

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JORDAN INDUSTRIAL ESTATES CORPORATION (JIEC)
THE HASHEMITE KINGDOM OF JORDAN

**STUDY
ON
INDUSTRIAL DEVELOPMENT
IN
THE SOUTHERN DISTRICTS
OF
THE HASHEMITE KINGDOM OF JORDAN**

**FINAL REPORT
MAIN**

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February 1997

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PREFACE

In response to a request from the Government of the Hashemite Kingdom of Jordan, the Government of Japan decided to conduct the Study on Industrial Development in the Southern Districts of the Hashemite Kingdom of Jordan and the study was implemented by the Japan International Cooperation Agency (JICA).

JICA sent a study team, led by Mr. Masatoshi Akagawa of Nippon Koei Co. Ltd. and organized by Nippon Koei Co. Ltd., Japan Industrial Location Center and Regional Planning International Co. Ltd., to the Hashemite Kingdom of Jordan 4 times from November 1995 to January 1997.

The team held discussion with the officials concerned of the Government of Jordan, and conducted related field surveys. After returning to Japan, the team conducted further studies and compiled the final results in this report.

I hope this report will contribute to the promotion of the plan and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Jordan for their close cooperation throughout the study.

February 1997



Kimio Fujita

President

Japan International Cooperation Agency

February 1997

Mr. Kimio Fujita
President
Japan International Cooperation Agency
Tokyo, Japan

LETTER OF TRANSMITTAL

Dear Sir,

We have pleasure of submitting to you the Final Report of "Study on Industrial Development in the Southern Districts of the Hashemite Kingdom of Jordan".

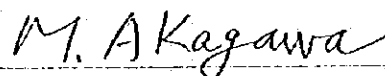
This report presents the results of the study that was carried out for a total period of 16 months from October 1995 to January 1997 by the Study Team composed of Nippon Koei Co., Ltd., Japan Industrial Location Center and Regional Planning International Co., Ltd., in accordance with the contract concluded with your Agency.

The report consists of (1) a master plan for the industrial development in the Southern Districts mainly comprising the selection of the target industrial categories, selection and evaluation of the priority projects, and selection of the priority industrial estates; and (2) a pre-feasibility study of the selected industrial estate.

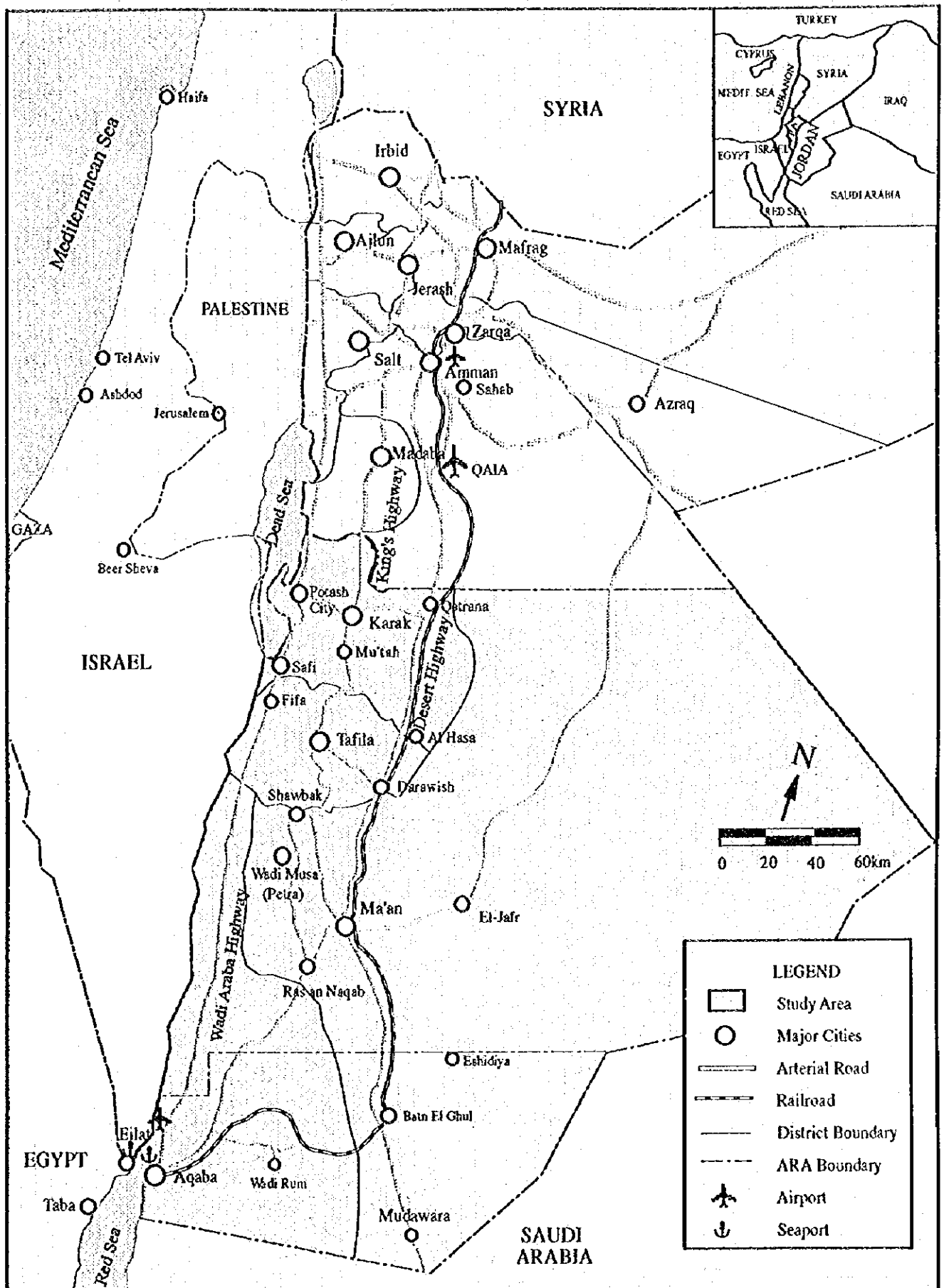
On this occasion, we would like to express our deep appreciation and sincere gratitude to all those who extended their kind assistance and cooperation to the Study Team, in particular the officials concerned from the Jordan Industrial Estates Corporation (JIEC), the Ministry of Planning (MOP), and the Aqaba Region Authority (ARA). We also would like to extend our acknowledgments to the officials of your Agency, the Ministry of Foreign Affairs, the Ministry of International Trade and Industry, and the Embassy of Japan in Jordan.

We hope the report will realistically contribute to the future industrial development in the Southern Districts of Jordan.

Sincerely yours,



Masatoshi AKAGAWA
Team Leader for the Study on
Industrial Development in the
Southern Districts of the
Hashemite Kingdom of Jordan



LOCATION MAP



EXECUTIVE SUMMARY

OBJECTIVES AND STUDY AREA

01 *Objectives* : The Study on Industrial Development in the Southern Districts of the Hashemite Kingdom of Jordan (The Study) has the following three objectives:

- To prepare a master plan for the industrial development in the Southern Districts;
- To conduct a preliminary feasibility study (Pre-F/S) on an industrial estate with the highest potential among the candidate sites; and
- To conduct technology transfer to the Jordanian counterpart personnel.

02 *Study Area* : The Study Area roughly encompasses the southern half of Jordan comprising the four districts of Karak, Tafila, Ma'an, and Aqaba with approximately 43,000 km².

03 *Scope* : It should be noted that the purpose of the Study is not to draw up a detailed industrial development plan for every part of the Study Area, but rather to show the basic direction of the industrial development in the Southern Districts and its role in the national economic development. It should also be noted that industrial infrastructures which are considered prerequisite for the takeoff of industrialization have been identified and profiles were worked out rather than formulating individual industrial projects.

OUTLINE OF THE STUDY

04 *Outline* : Industrial development in the Southern Districts has close relevance with the national economic development and socioeconomic environment in the Middle East region as well, either directly or indirectly. Preparation of the industrial master plan for the Southern Districts has, therefore, firstly started with the formulation of a development scenario for the country, then has proceeded through several steps to provide the major outputs as described below.

(a) Development Scenarios

- Basic policy direction
- Scenario for the Middle East Peace Process
- Industrial development scenario for the Southern Districts
- Macro-economic targets for the industrial development in the Southern Districts

(b) Industrial Development Strategies for the Southern Districts

Nine strategies have been worked out from the following 3 viewpoints:

- Strengthening of spatial linkage (formulation of regional development axes and economic development bases);
- Priority development of the social and economic infrastructures in the Southern Districts; and
- Upgrading of basic industrial infrastructures in the Southern Districts.

(c) Overall Industrial Development Plan

The overall plan for the Southern Districts comprises the following three principal components.

- Selection of target industrial categories and product mix, and strategy for the sub sector with highest potential
 - Target industrial categories: 13 categories
 - Product mix: More than 100 products
 - Sub-sector with the highest potential: Chemical industry
- Selection and evaluation of the high priority/priority projects
 - High priority projects: 3 projects
 - Priority projects: 11 projects
- Selection of the priority industrial estates

(d) Selection of an Industrial Estate with the Highest Potential

- An industrial estate with the highest potential
- Pre-F/S of the selected industrial estate

INDUSTRIAL DEVELOPMENT SCENARIO

05 *Development Scenario for Jordan* : The development scenario for Jordan as a whole, which should set the overall frame for the industrial development in the Southern Districts, has been worked out considering the following two factors.

- Development policy for the country
- Possible scenarios for the Middle East Peace Process and activation of the Middle East region

Of the two possible alternative policies, the self-reliant policy alternative is recommended to be adopted considering that national economic management in line with the self-reliant policy, if successful, could solve the chronic economic illness of deficit on

trade balance, vulnerability to the fluctuation of external economies, etc. and improve the productivity of the country's economy by strengthening the private sector economy as well as narrow down the regional socio-economic gap in the country.

Three alternative cases were contemplated for the scenarios for the Middle East Peace Process and activation of the Middle East region as follows.

- **Ideal Scenario**

Major issues concerned will either be solved or realized in the short-term before the year 2000, including the lift of UN sanction against Iraq, a comprehensive Middle East peace agreement including independence of Palestinian State and restoration of the Golan Heights to Syria, and a regional agreement for free trade and investment.

- **Optimistic Scenario**

Major issues will either be solved or realized in the middle term before the year 2005.

- **Conservative Scenario**

Major issues will remain to be solved or realized after the year 2010 except UN sanction against Iraq to be lifted before 2010.

Assuming that the self-reliant policy is adopted under all the cases, the macro economic target for the country in terms of manufacturing sector development could be set for the year 2010 under ideal and optimistic scenarios as follows with the following assumptions.

- Under the ideal scenario, per capita GDP and share of the manufacturing sector of Jordan in the year 2010 should reach those of Thailand in the year 1994.
- Under the optimistic scenario, value-added of manufacturing sector should grow at an annual average rate of 7.8%

Scenario	VA of	Number of employees	
	Manufacturing sector (JD million)	In Manufacturing sector (persons)	Industrial area (ha)
Ideal	2,506	383,727	4,590
Optimistic	1,482	226,861	2,714

06 *Development Scenario for the Southern Districts* : To determine the role and basic direction of the development of the Southern Districts and their industrial development scenario, the following advantages were taken into account.

- Relatively well-developed economic infrastructures including an international

- trading port and an international airport at Aqaba and electricity supply;
- Relatively rich groundwater resources at Dici;
- Phosphorous mineral and limestone resources and the Dead Sea mineral resources;
- Tourism resources including Petra, Wadi Rum and the Gulf of Aqaba;
- Though to a limited scale, agricultural and livestock products in the southern Ghor area, highland area and the Ma'an district; and
- Sharing long borders with Saudi Arabia and Israel, and easy access to Egypt.

Considering the above, the basic direction to be followed and roles to be played by the development of the Southern Districts should be:

- To establish a new growth pole of the country besides the Central-Northern Districts;
- To strengthen the getaway function of the Southern Districts for the country;
- To form an important core region for international economic/industrial cooperation;
- To increase GRP (Gross regional product) of the Southern Districts;
- To alleviate poverty, both in terms of abject and absolute poverty;
- To narrow the socio-economic development gap with the Central/Northern Districts;
- To keep the development gap among the four Governorates in the Southern Districts within a permissible range;
- To develop the agriculture and tourism sectors in the Southern Districts; and
- To utilize the mineral resources available in the Southern Districts.

Industrial development in the Southern Districts should be realized in the scenario with the following major factors.

- Mineral resources-based industries should be promoted aiming at attaining higher value-added;
- Processing of agricultural and livestock products should be promoted;
- Assembling type industries should be expanded in the vicinity of Aqaba, utilizing the international trading facilities;
- High quality labor-intensive products should be manufactured utilizing medium technology/medium wage level labor force of Jordan;
- Tourism related manufactures should be reinforced;
- Material industry, namely housing materials for increasing population and construction materials for the expected large-scale infrastructure projects, should

be promoted;

- Foreign investors utilizing the strategic location of the Southern Districts, well-developed transport infrastructures, relatively low wage labor with good academic background, should be attracted;
- Cooperation with the neighboring countries, in particular Saudi Arabia, Egypt, and Israel as well as West Bank and Gaza by means of utilizing their comparative advantages should be sought for the industrialization in the Southern Districts which share long borders with the neighboring countries;
- Intra-region linkage among the four Southern Districts should be strengthened in order to supplement the defects including limited population and labor force and small accumulation of urban and industrial facilities, as well as to make best use of the strong points of each district.

On the condition that determined and vigorous efforts for the industrial development in the Southern Districts be made both by the public and private sectors both in terms of structural infrastructures and non-structural infrastructures including policy and institutional measures, share of the value-added of the manufacturing sector of the Southern Districts in the national total should sharply be increased in 2010. In the Study, two cases were assumed where the share will be either about doubled or tripled as follows.

				Targets in 2010		
Case	Policy	Scenarios for the Middle East Peace Process	Share (%) of VA of Manufacturing Sector of the Southern Districts	VA	Employment	Industrial
				(JD million)	(person)	Area (ha)
1	Self-reliant	Ideal	10	251	31,400	376
2	Self-reliant	Ideal	15	376	47,100	563
3	Self-reliant	Optimistic	10	148	18,600	222
4	Self-reliant	Optimistic	15	222	27,800	333

INDUSTRIAL DEVELOPMENT STRATEGIES FOR THE SOUTHERN DISTRICTS

07 Strengthening of Spatial Linkage : Aiming at the exploitation of the development potential of the Southern Districts and achievement of self-reliant economy for the Southern Districts, intra-region linkage should firstly be strengthened. Strengthening of spatial linkage should proceed step by step as shown below.

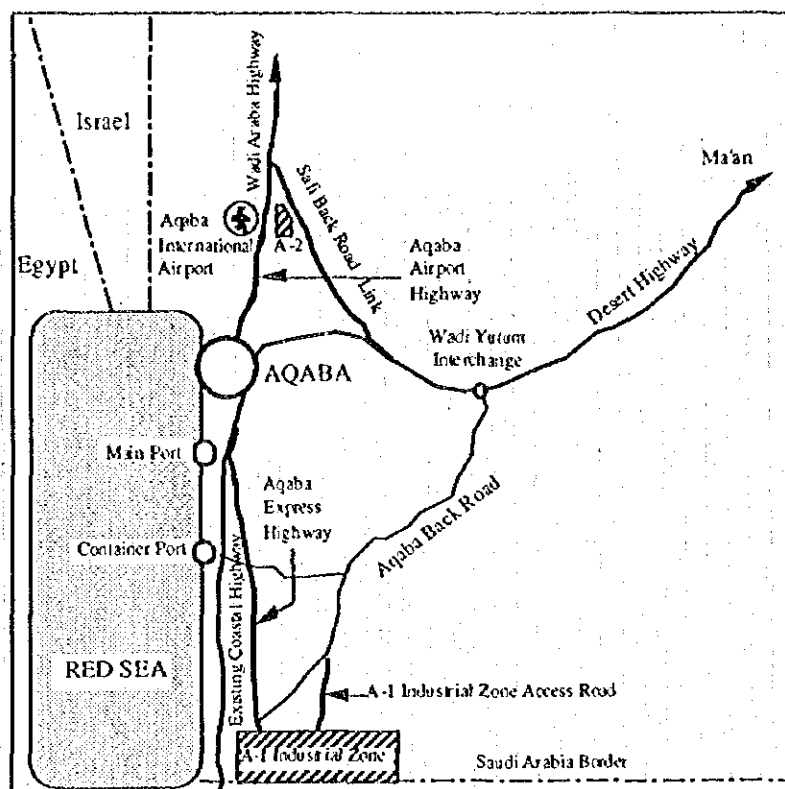
	2005	2010
Intra-region linkage in the lower south (Ma'an and Aqaba)	Regional development axes	Economic development base
Intra-region linkage in the upper south (Karak and Tafila)	Regional development axes	Economic development base
Inter-region linkage between the upper and lower souths	-	Regional development axes
Inter-region linkage between the upper south and the capital	-	Regional development axes
International linkage	-	Regional development axes

08 *Priority Development of the Infrastructures in the Southern Districts* : Socio-economic infrastructures as a whole in the Southern Districts should be developed, with high priority being placed in the infrastructure development in the country. Particular attention should be paid to water supply and road transportation. Dici groundwater should be used suitably for the development of the Southern Districts and the Capital region.

A trial calculation of the use of Dici groundwater is shown below.

	Unit: million m ³ /year		
	Alternative A	Alternative B	Alternative C
Planned Supply Volume to Amman	72	41	9
Future Use in the Southern Districts	53	84	116

The proposed road network around Aqaba City is shown below.



Future Development Plan for the Road Network Around Aqaba City

09 *Upgrading of Basic Industrial Infrastructures in the Southern Districts :* Strategies have been worked out for the following six fields:

- (a) Strengthening of basic industrial infrastructures,
- (b) Strengthening of institutional and legal framework,
- (c) Enhancement of value-added,
- (d) Export promotion,
- (e) International cooperation and promotion of foreign direct investment, and
- (f) Conservation of natural environment

TARGET CATEGORIES, PRODUCT MIX AND DEVELOPMENT STRATEGY FOR CHEMICAL INDUSTRY AS STRATEGIC SUB-SECTOR

10 *Target Categories and Product Mix :* Target categories (ISIC 3 digits) are selected in the light of the advantages/disadvantages of the four Governorates. More than 100 promising products in these target categories have also been selected for the Southern Districts.

11 *Development Strategies/Projects of the Strategic Industrial Sub-sector :*

(a) Selection of the strategic industrial sub-sector

Chemical industry has been selected as the strategic industrial sub-sector for the Southern Districts for the following reasons:

- Effective utilization of local mineral resources,
- Presence of accumulated know-how and capital for the existing chemical industry
- Enhancement of value-added,
- Exportable products with high competitiveness, and
- Adequate water resources and supply capacity in the Southern Districts.

(b) Formulation of the strategies/projects

The following products of the chemical industry should be developed in the Southern Districts:

- Potash-related products,
- Table salt,
- Industrial salt and related products,
- Magnesium-related products,
- Bromine-related products,
- Phosphate rock-related products (phosphoric acid; DAP, NPK fertilizer, etc.), and
- LNG receiving terminal

SELECTION CRITERIA AND SELECTED PRIORITY/HIGH PRIORITY PROJECTS

12 *Selection and Profiles of the Priority/High Priority Projects:* The Identified projects have been assessed in the light of the criteria comprising urgency, economic viability, social benefits, environmental conservation, project implementability, regional development effect and multiplier effects and 14 projects have been selected accordingly as priority projects. Three projects with high potential have been selected among 14 priority projects based on additional selection criteria including sizable mutual linkage effects. The 14 priority projects are:

- (a) Establishment of the Southern Region Research and Technology Center (high priority project) ;
- (b) Establishment of the Southern Region Small and Medium Industries Center (high priority project) ;
- (c) Establishment of a community college or a university in Aqaba;

- (d) Establishment of an engineering department in Ma'an branch of Mu'tah University;
- (e) Strengthening of vocational training centers (high priority project) ;
- (f) Establishment of soft loans for subsistence and small enterprises;
- (g) Strengthening of the Investment Promotion Law;
- (h) Introduction of VAT (Value-Added Tax);
- (i) Establishment of the Southern Region Authority;
- (j) Strengthening of the cooperation between the GIE and FZ and study of the appropriateness of transferring the authority over EPZ from FZC/MOF to JIEC/MOIT;
- (k) JIEC capacity building;
- (l) Promotion of the A-1 site as a heavy/chemical industrial zone;
- (m) Provision of well-facilitated workshop apartments; and
- (n) Strengthening of the Aqaba Gulf environmental monitoring program.

SELECTION AND EVALUATION OF PRIORITY INDUSTRIAL ESTATES

13 *Selection of the Priority Industrial Estates :* All the 10 identified candidate sites have been evaluated considering 5 major factors: locational conditions, site conditions, investment demands, progress of approval procedure and actions taken, as well as special considerations. The A-2 site in the Aqaba district has been selected as the highest priority industrial estate and 3 other sites, one each in the districts of Karak, Tafila, and Ma'an, have been selected as priority ones. Pre-F/S was conducted for the A-2 site based on the topographic map with the scale of 1/5,000 with 2m contour interval prepared in the Study.

14 *Evaluation of the Priority Industrial Estates :* Based on the investment demand survey and other factors, the roles and functions, area size and implementation schedule of the industrial estates are proposed. The construction costs and the evaluation results of the industrial estates are summarized below.

Basic Indicators, Roles and Functions, Implementation Schedule, Construction Costs and Evaluation for each Industrial Estate

IE Site	Area Size (gross, ha)	Purposes	Implementa- tion Schedule/1	Investors	Market	Type of Industries	Costs (JD million) /2	Sales Price (JD/m2)	Generation of employment	FIRR(%) /3	EIRR (%)	Repayment of loans
A-2	200	Economic Development	Short term	Mainly foreign	Foreign	Machinery, Fabricated metal, Transport equipment, Food	35.4 (41.7)	25.0	28,000 (18,000 is from manufacturing sector)	7.8 (9.1)	13.2	Capable of repayment
M-2	80	Economic Development	Medium term	Mainly domestic	Domestic	Leather products, Glass, Wood & furniture	11.7 (15.1)	20.0	7,000 (4,500 is from manufacturing sector)	1.5 (3.1)	6.3	Not studied
T-2	60	Economic Development	Long term	Mainly domestic	Domestic	Food & Beverage, Glass, Chemical	12.9 (15.1)	15.0	6,000 (4,000 is from manufacturing sector)	-	2.0	Not studied
K-3	35	Regional Development	Medium term	Domestic/ foreign	Domestic	Wearing apparel, Fabricated metal, Chemical	6.3 (7.9)	15.0	8,000 (5,000 is from manufacturing sector)	-	0.2	Not studied

Notes: (1) JD1.00=US\$1.41=Japanese Yen 151

/1: Short term: before 2000, Medium term: 2001-2005, Long term: 2006-2010

/2: Figures are in 1996 prices. Figures in brackets show the costs including ones outside the sites of the industrial estates.

/3: Figures in brackets show the FIRRs in the case the custom duties are excluded.

Since the opportunity cost of capital (OCC) in Jordan is considered to lie in the range of 5-10%, the A-2 IE Project can be considered as financially feasible. As for the M-2 and the T-2 sites, it is recommended that further detailed analyses be made of the selling price, size of the development and timing for implementation to determine their viability.

Although the K-3 IE Project may not be justified for implementation from the viewpoint of financial and economic viability, construction of the estate in Karak Governorate might be appropriate from the regional point of view.

JIEC and MOP strongly support the development of an industrial estate in Karak and the land for the IE site has been already purchased. Thus, the Study Team agrees that the K-3 IE Project should be implemented if the following conditions are fulfilled.

- The site should be so selected as to minimize the land preparation cost in consideration of topographic and geological conditions;
- Development should be phased in steps with the increase of investment demand;
- Strong investment incentives including exemption of corporate income tax should be provided; and
- Financial viability should not be evaluated only from the viewpoint of a single K-3 IE Project, but from all the JIEC projects as a whole.

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ABBREVIATIONS

International/Foreign Organization

ASEAN	:	Association of Southeast Asian Nations
CARE	:	Cooperative for American Relief Everywhere
COMECON	:	Council for Mutual Economic Assistance
E.E.C	:	European Economic Community
EIB	:	European Investment Bank
IAMTI	:	International Aviation Management Training Institute
IBRD	:	International Bank for Reconstruction and Development
ICAO	:	International Civil Aviation Organization
ILO	:	International Labor Organization
IMF	:	International Monetary Fund
IUCN	:	International Union for the Conservation of Nature and Natural Resources
JICA	:	Japan International Cooperation Agency
JOCV	:	Japan Overseas Cooperation Volunteers
OECD	:	Overseas Economic Cooperation Fund, Japan
PLO	:	Palestine Liberation Organization
T. A. P.	:	Trans - Arabian Pipeline Company
UN	:	The United Nations
UNDP	:	United Nations Development Program
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
UNICEF	:	United Nations International Children's Emergency Fund
USAID	:	United States Agency for International Development
WB	:	World Bank
WTO	:	World Trade Organization

Jordanian Governmental Organization

ACI	:	Amman Chamber of Industry
APA	:	Aqaba Port Authority
ARA	:	Aqaba Region Authority

ARC	:	Aqaba Railway Corporation
CAA	:	Civil Aviation Authority
CBJ	:	Central Bank of Jordan
CD	:	Custom Department
CSC	:	Cooperative Service Councils
CVDB	:	City and Village Development Bank
FJCC	:	Federation of Jordan Chambers of Commerce
FZC	:	Free Zones Corporation
GCEP	:	General Corporation for Environmental Protection
GOJ	:	Government of Jordan
HCST	:	The Higher Council for Science and Technology
HRC	:	Hijaz Railway Corporation
HTC	:	Hotel Training Center
IDB	:	Industrial Development Bank
IPC	:	Investment Promotion Corporation
ISM	:	Institution for Standard and Metrology
ITD	:	Income Tax Department
JEA	:	Jordan Electricity Authority
JEDCO	:	Jordan Export Development & Commercial Center Corporation
JIC	:	Jordan Investment Corporation
JIEC	:	Jordan Industrial Estates Corporation
JNCP	:	Jordanian National Committee for Population
JNCW	:	Jordanian National Committee for Women
JUH	:	Jordan University Hospital
JVA	:	Jordan Valley Authority
LPITC	:	Local and Public Industrial Technology Center
MEMR	:	Ministry of Energy and Mineral Resources
MMRAE	:	Ministry of Municipalities, Rural Affairs and Environment
MOC	:	Ministry of Communication
MOE	:	Ministry of Education
MOF	:	Ministry of Finance
MOH	:	Ministry of Health
MOHE	:	Ministry of Higher Education
MOIT	:	Ministry of Industry and Trade
MOL	:	Ministry of Labor
MOP	:	Ministry of Planning
MOT	:	Ministry of Transport
MPWH	:	Ministry of Public Works and Housing

MWI	:	Ministry of Water and Irrigation
NIC	:	National Information Center
NRA	:	Natural Resources Authority
OSHI	:	Occupational Safety and Health Institute
PHC	:	primary health care
PTC	:	Public Transport Corporation
RGC	:	Royal Geographic Center
RJ	:	Royal Jordanian Airline
RMS	:	Royal Medical Services
RSCN	:	Royal Society for Conservation of Nature
RSS	:	Royal Scientific Society
SSIH	:	Small Scale Industrial and Handicraft Fund
TCC	:	Telecommunication Corporation
TDI	:	Training and Development Institute
TPC	:	The Ports Corporation
TTC	:	Trade Training Center
TTI	:	Testing and Training Institute
UDTC	:	Urban Development Training Center
VTC	:	Vocational Training Corporation
WAJ	:	Water Authority of Jordan
WRC	:	Water Resources Corporation

Jordanian Non-Governmental Organization & Private Company

APC	:	Arab Potash Company
GUVS	:	General Union of Voluntary Societies
IJC	:	Indo-Jordan Chemical Company
JCFC	:	Jordan Cement Factories Co. Ltd.
JISD	:	Jordan Investment and Southern Development Company
JMTS	:	Jordan Mobile Telephone Service
JNCW	:	Jordan National Committee for Women
JODICO	:	Jordan Dead Sea Industries Company
JPMC	:	Jordan Phosphate Mines Company Ltd.
JPRC	:	Jordan Petroleum Refinery Co. Ltd.
NEPCO	:	National Electric Power Company
NIHF	:	Noor Al-Hussein Fund for Social Development
NJFC	:	Nippon Jordan Fertilizer Company Ltd.

QAF	:	Queen Alia Fund for Social Development
SCC	:	South Cement Company
SPIC	:	Southern Petrochemical Corporation

Others

ACA	:	Amman Civil Airport
AIA	:	Aqaba International Airport
ATPS	:	Aqaba Thermal Power Station
BOO	:	Built, Operation and Own
BOT	:	Built, Operation and Transfer
BPSD	:	Barrel Per Stream Day
CIS	:	Commonwealth of Independent States
DAP	:	Diammonium Phosphate
EIA	:	Environmental Impact Assessment
EPZ	:	Export Processing Zone
FDI	:	Foreign Direct Investment
FEED	:	front - end engineering and design
FMP	:	Fused Magnesium Phosphate
FTZ	:	Free Trade Zone
FZ	:	Free Zone
GDP	:	Gross Domestic Product
GIE	:	General Industrial Estate
GST	:	General Sales Tax
GVA	:	Gross Value Added
HJR	:	Hijaz Jordan Railway
HTPS	:	Hussein Thermal Power Station
IEE	:	Initial Environmental Examination
IES	:	Industrial Extension Services
ISIC	:	International Standard Industrial Classification
LNG	:	Liquefied Natural Gas
MAP	:	Monaammonium Phosphate
MEED	:	Middle East Economic Digest
MEFTA	:	Middle East Free Trade Agreement/Area
MENA	:	Middle East and North Africa
NGOs	:	Non-Governmental Organizations
ODA	:	Official Development Aid

PNA	:	Palestinian National Authority
QAIA	:	Queen Alia International Airport
RLU	:	Remote Line Unit
SC	:	Steering Committee
SEZ	:	Special Economic Zone
TBBPA	:	Tetrabromobisphenol - A
TDS	:	Total Dissolved Solids
VAT	:	Value-Added Tax
WID	:	women in development

PART 1: BACKGROUND AND CURRENT CONDITIONS

I. INTRODUCTION

1-1 Background and the Objectives of the Study

In the Jordanian economy, performance of the agriculture sector and the industry sector has been relatively inactive while mining and service sectors and public sector have been dominating in GDP. In the total production, the public sector including state-owned enterprises accounts for the major portion. In terms of the employment, the share of the public sector is also the majority, accounting for about 51% of the total. The production and the employment condition both show the heavy dependence of the economy on the public and governmental sector.

Trade balance has been in red figures due to the weakness of the export sector, while substantial import of consumer goods and capital goods as well as intermediate goods have been indispensable because of the weak structure of the manufacturing industry in the country. The balance has been made up by the external financial aid and fund transfers by the Jordanian workers overseas.

In terms of the regional development, population as well as economic activities have been concentrated in the Northern and Central Districts where the capital city, Amman is located. Population is sparse in the Southern Districts and the economy in the area has been lagging behind the national development. The above regional gap has been putting pressure on the Jordanian social and political frameworks.

On the other hand, the Southern Districts are richly endowed with mineral resources of phosphate and limestone as well as potash and other minerals in the Dead Sea located at the west side of Karak Governorate. Water resource is relatively well-endowed in the form of groundwater. Infrastructures have also been well-developed, in particular power and transport facilities including port, airport, road and railway. The Southern Districts have the advantage of sharing long border with Saudi Arabia to the south and east and with Israel to the west. Via the Red Sea, Egypt is eventually a neighbor of Jordan. In other words, the Southern Districts have big potential for industrial development which is yet to be exploited.

In addition, a ray of hope has recently appeared in the improvement of the relationship between the Arab countries and Israel. Jordan already has established diplomatic relations with Israel in October, 1994. PLO and Israel are trying to reach agreement on the future

self-government of the West Bank of the Jordan River as well as Gaza. If peace framework for the Middle East Region is established, Jordan would have a big positive turning point for changing and strengthening its economy by benefitting from its strategic location in the region.

It is urgent and of vital importance, therefore, to realize the industrialization of the Southern Districts by making the best use of its potential, for their own sake as well as for the benefit of the whole country. The objectives of the Study on Industrial Development in the Southern Districts of the Hashemite Kingdom of Jordan (the Study) are to work out strategies and formulate priority projects aiming at materializing the industrialization of the Southern Districts.

Under such circumstances, the Government of Jordan (GOJ) requested technical assistance of Japanese Government to conduct a master plan study of industrial development in the Southern Districts of Jordan. The Scope of Work (S/W) for the Study was concluded between Jordan Industrial Estates Corporation (JIEC) and Japan International Cooperation Agency (JICA) in June 1995.

The principal objectives of the Study are: 1) to prepare a master plan for industrial development, 2) to formulate a conceptual plan for the optimum industrial estate in the Southern Districts and conduct its pre-feasibility study, and 3) to perform technology transfer to Jordanian counterpart personnel.

1-2 Scope of the Study

Under the Scope of Work agreed between JIEC and JICA, the scope of the study to be executed by the consultants has been defined to include the followings:

Industrial Master Plan

- Review of Jordanian economy,
- Study on the external influence on Jordanian economy,
- Review of the policy environment,
- Study on the present conditions and future prospects of the Southern Districts of Jordan,
- Study on the implementation progress of integrated regional development plan for Karak and Tafila,
- Investment demand survey in the Middle East including Jordan, European countries, Asia including Japan and U.S.A. and detailed analysis of the survey results,
- Study on the present situation and future prospects of industrial development in

the Southern Districts,

- Identification of industrial sectors with high potentiality and their location in the Southern Districts,
- Study on the potential of possible industrial estates,
- Selection, formulation and evaluation of alternatives of industrial development projects with high priority, and
- Formulation of a master plan for industrial development in the Southern Districts

Pre F/S of an Industrial Estate

- Formulation of a conceptual plan for the industrial estate with the highest potential,
- Conducting a pre F/S of the industrial estate with the highest potential, and
- Preparation of implementation schedule for the industrial estate with the highest potential

1-3 Execution of the Study

The Study has been carried out by the consortium of the consultants contracted by JICA. The consortium comprises the following consulting firms:

Nippon Koei Co., Ltd.

Japan Industrial Location Center

Regional Planning International Co., Ltd.

On the Jordanian side, a Steering Committee (SC) was formed in order to coordinate and to extend support for the activities of the Study with the following member ministries/corporations and organizations with the Director General of the Jordan Industrial Estates Corporation (JIEC) as Chairman.

- Ministry of Industry and Trade
- Ministry of Planning
- Ministry of Finance
- Ministry of Municipalities, Rural Affairs and Environment
- Jordan Industrial Estates Corporation
- Representative of Governorate of Karak
- Representative of Governorate of Tafila
- Representative of Governorate of Ma'an
- Representative of Governorate of Aqaba
- Chamber of Industry
- Higher Council for Science and Technology
- Aqaba Region Authority (ARA), and

- Free Zones Corporation (FZC)

It is noted that ARA and FZC were added as members of SC during the initial stage of the Study for the efficient and effective conduct of the Study at the request of the Study Team.

Besides the meetings held between SC and Study Team during the Team's stays in Jordan, meetings were held between the Study Team and the member ministries/corporations as well as other relevant organizations for in-depth discussions. Of the SC members, two (2) members were invited to Japan to receive technology transfer in the field of industrial development including lectures for the history and institutional settings of the industrialization in Japan and site visits to industrial estates/parks as well as discussions on the methodologies for the formulation of the industrial master plan of the Southern Districts. The members of the Study Team and these of SC are listed in Table 1-3-1 and 1-3-2, respectively.

The Study was initiated in October 1995 and was completed in March 1997 for the gross time period of about 16 months, of which 158 days have been devoted to the study in Jordan before the completion of the Study.

1-4 Outline of the Study

The outline of the Study is shown in Figure 1-4-1 and 1-4-2.

Table 1-3-1 Members of the Study Team

Speciality	Name
Team Leader/Industrial Planner	M. Akagawa (NK)
Sub-Leader/Regional Development Planner	N. Okawa (JILC)
Industrial Location Planner	E. Nishita (RPI)
Small-and-medium Industrial Planner	M. Fujikawa (RPI)
Macro Economy/Economic Policy Expert	H. Takahashi (RPI)
Social Analyst	K. Tanaka (NK)
Infrastructure/Energy Planner (Electricity, Telecom.)	T. Hasegawa (NK)
Infrastructure Planner (Transportation)	J.H. Jung (NK)
Water Resources Planner	T. Murakami (NK)
Industrial Estate Utility Planner (Water Supply/Sewerage)	M. Momose (NK)
Mineral Resources Expert	H. Karashima (RPI)
Industrial Sub-sector Planner (Chemical Industry)	M. Nagai (NK)
Investment Demand Survey/Investment Promotion Planner	N. Oshima (NK)
Industrial Estate Planner	T. Matsuda (NK)
Industrial Estate Management Planner	S. Tsuruta (RPI)
Economic/Financial Analyst	K. Yanagisawa (NK)
Environmental Expert	K. Ide (RPI)

Note: (NK) : Nippon Koei Co., Ltd.
(RPI) : Regional Planning International Co. Ltd.
(JILC) : Japan Industrial Location Center

Table 1-3-2 Members of Steering Committee

	Name	Title	Organization
1.	Mr. Assem Hindawi	General Manager	JIEC
2.	Mr. Awni Y. Abdul-Ruhim	Dir. of Investment Dept.	JIEC
3.	Mr. Isam Mustafa	Assist. Dir. of Industry	HCST
4.	Mr. Ahmad Awidi	Head Sect. Municipality	MMRAE
5.	Mr. Nahar Aldalaen	Aqaba Governor Assist.	Aqaba Gov.
6.	Mr. Narif Najadat	Karak Governor Assist.	Karak Gov.
7.	Mr. Khalid Hajaj	Computer Programmer	Tafila Gov.
8.	Mr. Fawaz Resheidat	Maan Governor Assist.	Maan Gov.
9.	Mr. Mahmoud Hadid	Assist. Director RPD	MOP
10.	Miss. Abber Haj Hassan	Head of Chemical Industry	MOIT
11.	Mr. Qasim Bashabsheh	Financial Researcher	MOF
12.	Mr. Said Awamleh	Head of Chamber Office, Amman Industrial Estate	Chamber of Industry
13.	Mr. Mohammad Abdulmajid Arabciat	Dir. of Research & Studies	ARA
14.	Mr. Ibrahim Salim	Manager of Studies	FZC

JORDAN



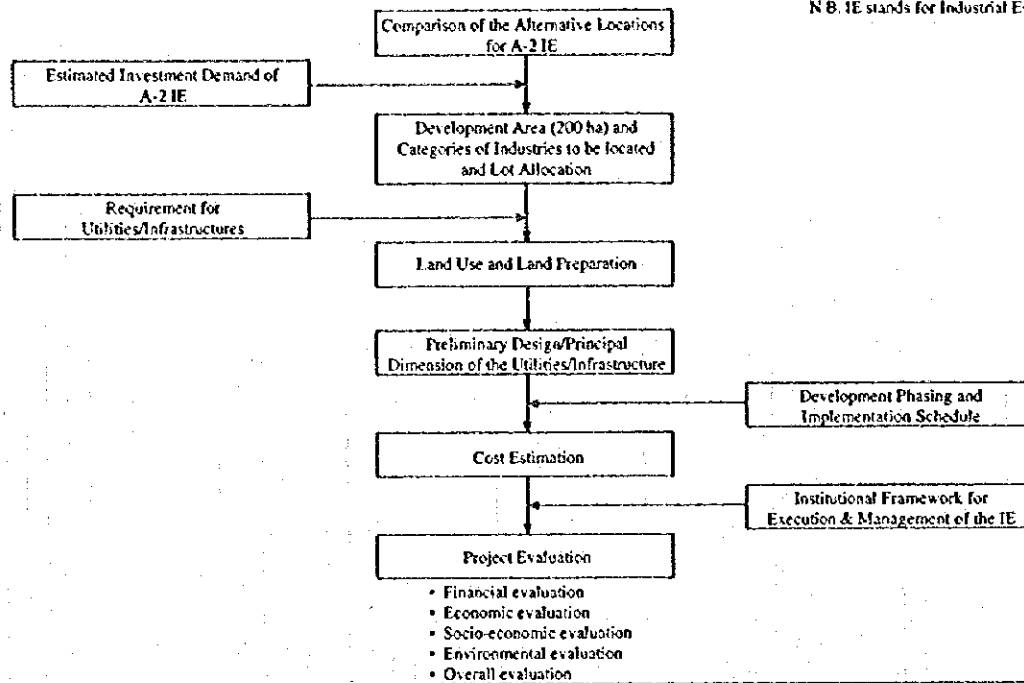
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Part 3 PRIORITY PROJECTS FOR INDUSTRIAL ESTATE DEVELOPMENT

PRE-F/S ON THE HIGHEST POTENTIAL PROJECT FOR INDUSTRIAL ESTATE DEVELOPMENT

N.B. IE stands for Industrial Estate



STUDY ON THE PRIORITY PROJECTS

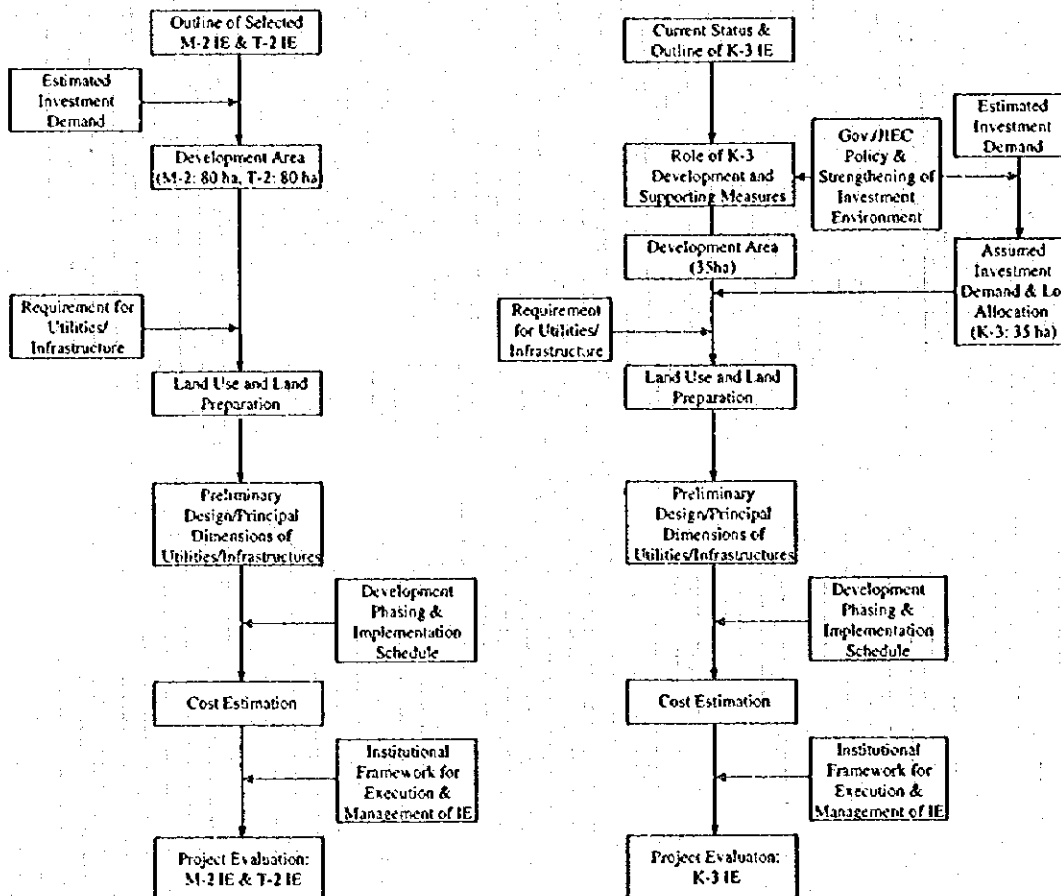


Figure 1-4-2 Outline of the Study on Industrial Development in the Southern Districts of Jordan (2/2)

II. CURRENT CONDITIONS OF JORDAN

2-1 Natural Conditions and Geography of Jordan

Jordan is located in the center of the Middle East Region. It is bordered by Syria to the north, Iraq to the east, and Saudi Arabia on both the eastern and the southern fronts. The Gulf of Aqaba, located in the southwest of Jordan, is the country's only outlet to the Red Sea. Jordan's western boundary is defined by the Jordan River and Israel.

Jordan's area is 89,206 km², three-fourth of which is desert. The three main physiographic regions of Jordan extend in a north-south alignment. Those comprise tropical desert in central Ghor or Rift Valley, escarpments and highlands east of Ghor and desert plains in Syrian Badia. Most of Jordan's rain-fed agriculture is practiced on top of the highlands. The escarpments are cut by many large wadis that flow into Ghor. Steep slopes and narrow bottoms of the wadis support a diverse composition of wild plants and animals. Irrigated agriculture is practiced at the bottom of Ghor and in the margin of the desert area.

The Mediterranean climate prevails in the high region, where summer is moderate and dry and winter is cold and rainy. The desert climate prevails in Badia; summer is hot and winter cold. The Ghor area has a semitropical climate with a hot summer and a warm winter. Average annual temperatures range from 22 to 25 °C in the Ghor area, 18 to 21 °C in Badia, and 14 to 18 °C in the heights.

The major rivers in Jordan are the Yarmouk and the Zarka, both located in the northern part of the country. The waters of the Jordan River are too saline today for any types of human use.

The Dead Sea and the Gulf of Aqaba are the only natural open water bodies in Jordan. In the last five decades, the Jordan River and the Yarmouk River have been diverted and construction of dams and irrigation projects proceeded in the Jordan Valley. The water level of the Dead Sea has dropped about 15 m and the surface area has shrunk over the years. These activities also resulted in the change in water salinity. In 1979, the salinity of surface water became so high that the fossil water body at the bottom overturned to the surface. The overturn caused a major bloom of micro-organisms in the next year. The bloom turned the color of water to a reddish blue, damaging the tourism value of the Dead Sea.

The Jordanian section of the Aqaba coast is 27 km long and used heavily by tourism, manufacturing industry and transportation. Within a limited coastline, the Gulf of Aqaba contains internationally important Yamanieh coral reef and marine ecosystems. There are

about 1,000 marine fish species in the Gulf of Aqaba and 5% of them are estimated as endemic to the Gulf. Turtles, dolphins and sea cows are also observed in the Gulf.

2-2 Macro Economy

2-2-1 Review of the Past Economic Performance of Jordan

(1) Past economic performance of Jordan

Jordanian economy enjoyed an unprecedented growth during 1973-1984, boosted by foreign assistance and loans, workers' remittances and export to regional markets. This ended in the mid-1980s as a result of the rapid decline of the oil price and the subsequent slowdown of the regional economy.

The impact of an increased debt burden and debt servicing requirements led Jordan into the economic crisis in 1988-1989. As a consequence, Jordan's economy experienced a drastic slowdown in growth and severe deficits in fiscal and external accounts.

By 1991, real per capita income had declined to about a half of its highest level during the pre-crisis years. The government responded, in 1989, by undertaking policy adjustments to stabilize the economy and to restore growth.

The stabilization policies, notwithstanding the disruptions caused by the Gulf Crisis in 1991, have been successful. Inflation has been checked, and prices, interest rates, and exchange rates are largely market-based. However, major structural constraints on economic growth still remain as discussed in the following sections.

(2) Major industrial estates and free zones in Jordan

1) Amman Industrial Estate at Sahab

The Amman Industrial Estate is located 3 km south of the boundary of Greater Amman Municipality (about 12 km south of downtown Amman). The location of this estate has the major advantage of direct and easy access to all major regions within the country. Namely, it is located nearby the route towards Queen Alia International Airport, leading to the Port of Aqaba and the southern borders towards Saudi Arabia.

The Amman Industrial Estate, which was developed during the 1980s, has a total area of 253 ha. As of August 1995, 327 companies have been established with more than 400 factories in operation, employing more than 13,600 workers. These include Arab companies and 160 foreign and joint venture companies. With regard to land occupation, engineering industries are dominant, followed by printing, packing and paper industries, and food industries.

The management body is the Jordan Industrial Estates Corporation (JIEC), which is a semi-governmental and self-financing body established in 1980 with the Minister of Industry and Trade as Chairman of its Board of Directors.

Industries Operating in the Amman Industrial Estate - Sahab
(Classified According to Industrial Categories as of August 1995)

Sector	No.	No. of Employees	Factory Building (m ²)	Land (ha)
Food Industry	37	1,992	9,700	16.2
Pharmaceutical Industry	18	577	3,053	6.1
Engineering Industry	80	3,677	18,636	33.1
Plastic and Rubber Industry	44	1,310	9,461	13.7
Chemical Industry	48	1,372	12,735	16.2
Cotton and Woven Industry	32	1,594	13,748	12.3
Timber Industry	26	722	N.A.	N.A.
Furniture, Kitchen & Doors	N.A.	N.A.	11,046	9.0
Printing, Packing & Paper Industry	26	1,963	12,109	19.7
Leather Industry	10	167	3,805	1.5
Construction Industry	6	297	N.A.	5.1
Others	N.A.	N.A.	1,140	20.7
Total	327	13,671	95,433	153.6

N.A.: Data are not available.

2) Al Hassan Industrial Estate at Irbid

The Al Hassan Industrial Estate was established with complete infrastructure services in 1991. The site is located next to the University of Science and Technology in the outskirts of the northern major city of Irbid. The estate has a total land area of 42.7 ha.

During its four years of operation, Al Hassan Industrial Estate has attracted about 56 companies from various fields and created more than 1,200 job opportunities as shown below. With regard to land occupation, engineering industries are dominant, followed by chemical industries. The management body is also JIEC.

Industries Operating in Al Hassan Industrial Estate - Irbid
(Classified According to Industrial Categories as of August 1995)

Sector	No.	No. of Employees	Factory Building (m ²)	Land (ha)
Food Industry	8	76	5,902	N.A.
Pharmaceutical Industry	1	N.A.	N.A.	N.A.
Engineering Industry	13	409	12,420	13.1
Plastic and Rubber Industry	8	232	8,878	0.3
Chemical Industry	16	252	11,197	1.6
Cotton and Woven Industry	2	101	12,366	0.3
Timber Industry	6	95	N.A.	N.A.
Furniture, Kitchen & Doors	N.A.	N.A.	3,556	0.6
Printing, Packing & Paper Industry	1	10	N.A.	N.A.
Construction Industry	1	5	328	N.A.
Total	56	1,180	54,647	15.9

N.A.: Data are not available.

3) Zarqa Free Zone

The Zarqa Free Zone with a total area of 550 ha was established in 1983 in Zarqa city, 35 km northeast of Amman. The Zone lies along the strategic international roads providing excellent access to the neighboring countries including Iraq and Syria. Three (3) different industrial sectors i.e., manufacturing sector, commercial sector and motor cars free market sector, are accommodated by the Zone.

45 ha in the Free Zone area allocated to the manufacturing activities. Although licenses have been issued to forty (40) enterprises, only nine (9) are in operation in the following fields:

- a) Mineral oil
- b) Second hand clothes
- c) Garment
- d) Plastic products
- e) Furniture
- f) Agricultural machinery
- g) Automobile parts
- h) Cassette tapes

One company is in operation in each field except for garment which has two (2) companies. In principle, all the products shall be exported. In the case the products are

sold to the domestic market, the exempted import duties shall be paid to the Customs Office.

As for the commercial sector, a total area of 200 ha has been allocated to 680 enterprises, being leased in full to investors for commodities storage, or for construction of warehouses for commercial activities.

The motor cars free market sector with a total area of 20 ha encompasses 120 exhibition sections used by 134 investors.

The number of enterprises currently in operation in the three (3) sectors totals 823, employing about 10,000 workers. The Free Zones Corporation (FZC) which was established in 1976, is responsible for the management of all the state - run free zones including the Zarqa Free Zone. FZC is a financially and administratively independent governmental institution, managed and supervised by a Board of Directors with the Minister for Finance as President, the Corporation's Director General as Vice-president, and deputies from the Ministry of Industry and Trade, Ministry of Finance / Customs, Ministry of Transportation, and Central Bank as members of the Board.

4) Aqaba Free Zone

Located 350 km south of Amman, the Aqaba Free Zone was established in 1973. Starting with four small warehouses and open areas for the purpose of storing commercial goods, serving foreign and transit trade and handling the goods imported through its seaport, the Aqaba Free Zone now has a total area of 100 ha fully equipped with essential facilities. The area includes:

- a) Storage warehouses with an area of 40,000 m²,
- b) Paved open yards with an area of 300,000 m² for general storage purposes,
- c) Open storage yards with an area of 300,000 m² for renting purposes,
- d) Cold-storage facilities with a capacity of 6,000 tonnes.

This Zone is also operated under the management of the Free Zones Corporation.

2-2-2 Current Socio-economic Conditions of Jordan

(1) Population, labor force and employment

The population of Jordan was analyzed by age group as shown in Table 2-2-1. As seen in this table, the population of Jordan in 1994 was 4,139,458, composed of 2,160,725 males and 1,978,733 females. The structure of the population by age is a typical inverted triangle.

The working population of Jordan, aged from 15 to 59, was 2,251,288 (54.4% of total population) in 1994, consisting of 1,193,832 males and 1,057,456 females.

The estimated labor force of Jordan was analyzed by major economic activity as shown in Table 2-2-1. The estimated labor force in 1994 was 859,300. As seen in this table, 50.6% of the employment was absorbed by the social and public administration sector. The second largest employment absorber was the trade sector (15.1%). The agriculture sector and the mining and manufacturing sectors absorbed just 6.4% and 10.6% of employment respectively. The economic participation rate, a percentage of the employed population in the working age population, is calculated to be 38.2%.

The unemployment rate in 1994 was 15.0%, being 12.9% for males and 28.3% for females. This rate decreased from 17.1% in 1991.

There would be many reasons for Jordan's high unemployment rate: Decline in economic growth; increase in the natural growth rate of the population; decline in out-migration to the Gulf States; increase in foreign labor; incompatibility between the outputs of the educational and training system and the requirements of the labor market; increase in female participation in the labor force; and the lack of regular information on labor supply and demand.

(2) Gross domestic product (GDP) by economic activity

The gross domestic product of Jordan in the past seven years from 1988 to 1994 was analyzed by economic activity as shown in Table 2-2-2. The growth rate of GDP in 1989 was negative, -13.4%, and those in 1990 and 1991 were just marginal, above 1%, due to the Gulf War. GDP growth in 1992 was fairly high, 16.1%, mainly owing to domestic investment in housing and other construction demands using funds brought by returning workers from the Gulf countries. The population of Jordan increased by 10.3% and 6.8% in 1990 and 1991 respectively, as a result of the Gulf War.

Due to the above mentioned two factors, GDP per capita declined continuously from 1989 to 1991, and sharply increased 11.8% in 1992. The growth rates of GDP per capita were rather modest in 1993 and 1994: 1.9% and 1.0% respectively.

The GDP share of the manufacturing sector, which includes "manufacturing," "construction" and "electricity and water," increased 7.4% from 17.5% in the seven years from 1988 to 1994. The GDP share of the primary sector, which includes "agriculture, hunting, forestry and fishing" and "mining and quarrying," slightly decreased 2.8% in the

same period, while the GDP share of the service sector accounted for 65.7% in 1994 though this share decreased 4.6% in these seven years.

In this analysis, it is observed that Jordan's economy is very much depending on the service sector, and its manufacturing sector and primary sector are quite weak.

(3) Activities of the industrial sector

The industrial indicators of Jordan in 1993, such as the number of enterprises, number of employees, gross output, and gross value added, were analyzed by industry as shown in Table 2-2-3. As seen in this table, the top five industrial activities of Jordan in 1993 in terms of "gross output" were:

- 1) Chemical and chemical products,
- 2) Petroleum refineries,
- 3) Mining and quarrying,
- 4) Food manufacturing, and
- 5) Manufacturing of non-metallic mineral products.

The total gross output of these five industries is JD 1,452,651,000, which accounts for 63% of the total gross output of the industrial activities in Jordan.

In terms of "gross value added" (GVA), however, "mining and quarrying" is far larger than other industrial activities. The second largest industrial activity in terms of GVA is "non-metallic mineral products". The ratios of "gross value added" over "gross output" of these two industrial activities are 55.1% and 51.1% respectively. These two industries are very high value added industries. Total GVA of these two industries accounts for 31.8% of the total GVA of Jordan. The significance of these industries in the Jordanian economy is seen in this analysis.

It should be noted that the number of workers in the industrial sector was only a little more than 100,000, while Jordan had more than 4 million people in 1994. This number was too small even though it did not include workers in the agricultural and fishery sectors. It should also be noted that the number of women workers was less than 6,000.

As for the present distribution of industries by Governorate, Amman has a large share of almost 40% - 60% of the total in terms of number of enterprises, number of employees, gross output, and value added. By district, the Central Districts, which include Amman and Zarqa, are dominant in every item. The share of the Southern Districts are rather large in terms of gross output and value added in the case that the mining sector is included. However, their

share becomes smaller especially in value added when the mining sector is excluded. Details are shown in Table 2-2-4.

(4) International trade

Jordan is suffering from huge chronic trade deficits in the past. Trade deficit against total export has been improving since 1987, when the ratios dropped below 200%. However, the trade deficit is becoming worse in terms of the absolute value itself.

In 1994, Jordan's import was JD 2,362.6 million, while its export was only JD 995.2 million resulting in a trade imbalance of JD 1,367.4 million or 137%. It is observed that overconsumption is one of the causes of the chronic trade deficit in the Jordan's economy.

"Fuel and oil" and "machinery and mechanical appliance" are two major import products of Jordan. In 1994, the CIF import values of these two products were JD 297 million (12.6% of total import of JD 2,363 million) and JD 251 million (10.6%) respectively. "Vehicle" amounting to JD 177 million (7.5%) and "cereals" amounting to JD 127 million (5.4%) were other major import products of Jordan.

"Fertilizer" and "salt, sulfur, earths and stone, plastering materials, lime and cement" are two major export products. In 1994, the export values of these products were JD 182 million and JD 129 million respectively, and their share in the total export were 18.3% and 12.9%. "Pharmaceutical product" was also a significant export product amounting to JD 97 million (9.7% of the total export) in 1994.

(5) Balance of payments

Jordan's balance of payments is depending on three major foreign currency transfers: 1) surplus of balance of payments from services ("service balance"), 2) financial assistance from foreign governments ("unrequired transfer - government"), and 3) fund transfers by overseas workers ("transfer of workers' savings"). In 1994, they were JD 855.6 million, JD 226.3 million and JD 157.9 million respectively, totaling JD 1,239.8 million, which accounted for 49.1% of GDP, as shown in Table 2-2-5. Continuous Jordan's huge trade deficits, for example JD 1,362.4 million being 53.9% of GDP in 1994, were made up for by these money transfers from overseas.

"Errors and omissions" in 1991 and 1993 were JD 269.9 million and JD 184.3 million respectively. These huge variances indicate that a significant amount of money was brought into the financial system without being in compliance with proper foreign exchange procedures, and consequently they were not reflected in the "balance of payments" statistics.

Control of the foreign exchange transactions should be strengthened to minimize these statistical variances. However, this unofficial money in-flow would be a good sign, because it implies increase of people's confidence in Jordan's economy and the financial market in Jordan. Unofficial money in-flow from overseas has, on the other hand, good impacts on Jordan's economy, as available funds in the market increase as a result of this in-flow.

The tight balance of payments of Jordan has been supported by two rounds of rescheduling (1992 and 1994) by Paris Club. More recently, a debt reduction in the order of US\$ 800 million has been granted. The debt to GDP ratio was reduced from over 200% in 1989 to less than 103% in 1994. The debt service in 1994 was 20% of the value of export of goods and services, and it is expected to decline further to 11% by 1998.

(6) Government finance

1) Review of past performance

The government finance for the period from 1990 to 1994 is shown in Table 2-2-6. The government budget recorded surpluses in the period except for 1990. The annual surpluses were JD 12.4 million (1.1% of total revenue) in 1991, JD 181.0 million (13.3%) in 1992, JD 69.7 million (5.0%) in 1993, and JD 55.2 million (3.7%) in 1994.

If external aid was excluded, the budget turned out to be in deficit, except for 1992 when a surplus of JD 43.6 million (3.2% of total revenue) was recorded. The deficits were JD 258.7 million (27.6% of total revenue) in 1990, JD 212.8 million (19.1%) in 1991, JD 93.6 million (6.7%) in 1993, and JD 112.1 million (7.5%) in 1994. As revealed by this analysis, the government budget was very much dependent on external aid.

However, the percentage of external aid to total revenue was significantly reduced by 6.3% from 17.5% in 1990 to 11.2% in 1994. The decrease in external aid was made up by the increase in tax revenues. The percentage of tax revenues to total revenue increased 6.4% from 40.9% in 1990 to 47.3% in 1994.

2) Comparison to the targets of the Five-Year Plan (1993-1997)

As seen in Table 2-2-6, the ratio of total government expenditure to GDP at current prices was gradually reduced from 38.7% in 1990 to 34.3% in 1994. One of the Five-Year Plan's targets is to attain the ratio of total government expenditure - excluding debt services - to GDP of 35.1% in 1997. The actual performance of the government budget to date has been somewhat close to the target set in the Plan.

The Plan has contemplated reducing the deficit of the government budget, excluding external aid, to 0.4% of GDP in 1997. The deficit, excluding external aid, in 1994 was 2.7% of GDP, which was still fairly higher than the target.

In the Plan, the ratio of domestic revenue to current expenditure has been envisaged to be 120% in 1997. From 1990 to 1994, the ratio of domestic revenue to current expenditure was significantly improved from 88.4% in 1990 to 125.8% in 1992, which was higher than the target. However, the ratio subsequently dropped to 114.1% in 1993 and further dropped to 113.5% in 1994.

(7) Economic disparities between the Southern Districts and the Northern/Central Districts of Jordan

The major regional indicators used to examine the economic disparities between the Southern Districts and the Northern/Central Districts of Jordan are shown in Table 2-2-7.

In specific terms, the population of the Southern Districts is 390,000, equivalent to only 9% of the combined total population of 2,531,000 of the Northern Districts (963,000) and the Central Districts (1,567,000). In view of the fact that the Southern Districts account for more than 50% of the entire geographical area of Jordan, the over concentration of population in the Northern/Central Districts is conspicuous indeed.

According to other key economic indicators examined, the number of companies in the Northern Districts is 3,034, and in the Central Districts 10,339. This total figure of 13,372 equals 61.4% of the total number of companies nationwide. There are 53,157 employed workers in the Northern Districts, and 213,307 in the Central Districts. This combined total of 266,464 workers is 85.7% of the total number of employed workers in Jordan. As for gross output, the Northern Districts generate JD13,140, and the Central Districts JD263,187,000. This combined total of JD276,331,000 accounts for 95.1% of the national gross output.

Compared to the above, the figures for the Southern Districts are 1,046 companies (5.7% of national total), 28,003 employed workers (9.0%), and JD8,662,000 in gross output (3.0%). These statistics clearly underscore the excessive concentration of economic activities in the Northern and Central Districts of Jordan.

(8) Vulnerability of Jordan's economy

In the light of the above discussion, the major features of Jordan's economy could be characterized as follows:

- 1) Chronic current account deficit
- 2) Dependence on fund transfer from overseas
- 3) Significance of specific mineral resources in export

All of these features of Jordan's economy cause vulnerability to the national economy. The economy is very much dependent on the external factors such as foreign government assistance and remittances from overseas Jordanians. This is due to the weak industrial sector, which accounted for only 24.9% of GDP in 1994, and lack of competitiveness of Jordanian products in export markets except for certain minerals and mineral-related products.

2-3 National Socio-Economic Development Policy

2-3-1 Socio-Economic Development Policy and Performance to Date

(1) Social development policy

In the short term, the social development policy of Jordan intends to tackle the two major social issues, namely poverty and unemployment, by creating various projects, especially for low income groups and the less developed regions. In the medium and long terms, the social policy of Jordan is aiming at solving these problems through self-sustained growth and through policies which aim at reducing income disparities both among social groups and regions.

The social issues of Jordan and the policies adopted by the Government to solve these issues are mentioned in the Economic and Social Development Plan 1993-1997. They are summarized as follows:

1) Poverty and disparity between regions

Adoption of policies designed to promote the establishment of income-generating small projects for low income groups, particularly in the less developed regions.

2) Unemployment

Training and rehabilitating people to help them acquire the skills needed for jobs created by economic growth and to reduce dependence on non-Jordanian labor, and increasing vocational education enrolment.

3) Quality and standard of social services

Concentrating the public sector investment on programs in the field of social services, and securing the delivery of these services to various regions in a way that would ensure balanced geographical distribution and access by low income groups.

(2) Review of structural adjustment

i) Outline of structural adjustment

(a) Background

In April 1989, Jordan concluded a five-year structural readjustment package (1989-1993) with the IMF, but the Gulf Crisis in 1990 undermined the program's timetable, and the second agreement was reached in October 1991 after the Crisis has ended. The second accord is covering a seven-year period, 1992-1998.

(b) Objectives of reform

The overall structural program and stabilization program are being implemented by the Government in line with the following objectives of the Government's development strategy:

- a) Sustaining macroeconomic stability,
- b) Promoting economic integration with world markets, starting with the European Union and the regional markets,
- c) Restructuring the role of the public sector and creating a stable private sector development environment, and
- d) Improving the functions and standards of the financial sector to promote Jordan as a regional financial hub.

(c) Basic premises and conditions for the economic reform program

There are certain basic premises and conditions for the structural adjustment and the economic development program. They include:

- a) Private sector development should be the engine of economic growth to provide expanded employment opportunities,
- b) Adequate external concessive resources and foreign direct investment should be secured to finance the reform program,
- c) Poverty reduction should remain as the highest priority, and
- d) The development activity must not further deplete Jordan's scarce resources and be detrimental to the environment.

2) Reform program

Structural adjustment comprises several components. Each of these components is dealing with (a) economic policy, (b) financial sector, (c) trade, (d) deregulation of

business activities, (e) privatization and commercialization of public enterprises. These components are, of course, inter-related in the process of economic development.

(a) Sound economic policy

Stability of the macro economy is one of the basic conditions to sustain the growth and the economic development of a country. This implies the following measures:

- a) Fiscal adjustment and tightening of fiscal expenditure to reduce the budget deficits,
- b) Adjustment of domestic interest rates,
- c) Tight monetary control,
- d) Increasing reliance on indirect monetary control mechanisms such as open market operations,
- e) Increasing public reliance on the economy and the financial system of Jordan and improving the level of foreign exchange reserves,
- f) Shifting the General Sales Tax into a full Value-Added Tax (VAT) to fortify the base of the government revenue, and
- g) Amendment of the Income Tax Law to rationalize the tax structure and to encourage corporate and personal savings.

In the second structural adjustment program, the following targets have been established, in terms of macro economic indicators, at the end of the structural adjustment period, namely 1998:

- a) Jordan's budget deficit (excluding grants) is to fall from 18% of GDP to 5% by reducing public expenditure from 44.4% of GDP to 35% and increasing domestic revenues from 26.5% of GDP to 30%,
- b) Consumption is to be cut from 100.9% of GDP to 79.5%,
- c) Inflation is to fall from 10% to 4.5%,
- d) Foreign and domestic borrowings are to be cut from 10.6% of GDP to 3.5% in 1998, and
- e) Current account deficit from the equivalent of 24% of GDP to 2% by the end of the period.

(b) Financial sector reform

The reform in the financial sector is aiming at two goals. The first goal is to make the financial sector serve as a facilitator for real sector growth by mobilizing savings and channeling these funds to the optimal investments. The other goal is to make Jordan a transit point and an active service center for the Middle East Region.

To attain these goals, the following steps have been or are going to be taken:

- a) Improving competition and increasing efficiency and effectiveness in the financial sector,
- b) Adoption of a flexible exchange rate policy in line with market forces,
- c) Fostering the development of the long-term finance, both equity and debt, which are not yet sufficiently available,
- d) Development of secondary markets for long-term papers,
- e) Further strengthening bank supervision,
- f) Establishment of a sound deposit insurance scheme, and
- g) Planned revision of the Foreign Exchange Law.

(c) Trade sector reform

The Government's long-term vision is to hang in place by the year 2010 in a trade policy regime which would place Jordan among the world's leaders in the liberalized trade. The following is the current progress of the trade sector reform:

- a) A number of measures to reduce tariff protection and improve trade incentive regime including abolishment of the exceptional list of imports which were subject to tariffs from 50% to over 200%,
- b) Institutional support for export development,
- c) Application for a membership to WTO, and
- d) Negotiation with the European Union for a partnership agreement on free trade.

(d) Deregulation of business activities

The economic reform program is accelerated with strong focus on a liberalized trade and investment regime and on creating a policy and institutional framework to promote growth through the private sector initiative. A new Investment Law has been already enacted and the Investment Promotion Corporation was established in 1995.

- a) Liberalization of the regulatory framework affecting business entry, exit and operation,
- b) Measures to limit government participation in productive activities, and
- c) Planned revision of the Company Law.

(e) Privatization and commercialization of public corporations

The Government committed itself to converting many of its agencies and corporations into companies fully owned by the Government for the first step. Any

additional financing for such corporations is to be obtained from the private sector. However, the Government would still maintain its investment in the strategic industries while priority would be placed on selling its ownership in tourist and processing industries.

For example, gas and oil exploitation activities are determined to be converted into a company fully owned by the Government operating on a commercial basis.

The current status of commercialization and privatization of the major public corporations is summarized below:

Name of public corporation	Current status of plan
Royal Jordanian Airline	Privatization is being planned
Aqaba Railway Corporation	Privatization is being planned
Telecommunications Corporation	Allowing the private sector's entry and eventual privatization
Public Transport Corporation	No plan, but may be privatized in future
Jordan Electric Authority (JEA)	Corporatization
Water Authority of Jordan	No plan, and will not be privatized

2-3-2 Industrial Development Policy

(1) Industrial Policy in the New Third Five-Year Economic and Social Development Plan (1993-1997)

The New Third Five-Year Economic and Social Development Plan does not clearly establish so-called industrial policies, but the following investment sector policies are included as part of the economic and social policies. To provide a suitable investment environment conducive to increasing domestic production and exports and to rationalizing imports, the following measures are listed:

- 1) Providing investment information and simplifying registration and licensing procedures,
- 2) Promoting reliance on non-credit financing and facilitating access to such financing,
- 3) Encouraging the banking sector and financial institutions to provide the necessary funds for investment by developing an institution,

- 4) Preventing monopolies and protecting the consumers by enacting appropriate legislation, increasing the supervisory role of the Government,
- 5) Modifying customs regulations in favor of export and industrialization, and simplifying their application,
- 6) Linking tax incentives in the manufacturing sector directly to investment and export processing, increasing travel, marketing and hospitality tax exemption rates for hotels and travel agencies, and abolishing fees and taxes imposed on the capitalization of shareholders' rights,
- 7) Increasing investment incentives by amending the Investment Promotion Law,
- 8) Upgrading the quality of goods and services to increase their international competitiveness by complying with international specifications,
- 9) Developing specialized domestic capabilities in the field of maintenance,
- 10) Regulating auditing services by revising the conditions for the licensing and practice of the accounting and auditing professions,
- 11) Restoring financial and administrative autonomy of public institutions, and
- 12) Developing domestic technical expertise by involving it in the provision and export of consultancy services.

The Plan assumes the target for GDP by industry as shown in Table 2-3-1.

(2) Necessity of an industrial policy

With the consultation and guidance by the international organizations such as the World Bank and the IMF, Jordan is heading toward a deregulated economy in many respects as we overviewed in the preceding section. Essentially, this is a very correct and appropriate decision.

On the other hand, a "long-term sectorwise development policy and program" is needed for this country, since resources including money fund, human resources and natural resources available for the industrial development are limited. Therefore, it is seriously needed to strengthen comparative advantages in certain industrial sectors, where Jordan is endowed with better conditions for industrial development, backed by a powerful industrial policy. Driving forces to set forth a development of such industrial sectors could be provided

by the government initiative in the first stage of the development, in order to create Jordan's comparative advantages in the international trade and the division of production process.

For example, the free trade agreement currently being discussed with EU will benefit Jordan's economy only if Jordan could attain some comparative strengths and advantages in specific industries within the prescribed 12-year grace period. Otherwise, the effect of the agreement may end up with just opening a market to foreign countries and resulting in further increase of the trade deficit.

The current Jordanian industrial policy is very limited, it just states "to make the private sector play more significant role in the economic activities." The New Five-Year Plan (1993-1997) makes a macro economic analysis, and presents target economic figures towards the end of the planning period. The Plan, however, does not specify methodologies and policy measures to attain these goals.

(3) Characteristics of the Middle East Region to be considered in designing the industrial policy

The following characteristics of the Middle East Region (the Region) should be considered to formulate the most appropriate industrial policy of the country.

1) Water resources

The most fundamental and unfavorable nature of the Region is the lack of sufficient water resources. Agricultural production is inevitably limited in the Region where the required minimum water resources are not secured for agriculture. Therefore, the agricultural production of the Region is generally very limited. The Region's population is very small due to the small agricultural production, which implies that the size of the domestic market of one country is considerably small except for certain countries such as Egypt.

2) "Mono-culture" of oil

The economy of the Middle East countries, including the oil producing countries as well as the non-oil producing countries, basically depends on the revenue of the oil producing countries in the Gulf area. The structure of the balance of payments of Jordan given in Table 2-2-5 explains this dependency.

In this respect, the economy of this area can be characterized as "mono-culture" of oil. Desperate efforts for industrialization of this area have not been made, since some level of

livelihood could be maintained by the distribution of "oil money" in the form of remittances from workers in the oil producing countries.

3) High mobility of labor force

Mobility of labor force in the Region is very high. There are a couple of reasons for this high mobility. The first is that since Arabic language is the common language in the Region, national borders do not function as language barriers. In most areas in the world, however, borders of the countries are also borders of language. Mobility of labor force is limited by the language barrier in such case, as typically seen in East Asia.

Another reason is that Islam is the common religion in the Region and the people share the feeling of Muslim brotherhood.

(4) Industrial policy of Jordan

1) Industrial policy to make the economy more independent from the external environment

For problems caused by the small size of the markets in the Region, development of the regional cooperation and the regional economy would be the most appropriate solution. Development of the regional cooperation, however, cannot be achieved merely by economic measures. Speed and extent of the development of the regional cooperation very much depend on political reconciliation and mutual trust/reliance in the countries of this Region.

Jordan's economy would continue to be very vulnerable to changes in the external environment such as oil market and military collision. Industrialization might be the fundamental solution to make the economy more independent from these changes. A long-term, sectorwise industrial policy is seriously needed for this reason.

2) Policy measures for promotion of foreign investment and export

Jordan should adopt an "open door" policy and an "export-oriented" policy rather than a "protection of domestic industry" policy or an "import substitution policy," since the domestic market is quite small and industry is very much limited to certain sub-sectors such as mining and mining-related industries, and pharmaceutical industry.

On the other hand, the scope for the structural adjustment is rather limited to maintain the minimum level of per capita consumption and to provide basic human needs. Further foreign official assistance will be limited and the economy will need to rely more on

inflow of external capital and export. This is another reason for the necessity of special incentives and measures for acceleration of foreign investment and export.

In designing policy measures for promotion of foreign investment and export, some sense of "sales and marketing" is important, as promotion of foreign investment and export involves severe competition with other countries especially with the countries surrounding Jordan. Jordan should have at least equivalent, hopefully more attractive, policy measures and investment incentives compared to those of the competing countries.

2-3-3 Regional Development Policy

Jordan's initial economic development plan was the New Seven-Year Plan (1964-1970). Since then, Jordan has established five economic development plans over a period of roughly 30 years. However, the level at which the targets were achieved was greatly influenced by external factors including the Middle East War, the oil shocks and the Gulf War. Actually there is even the case of the Third Five-Year Plan (1986-1990) which was terminated half way through its execution.

Currently Jordan is in the midst of its New Third Five-Year Economic and Social Development Plan (1993-1997). This Plan integrates the Medium-Term Economic Program (1989-1993) and the Medium-Term Economic Structural Adjustment Plan (1992-1998), which were established in cooperation with the IMF and the World Bank, to enable Jordan to overcome the economic crisis due to the Gulf Crisis broken out in August 1990.

The following are the primary targets of the Plan:

- (1) Economic liberalization, improved investment environment,
- (2) Development of natural resources, particularly water and energy,
- (3) Development of new export/sales routes, expansion of traditional markets, development of export sectors,
- (4) Balance between human resources and economic resources, and
- (5) Expanded production sector employment.

There is no specific mention of regional development policy within the New Third Five-Year Economic and Social Development Plan. Among the targets of that Plan, however, there is a mention of achievement of balanced social development (decrease in the imbalance between regions). It is clear that the focus is being placed on correcting the economic disparities between the southern part of Jordan and the other parts of the country.

2-4 Institutional Framework for Industrial and Regional Development in Jordan

2-4-1 Industrial Settings

Outlines and activities of organizations set up for the industrial and regional development in Jordan are summarized in this section.

(1) Central ministries

The central ministries which are directly related to the industrial development of Jordan are shown in Figure 2-4-1.

(2) Government agencies

1) Industrial Development Bank (IDB)

The Industrial Development Bank (IDB) was established in 1965 to encourage and assist development and renewal of industrial projects. The current paid-in capital of the bank was JD 7.5 million as of the end of 1994, and the Government is holding 12% of the shares. Other shares are held by financial institutions and private sector enterprises. The bank is listed in the Amman Stock Market. The chairman of the bank is the former vice chairman of the Central Bank of Jordan.

Out of the total liabilities amounting to JD 48.9 million, borrowing from the Central Bank was JD 10.9 million at the end of 1994. Other significant funding sources are loans from foreign countries and deposits from the Government and other financial institutions. Exchange risks of loans from foreign countries are usually taken by the Government.

(a) Small Scale Industrial and Handicraft Fund (SSIH)

IDB established the Small Scale Industrial and Handicraft Fund (SSIH) to provide loans to small scale industry and handicraft projects. Criteria for SSIH loan approval are not so strict as commercial loans and the interest rate is lower than the market interest rate. Lending term is normally five to six years. The definition of "small" is having less than five employees. The maximum limit of the loan is JD 10,000.

Lending conditions of this concessive loan are as follows:

- | | |
|-----------------|-----------------------------------|
| - Interest rate | 8% (9% for medical practitioners) |
| - Lending term | Up to seven years |
| - Grace period | Six months |

- Mortgage and security
 - Mortgage over machinery and equipment
 - Mortgage over real estate
 - Charge on salary
 - Bank Guarantee (this case is very rare.)

The current interest rate of 8% is considerably lower than the market interest rate of around 12%. The bank did not set up any particular preference or priority for this loan in terms of area or industry. Sources of SSIH fund are provided mainly from the Central Bank and international financial institutions.

(b) Venture capital business

IDB lends money to one investor up to 50% of his equity investment on the venture business. The bank receives maximum 66% of the investor's dividend from the business. In case the investor sells his shares in the business to other persons, the bank is entitled to receiving maximum 160% of the original loan amount. In addition to the above mentioned loan, the bank may directly participate in shares in the venture businesses.

2) Jordan Export Development & Commercial Center Corporation (JEDCO)

(a) Outline of the organization

The Jordan Export Development & Commercial Center Corporation (JEDCO) was established to expand the national efforts for diversifying export markets and import sources. JEDCO is supervised by the Board of Directors comprising senior government officials, presidents of various business organizations and leading industrialists.

(b) Activities of JEDCO

JEDCO offers the following services to exporters and private sector organizations.

a) Product improvement

- Assistance for improvement of the quality of Jordanian products by inviting experts from overseas and sending them to factories

b) Information service

- Free access to the library of JEDCO
- Access through JEDCO to the computer network connected to data base systems overseas including Internet, Arab Trade Information Network, etc.

c) Trade promotion

- International fairs and exhibitions
- Answering inquiries from domestic enterprises and foreign enterprises

d) Market research and analysis

- Market analysis
- JEDCO has overseas liaison offices in Cairo, Tunis, Baghdad, Yemen, Casablanca, Tripoli, Khartum, Moscow, Muscat, and Washington.

The volume of exports handled through JEDCO during 1994 amounted to JD 215.0 million, which accounted for 21.6% of the whole export by Jordan, and the volume of imports through JEDCO in the same year amounted to JD 43.0 million, which accounted for 1.8% of the whole import by Jordan.

3) Jordan Investment Corporation (JIC)

(a) Outline of the organization

In 1991, the Jordan Investment Cooperation (JIC) was founded as a governmental corporation by the Law No. 18 of the year 1991. When being established, JIC succeeded the assets and liabilities of the Pension Fund except for those relating to the pension fund scheme itself. The whole equity of JIC has been contributed by the Government.

The initial equity contribution by the Government was approximately JD 5 million and additional equity contribution in the amount of JD 16 million was made in the next three to four years. Subsequently, investments held by other governmental agencies were transferred to JIC for efficient management of the Government investment portfolio. The book value of the investment portfolio held by JIC was JD 206 million at the end of 1994.

(b) Activities of JIC

a) Investment in securities

JIC, in cooperation with other public corporations, makes investments in accordance with the investment policy of the Government to supervise the economic activities and to establish a solid national economy in all production sectors.

b) Appraisal of new projects

Feasibility studies, consisting of technical, marketing and financial aspects, are conducted by JIC for new projects. Outside consultants, domestic and foreign, are hired for the studies from time to time.

In 1995, 10 projects were appraised. The feasibility studies of six projects out of 10 were conducted by JIC teams. Four projects out of 10 proceeded to implementation. Private sector investors took interests in three projects (a rubber seal project, a filter project, and a hotel management project), and JIC formed a committee for a remaining project on casting (such as mold) to set up the project and subsequently invite private sector investors. Project finding is the task of the Project Scheme Department of JIC. Private sector investors may contact JIC to ask for JIC's involvement in their projects.

4) Investment Promotion Corporation (IPC)

(a) Outline of the organization

The Investment Promotion Corporation (IPC) was established in 1995 in accordance with the new Investment and Promotion Law. The Board of Directors consists of 12 members. Some are from the governmental sector and others are from the private sector.

The new Investment and Promotion Law deals with foreign investment as well as domestic investment. The purposes of this law are:

- a) To enhance investment environment and investment opportunity, and
- b) To ease investment procedures.

(b) "One window service facility"

IPC is planning to introduce the so-called "one-window service facility" for application and processing of new industrial projects. In this "one-window service facility" concept, the responsible section reviews investment applications submitted by investors. The section must reach a decision within 30 days after receipt of the application. The "one-window service facility" serves both foreign investment and domestic investment.

The "one-window service facility" covers not only application process of the investment but also provision of public utility services such as electricity, gas, water,

etc. Furthermore, it covers application to obtain permits required for protection of the environment and other permits required for businesses in certain sectors.

5) Amman Chamber of Industry

(a) Outline of the organization

The Amman Chamber of Industry consists mainly of manufacturers, while the Amman Chamber of Commerce is a separate organization consisting mainly of traders. Manufacturers and traders sometimes take different positions in lobbying for the government policy. This is one of the reasons for their separation into two organizations.

The Amman Chamber of Industry is the sole chamber of industry in Jordan. It has approximately 7,500 members. Two hundred members have more than 50 employees and 1,000 members have more than 10 employees. The Amman Chamber of Industry submits its requests, from time to time, to the Government when a new policy is going to be introduced or a policy change is going to be made.

(b) Activities of the Amman Chamber of Industry

The Amman Chamber of Industry performs its functions at two levels. It takes care of each individual member's interests and, at the same time, represents the country's industrial sector as a whole. The activities include:

- a) Cooperation with the Government in enacting laws, regulations and procedures relevant to the industrial sector in particular, and the country's economy at large,
- b) Providing a forum for the Chamber members to debate on issues related to the industrial sector,
- c) Organizing and sponsoring lectures, workshops, seminars and conferences on various economic issues especially those related to the industrial sector,
- d) Organizing and sponsoring business delegations abroad and promoting meetings and contacts with foreign business delegates in order to strengthen international cooperation, promote investment and trade exchange, find markets for Jordanian exporters, and encourage joint ventures,

- e) Participation in relevant activities whether local, regional or international, such as international and regional trade fairs and meetings of the UN organizations as well as independent organizations, and
- f) Enhancing stronger relationships among its members and coordinating activities, requests and needs of each industrial sub-sector.

6) Vocational Training Corporation (VTC)

Jordan institutionalized vocational and technical education in 1973, when the Ministry of Education adopted the National Vocational Training Scheme that introduced apprenticeship training in collaboration with employers. As a result, the Vocational Training Corporation (VTC) was established in 1976 as a semi-autonomous organization under supervision of the tripartite Board of Directors representing the Government, employers, and labor unions. The Board is chaired by the Minister of Labor, and VTC is run by an executive body headed by the Director General, who also serves as the deputy chairperson of the Board. Figure 2-4-2 shows the organizational chart of VTC.

VTC operates a national network of 35 training centers and institutes which include one Training and Development Institute (TDI), one Occupational Safety and Health Institute (OSHI), one Testing and Training Institute (TTI), one Industrial School, three Hotel Training Centers (HTC), ten female-only Urban Development Training Centers (UDTC), and 18 Trade Training Centers (TTC). The annual capacity of these centers was 10,080 trainees for apprenticeship and medium-term training programs and 8,930 trainees for short-term training programs in 1994. UDTCs are established in collaboration with the Housing and Urban Development Corporation to offer short-term training for women living in Amman, Zarqa, and Aqaba. In addition to these centers, VTC encourages and assists both private and public enterprises in establishing their own training centers, and there are now eight training centers owned by large companies and operated under close cooperation and coordination with VTC.

VTC offers the following training programs:

(a) Apprenticeship training program

This program trains trainees of various levels, from those who finished ten-year basic education to the skilled worker level. The program offers one- or two-year off-the-job training in the classroom and workshop, and one-year on-the-job training at the enterprise under the joint supervision of the employer and the VTC staff.

(b) Medium-term training program

This one-year training program trains experienced skilled workers up to the craftsman level.

(c) Short-term training programs

VTC offers a variety of short-term training programs: three to nine-month training for semi-skilled workers, upgrading training for employed workers, training of instructors and supervisors at TDI, and training in the field of occupational safety and health at OSHI.

VTC is on the process of establishing the national standards of occupational classification. The process includes clarification of job descriptions based on occupational classification, establishment of a national performance standards test, and certification at TTI.

In 1992, VTC started implementation of industrial extension services for medium and small scale industries. The services are financed by UNDP and executed by ILO. The services include consultancy and advisory services in quality control, management, production techniques, marketing, safety, and skill upgrading.

It is generally believed that VTC has stronger links and better communications with local industries than the vocational secondary schools run by the Ministry of Education. But the further industrialization in Jordan will require higher levels of workers, and different skills from what is needed today. The World Bank, therefore, recommended to invest more on general secondary education than vocational education, to create a flexible labor force, not a narrowly-specialized labor force.

7) The Royal Scientific Society (RSS)

The Royal Scientific Society (RSS) was established in 1970 as a national scientific and technological research and development (R&D) institution. It became the first scientific center under the Higher Council for Science and Technology (HCST) in 1987. His Royal Highness Crown Prince El Hassan Bin Talal is the founder and chairman of RSS, and HCST assumes the powers of the board of trustees of RSS. RSS has the following seven centers:

- (a) Computer Technology, Training and Industrial Studies Center
- (b) Renewable Energy Research Center

- (c) Industrial Chemistry Research Center
- (d) Mechanical Design and Technology Center
- (e) Building Research Center
- (f) Electronic Services and Training Center
- (g) Environmental Research Center

Figure 2-4-3 shows the organizational chart of RSS.

RSS plays a major role in all aspects of the advancement of science and technology in Jordan, and carries out a wide variety of research programs. RSS also acts as a central standards authority for the government and private industries.

RSS enjoys administrative and financial independence, and its budget sources are self-generated revenues from technical services and consultations, research contracts, an annual grant from the Government of Jordan, grants and donations from local institutions, and technical assistance from donor organizations.

RSS also established the Princess Sumaya University College for Technology in 1990 which offers two programs leading to the bachelor of science degrees in computer science and applied engineering for electronic maintenance.

8) The Higher Council for Science and Technology (HCST)

The Higher Council for Science and Technology (HCST) was established as an administratively and financially independent governmental organization by the Law No. 30 in 1987, to create a national scientific and technological base for national development and make science and technology (S&T) a major element of all development plans.

HCST is in charge of (a) formulating a national science and technology policy, (b) identifying sectorial research and development priorities, and (c) coordinating and funding scientific and technological research and development activities.

HCST is chaired by His Royal Highness Crown Prince El Hassan Bin Talal and the Council is composed of the following 14 members:

- (a) His Royal Highness Crown Prince El Hassan Bin Talal (Chairman),
- (b) Minister of Planning (Vice Chairman),
- (c) Minister of Finance,
- (d) Minister of Higher Education,
- (e) Minister of Industry and Trade,

- (f) Minister of Energy and Mineral Resources,
- (g) Minister of Agriculture,
- (h) Commander-in-Chief of the Jordanian Armed Forces,
- (i) President of the Royal Scientific Society,
- (j) President of the Amman Chamber of Industry,
- (k) Secretary General of HCST, and
- (l) Three persons appointed by the Chairman.

The General Secretariat of HCST has the following four sectorial departments:

- (a) Department of Agriculture,
- (b) Department of Industry,
- (c) Department of Infrastructure, and
- (d) Department of Development Cooperation.

9) The Institution for Standards and Metrology (ISM)

The Institution for Standards and Metrology (ISM) was established in 1994 by virtue of the Standards and Metrology Law No. 15, evolved from the defunct Directorate of Standards and Metrology under the Ministry of Industry and Trade (MOIT).

ISM aims at achieving the following four objectives:

- (a) To adopt a national system for standards and metrology founded on current scientific basis,
- (b) To keep pace with scientific development in the fields of standards, metrology and quality control activities,
- (c) To provide health, economic and environmental protection for citizens by ensuring that consumable goods and other materials conform to the approved standards, and
- (d) To support the national economy and economic development by assuring the quality of production through the provision of adequate levels of standards to compete in the international markets.

ISM's activities include:

- (a) To set up the national standards for commodities and materials except for drugs, veterinary medicines, serums and vaccines,
- (b) To accredit qualified testing or calibration laboratories at the public and scientific institutions such as RSS and the universities,
- (c) To grant quality mark and certificates of conformity, and

- (d) To monitor the application of standards.

10) Jordan Industrial Estate Corporation (JIEC)

The Jordan Industrial Estate Corporation (JIEC) was established by a legal act in 1980. It is responsible for planning, land acquisition, construction, and operation of industrial estates (IE) in Jordan. JIEC is supervised by MOIT on a self-supporting basis. Industrial projects may receive incentives specified in the Law for Encouragement of Investment. In addition, enterprises that are located in the IEs of JIEC may also receive the following additional incentives:

- (a) New industrial projects established within the IEs are granted two years of income and social services tax holidays,
- (b) Existing industrial projects outside the Industrial Zones that relocate to the IEs are granted two years of income and social services tax holidays,
- (c) Existing industrial projects within the Industrial Zones that relocate to the IEs are granted two years of income and social services tax holidays, and
- (d) All industrial projects established within the IEs are exempted from the building and land tax.

11) Free Zones Corporation (FZC)

The Free Zones Corporation (FZC) is a governmental agency and possesses all authorities related to the free zones in Jordan. It was established by a legal act in 1976. FZC constructs and operates Free Trade Zones (FTZs) and IEs with the free trade function. Since it handles tariffs, MOF has jurisdiction over FZC. FZC is financially independent. The finances of FZC are covered mainly by revenues earned through: (a) returns of rents, charges for temporary use of lands and properties owned by FZC, and (b) returns of services furnished by FZC. Collected tariffs become the property of the national treasury.

2-4-2 Regional settings

(1) Central ministries

Central ministries responsible for regional development are Ministry of Planning (MOP) and Ministry of Municipal, Rural Affairs and Environment (MMRAE). Major functions of each ministry are summarized below:

1) Ministry of Planning (MOP)

MOP is responsible for formation and implementation of the national economic and social plan. Although Jordan currently has authorized no regional development plan, a regional plan was prepared by MOP based on the previous Five-Year Plan for Economic and Social Development 1986-1990. The plan showed the direction of social and economic development of each Governorate. This planning style clarified the development objectives of each Governorate and was expected to result in efficient investment. This regional plan, however, was not fully implemented along with the previous Five-Year Plan.

When the next social and economic development plan will be formulated, it should be to implement comprehensive development of all Governorates in line with the national plan.

2) Ministry of Municipal, Rural Affairs and Environment (MMRAE)

MMRAE executes various operations in accordance with the national economic and social plans prepared by MOP. The following are the functions of MMRAE related to the industrialization of the Southern Districts:

- (a) Preparation of the land use plan,
- (b) Construction of the public infrastructure (mainly roads) within the areas covered by the land use plan, and
(MOP is responsible for coordinating infrastructure construction projects implemented by the respective ministries. In the case of projects located outside the areas covered by the land use plan, infrastructure is constructed by the Ministry of Public Works & Housing and other responsible agencies.)
- (c) Licensing the private sector construction within the areas covered by the land use plan.

The following ministries also play their roles in regional development:

- (a) Ministry of Energy and Mineral Resources (MEMR)
- (b) Ministry of Labor (MOL)
- (c) Ministry of Transport (MOT)
- (d) Ministry of Industry and Trade (MIT)
- (e) Ministry of Finance (MOF)

(2) Governmental agencies

1) Aqaba Region Authority (ARA)

The Aqaba Region Authority (ARA) was established by a legal act in 1984. Its jurisdiction covers parts of Aqaba and Ma'an Governorates. The objective of its establishment is to create a comprehensive development agency that plans and executes development projects in the areas of industry, tourism, and agriculture in the area. ARA is placed under the direct control of the Prime Minister, and it is financially independent.

2) Jordan Valley Authority (JVA)

The Jordan Valley Authority (JVA) was established by a legal act in 1988 as the first agency specializing in regional development in Jordan. Its jurisdiction is the so-called Jordan Valley including a part of Karak, Tafila and Aqaba Governorates. JVA aims at developing and distributing water resources for irrigated farming, domestic and municipal uses, industry, hydroelectric power and other beneficial uses in the region. JVA is directed by a board of ministers from related ministries and governmental offices such as MOP, and it is financially independent.

(3) Coordination of regional development projects

It is important to coordinate various regional development projects. For this purpose, the 1986-1990 Regional Development Plan formed Regional Councils and Sub-regional Development Councils under the jurisdiction of MOP. These Councils constitute an excellent management system for regional development, however, it appears that so far they are not working effectively.

1) Sub-regional Development Councils

The Council members consist of the administrative governors of the sub-region's, representatives of local councils and local leaders representing various economic and social activities from both the public and private sectors.

2) Regional Councils

The Council members consist of the governors, representatives from Governorates' parliaments, sub-regional councils and MOP.

3) The Higher Planning Council

The Council members consist of the Prime Minister (as President), the Minister of Planning (as Vice-President), ministers of related ministries, the Governor of the Central Bank of Jordan, and the Secretary General of MOP.