

THE ARAB REPUBLIC OF EGYPT
FAYOUM GOVERNORATE

FEASIBILITY REPORT


ON

FAYOUM AGRICULTURAL DEVELOPMENT PROJECT
MAIN REPORT



MARCH 1985

JAPAN INTERNATIONAL COOPERATION AGENCY

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国際協力事業団

受入 月日 '85. 6. 18	405
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PREFACE

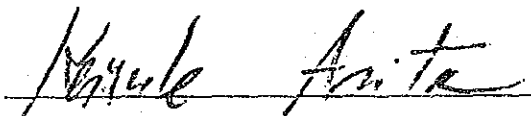
In response to the request of the Government of the Arab Republic of Egypt, the Government of Japan decided to conduct a feasibility study on the Fayoum Agricultural Development Project and entrusted the study to the Japan International Cooperation Agency. The JICA sent to Egypt a survey team headed by Mr. K. Tamaki from July to September, 1984.

The team exchanged views on the Project with the officials concerned of the Government of Egypt and conducted a field survey. After the team returned to Japan, further studies were made and the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relation between our two countries.

I wish to express my deep appreciation to the officials concerned to the Government of the Arab Republic of Egypt for their close cooperation extended to the team.

March, 1985

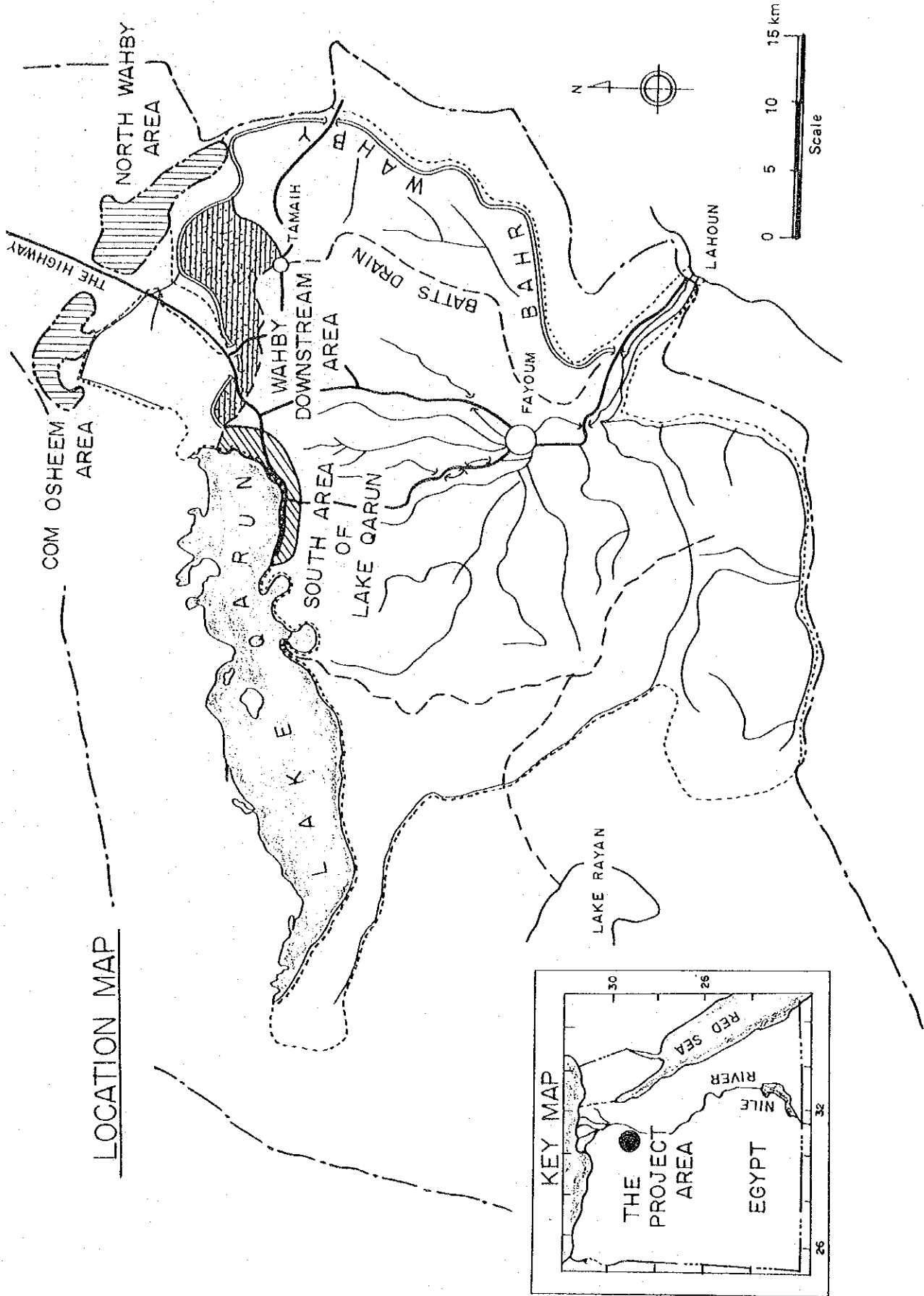


Keisuke ARITA

President

Japan International Cooperation Agency

LOCATION MAP



FAYOUM AGRICULTURAL DEVELOPMENT PROJECT GENERAL PLAN NORTH WAHBY AND COM OSHEEM AREAS

Proposed Land Use

Description	(Unit: feddan)		
	North Wahby	Com Osheem	Total
a. Gross Project Area	5,100	3,700	8,800
b. Structure, Village, and Facilities	680	540	1,220
c. Land Holder Area (a-b)	4,420	3,720	7,580
d. On-farm Holder Area (a-b) (approx. 5%)	220	160	380
e. Farm Land Acreage (c-d)	4,200 (82.4%)	3,000 (81.1%)	7,200 (81.8%)

Irrigation & Drainage Facilities

Facility	Stations	North Wahby	Com Osheem	Total
Pump Station	Stations	5	3	8
Pipelines	km	31.4	19.7	51.1
Drainage Canals	km	18.1	15.9	34.0

On-Farm Facilities

Facility	sets	North Wahby	Com Osheem	Total
Sprinkler	sets	890	530	1,420
Drip	sets	1,200	570	1,770
Pipeline	km	122.2	81.8	204.0

Population and number of households to be settled

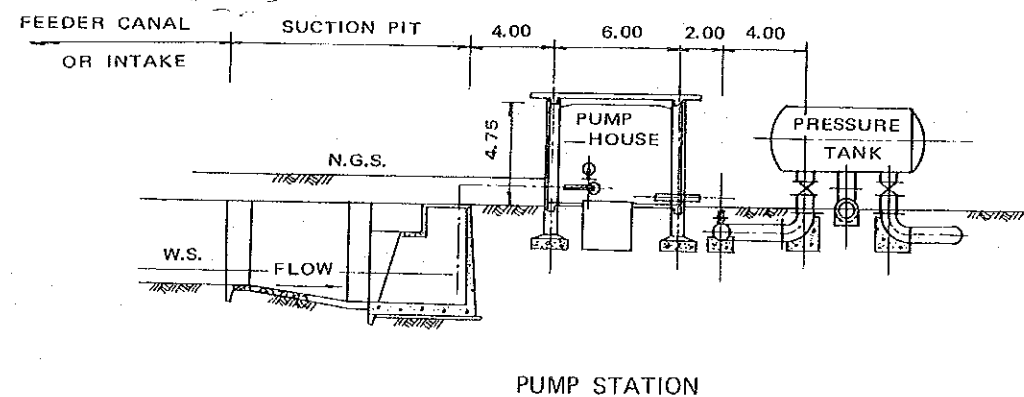
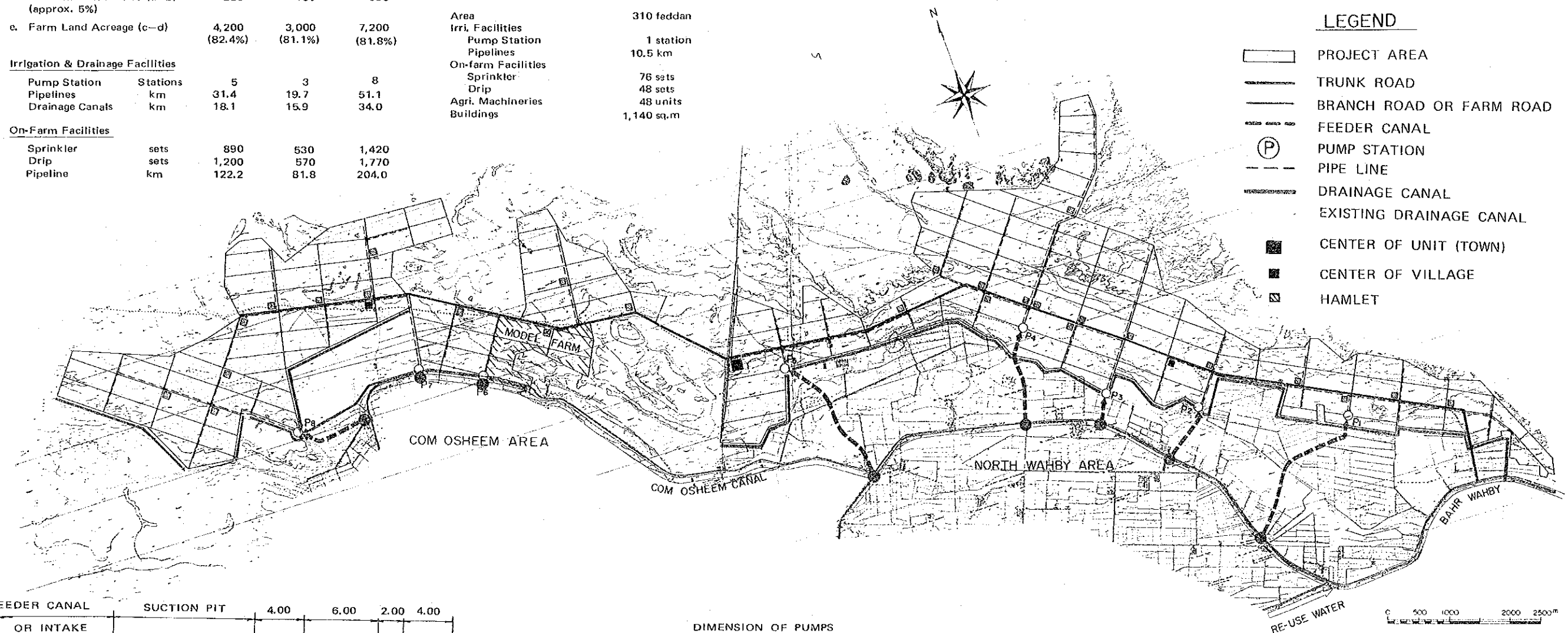
Area	Household		Total	Population
	Farmers	Non-farmers		
North Wahby	571	80	651	3,255
Com Osheem	270	78	348	1,740
Total	841	158	999	4,995

Model Farm

Area	310 feddan
Irri. Facilities	
Pump Station	1 station
Pipelines	10.5 km
On-farm Facilities	
Sprinkler	76 sets
Drip	48 sets
Agri. Machineries	48 units
Buildings	1,140 sq.m

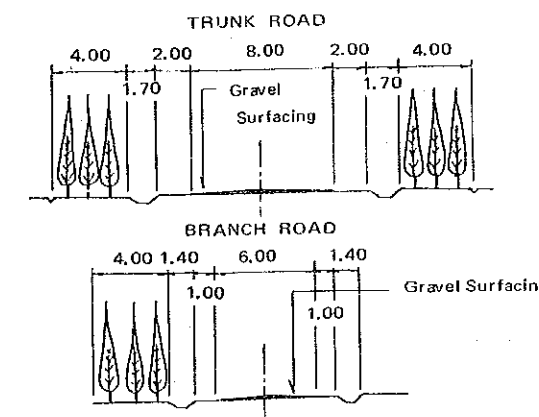
LEGEND

- PROJECT AREA
- TRUNK ROAD
- BRANCH ROAD OR FARM ROAD
- FEEDER CANAL
- PUMP STATION
- PIPE LINE
- DRAINAGE CANAL
- EXISTING DRAINAGE CANAL
- CENTER OF UNIT (TOWN)
- CENTER OF VILLAGE
- HAMLET



DIMENSION OF PUMPS

P.S.	Q	TH	D	KW	N	TYPE	AREA SERVED
	cum/min	m	mm	kw	units		feddan
P1	4.58	80	200	90	7	Horizontal Axis single suction	684
P2	4.53	72	200	90	7		676
P3	4.68	77	200	90	7		699
P4	6.11	79	250	120	10	multi stage	1,367
P5	5.19	85	200	110	7	volute pump	774
P6	6.60	78	250	130	7		750
P7	8.04	83	250	160	7		1,200
P8	5.36	82	200	110	7		800



TYPICAL SECTION OF ROADS

FAYOUM AGRICULTURAL DEVELOPMENT PROJECT GENERAL PLAN WAHBY DOWNSTREAM AREA

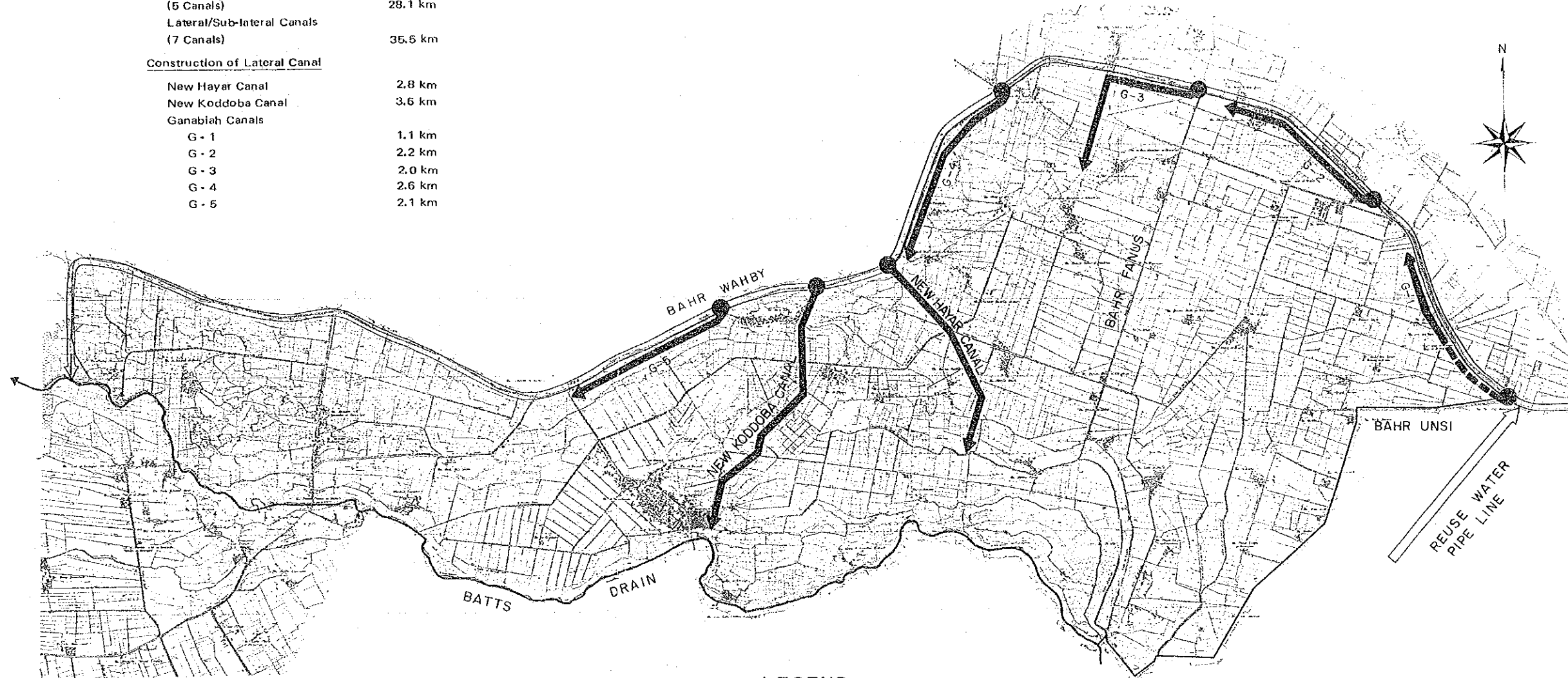
Area Served 17,200 feddan

Improvement of Canals

Main Canal (Bahr Wah by 46.80 - 68.10 km)	21.3 km
Branch Canals (5 Canals)	28.1 km
Lateral/Sub-lateral Canals (7 Canals)	35.5 km

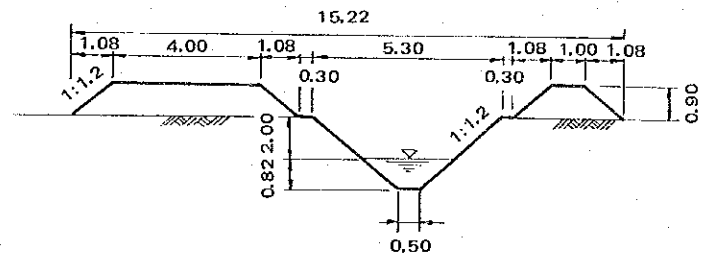
Construction of Lateral Canal

New Hayer Canal	2.8 km
New Koddoba Canal	3.6 km
Ganabiah Canals	
G - 1	1.1 km
G - 2	2.2 km
G - 3	2.0 km
G - 4	2.6 km
G - 5	2.1 km



LEGEND

- EXISTING CANAL
- PROPOSED CANAL
- PROJECT AREA



CROSS SECTION OF NEW HAYAR CANAL

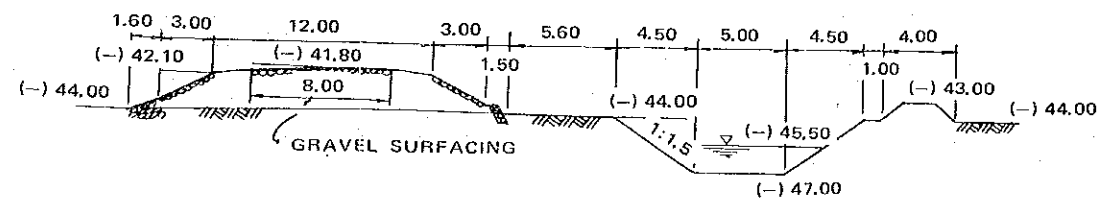
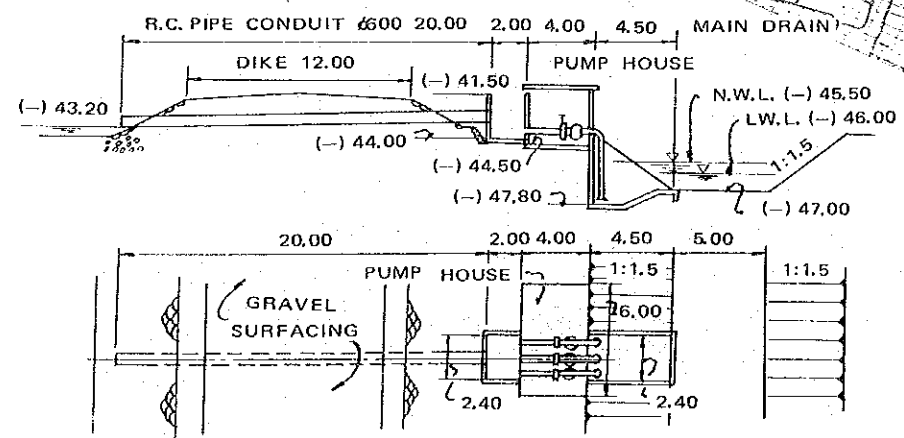
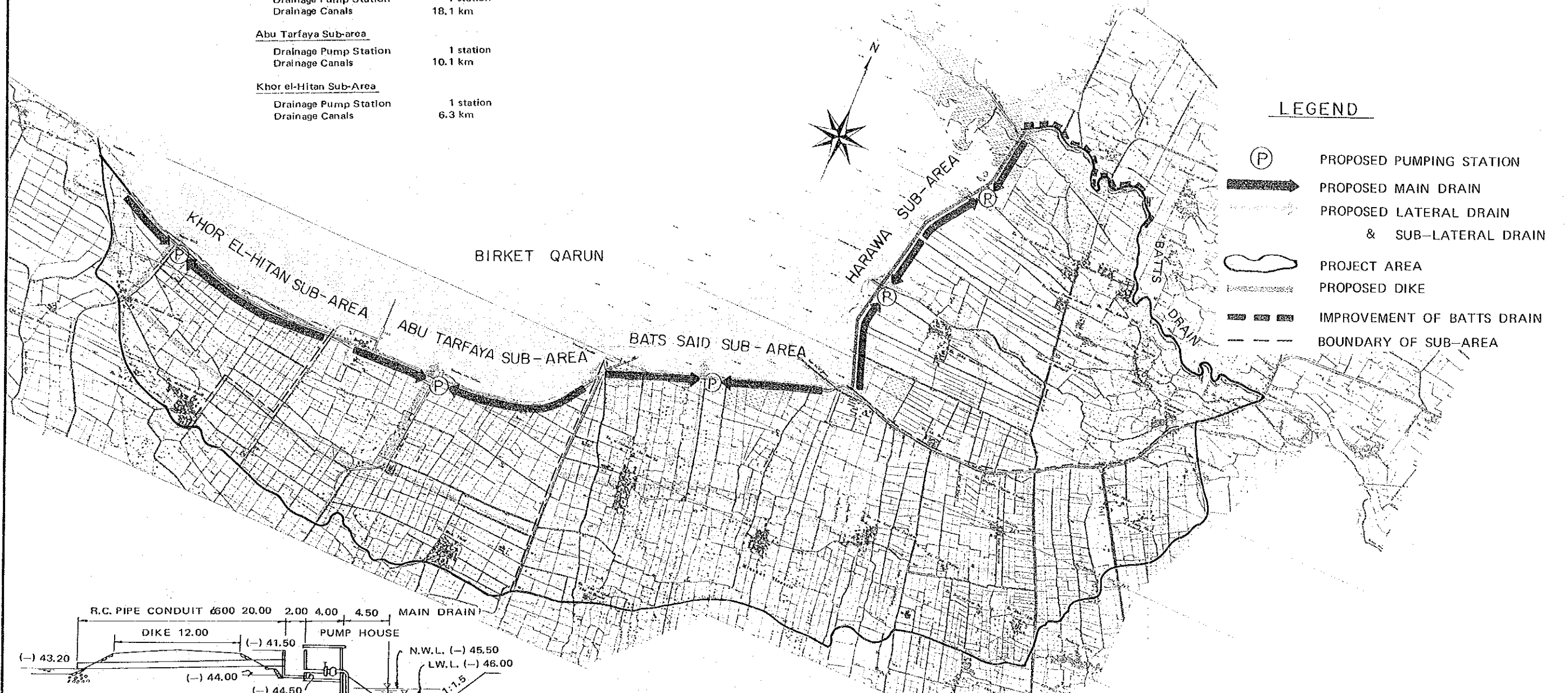


FAYOUM AGRICULTURAL DEVELOPMENT PROJECT GENERAL PLAN SOUTH AREA OF LAKE QARUN

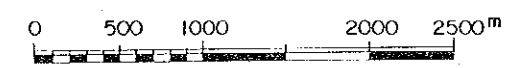
Harawa Sub-area	
Drainage Pump Station	2 stations
Qarun Dike	3.5 km
Drainage Canals	7.0 km
Batts Drain (Imprv.)	2.5 km
Bats Said Sub-area	
Drainage Pump Station	1 station
Drainage Canals	18.1 km
Abu Tarfaya Sub-area	
Drainage Pump Station	1 station
Drainage Canals	10.1 km
Khor el-Hitan Sub-Area	
Drainage Pump Station	1 station
Drainage Canals	6.3 km

LEGEND

- (P) PROPOSED PUMPING STATION
- ➔ PROPOSED MAIN DRAIN
- ⋯ PROPOSED LATERAL DRAIN & SUB-LATERAL DRAIN
- ▭ PROJECT AREA
- ▬ PROPOSED DIKE
- ▬▬▬ IMPROVEMENT OF BATTS DRAIN
- - - BOUNDARY OF SUB-AREA

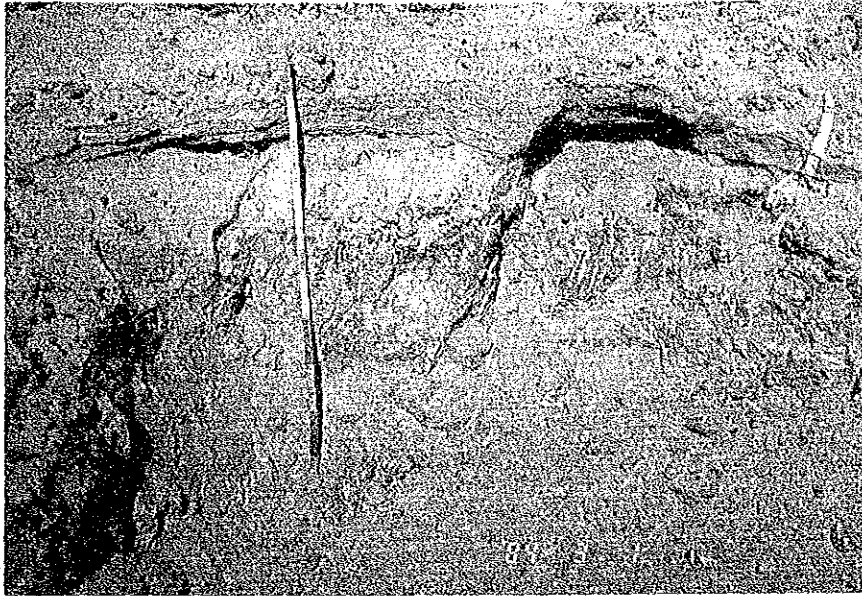


TYPICAL SECTION OF DIKE & MAIN DRAIN



ABU EL-RAHMAN
ABU HARAWA PUMPING STATION

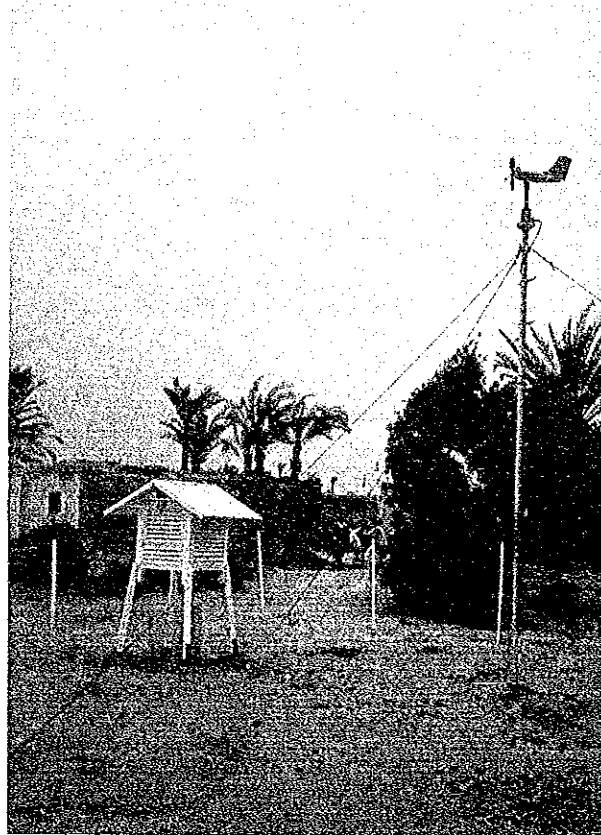




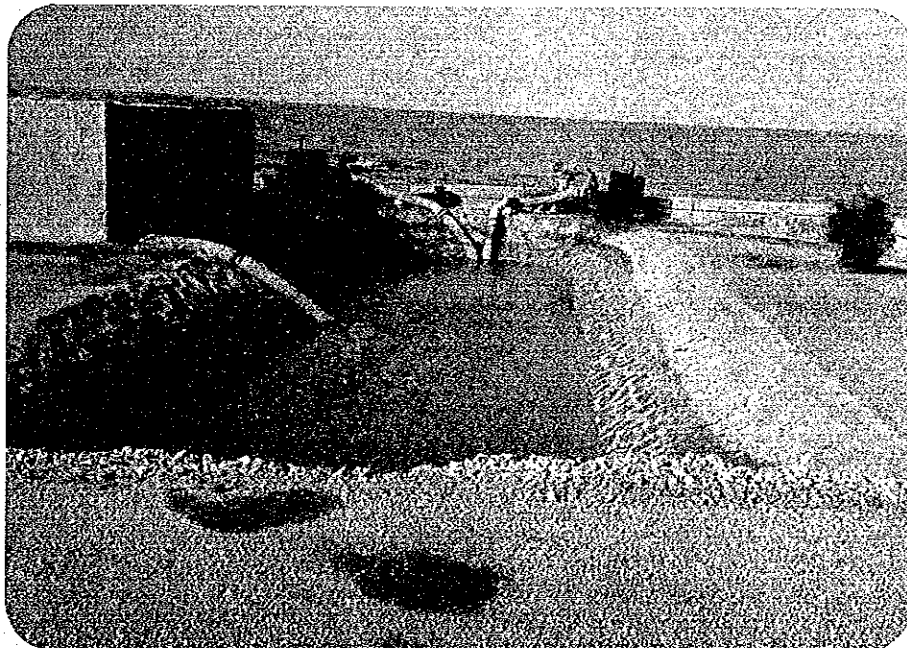
Typical Soil Profile in the New Reclamation Area



Typical Soil Profile in a Existing Farm Land



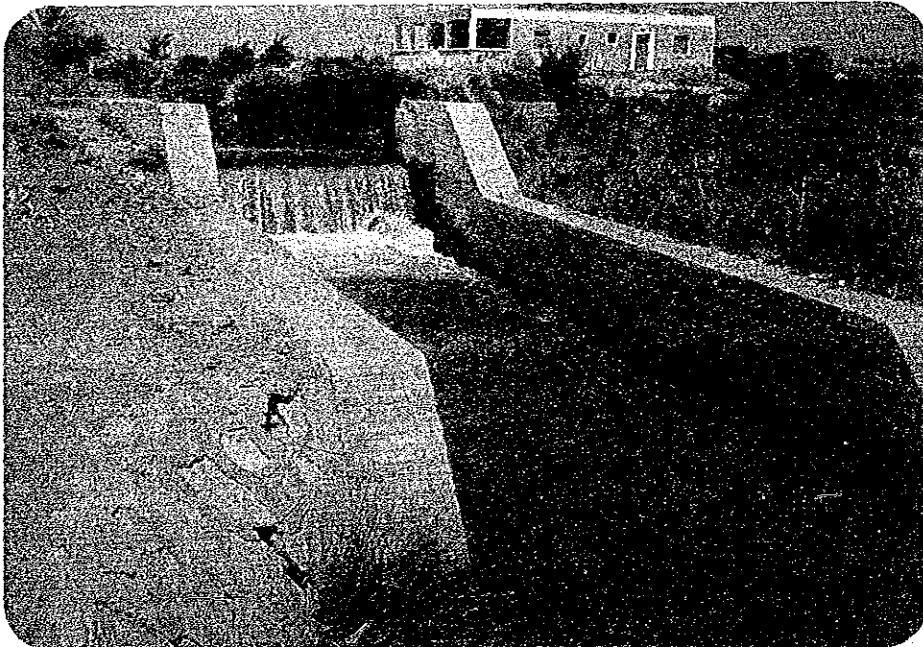
Meteorological Station in the Project Area



Existing Drainage Pump Station to drain water to Lake Qarun



Existing Check and Vent for Intaking Irrigation Water



Existing Drop cum Check Structure on a Branch Canal



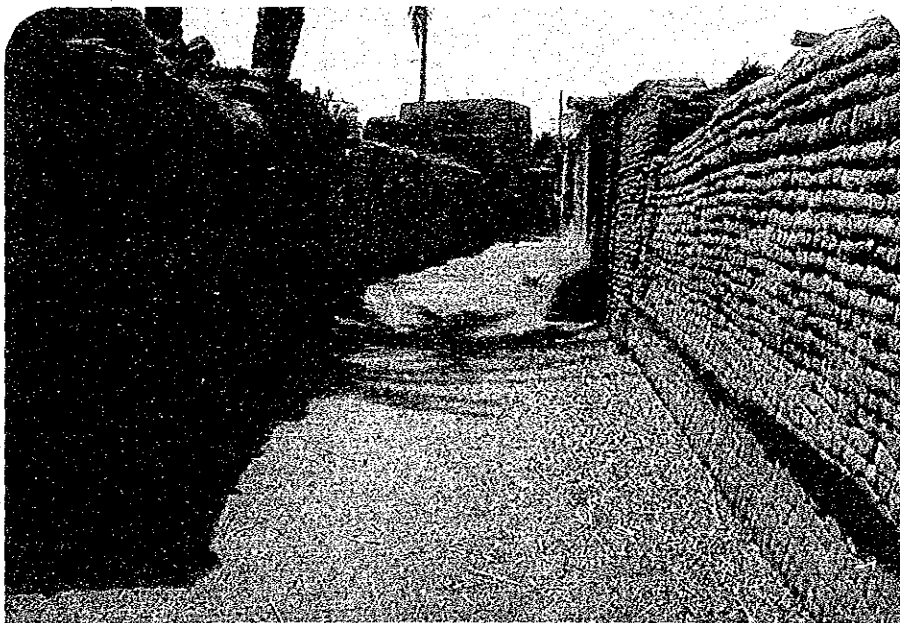
Summer Crop (Cotton on the Flowering Stage)



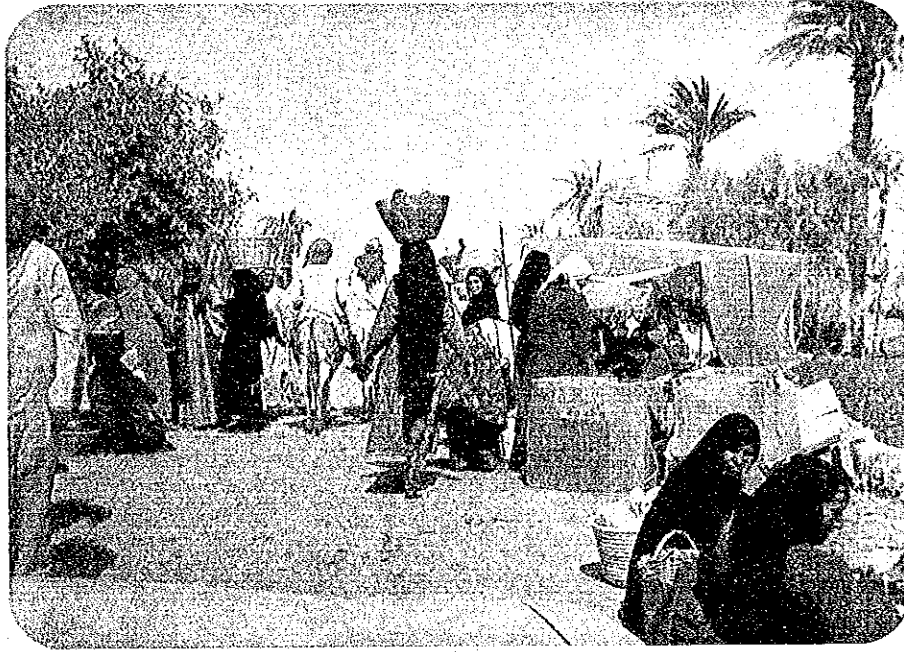
Harvesting of Rush



Winter Crop (Wheat)



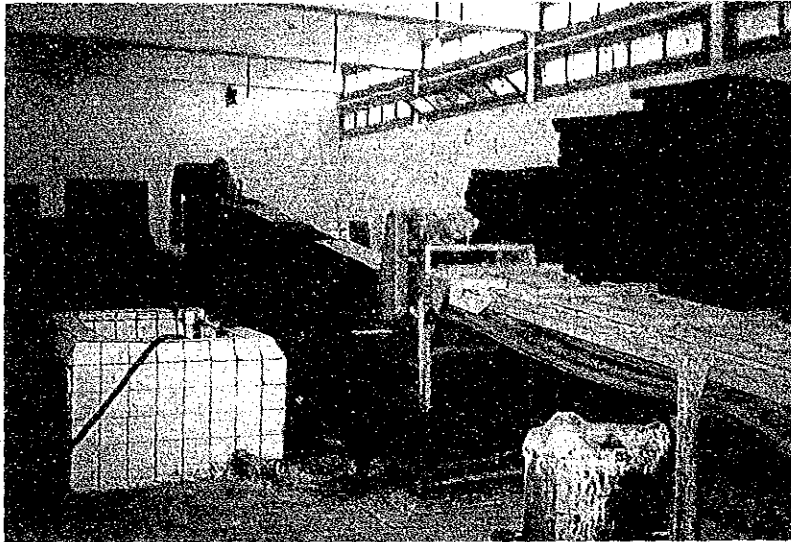
Existing Hamlet



Weekly Market in a Village



Private Vegetable Saller in Fayoum



Dates Processing Factory in Fayoum



Cattle Breeding and Fattening Farm in Com Osheem

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ABBREVIATION AND GLOSSARY

ABBREVIATION

AOF	Agricultural Office in Fayoum, MOA
ARC	Agricultural Research Center
ARE	Arab Republic of Egypt
COF	Agricultural Cooperative Office in Fayoum
DOB	Drainage Office in Beni Suef
EIRR	Economic Internal Rate of Return
ESD	Egypt Survey Department
Ez	Ezba Hamlet or Small Village
FAF	Faculty of Agriculture in Fayoum, Cairo Univ.
FGC	Fayoum Geological Center
FIRR	Financial Internal Rate of Return
FSA	Farmer Social Association
GARPAD	General Authority for Rehabilitation Project and Agricultural Development
GOE	Government of Egypt
GOF	Governorate of Fayoum
GOJ	Government of Japan
IBRD	International Bank of Reconstruction & Development
IDF	Irrigation Department, Fayoum
IOF	Irrigation Office in Fayoum, MOI
JICA	Japan International Cooperation Agency
LE	Egyptian Pound
MOA	Ministry of Agriculture and Food Security
MOI	Ministry of Irrigation
MOPIC	Ministry of Planning and International Cooperation
MORCL	Ministry of Reconstruction, New Communities and Land Reclamation
O&M	Operation and Maintenance
OECE	The Overseas Economic Cooperation Fund
SSD	Soil Survey Department
UNDP	United National Development Program
USAID	US Agency for International Development
¥	Japanese Yen

UNIT

Length

mm	millimeter(s)
cm	centimeter(s)
m	meter(s)
km	kilometer(s)

Area

sq.m	square meter(s)
sq.km	square kilometer(s)
Fed. or feddan	local unit of acreage = 4,200 sq.m = 0.42 ha
ha	hectare = 2.381 feddan

Weight

mg	milligram(s)
g or gr	gram(s) = 1,000 mg
kg	kilogram(s) = 1,000 g
ton	ton(s) = 1,000 kg

Time

sec	second(s)
min	minute(s)
hr	hour(s)

Content

lit.	liter(s)
cu.cm	cubic centimeter(s)
cu.m	cubic meter(s)

Discharge

lit/sec liter(s) per second
cu.m/sec cubic meter per second

Others

V volt(s)
KVA kilovolt ampere(s)
KW kilowatt(s)
KWH kilowatt(s) hour
Hz hertz(s)
ps Pferdestärke = horse power(s)
ppm part(s) per million
mmhos millimhos unit for electric conductivity
°C centigrade degree(s)

CONVERSION TABLE

Metric Cantar	Cotton (Unginned)	157.5 kg
	(Ginned or lint)	50.0 "
Cantar	Other Crops	44.9 "
Ardeb	Wheat	150.0 "
	Maize	140.0 "
	Sorghum	140.0 "
	Millet	140.0 "
	Barley	120.0 "
	Sesame	120.0 "
	Rice (Unhusked)	300.0 "
	Rice (Bleached)	200.0 "
	Beans	155.0 "
	Beans (Crushed)	144.0 "
	Lentiles	160.0 "
	Lentiles (Crushed)	148.0 "
	Groundnuts	75.0 "
Dariba	Rice (Unhusked)	933.0 "
	Rice (Bleached)	630.0 "

CURRENCIES

LE 1 = US\$ 1.22

US\$ 1 = LE 0.82

US\$ 1 = ¥ 240

LE 1 = ¥ 290

FISCAL YEAR

JULY to JUNE

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- APPENDIX-A GENERAL
- B METEOROLOGY AND HYDROLOGY
- C SOIL
- D AGRICULTURE
- E ANIMAL HUSBANDRY

APPENDIX II (Other Volume)

- APPENDIX-F IRRIGATION AND DRAINAGE
- G AGRO-INDUSTRY AND RURAL DEVELOPMENT
- H IRRIGATION AND DRAINAGE FACILITIES
- I COST ESTIMATE
- J ECONOMIC EVALUATION

