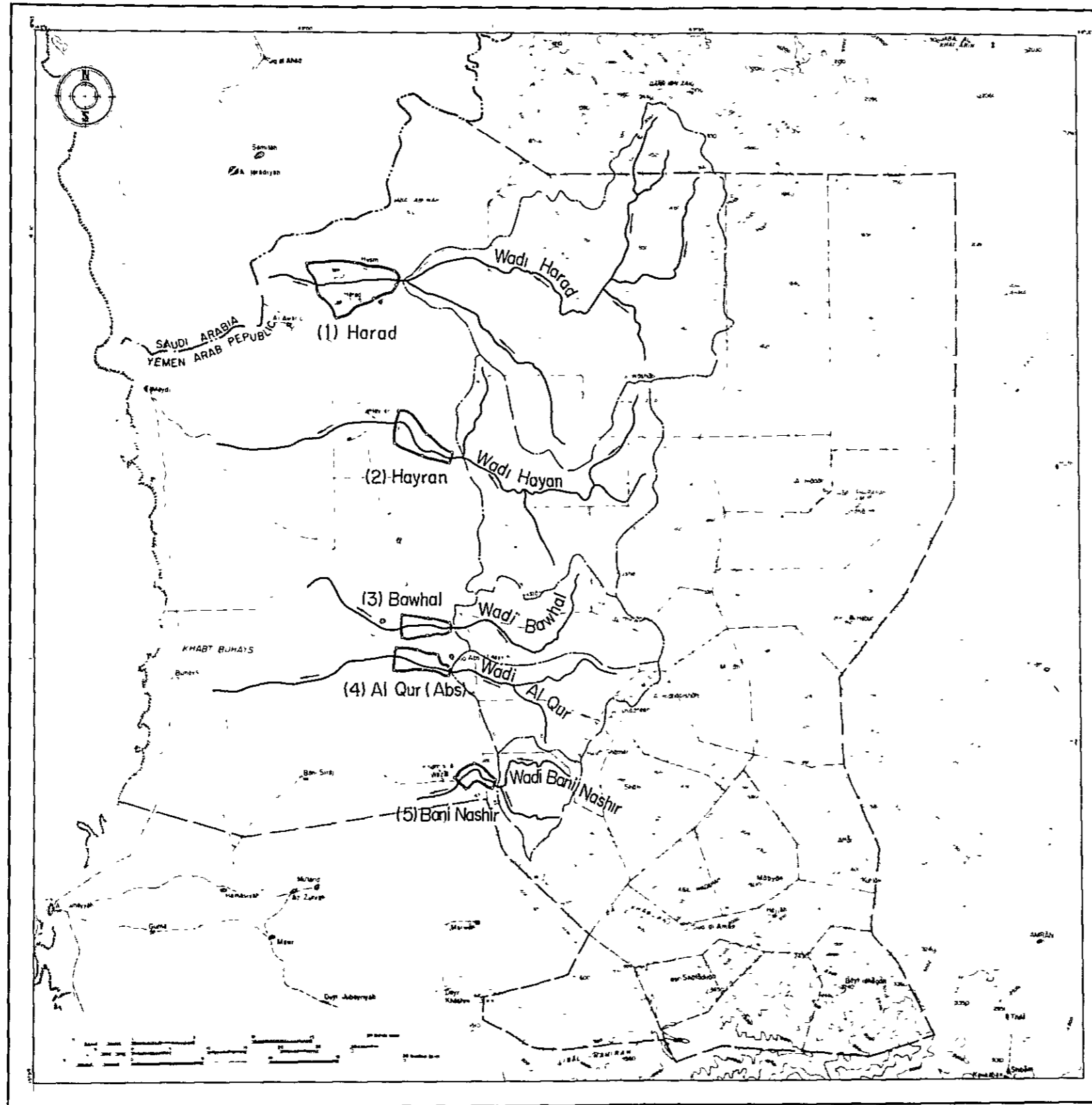


☐ Irrigated area

Fig. 6.5 Present and Future Cropping Pattern



Irrigable Area in Lowland

Name of Wadi	Catchment Area (sq km)	Irrigable Area (ha)
(1) Harad	994.7	3,500
(2) Hayran	414.6	1,800
(3) Bawhal	249.8	1,200
(4) Al Qur	243.0	1,300
(5) Bani Nashir	126.7	700

Legend

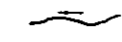


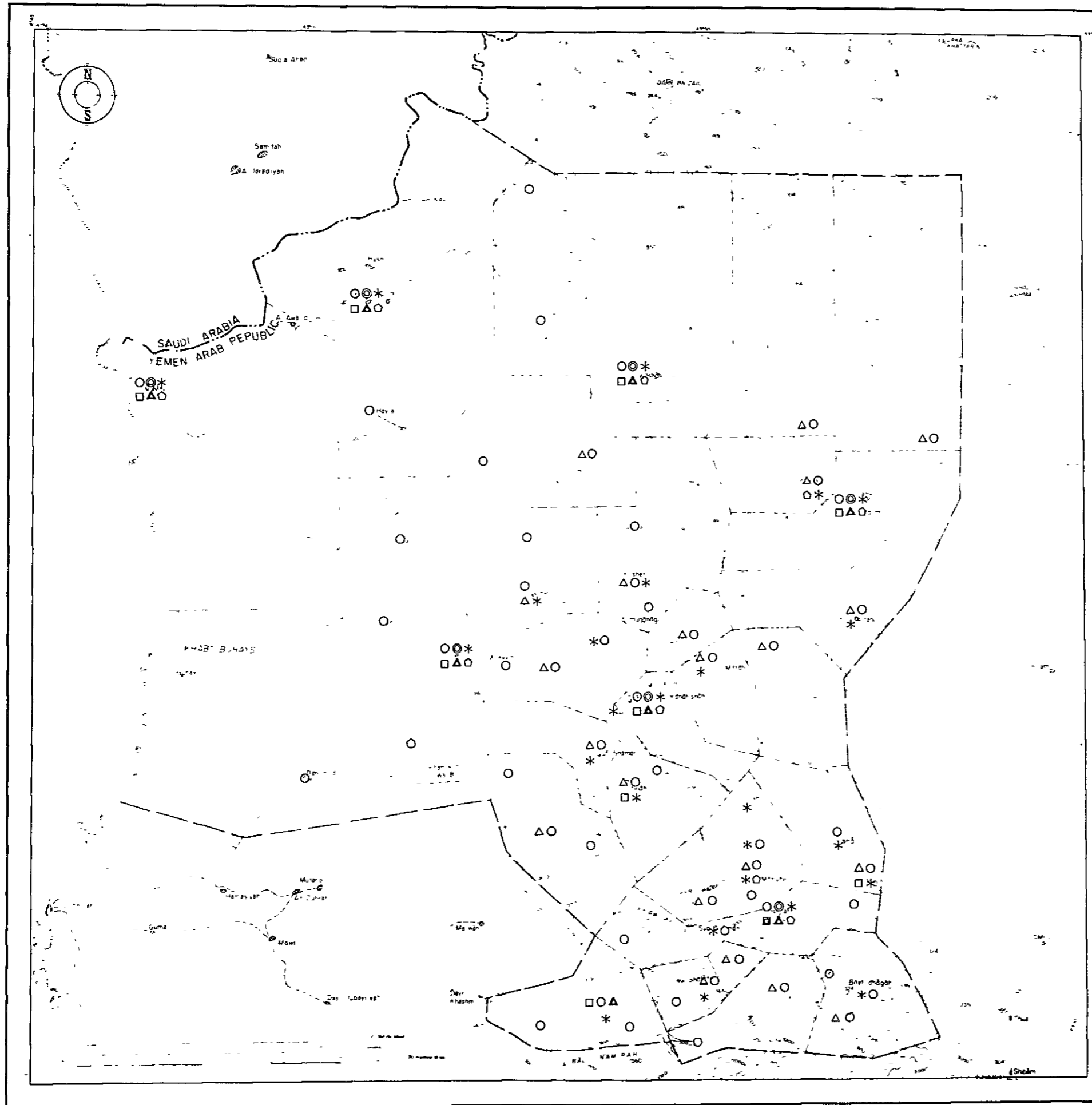
-  Wadi
-  Catchment Area
-  Irrigable Area

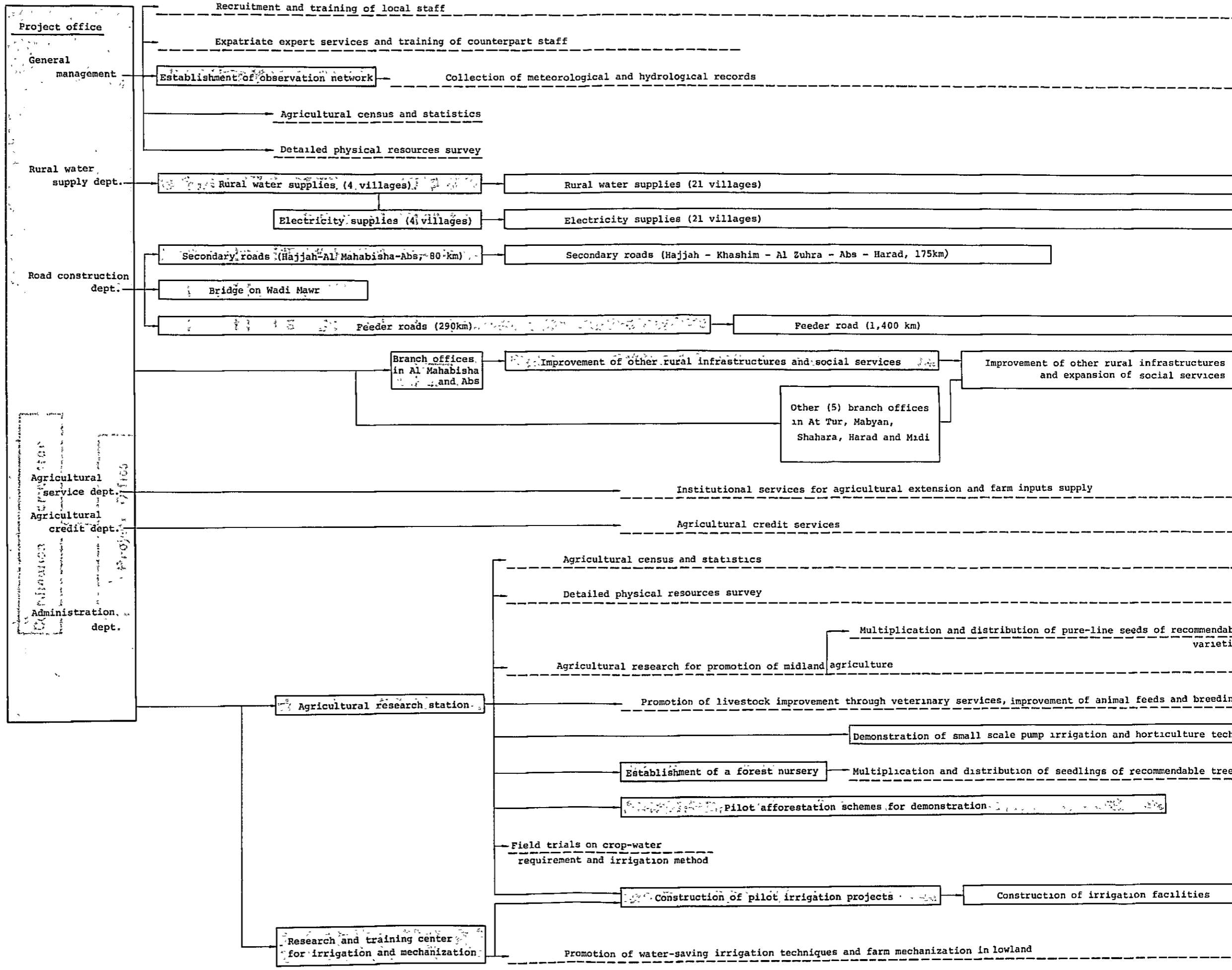
Fig. 6.6 Irrigable Area in Lowland

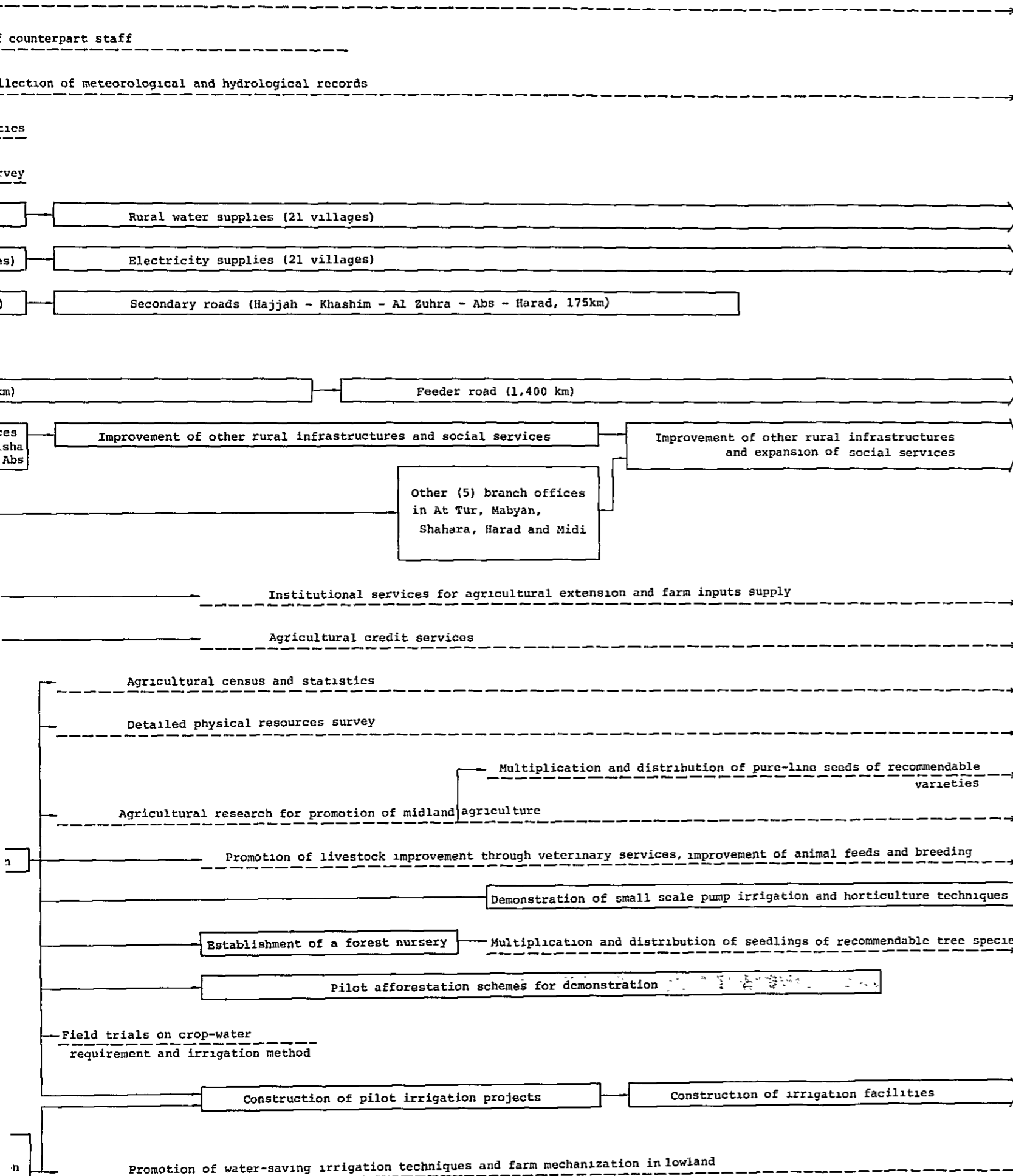


LEGEND

- Primary School
- ⊙ Public Hall
- ⊠ Main Hospital
- Branch Hospital
- ▲ Health Center
- △ Rural Health Unit
- * Electric Power Supply
- ⊖ Telephone Exchange

Fig.6.7 General Plan of Rural Infrastructures





Legend


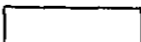
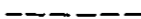
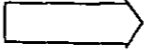
-  Priority projects
-  Construction of project facilities
-  Project activities
-  To be continued

Fig. 7.1 Preliminary Implementation Schedule for Possible Projects

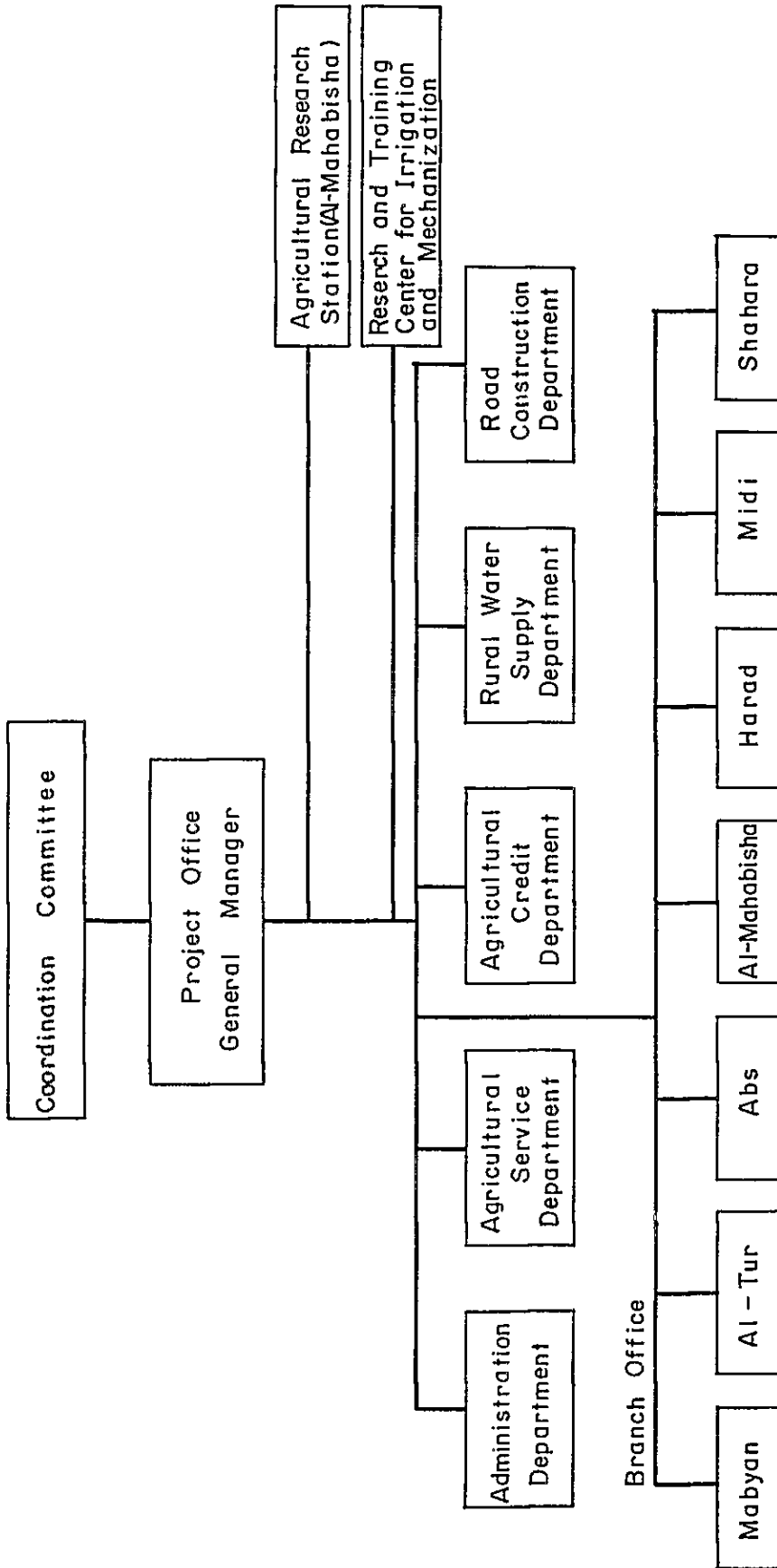
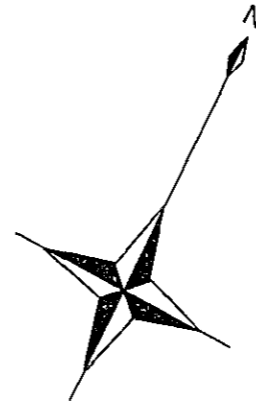
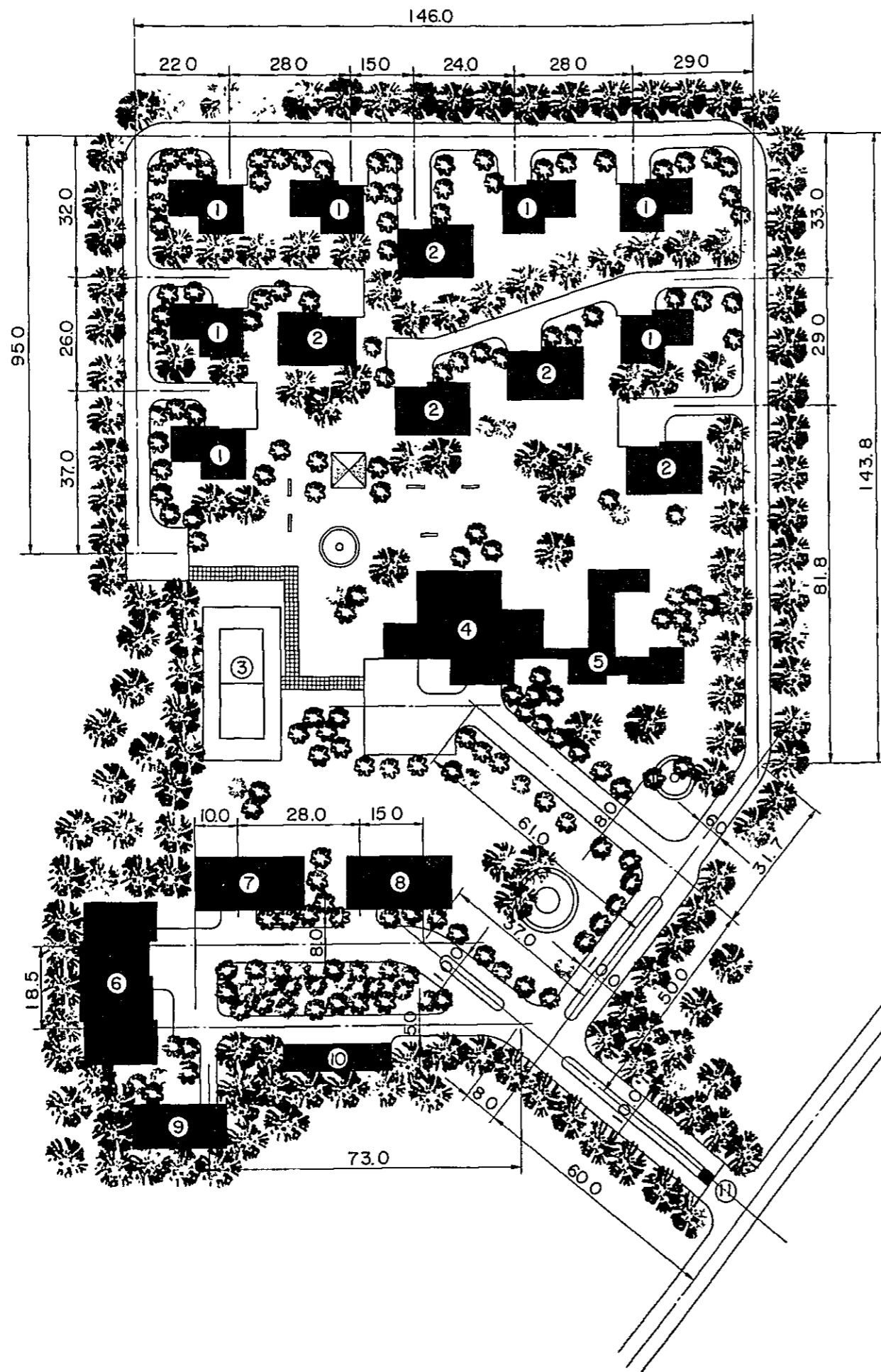


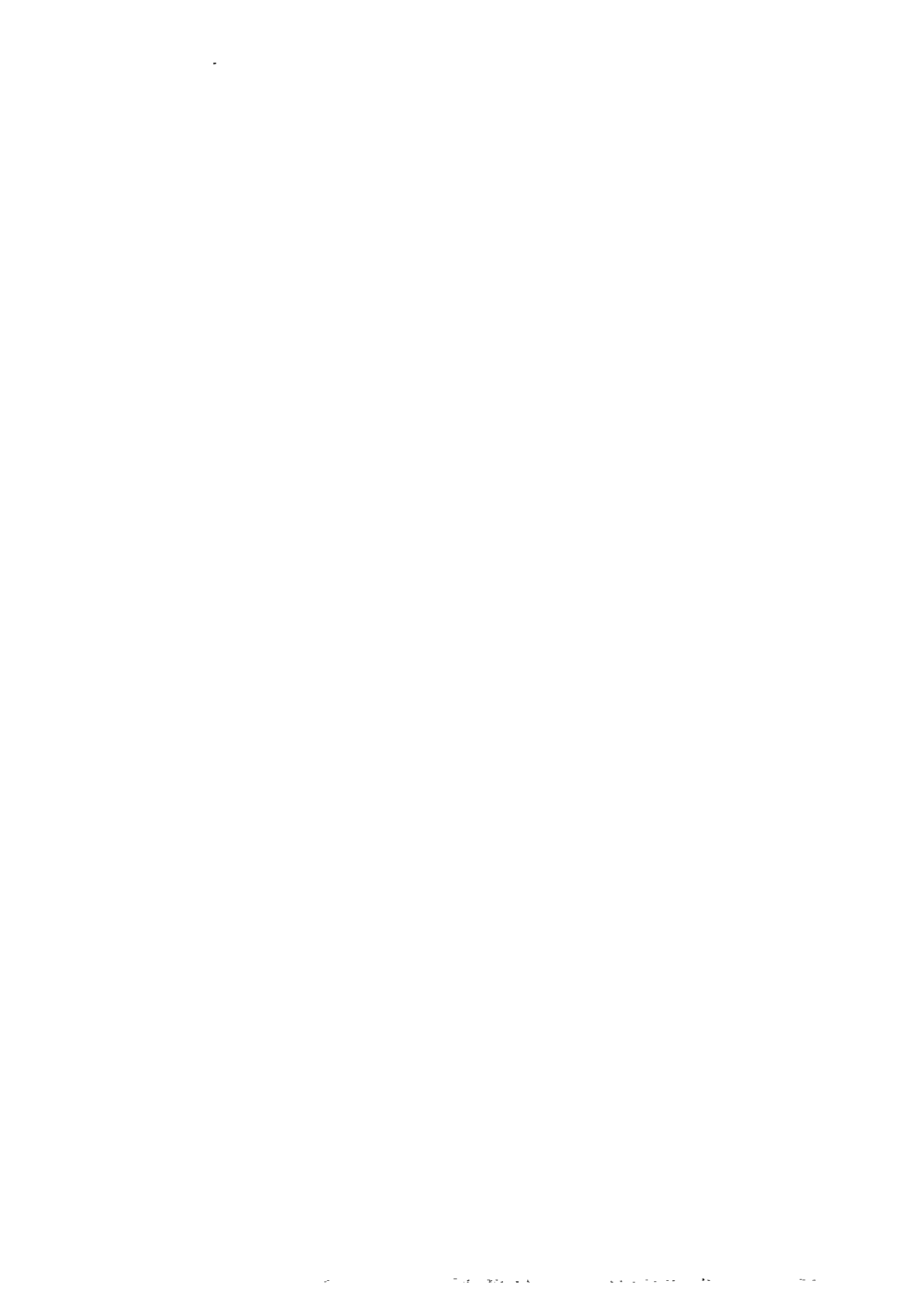
Fig. 8.1 Organizational Set-up of Hajjah Province Integrated Rural Development Project Office



LEGEND

- 1 TWO BEDROOM RESIDENCE
- 2 THREE BEDROOM RESIDENCE
- 3 TENNIS COURT
- 4 CLUB
- 5 GUEST HOUSE
- 6 MAIN OFFICE
- 7. ROAD CONSTRUCTION DEPARTMENT
- 8 RURAL WATER SUPPLY DEPARTMENT
- 9 DRIVERS' DORMITORY
- 10 COVERED PARKING
- 11. MAIN GATE AND GUARD HOUSE

Fig. 8.2 Proposed Layout of Project Office



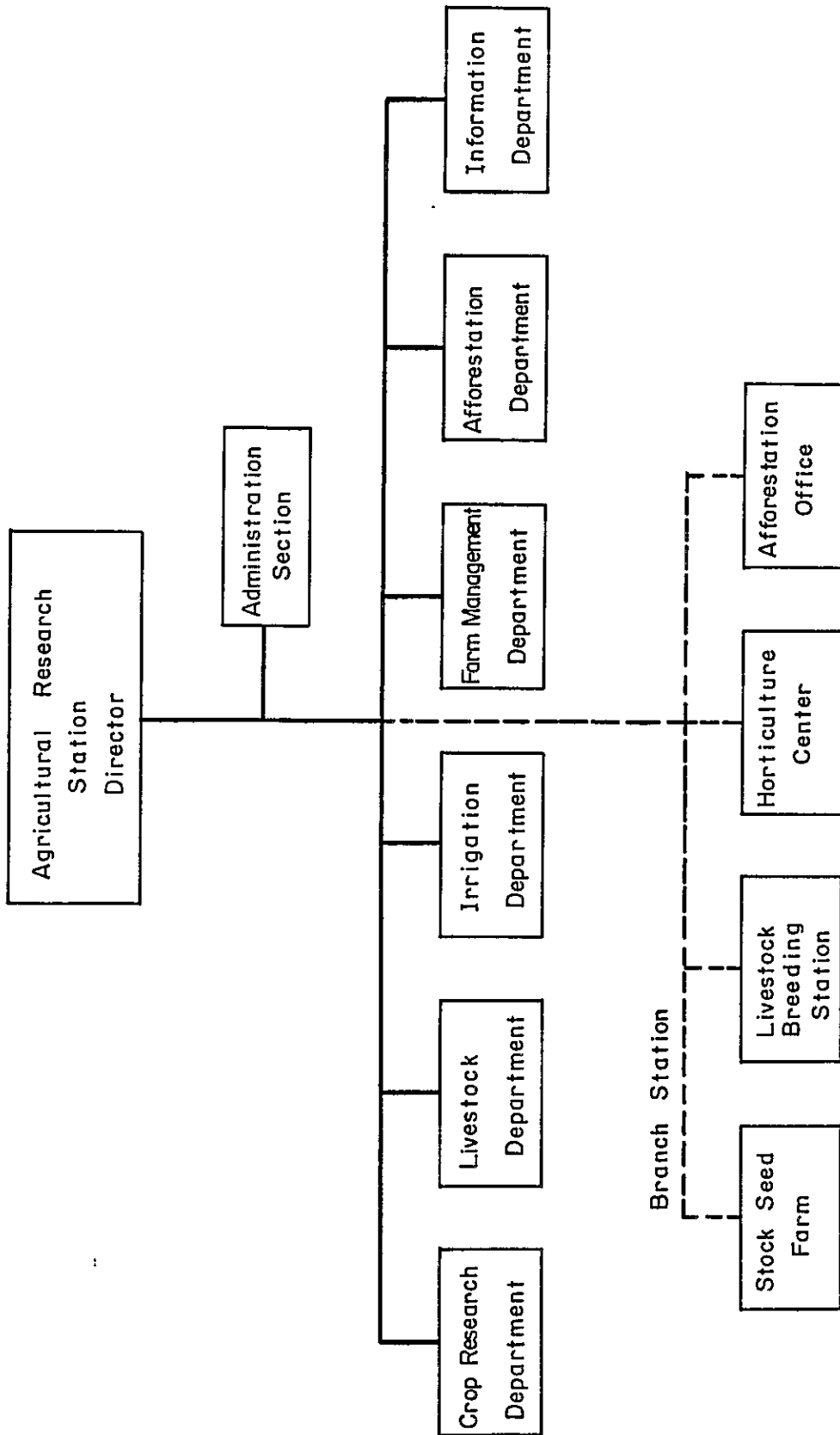


Fig. 8.3 Organization of Agricultural Research Station

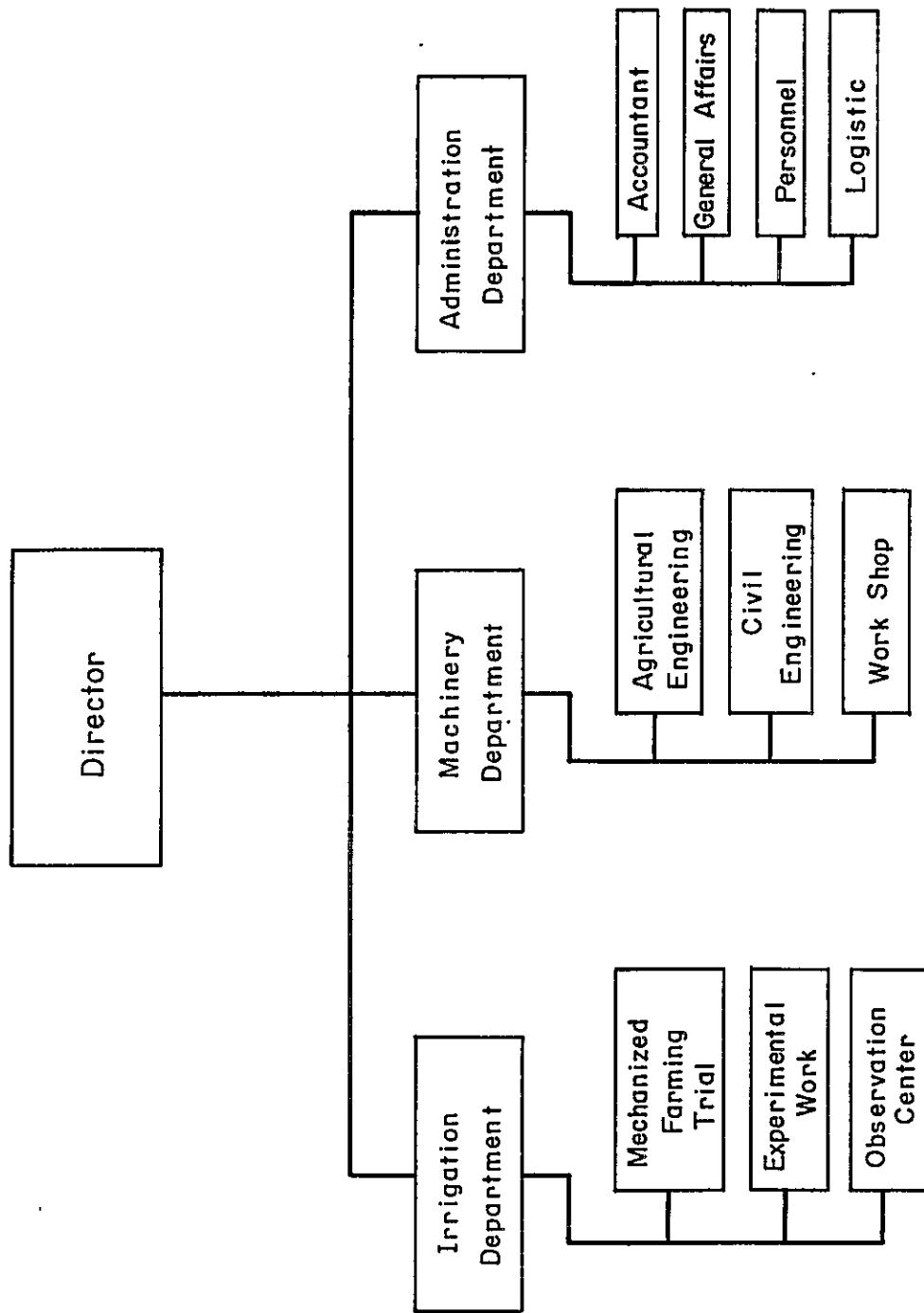


Fig. 8.4 Organization of Research and Training Center for Irrigation and Mechanization

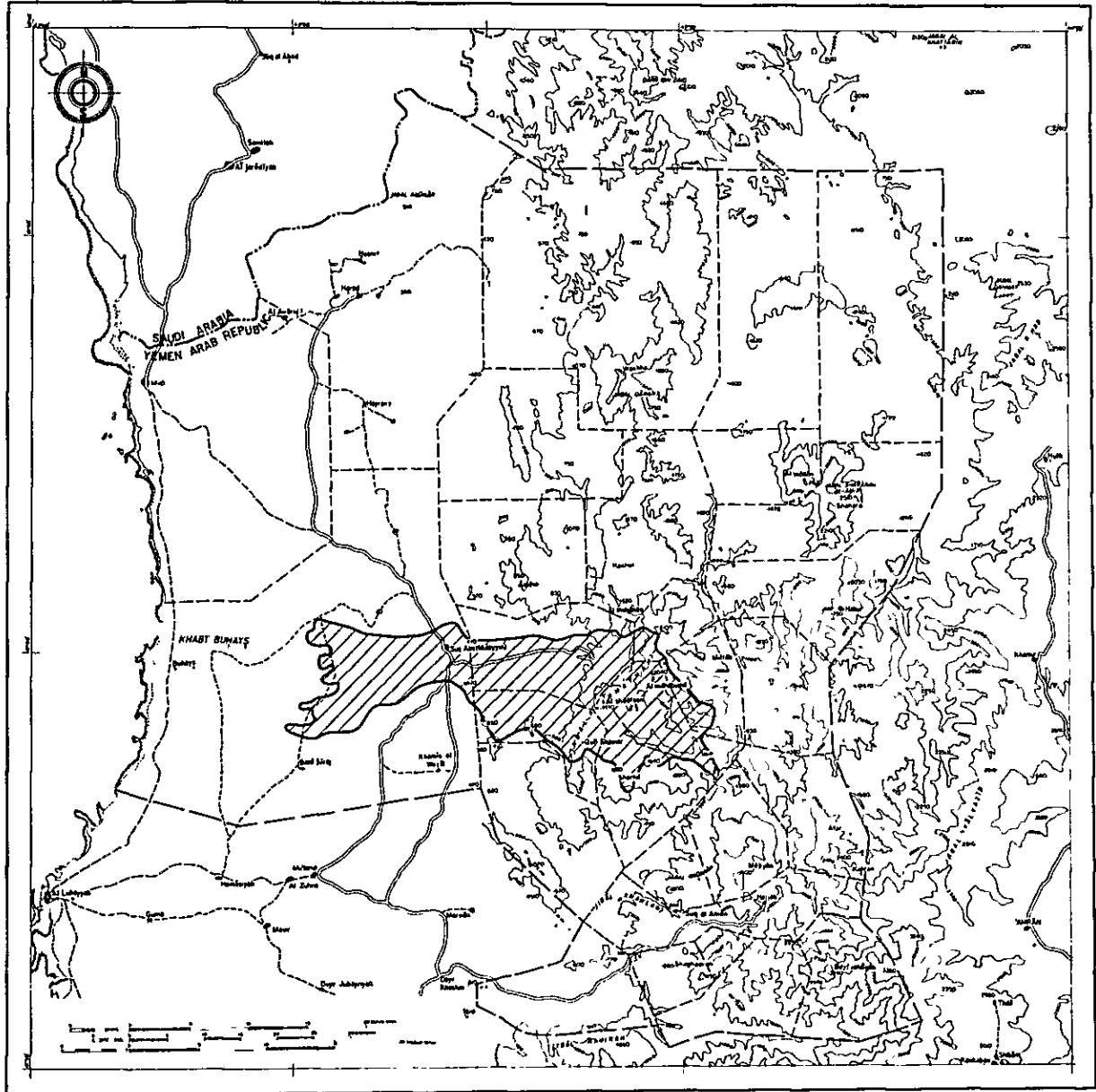
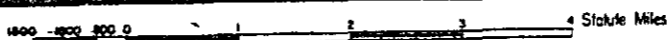
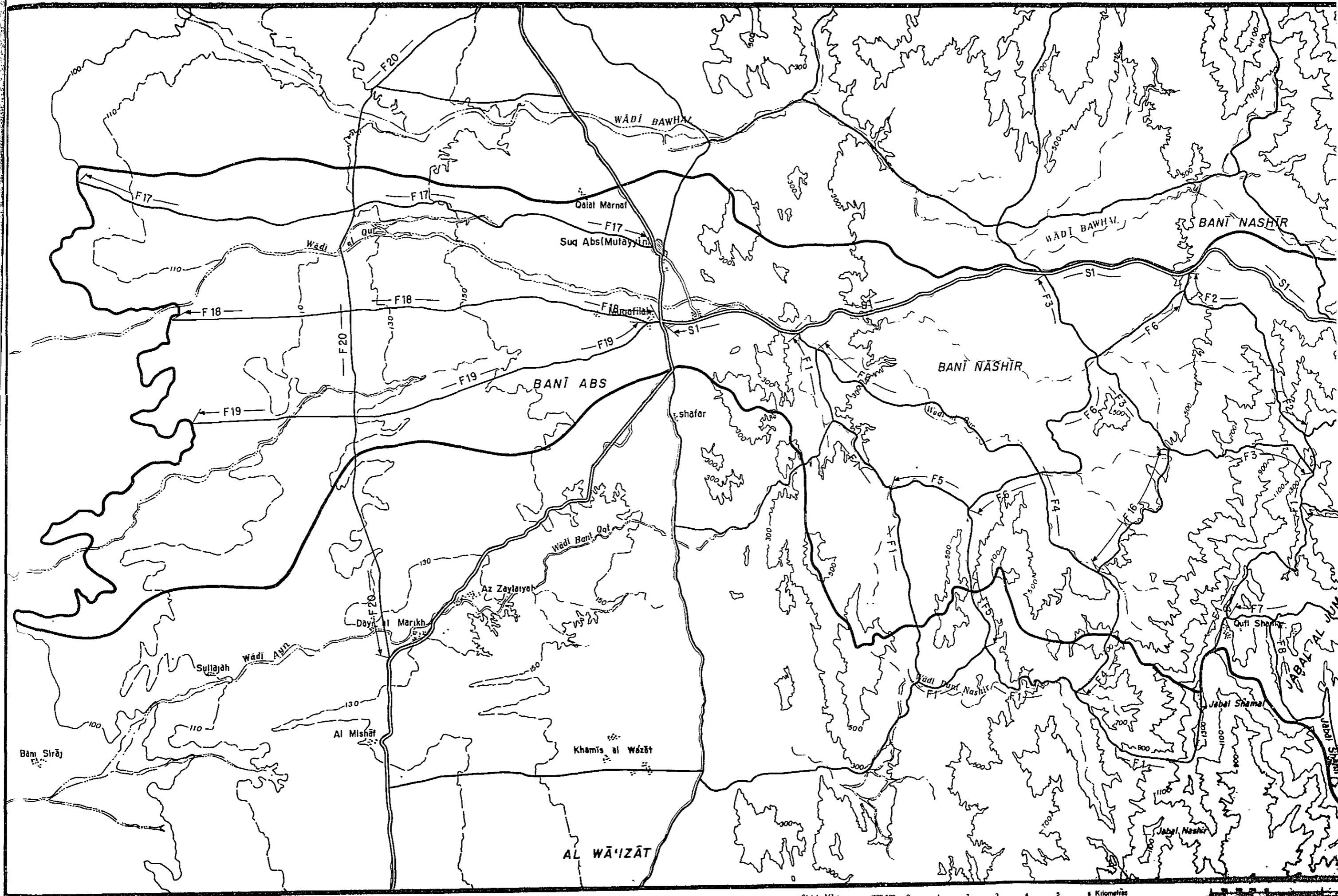
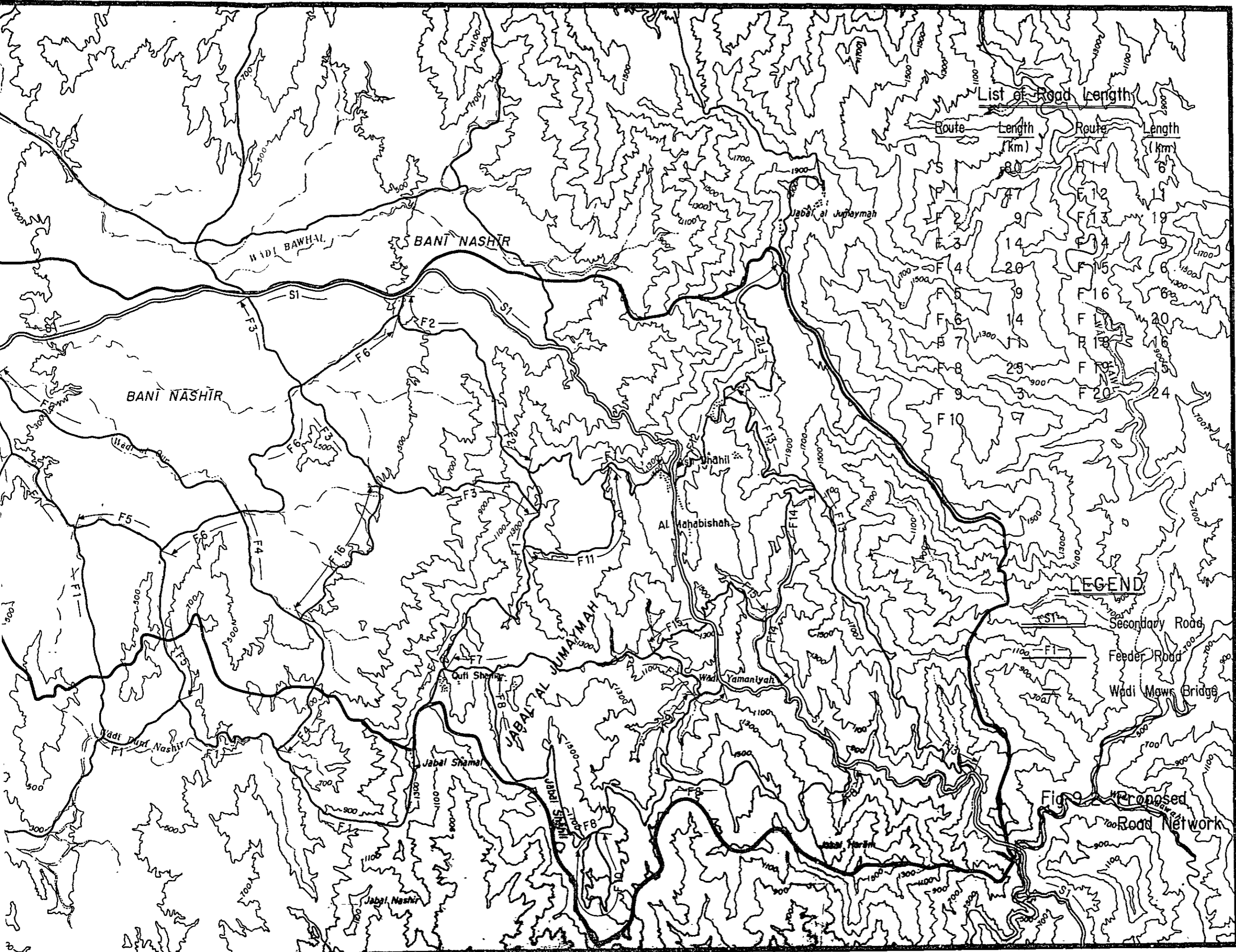


Fig.9.1 Location Map





List of Road Length

Route	Length (km)	Route	Length (km)
S1	80	F11	6
F1	77	F12	11
F2	9	F13	19
F3	14	F14	9
F4	20	F15	6
F5	9	F16	6
F6	14	F17	20
F7	11	F18	16
F8	25	F19	15
F9	3	F20	24
F10	7		

LEGEND




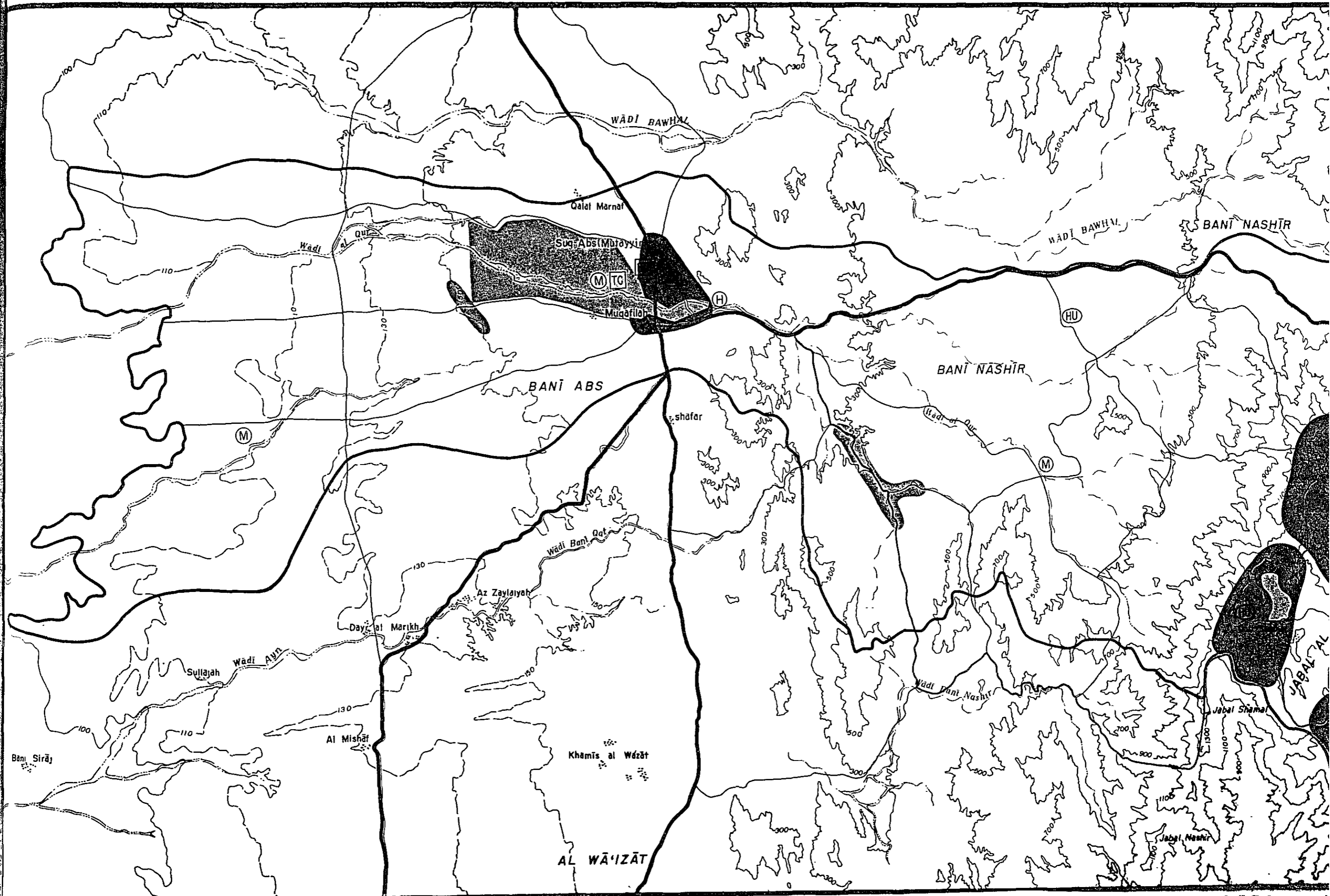
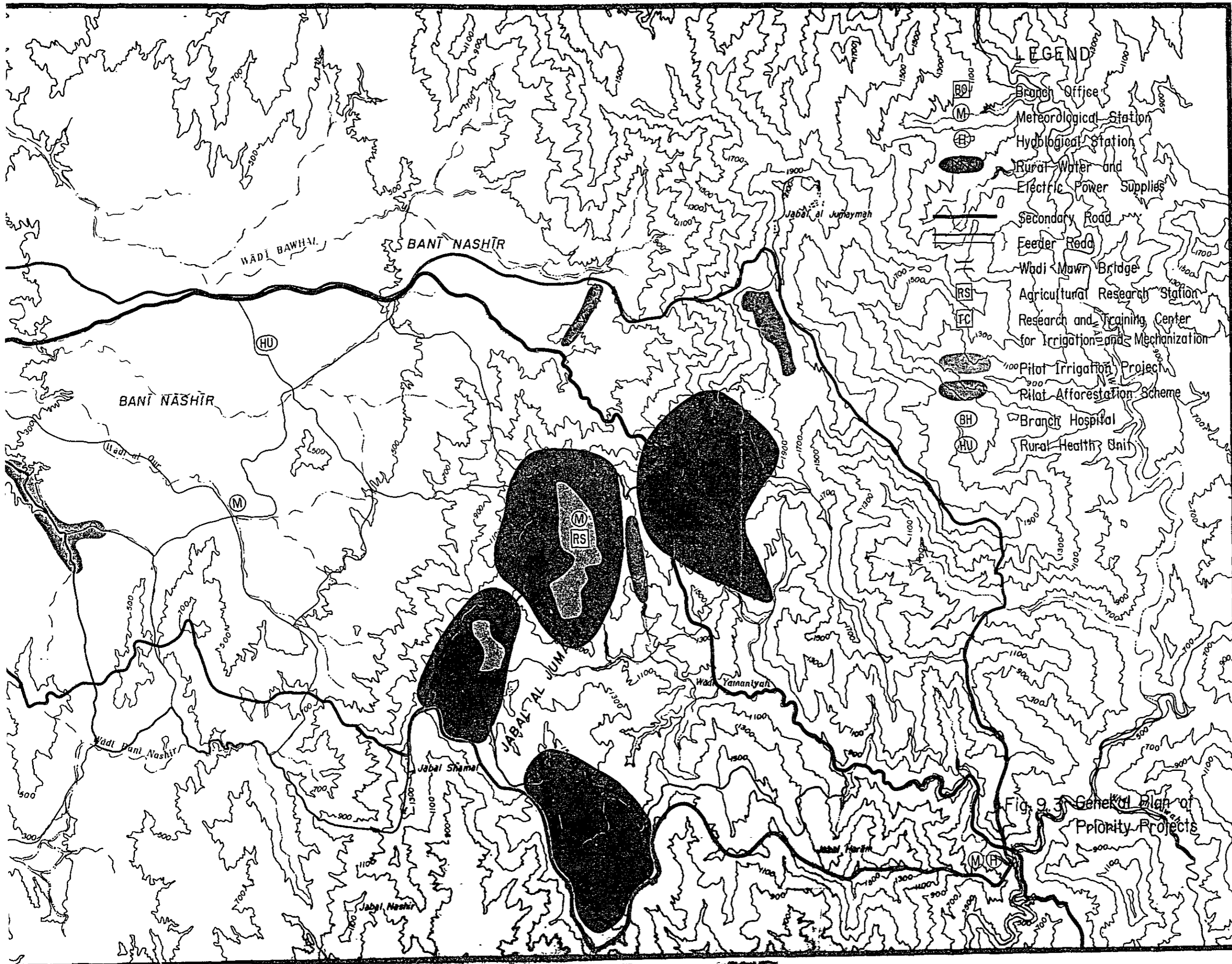
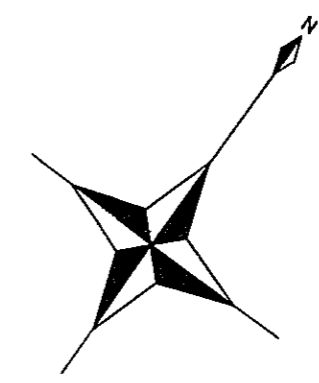
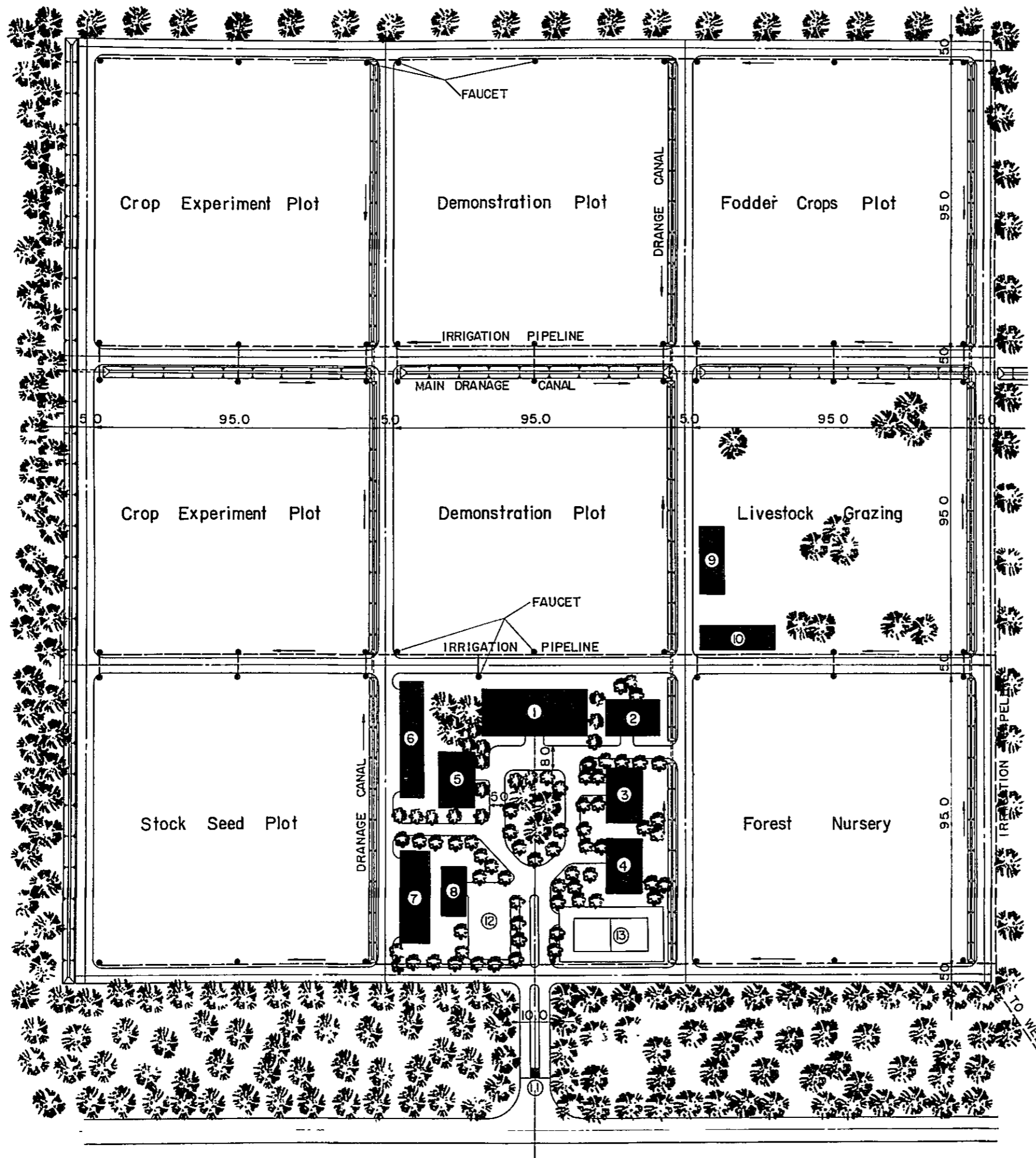
-  Secondary Road
-  Feeder Road
-  Wadi Mawr Bridge

Fig. 9 Proposed Road Network





0 500 1000 Kilometres



LEGEND

- 1 MAIN OFFICE
- 2 LIVESTOCK DEPARTMENT
- 3 AFFORESTATION DEPARTMENT
- 4 IRRIGATION DEPARTMENT
- 5 CROP RESEARCH DEPARTMENT
- 6 FARM TOOLS STORAGE
- 7 FERTILIZER STORAGE
- 8 WATCHMAN'S DORMITORY
- 9 FODDER STORAGE
- 10 STABLE
- 11 MAIN GATE AND GUARD HOUSE
- 12 PARKING AREA
- 13 TENNIS COURT

Fig. 9.4 General Layout of Agricultural Research Station

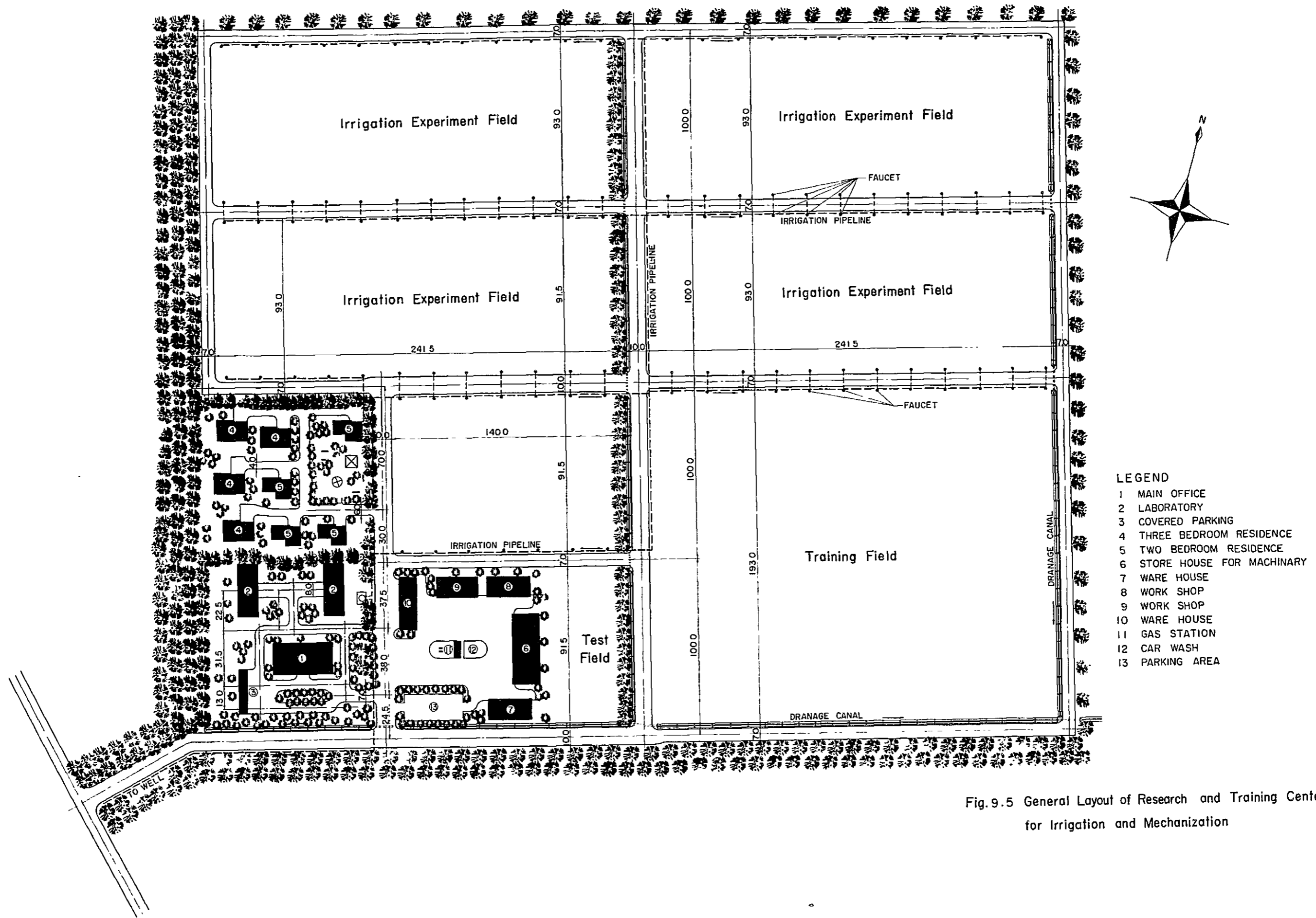


Fig.9.5 General Layout of Research and Training Center for Irrigation and Mechanization

Description	1	2	3	4	5	6	7	8	9	10	(Year in order)
(1) Project office	_____										
(2) Branch offices in Al Mahabisha and Abs		_____									
(3) Establishment of observation network		_____									
Meteorological stations (4)		_____									
Hydrological stations (2)		_____									
(4) Rural water supplies		_____									
Abs, Al Shaafeen		_____									
Sharhil, Quf1 Shamal		_____									
(5) Rural road network		_____									
Secondary roads		_____									
Hajjah - Al Mahabisha (45 km)		_____									
Al Mahabisha - Abs (35 km)		_____									
Bridge on Wadi Mawr (200 m)		_____									
Feeder roads		_____									
Abs - Quf1 - Al Mahabisha (47 km)		_____									
Quf1 - Sharhil (25 km)		_____									
Other feeder roads (220 km)		_____									
(6) Agricultural research station (10 ha)		_____									
(7) Research and training center (20 ha)		_____									
for irrigation and mechanization		_____									
(8) Pilot irrigation projects		_____									
Wadi-delta plain — Abs area (1,300 ha)		_____									
Swampy lands — Jaya, Tahannen and Sharhil area (500 ha)		_____									
Wadi lands (200 ha)		_____									
(9) Establishment of a forest nursery (1 ha)		_____									
(10) Pilot afforestation schemes (200 ha)		_____									
(11) Rural infrastructures		_____									
Health facilities		_____									
Electric power supply		_____									

Fig. 9.6 Preliminary Implementation Schedule for Priority Projects



SCOPE OF WORKS ON MASTER PLAN STUDY FOR HAJJAH PROVINCE
INTEGRATED RURAL DEVELOPMENT IN THE YEMEN ARAB REPUBLIC

(1) Introduction

In response to the request of the Government of the Yemen Arab Republic, the Government of Japan has decided to conduct a study of Master Plan for Hajjah Province Integrated Rural Development in accordance with laws and regulations in force in Japan, and the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of technical cooperation programs of the Government of Japan, will carry out the study.

The present documents set forth the scope of works in regard to the above-mentioned study which to be carried out in close cooperation with the Government of the Yemen Arab Republic and authorities concerned.

(2) Objectives of the Study

The objectives of the study will be:

- a) to formulate, on the basis of the result of the preliminary survey conducted by JICA, the Master Plan for the Integrated Rural Development (hereinafter referred to as "IRD") in Hajjah Province area and
- b) to transfer technical knowledge to the Government staff of the Yemen Arab Republic concerned.

(3) Outline of the Study

The Master Plan study consists of the field works in Yemen and home works in Japan.

Field Works

- a) Data collection and investigation

- 1) Natural environment
Topography, geology, soil, meteorology,
hydrology and vegetation
 - 2) Social and economic survey:
Culture and history
Land use and land classification
Industry and marketing system
Infrastructures (road, irrigation and etc.)
 - 3) Agricultural survey:
Agricultural infrastructures
Crops, cultivation
Livestock
Farm management and economy
Farmer's association, marketing of agricultural
products
- b) Plan formulation of the basic IRD
- 1) Objectives of the IRD
 - 2) Selection and delineation of priority regions
in the Province for the staged development
 - 3) Study of development strategy and identifica-
tion of possible projects
 - 4) Preparation of investment program

Home Works

The Master Plan shall be established in accordance with the findings in the field works, and based on the results of items 3-b and the followings:

- a) Data adjustments and analysis
- b) Assessment of capable resources and study of the obstructing factors for development
- c) Preparation of the Master Plan incorporating the outcome of item 3-b.

(4) Reports

The JICA will prepare and submit the following reports to the Government of the Yemen Arab Republic, according to the attached work schedule.

- a) Interim Report: Twenty (20) copies in English at the end of field study on Hajjah Province area.
- b) Draft Final Report: Twenty (20) copies in English after the completion of the field works. The Government of the Yemen Arab Republic is requested to provide JICA with its comments after the receipt of the draft final report.
- c) Final Report: Fifty (50) copies in English after the receipt of the draft final report.

(5) Undertakings of the Government of the Yemen Arab Republic To secure the smooth performance of the study, the Government of Yemen Arab Republic is requested:

- a) to provide the study team with data and information necessary for the study.
- b) all equipments and materials are exempted from taxes and custom duties including personal effects.
- c) to assure security of the team during their services in Yemen.
- d) to assign the necessary number of counterpart personnel to cooperate and assist the team, as well as to be trained during the implementation of the project.
- e) to provide and arrange the study team with suitable office and accommodation in Hajjah Town for about 10 Japanese team members.
- f) to assist the team in hiring 4-wheel-drive vehicles.
- g) to make necessary arrangements for the work schedule.

W O R K _ S C H E D U L E

	1 9 7 8												1 9 7 9					1 9 8 0						
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	
Scope of Works Mission	2W																							
Field Work Dry Season	3M																							
Wet Season	4M																							
Home Office Work	-----																							
Report													Interim Report					Draft Report					Final Report	
Draft Report Mission	2W																							

JAPANESE MASTER PLAN STUDY TEAM

(1) First Study Team

<u>Assignment</u>	<u>Name</u>	<u>Present Position</u>
Leader	Mr. Shizen Inoue	Vice President Agricultural Develop- ment Consultants Association, Japan (ADCA)
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Agricultural Economy	Mr. Naoki Ariga	Advisor (ADCA)
Agricultural Engineering	Mr. Takao Kume	Advisor (ADCA)

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<u>Assignment</u>	<u>Name</u>	<u>Present Position</u>
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Geography	Mr. Shoji Ando	Advisor (ADCA)
Geology	Mr. Toru Kawasaki	Advisor (ADCA)
Irrigation	Mr. Takao Kume	Advisor (ADCA)
Hydrology	Mr. Hironori Takahashi	Advisor (ADCA)
Regional	Mr. Shizuo Sato	Advisor (ADCA)
Agricultural Extension	Mr. Masashi Shono	Advisor (ADCA)
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Mr. Ahmed Mohmed Mogbil	Director, Credit Dept.
Mr. Ogale Eleriani	Director, Follow-up Dept.
Dr. Magdi El-Menshaui	Advisor
Mr. Ali Abdalla Ali	Advisor
Mr. Aquil Al-Iryan	Head, Follow-up Dept.
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Mr. Anwar Al-Harazi	Head, Project Dept.
Mr. Abdel Rahim Saeed Tahir	Loans and Technical Assistance Dept.

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Mr. Hussain A. Al-Fakeih	Director-General, Irrigation Dept.
Mr. Kamil Monsour	Chief of the World Bank Team
Mr. Hussain Al-Safargal	Planning and Statistics Dept.
Mr. Shawlik	Expert of Hydrological Dept.
Mr. Lutf El-Ansy	Director, Planning Dept.
Mr. Abdulla Al-Anashi	Director, Extension Dept.
Mr. Mahamoud Juneidi	FAO Forestry Officer
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Mr. Kamil Monsour	IBRD Expert/ Team Leader
Mr. H. A. Hamni	IBRD Expert/ Statistics
Mr. Nafeh Orabi	IBRD Expert/ Agriculture
Mr. Ramiz Malik	IBRD Expert/ Irrigation

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Mr. Abdul Rahman Hamid	Chief of Cooperative Development Board
Mr. Ali Al-Moied	Director, Mahabisha District
Mr. Abdul Hamid Al-Mahdi	Director, Mahabisha Cooperative
Mr. Yahya	Director Abs Cooperative

Southern Uplands Rural
Development Unit

Mr. Hassan El-Huraibi	General Manager, Rural Development Office
Mr. El-Kheir Hag El-Amin	Chief Engineer
Mr. M. A. Hahboob	Acting Chief Engineer
Mr. Zein El-Abdin El-Borai	Expert, Finance and Administration

Central Agricultural Research
and Training Center

Mr. Abdul Rahman Sallam	Co-Manager of Research Station
Mr. Mahmoud Swelem	Training Expert, Taiz Training Center

Taiz Water Supply Office

Mr. Mohmed Abdul Aziz	General Director
Mr. Harold R. Jackson	Advisor

Tihama Development Authority

Mr. Abdul Moonren Hozza	Director, Research Station
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Confederation of Yemeni
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Mr. Morshed Muhamed	General Director, Planning Dept.

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Mr. Gamal Mohammed Abdu	Deputy Minister
Mr. Abraham Al-Shamy	General Director, Rural Water Supply Dept.
Mr. A. M. Krishina	Deputy Chief Engineer, Highway Authority
Mr. Mohmed Yones	Expert, Rural Water Supply Dept.
Mr. Hasen Al-Shamy	WHO General Project Manager

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Mr. Abdul Rahman Shuga	Third Secretary
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Ministry of Communication

Mr. Mohamed Mohamed Arashi	Under Secretary
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Ministry of Health

Mr. Yahia Mohamed El-Hila	General Manager, Hajjah Hospital
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Agricultural Credit Bank

Mr. Mohammed Basalama	Manager, Credit Dept.
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Central Bank of Yemen

Mr. Omar T. Bazara	Manager, Foreign Dept.
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JICA