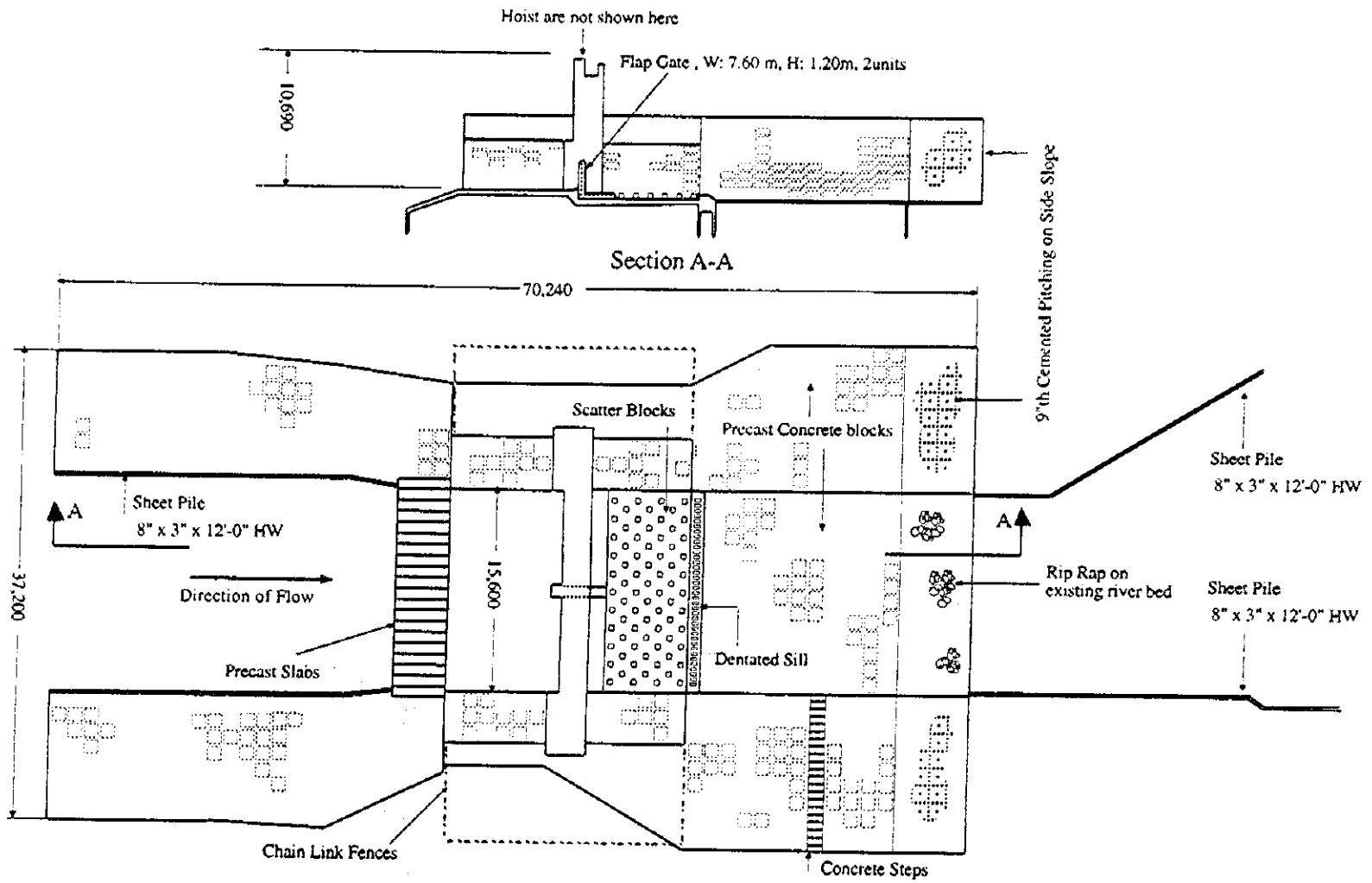
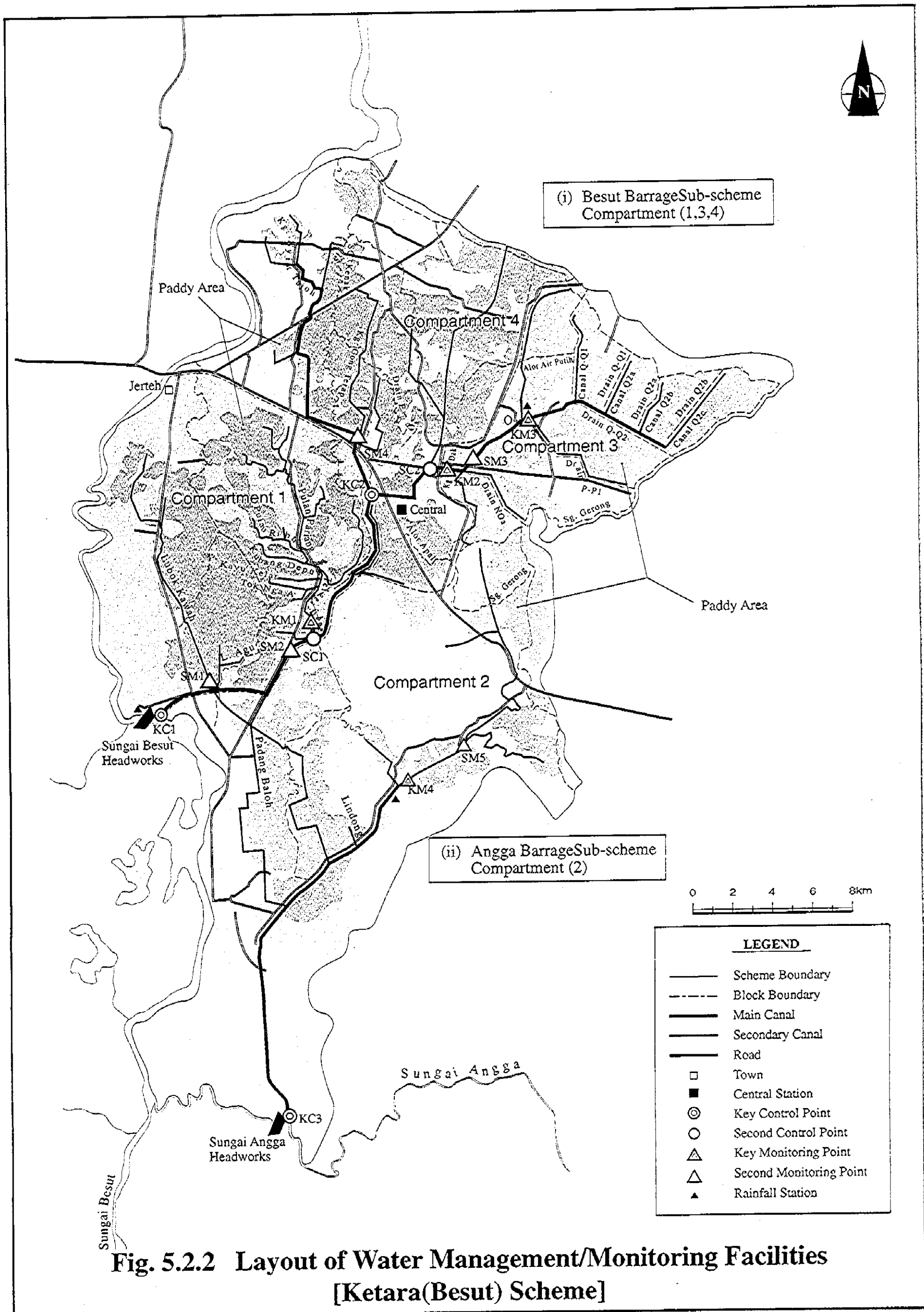


Fig. 5.2.1(2/2) Implementation Plan of Angga Barrage

(estimated based on Details of Modification Works by D.I.D., 1958)



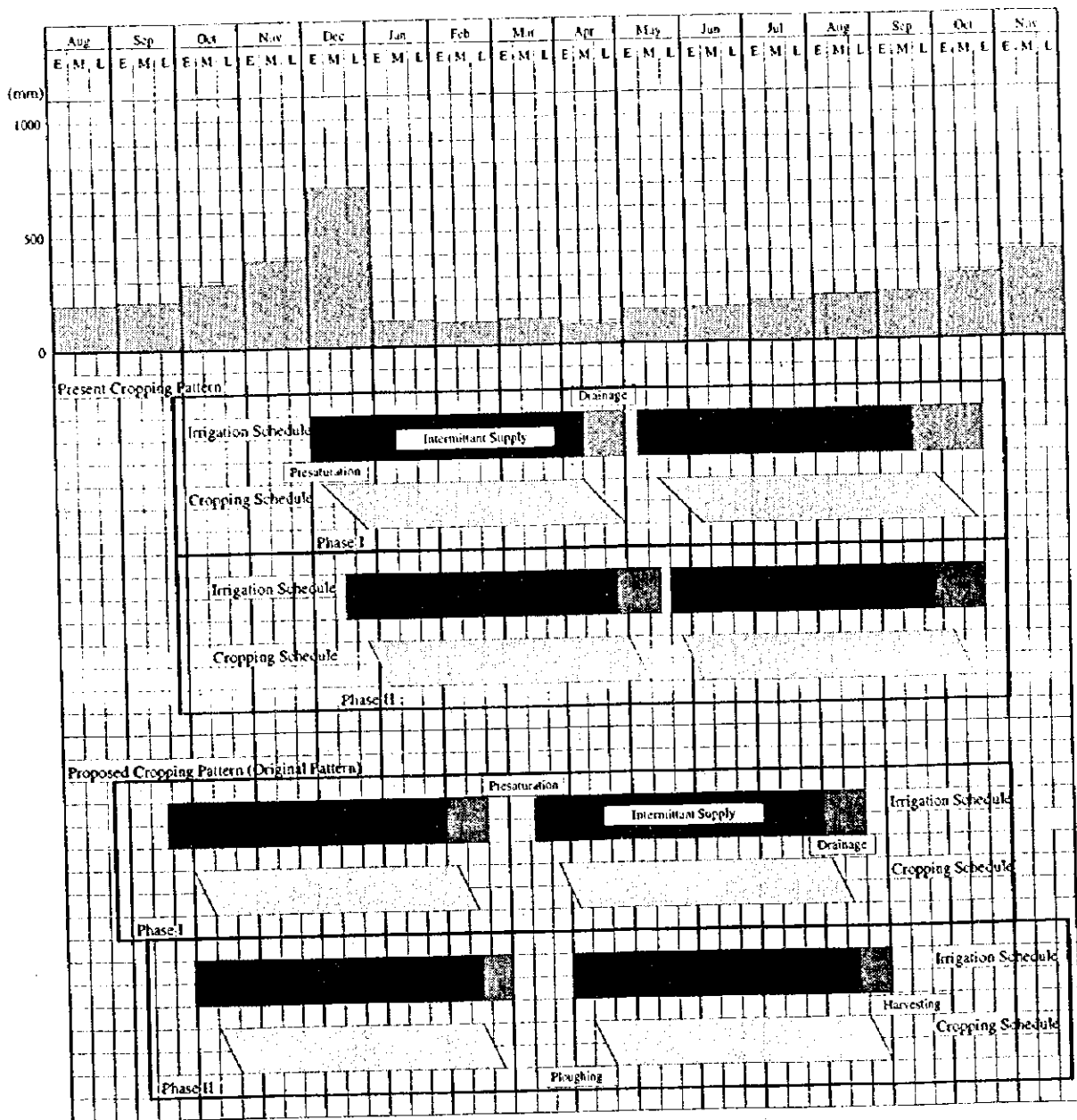


Fig. 5.2.3 Present and Proposed Cropping Schedule in Ketara (Besut)

Fig. 5.2.4 Implementation Schedule (Besut Scheme)

Work Item	Year	7th Malaysian Plan					8th Malaysian Plan					9th Malaysian Plan				
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
I. Improvement of System Infrastructures																
1. Replacement of Besut Barrage Improvement				██████████	██████████	██████████										
2. Construction of New Angga Barrage				██████████	██████████	██████████										
3. Concrete lining of canals				██████████	██████████	██████████										
4. Improvement of drainage facilities				██████████	██████████	██████████										
5. Improvement of farm road				██████████	██████████	██████████										
6. Improvement of related structures				██████████	██████████	██████████										
II. Improvement of In-field Infrastructures																
1. Land leveling				██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
2. In-field structures				██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████
III. Water Management / Monitoring System																
1. Telemetry and telecontrol system				██████████	██████████	██████████										
2. Feedback system				██████████	██████████	██████████										
IV. Training of Water Users Group																
				██████████	██████████	██████████										

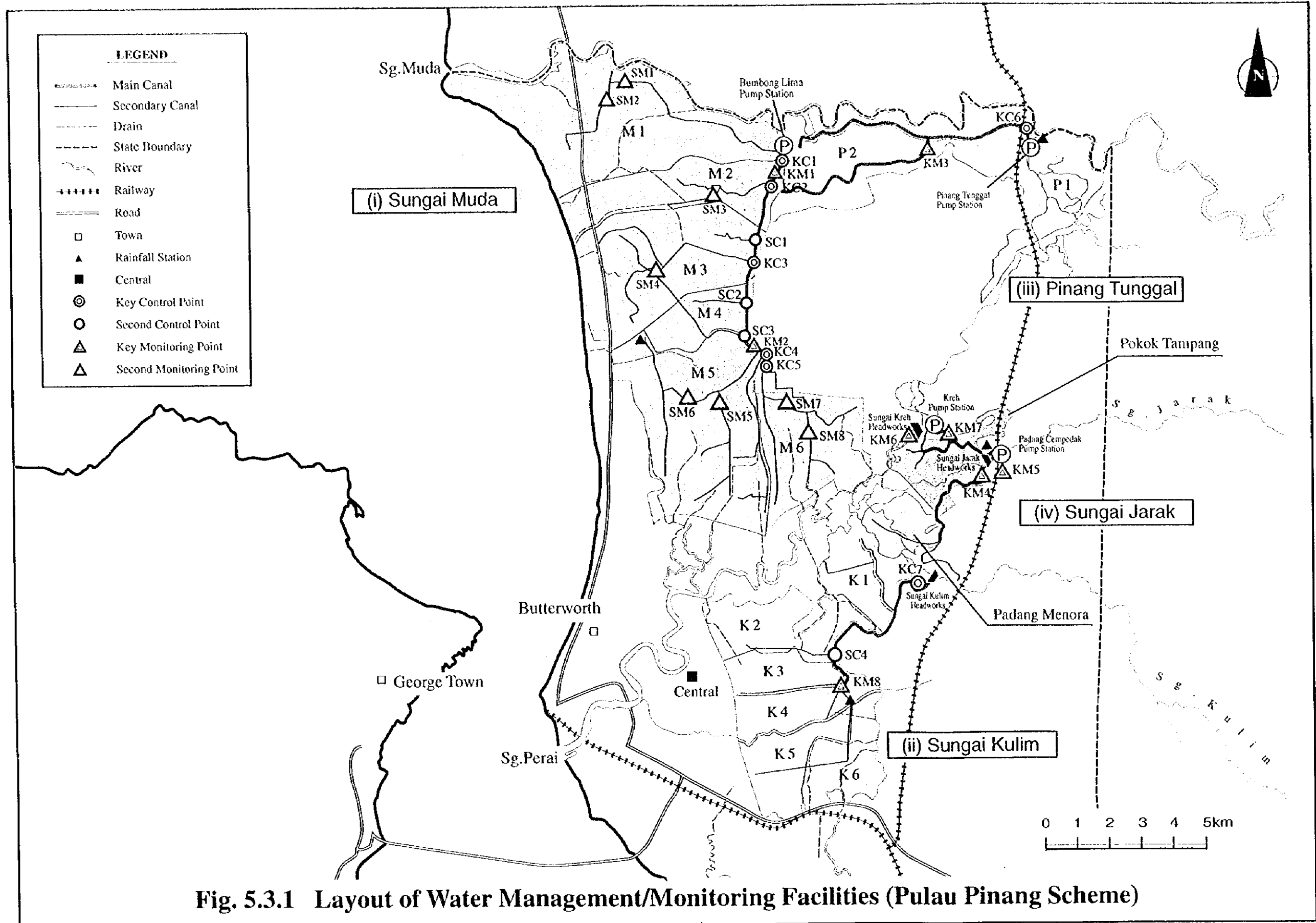


Fig. 5.3.2 Implementation Schedule (Pulau Pinang Scheme)

Work Item	Year	7th Malaysian Plan					8th Malaysian Plan					9th Malaysian Plan					
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
I. Improvement of System Infrastructures																	
1. Concrete lining of canals				—————													
2. Improvement of drainage facilities				—————													
3. Improvement of farm road				—————													
4. Improvement of related structures				—————													
II. Improvement of In-field Infrastructures																	
1. Land leveling				—————													
2. In-field structures				—————													
III. Water Management / Monitoring System																	
1. Telemerty and telecontrol system				—————													
2. Feedback system				—————													
IV. Training of Water Users Group																	
				—————													

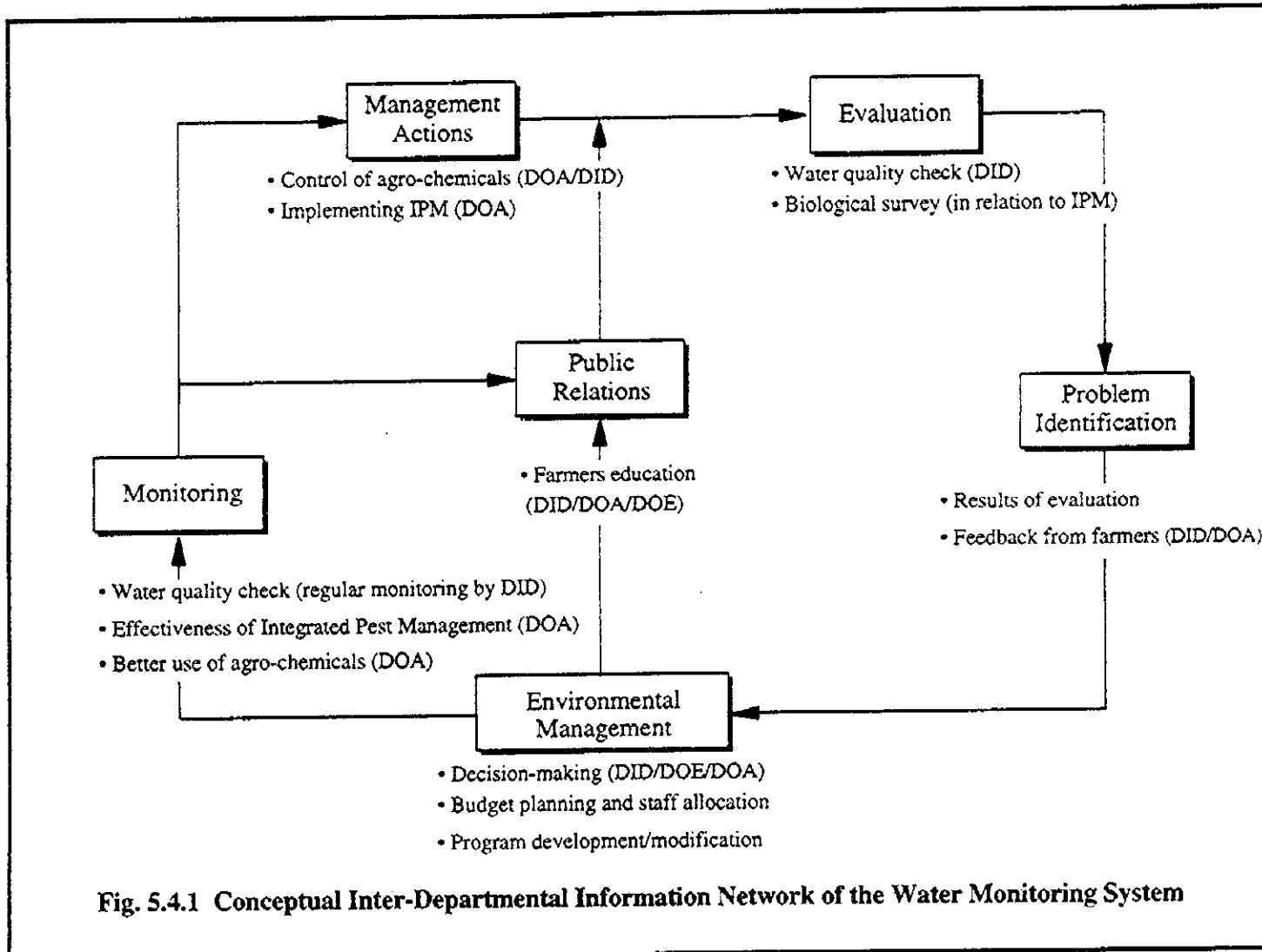


Fig. 5.4.1 Conceptual Inter-Departmental Information Network of the Water Monitoring System

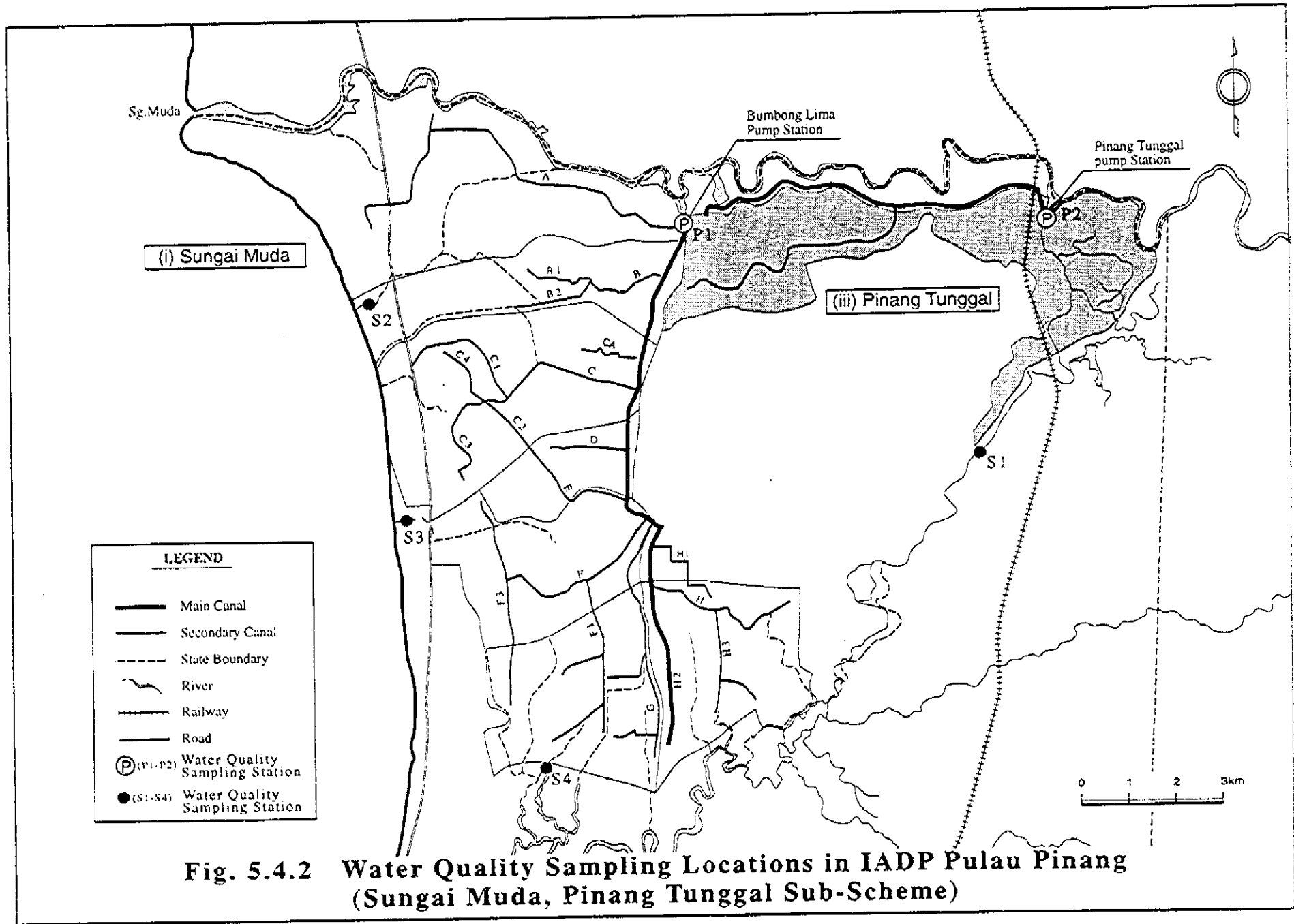


Fig. 5.4.2 Water Quality Sampling Locations in IADP Pulau Pinang (Sungai Muda, Pinang Tunggal Sub-Scheme)

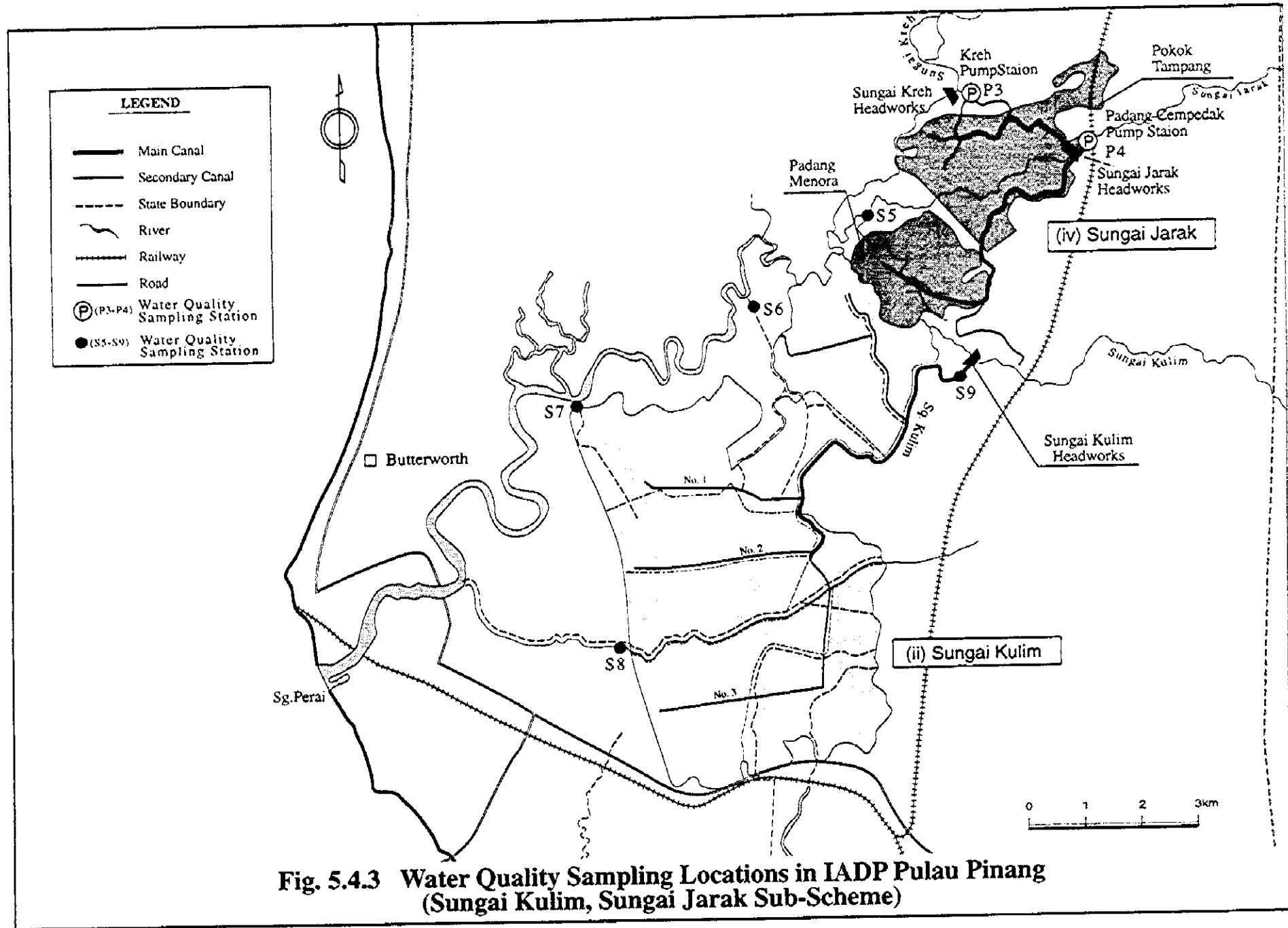
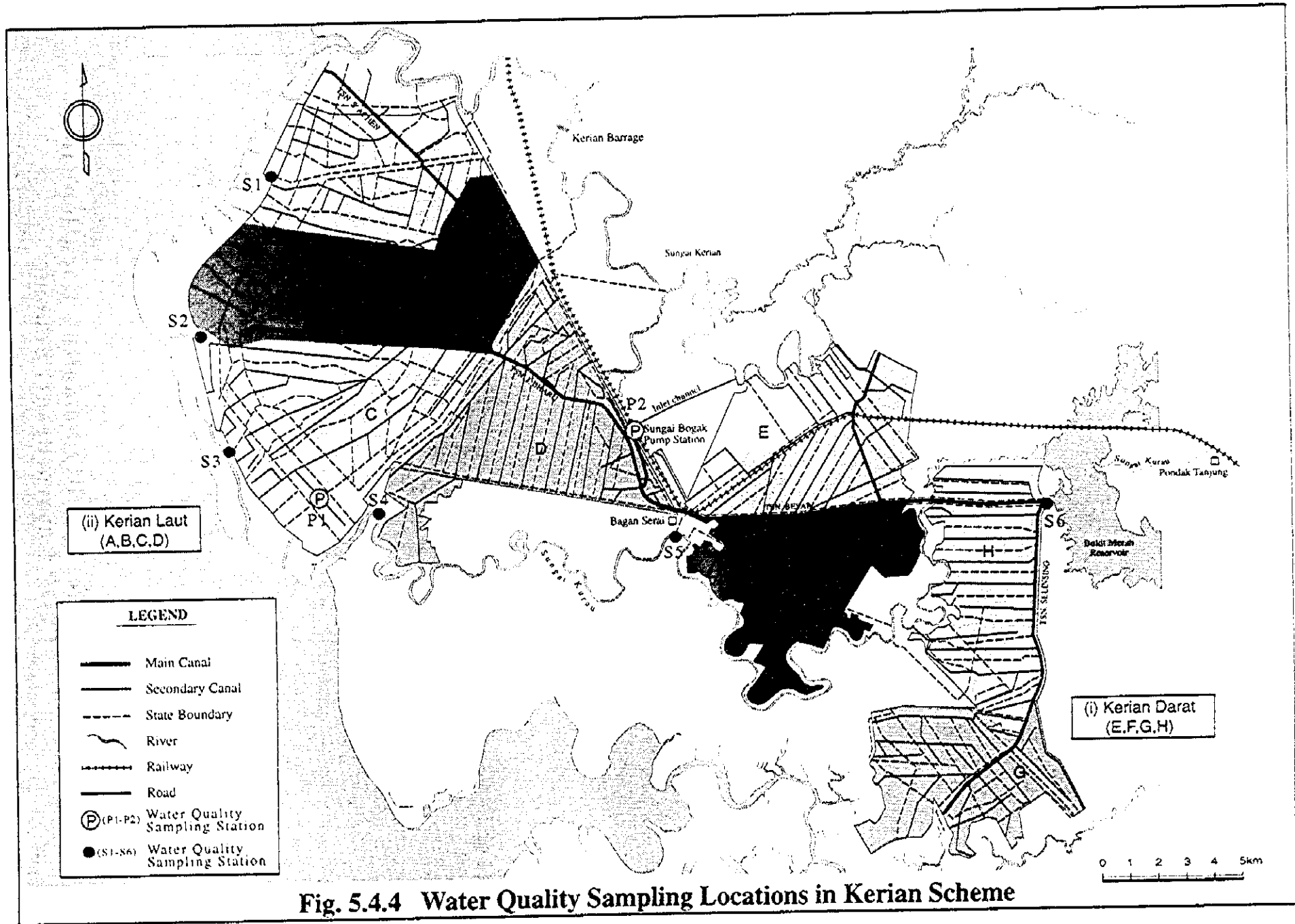


Fig. 5.43 Water Quality Sampling Locations in IADP Pulau Pinang (Sungai Kulim, Sungai Jarak Sub-Scheme)



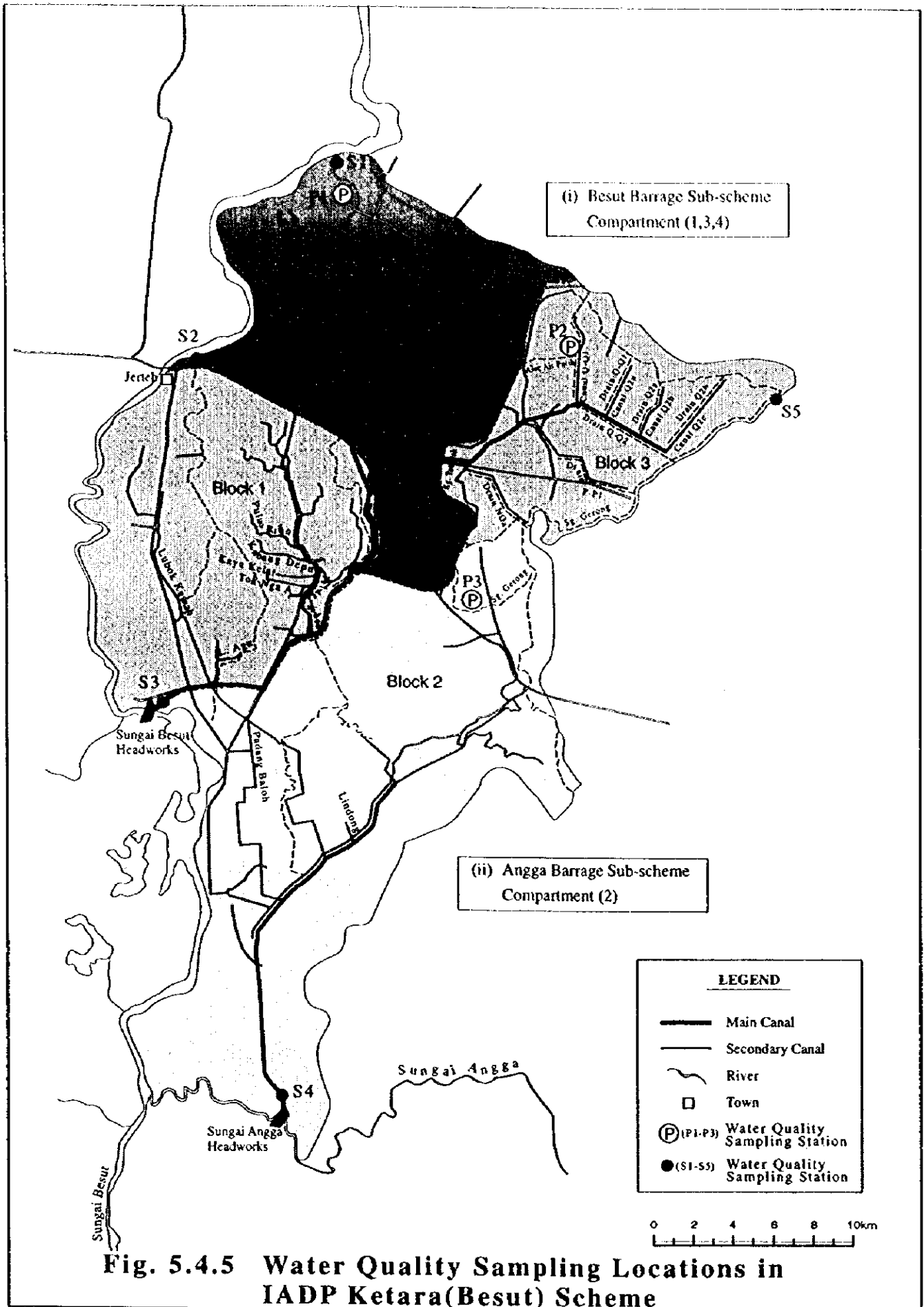


Fig. 5.4.5 Water Quality Sampling Locations in IADP Ketara (Besut) Scheme

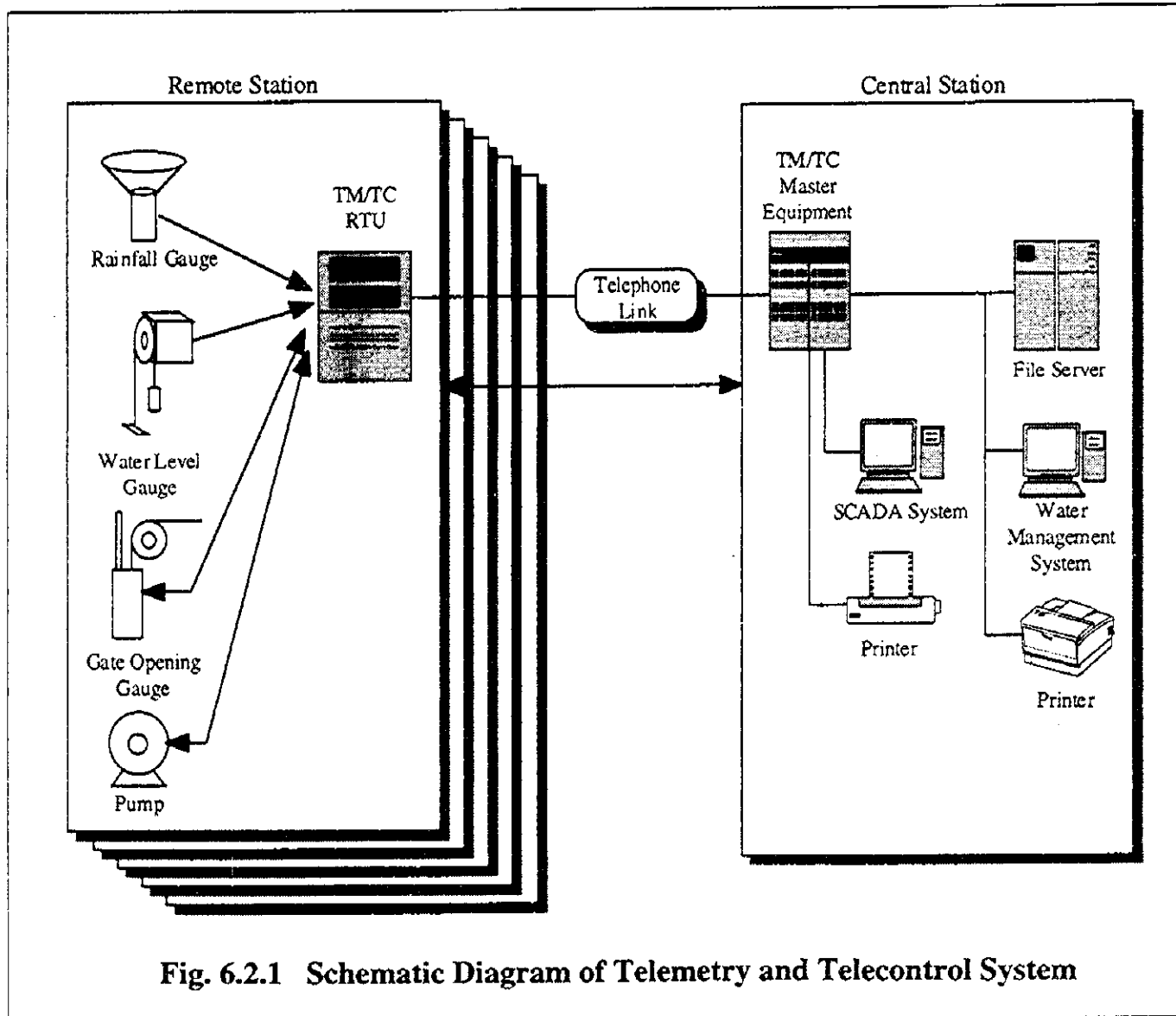


Fig. 6.2.1 Schematic Diagram of Telemetry and Telecontrol System

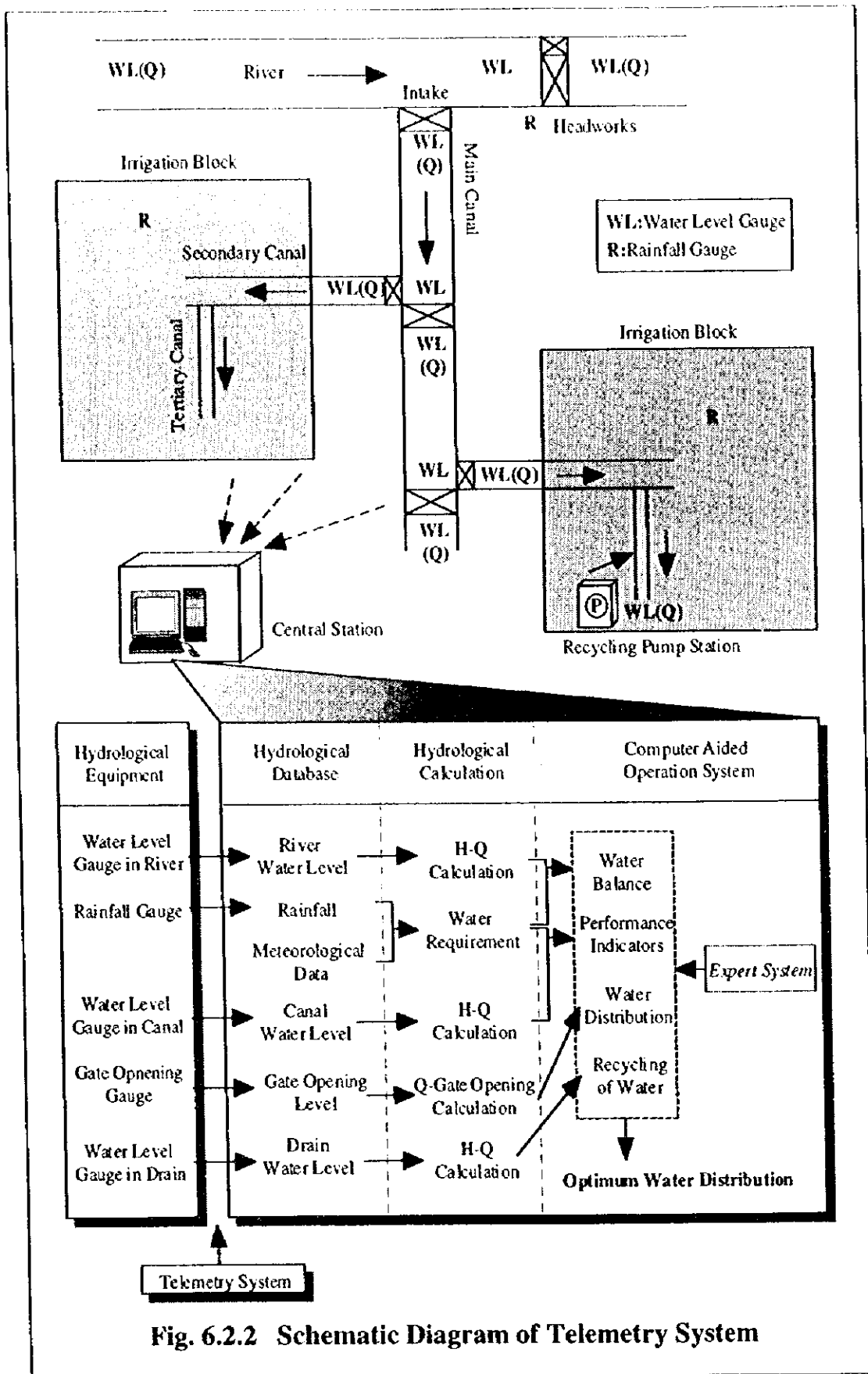


Fig. 6.2.2 Schematic Diagram of Telemetry System

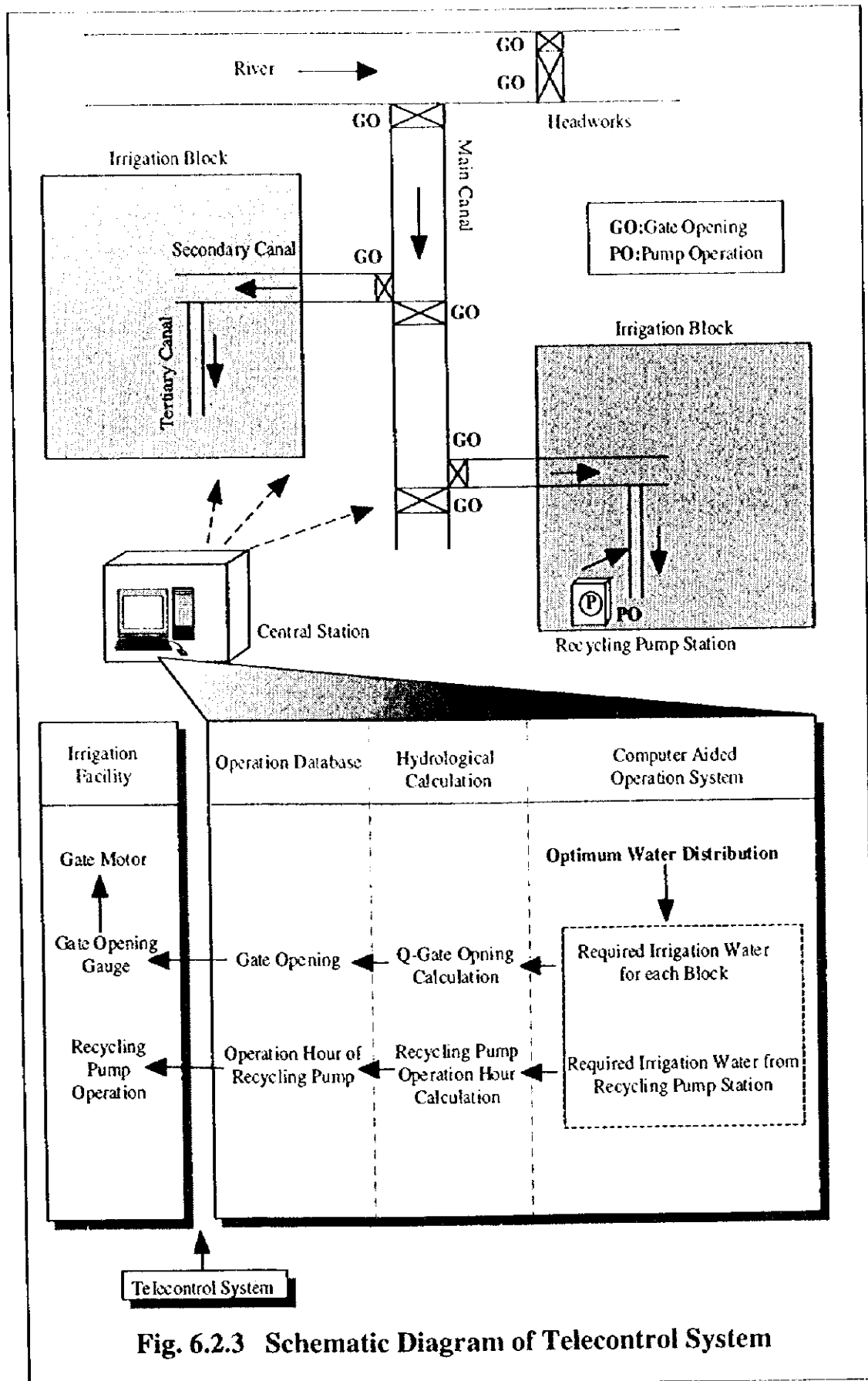


Fig. 6.2.3 Schematic Diagram of Telecontrol System

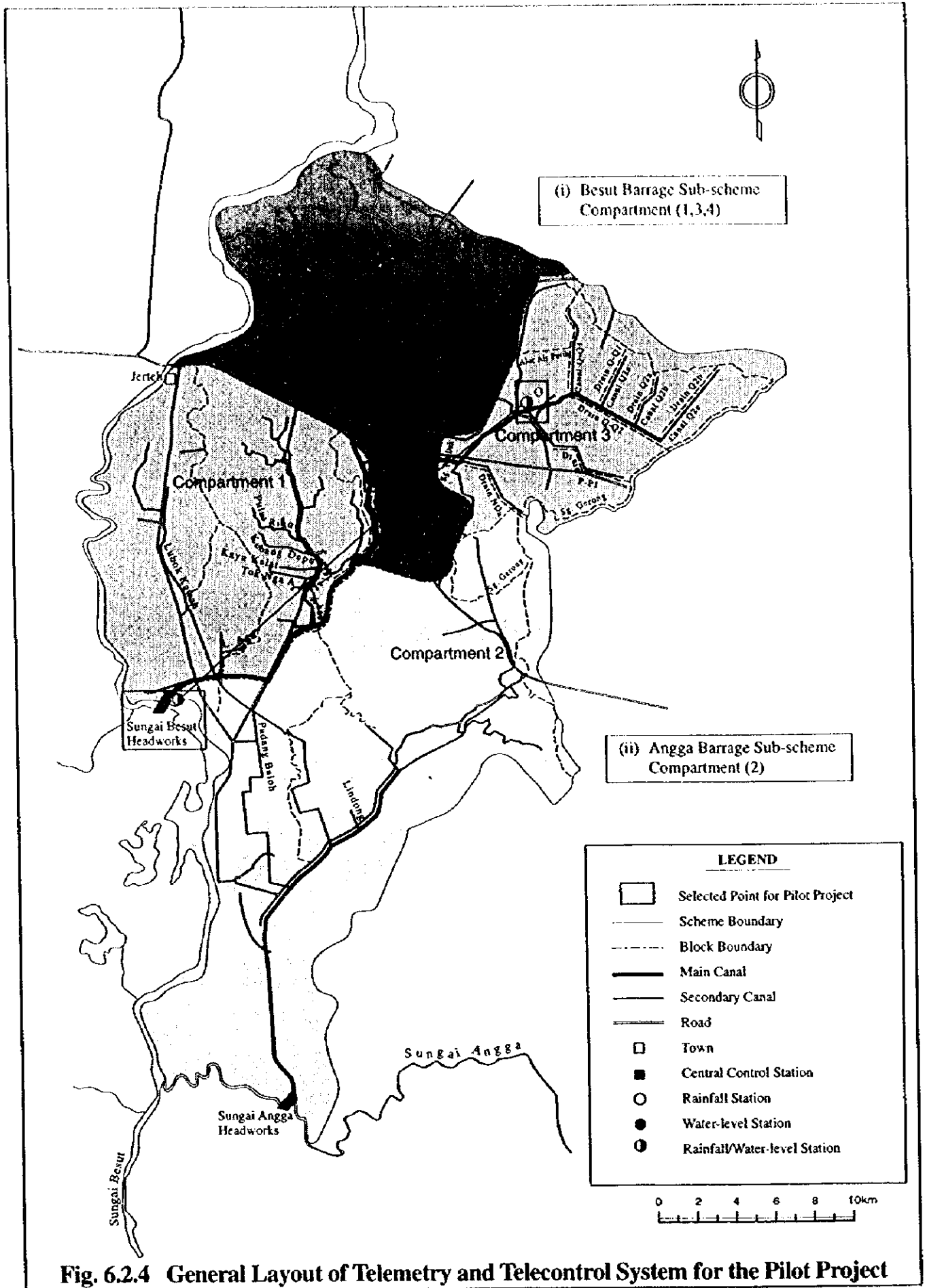


Fig. 6.2.4 General Layout of Telemetry and Telecontrol System for the Pilot Project

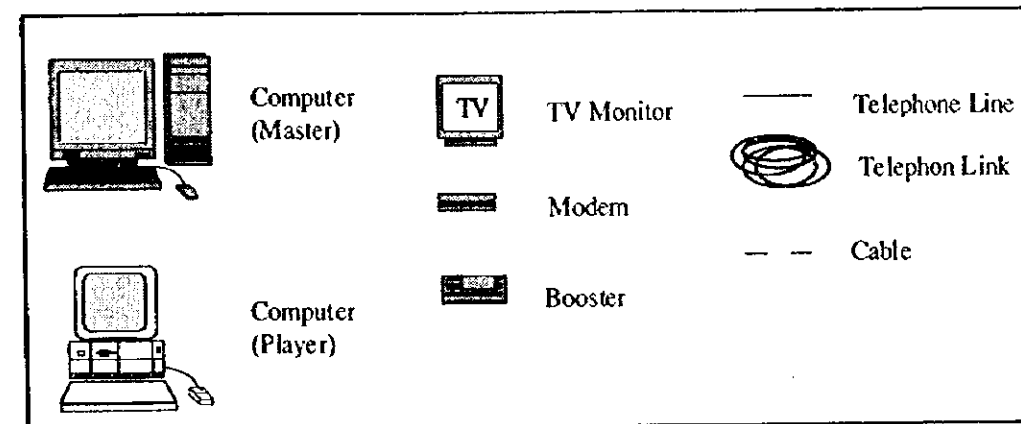
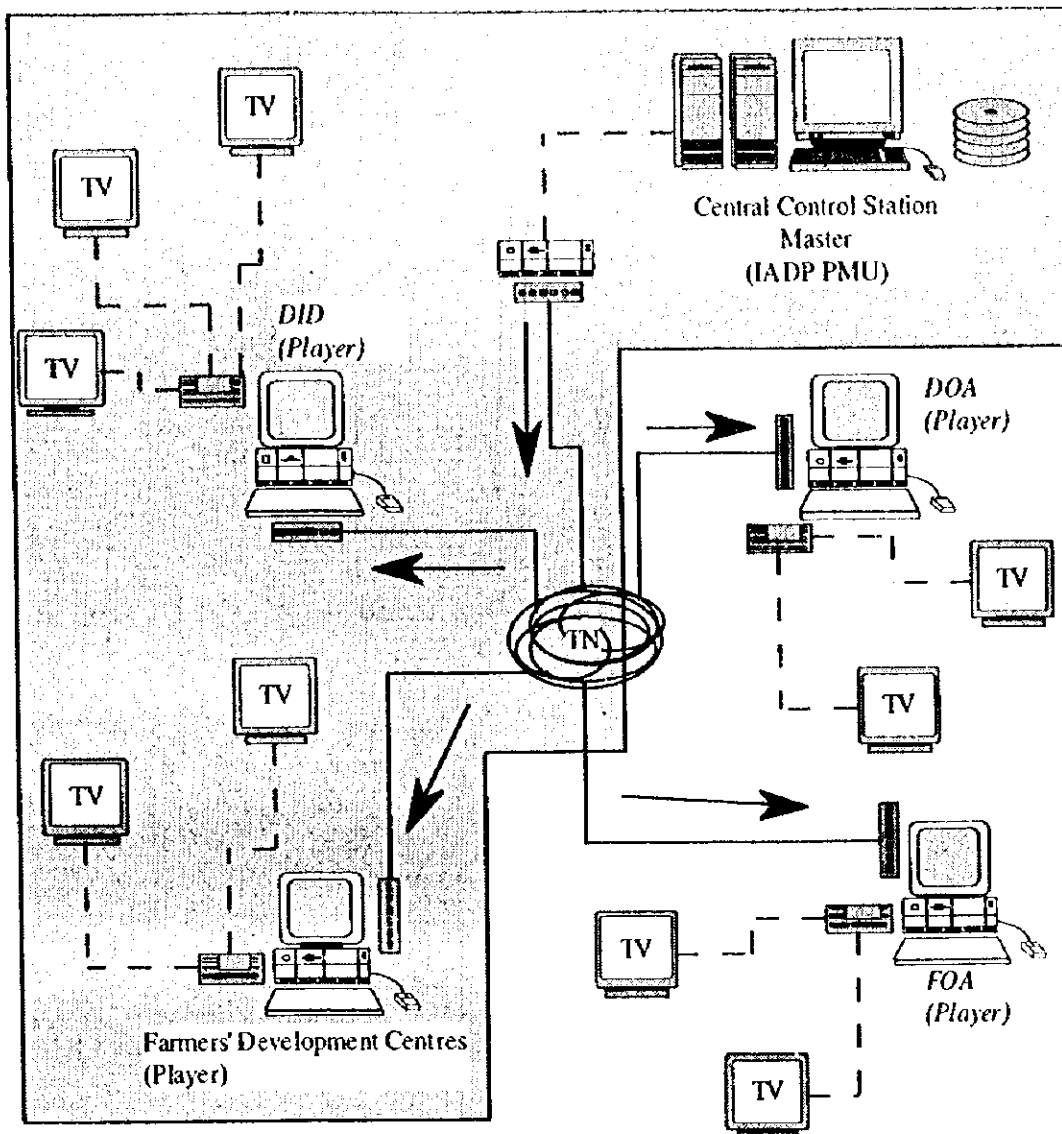


Fig. 6.2.5 Schematic Diagram of Irrigation Monitoring and Feedback System (1st Step)

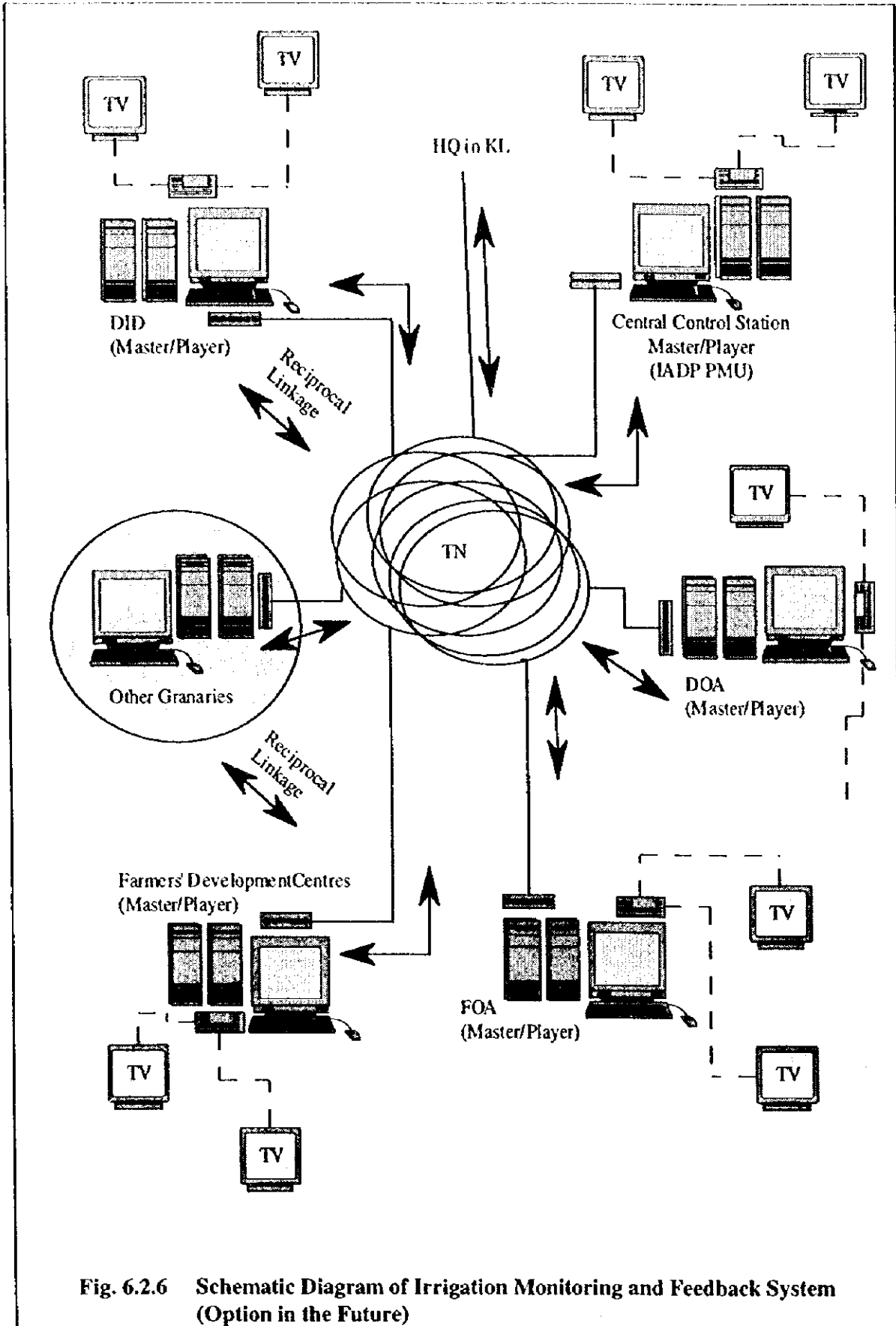


Fig. 6.2.6 Schematic Diagram of Irrigation Monitoring and Feedback System (Option in the Future)

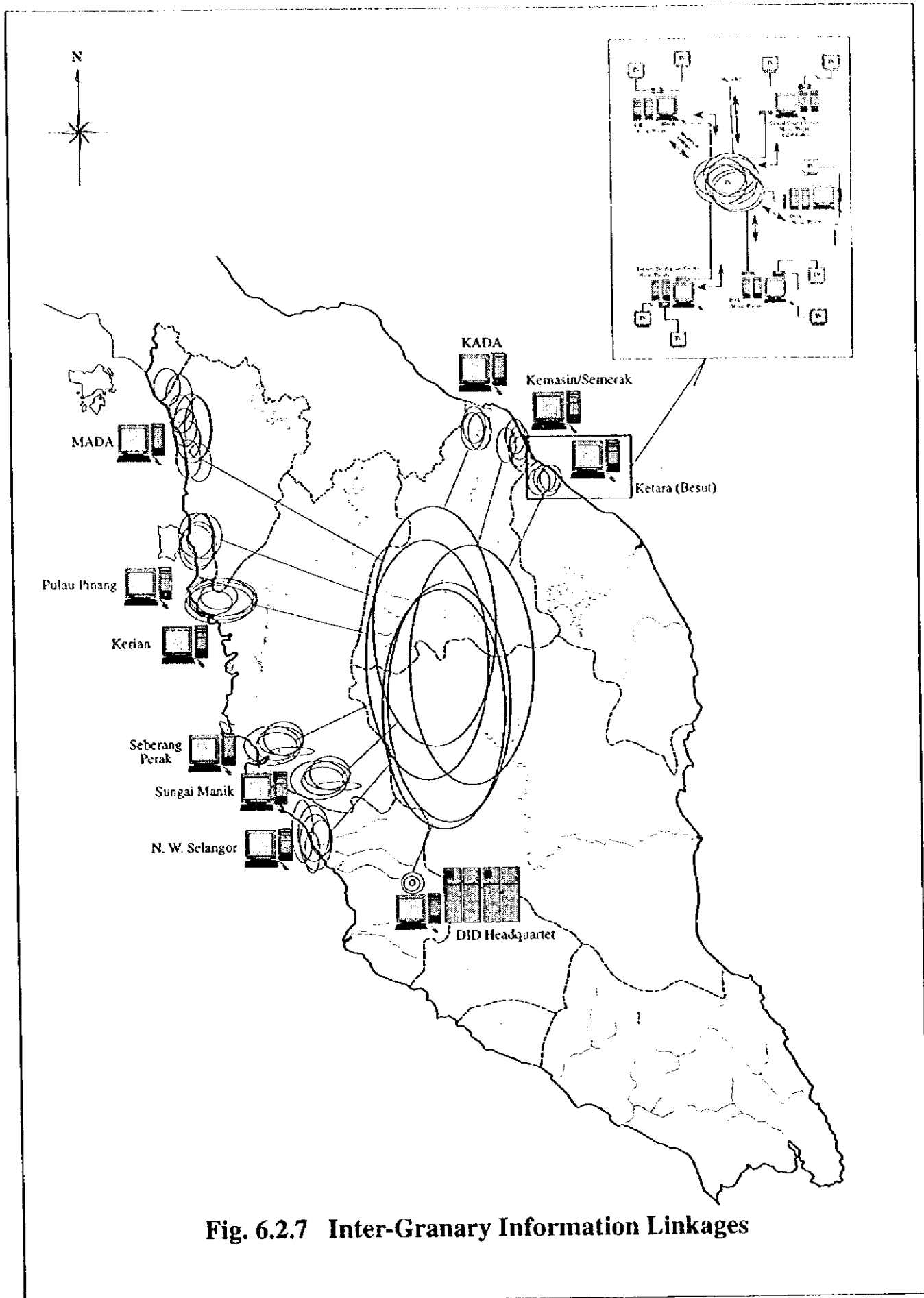


Fig. 6.2.7 Inter-Granary Information Linkages

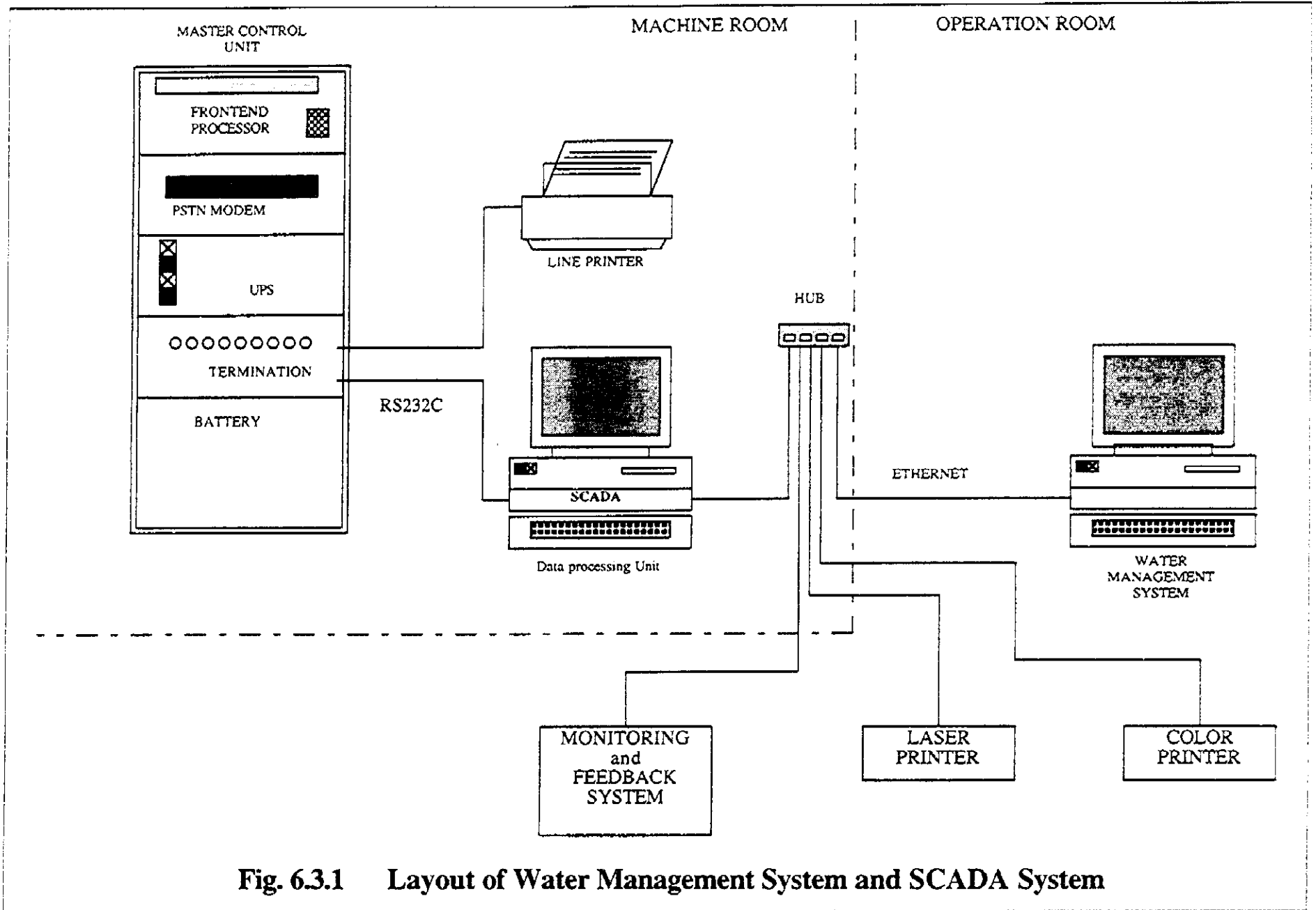


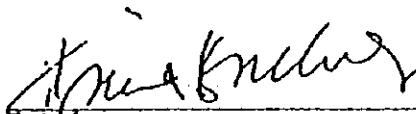
Fig. 6.3.1 Layout of Water Management System and SCADA System

ATTACHMENTS

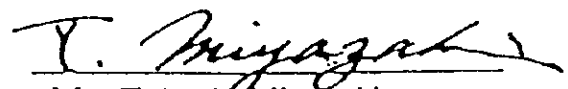
SCOPE OF WORK
FOR
THE STUDY
ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA

AGREED UPON BETWEEN
ECONOMIC PLANNING UNIT
OF
PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR, 20 November, 1996



Mr. Ahmad Konchong
Director of Agriculture Section,
Economic Planning Unit (EPU),
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Miyazaki
Leader,
Preparatory Study Team,
Japan International Cooperation
Agency (JICA)

I. Introduction

In response to the request of the Government of Malaysia (hereinafter referred to as "GOM"), the Government of Japan (hereinafter referred to as "GOJ") has decided to conduct the Study on Modernization of Irrigation Water Management System in the Granary Areas of Peninsular Malaysia (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of technical cooperation programs of GOJ, will undertake the Study in close cooperation with the authorities concerned of GOM.

The present document sets forth the scope of work with regard to the Study.

II. Objectives of the Study

The objectives of the Study are:

1. To formulate a Master Plan for modernizing irrigation water management systems in the five schemes located in Peninsular Malaysia to achieve higher paddy production,
2. To conduct a Feasibility Study to formulate development plans in the three selected schemes prioritized in the Master Plan, and
3. To carry out technology transfer to the Malaysian counterpart personnel through on -the-job training in the course of the Study.

III. Study area

The Study area shall cover 5 existing schemes consisting of (1)Sebarang Perai/Balik Pulau scheme, (2)Kerian/Sungai Manik scheme, (3)Sebarang Perak scheme, (4)Kemasin Semerak scheme and (5)Besut scheme in Peninsular Malaysia.

T.

o

IV. Scope of the Study

In order to achieve the above objectives, the Study will consist of two(2) phases and the following items.

I. Phase I (Master Plan Study for 5 schemes)

1.1. To review the existing development plans and policies.

1.2. To collect and review existing data and information through field survey and investigation:

- (1) Meteorology, hydrology, soils and land use
- (2) Irrigation and drainage facilities and social infrastructures
- (3) Water use and water right
- (4) Agriculture
- (5) Land holding and tenure
- (6) Socio-economic conditions
- (7) Agro-economy and marketing
- (8) Farmer's intention
- (9) Operation, maintenance and management system of irrigation and drainage facilities
- (10) Organization of existing water users and/or farmers organizations
- (11) Organization of existing scheme's office
- (12) Environment
- (13) Construction materials and equipment

1.3. To identify and assess development needs, problems and constraints.

1.4. To formulate basic development plan, considering following items:

- (1) Modernizing irrigation water management systems plan
- (2) Paddy development plan concerning variety, scheduling, farming practices and management system, etc.
- (3) Irrigation and drainage plan
- (4) Agricultural supporting plan, concerning farmers organization, financing, research, training and extension services, etc.

1.5. To select 3 priority schemes for the feasibility study in Phase II .

2. Phase II (Feasibility study for selected 3 schemes)

2.1. To collect additional data and information, and detailed field survey.

2.2. To conduct feasibility study for the selected 3 schemes, considering following items:

- (1) Paddy development plan concerning variety, scheduling, farming practices and management system, etc.
- (2) Irrigation and drainage plan
- (3) Water management plan
- (4) Operation and maintenance plan
- (5) Proposed organization of scheme offices in terms of organizational structure
- (6) Proposed farmers organization for water management
- (7) Preliminary design of major structures
- (8) Environmental conservation plan
- (9) Estimation of the project cost and benefit
- (10) Implementation schedule
- (11) Evaluation of the project
- (12) Recommendations

2.3. To provide technical advice to counterparts to conduct feasibility study for the other two schemes not covered in this study during Phase II.

V. Study schedule

The Study will be carried out in accordance with the attached tentative work schedule. (ANNEX I)

VI. Reports

JICA will prepare and submit the following reports in English to GOM.

1. Inception Report

Forty (40) copies at the commencement of the Phase I field work.

2. Progress Report (I)

Thirty-five (35) copies at the end of the Phase I field work.

T.

o

3. Interim Report

Forty(40) copies at the commencement of the Phase II field work.

4. Progress Report (2)

Thirty-five (35) copies at the end of the Phase II field work.

5. Draft final Report

Forty (40) copies at the end of the Phase II home office work. GOM will provide its comments on the Draft Final Report to JICA Malaysia office within one (1) month after receiving the Draft Final Report.

6. Final Report

Seventy (70) copies within two (2) months after the receipt of comments on the Draft Final Report.

The Japanese study team (hereinafter referred to as "the Study Team") shall ensure that all data, information, maps, materials and findings connected with the Study are kept confidential and not revealed or disposed of to any third party except with the prior written consent of GOM. Such maps, and aerial photographs are to be returned to GOM immediately upon completion of the Study. All reports when finalized and submitted to GOM shall remain the property of GOM.

VII. Undertakings of GOM

To facilitate the smooth conduct of the Study, GOM shall take the following necessary measures:

1. To inform the members of the Study team any existing risk in the Study area and to take any measures deemed necessary to secure the safety of the Study team.
2. To ensure the necessary entry permits for the Study Team to conduct field survey in Malaysia and exempt them from consular fees.
3. To exempt the members of the Study Team from taxes and duties, as normally accorded under the provision of Malaysian General Circular No. 1 of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study.
4. To exempt the non-Malaysian members of the Study Team from Malaysian

income tax on their official emoluments in respect of their period of assignment in Malaysia in connection with the conduct of the Study, but GOM shall retain the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources.

5. To provide the necessary facilities to the Study Team for the remittance as well as the utilization of funds introduced into Malaysia from Japan in connection with the implementation of the Study.
6. To secure permission for entry into private properties or restricted areas for the implementing of the Study.
7. To make arrangements for the Study Team to take back to Japan the data, maps and materials connected with the Study, subject to the approval of GOM, in order to prepare the reports.
8. To provide the Study Team with medical services when needed but the expenses will be chargeable to the members of the Study Team.
9. To provide the Study Team with available data, maps, and information necessary for the execution of the Study.
10. To appoint counterpart personnel to the Study Team during the Study period.
11. To provide the Study Team with suitable office space, with clerical service and necessary office equipments in Kuala Lumpur and study area.
12. To provide the Study Team with adequate means of local transport for official travel only.
13. To provide the Study Team with credentials or identification cards.
14. To indemnify any member of the Study Team in respect of damages arising from any legal action against him in relation to any act performed or omissions made in undertaking the Study except when both sides agree that such a member is guilty of gross negligence or willful misconduct.
15. To nominate the Department of Irrigation and Drainage to act as a main counterpart agency for the Study and Economic Planning Unit as main

coordinating body in relation to other relevant governmental and non-governmental organizations.

16. To secure clearance for the use of communication facilities including transceivers.

VIII. Undertakings of JICA

In order to conduct the Study, JICA shall take the following measures;

1. to dispatch, at its own expense, the Study Team to Malaysia, and
2. to transfer technology to Malaysian counterpart personnel in the course of the Study.

IX. Consultation

JICA and GOM shall consult with each other in respect of any matter that is not agreed upon in this document and which may arise from or in connection with the Study.

T.

α

ANNEX I

TENTATIVE WORK SCHEDULE

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
ITEM																						
Works in the Malaysia		■						■						I	⊙							
Works in Japan	□			□								□					□					
Phase	← - PHASE I - →				← - - - - PHASE II - - - - →																	
Report	△ Ic/R		△ P/R(I)				△ I/R			△ P/R(II)				△ Df/R							△ F/R	

- (Remarks)
- Ic / R : Inception Report
 - P / R(I) : Progress Report(1)
 - I / R : Interim Report
 - P / R(II) : Progress Report(2)
 - Df / R : Draft Final Report
 - F / R : Final Report
 - ⊙ : Comments on Df / R by the Malaysia side

T

2

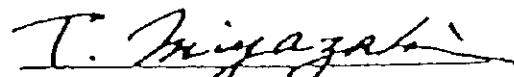
MINUTES OF MEETING
ON
SCOPE OF WORK
FOR
THE STUDY
ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA

AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR, 20 November, 1996



Mr. Ahmad Konchong
Director, Agriculture Section,
Economic Planning Unit (EPU),
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Miyazaki
Leader,
Preparatory Study Team,
Japan International Cooperation
Agency

1. Welcoming Speech

The chairman warmly welcomed all members of the meeting and thanked them for their presence. He hoped that the study team's visit to the sites was without much problem and hoped that it was a useful one.

Mr. Miyazaki, the team leader conveyed his satisfaction on the study team's visit to the sites. The team collected a lot of information and was very pleased. Briefly, the study team observed that some projects are very advanced, well maintained and being operated on a large scale while some are not. Some facilities are 20 to 30 years of age and will require rehabilitation works so that this study would be very useful.

2. Discussion on the Scope of Work

2.1 Although the study covers only five of the eight granary areas, the meeting believes that the title of the study "Modernization Of Irrigation Water Management System In The Granary Areas Of Peninsular Malaysia" is acceptable. The other three granary areas were not included in the study because of the following:

- i. the production from the areas have achieved the target of the study
- ii. there were some previous studies done by JICA on some of these areas

2.2 The agreement, as requested, will be structured according to the one rendered between JICA and the Government of Malaysia for the study on the establishment of the river basin information system. A clause will be added at the end of item VI.- Reports, sub-item 6.- Final Report which reads:

"The Japanese study team (hereinafter referred to as 'the Study Team') shall ensure that all data, information, maps, materials and findings connected with the Study are kept confidential and not revealed or disposed of to any third party except with the prior written consent of GOM. Such maps, and aerial photographs are to be returned to GOM immediately upon completion of the study. All reports when finalized and submitted to GOM shall remain the property of GOM".

2.3 Malaysia expressed the need to include a pilot project as one of the objectives of the study. However, JICA explained that the scope of this study covers up to the feasibility study only. However, at the end of the Master Plan Study, JICA will identify and propose the pilot project area which Malaysia will implement during the Feasibility Study, JICA will assist Malaysia by providing technical advice and guidance.

2.4 A steering committee and a technical committee will be formed for this study comprising the following membership:

2.4.1 Steering Committee:

Economic Planning Unit (EPU) Chairman
Department of Irrigation and Drainage (DID)
Ministry of Agriculture (MOA)
Department of Environment (DOE)
Public Works Department (PWD/JBA)
Relevant states (UPEN): Perak, Penang, Kelantan and Trengganu

2.4.2 Technical Committee:

Department of Irrigation and Drainage (DID) Chairman
The related IADPs' Project Director and the Project Engineer
Economic Planning Unit (EPU)
Ministry of Agriculture (MOA)
Department of Agriculture (DOA)
Farmers Organization Association (FOA)
Malaysian Agricultural Research Development Institute (MARDI)
Department of Environment (DOE)
Public Works Department (PWD/JBA)
The relevant States Department of Irrigation and Drainage (DID)

2.5 Under section VII of the Scope of Works, Undertakings of GOM item 11 & 12, Malaysia hopes JICA could consider to provide clerical service and the necessary equipment (copying & fax machine, etc.) and transport. GOM will provide suitable office space at DID Ampang, telephone line, electricity and furniture.

2.6 The Department of Irrigation and Drainage expressed the need for some counterpart training in Japan and a Seminar to disseminate the findings of the study.

2.7 The study team confirmed that the study will include infield drainage, land levelling and farmers as the project beneficiaries where farmers views will be given due consideration.

2.8 The study team will consider the use of suitable central control/on-demand real-time computer model and automation technology in the modernization plan.

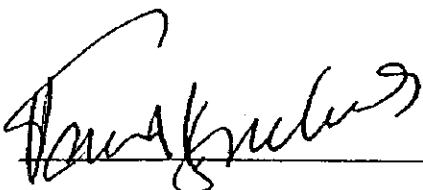
2.9 JICA will prepare and submit the following reports in English to GOM

1. Inception Report
Forty (40) copies at the commencement of the Phase I field work
2. Progress Report (1)
Thirty-five (35) copies at the end of the Phase I field work.
3. Interim Report
Forty (40) copies at the commencement of the Phase II field work
4. Progress Report (2)
Thirty-five (35) copies at the end of the Phase II field work
5. Draft final Report
Forty (40) copies at the end of the Phase II home office work. GOM will provide its comments on the Draft Final Report to JICA Malaysia office within one (1) month after receiving the Draft Final Report
6. Final Report
Seventy (70) copies within two (2) months after the receipt of comments on the Draft Final Report.


*MINUTES OF MEETING
ON
INCEPTION REPORT
FOR
THE STUDY
ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA*

*AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY*

KUALA LUMPUR, 13 MARCH, 1997



Mr. Ahmad Konchong
Director, Agriculture Section,
Economic Planning Unit (EPU),
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Kawaguchi
Leader,
Study Team,
Japan International Cooperation
Agency

**MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS OF PENINSULAR MALAYSIA**

**Technical and Steering Committee
Record of Discussion on the Inception Report**

Date : 11 & 12 March 1997

Time : 2.30 pm & 9.00 am

Place : Department of Irrigation and Drainage, Malaysia &
Economic Planning Unit (EPU), Prime Minister's Department, Malaysia

Attendance:

Malaysian Side

- | | | |
|-----|--------------------------------------|---|
| 1. | Mr. Ahmad Konchong | EPU, Malaysia
- Chairman Steering Committee |
| 2. | Ir. Teh Siew Keat | DID, Malaysia
- Chairman Technical Committee |
| 3. | Mr. Mat Aron Deraman | EPU |
| 4. | Mr. Arisfadilah b. Sariat | EPU |
| 5. | Mr. Raj D'Nathan | MOA |
| 6. | Mr. Abd Hamid Murad | MOA |
| 7. | Mr. Aminuddin Shah Hj. Ahmad | DOE |
| 8. | Ir. Kanagarajah | PWD |
| 9. | Ir. Leong Tak Meng | DID, Malaysia |
| 10. | Ir. Rehan Ahmad | DID, Malaysia |
| 11. | Ir. Mohd Azhari Ghazalli | DID, Malaysia |
| 12. | Mr. Mohd Noor Azhab b. Mohd Shazilli | FOA |
| 13. | Y.M Engku Rajhan bin Engku Ismail | UPEN Kelantan |
| 14. | Mr. Roshidi bin Hj. Hashim | UPEN Perak |
| 15. | Mr. Hj. Ahmad Awang | UPEN Terengganu |
| 16. | Ir. Teoh Boon Pin | DID, Perak |
| 17. | Ir. Marinamarican b. Abdullah | DID, IADP Kemasin Semerak |
| 18. | Ir. Ngoh Tee Dong | DID, IADP Kerian/Sg. Manik |
| 19. | Ir. Amiruddin Hashim | DID, IADP KETARA |
| 20. | Ir. Hassan Abd. Hamid | DID, IADP Pulau Pinang |
| 21. | Ir. Tan Choo Yong | DID, IADP Seberang Perak |

JICA Representative

- | | | |
|----|-----------------------|-----------------------------------|
| 1. | Mr. Minoru Yoshimura | JICA Agriculture Dev. Study Dept. |
| 2. | Mr. Takeshi Kawaguchi | JICA Study Team Leader |
| 3. | Mr. Kunio Goto | JICA Study Team |
| 4. | Mr. Jun Tsurui | JICA Study Team |
| 5. | Mr. Yem bin Othman | JICA Study Team |
| 6. | Mr. Adnan Mohd Nor | JICA Study Team |
| 7. | Mr. Toshinori Isogai | JICA, Malaysia Office |
| 8. | Mr. Junichiro Yamada | JICA, DID |

1. Welcoming Speech Technical Committee

The chairman warmly welcomed all members of the meeting and thanked them for their presence. He explained that a preparatory study team was in Malaysia in November 1996 where the Term of Reference on the scope of study was signed. He informed that a Steering Committee chaired by EPU and a Technical Committee chaired by DID would be formed to oversee this study. He expressed the pleasure that the study team was here to present the Inception Report and said that the meeting provided good opportunity to commend and raise issues where the final quality of the study would depend much on the co-operation of all parties involved. He assured that all members would do their best to support the study. The chairman then requested members of the meeting to introduce themselves.

Mr. Yoshimura hoped that the committee would come to a mutual understanding on the scope, implementation and expectation of the study. The agreement of the study would be signed on the 13 of March 1997 based on the minutes of the Technical Committee meeting held today (11 March 1997) and the Steering Committee meeting which would be held on the 12 of March 1997.

He elaborated that the official request for the study was received in October 1995 and a preparatory study team was sent to Malaysia in November 1996. The scope of work was signed on the 20 of November 1996 by EPU on behalf of the Government of Malaysia and the Preparatory Study team Leader on behalf of JICA.

He commended that Malaysia and Japan have much similarity in the industrialisation process where lack of labour is the common issue. He emphasised that both parties must work closely together and hoped that both parties would understand and have an agreement. He then cordially requested Mr. Kawaguchi, the study team leader to brief the committee on the Inception Report.

2. Welcoming Speech Steering Committee

The chairman extended his warm welcome to all present and expressed the need for support from the IADPs, state and all other agencies. The agenda of meeting includes:

- i. Briefing from the study team leader.
- ii. Report on yesterday's Technical Committee Meeting and
- iii. Discussion on matters arise

Mr. Yoshimura thanked EPU for organising the meeting and noted two points from the Technical Committee Meeting which was held yesterday namely:

- i. Human Resource Development
- ii. Environmental considerations

3. Discussion on the Inception Report and Minutes of Technical and Steering Committees Meeting

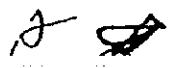
- 3.1 The name for IADP Pulau Pinang is to be used instead of Seberang Perai/Balik Pulau while KETARA (Besut) should be used instead of Besut. The net, gross and irrigated area for the schemes and some other facts and figures need to be reconfirmed by the study team.
- 3.2 The Kerian/Sg. Manik scheme has two separate areas but they are under one management. It was pointed out that the Sg. Manik scheme with an area of about 6,000 hectares is not shown on the location map. The area specific approach for the schemes does not appear to include the Sg. Manik area.
- 3.3 The acronym for FELCRA is Federal Land Consolidation and Rehabilitation Authority.
- 3.4 Kemasin Semerak Project comprises two phases. Phase I, the Kemasin scheme with an area of about 1,700 hectares is completed while under phase II, the Semerak scheme with an area of about 5,250 hectares has yet to implement the irrigation component.
- 3.5 The team recognised that not all problems are listed in the inception report and more study will be conducted to identify them. Some facts and figures will be reconfirmed and amended appropriately during the field survey stage.
- 3.6 The plan for land use and farming practice should take into consideration the dynamic nature of the NAP. It is currently being reviewed where the target demand and production will include the significant number of foreign labour living in the country.

- 3.7 The team confirmed that water resource study is within the scope of the study based on the targeted cropping intensity which falls under the Irrigation/drainage consolidation plan. However, the development of new major water resources is not included in the study. The team will take note that DID is currently doing a water resource study for all the granary areas.
- 3.8 Under the same plan, the team will also take note that the state has the prerogative on matters pertaining to land and water. The state normally gives priority to domestic and industrial needs in case of water shortage. There is a need to utilise water efficiently or recycle water for irrigation. The team should also note that the schemes were designed based on transplanting and the land are mostly rented or leased thus the lack of interest to build onfarm irrigation/drainage infrastructure. This concern generally also applies to other areas.
- 3.9 The Drainage and Irrigation Act is currently being reviewed by DID. The study team will incorporate the requirements of the Act into the plan for water management and facilities and will propose amendments to the act if necessary.
- 3.10 The choice for scheme to be included in the feasibility study will take into consideration the study to be undertaken by FAO for the Kerian scheme which is expected to start sometime in September 1997 or January 1998. The scope of work for the FAO study will be provided to the study team.
- 3.11 The country aspires to achieve irrigation efficiency of at least 60%. The study team will look into the existing performance assessment programmes and consider appropriate measures to achieve it. Currently, the irrigation efficiency is about 40%.
- 3.12 Apart from on-farm productivity, the team will look into off-farm activities such as agro-tourism and the possibility of estate farming. To ensure the sustainability of paddy production, the team will perform a composite study as to capture the interest of both federal and the state government.
- 3.13 It was agreed that Preliminary EIA or what the study team referred to as IEE will be done during the master plan stage and the necessary full EIA study will be conducted during the feasibility study stage in consultation with DOE.
- 3.14 The Department of Irrigation and Drainage reiterated the need for counterpart training in Japan. However, it was confirmed that a Seminar will be conducted by JICA at the end of the feasibility study stage. The team will provide a list of technologies that will be introduced and transferred to Malaysian counterpart.
- 3.15 The study team requested for assistance from field officers. Sample questionnaire will be addressed to some 500 respondents. There is a need to identify liaison officer for each granary area under study and for each key agency (DID, DOA, FOA, etc.). The team will also looked into the use of existing socio-economic study as secondary data.

3.16 All IADPs are to provide the name and telephone numbers of counterpart to co-ordinate all requirements by the study team at locality level. Counterparts at departmental level will be as follows:

DID	-	Mr. Mohd Azhari Ghazalli	Tel 03-4403769
FOA	-	Mr. Mohd Noor Azhab b. Mohd Shazili	Tel 03-2505205
DOA	-	to be identified later	

3.17 Office space for the study team is located at DID Ampang. It will be ready by 15 March 1997. Telephone and Facsimile lines, furniture and central air-conditioning will be provided. Unit air conditioning will be installed later as the process takes time.



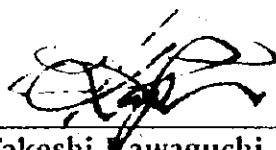
MINUTES OF MEETING
ON
PROGRESS REPORT I
FOR
STUDY
ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA

AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

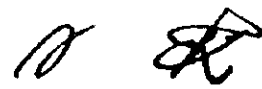
KUALA LUMPUR, 30 May, 1997



Mr. Ahmad Konchong
Director, Agriculture Section,
Economic Planning Unit (EPU),
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Kawaguchi
Leader, Study Team,
Japan International Cooperation
Agency



MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS OF PENINSULAR MALAYSIA

Technical And Steering Committee
Record of Discussion on the Progress Report 1

Date : 27 and 28 May 1997
Time : 9.00 am
Place : Bilik Gerakan,
Department of Irrigation and Drainage, Malaysia & Economic
Planning Unit (EPU) Prime Minister's Department.

Attendance:

Malaysian Side

- | | | |
|-----|--------------------------------|---|
| 1. | Mr. Ahmad bin Konchong | EPU, Chairman of Steering Committee |
| 2. | Ir. Chan Kwang Yew | JPS, Malaysia
- Chairman Technical Committee |
| 3. | Mr. Arisfadilah bin Sariat | EPU |
| 4. | Mr. Raj R. D'Nathan | MOA |
| 5. | Mr. Lim Lee | FOA |
| 6. | Dr. Mahmud Nor Jaafar | MARDI |
| 7. | Mr. Mokhtar Abdul Majid | DOE |
| 8. | Mr. Baharuddin Salehuddin | DOA |
| 9. | Mr. Haji Zainuddin bin Ibrahim | UPEN Kelantan |
| 10. | Mr. Kan Cheong Weng | Penang Water Authority |
| 11. | Ir. Shapiei Mustapa | Perak Water Board |
| 12. | Mr. Wan Ab. Aziz Wan Jaafar | Jab. Bekalan Air, Kelantan |

- | | | |
|-----|---------------------------------|------------------------------|
| 13. | Mr. Che Yunus Hasan | Jab. Bekalan Air, Terengganu |
| 14. | Mr. Mohd Azizi Mat Rais | IADP Kerian/Sg. Manik |
| 15. | Mr. Mohamed Nazli Abcl. Majid | IADP KETARA |
| 16. | Mr. Mohd. Zahari Awang | IADP Kemasin Semerak |
| 17. | Ir. Kamaruddin Saleh | IADP P. Pinang |
| 18. | Ir. Hj. Amirudin Hashim | IADP KETARA |
| 19. | Ir. Teoh Boon Pin | IADP Kerian/Sg. Manik |
| 20. | Ir. Tan Choo Yong | IADP Seberang Perak |
| 21. | Ir. Marina Marican bin Abdullah | IADP Kemasin Semerak |
| 22. | Ir. Salmiah bt. Abd. Rahman | JPS Trengganu |
| 23. | Ir. Masita Mohd. Yunus | JPS Kelantan |
| 24. | Ir. Zainuddin Yusoff | IADP P.Pinang |
| 25. | Ir. Leong Tak Meng | JPS, Malaysia |
| 26. | Ir. Rehan Ahmad | JPS, Malaysia |
| 27. | Mr. Junichiro Yamada | JPS, Malaysia |

JICA Representative

- | | | |
|----|-----------------------|------------------------|
| 1. | Mr. Takeshi Kawaguchi | JICA Study Team Leader |
| 2. | Mr. Kunio Goto | JICA Study Team |
| 3. | Mr. Jun Tsurui | JICA Study Team |
| 4. | Mr. Yem bin Othman | JICA Study Team |
| 5. | Mr. Adnan Mohd. Nor | JICA Study Team |
| 6. | Mr. Hideaki Higashino | JICA Study Team |
| 7. | Mr. Yishihiko Ogata | JICA Study Team |



8. Mr. Ko Watanabe JICA Study Team
9. Mr. Toshinori Isogai JICA Malaysia Office

1. Welcoming Speech By The Chairman Of The Technical Committee

1.1 The Chairman warmly welcomed all members of the Technical Committee and commenced the meeting at 9.00am. He conveyed an apology on behalf of Ir. Teh siew Keat who is unable to chair this morning's meeting. Subsequently he briefed the committee on some of the issues that were discussed at the last meeting and mentioned that the purpose of this meeting is to discuss the Progress Report (I) that JICA Study Team had submitted on 20 May 1997.

1.2 The Chairman then invited the Study Team Leader, Mr. Kawaguchi to present the Progress Report (I). Mr. Kawaguchi thanked members of the committee for their cooperation during the data collection stage. He mentioned that three survey works was carried out during Phase I as follows:

- Canal Route Survey
- Irrigation and Drainage System Survey
- Farm Survey

These surveys are still in progress and their results will be compiled in the report at a later date.

1.3 Regarding the size of the granary areas, the team leader mentioned that different values were reported in different reports. After a lengthy discussion, the committee decided that the following values be adopted in this study as follows:

- Kemasin Semerak 6,895 ha
- Kelara (Besut) 5,164 ha
- Pulau Pinang to be confirmed
- Kerian/Sg.Mauik 29,989 ha
- Seberang Perak 8,708 ha



- 1.4 In discussing the problems and constraints in the drainage and irrigation areas, it was pointed out that in Kerian, the problem of leaking drain bunds and numerous illegal drainage pipes must be tackled. It was also mentioned that presently water shortage is not a problem in IADP Seberang Perai.
- 1.5 It was agreed that all engineering survey results (eg. main canal, tertiary canal) carried out by JICA in this study be made available to members of the committee.
- 1.6 The study team noted that farmers participation in water users group etc is most active in Besut compared to other areas. It was pointed out that the formation of farmers group is easy but maintaining these groups requires much effort. It is not always necessary to form new groups but adjusting existing groups to perform new roles is preferred.
- 1.7 It was pointed out to the study team that contrary to the report, the padi yield in Kerian is much higher than that obtained at Sg. Manik. (refer pg 46)
- 1.8 The basic concept for project formulation as reported by the study team are as follows:
- Rehabilitation and Improvement Plan for Drainage and Irrigation facilities
 - Water Management Plan
 - Agricultural Development Plan
 - Agricultural Support Service Plan
 - Improvement Plan for Farmers Organisation
- 1.9 It was pointed out that the basic concept should include Human Resources Development Plan which discusses the role of farmers, operation and maintenance etc, and an Environmental Plan.



- 1.10 On the issue of rationalisation of granary areas, it was agreed that for IADP Pulau Pinang, the team should focus on Seberang Perai while the Kerian and Sg. Manik schemes could be considered as two entities due to the distance separating them. However any actual reclassification should be left to higher authorities.
- 1.11 Regarding the selection of priority schemes, many factors were considered and the technical committee agreed on the following in order of priority:
- (i) IADP Kerian
 - (ii) IADP KETARA (Besut)
 - (iii) IADP Pulau Pinang -(Seberang Perai only)
 - (iv) IADP Sebarang Perak
 - (v) IADP Kemasin Semerak
- 1.12 On the identification of a suitable area for pilot project, it is noted that an area of about 1000 ha shall be chosen from one of the three priority schemes. JICA and JPS shall formulate the criteria in selecting the project area and make a proposal to the committee at a later date.
- 1.13 The team leader mentioned that members are welcomed to review the Progress Report in greater detail especially the data presented and any necessary changes to the report could be made to the team within two weeks.

2. Welcoming Speech By The Chairman Of The Steering Committee

- 2.1 The Chairman extended his warm welcome to all present especially to Japanese Team and thanked them for their presence. After the briefing given by the Chairman of the Technical Committee and the Leader of Study Team, the meeting discussed and agreed on the following:

a) **Pilot Project Area.**

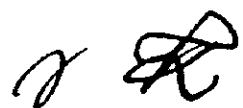
It is agreed that the pilot project will be carried out for the whole irrigation area of the IADP Besut instead of as appeared at Para

1.12. In this respect, the Japanese Team will advise the DID on the detailed concept and design while the actual design work will be undertaken by the DID staff.

b) Work Schedule

The Japanese Study Team will reschedule their work program in order to carry out the Pilot Project.

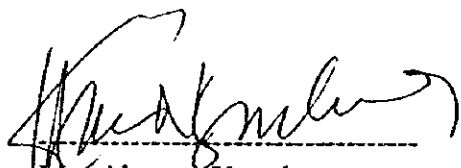
3. The Chairman concluded the meeting by thanking the Japanese Study Team for submitting the report on time.




MINUTES OF MEETING
ON
INTERIM REPORT
FOR
STUDY
ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA

AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR, 13 SEPTEMBER 1997



Mr. Ahmad Konchong
Director, Agriculture Section
Economic Planning Unit (EPU)
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Kawaguchi
Leader, Study Team
Japan International Cooperation
Agency

**MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS OF PENINSULAR MALAYSIA**

**Technical and Steering Committee
Record of Discussion on the Interim Report**

Date : 10th and 11th September 1997
Time : 9.00 a.m.
Place : Bilik Gerakan
Department of Irrigation and Drainage, Malaysia
: Bilik Mesyuarat FIC
Tingkat 4, Bangunan Baru Tambahan
Unit Perancang Ekonomi
Jabatan Perdana Menteri.

Attendance:

Malaysian Side

1. Mr. Ahmad Konchong Economic Planning Unit
Chairman of Steering Committee
2. Ir. Teh Siew Keat JPS, Malaysia
Chairman Technical Committee
3. Encik Raj R. D'Nathan MOA
4. Encik Abdullah Hassan FOA
5. Dr. Kassim Buhiran MARDI
6. Encik Aminuddin Shah Ahmad DOE
7. Puan Norlin Jaafar DOE
8. Encik Chua Lee Kiang DOE
9. Ir. Hj. Wan Amil Abas Lembaga Air Perak
10. Encik Wan Ab. Aziz Wan Jabatan Air Negeri Kelantan

11.	Ir. Mohd. Azizi Mat Rais (Wakil)	Pengarah IADP Kerian/Sg. Manik
12.	Encik Mohd. Amran Mohd. Nor	Pengarah IADP KETARA
13.	Encik Mohd. Zahari Awang	Pengarah IADP Kemasin Semerak
14.	Ir. Mohd. Yazid Abduillah (Wakil)	Pengarah JPS Terengganu
15.	Ir. Masita Mohd. Yunus (Wakil)	Pengarah JPS Kelantan
16.	Ir. Kamaruddin Salleh (Wakil)	Pengarah JPS P. Pinang
17.	Ir. Ng Sui Wan	Jurutera Projek IADP P. Pinang
18.	Ir. Zaki Mat (Wakil)	Jurutera Projek IADP KETARA
19.	Ir. Ngoh Tee Dong	Jurutera Projek IADP Kerian/Sg. Manik
20.	Ir. Raja Abdul Aziz Raja Ismail (Wakil)	Jurutera Projek IADP Kemasin Semerak
21.	Ir. Marinamarican Abdullah (Wakil)	Jurutera Projek IADP Kemasin Semerak
22.	Ir. Leong Tak Meng	JPS Malaysia
23.	Ir. Tajudin Sulaiman	JPS Malaysia
24.	Mr. Junichiro Yamada	JPS Malaysia
25.	Mr. Tengku Azmi Haji Tg. Jaafar	UPEN Kelantan
26.	Mr. Yap Ban Poe	Cawangan Bekalan Air JKR
27.	Mr. Mohamad Yazi Md. Zin	UPEN P. Pinang
28.	Mr. Arisffadilah Sariat	Economic Planning Unit
29.	Cik Zarina Kadri	Economic Planning Unit

JICA Representatives

1. Mr. Takeshi Kawaguchi JICA Study Team Leader
2. Mr. Kunio Goto JICA Study Team
3. Mr. Jun Tsurui JICA Study Team
4. Mr. Yem bin Othman JICA Study Team
5. Mr. Mohd. Adnan Mohd. Nor JICA Study Team
6. Mr. Yoshihide Teranishi JICA Malaysia Office
7. Mr. Yishihiko Ogata JICA Study Team
8. Mr. Yoshikazu Yamada JICA Malaysia Office

1.0 The Chairman extended his warm welcome to all present especially to Japanese Team and thanked them for the submission of the Interim Report. The purpose of this meeting is to consider the findings of the report.

2.0 The Committee noted that most of the tables in the Summary were not dated and their sources not identified. Likewise, tables in Annexes, are also not dated and sources not identified. The Consultant explained that those tables were dated and their sources were identified in the main text. The meeting agreed that the Consultant take steps to rectify the shortcomings.

3.0 Similarly, the Committee also noted that on Para 05, page S-1 the statement regarding the targetted yield and cropping intensity must also be clarified in terms of time.

4.0 The Committee noted the tables on page S-8 seemed not to be consistent particularly regards to relationship between yield and farm income. The Consultant explained that besides yield, farm income is also determined by farm size and cropping intensity. However, the Committee


felt that the poverty rate stated in the table could not be satisfactorily accounted for. The meeting agreed that the Consultant should verify the figures in the two tables particularly regarding the poverty rate.

5.0 Regarding the water balance study, the Committee noted that Table I-1 made reference to 1976 data. The consultant explained that actually they made reference to 1976-1993 data, but took 1976 as sample. The meeting agreed that the Consultant must provide detailed information on the basis used to select the data and other relevant data.

6.0 The Committee also noted that the water balance study has not taken into consideration the future demand of water for non-farm uses such as domestic and industrial requirements. This aspect will become critical in future with the increasing demand for water as the result of population growth and industrial development, among others. At present, this problem is already been faced in P.Pinang and Kerian. The Consultant explained that they find hard to do the projection due to lack of information. Nonetheless, the Committee felt that the projections are critical and information can be obtained from the Waterworks Department. In this context the value of 4.4 cumec extraction from Bukit Merah reservoir for domestic and industrial use (Pg 16) need to be confirmed.

7.0 In view of the limitation mentioned above, the Committee noted that the result of water balance study as given on page S-12 will be more severe if future water extractions are considered. Therefore, such figures should be used with caution by policy makers.

8.0 The Committee noted the consultant's recommendations on water users groups and farmers' participation relating to O&M. This issue will become critical in the future as the Government expects farmers to be more self-reliant. However, the issue needs to be further considered in terms of its implications on financing, water rights, legal structure and viability, among others. The issues of land rehabilitation and land levelling also warrant similar detailed attention and clarity in approaches to their



implementation. These should be incorporated in the Master Plan.

9.0 The Committee noted that the Consultant has not done any empirical calculation of the water efficiency levels on various granaries. The measurement of water efficiency level is an important aspect of water management which should have been done in a study of this kind. The meeting agreed that this capability be incorporated in the irrigation water management system that is to be developed.

10.0 The Committee noted the proposed steps for the water management system covering the hardware and software aspects. The Committee emphasised that the system to be developed must be the state-of-the-art incorporating future developments in the technology in the area. In this respect, the Committee is not convinced of the status of CROPWAT proposed by the Consultant. The Consultant need to provide the detailed evaluative assessment of the technology proposed vis-a-vis other alternatives that are available. Such evaluation must be incorporated in the report to be submitted by the Consultant.

11.0 Regarding the size of the granary areas, it was pointed out to the team leader that the area of Kerian/Sg.Manik should be 29878 ha, instead of 29989 ha which was agreed earlier. A breakdown of the area is as follows:

Kerian	Kerian Laut	13726 ha	
	Kerian Darat	9834 ha	23560 ha
Sg. Manik	Labu Kubong	2716 ha	
	Sungai Manik	3602 ha	6318 ha
	Total		29878 ha


12.0 Referring to the findings for the Kemasin Semerak scheme, it was found that the analysis was based on river flows of the Kemasin and Semerak rivers alone. However, in reality a more complex water distribution system involving Sg. Kelantan and farm water recycling would

be adopted in future. It was agreed that a discussion among DID, JICA Study Team and Perunding Bakti (the Consultant for Kemasia Semerak Project) would be arranged by DID to better understand the planning and design criteria for the scheme. The Study Team is expected to review all the findings on Kemasin Semerak scheme after the discussion.

13.0 It was observed that some of the facts and figures presented in the report need to be reviewed. The Study Team was requested to check all the data presented in the report and revise where necessary. It may be necessary for the Study Team to contact the relevant agencies. On the other hand, agencies concerned could contact the DID or the Study Team regarding amendments to be made, preferably before November 1997. Some of the necessary amendments identified during the meeting are as follows:

- (a) the various types and number of farmer groups as reported in item 23 page S-7
- (b) the pump station on Kerian River serves as an intake facility/ water source for Kerian Laut sub-scheme, and not Kerian Darat sub- scheme. Refer page S-9.
- (c) the analysis for Besut Scheme which was carried out using little available data and generated data from the Tank Model need confirmation from data recently collected. Such data should be made available to the Study Team.
- (d) the reference to the DOA's recommended rate of fertilizer as reported in page 92 need further discussion with the DOA.

14.0 It was pointed out that while considerable work was carried out on IEE, the summary on Environment (page S-8) is too brief and should be elaborated. The heading on IEE (pg S-16) should be changed to Initial Environmental Examination / Environmental Management Plan. The issue of environment is expected to be critical in future both in term of air and



water quality which the granary will have significant direct impact. The report should include the impact of agricultural modernization on the environment such as disposal of paddy straw and husk, increased use of fertilizers on drainage water quality, crop intensification on air quality etc. Although the EMP for Malaysia is still being finalized, the study team should make comparisons with international standards adopted by developed countries such as Japan.

15.0 The Study Team reported that in the water balance study, the planned cropping pattern is adopted if it does not differ very much from the actual cropping pattern. This happens in most cases except for the Kerian Scheme where the actual cropping pattern was adopted in the analysis. However the modified cropping pattern proposed under planning formulation is similar to the planned cropping pattern.

16.0 Regarding the Rehabilitation and Improvement Plan for Irrigation and Drainage Facilities, the Study Team was requested to seriously consider water recycling as an alternative, where applicable.

17.0 The meeting also agreed that the Information Display / Dissemination System from the Control Room to Project Monitoring Unit, FOA etc is good but should cover the water aspects as well as other aspects such fertilizer application, cropping schedule etc. Updating of data in the system is important and this requires concerted effort from the various agencies. Since DID is the main agency involved, the control room should preferably be located in the DID local office.

18.0 The Study Team was advised to tailor their findings in accordance with the National Agricultural Policy (NAP) which is being revised. The Ministry of Agriculture should be consulted for access to the recommendations on this revised NAP.

19.0 The meeting took note that the Master Plan when finalized will form part of the Final Report. The Master Plan should address short and long term measures to modernize irrigation management in the study area. Strategy and cost estimate in implementation are also expected.

20.0 The meeting agreed to the proposal by the Study Team that the three schemes selected for the Feasibility Study be:

- (a) Kerian Scheme
- (b) Ketara (Besut) Scheme
- (c) Pulau Pinang Scheme

21.0 As decided by the Steering Committee earlier, the meeting was informed that the pilot project is Besut Scheme. In this connection, the state of art technology should be applied. Among others, the pilot project will include telemetry/automation, computerized system of water management, irrigation performance assessment and monitoring of farm activities. In view of the short time available, the various parties involved were requested to put in extra effort to ensure smooth implementation of the project.


22.0 The Malaysian Government repeated the request for one additional counterpart training in Japan.

23.0 The Chairman thanked Mr. Kawaguchi for presenting the report which was subsequently accepted by the steering and technical committee. He thanked all members for their presence and adjourned the meeting at 12.40pm.

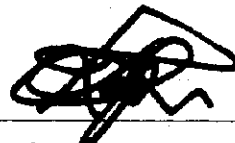


MINUTES OF MEETING
ON
PROGRESS REPORT II
FOR THE STUDY ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA
AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR, 27 DECEMBER, 1997



Mr. Ahmad Konchong
Director, Agriculture Section,
Economic Planning Unit (EPU),
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Kawaguchi
Leader, Study Team,
Japan International Cooperation
Agency

**MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS OF PENINSULAR MALAYSIA**

**Steering Committee
Record of Discussion On The Progress Report II**

Date : 23rd December, 1997
Time : 9.00 a.m.
**Place : Bilik Mesyuarat FIC
Tingkat 4, Bangunan Baru Tambahan
Unit Perancang Ekonomi
Jabatan Perdana Menteri.**

Attendance:

Malaysian Side

- | | | |
|-----|-----------------------------------|--|
| 1. | Mr. Ahmad Konchong | Economic Planning Unit (EPU)
Chairman of Steering Committee |
| 2. | Dr. Muhamad Hamzah | EPU |
| 3. | Ir. Teh Siew Keat | JPS, Malaysia |
| 4. | Encik Jamalulail Abu Bakar | MOA |
| 5. | Ir. Leong Tak Meng | JPS |
| 6. | Ir. Tajudin Sulaiman | JPS |
| 7. | Encik Aminuddin Shah Ahmad | DOE |
| 8. | Y.M. Tengku Azmi b. Hj Tg. Jaafar | UPEN Kelantan |
| 9. | Tuan Hj. Abdul Latib b. Markom | EPU |
| 10. | Cik Zarina b. Kadri | EPU |
| 11. | Encik Arisfadilah b. Sariat | EPU |

JICA/Study Team Representative

- | | | |
|-----|---------------------------|------------------------|
| 1. | Mr. Takeshi Kawaguchi | JICA Study Team Leader |
| 2. | Mr. Kunio Goto | JICA Study Team |
| 3. | Mr. Jun Tsurui | JICA Study Team |
| 4. | Mr. Yem bin Othman | JICA Study Team |
| 5. | Mr. Mohd. Adnan Mohd. Nor | JICA Study Team |
| 6. | Mr. Shinichi Takefuta | JICA Study Team |
| 7. | Mr. Yishihiko Ogata | JICA Study Team |
| 8. | Mr. Hideaki Higashino | JICA Study Team |
| 9. | Mr. Ko Watanabe | JICA Study Team |
| 10. | Mr. Teranishi Yoshihide | JICA Malaysia office |
| 11. | Mr. Tanaka Motonori | JICA Malaysia Office |

OPENING REMARKS

The Chairman extended his warm welcome to all present especially to Japanese Team and thanked them for the submission of the Progress Report II. The purpose of this meeting is to consider the findings of the report. The meeting then received a briefing by the Study Team Leader Mr. Takeshi Kawaguchi.

PLANNING PREMISES FOR THE WATER MANAGEMENT SYSTEM

2. The meeting took note of the underlying planning premises on which the proposed modernization plan for irrigation water management system in the granary areas as presented in Chapter 3. However, the Committee pointed out some reservations on the proposed planning premises as follows:



i. SSL Target

The word 'minimum' under item 1 of the second para on page 3-1 should be deleted;

ii. Yield

The figure 5 tonnes/ha under item 4 of the second para on page 3-1 and subsequently should be changed to 5.5 tonnes/ha;

iii. Cropping Intensity

The figure 180% cropping under item 4 of the second para on page 3-1 and subsequently should be deleted;

iv. Farmers' Involvement

In principle, the Committee agreed on the planning premises proposed for the strengthening of the farmers' organisations and their taking over of the operation of the water management system through the establishment of Water User Groups. In this respect, the Committee emphasised the transitory role of the PMUs of the IADPs in the granary areas intended in the NAP. However, this objective is to be achieved in the long run and thus the JICA Study Team should develop the system under an intermediate period during which the IADP is still actively involved.

v. Financial Analysis of Padi Production

The Committee noted the shortcomings in the financial analysis of padi planting as presented by the JICA Study Team shown in Appendix 3.1, particularly with regard to the capping of maximum yield at 5 tonnes/ha whereas MARDI has established the potential yield to be at



11 tonnes/ha. Furthermore, the analysis is not supported by detailed breakdown of the production costs. The JICA Study Team should make available these data and revise the assumptions accordingly in their next Report.

vi. **Environmental Management**

The meeting agreed on the proposed incorporation of environmental aspect in the water management system which includes the establishment new posts and a system of water sampling to monitor the water quality as detailed out in Chapter 5. However, the meeting took note of the error relating to the preparation of the Manual for Biological Parameters stated in page 5-11 in view of explanation by the representative of the DOE to the contrary.

THE PROPOSED WATER MANAGEMENT SYSTEM

3. The meeting took note of the proposed the Pilot Project (Water Management System) as detailed out in Chapter 6. However, the Committee pointed out some reservations on the proposed Water Management System as follows:

i. **Planning Tool**

The Committee noted that the information on water management generated by the proposed WMS was only at the compartment level. The WMS should therefore be strengthened to enable it to determine decisions about water flows to the KP level in details in terms of volume of water and time.

ii. **Dissemination**

The WMS must also be able to be used as a management tool, including the determination and dissemination of planting schedule to the

Two handwritten signatures in black ink are located at the bottom right of the page. The first signature is a cursive 'J' or similar character, and the second is a more complex cursive signature.

farmers. Such capability should consider the establishment of Info Kiosks and other sub-systems including Manual systems which would be able to disseminate planting information more effectively. The JICA Study Team should examine these requirements in detail and propose possible solutions in the next Report.

iii. Integration of the sub-systems

The Committee noted the lack of integration between SCADA, WMS, and SCALA. This would make the proposed System ineffective as a Water Management System. The JICA Study Team should therefore incorporate the three sub-systems (SCADA, WMS, SCALA) to form an integrated system to enable it to become a more effective water management system.

iv. Costs and Capital Expenditure Plan

The Committee took note of the various capital expenditure on infrastructure which need to be built to support the WMS. The Committee requested that such items be prioritized and classified accordingly and the development of the list of criteria to be used in their selection must also be detailed out and supported with explanation of their basis for selection.

v. Environment

In view that environmental concerns would grow in importance in the future and the development of environmental monitoring technology, the Committee decided that sensing devices for water quality monitoring be included in the Pilot Project in Besut.



TYPOGRAPHICAL ERRORS

4. The JICA Study Team was requested to correct the following typographical errors in the Report:

- (a) Farm Income Level on Pg 2-13 should be clarified to be in Malaysian Ringgit per family per year.
- (b) Area Farmer's Organization (PPK) should be changed to Farmers Organization Authority (LPP) where applicable.
- (c) Land consolidation mentioned in para 3.2.5 should be clarified as steps to reorganize small farm plots into larger plots of about 3 to 5 ha.
- (d) Telemetry system on pages 4-46 and 4-57 be changed to tertiary system.
- (e) Pulau Pinang Scheme K1B on page 4-32 should be denoted as a granary area.
- (f) Information on the status of land leveling in each granary area in Table 4.1.7 pg 4-54 should be provided.
- (g) Table 4.3.1 in pg 4-65 should be updated with the latest information.

WORK SCHEDULES

5. The Committee noted that the Draft Final Report will be tabled in May 1998 and requested the JICA Study Team to submit the report at least two weeks before the scheduled date of meeting. The meeting was also informed that a seminar would be conducted around that time to disseminate the findings of the Study to relevant parties. Details of the seminar is still being worked out.

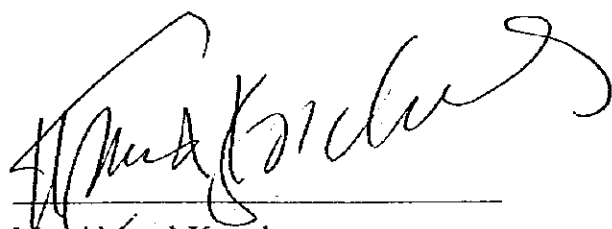


6. The Chairman thanked Mr. Kawaguchi and JICA Study Team for the preparation and presentation of the Progress Report II and adjourned the meeting at 1.00 pm.



MINUTES OF MEETING
ON
DRAFT FINAL REPORT
FOR THE STUDY ON
MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS
OF PENINSULAR MALAYSIA
BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR, 2nd June 1998



Mr. Ahmad Konchong
Director, Agriculture Section,
Economic Planning Unit (EPU),
Prime Minister's Department
on behalf of
the Government of Malaysia



Mr. Takeshi Kawaguchi
Leader, Study Team,
Japan International Cooperation
Agency

**MODERNIZATION OF IRRIGATION WATER MANAGEMENT
SYSTEM IN THE GRANARY AREAS OF PENINSULAR MALAYSIA**

**Steering Committee
Record of Discussion On The Draft Final**

Date : 2nd June, 1998
Time : 9.00 a.m.
**Place : Bilik Mesyuarat FIC
Tingkat 4, Bangunan Baru Tambahan
Unit Perancang Ekonomi
Jabatan Perdana Menteri.**

Attendance:

Malaysian Side

- | | | |
|-----|------------------------------|-------------------|
| 1. | Mr. Ahmad Konchong | Chairman |
| 2. | Dr. Muhamad Hamzah | EPU |
| 3. | Ir. Teh Siew Keat | JPS |
| 4. | Mr. Raj R. D' Nathan | MOA |
| 5. | Ir. Leong Tak Meng | JPS |
| 6. | Ir. Tajudin Sulaiman | JPS |
| 7. | Hajah Hanili Ghazali | DOE |
| 8. | Mr. Anuar bin Awang Mohd | UPEN Terengganu |
| 9. | Mr. Mohd. Yazid b. Mohd Zain | UPEN Pulau Pinang |
| 10. | Mr. Arisfadilah b. Sariat | EPU |

JICA/Study Team Representative

- | | | |
|----|---------------------------|------------------------|
| 1. | Mr. Takeshi Kawaguchi | JICA Study Team Leader |
| 2. | Mr. Kunio Goto | JICA Study Team |
| 3. | Mr. Mohd. Adnan Mohd. Nor | JICA Study Team |
| 4. | Mr. Yoshihide Yoshihide | JICA Malaysia Office |
| 5. | Mr. Motonori Tanaka | JICA Malaysia Office |

OPENING REMARKS

The Chairman welcomed the JICA's Study Team and explained the objective of the meeting was to discuss the Draft Final Report.

The meeting then received a briefing by the Study Team Leader Mr. Takeshi Kawaguchi.

MAIN ISSUES DISCUSSED

2. The meeting took note the findings of the Study Team and raised the following major issues:

a) Economic Evaluation

It was explained to the Committee that the calculation of the economic evaluation of the proposed Modernization Programme was based on the economic prices which excluded subsidy elements and the likes. However, the financial evaluation of the project was based on unit price which include price subsidy.

b) Yield Improvement

The Study Team Leader explained the improvement in yield generated by the project would be realised five years after the project completion. This point was in reply to the question raised regarding the attainability of the yield improvement assumed in calculation of the economic viability of the project.

c) Water Balance Study

The Study Team explained that the water balance study was based on the drought level of one in five years. It is agreed that the Study Team should come out with more stringent drought estimates by working on a more pessimistic drought position in order to help policy formulation contingency plans in the event of water shortages in the future. In this regard, the meeting agreed that the figures on projected domestic water demand be given by the Public Work Department to the Study Team by June 15, 1998 to enable The Study Team work out the analysis.

d) Water Users Development

The Committee took note the proposed Water User Group development submitted by the Study Team and the reservations raised by the DID at the Technical Committee Meeting on the extent of the saving in O&M. The meeting agreed to consider the Water User Group Development proposal as alternatives to be considered in developing future policy.



3. In conclusion, the Committee agreed on the proposed submission as presented in the Draft Final Report subject to the comments above. The Chairman wished to place on record a deep appreciation on the effort extended by the Study Team and JICA in conducting the Study successfully.

4. The meeting was adjourned at 12.00 noon with note of thanks to all the members.

b agn

JICA