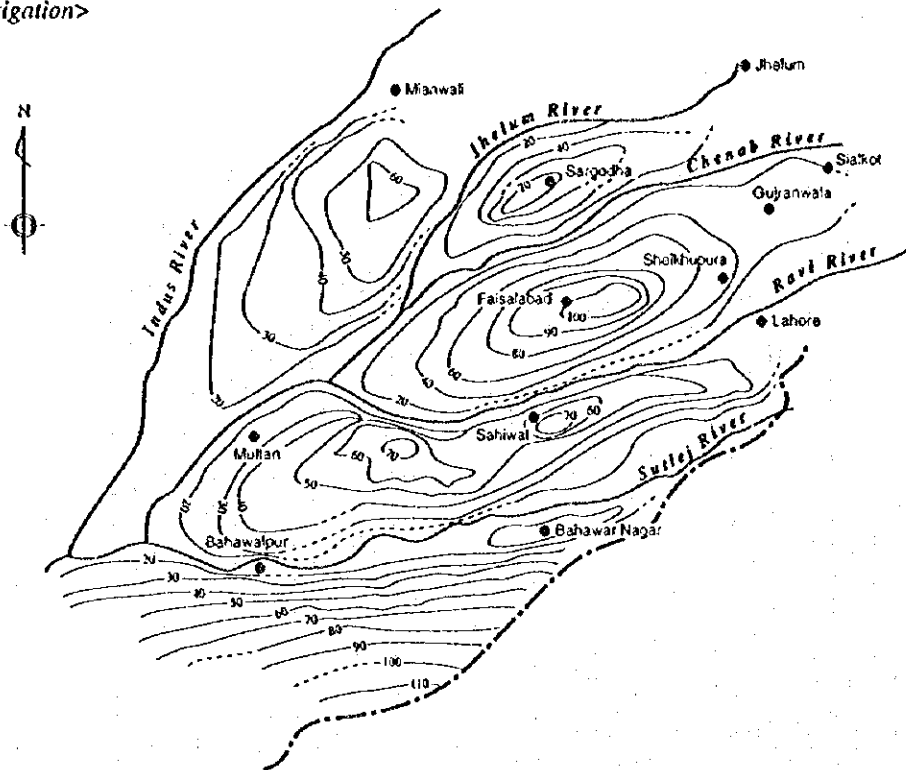


FIGURES

< Pre Irrigation >



< Post Irrigation >

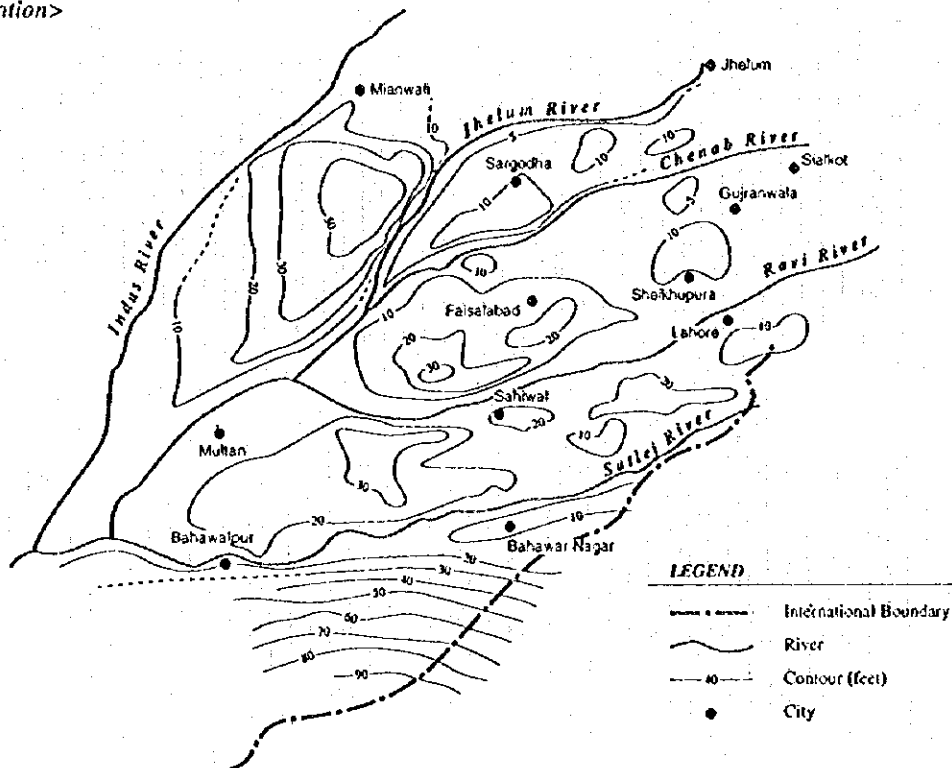


Fig. 3.1.3-1 Ground Water Depth Contours for Pre Irrigation and Post Irrigation Period (1960) in Punjab

Source: Ground Water Resources of Pakistan - Dr. Nazir Ahmad

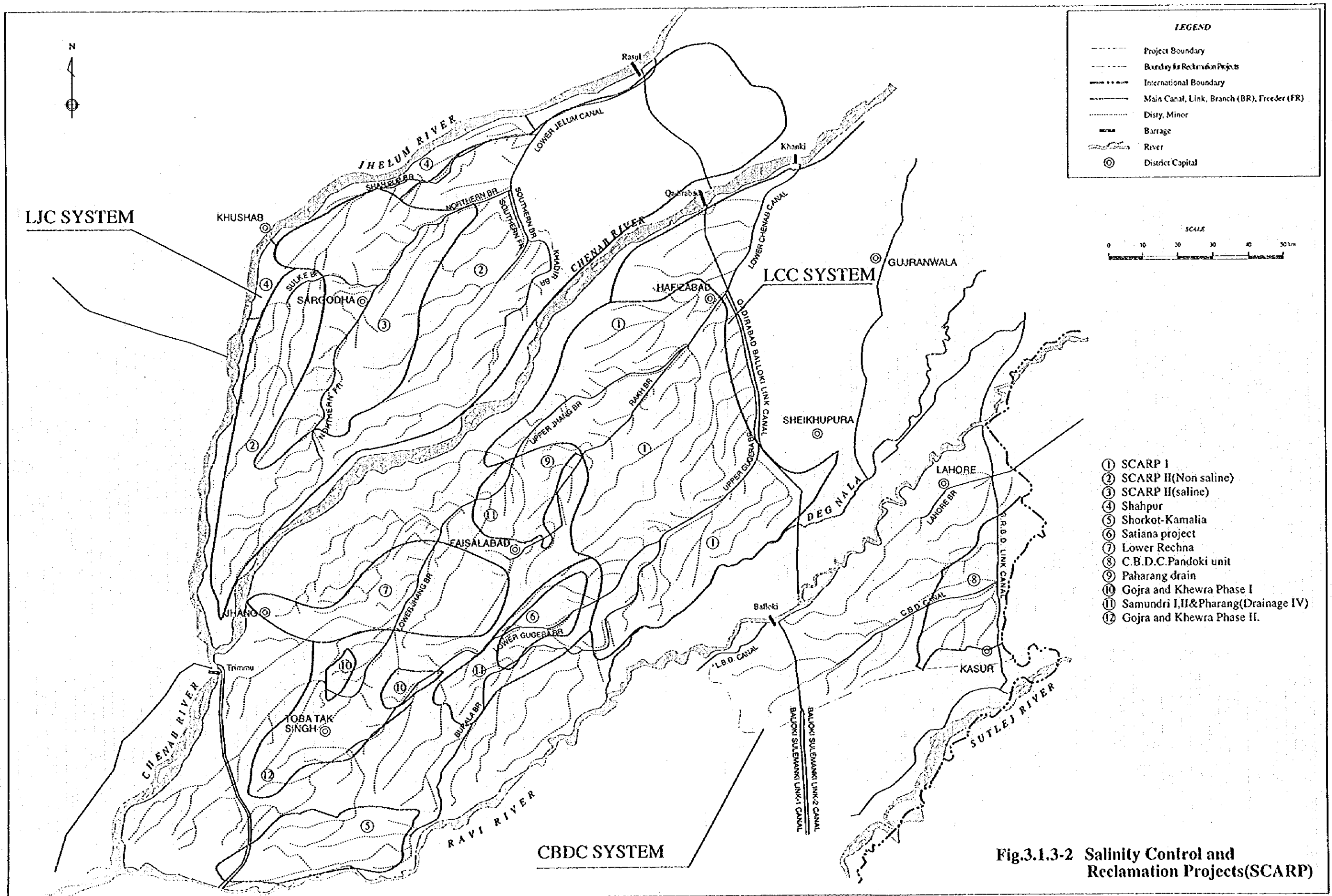
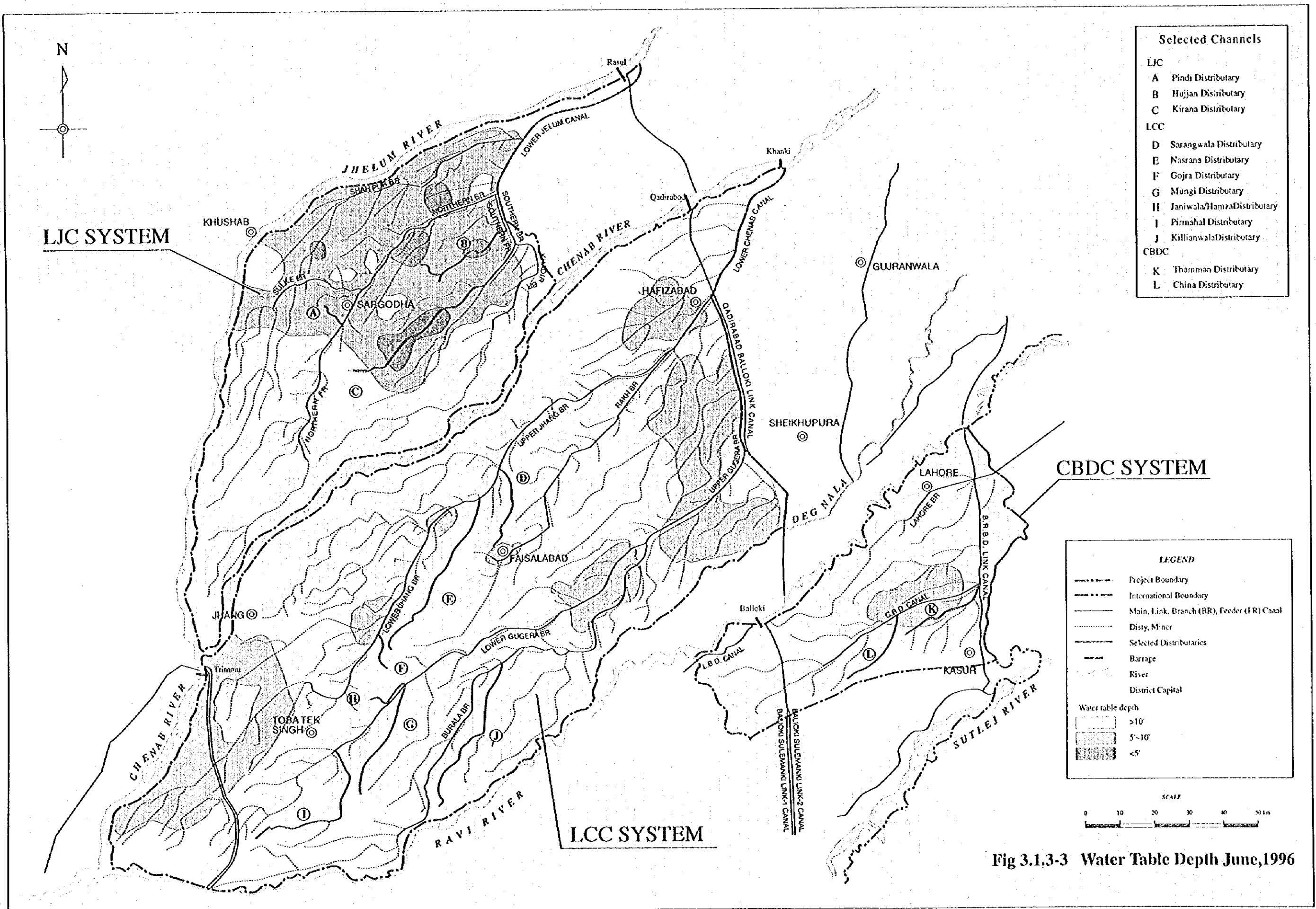


Fig.3.1.3-2 Salinity Control and Reclamation Projects(SCARP)



- Selected Channels**
- LJC
 - A Pindi Distributary
 - B Hujjan Distributary
 - C Kirana Distributary
 - LCC
 - D Sarangwala Distributary
 - E Nasrana Distributary
 - F Gojra Distributary
 - G Mungi Distributary
 - H Janiwal/Hamza Distributary
 - I Pirmahal Distributary
 - J Killianwala Distributary
 - CBDC
 - K Thanman Distributary
 - L China Distributary

LEGEND

- Project Boundary
- - - International Boundary
- Main, Link, Branch (BR), Feeder (FR) Canal
- ... Disty, Minor
- - - Selected Distributaries
- Barrage
- River
- District Capital

Water table depth

- >10'
- 5'-10'
- <5'

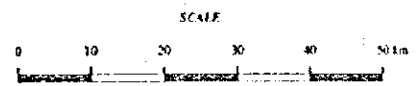


Fig 3.1.3-3 Water Table Depth June, 1996

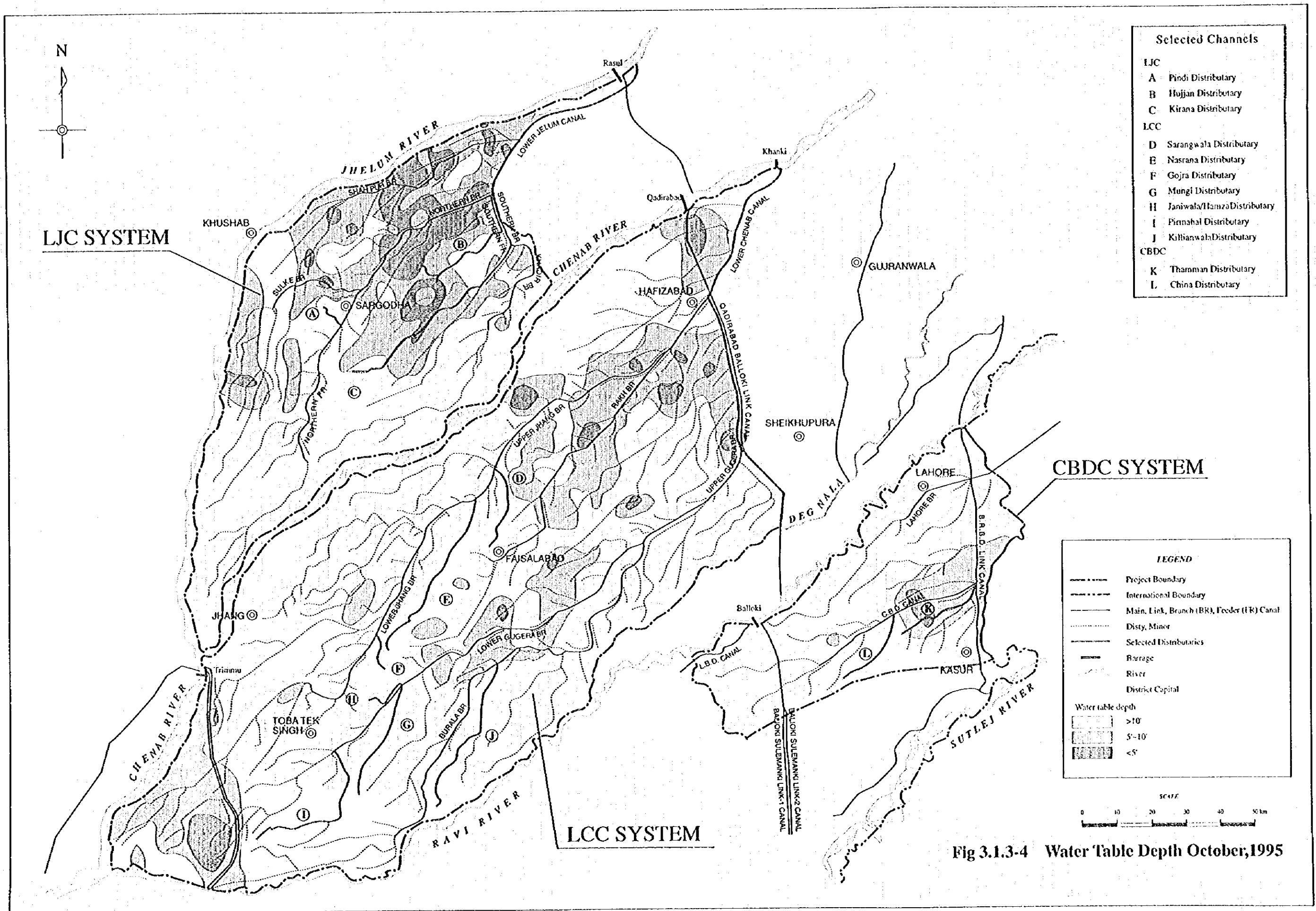
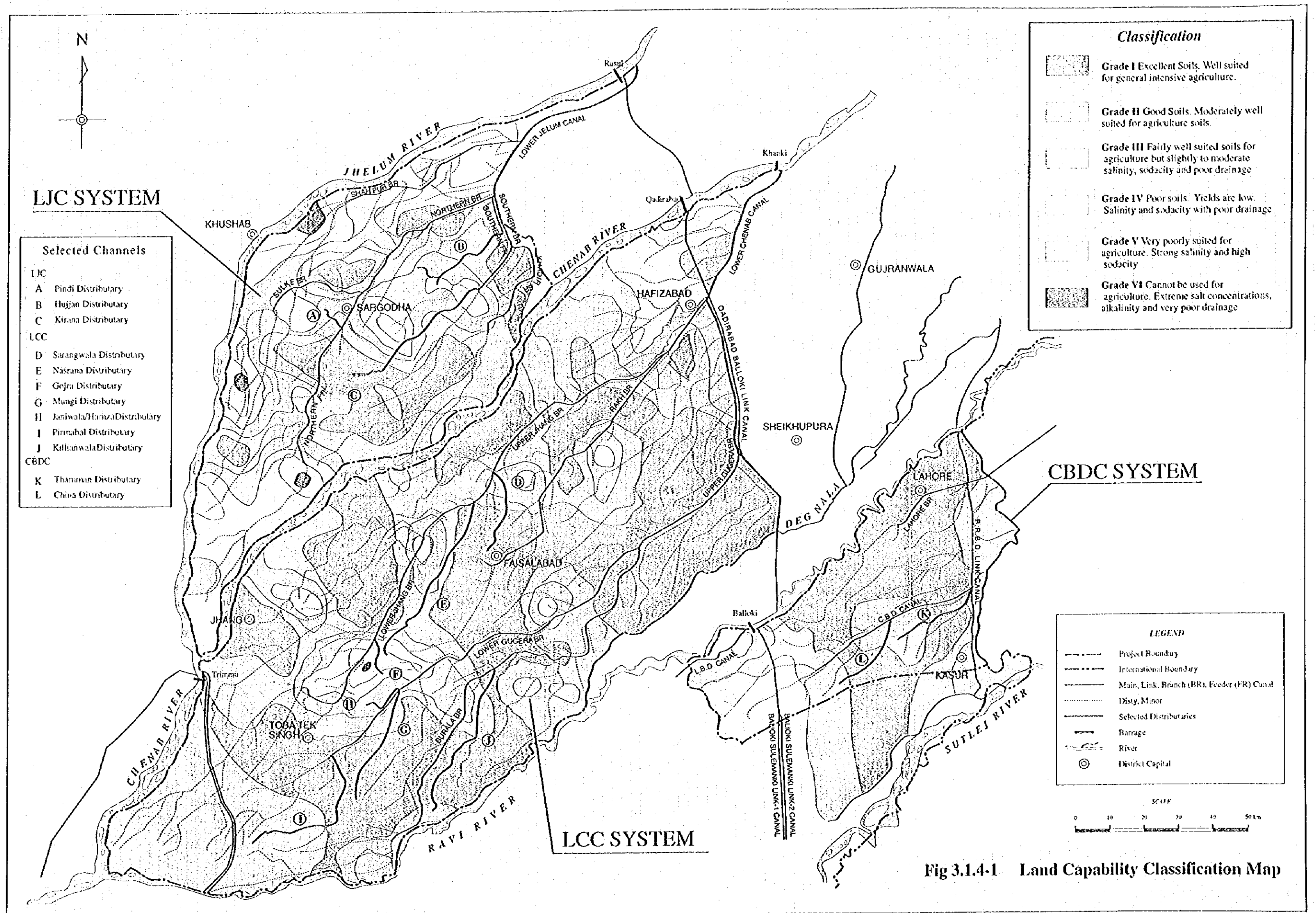


Fig 3.1.3-4 Water Table Depth October, 1995



LJC SYSTEM

- ① Fateh Pur Disty
- ② Lak Disty
- ③ Blochera Disty
- ④ Dherama Disty
- ⑤ Jani Disty
- ⑥ Pindi Disty
- ⑦ Old Khatwan Minor
- ⑧ Naurang Disty
- ⑨ Shergarh Minor
- ⑩ Lakhwana Minor
- ⑪ Sobhi Disty
- ⑫ Hujjan Disty
- ⑬ Chokera Disty
- ⑭ Assian Minor
- ⑮ Kirana Disty
- ⑯ Malkana Minor
- ⑰ Wasuana Minor
- ⑱ Rodian Minor
- ⑲ Lalian Disty
- ⑳ Kohir Minor

LCC SYSTEM

- ① Vanik Disty
- ② Jallal Disty
- ③ Chinot Disty
- ④ Sarang Wala Disty
- ⑤ Nasarana Disty
- ⑥ Sultan Disty
- ⑦ Bhangu Disty
- ⑧ Darsana Disty
- ⑨ Khrwara Disty
- ⑩ Aruri Disty
- ⑪ Sial Wala Minor
- ⑫ Dijkot Disty
- ⑬ Gajiana Disty
- ⑭ Karkan Minor
- ⑮ Ghour Dour Disty
- ⑯ Tarkhan Disty
- ⑰ Mungi Disty
- ⑱ Pir Mahal Disty
- ⑲ Bhalak Branch Disty
- ⑳ Killianwala Disty

CBDC SYSTEM

- ① Chinna Disty
- ② Turkwind Disty
- ③ Handal Disty
- ④ Rakh Disty
- ⑤ Vahn Disty
- ⑥ Thaman Disty
- ⑦ Athilpur Minor

LEGEND

- Project Area (LJC System)
- Project Area (LCC System)
- Project Area (CBD System)
- International Boundary
- Main Canal, Link, Branch (BR), Feeder (FR)
- Disty, Minor
- Surveyed Canal
- Barrage
- River
- District Capital



Figure 3.3.3-1 Seepage Survey Sites

Figure 3.3.3-2 Frequency Distribution of Seepage Rate of Unlined Distributaries and Minors

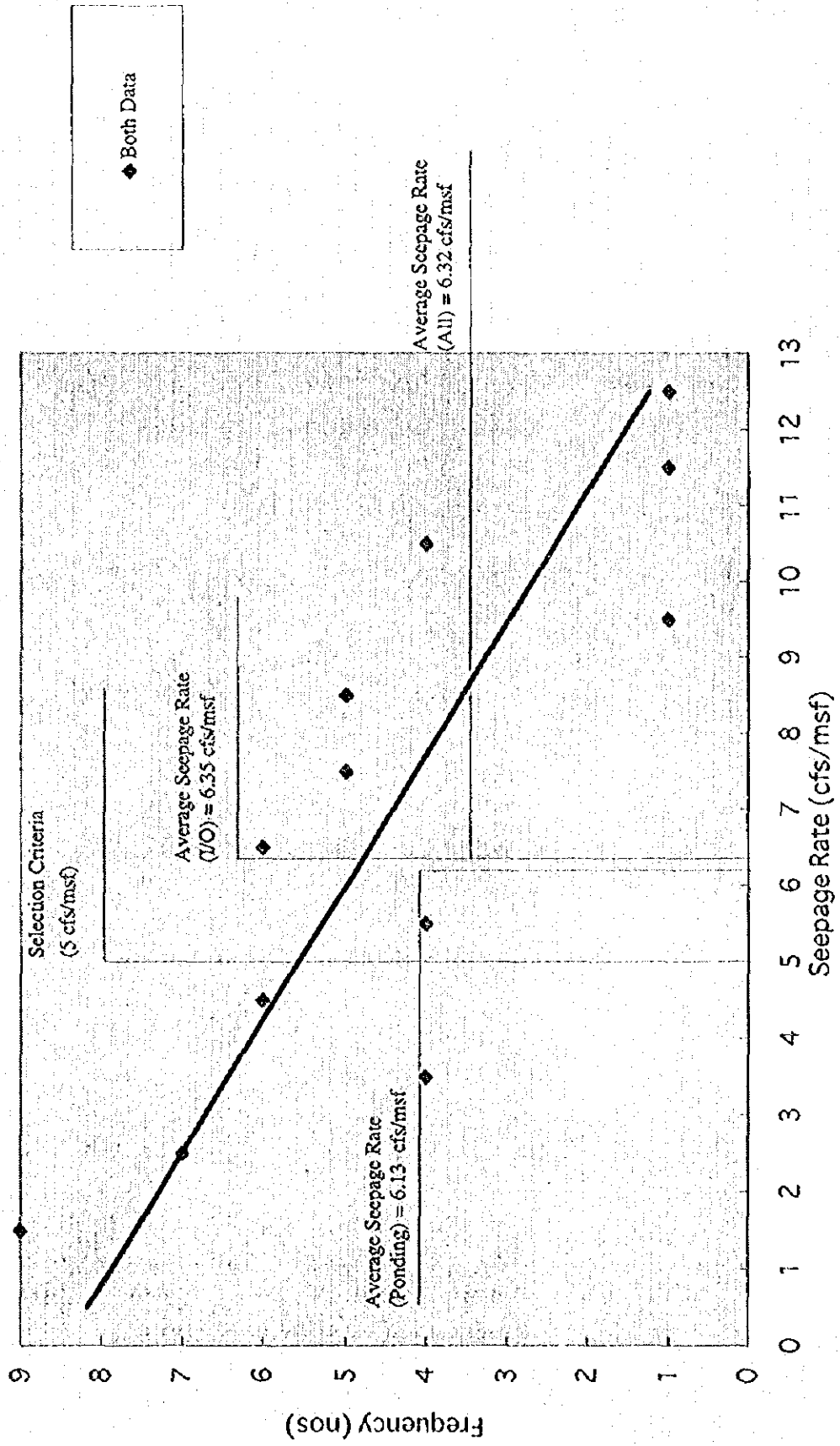


Fig. 3.3.5-1 Inequity of Water Distribution

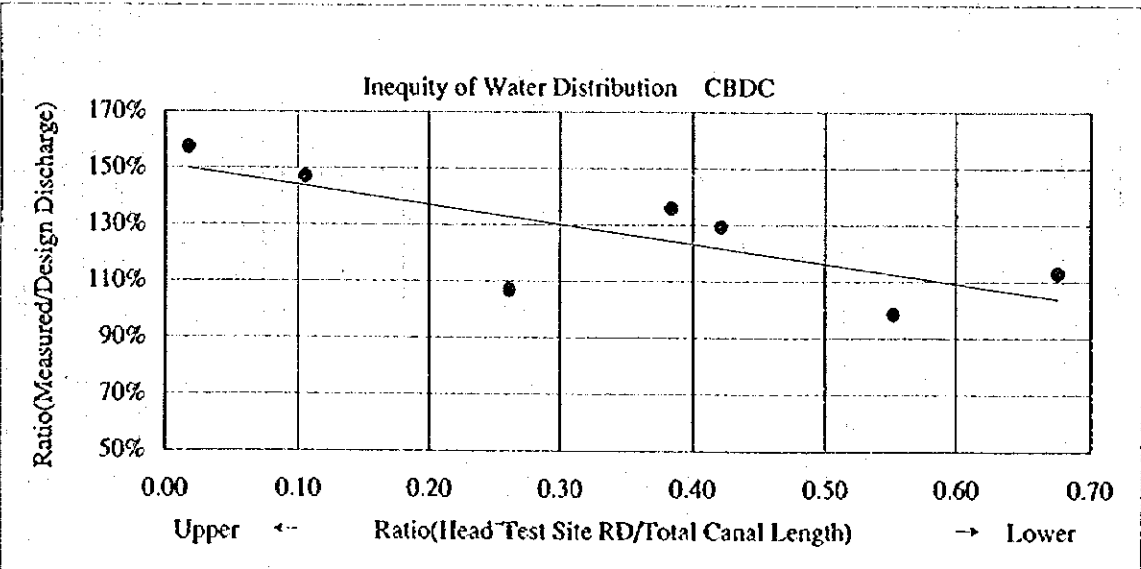
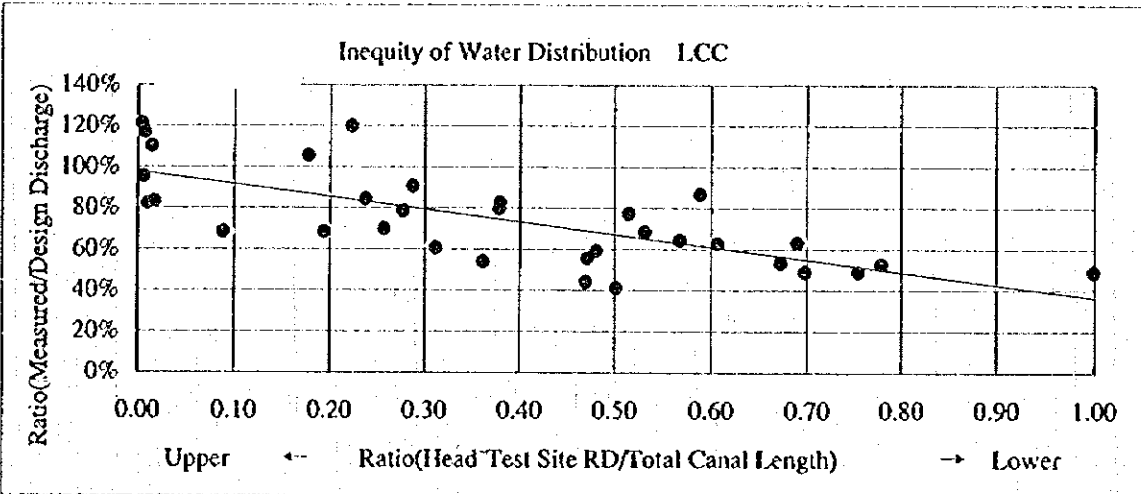
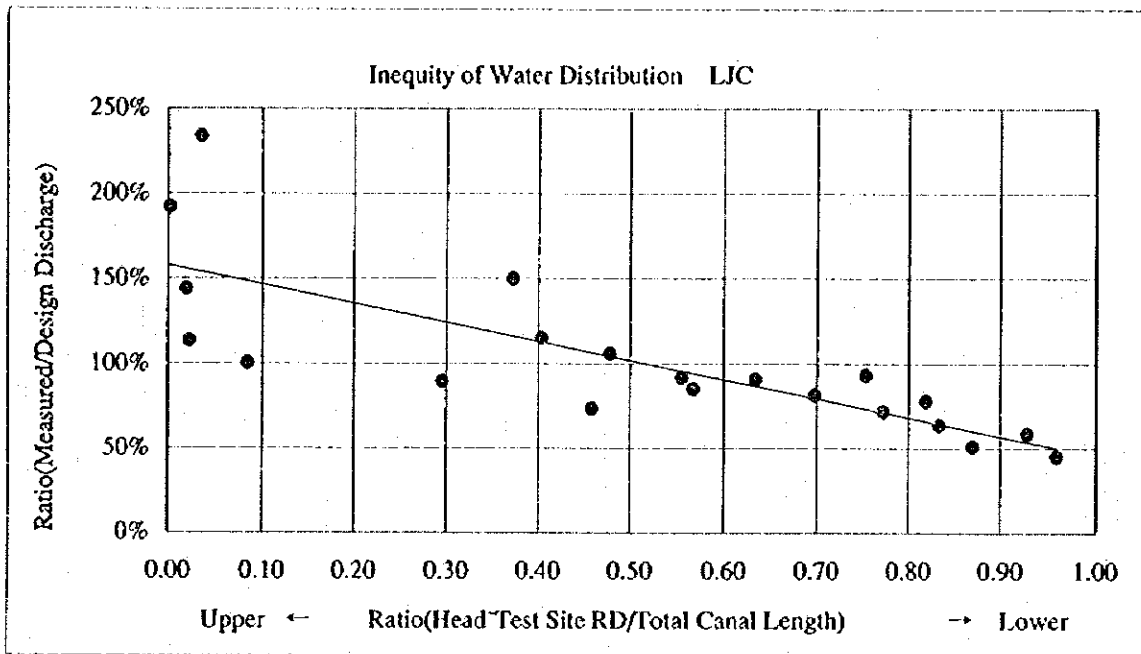


Fig. 3.4.1-1 ORGANIZATION CHART OF PUNJAB IRRIGATION DEPARTMENT

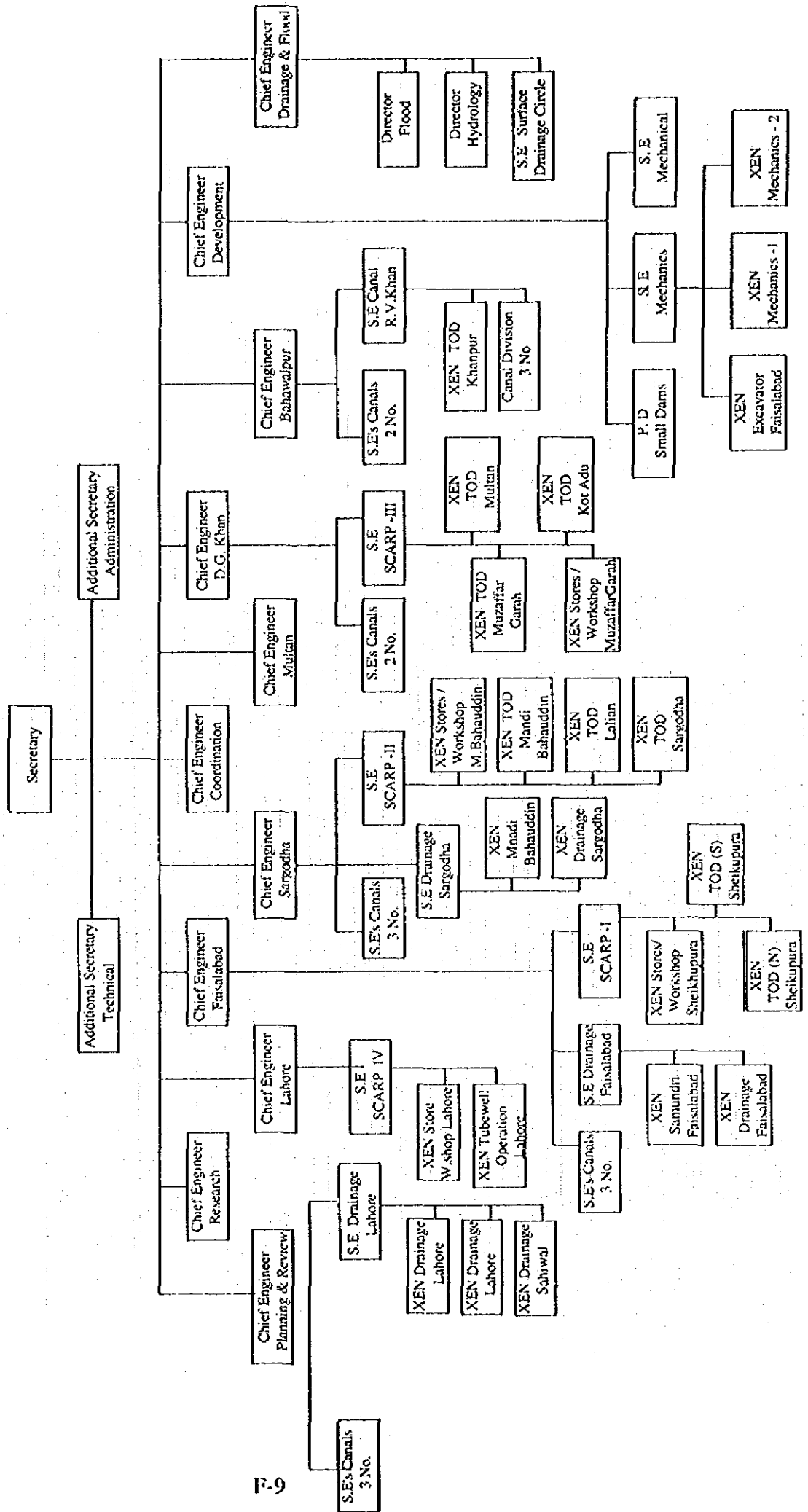


Fig. 3.4.1-2 ORGANIZATION CHART OF SARGODHA IRRIGATION ZONE

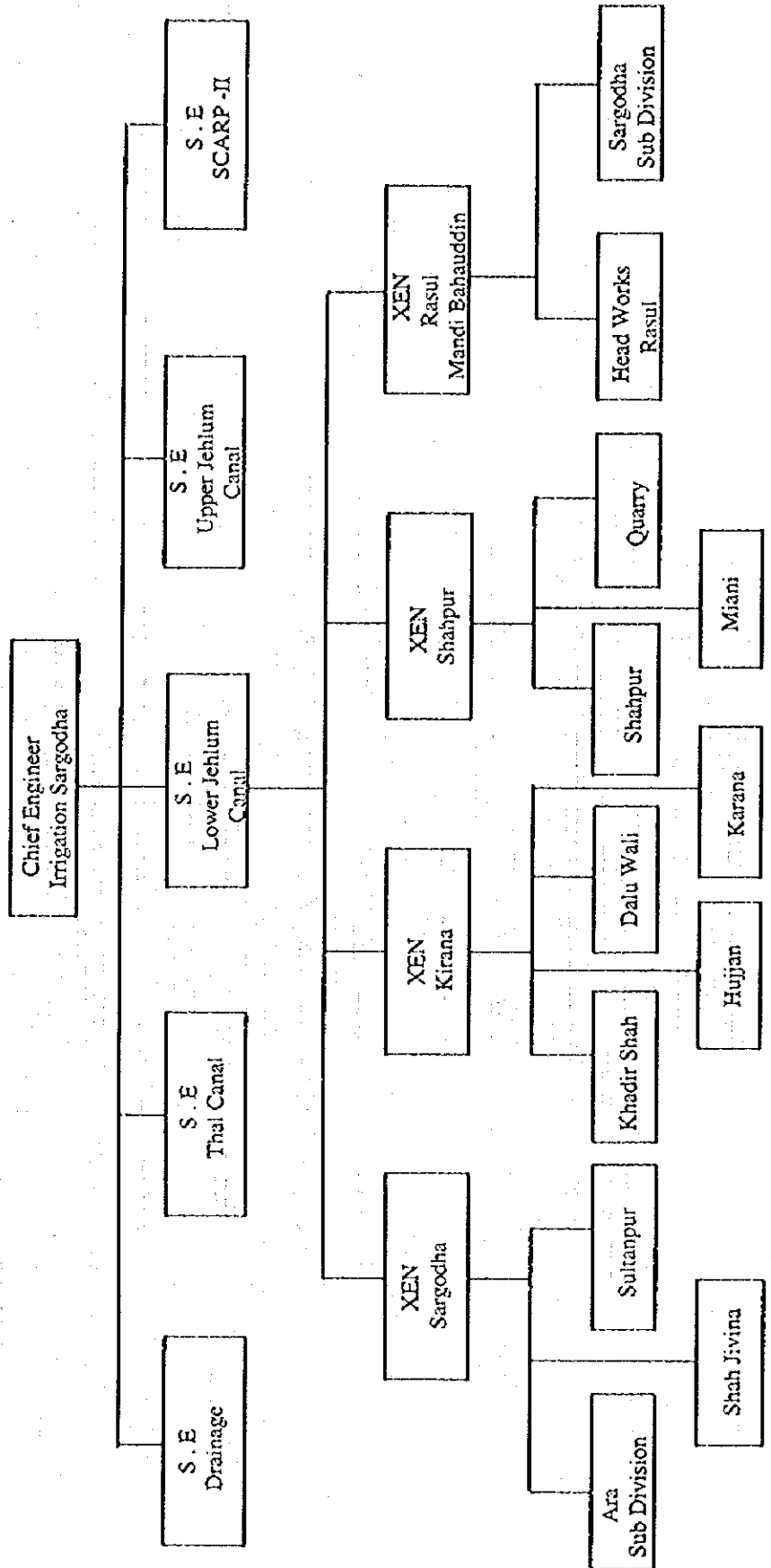
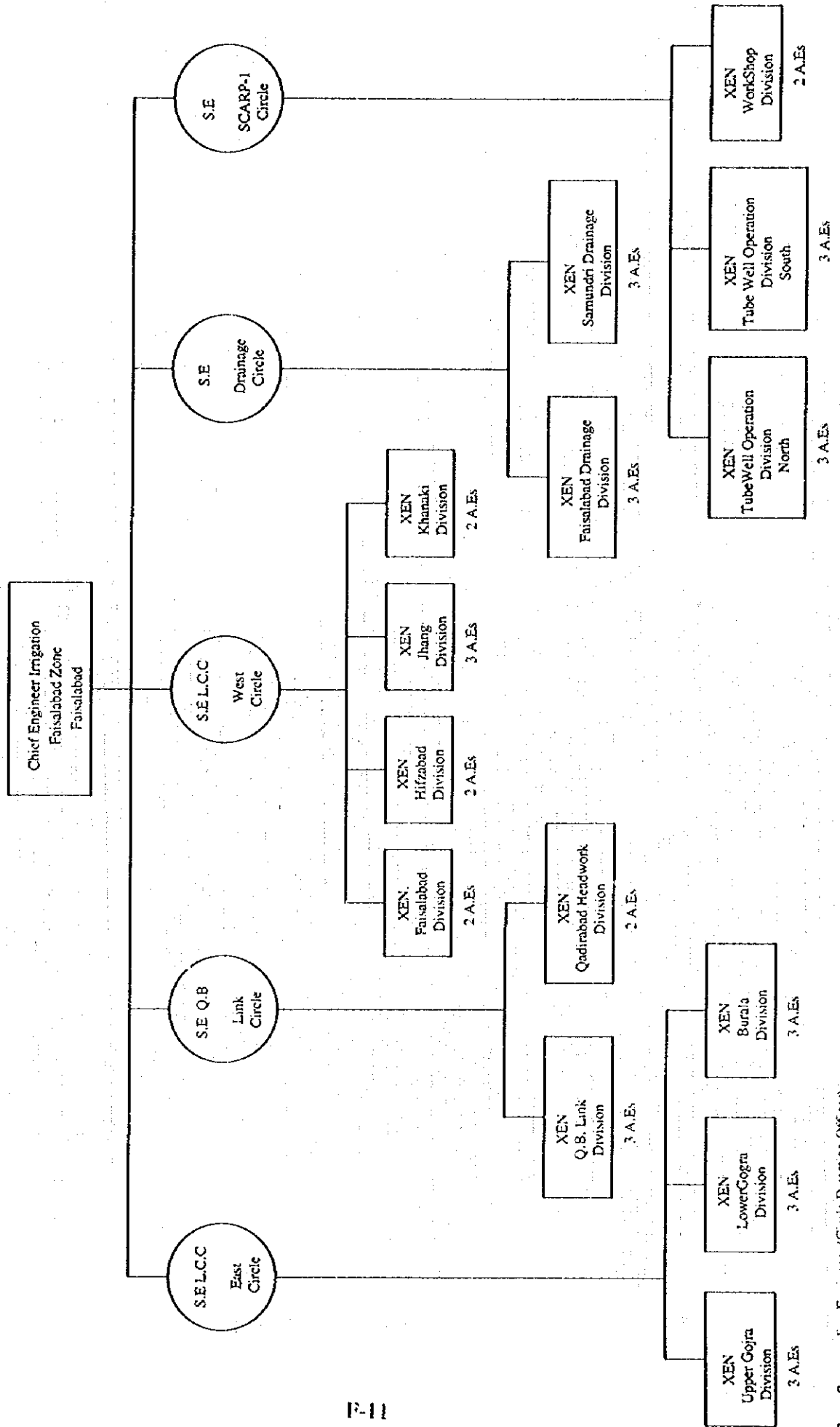


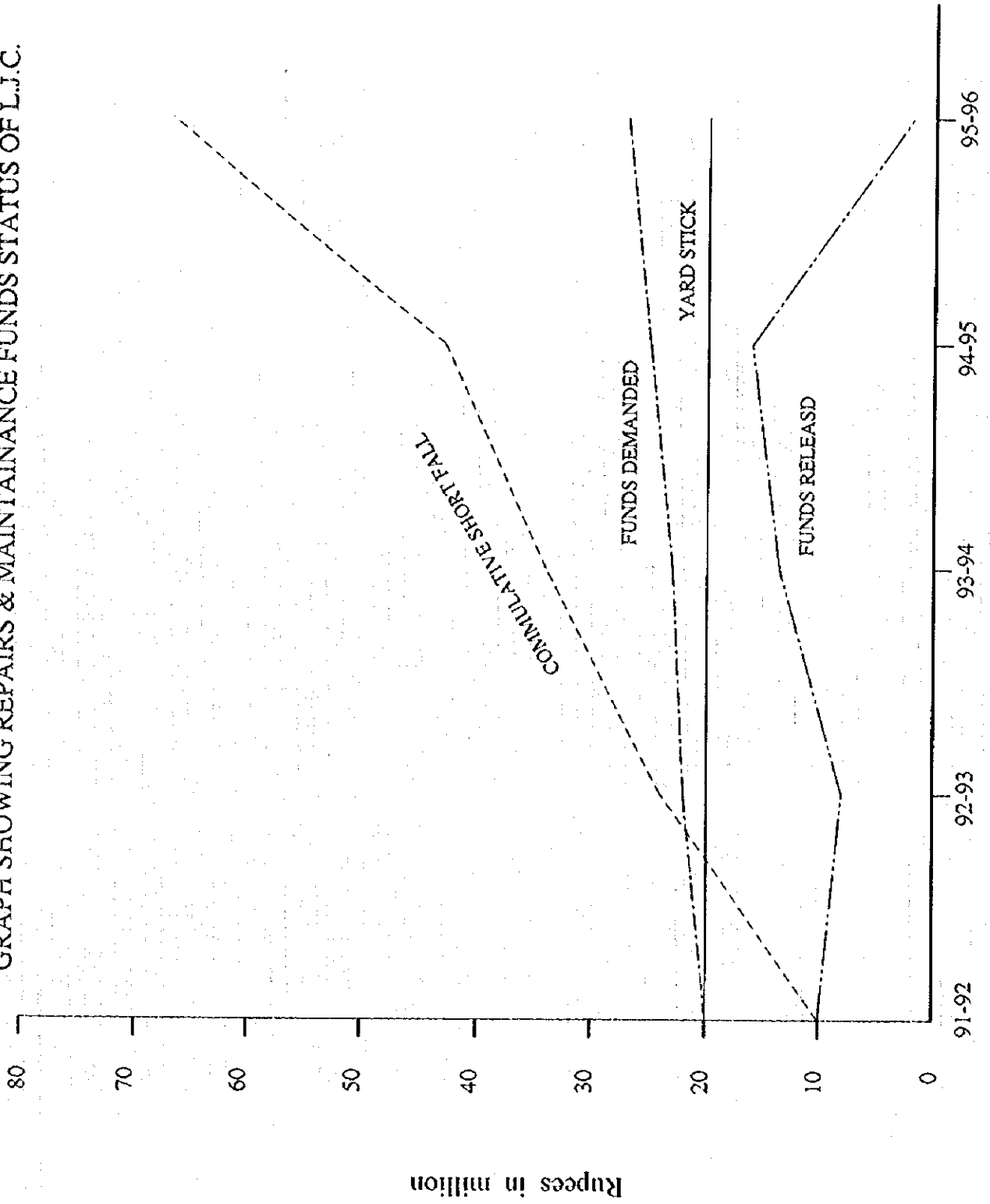
Fig. 3.4.1-3 ORGANIZATION CHART OF FAISALABAD IRRIGATION ZONE



S.E: Superintending Engineers (Circle Direction Officer)
 XEN: Executive Engineer (Divisional Officer)
 A.E: Assistant Engineer (Subdivisional Officer)

Fig. 3.4.1-4

GRAPH SHOWING REPAIRS & MAINTAINANCE FUNDS STATUS OF L.J.C.



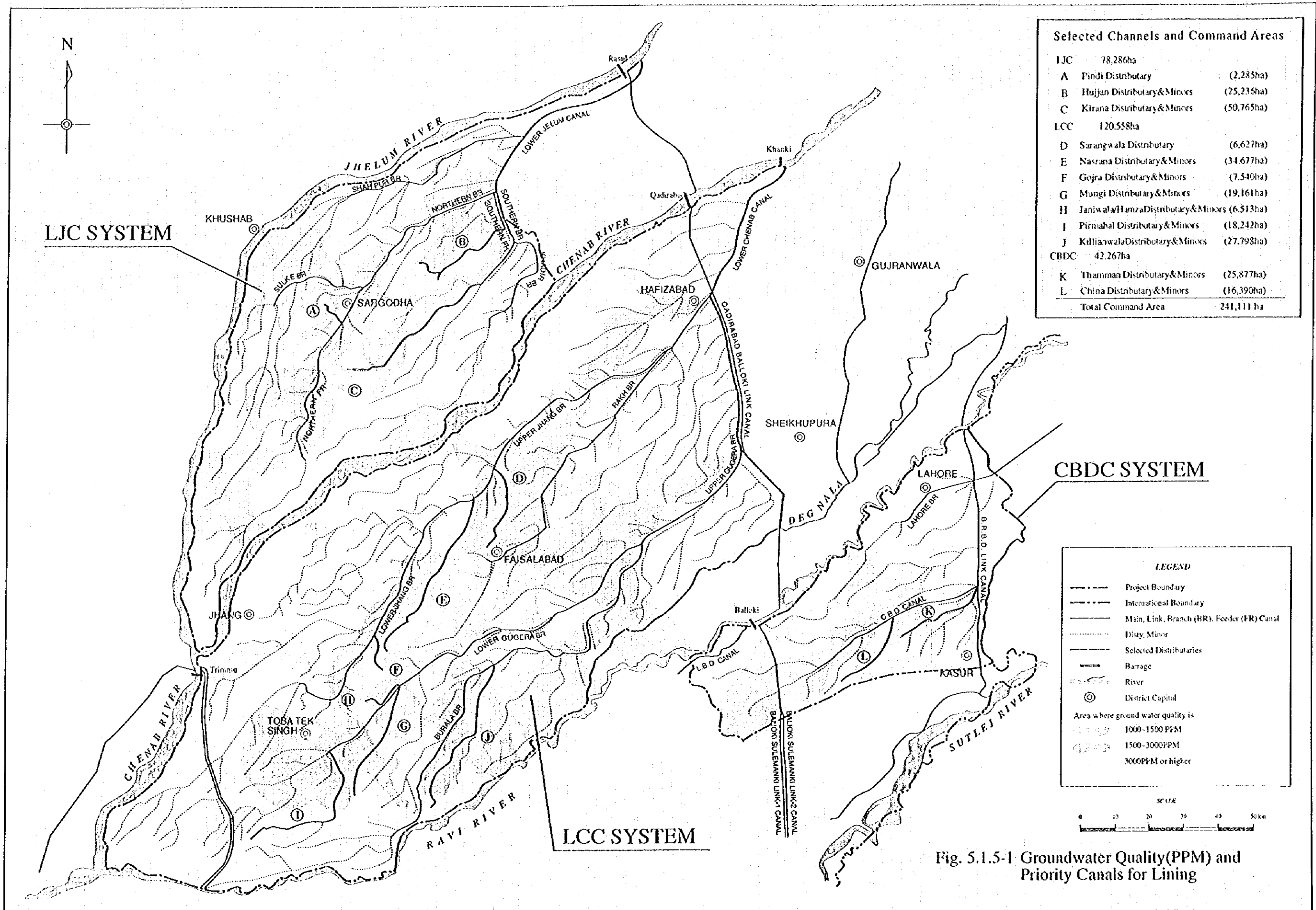
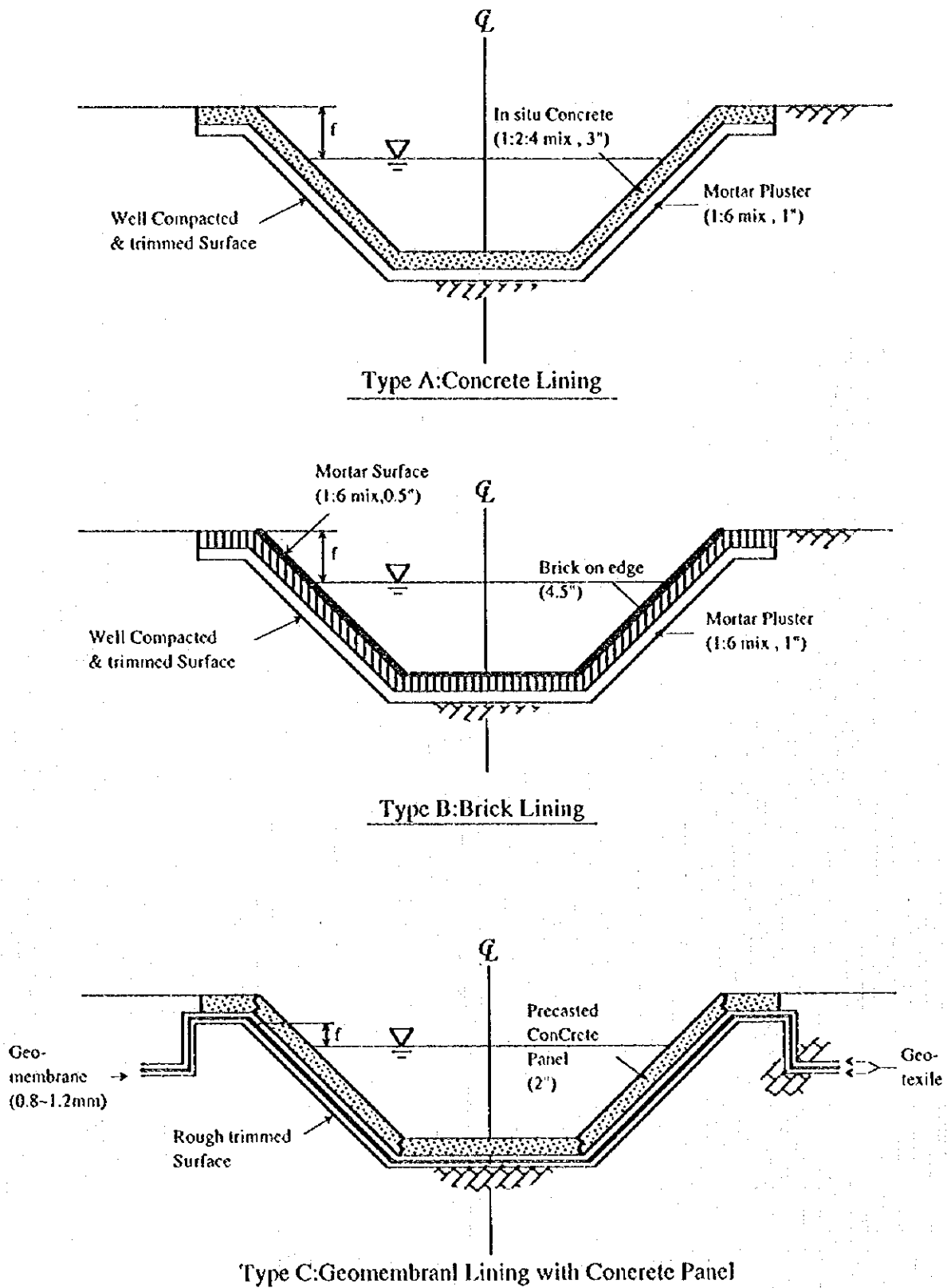


Fig. 5.1.5-1 Groundwater Quality (PPM) and Priority Canals for Lining



Note f: Free Board

Figure 5.2.4-1 Alternative Lined Canal Section

Figure 5.2.4-2 Design B/D Ratio for Discharge

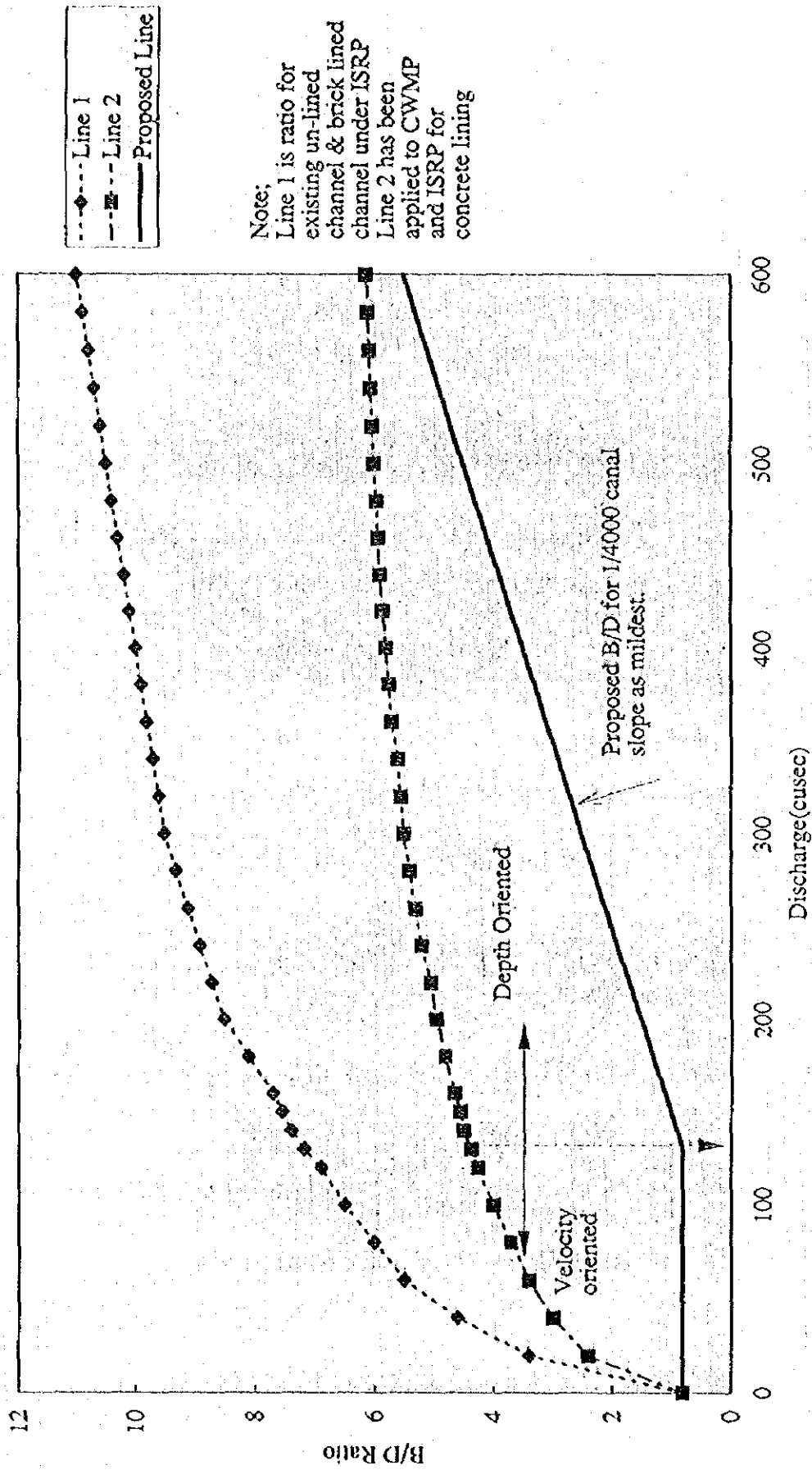


Figure 5.2.4-3 Proportionality Comparison of Outlet(AOSM)

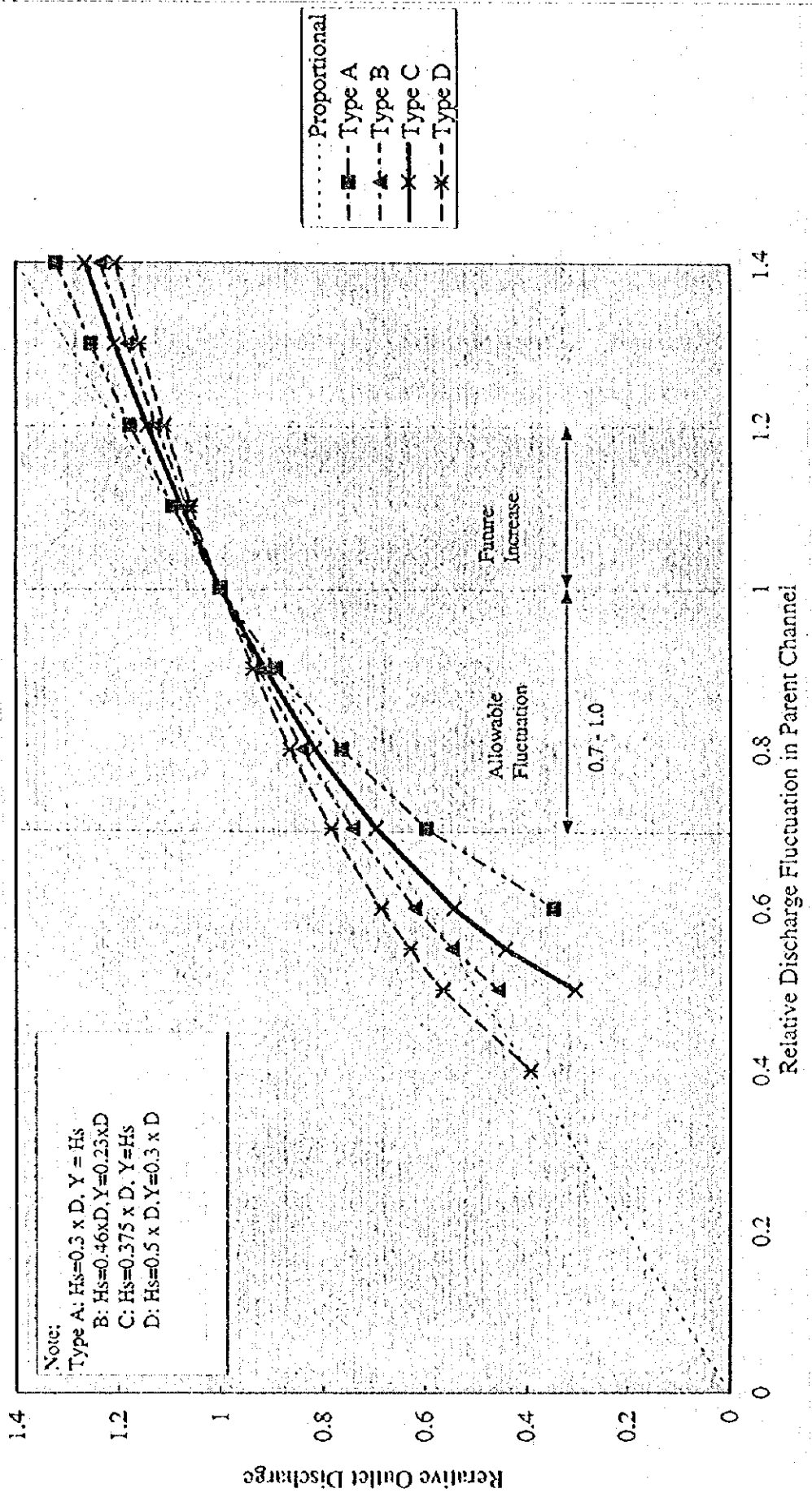
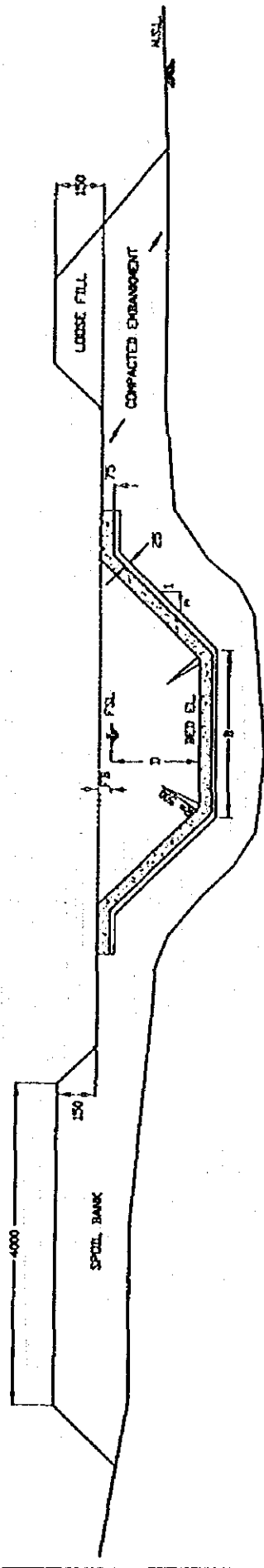
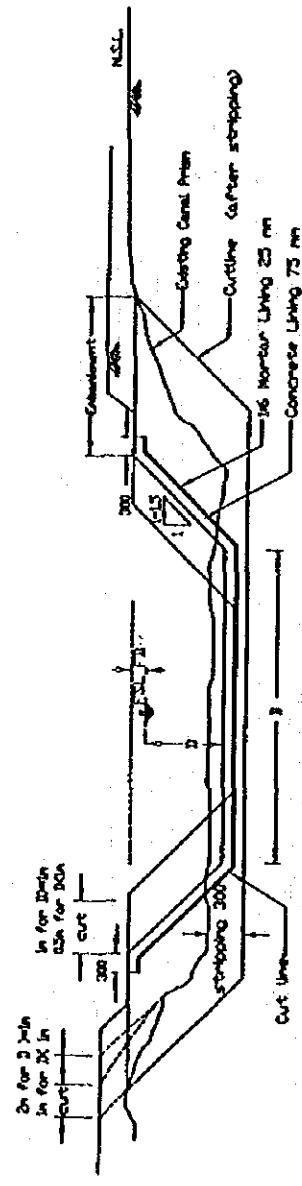


Figure 5.2.5 - 1 Typical Cross Section of Lined Canal



TYPICAL COMPLETED CANAL FEATURES



TYPICAL CONSTRUCTION DETAILS

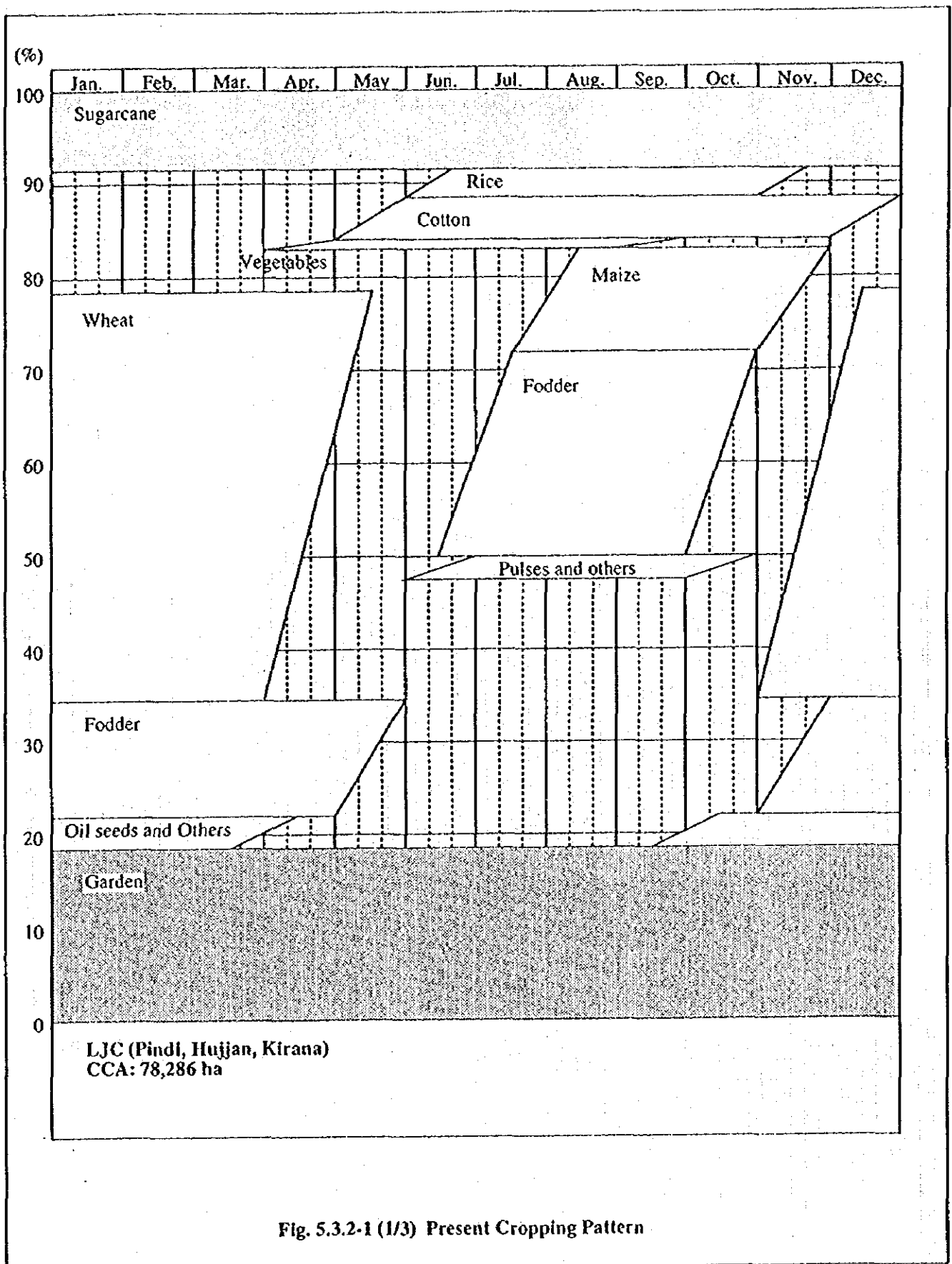


Fig. 5.3.2-1 (1/3) Present Cropping Pattern

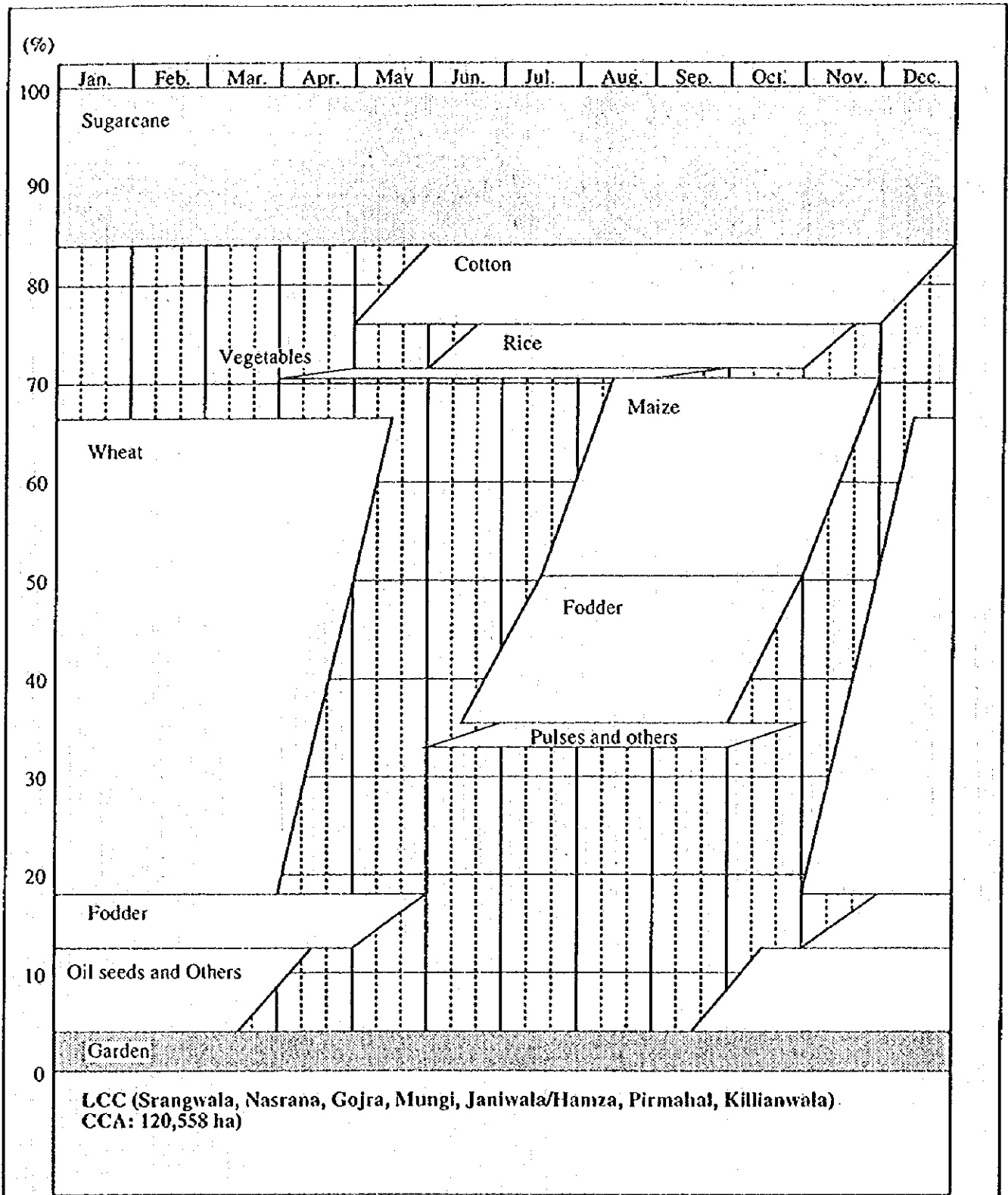


Fig. 5.3.2-1 (2/3) Present Cropping Pattern

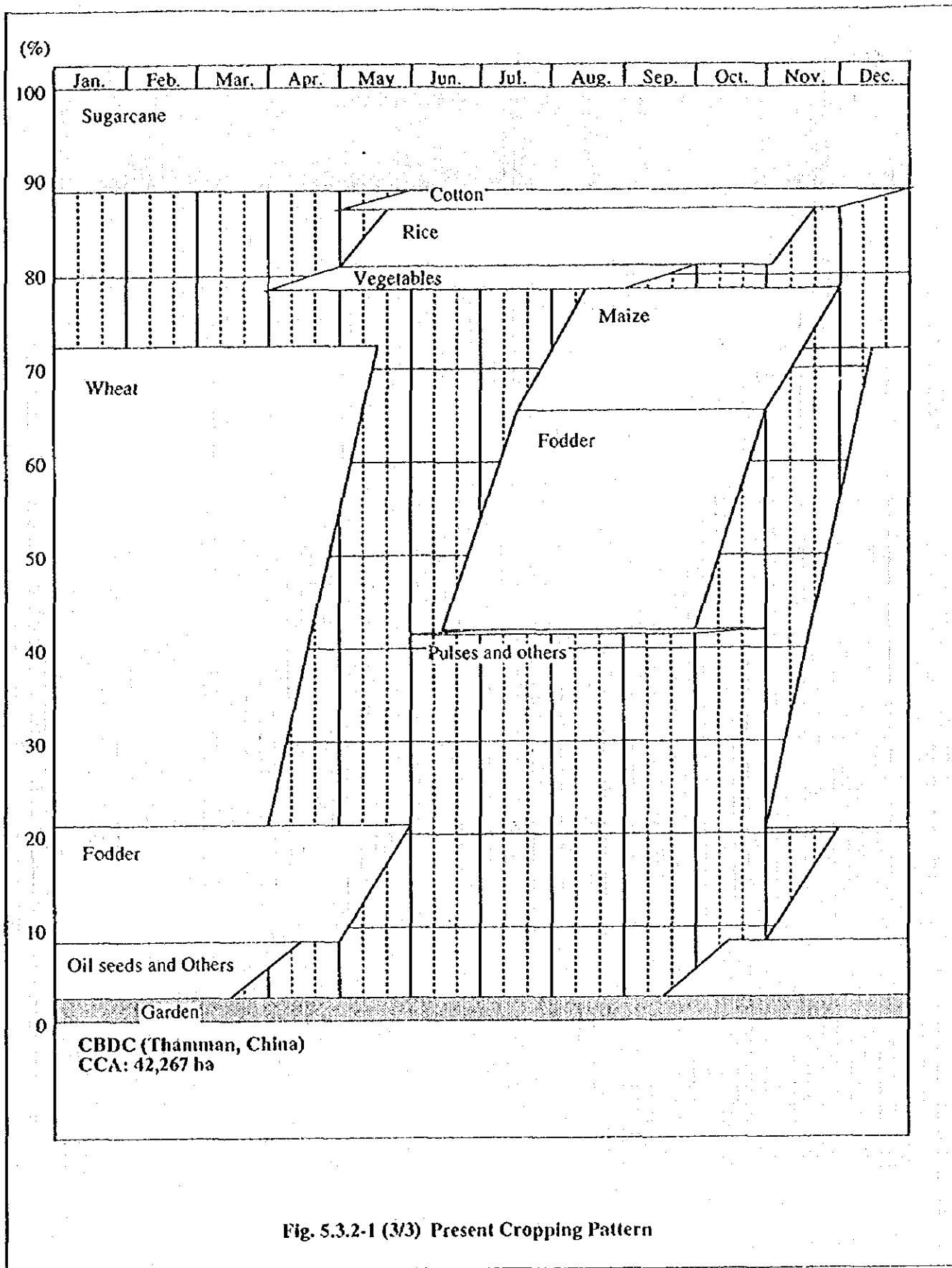


Fig. 5.3.2-1 (3/3) Present Cropping Pattern

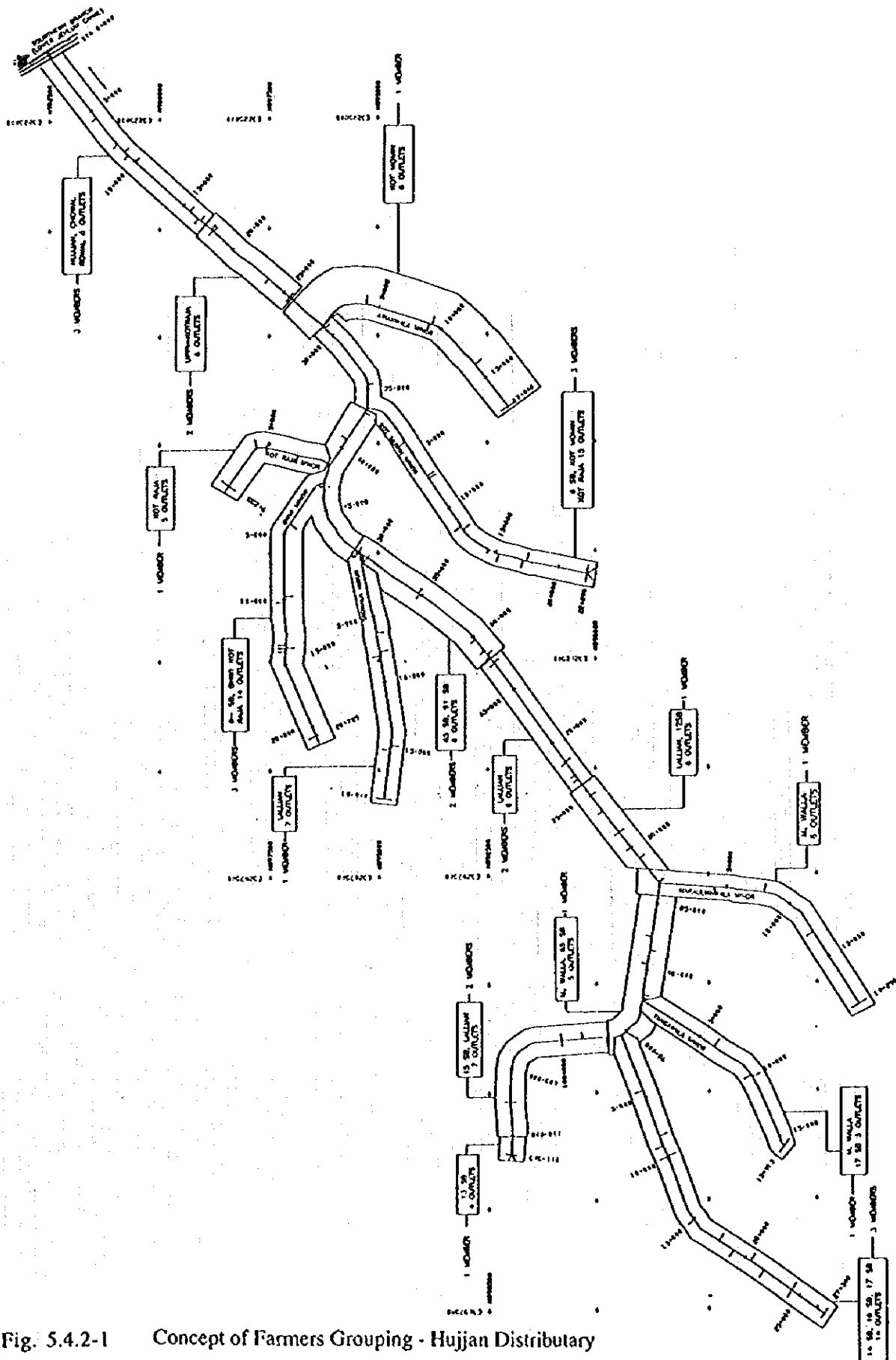


Fig. 5.4.2-1 Concept of Farmers Grouping - Hujjan Distributary

Fig. 5.5.1 - 1 PROCEDURE FOR OBTAINING APPROVAL AND CLEARING OF CANALSIDE FOREST PLANTATIONS

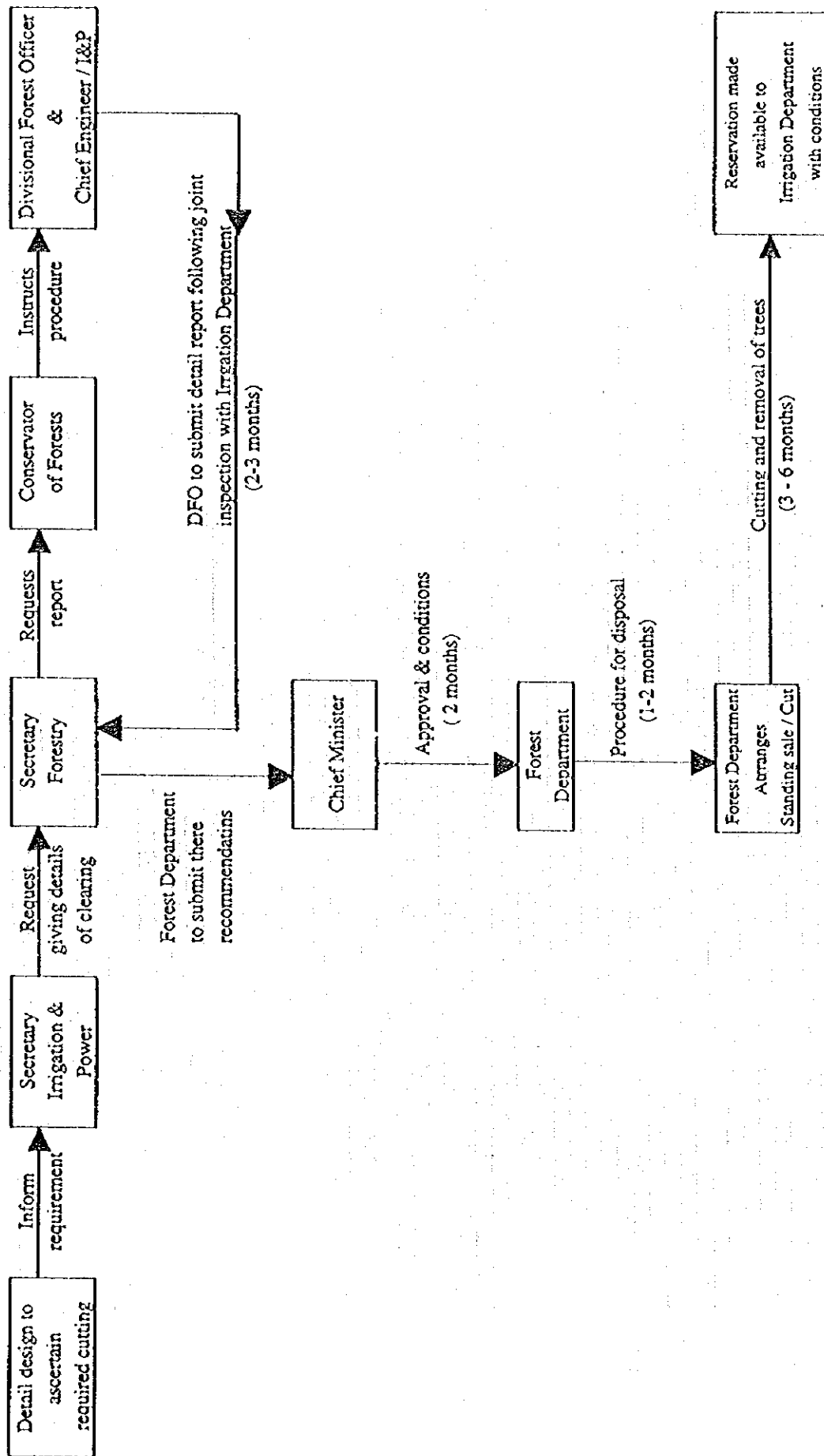


Fig. 6.1-1 Proposed Organization of Project Implementation

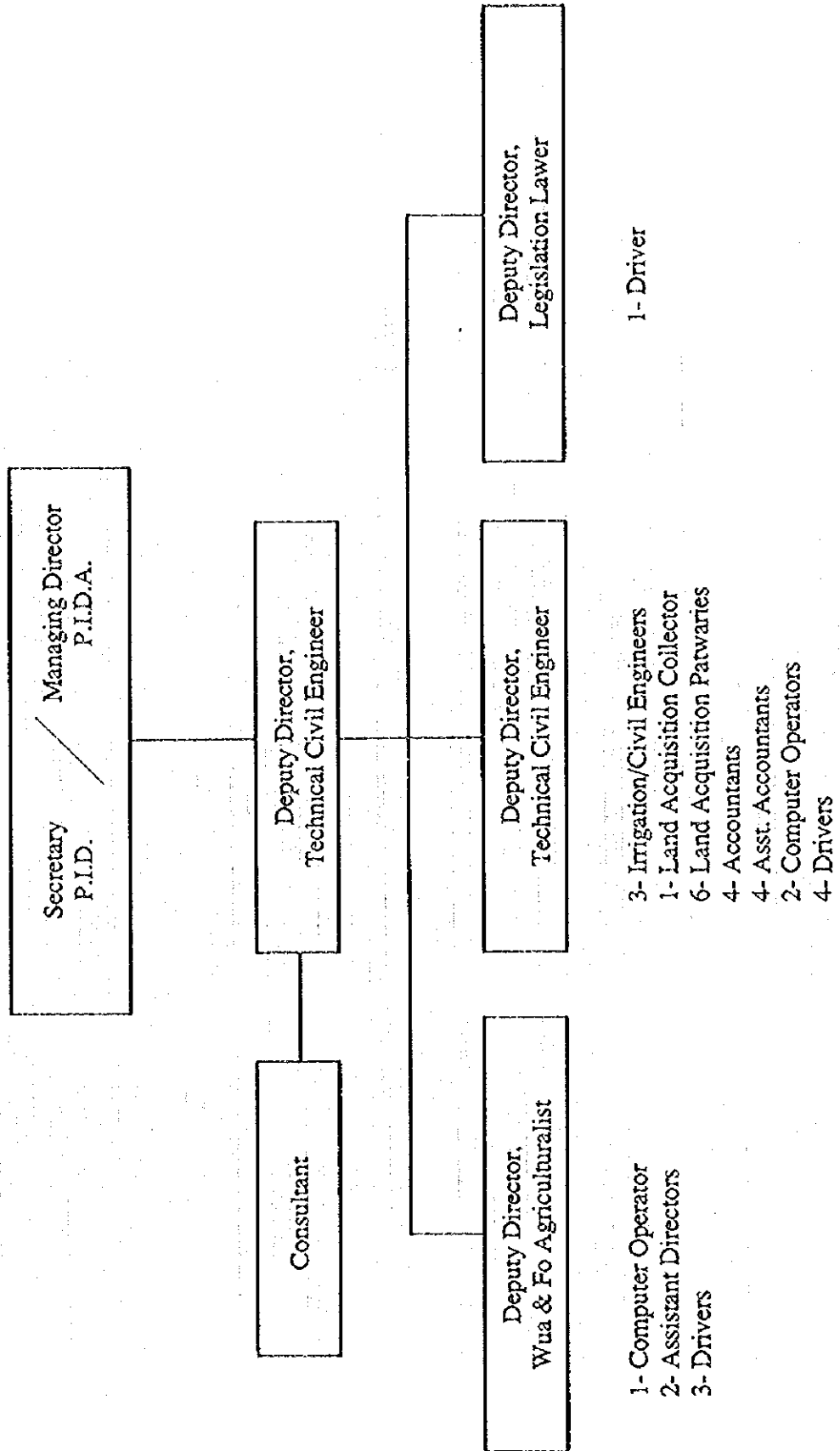
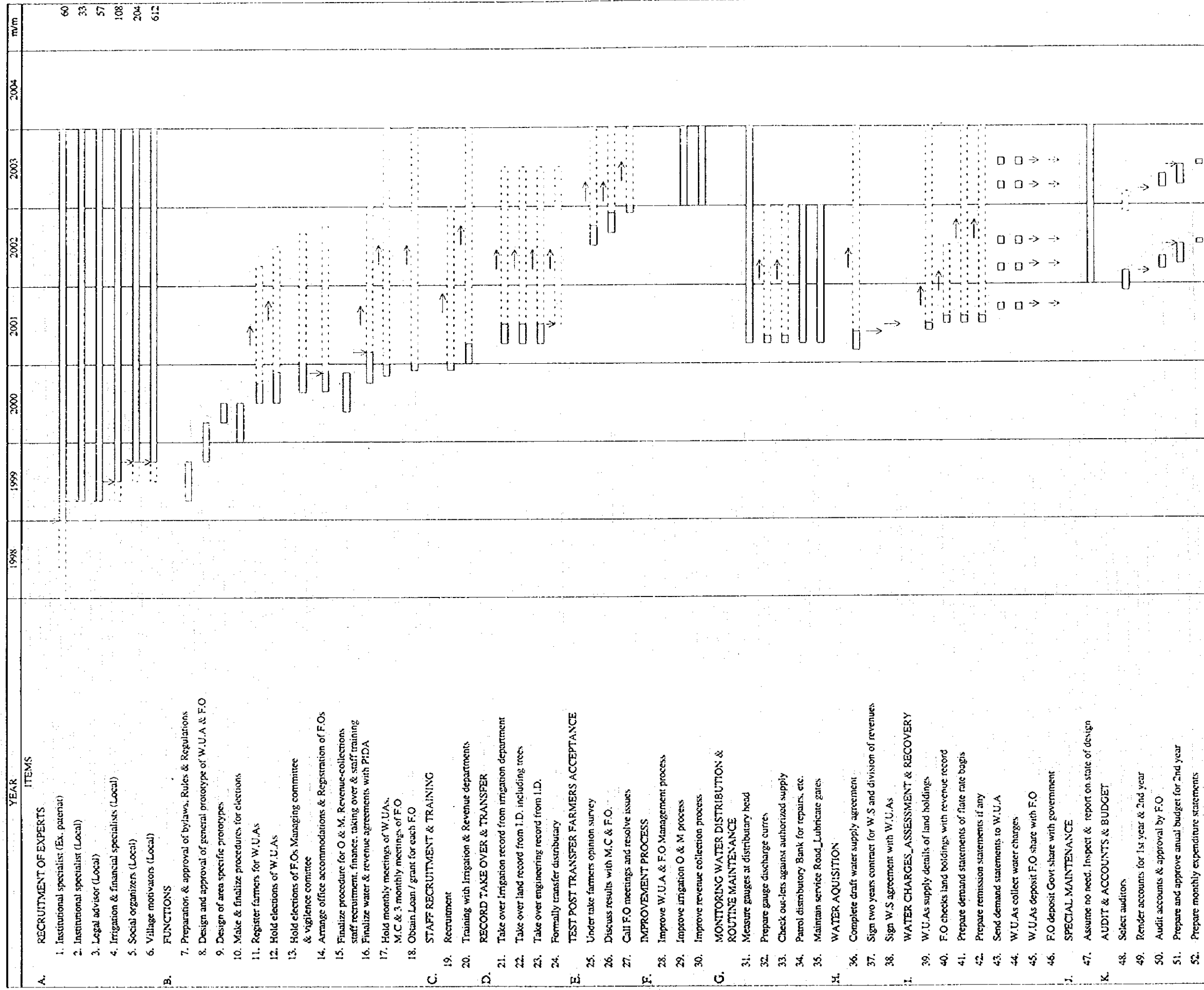


Fig. 6.2.3-1 IMPLEMENTATION SCHEDULE

ACTIVITIES	1997		1998		1999		2000		2001		2002		2003		2004	
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
I. PREPARATORY WORKS																
(1) Loan Procedure																
Preparation of PC- I Form																
Approval of PDWP																
Approval of CBWP																
Financial Institution Appraisal																
Loan Agreement																
(2) Selection of Consultant																
II. PRE-CONSTRUCTION WORKS																
(1) Survey and Design Work including Review of Existing Development Plan																
(2) Preparation of Bid Documents																
(3) Prequalification of Contractors																
(4) Bidding/Contracting																
III. LAND ACQUISITION																
IV. CONSTRUCTION WORKS																
(1) LJC																
Pindi																
Hujan																
Kirana																
(2) LCC																
Sarangwala																
Nasrana																
Gojra																
Mungi																
Janiwala/Hamza																
Pirmahal																
Killiarwala																
(3) CBDC																
Thamman																
China																
V. ADMINISTRATION																
VI. ENGINEERING SERVICES																

Fig. 6.3-1 Implementation Schedule of Institutional Reforms



Dotted lines at beginning show procedural requirements for recruitment. Firm lines show continuous work on the same distributary.

W.U.A : Water Users Associations

F.O : Farmers Organization

M.C : Managing Committee of Farmers Organization

V.C : Vigilance Committee

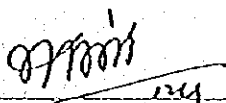
ATTACHMENTS

SCOPE OF WORK
FOR
THE STUDY
ON
THE LINING OF DISTRIBUTARIES AND MINORS
IN
PUNJAB
IN
THE ISLAMIC REPUBLIC OF PAKISTAN

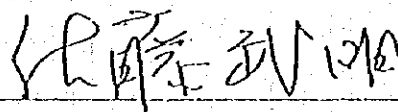
AGREED UPON BETWEEN

THE GOVERNMENT OF THE PUNJAB
IN
THE ISLAMIC REPUBLIC OF PAKISTAN
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

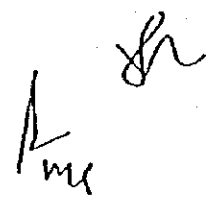
Labore, September 12, 1995



Mansoob Ali Zaidi
Secretary,
Irrigation and Power Department
Government of the Punjab



Takeaki Sato
Leader,
Preparatory Study Team
Japan International Cooperation Agency



I. INTRODUCTION

In response to the request of the Government of the Islamic Republic of Pakistan (hereinafter referred to as "GOP") , the Government of Japan has decided to conduct the Study on the Lining of Distributaries and Minors in Punjab of the Islamic Republic of Pakistan (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 the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of GOP and the Government of Punjab (hereinafter referred to as "GOPunjab")

The present document sets forth the Scope of Work with regard to the Study mentioned above.

II. OBJECTIVES OF THE STUDY

The objectives of the study are :

1. To conduct a feasibility study on the lining of the distributaries and minors in Punjab , and
2. To carry out technology transfer to the Pakistani counterpart personnel through on-the-job training in the course of the study.

III. Study Area

The Study covers the Lower Chenab Canal System , Lower Jhelum Canal System and C.B.D. Canal System in Punjab province , which is approximately 23,500km² (Command Area) including about 3,300km of Distributaries and Minors.

IV. Scope of the Study

Phase I

1. Collection of Data and Information
 - a. Natural condition
 - b. Socio-economic condition
 - c. Agricultural condition
 - d. Agricultural economy
 - e. Agricultural infrastructures
 - f. Farmer organizations

Am *Sh*

- g. Agricultural supporting services
- b. Others
- 2. Review of other relevant projects and related projects
- 3. Field Survey
 - a. Meteorology - hydrology
 - b. Water quality
 - c. Groundwater
 - d. Soil
 - e. Nature of soil
 - f. Agricultural society
 - g. Environment
 - h. Farmers economy
 - i. Land use
 - j. Cropping pattern
 - k. Others
- 4. Initial Environmental Examination
- 5. Selection of the priority project areas for the feasibility study in Phase II

Phase II (Feasibility Study for the priority project areas)

- 1. Collection of supplementary data and information in the priority project areas through additional field survey
- 2. Formulation of the development plan on the priority project areas
 - a. Irrigation
 - b. Cropping pattern and yield
 - c. Farmer organizations
 - d. Agricultural supporting system
 - e. Water management
 - f. Environmental preservation plan
 - g. Preliminary design of major structures
 - h. Operation and maintenance plan for major structures
 - i. Implementation schedule
 - j. Estimation of the project cost and benefit
 - k. Evaluation of the project

V. STUDY SCHEDULE

Handwritten signature and initials
 L. M. Jh

The Study will be carried out in accordance with the attached tentative work schedule as ANNEX 1.

VI. REPORTS

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

1. Inception Report

Thirty(30)copies in English at the commencement of the Phase I study.

2. Progress Report(1)

Thirty(30)copies in English at the end of the field work of Phase I study.

3. Interim Report

Thirty(30)copies in English at the commencement of the Phase II study.

4. Progress Report(2)

Thirty(30)copies in English at the end of the field work of the Phase II study.

5. Draft Final Report

Thirty(30)copies in English at the end of the Second home office work. The Pakistani side provides 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 in English within one(1) month after receiving Pakistan's comments on the Draft Final Report

VII. UNDERTAKING OF GOP

1. To facilitate the smooth conduct of the Study, GOP shall take necessary measures:

(1) To secure the safety of the Japanese study team.

(2) To permit the members of the Japanese study team to enter, leave and sojourn in the Islamic Republic of Pakistan for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees.

(3) To exempt the members of the Japanese study team from taxes, duties and other charges on equipment, machinery and other materials brought into and out of the Islamic Republic of Pakistan for the conduct of the Study.

(4) To exempt the members of the Japanese study team from income taxes and charges of any kind imposed on or in connection with any emoluments or

allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study.

- (5) To provide the necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into the Islamic Republic of Pakistan from Japan in connection with the implementation of the Study.
 - (6) To secure permission for entry into private properties and other areas for the conduct of the study when necessity arises.
 - (7) To secure permission for the Japanese study team to take copies of all data, documents including photographs , (excluding restricted material) related to the Study out of the Islamic Republic of Pakistan to Japan.
 - (8) To provide medical services as needed and its expenses will be chargeable on the members of the Japanese study team.
2. GOPunjab shall bear claims, if any arises against the members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese study team.
 3. GOPunjab has all responsibilities for the implementation of the Study and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
Irrigation and Power Department , GOPunjab shall act as counterpart agency to the Japanese study team
 4. GOPunjab shall, at its own expense, provide the Japanese study team with the following, in cooperation with other relevant organizations:
 - (1) Available maps , data and information related to the Study,
 - (2) Counterpart personnel,
 - (3) Credentials or identification cards, and
 - (4) Suitable office space with necessary equipment in Lahore , Faisalabad and Sargodha.

VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures;

- (1) To dispatch, at its own expense, the Japanese study team to the Islamic

Republic of Pakistan.

- (2) To perform technology transfer to the Pakistani counterpart personnel in the course of the Study.

IX. CONSULTATION

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

True

So

TENTATIVE WORK SCHEDULE

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Work in Pakistan																			
Home office work in Japan																			
Reports	△				△				△			△			△		⊙		△
	Ic/R			P/R(1)					Ic/R			P/R(2)			D/R				F/R

(Remarks)

Ic/R : Inception Report

P/R(1) : Progress Report(1)

Ic/R : Interim Report

P/R(2) : Progress Report(2)

Dc/R : Draft Final Report

F/R : Final Report

⊙ : Comments on DF/R by the Pakistani side

Handwritten mark

Handwritten signature

MINUTES OF MEETING
ON
SCOPE OF WORK
FOR
THE STUDY
ON
THE LINING OF DISTRIBUTARIES AND MINORS
IN
PUNJAB

The Preparatory Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Takeaki Sato, visited The Islamic Republic of Pakistan from September 1st to 12th, 1995 for the purpose of discussing and confirming the Scope of Work for the Study on the Lining of Distributaries and Minors in Punjab (hereinafter referred to as "the Study").

The Team had a series of discussions with the officers concerned of Irrigation and Power Department, Punjab Province (hereinafter referred to as "PID") and other organizations concerned. The list of participants in a series of meetings is attached in the Annex 1.

As a result of the discussions, PID and the Team agreed on Scope of Work for the Study.

The following are the main issues discussed and agreed upon by both sides in relation to the Scope of Work for the Study.

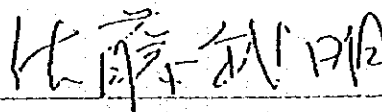
1. Total length of rehabilitation of distributaries and minors in the priority project areas will be approximately 500km. The number of priority projects and total length of rehabilitation will be fixed through Phase I study. The definition of "project area" is the canal command which is covered by one distributary system.
2. Priority project areas will be selected from three canal systems considering :

- 1) level of salinization and waterlogging
 - 2) level of maintenance of watercourses
 - 3) level of farmer organizations , and
 - 4) possibility of future collaboration with other donor's projects.
3. Regarding drainage in the study area, the Study will focus on the investigation of present condition of salinization and waterlogging , and a development plan of drainage system should be examined separately from the Study.
4. Initial Environmental Examination (IEE) will be carried out in the phase I study by the Japanese study team in consultation with PID. Environmental Impact Assessment (EIA), if necessary, will be carried out in the phase II study by the Japanese study team in consultation with PID.
5. PID requested the following equipment and vehicle(s) for the Study be arranged by JICA. The Team promised to convey its request to the Government of Japan.
- vehicle(s)
 - computer(s)
 - copy machine(s)
 - survey equipment
- Driver(s) for the vehicle(s) will be provided by PID at its own expense.
6. PID requested the counterpart training in Japan. The Team promised to convey its request to the Government of Japan.

LAHORE, September 12, 1995



Mansoor Ali Zaidi
Secretary,
Irrigation and Power Department,
Government of the Punjab



Takenki Sato
Leader,
Preparatory Study Team
Japan International Cooperation Agency

ANNEX 1

LIST OF PARTICIPANTS

Irrigation and Power Department

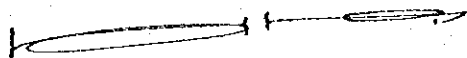
<i>Mr. Mansoob Ali Zaidi</i>	Secretary
<i>Mr. Abdul Ali Sheikb</i>	Deputy Secretary (Development)
<i>Mr. Rana Muhammad Akhtar</i>	Chief Engineer (Planning & Review)
<i>Mr. Ehsanullah Sardar</i>	Chief Engineer (Lahore)
<i>Mr. Tariq Jameel Chaudry</i>	Superintending Engineer D.C.C. Lahore

The Team

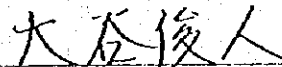
<i>Mr. Takeaki Sato</i>	Leader
<i>Mr. Yoshinobu Matsuo</i>	Member
<i>Mr. Yasunari Ueda</i>	Member
<i>Mr. Masaki Oga</i>	Member

MINUTES OF MEETING
OF
THE INCEPTION REPORT
FOR
THE FEASIBILITY STUDY
ON
THE LINING OF DISTRIBUTARIES AND MINORS
IN
PUNJAB
IN
THE ISLAMIC REPUBLIC OF PAKISTAN

Lahore, April 9, 1996



Mr. Riaz Hussian Waraich
Secretary,
Irrigation and Power Department
Government of the Punjab



Mr. Toshihito OTANI
Team Leader,
JICA Study Team

The Study Team organized by Japan International Cooperation Agency (hereinafter referred to as JICA), headed by Mr. Toshihito OTANI as the Team Leader and the Irrigation and Power Department, Government of Punjab (hereinafter referred to as PID), headed by Mr. Riaz Hussian Waraich, Secretary, had a series of discussion and exchanged views on the Inception Report for the Feasibility Study prepared by the Study Team with attendance of Mr. Shiro NABEYA, Deputy Director of Agriculture Study Division of JICA.

1. Receipt of Inception Report

PID received 30 copies of Inception Report submitted by the Study Team on April 3, 1996.

2. Meetings

A series of meetings were held at the head office of PID on April 7 and 8, 1996.

3. Presentation

The Study Team presented a brief of Inception Report including the plan of operation and the undertaking of the Government of Pakistan for the Feasibility Study.

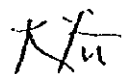
4. Discussion

The Inception Report of the Study was accepted by PID. Therefore, the contents of the Inception Report were agreed to by both parties in principle. The followings issues were discussed by both parties.

- (a) PID will despatch the counterpart personnel to the Study Team, of which names and specialities are finalized between the two parties on April 9, 1996 and attached hereto
(See Attachment 1).
- (b) PID will provide the Study Team with an office accommodation by April 11 consisting of three rooms and furniture as listed in Attachment 2.
- (c) Some of the field investigations are scheduled to be sublet to local contractors, which include the Irrigation Research Institute of PID.

- (d) Comments on the Inception Report made by the Dept. of Agriculture will be taken care of in the Study within the range of S/W.

- (e) PID will provide the Study Team with the data and information including topographic maps stated in the Inception Report as soon as the Team requests to do so.



Names, and background of counterparts

Position	Name	Name of Counterparts	background
1. Team Leader	Toshihito OTANI	Mr. Ehsanullah Sardar	Chief counterpart
2. Irrigation	Kenjiro YATABE	Mr. Jilani	Irrigation
3. Institution / Rural Community	A. R. MAHSUD	from P&D	Sociology
4. Environment	A. COORAY	from P&D	Environment
5. Agriculture / Supporting Services	Yoshihiko OGATA	Mr. Afzal Hussain Syed	Agronomy
6. Operation and Maintenance	Hideaki HIGASHINO	Shaikh Mohammad Akhtar	Irrigation
7. Design / Cost Estimate	Koichi YAMAMOTO	Mr. Abdur Rauf Qamar	Civil engineering
8. Agro-economy / Project Evaluation	Ko WATANABE	Mr. Faiz Muhammad Tahir	Agroeconomy
9. Topo-survey	Kazuyuki KIKUKAWA	on case to case basis by Chief Engineers	



The Study
on
The Lining of Distributaries and Minors in Punjab in
the Islamic Republic of PAKISTAN

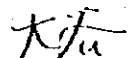
Attachment 2

Office Supply

Item	Q'ty
1. A/C	+1
2. Desks*	+5
3. Chairs*	10
4. Desk Lamp*	8
5. Telephones	2
	for local and international calls
6. Facsimile	1
7. Photocopy machine	1
8. Electric kettle*	2
9. Tea cups/Spoons*	10
10. Lockers*	2(one for each room)
11. Book shelves*	2
12. Extension cables*	3 x 5m
13. Multi plugs*	8
14. Voltage regulator	2
15. UPS	2

note: An office boy who cleans the room, serves tea and does some chores will be helpful.

*: Prepared by PID



List of Participants

Date: 7, April 1996

No.	Name	Position	Organization/Institution
1	Mian Yousaf Ali	Additional Secretary (Technical)	Irrigation and Power Dept.
2	Mr. Mohammad Waqar Khan	Superintending Engineer, Depalpur Canal Circle (DCC)	Irrigation and Power Dept.
3	Mr. Ehsanullah Sardar	C. E. Irrigation, Faisalabad	Irrigation and Power Dept.
4	Mr. Mohammad Siddique	Director Planning, Planning and Review Zone, Lahore	Irrigation and Power Dept.
5	Ch. Mohammad Ashraf	Director Headquarters, On-farm Water Management	Agriculture Dept.
6	Mr. Mohammad Dilpazir	Officer on Special Duty (OSD)	Irrigation and Power Dept.
7	Mr. Tahir Ahmad Malik	Chief Engineer Research	Irrigation and Power Dept.
8	Mr. Abdul Ali Sheikh	Deputy Secretary (Development)	Irrigation and Power Dept.
9	Mr. Shiro Nabeya	Dept. Director of Agriculture Study Div.	JICA Headquater (Tokyo)
10	Mr. Toshihito Otani	Team Leader	JICA Study Team
11	Mr. Kenjiro Yatabe	Irrigation Engineer	JICA Study Team
12	Mr. Asoka Cooray	Environmentalists	JICA Study Team
13	Mr. Yoshihiko Ogata	Agronomist	JICA Study Team
14	Mr. Hideaki Higashino	O&M Expert	JICA Study Team

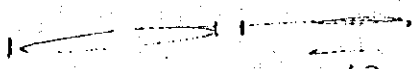
List of Participants

Date: 8, April 1996

No.	Name	Position	Organization/Institution
1	Mian Yousaf Ali	Additional Secretary (Technical)	Irrigation and Power Dept.
2	Mr. Mohammad Waqar Khan	Superintending Engineer, DCC	Irrigation and Power Dept.
3	Mr. Ehsanullah Sardar	C. E. Irrigation, Faisalabad	Irrigation and Power Dept.
4	Mr. Mohammad Siddique	Director, Planning and Review Zone, Lahore	Irrigation and Power Dept.
5	Mr. Mohammad Dilpazir	Officer on Special Duty (OSD)	Irrigation and Power Dept.
6	Mr. Abdul Ali Sheikh	Deputy Secretary (Development)	Irrigation and Power Dept.
7	Mr. Ghulam Zakir Hassan	Assistant Director	Irrigation Research Institute
8	Mr. Hafeez-Ur-Rahman	Deputy Director (Research)	Irrigation Research Institute
9	S. Kazim Hussain	P. R. O.	Irrigation Research Institute
10	Mr. Abu Athar	Director (Hgd) for CE Research	Irrigation Research Institute
11	Mr. ATA Mohammad Malik	CE (Irrigation) Lahore	Irrigation and Power Dept.
12	Mr. Malik Ahmad Khan	CE (Irrigation) Sargodha	Irrigation and Power Dept.
13	Mr. Karamat Ali	Director Land Reclamation, Punjab	Irrigation and Power Dept.
14	Mr. Shiro Nabeya	Dept. Director of Agriculture Study Div.	JICA Headquater (Tokyo)
15	Mr. Toshihito Otani	Team Leader	JICA Study Team
16	Mr. Kenjiro Yatabe	Irrigation Engineer	JICA Study Team
17	Mr. Abdur Rahim Mahsud	Institution/Rural Community	JICA Study Team
18	Mr. Asoka Cooray	Environmentalists	JICA Study Team
19	Mr. Yoshihiko Ogata	Agronomist	JICA Study Team
20	Mr. Hideaki Higashino	O&M Expert	JICA Study Team

MINUTES OF MEETING
OF
THE INTERIM REPORT
FOR
THE STUDY
ON
THE LINING OF DISTRIBUTARIES AND MINORS
IN
PUNJAB
IN
THE ISLAMIC REPUBLIC OF PAKISTAN

Lahore, October 15, 1996


Mr. Riaz Hussain Waraich
Secretary,
Irrigation and Power Department
Government of the Punjab


Mr. Foshilito OTANI
Team Leader,
JICA Study Team

Minutes of Meeting for Interim Report

1. Date and Time: October 14, 1996 (11:30 - 14:00) at Committee Room of Irrigation and Power Department
2. Attendants: See attached list.
3. Summary of Discussions:

The Study Team submitted 25 copies of Interim Report to GO Punjab on October 10, 1996. A meeting was chaired by the Secretary, PID to discuss the Interim Report. The Team presented a brief of Interim Report including priority projects, basic concept for canal lining and institutional development with attendance of Mr. Makoto KITANAKA, Deputy Director of Agricultural Development Study Division of JICA. Comments and suggestions made by the PID officials are as follows:

- (1) It was observed that para 3 of 3.4.5 gives the impression as if all the farmers in the system have complained of the informal payments. Since the Team may have met a limited number of farmers during their field survey the observation may be toned down to reflect the actual situation. It was suggested that instead of stating that "the farmers stated" it may be corrected as "the farmers (some) stated." The Team agreed to reflect this position in the final report.
- (2) It was suggested by PID that canal lining be basically made with concrete as membrane lining will be much costly. The Study Team was further requested to study advanced technology for quality control of concrete and its joints, for instance, by introducing mechanized methodology.
- (3) Although, at the stage of Interim Report, water charge is not presented, it is expected that water charge will be estimated in the final report in order to evaluate farm economy from viewpoint of farmers who will be benefited.
- (4) It was observed that the Interim Report accepts the dilemma of political interference in the inequitable distribution of water and O&M degeneration. Under these circumstances how it is expected that participatory approach of transfer of distributary to farmers will eliminate such interference. The Team responded that by transferring the distributary to the farmers, any interference from outside or from within will be directly infringing on the rights of the owners and shareholders and the farmers managing body will be directly answerable to them whose rights are infringed upon against the present system in which O&M operators are not responsible to the farmers.
- (5) It was agreed upon between PID and Study Team that minor changes in the priority channels selected would be made in the LJC System and the CBDC System since lining work for some minors in the former System is scheduled to be performed by PID, and minor modification of contouring of groundwater has been made in CBDC based on the recent information. It should be noted however that the total length of the channels in the respective Systems will not exceed the original length.



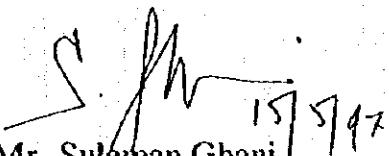
List of Participants

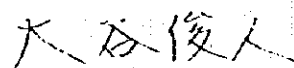
Date: 14, October 1996

No.	Name	Position	Organization/Institution
1	Mr. Riaz Hussain Waraich	Secretary	Irrigation and Power Deptt.
2	Mr. Ahmad Khan Malik	CE (Irrigation) Sargodha	Irrigation and Power Deptt.
3	Mr. ATA Mohammad Malik	CE (Irrigation) Lahore	Irrigation and Power Deptt.
4	Mr. Ehsanullah Sardar	C. E. Irrigation, Faisalabad	Irrigation and Power Deptt.
5	Mr. M. H. Siddiqi	Consultant	Irrigation and Power Deptt.
6	Mr. Zaka Ullah Bhatti	Superintending Engineer, LCC (E)	Irrigation and Power Deptt.
7	Mr. Sajjad H. Nasim	Superintending Engineer, LJC	Irrigation and Power Deptt.
8	Mr. Mohammad Waqar Khan	Superintending Engineer, DCC	Irrigation and Power Deptt.
9	Mr. Inayatullah Waraich	Superintending Engineer, LCC (W)	Irrigation and Power Deptt.
10	Shaikh Mohammad Akhtar	XEN Scarp, o/o CE (L)	Irrigation and Power Deptt.
11	Mr. Khadim Hussain	XEN Jhang Canals Division	Irrigation and Power Deptt.
12	Mr. Abdul Ali Sheikh	Deputy Secretary (Development)	Irrigation and Power Deptt.
13	Mr. Makoto Kitanaka	Dept. Director of Agriculture Study Div.	JICA Headquarter (Tokyo)
14	Mr. Toshihito Otani	Team Leader	JICA Study Team
15	Mr. Kenjiro Yatabe	Irrigation Engineer	JICA Study Team
16	Mr. Abdur Rahim Mahsud	Institution/Rural Community	JICA Study Team
17	Mr. Asoka Cooray	Environmentalist	JICA Study Team
18	Mr. Hideaki Higashino	O&M Expert	JICA Study Team
19	Mr. Koichi Yamamoto	Design/Cost Estimate	JICA Study Team
20	Mr. Yoshihiko Ogata	Agronomist	JICA Study Team

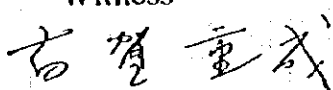
**MINUTES OF MEETING
OF
THE DRAFT FINAL REPORT
FOR
THE STUDY
ON
THE LINING OF DISTRIBUTARIES AND MINORS
IN
PUNJAB
IN
THE ISLAMIC REPUBLIC OF PAKISTAN**

Lahore, May 15, 1997


15/5/97
Mr. Suleman Ghani
Secretary,
Irrigation and Power Department
Government of the Punjab


Mr. Toshihito Otani
Team Leader,
JICA Study Team

Witness


Mr. Shigenari Koga
Director,
Agricultural Development Study Division
Japan International Cooperation Agency

Minutes of Meeting for the Draft Final Report

1. Date and Time: May 14, 1997 (14:30 - 17:00) in the Committee Room of Irrigation and Power Department
2. Attendants: See Attached List.
3. Summary of Discussions:

A meeting was chaired by the Secretary, PID to discuss the Draft Final Report. The Team presented a brief of the Draft Final Report including priority projects, canal lining concepts, institutional development, cost estimate and project evaluation with attendance of Mr. Sigenari Koga, Director of Agricultural Development Study Division of JICA. The following issues were discussed by both parties:

- (1) The Draft Final Report of the Study was appreciated and accepted by PID. Therefore, the contents of the Draft Final Report were agreed to by both parties in principle.
- (2) It was understood that the implementation program of the project may be modified to be done in phases concurrent with the global reforms proposed under the PIDA ordinance and progress of the National Drainage Program (NDP). Likewise, minor changes of institutional reforms would later on become necessary in order to be consistent with the province wide reforms under NDP.
- (3) PID agreed that the Final Report would be available to any persons who have interests in the Study.
- (4) The Provincial Government agreed to give its comments, if any, by writing by May 25, 1997, thereafter the Final Report will be submitted.



MINUTES OF MEETING HELD ON 14.05.1997 IN THE COMMITTEE
ROOM OF IRRIGATION AND POWER DEPARTMENT

List of participants.

PID side

1. Mr. Suleman Ghani,
Secretary
Irrigation and Power Department.
2. Mr. Tahir Ahmad Malik,
Chief Engineer, Irrigation,
Irrigation Research Institute.
3. Mr. M. Saleem Cheema,
Superintending Engineer,
Lower Canal Circle (West),
Faisalabad.
4. Mr. Zaka Ullah Bhatti,
Superintending Engineer,
Lower Canal Circle (East),
Faisalabad.
5. Mr. Muhammad Waqar Khan,
Superintending Engineer,
Depalpur Canal Circle,
Lahore.
6. Ch. Asghar Hameed,
Executive Engineer,
Hafizabad Division,
Faisalabad.

JICA side.

7. Mr. Shigenari Koga
Director,
Agriculture Development Study Division,
JICA.
8. Mr. Toshihito Otani,
Team Leader,
JICA Study Team.
9. Mr. Kenjiro Yatabe
Irrigation Engineer,
JICA Study Team.
10. Mr. Abdul Rahim Mahsud,
Institutional/Rural Community,
JICA Study Team.

JICA