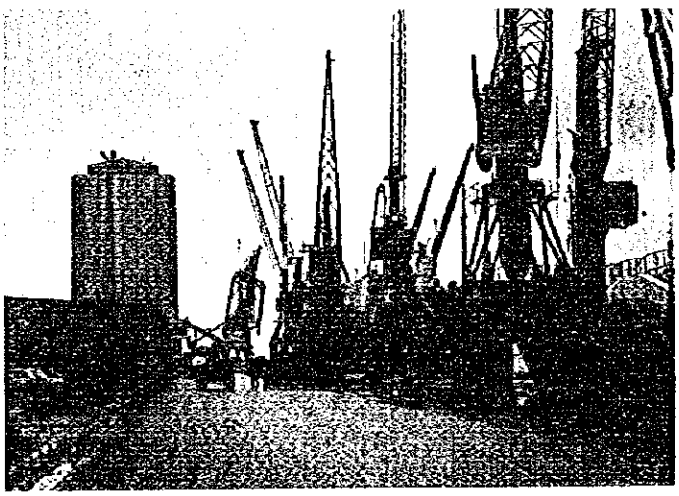
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF TRANSPORT
THE SYRIAN ARAB REPUBLIC

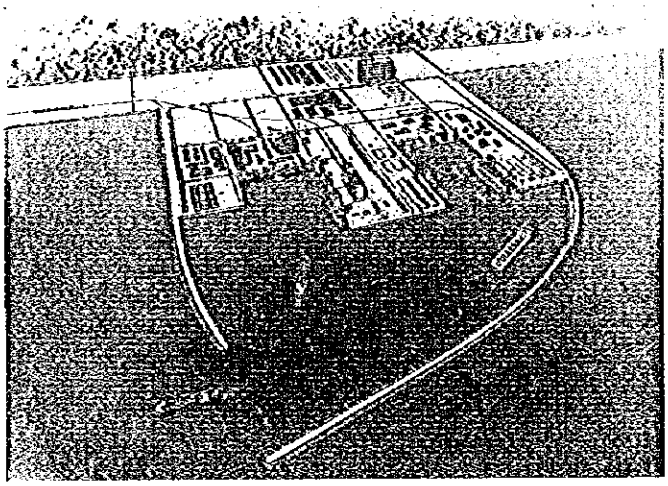
社会開発調査部報告書

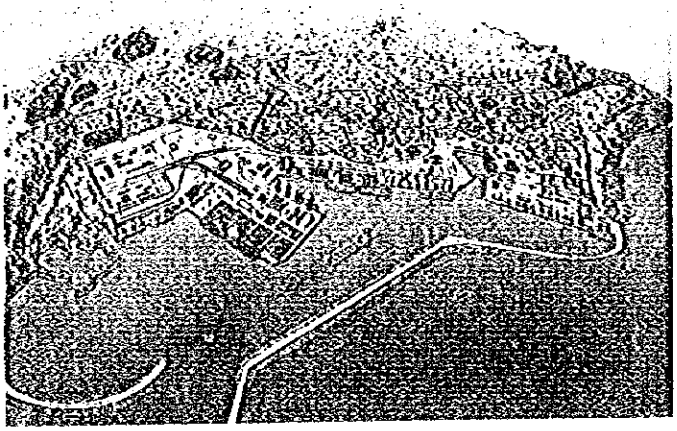
FINAL REPORT

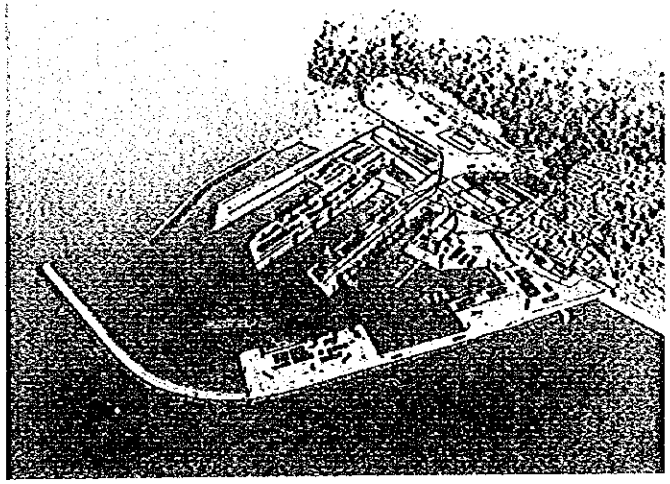
THE STUDY ON THE PORT DEVELOPMENT PLAN IN THE SYRIAN ARAB REPUBLIC

Vol.1









AUGUST 1996

The Overseas Coastal Area Development Institute of Japan (OCDI)
NIPPON KOEI CO.,LTD.(NK)

The following foreign exchange rate is applied in this study:
US$1.00 = 42 Syrian Pound (as October 1995) = ¥100

FINAL REPORT

THE STUDY ON THE PORT DEVELOPMENT PLAN IN THE SYRIAN ARAB REPUBLIC

Vol.1

AUGUST 1996

PREFACE

In response to a request from the Government of the Syrian Arab Republic, the Government of Japan decided to conduct a study on the Port Development Plan in the Syrian Arab Republic and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent a study team to Syria headed by Mr.Yugo Otsuki, Senior Advisor of the Overseas Coastal Area development Institute of Japan (OCDI) and composed of members from this institute and the company, Nippon Koei Co., five times between March 1995 and May 1996.

The team held discussions with the officials concerned of the Government of Syria and conducted field surveys in the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project 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 the Syrian Arab Republic for the close cooperation they extended to the team.

August, 1996

Kimio Fujita
President
Japan International Cooperation Agency

LETTER OF TRANSMITTAL

August 1996

Mr. Kimio FUJITA
President
Japan International Cooperation Agency

Dear Sir,

It is my great pleasure to submit the Final Report for the Study on the Port Development Plan in the Syrian Arab Republic.

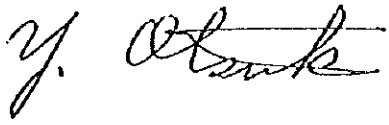
This report is the outcome of works between March 1995 and August 1996 including five field surveys during the period. The work was undertaken by the Overseas Coastal Area Development Institute of Japan (OCDI) and Nippon Koei Co., Ltd. as per the contract with the Japan International Cooperation Agency (JICA).

Based on the findings of these surveys and utilizing data and information collected, and along the line of the scope of work which was agreed upon by both governments, the report is formulated to cover the following subjects;
(1) To formulate a master plan for the existing two ports (Latakia and Tartous) and a new port for bulk cargoes up to the year 2010.
(2) To conduct a feasibility study of a short-term plan for the existing two ports and the new port for the period up to the year 2005.

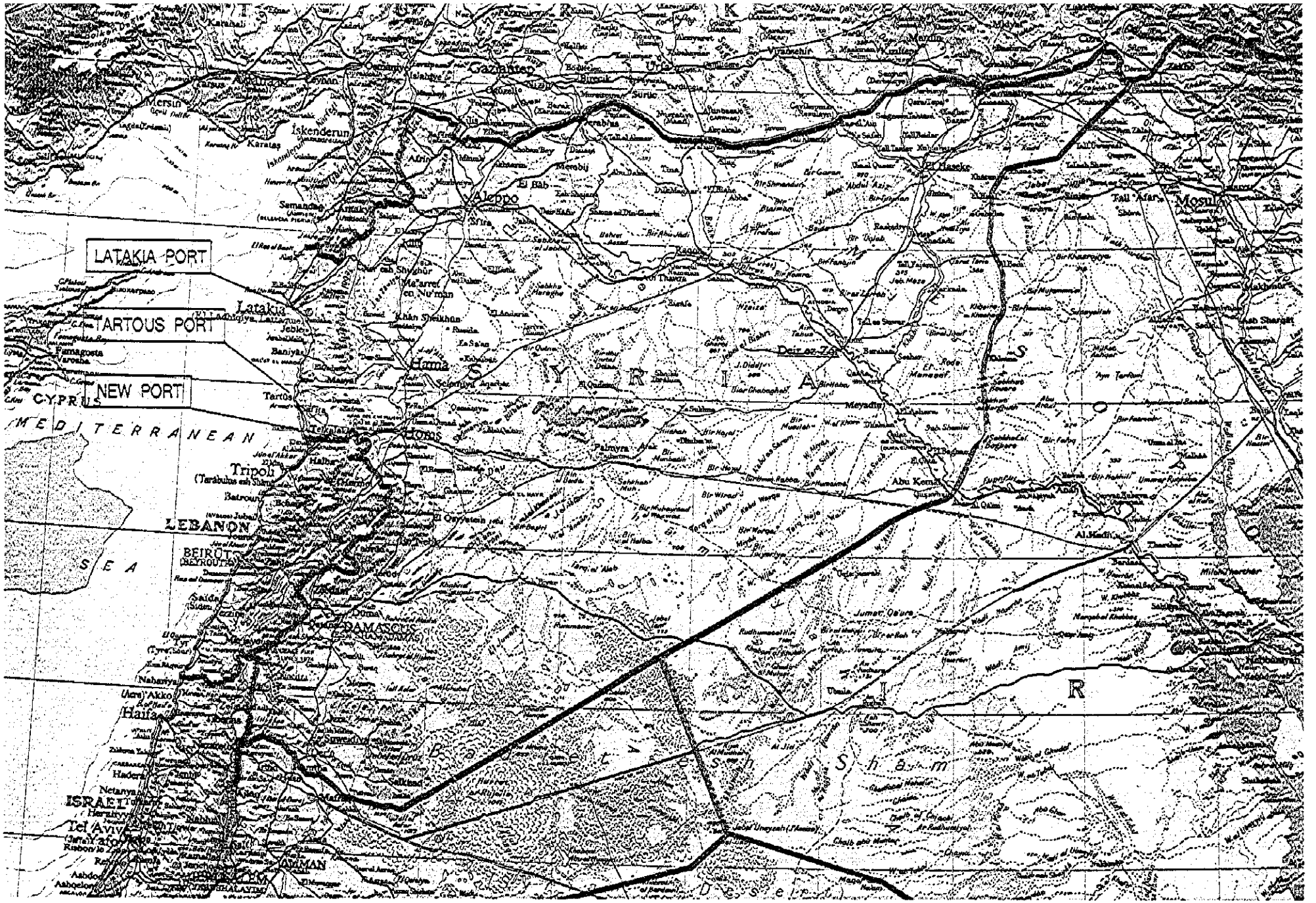
On behalf of the study team, I would like to express my deep appreciation to the Government of Syria, the Latakia Port General Company, the Tartous Port General Company and other authorities concerned for their thoughtful cooperation and assistance and for the heartfelt hospitality which they extended to the study team during our stay in Syria.

I am also greatly indebted to the Japan Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Transport and the Embassy of Japan in Syria for giving us valuable advice and assistance at every step in the whole course of the study.

Yours faithfully,

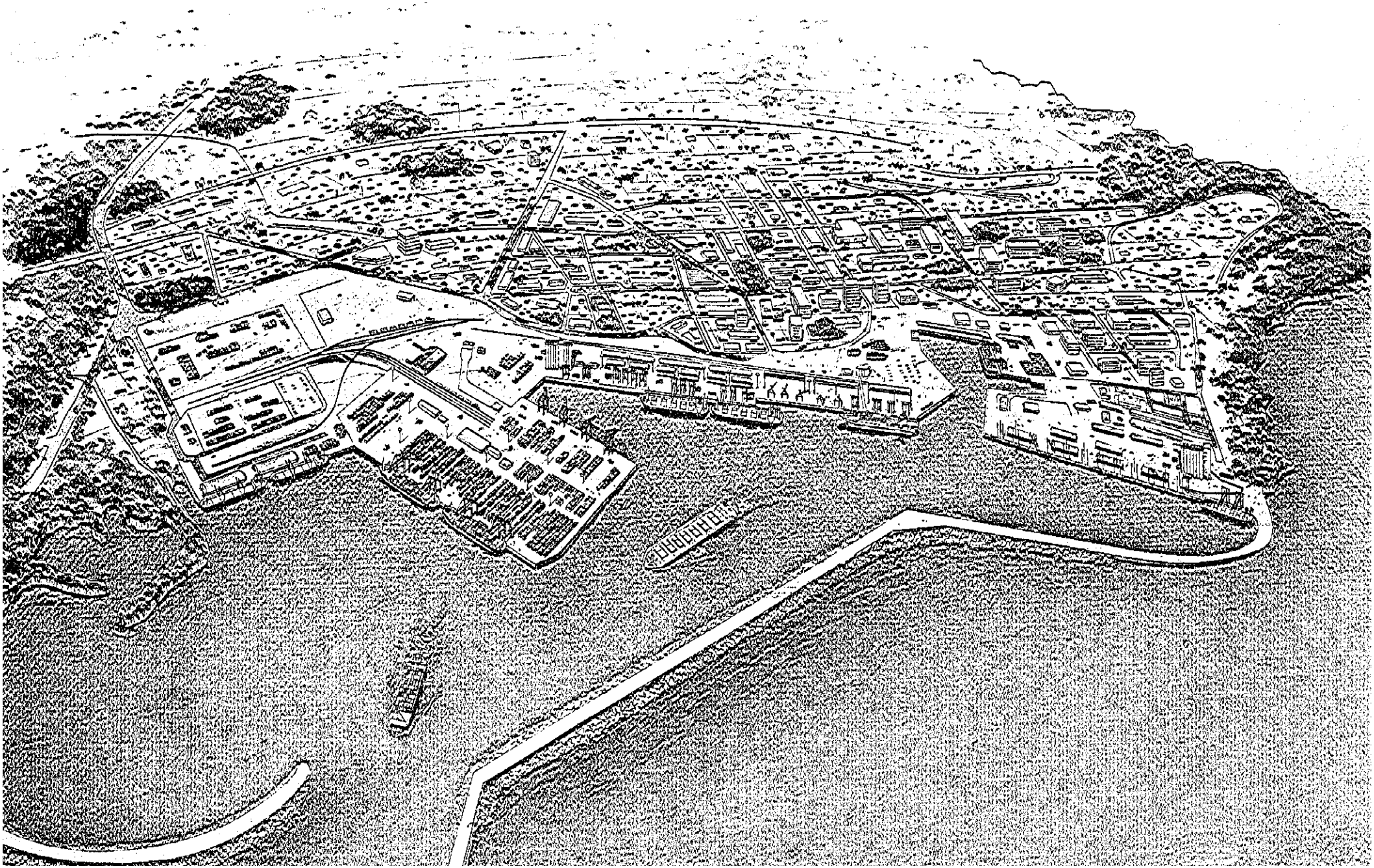


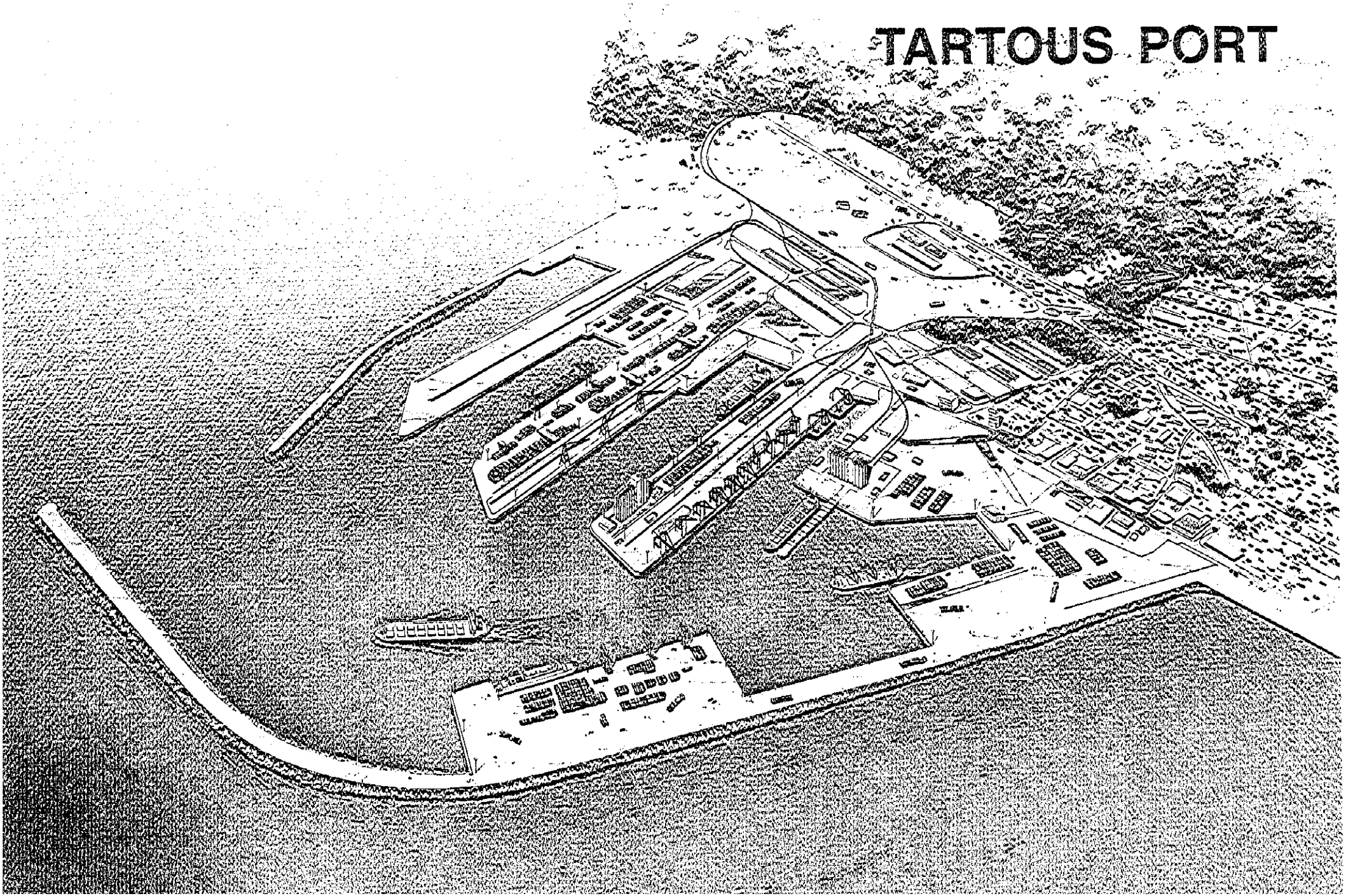
Yugo Otsuki
Leader, Team for the Study on the
Port Development Plan in the Syrian
Arab Republic

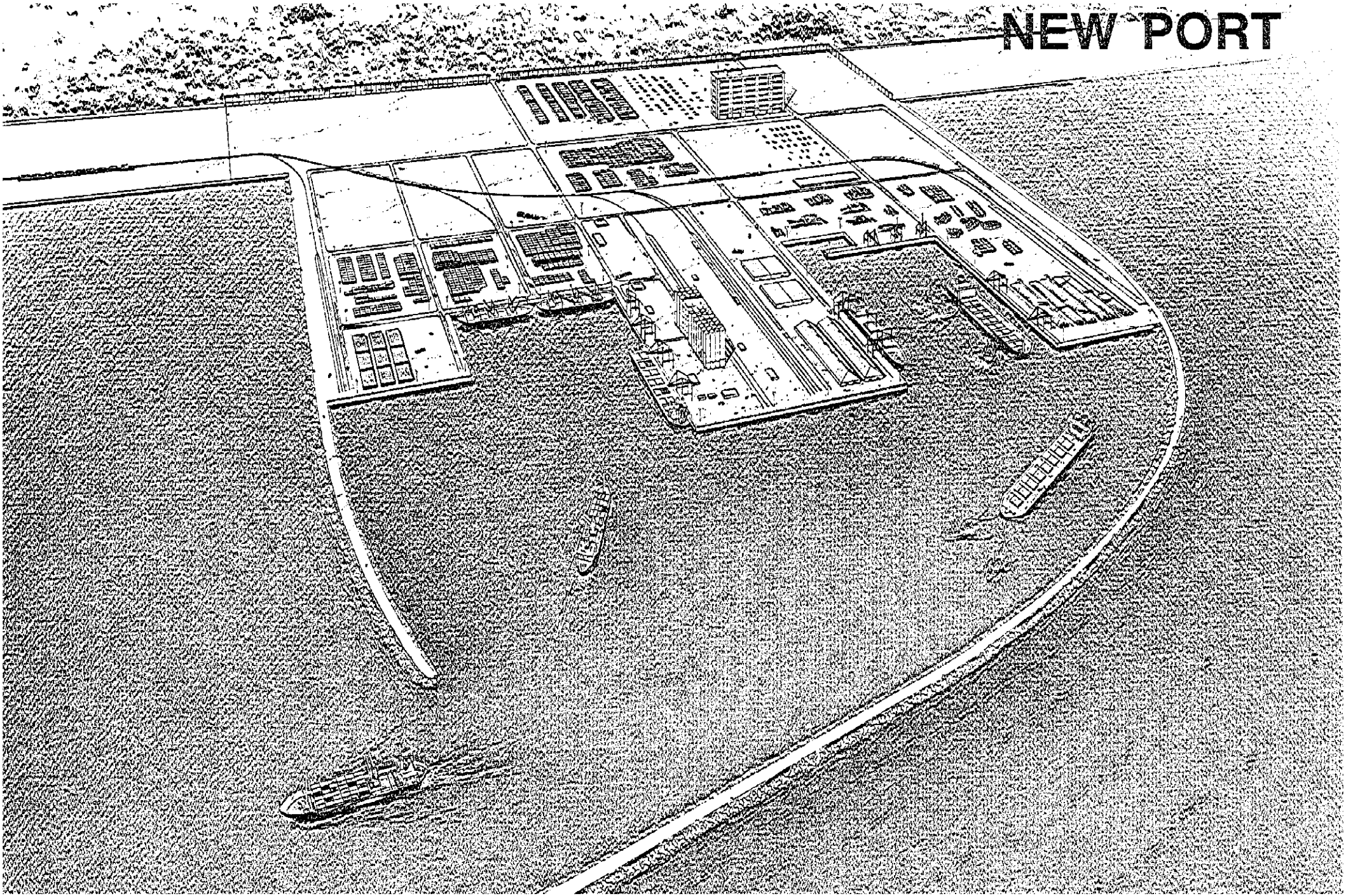


LOCATION MAP

LATAKIA PORT




TARTOUS PORT


NEW PORT

ABBREVIATIONS

B/L	Bill of lading
CAMP	Coastal Area Management Plan
CBR	Cost Benefit Ratio
CFC	Conversion Factor for Consumption
CFL	Conversion Factor for Labor
CFS	Container Freight Station
CIF	Cost Insurance and Freight
COD	Chemical Oxygen Demand
CPU	Central Processing Unit
CY	Container Yard
dB	Decibel
DG	Dangerous Goods
DMC	Developing Member Countries
DO	Dissolved Oxygen
DWT	Dead Weight Tonnage
ECU	European Currency Unit
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EPZ	Exporting Processing Zone
ETA	Estimated Time of Arrival
EDA	Estimated Time of Departure
FCL	Full Container Load
FEU	Forty-foot Equivalent Unit
FIRR	Financial Internal Rate of Return
FOB	Free on Board
FTZ	Free Trade Zone
GDP	Gross Domestic Product
GL	Ground Level
GNP	Gross National Product
GRT	Gross Registered Tonnage
HP	Horse Power
hr	hour
IALA	International Association of Lighthouse Authorities
IEE	Initial Environmental Examination
IMF	International Monetary Fund
IMO	International Maritime Organization
JICA	Japan International Cooperation Agency
LCL	Less than Container Load
LOA	Length Over All
MLWL	Mean Low Water Level
MOT	the Ministry of Transport
MT	Metric Ton
NRT	Net Registered Tonnage

OD-Survey	Origin and Destination Survey
OECF	The Overseas Economic Cooperation Fund
OS	Operation System
PH/ph	Potential of Hydrogen
Ro-Ro	Roll-on Roll-off
SCF	Standard Conversion Factor
SDR	Special Drawing Rights
SHIPCO	Shipping Agencies Company
SP	Syrian Pound
SPC	State Planning Committee
SS	Suspended Substance
SW	Scope of Work
TEU	Twenty-foot Equivalent Unit
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
US$	US Dollar
WHO	World Health Organization

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PRESENT CONDITIONS

PART I

PRESENT CONDITIONS

Chapter 1 Socio-economic Conditions

1.1 Demography

1.1.1 Population

The population of Syria in 1994 is estimated to be about 13,840,000. The annual population growth rate has remained steady at 3.4% over the past two decades with a few exceptions (see Table 1.1.1-1). Among Middle East countries, this growth rate is rather high.

The Syrian population can be characterized as being very young. Using intervals of five years, the first three age brackets, 0-4 years, 5-9 years and 10-14 years, account for 46% of the total population. This trend has been maintained over the past two decades.

There are 14 administrative districts in Syria. In terms of population distributions, the Damascus area which includes both Damascus city and the Damascus rural area has a population of about three million or 22% of the total population, followed by Aleppo (2.9 million), Homs (1.3 million), Hama (1.1 million) and Hassakeh (1.0 million). In the past two decades, Damascus city has seen a decline in its share of the population, while that of Homs and Dar'a has increased.

The above 14 administrative districts have the respective cities as the center of the districts, excluding the Damascus district which coincides with the city itself. Among these cities, Damascus has the largest population, followed by Aleppo, Homs, Latakia, Hama, Al-Rakka, Deir-ez-Zor, Al-Hassakeh, Dar'a and Tartous. Half of the above ten principal cities in Syria are situated within 150km of the coastline facing the Mediterranean Sea. The population of Dar'a city increased by over 60% from 1985-1994, while the remaining nine principal cities all showed an increase of over 30% during the same period.

Table 1.1.1-1 Trend of Total Population and Increase Rate in Syria

(Unit: thousand person, %)

Year	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Population	7140	7380	7627	7883	8148	8421	8704	9046	9298	9611	9934
Increase Rate		3.4	3.3	3.4	3.4	3.4	3.4	3.9	2.8	3.4	3.4

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Population	10267	10612	10969	11338	11719	12116	12529	12958	13393	13844
Increase Rate	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4

Data: STATISTICAL ABSTRACT

Note: Increase Rate in each Column is percentage for the previous year.

Table 1.1.1-2 Total Population in Syria by Sex

(Unit: thousand person, %)

Year	1974	1979	1984	1989	1994
Total	7,140	8,421	9,934	11,719	13,844
Males	3,655	4,310	5,074	5,986	7,071
Females	3,485	4,111	4,860	5,733	6,773
Percentage of Males	51.2	51.2	51.1	51.1	51.1

Data: STATISTICAL ABSTRACT

Table 1.1.1-3 Population in Syria by Age

(Unit: thousand person)

Year	1974	1984	1994
Total	7,121	9,934	13,844
Less than 1	260	363	506
1 ~ 4	1,083	1,511	2,102
5 ~ 9	1,215	1,695	2,361
10 ~ 14	950	1,325	1,844
15 ~ 19	680	949	1,323
20 ~ 24	521	726	1,013
25 ~ 29	397	554	776
30 ~ 34	364	509	709
35 ~ 39	358	500	699
40 ~ 44	298	415	578
45 ~ 49	230	321	448
50 ~ 54	173	242	335
55 ~ 59	133	185	260
60 ~ 64	146	204	284
65 ~ 69	76	135	187
70 ~ 74	97	135	185
75 ~	119	165	234

Data: STATISTICAL ABSTRACT

Table 1.1.1-4 Population in Syria by Mohafazat

(Unit: thousand person)

Year	1974	1984	1994
Total	7,121	9,934	13,844
Damascus	973	1,196	1,552
Damascus Rural Area	697	1,013	1,451
Aleppo	1,484	2,058	2,856
Homs	614	903	1,301
Hama	586	807	1,116
Lattakia	435	607	834
Deir-ez-Zor	326	445	599
Idleb	421	644	937
Al-Hassakeh	523	735	1,030
Al-Rakka	275	382	518
Al-Sweida	159	218	300
Dar'a	267	407	616
Tartous	341	489	689
Quneitra	19	30	45

Data: STATISTICAL ABSTRACT

Table 1.1.1-5 Trend of Population of Biggest 10 Cities in Syria

(Unit: thousand person)

Rank	Year / City	1985	1988	1991	1994
1	Damascus	1,227	1,314	1,414	1,549
2	Aleppo	1,131	1,261	1,399	1,542
3	Homs	399	447	499	558
4	Lattakia	224	249	275	303
5	Hama	201	222	245	273
6	Al-Rakka	100	113	126	138
7	Deir-ez-Zor	103	112	121	133
8	Al-Hassakeh	84	94	103	113
9	Dar'a	63	76	90	102
10	Tartous	61	69	77	86

Data: CENTRAL BUREAU OF STATISTICS

Note: Ranking is done in order of 1994.

1.1.2 Labour Force

In Syria, manpower which means the potential labour force is officially comprised of people ten years of age and older, which represents 65-70% of the total population in the past decade (see Table 1.1.2-1). Labour force, however, comprises only 40% of manpower in 1994, as manpower includes students and housewives. The unemployment rate has shown an upward trend, reaching almost 7% as of 1991. By sector, the service sector employed 29.2% of the total labour force, followed by agriculture and forestry (28.0%), manufacturing (14.1%), commerce (11.7%) and building/construction (10.6%) (see 1.1.2-2).

Table 1.1.2-1 Trend of Population of Labour Force in Syria

(Unit: thousand person, %)

Items \ Year		1978	1984	1991
Total Population		8,148	9,934	12,529
Size of Manpower		5,566	6,365	8,695
Population of Labour Force	Employed	1,934	2,246	3,250
	Unemployed	90	110	236
Percentage of Labour Force		36.4	37.0	40.0
Percentage of Unemployment		4.4	4.7	6.8

Data: STATISTICAL ABSTRACT

Note:

1) Size of Manpower includes all people ten years of age and over.
2) Percentage of Labour Force =
   Population of Labour Force / Size of Manpower

Table 1.1.2-2 Employment by Industry

(Unit: thousand person, %)

Items \ Year	Number of Workers		Percentage	
	1984	1991	1984	1991
Agriculture & Forestry	571	924	25.4	28.0
Mining & Quarrying	18	7	0.8	0.2
Manufacturing	337	466	15.0	14.1
Electricity, Gas & Water	19	9	0.8	0.3
Building & Construction	367	351	16.3	10.6
Commerce	253	385	11.2	11.7
Transportation & Storage	128	170	5.7	5.1
Money & Insurance	17	25	0.8	0.8
Community & Social Services	536	964	23.9	29.2
Total	2,246	3,301	100.0	100.0

Data: STATISTICAL ABSTRACT

1.2 Gross Domestic Product (GDP)

1.2.1 GDP

The Syrian GDP amounted to around 110 billion Syrian Pounds (S.P.) in 1993 at constant price of the year 1985, and except for a period of standstill between 1983 and 1989, GDP has grown steadily since 1975. The growth rate of GDP per annum is over 4% on average in the period of 1975-1993, exceeding 10% in the years of 1980, 1988 and 1992.

It is said that there are three decisive factors in terms of the Syrian GDP: output of agricultural products which is largely affected by the vagaries of weather, the value of exported petroleum which is affected by the fluctuations in international market price and the amount of foreign funds mainly provided by the Gulf countries; in 1988, abundant harvest contributed to an increase in GDP of 13.3% over the preceding year; in 1989, drought and cold weather caused a decrease in GDP of 9% from the preceding year. The recent abundant harvest years, a steady increase in the volume of petroleum export and the provision of foreign funds on a comparatively high level after the end of the Gulf crisis have contributed to the steady economic growth of Syria since the year 1990.

1.2.2 GDP by Sector

As to GDP by sector, the product of the mining and manufacturing sector in 1993 accounts for 28.1% of the total GDP, followed by the agriculture sector (20.6%) and the commerce sector (19.1%) (see Table 1.2.2-2). The mining and manufacturing sector has been gradually increasing its share since the start of the petroleum production at Deir-ez-Zor in around 1987. On the other hand, the share of the agriculture sector has maintained a level of slightly more or less than 20% in the past decade depending on whether it was a good or bad harvest year (see Table 1.2.2-2).

In the meantime, according to the record of sectorial GDPs at current price, the agriculture sector ranked first in 1994, accounting for 30.8% of the total GDP, while the share of the mining and manufacturing sector, which followed, was only 14.1%, indicating a remarkable gap between the shares expressed at constant price and at current price in terms of the GDP (see Table 1.2.2-3). The difference in deflators between the industrial sectors contributes to the above gap of the sectoral shares.

1.2.3 Expenditure on GDP

In the expenditure on the GDP in 1993, the private consumption and the public consumption accounts for around 90% of the total expenditure, followed by the gross capital formation (14.5%) in housing, producer goods, etc. (see Table 1.2.3-2). The gap between imports and exports in terms of goods and non-factor services

was recently narrowed sharply owing to an increase in petroleum export. The imports and exports in 1993 account for over 20% of the total expenditure on GDP, respectively.

1.2.4 GDP per Capita

Tables 1.2.4-1 and 1.2.4-2 show GDP per capita in Syria expressed at constant price and current price, respectively. According to the former table, GDP per capita in the past decade, 1983-1993, was kept mostly on the same level without any growth, presumably due to a considerably high population growth rate of 3.4% per annum on average, and economic stagnation up to 1989.

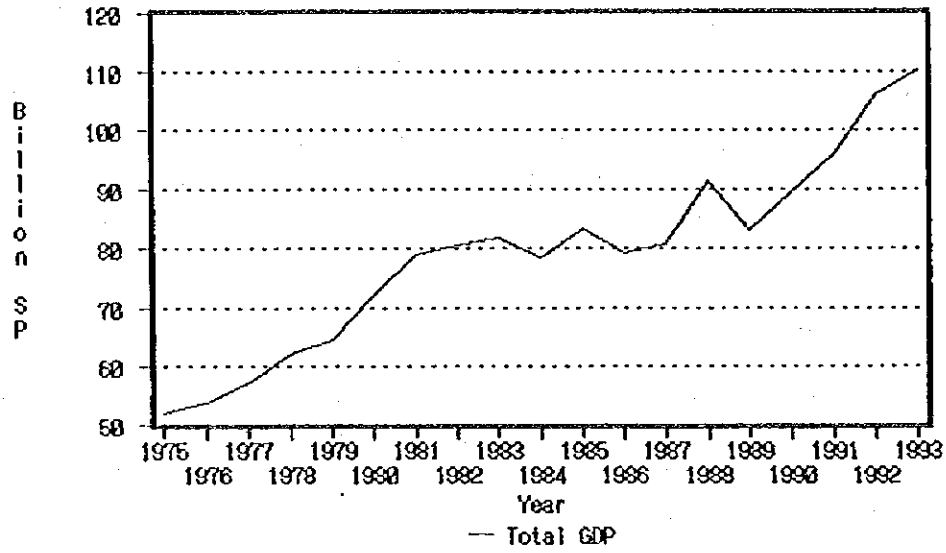

Figure 1.2.1-1 Trend of GDP at 1985 constant price

Table 1.2.1-1 Trend of Syrian GDP at 1985 Constant Price

(Unit: million SP, %)

Year	1975	1977	1978	1979	1980	1981	1982	1983	1984
GDP	52,145	57,124	62,109	64,365	72,078	78,931	80,606	81,758	78,429
Growth Rate			8.7	3.6	12.0	9.5	2.1	1.4	-4.1

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993
GDP	83,225	79,109	80,618	91,313	83,133	89,485	95,883	105,997	110,151
Growth Rate	6.1	-4.9	1.9	13.3	-9.0	7.6	7.1	10.5	3.9

Data: GDP; STATISTICAL ABSTRACT

Note: Growth Rate in each Column is percentage for the previous year

Table 1.2.1-2 Trend of Syrian GDP at Current price

(Unit: million SP, %)

Year	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
GDP	20,597	24,725	27,013	32,389	38,974	51,270	65,777	68,788	73,291	75,342
Growth Rate		20.0	9.3	19.9	20.3	31.5	28.3	4.6	6.5	2.8

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993
GDP	83,225	99,933	127,712	186,047	208,892	268,328	311,564	370,631	398,515
Growth Rate	10.5	20.1	27.8	45.7	12.3	28.5	16.1	19.0	7.5

Data: GDP; STATISTICAL ABSTRACT

Note: Growth Rate in each Column is percentage for the previous year

Table 1.2.2-1 Trend of Syrian GDP by Sector at 1985 Constant Price

(Unit: million SP)

Sectors \ Year	1983	1984	1985	1986	1987	1988
Agriculture	18,021	16,461	17,463	18,590	15,999	21,131
Mining & Manufacturing	11,518	9,608	12,521	10,819	13,961	18,793
Building & Construction	4,615	5,121	5,693	5,355	2,989	2,676
Wholesale & Retail Trade	18,949	17,571	18,509	15,644	21,946	23,163
Transport & Communication	7,338	7,704	8,196	8,312	8,860	9,107
Finance & Insurance	4,896	4,383	4,180	4,612	3,936	4,028
Social & Personal Services	2,279	2,132	2,195	2,005	1,498	1,328
Government Services	14,091	15,394	14,408	13,709	11,362	11,016
Private non-profit Services	51	55	60	63	67	71
Total	81,758	78,429	83,225	79,109	80,618	91,313

Sectors \ Year	1989	1990	1991	1992	1993
Agriculture	14,800	17,891	19,099	22,691	22,723
Mining & Manufacturing	22,872	26,434	27,559	29,666	30,969
Building & Construction	2,207	2,257	2,485	2,569	2,906
Wholesale & Retail Trade	17,139	16,032	17,531	21,429	21,051
Transport & Communication	9,197	9,436	9,694	10,023	11,745
Finance & Insurance	3,614	3,974	4,190	4,598	4,847
Social & Personal Services	1,155	1,315	1,512	1,621	1,659
Government Services	12,070	12,063	13,723	13,302	14,143
Private non-profit Services	79	83	90	98	108
Total	83,133	89,485	95,883	105,997	110,151

Data: STATISTICAL ABSTRACT

Table 1.2.2-2 Trend of Share of GDP by Sector at 1985 Constant Price

(Unit: %)

Sectors \ Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Agriculture	22.0	21.0	21.0	23.5	19.8	23.1	17.8	20.0	19.9	21.4	20.6
Mining & Manufacturing	14.1	12.3	15.0	13.7	17.3	20.6	27.5	29.5	28.7	28.0	28.1
Building & Construction	5.6	6.5	6.8	6.8	3.7	2.9	2.7	2.5	2.6	2.4	2.6
Wholesale & Retail Trade	23.2	22.4	22.2	19.8	27.2	25.4	20.6	17.9	18.3	20.2	19.1
Transport & Communication	9.0	9.8	9.8	10.5	11.0	10.0	11.1	10.5	10.1	9.5	10.7
Finance & Insurance	6.0	5.6	5.0	5.8	4.9	4.4	4.3	4.4	4.4	4.3	4.4
Social & Personal Services	2.8	2.7	2.6	2.5	1.9	1.5	1.4	1.5	1.6	1.5	1.5
Government Services	17.2	19.6	17.3	17.3	14.1	12.1	14.5	13.5	14.3	12.5	12.8
Private non-profit Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Data: STATISTICAL ABSTRACT

Table 1.2.2-3 Trend of Share of GDP by Sector at Current Price

(Unit: %)

Sectors \ Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Agriculture	21.3	19.7	21.0	23.8	25.4	30.4	23.7	28.5	30.3	31.3	30.8
Mining & Manufacturing	16.4	16.0	15.0	15.6	14.2	16.2	19.8	20.1	18.2	14.3	14.1
Building & Construction	6.1	6.6	6.8	6.7	5.2	3.9	3.9	3.8	3.9	3.7	4.2
Wholesale & Retail Trade	24.3	23.5	22.2	20.1	24.8	24.6	25.3	22.7	21.5	25.7	25.4
Transport & Communication	8.1	8.3	9.8	9.9	9.2	9.0	10.5	9.5	9.9	9.3	9.7
Finance & Insurance	5.7	5.8	5.0	4.9	4.6	3.6	3.7	3.7	3.5	3.4	3.7
Social & Personal Services	2.0	2.4	2.6	2.7	2.5	2.1	1.9	1.9	1.9	1.9	2.0
Government Services	16.0	17.6	17.3	16.3	13.9	10.2	11.1	9.7	10.7	10.3	10.0
Private non-profit Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Data: STATISTICAL ABSTRACT

Table 1.2.3-1 Expenditures on GDP at 1985 Constant Price

(Unit: million SP)

Items \ Year	1983	1984	1985	1986	1987	1988
Final Consumption	69,010	65,672	74,435	71,034	80,141	89,075
Private	49,305	44,287	54,650	53,246	66,379	76,166
Public	19,705	21,385	19,785	17,788	13,762	12,909
Gross Capital Formation	18,878	19,090	20,016	17,736	11,951	11,469
Private	6,638	6,886	6,751	6,782	5,297	3,398
Public	12,240	12,204	13,265	10,954	6,654	8,071
Net External Transaction	-6,130	-6,333	-11,226	-9,661	-11,474	-9,231
Export	9,263	8,875	9,949	9,196	10,816	12,343
Import	15,393	15,208	21,175	18,857	22,290	21,574
Total	81,758	78,429	83,225	79,109	80,618	91,313

Items \ Year	1989	1990	1991	1992	1993
Final Consumption	80,730	83,883	87,441	93,455	95,818
Private	65,527	68,919	70,176	76,700	78,131
Public	15,203	14,964	17,265	16,755	17,687
Gross Capital Formation	10,435	11,680	12,110	16,059	15,984
Private	5,219	6,714	6,983	10,836	9,976
Public	5,216	4,966	5,127	5,223	6,008
Net External Transaction	-8,032	-6,078	-3,668	-3,517	-1,651
Export	14,666	16,815	19,492	22,673	24,304
Import	22,698	22,893	23,160	26,190	25,955
Total	83,133	89,485	95,883	105,997	110,151

Data: STATISTICAL ABSTRACT

Note: According to the Statistical Abstract, figures of both gross capital formation and gross fixed capital formation is equal.

Table 1.2.3-2 Percentage of Expenditures on GDP at 1985 Constant Price

(Unit: %)

Items \ Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Final Consumption	84.4	83.7	89.4	89.8	99.4	97.5	97.1	93.7	91.2	88.2	87.0
Private	60.3	56.5	65.7	67.3	82.3	83.4	78.8	77.0	73.2	72.4	70.9
Public	24.1	27.3	23.8	22.5	17.1	14.1	18.3	16.7	18.0	15.8	16.1
Gross Capital Formation	23.1	24.3	24.1	22.4	14.8	12.6	12.6	13.1	12.6	15.2	14.5
Private	8.1	8.8	8.1	8.6	6.6	3.7	6.3	7.5	7.3	10.2	9.1
Public	15.0	15.6	15.9	13.8	8.3	8.8	6.3	5.5	5.3	4.9	5.5
Net External Transaction	-7.5	-8.1	-13.5	-12.2	-14.2	-10.1	-9.7	-6.8	-3.8	-3.3	-1.5
Export	11.3	11.3	12.0	11.6	13.4	13.5	17.6	18.8	20.3	21.4	22.1
Import	-18.8	-19.4	-25.4	-23.8	-27.6	-23.6	-27.3	25.6	-24.2	-24.7	-23.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Data: STATISTICAL ABSTRACT

Table 1.2.4-1 Trend of GDP per Capita at 1985 Constant Price

(Unit: SP, %)

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
per Capita	8,507	7,895	8,106	7,455	7,350	8,054	7,094	7,386	7,653	8,180	8,225
Growth Rate		-7.2	2.7	-8.0	-1.4	9.6	-11.9	4.1	3.6	6.9	0.6

Data: GDP; STATISTICAL ABSTRACT

Note: Growth Rate in each Column is percentage for the previous year

Table 1.2.4-2 Trend of GDP per Capita at Current Price

(Unit: SP, %)

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
per Capita	7,626	7,584	8,106	9,417	11,643	16,409	17,825	22,147	24,867	28,602	29,755
Growth Rate		-0.6	6.9	16.2	23.6	40.9	8.9	24.2	12.3	15.0	4.0

Data: GDP; STATISTICAL ABSTRACT

Note: Growth Rate in each Column is percentage for the previous year

1.3 Foreign Trade

1.3.1 Trend of Export/Import Value

In 1989 the value of exports exceeded that of imports for the first time in 30 years owing to a sharp increase in income earned from petroleum export (see Table 1.3.1-1).
In 1987, Syrian Pound was depreciated by around one third from the former value in terms of the exchange rate between S.P. and US$, resulting in a large gap between the statistics in 1989 and the preceding year.

As to the trade structure of Syria, foreign exchange earnings mainly from the export of raw materials are used to import mainly final and intermediate products; in 1993, in export, raw materials accounted for around 80% of the total exports, whereas, in import, raw materials accounted for under 10% (see Table 1.3.1-2).

As to commodity-wise share in trade value, in export, petroleum comprising crude and refined oils has the largest share accounting for two thirds of the total exports in 1993, followed by foodstuffs including vegetables and fruits, textile materials including cotton and clothing accessories. On the other hand, in import, the major commodities are machinery, vehicles, foodstuffs, iron/steel products, fibers/textile and chemical products (see Table 1.3.1-3).

1.3.2 Trend of Export/Import Value by Main Countries

Table 1.3.2-1 shows the major trade partners of Syria. According to the table, France and Italy have been historically major trade partners in both export and import. In export, the former USSR and Romania were the major partners for a long period of time. Recently, however, new partners such as Lebanon, Saudi Arabia and Spain have been emerging. On the other hand, in import, the USA, Germany, Japan, Turkey, the former USSR and Romania are listed as main trade partners of Syria.

Table 1.3.1-1 Trend of Value and Volume of Export / Import

Items	Year	1975	1980	1983	1984	1985	1986	1987
Value	Export	3,441	8,273	7,547	7,275	6,427	5,199	15,192
(million SP)	Import	6,236	16,188	17,829	16,155	15,570	10,709	27,915
Volume	Export	10,371	9,023	9,042	8,181	8,375	7,949	8,398
(thousand ton)	Import	5,403	9,370	10,920	11,234	9,261	6,427	6,437

Items	Year	1988	1989	1990	1991	1992	1993
Value	Export	15,093	33,740	47,282	38,504	34,720	35,318
(million SP)	Import	25,040	23,544	26,936	31,066	39,178	46,469
Volume	Export	9,671	13,257	15,311	16,643	19,813	21,142
(thousand ton)	Import	4,047	4,260	4,465	4,774	4,612	5,770

Data: GDP; STATISTICAL ABSTRACT

Note: 1)The value of export/import is calculated according to FOB/CIF.

2)Value was calculated in SP based on official price of foreign exchange.
Exchange rate is as follows.
Until 1986: Export 1$=3.90SP, Import 1$=4.05SP
Since 1987 and forward: Export 1$=11.20SP, Import 1$=11.25SP

Table 1.3.1-2 Trend of Value of Export / Import by Nature of Items

(Unit: million SP)

Items	Year	1983	1984	1985	1986	1987	1988
Export	Raw Materials	5,210	5,232	3,949	2,341	7,485	6,079
	Final Products	1,710	1,614	2,074	2,176	5,677	6,449
	Semi-final Products	627	429	404	682	2,030	2,565
Import	Raw Materials	6,122	6,955	5,828	2,545	6,250	2,869
	Final Products	7,105	5,192	5,375	4,652	11,831	11,138
	Semi-final Products	4,602	4,007	4,367	3,512	9,834	11,033

Items	Year	1989	1990	1991	1992	1993
Export	Raw Materials	14,150	23,922	23,490	27,731	28,426
	Final Products	12,286	16,638	8,788	5,420	5,676
	Semi-final Products	7,304	6,722	6,226	1,569	1,216
Import	Raw Materials	4,113	4,258	4,421	3,853	4,120
	Final Products	7,671	9,569	10,955	18,093	22,303
	Semi-final Products	11,760	13,109	15,690	17,232	20,046

Data: GDP; STATISTICAL ABSTRACT

Note: 1)The value of export/import is calculated according to FOB/CIF.

Table 1.3.1-3 Trend of Value of main Commodities in Export / Import

(Unit: hundred million SP)

Items	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
1. Food	3/33	4/29	2/27	3/16	6/41	12/44	39/55	62/80	44/70	45/63	51/71
Live Animals	1/1	2/-	1/1	1/1	3/1	3/3	18/5	26/5	14/8	13/14	11/14
Cereals	-/13	-/16	-/10	-/6	1/18	3/16	5/28	5/43	-/29	1/19	2/21
Vegetables & Fruits	2/2	2/2	1/2	2/1	2/2	6/1	14/1	26/2	26/2	28/3	33/4
Sugars	-/7	-/3	-/3	-/3	-/8	-/-	-/11	1/17	-/16	1/12	1/13
2. Beverages & Tobacco	1/1	-/1	-/-	-/-	-/-	-/-	-/1	3/-	7/-	1/1	1/2
3. Raw Materials(without Foods, Fuels)	9/6	13/5	7/5	7/5	20/6	13/5	18/8	26/6	27/7	27/13	25/13
Textile Materials	7/0	11/1	6/1	5/1	11/1	6/1	11/-	18/-	20/-	20/1	20/1
4. Fuels	52/54	46/55	48/46	22/19	79/55	66/22	132/14	214/8	206/7	242/15	236/20
Petroleum(Crude & Products)	52/53	46/54	48/44	22/18	79/53	66/19	132/12	214/6	205/4	242/11	236/18
5. Animal&Vegetable Oils	-/-	-/1	-/2	-/2	-/4	-/5	-/3	-/3	-/8	-/9	-/10
6. Chemical Products	1/14	3/12	2/15	6/10	16/35	19/35	40/39	61/36	11/48	1/50	1/51
Plastics	-/3	-/3	-/3	-/3	-/9	-/7	-/9	-/9	-/11	-/13	-/13
7. Manufactured Goods	7/27	4/26	3/27	7/22	20/58	25/68	73/65	66/72	57/94	16/104	15/122
Textile Products	6/5	4/4	3/6	7/5	20/16	24/15	70/19	62/19	54/24	11/29	10/39
Iron & Steel	-/9	-/12	-/10	-/8	-/20	-/28	-/26	-/29	-/39	-/34	-/46
Other Metal Products	-/6	-/4	-/5	-/5	-/13	-/13	-/10	-/12	1/13	1/22	1/16
8. Machinery	1/39	1/31	1/29	-/28	1/70	1/64	2/42	1/54	1/67	1/123	1/159
Power Generating	-/3	-/2	-/3	-/4	1/13	-/15	1/6	-/6	-/8	-/11	-/11
Other Industrial	1/14	-/13	-/15	-/12	-/30	-/28	-/20	-/30	1/30	1/44	1/59
Communication&Sound	-/3	-/1	-/1	-/1	-/5	-/2	-/1	-/2	-/1	-/6	-/17
Electric	1/6	-/3	-/4	-/3	-/9	-/10	-/6	1/7	-/9	-/11	-/15
Vehicles	-/10	-/7	-/5	-/7	-/12	-/8	-/7	-/7	-/16	-/47	1/52
9. Other Manufactured Products	3/4	3/2	2/3	6/3	10/8	14/6	34/6	41/6	33/6	15/11	24/11
Clothing Accessories	2/-	2/-	2/-	5/-	10/-	13/-	28/-	37/-	30/-	12/-	21/-
10. Others	-/-	-/-	-/1	-/1	-/1	-/1	-/2	-/3	-/3	-/3	-/5

Data: GDP; STATISTICAL ABSTRACT

Note: 1)The value of export/import is calculated according to FOB/CIF.

2)Number in each Column is Value of export / Value of import.

Table 1.3.2-1 Trend of Main Countries and Value in Foreign Trade

(Unit: million SP)

Ranking		1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Import	1	4,662 Iran	3,665 Iran	2,771 Iran	1,082 USSR	2,738 France	2,800 Japan	2,684 France	3,425 France	3,130 Germany	4,006 Germany	4,730 Germany
	2	1,512 Germany	1,242 Libya	1,277 Germany		2,318 USSR	2,640 France	2,496 Germany	2,893 USA	2,908 USA	3,900 Japan	3,818 Italy
	3	1,356 France		1,111 Libya		2,295 Iran	2,154 USSR	1,859 USA	2,415 Germany	2,852 Turkey	3,208 Italy	3,798 Japan
	4	1,293 Italy		1,074 Italy		2,284 Germany	2,010 Germany	1,854 Turkey	2,073 Turkey	2,257 Italy	2,479 France	3,291 France
	5	1,198 Japan				1,884 Italy	1,592 USA	1,660 Italy	1,715 Italy	2,090 France	2,432 Turkey	2,993 USA
	6					1,575 Libya	1,551 Italy	1,039 USSR		1,404 Japan	2,397 USA	2,519 Turkey
	7					1,471 USA	1,494 Turkey	1,037 Iran		1,063 Belgium	1,698 Romania	2,085 Romania
	8										1,677 Bulgaria	1,635 USSR
	9										1,155 U.K.	1,567 Belgium
	10										1,137 Holland	1,335 Bulgaria
Export	1	2,241 Romania	2,053 Romania	2,015 Italy	1,544 USSR	4,719 Italy	4,394 USSR	12,053 USSR	15,446 USSR	8,623 Italy	12,164 Italy	10,861 Italy
	2	1,213 Italy	1,438 Italy	1,561 Romania		3,166 USSR	3,044 Italy	5,236 Italy	9,845 Italy	7,260 USSR	6,446 France	5,400 France
	3					1,503 France	1,238 Romania	3,225 France	6,039 France	6,811 France	4,516 Lebanon	3,718 Lebanon
	4					1,311 Romania	1,062 France	2,017 Saudi	3,035 Saudi	3,695 Lebanon	1,498 Saudi	2,740 Spain
	5							1,564 Romania	2,988 Lebanon	2,238 Saudi	1,232 Spain	1,729 Saudi
	6							1,507 Lebanon	1,275 Turkey	1,135 Germany		1,145 U.K.
	7							1,382 Iran	1,027 Germany	1,036 Turkey		
	8								1,002 Holland			

Data: GDP; STATISTICAL ABSTRACT

Note: 1)The value of export/import is calculated according to FOB/CIF.
2)Only the countries whose trade value with Syria was over one billion SP in each year are shown in the table.
3)Germany means West Germany and unified Germany, USSR means former USSR and Federal Russia.

1.4 Industry

1.4.1 Agriculture

(1) Land Space and Land Use

The land of Syrian Arab Republic is 185,200 sq.km. Steppes and forests account for 47.5% of the total land. Cultivable land excluding rocky lands and deserts amount to one third of the total area (see Table 1.4.1-1). The districts of Aleppo, AL-Hassakeh and AL-Rakka located north of Syria have spacious cultivable land (see Table 1.4.1-1). According to the table, in the past decade, both cultivable land and cultivated land have decreased.

(2) Agricultural Production

In Syria, agriculture has been one of the major industries for a long time, the value of its product accounted for around 20% in GDP at constant price in the past decade.

As to the value of agricultural output, crop production such as cereals (wheat, barley, etc.), fruits and vegetables is twice as much as animal and dairy production such as livestock (sheep, cattle, fowl, etc.), milk and eggs. The cereals product has the largest share, accounting for 20-25% of the total agricultural product since the year 1990, followed by industrial crops such as cotton, fruits such as olives and oranges, milk and meat, accounting for 12-15% each. In addition, the share of vegetables such as tomatoes and potatoes is nearly 10% (see Table 1.4.1-2).

As to the yield of major crops in 1993, the volume of wheat was the largest with 3.6 million tons, followed by barley (1.6 million tons), sugar beet (1.2 million tons), cotton (639,000 tons), tomatoes (397,000 tons), potatoes (361,000 tons), grapes (354,000 tons), olives (325,000 tons), water melons (308,000 tons), apples (235,000 tons) and oranges (233,000 tons) (see Table 1.4.1-3).

In Syria, only 20% of the total farm land is irrigated as of 1993, therefore the crops are influenced by the weather conditions to a great extent. The year 1988 was an abundant harvest year in which barley and olives yielded five times and twice as much as in the preceding year. On the contrary the following year, 1989, was a bad harvest year and the yield of barley and olives fell to one tenth and one fourth of those in the preceding year. In both cases, weather played a large role.

The farm land for barley has the largest share in the cultivated land, accounting for 12% of the total national land, followed by wheat (7%), olive and cotton (see Table 1.4.1-4). Any other crop covers an area less than 100,000 hectares.

As mentioned above, irrigation has not yet been well extended over Syria. In 1993 only one million hectares, less than 20% of the total cultivated land of five million

hectares excluding fallow, were irrigated. Nevertheless irrigated land area has increased steadily, especially in recent years (see Table 1.4.1-5).

Although irrigation is still insufficient, Syria can be characterized as an agricultural country abundant in various crops, livestock and its dairy products such as cereals, fruits, vegetables, meat, milk and dairy products. Table 1.4.1-6 shows the relation between supply and demand of major crops in Syria.

A large volume of wheat (500,000 - 1,000,000 tons), which is a staple food in Syria, has been imported for a long time, but in 1992 and 1993 when good harvests yielded over three million tons of wheat, the volume of imported wheat fell below 100,000 tons.

The import volume of rice, which is not produced in Syria, has kept a constant level of 100,000 - 150,000 tons.

Barley and maize are used mainly for livestock feed. Although the barley yield was apt to considerably fluctuate year by year in the past, recently, the yield has maintained a stable level of around one million tons and imports has ranged from 100,000 - 200,000 tons per annum. The barley yield in 1993 was around 1.5 million tons, which allowed some of the yield to be exported. On the other hand, domestic production of maize has been only 100,000 - 200,000 tons recently, while the import volume has been almost the same.

The production volume of cotton, one of the most important industrial crops in Syria, has constantly ranged from 100,000 - 200,000 tons, and a half or three quarters of the total are exported.

Table 1.4.1-1 Land Use by Mohafazat in Syria

(Unit: thousand ha)

	1993					
	Total	Foreasts Steppe Pastures	Uncult-ivable Lands	Cultivable Lands		
				Total	Culti-vated	Uncult-ivated
Total	18,518	8,802	3,777	5,939	5,426	513
Damascus	1,814	1,373	246	195	128	67
Aleppo	1,848	261	360	1,227	1,226	1
Homs	4,094	2,665	1,043	386	385	1
Hama	1,016	378	163	475	409	66
Latakia	230	89	29	112	99	13
Deir-ez-Zor	3,306	1,860	1,213	233	199	34
Idleb	610	116	157	337	315	22
Al-Hassakeh	2,333	861	88	1,384	1,278	106
Al-Rakka	1,924	891	146	887	884	3
Euphrat Basin	39	1	14	24	18	6
Al-Sweida	555	221	143	191	140	51
Dar'a	373	35	111	227	214	13
Tartous	190	34	42	114	114	-
Quneitra	186	17	22	147	17	130

	1983					
	Total	Foreasts Steppe Pastures	Uncult-ivable Lands	Cultivable Lands		
				Total	Culti-vated	Uncult-ivated
Total	18,518	8,883	3,530	6,105	5,607	498
Damascus	1,814	1,312	233	269	154	115
Aleppo	1,850	278	356	1,216	1,212	4
Homs	4,222	2,855	979	388	388	-
Hama	888	257	130	501	480	21
Latakia	230	89	37	104	88	16
Deir-ez-Zor	3,306	1,943	1,207	156	122	34
Idleb	610	119	150	341	341	-
Al-Hassakeh	2,333	804	84	1,445	1,356	89
Al-Rakka	1,962	930	118	914	897	17
Euphrat Basin	-	-	-	-	-	-
Al-Sweida	555	218	133	204	162	42
Dar'a	373	30	61	282	262	20
Tartous	189	31	29	129	129	-
Quneitra	186	17	13	156	16	140

Data: STATISTICAL ABSTRACT

Note: 1. Uncultivable Lands are buildings, public roads, Marshes & lakes and other rocky & sandy lands.

2. Damascus in the column by Mohafazat includes both Damascus city and Damascus Rural area.

Table 1.4.1-2 Trend of Production Value in Agriculture by Commodities

(Unit: hundred million SP)

Commodity \ Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Vegetable products	133	152	216	266	508	474	734	851	1,094	1,163
Cereals	21	42	56	67	174	93	231	297	399	451
Industrial Crops	23	24	28	35	56	92	101	131	191	204
Fruits	34	34	64	70	142	123	200	211	266	253
Vegetables	46	41	53	71	86	109	130	137	137	151
Beans	3	5	7	14	33	13	24	18	37	39
Others	6	6	8	9	17	44	48	57	64	65
Animal Products	57	70	89	158	235	325	439	503	512	534
Milk & It's Products	24	31	35	60	96	165	222	254	246	244
Livestock	21	26	36	69	96	123	166	189	183	206
Eggs	7	8	12	13	25	22	33	38	49	50
Wool & Hair & Silk	3	3	4	8	12	8	9	11	20	19
Others	2	2	2	8	6	7	9	11	14	15
Total	190	222	305	424	743	800	1,173	1,355	1,607	1,697

Data: GDP; STATISTICAL ABSTRACT

Table 1.4.1-3 Trend of Production Volume in Agriculture by Commodities

(Unit: thousand ton)

Commodity	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Cereals	Wheat	1,068	1,714	1,969	1,656	2,067	1,020	2,070	2,140	3,046	3,627
	Barley	304	740	1,116	576	2,836	271	846	917	1,091	1,553
	Maize	60	79	74	57	90	109	180	225	215	200
Industrial Crops	Cotton	451	487	419	351	473	431	441	555	689	639
	Sugar Beet	1,268	412	440	457	222	412	422	653	1,365	1,237
Fruits	Olive	311	185	415	221	487	121	461	226	519	325
	Grape	400	486	501	433	571	407	423	487	462	354
	Apple	130	125	145	132	206	195	205	215	270	235
	Orange	60	39	81	105	136	155	171	202	154	233
Vegetables	Onion	136	143	146	140	90	75	95	80	108	96
	Tomato	727	779	583	563	661	559	430	428	481	397
	Potato	322	280	409	334	337	371	398	452	413	361
	Cucumber	236	295	220	271	253	184	173	143	158	165
	Pumpkin	147	174	133	143	139	137	95	92	101	95
	Water Melon	286	684	631	518	477	129	250	217	353	308
Beans		127	154	141	171	301	106	178	108	199	199

Data: STATISTICAL ABSTRACT

Note: Cotton volume is measured in the condition before ginning.

Table 1.4.1-4 Trend of Area of Main Agricultural Products

(Unit: thousand ha)

Commodity	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Cereals	Wheat	1,107	1,265	1,098	1,183	1,101	1,240	1,341	1,269	1,381	1,385
	Barley	1,289	1,386	1,548	1,570	1,844	2,892	2,729	2,233	2,267	2,169
	Maize	42	47	47	36	49	56	60	60	68	63
Industrial	Cotton	179	170	144	129	171	158	156	170	212	197
Crops	Sugar Beet	36	15	13	18	10	22	21	20	30	32
Fruits	Olive	281	296	308	323	349	359	391	406	415	389
	Grape	106	110	113	113	115	109	109	110	109	66
	Apple	29	33	35	40	42	45	48	50	53	37
	Orange	5	6	7	7	8	9	10	10	12	12
Vegetables	Onion	7	7	7	8	6	4	6	5	6	5
	Tomato	38	40	33	35	35	30	28	26	24	20
	Potato	18	18	23	20	24	23	23	24	24	20
	Cucumber	20	25	20	22	21	15	15	12	13	15
	Pumpkin	10	12	10	11	10	9	7	6	7	6
	Water Melon	65	95	84	73	62	31	29	32	35	28
Beans		172	214	162	241	297	281	254	166	221	233

Data: STATISTICAL ABSTRACT

Table 1.4.1-5 Trend of Land Area by Method of Irrigation

(Unit: thousand ha)

Items	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total (Cultivated Lands)		5,655	5,623	5,627	5,630	5,560	5,503	5,626	5,576	5,554	5,426
Fallow		1,920	1,653	1,724	1,589	1,263	106	160	723	433	487
Under Crops		3,735	3,970	3,903	4,041	4,297	5,397	5,466	4,853	5,121	4,939
Non-irrigated		3,117	3,318	3,251	3,387	3,647	4,727	4,773	4,065	4,215	3,926
Irrigated		618	652	652	654	650	670	693	788	906	1,013
	without Engines	117	197	155	161	*	150	134	145	93	175
	by Engines	501	455	498	493	*	520	559	644	813	838

Data: STATISTICAL ABSTRACT

Note: Volume in * column is unknown.

Table 1.4.1-6 Trend of Demand / Supply of Main Agricultural Products

(Unit: thousand ton)

Commodity	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Wheat	Production Vol.	1,086	1,714	1,969	1,656	2,067	1,020	2,070	2,350	3,046	3,627
	Export Vol.	-	-	-	37	7	11	10	-	34	7
	Import Vol.	1,279	525	576	551	600	1,002	945	752	89	79
Rice(Import Volume)		184	107	74	114	68	95	108	109	125	144
Barley	Production Vol.	304	740	1,116	576	2,836	271	846	917	1,091	1,553
	Export Vol.	-	-	-	-	177	173	10	-	-	156
	Import Vol.	399	144	-	30	5	-	106	199	82	-
Maize	Production Vol.	60	79	74	57	90	109	180	225	215	200
	Import Vol.	249	210	106	145	81	126	250	262	104	348
Cotton	Production Vol.	196	151	159	123	97	119	132	120	162	200
	Export Vol.	148	91	98	60	32	59	66	81	135	159

Data: STATISTICAL ABSTRACT

Note: 1)Production volume of rice, export volume of maize and import volume of cotton are "0".
2)Cotton volume is measured in the condition after ginning.

1.4.2 Phosphate Rock Industry

As of 1993, the volume of phosphate rock produced in Syria is the ninth largest in the world. The mining of phosphate rock began in Syria in 1960. Then, in 1971 the General Company for Phosphate and Mines was established and it started full-scale production of phosphate rock in the Khneifiss mine with a view to exporting the product. In 1974, the Ash-shirks mine opened. These two mines, Khneifiss and Ash-Shirks, continue to be the major mines in Syria.

The volume of phosphate rock product peaked in 1989, amounting to 2,250,000 tons. Since then, product of phosphate rock in Syria has shown a downward trend. A similar trend is seen throughout the world as phosphate trade has been presumably affected by the political and economic chaos in Eastern Europe and Russia triggered by the collapse of the Soviet Union.

The volume of phosphate rock exported from Syria every year accounts for about 80 % of total production, while the remainder is used in the only fertilizer factory in Homs, though there has been no or little consumption of phosphate rock in this factory in the last several years because it has been under repair. The majority of phosphate rock exported from Syria is transported through Tartous Port mainly to both Eastern and Western Europe, though since 1988 100,000-250,000 tons has been transported to Lebanon by land (see Table 1.4.2-1).

Phosphate rock produced in Syria is not high in quality compared with that of other exporting countries. And so, to increase exports, it is necessary for the Syrian Government to make an effort to upgrade the quality and lower the cost of phosphate rock. At present there is a plan to install processing plants at the phosphate mines, and this will contribute to strengthening international competitiveness of Syrian phosphate rock.

There is only one fertilizer factory in Syria, which is why it has been necessary to import a large volume of phosphate, in spite of the fact that phosphate rock is produced here in great quantity. Taking account of this condition, a project for building a new phosphate making factory in the outskirts of Palmyra near the phosphate rock mines and a production increase program for the existing factory are under consideration.

Both the production and export of phosphate rock in Syria will steadily grow in the future, considering the quick recovery of international phosphate rock market, efforts to upgrade the quality and the large estimated amount of rock (the possible reserves of one billion tons and the proved reserves of 300 million tons).

Table 1.4.2-1 Trend of Production, Export and consumption Volume of Phosphate Rock

(Unit: thousand ton)

Items \ Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Production Vol.	1,515	1,224	1,600	1,985	2,186	2,250	1,633	1,469	1,265	931	1,202
Export Vol.	932	904	1,302	1,603	1,878	1,731	1,401	1,300	1,160	850	1,065
through Ports	932	904	1,302	1,603	1,763	1,643	1,272	1,147	941	620	801
Consumption Vol.	347	275	349	365	187	148	78	112	10	-	-

Data: General Company of Phosphate and Mine

Note: 1)All exports through ports are through Tartous Port.
2)Export volume excluding through ports is exported to Lebanon by land.

1.4.3 Petroleum

(1) Petroleum Production

The history of the petroleum industry in Syria began in the 1950's. In 1956 Karatchok oil field in the northeastern part of Syria was discovered, and in 1959 followed by Suwaidiyah oil field in the same region, and in the same year the first oil refinery in Syria was established in Homs. In 1968 commercial production of crude oil began in Suwaidiyah, which coincided with the completion of the pipeline which extended to the Mediterranean. Thus Syria exported the first drop of petroleum in the same year.

The petroleum industry in Syria got on the right track when the new "OPEN DOOR" policy (production sharing Agreements) was introduced in 1974. From the middle to the end of the 1980's, in the eastern part of the Deir-ez-Zor district, many oil fields such as Thayyem, Omar, etc. were discovered one after another and commercial production started at each field. The petroleum dug out in these fields was a kind of light oil including a little sulphur.

Since then, up to the present, the volume of crude oil production has steadily increased and in 1994 it amounted to 600,000 barrels/day.

Nowadays a portion of crude oil is refined in the oil refineries in Homs and Banias (capacity of each is about 120,000 barrels/day), which is mainly used for domestic consumption, while approximately 60% of total crude oil dug out in Syria, together with the rest of refined oil is exported. The exported petroleum earns valuable foreign currency, accounting for around 70% of the total export value.

Taking the estimated oil reserves of 2-3 billion barrels in Syria into consideration, oil production will continue successfully in the future. Meanwhile, it is said that a third oil refinery will be established in the eastern part of the Deir-ez-Zor district.

(2) Pipelines

In Syria, most of crude oil, refined petroleum and natural gas are transported through pipelines.

1) Oil Pipelines

There are three pipeline routes for crude oil transport (we call these routes "A", "B" and "C" respectively for convenience sake). On the "A" route, two pipelines were completed from the late 1960's to the beginning of the 1970's. The pipelines on the route are transporting heavy crude oil produced at the oil fields situated in north east of Syria to the refineries in Homs and Banias and the Tartous marine oil terminal for export.

The pipelines on the "C" route known as the Iraq-Syria pipelines was built in 1934 by the former Iraq Petroleum Company which was a joint venture composed of international major oil firms and had mining concessions in Syria. The pipelines were originally designed to send crude and refined oil produced in the Iraqi and Syrian oil fields to the Syrian coast facing the Mediterranean Sea, however oil transport from Iraq has been suspended since 1982.

The pipelines on the route "B" were built from the late 1980's to the beginning of the 1990's so as to send light oil to the above two refineries in Homs and Banias and the Banias marine oil terminal for export from the newly developed oil fields in Deir-ez-Zor including the Thayyem field which started production in 1986, the Omar field and the Attala North field by connecting with the above-mentioned "C"

route pipelines.

On the other hand, refined oil is sent through pipelines connecting the refineries in Homs and Banias, the marine oil terminals in Tartous, Banias and Latakia and the major cities including the Damascus city.

2) Gas Pipelines

Natural gas produced in the Jubaissah field which lies between the north east part of Syria and Deir-ez-Zor is sent for example to the fertilizer factory and the power plant in Homs through gas pipelines. Natural gas is also sent from the gas fields including the Omar field in Deir-ez-Zor to the power plants of Tichrin and Mhardeh located in the Damascus rural area. In addition, natural gas is sent from the field of Cherrife and Ash-Shaer which lie midway between Homs and Palmyra to the power plants of Banias and Jandar 30 km south of Homs.

(3) Marine Oil Terminals under the Jurisdiction of the Ministry of Petroleum and Mineral Resources

There are three marine oil terminals for export of crude/refined oil or import of refined oil. Through the Banias terminal, light crude oil from the Deir-ez-Zor field and refined oil produced at the Banias refinery are exported, and refined oil is imported. The exports of oil which passed through the terminal in 1993 accounted for around 70% of the total oil exports of 18.9 million tons in Syria.

Through the Tartous terminal, heavy crude petroleum sent from the north east oil fields including Karatchok and Suwaidiyah is exported, its volume is 4-5 million tons per annum presently.

On the other hand, through the Latakia terminal, only a small amount of oil is imported at present compared with the other two terminals, though a considerable amount of oil had been imported until the start of operation of the Banias refinery.

1.4.4 Manufacturing

(1) Sugar

The volume of sugar consumption per capita in Syria is the fifth largest in the world. The annual volume of sugar consumed in Syria has been 400,000-450,000 tons recently, 40% of which has been refined at sugar factories in Syria, while the rest comes from abroad (see Table 1.4.4-1).

Raw material for sugar refinery in Syria is divided into two types: sugar beet produced in Syria and imported raw sugar made from sugar cane. The volume of beet sugar and that of cane sugar are almost the same. From the above, the domestic sugar consumption in Syria depends on foreign resources to the degree

of around 80% of the total consumption.

Total capacity of the six sugar factories in Syria at present is 250,000 tons (120,000 tons for beet sugar and 130,000 tons for cane sugar).

Table 1.4.4-1 Trend of Production, Import and Consumption of Sugar

(Unit: thousand ton)

Items	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Production Volume		199	54	57	108	20	80	135	179	178	183
Import Volume	Raw Sugar	96	97	261	73	*	*	111	147	88	83
	Refined Sugar	200	322	268	261	251	207	255	276	228	271
Consumption Volume		399	376	325	367	271	287	390	455	406	454

Data: STATISTICAL ABSTRACT (production volume, import volume)

Note: 1)Consumption volume is production volume plus import volume of refined sugar.

2)Imported raw sugar is the material used for producing refined sugar.

3)Volume in * column is unknown.

(2) Flour

The volume of flour made in Syria has kept the approximately constant level of 1-1.2 million tons per annum in the last decade, while 300,000-400,000 tons of flour has been imported per annum in the same period (see table 1.4.4-2).

The volume of flour produced in Syria does not increase even during good harvests because some wheat must be reserved in silos as a safeguard against bad harvests without being milled. Also some varieties of Syrian wheat are hard and not suitable for bread, thus soft wheat must be imported even when yields are high, while hard grain can be exported.

Table 1.4.4-2 Trend of Production and Import Volume of Flour

(Unit: thousand ton)

Items	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Production Volume		1,116	1,161	1,161	1,016	1,221	1,161	1,177	1,253	1,251	1,218
Import Volume		178	23	113	384	209	255	491	302	438	404

Data: STATISTICAL ABSTRACT

(3) Iron and Steel

In Syria, the consumption volume of iron and steel products per annum has fluctuated widely. In 1993, the consumption volume is roughly estimated to be about 900,000 tons by using the following formula.

Volume of consumption of iron and steel products in Syria
= Volume of domestic production of steel bars
+ Volume of imported iron and steel products
- Volume of imported billets

In Syria, steel products are produced by the General Company of Iron and Steel Products in Hama, producing steel bars of 83,000 tons and pipes of 15,000 tons in 1993 (see Table 1.4.4-3). The company started the production of steel bars by electric furnaces in 1970, and then started the production of steel pipes after eight years. As to steel-making process, in the electric furnaces of the factory, first, billets are made from scrap iron collected in Syria, and then steel bars are made by a rolling mill from billets. Presently, imported billets through mainly Tartous Port are also used. On the other hand, steel pipes mainly used for running water are made of imported hot coils.

From the above, the general company supplies only about 10% of the total consumption volume of steel products in Syria. To increase the domestic supply capacity of steel products, it is planned to start the following projects:

* Expansion of steel bars making capacity of the existing steel-making factory in Hama (up to 200,000 tons)
* Establishment of a new steel factory by the direct reduction method in Al-Zara (steel bars: 500,000 tons, section steel: 200,000 tons)

Table 1.4.4-3 Trend of Demand / supply of Iron and Steel

(Unit: thousand ton)

		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Production Volume	Steel Bar	84	89	90	32	35	31	82	81	95	83
	Pipe		11,280	3,000	-	-	3,000	5	4	5	15
Import Volume		701	608	427	269	317	343	397	622	543	836
	Billet		17	40	8	20	5	12	24	44	37

Data: STATISTICAL ABSTRACT, General Company of Iron and Steel Products
Note: 1) Unit of Pipe volume from 1985 to 1989 is "km".
2) Import volume includes part of billet needed in production of steel bar and all hot coil needed in production of pipe.

(4) Cement and clinker

The consumption volume of cement in Syria once exceeded 4 million tons in the middle of the 1980's, but fell to the level of three million tons keeping its level until it recovered to the degree of 3.5 million tons in 1993. In 1994 it amounted to 4.4 million tons.

From 1988 to 1993 cement and clinker were exported in the range of 150,000-1,000,000 tons per annum and then in 1994 its exports were suspended.

There are nine cement factories in Syria and their actual production capacity is around 4.9 million tons in total. Five of them have a small capacity of less than 300,000 tons per annum each. The remaining four factories including the Tartous factory have a capacity of over 700,000 tons. The Tartous factory has a capacity of about 1.8 million tons, prominent among the Middle East countries.

The plants of the existing cement factories have become obsolete and can not achieve above nominal capacities as a whole and hence a study on the rehabilitation of old facilities has been scheduled. In addition, there is a program to establish new cement factories in Syria, three have a capacity of one million tons per annum, and one of three million tons per annum.

Table 1.4.4-4 Trend of Production, Export and consumption of Cement and Clinker

(Unit: thousand ton)

Items	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Production Volume of Cement		4,279	4,357	4,316	3,870	3,330	3,442	3,049	2,843	3,246	3,667
Export Volume	Cement	63	93	33	61	118	163	295	66	58	1
	Clinker	-	-	-	-	31	534	679	410	406	158
Consumption Volume		4,062	4,296	4,203	3,388	2,865	2,900	2,789	2,688	3,159	3,501

Data: STATISTICAL ABSTRACT, General Establishment of Cement

(5) Fertilizer

Although fertilizer is essential to Syrian agriculture, there is only one fertilizer factory in Homs, with the result that supply is not sufficient for domestic demand. Thus, a large amount of fertilizer is presently imported.

Table 1.4.4-5 Trend of Production Volume of Fertilizer

(Unit: thousand ton)

Items Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Nitrogenous	95	90	109	101	86	106	92	40	56	89
Phosphatic	191	162	192	160	100	59	42	46	-	-
Potassic	164	199	171	109	71	158	111	7	94	66

Data: STATISTICAL ABSTRACT, General Establishment of Chemical Industry

1.4.5 Electric Power

The capacity of electric power in Syria has steadily increased from 1986, reaching the level of 3.7 million kw as of 1993 with an average growth rate per annum of 6.9%, while the volume of electric power consumption has also almost steadily increased in this period with an average growth rate of 7.0%.

Until recently, periodic and intentional interruptions of power supply to the capital Damascus were the norm because the actual production had been unable to keep pace with the demand.

In 1994 two units of electric power generators, Nos 1 and 2 units with a total capacity of 200 MW of the Jandar Electric Power Station started operations, and then Nos 1 and 2 units with a total capacity of 200 MW of the Tichrin Electric Power Station and Nos 3 and 4 units with a total capacity of 200 MW of Jandar started operations from the end of 1994 to the beginning of 1995. As a result, power is no longer intentionally cut off in Damascus.

Towards the future, consumption of electric power both for everyday life and industry is expected to steadily increase along with the economic growth and progress in living standard. To meet the increasing demand, Nos 5 and 6 units with a total capacity of 200 MW of the Jandar power plant and five new electric power stations are planned to be in operation by the end of this century, producing a total capacity of over 3 million KW.

Table 1.4.5-1 Trend of Production Capacity, and Consumption Volume of Electric Power

(Unit: MW, hundred million Kwh)

Items	Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Capacity	Water Power	820	823	726	848	898	898	898	898	898	898
	Petroleum Heating	1,719	1,253	1,314	1,382	1,825	1,986	1,981	2,090	2,116	2,236
	Gas Heating	295	364	294	382	507	603	700	602	602	601
	Total	2,834	2,440	2,334	2,612	3,230	3,487	3,579	3,590	3,616	3,735
Consumption Volume	Everyday Life	27	29	26	33	39	41	41	44	43	43
	Industry	29	33	37	35	35	40	42	43	44	41
	Loss, Self-consumption	17	18	16	12	23	24	33	37	39	43
	Total	73	80	79	80	96	105	116	124	127	127

Data: STATISTICAL ABSTRACT

1.5 Governmental Budget

Table 1.5.1-1 shows a trend of the budget of the central government. Budget for investment for development such as expansion of irrigation, improvement of machinery and equipment in manufacturing industries, enlargement of electric supply had accounted for over 50% of the total budget until the early 1980s. Then it fell into 30-40% of the total, remaining in the level for about ten years. Recently in 1993 and 1994, it has recovered to the 50% level.

Table 1.5.1-1 Trend of Governmental Budget

(Unit: million S.P.)

Items \ Year	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Total Budget	10446	16564	17048	18202	22641	28903	30480	33345	37253	41289
Development	5851	10668	10404	10645	11080	14313	13779	16595	18672	17850
Ordinary	4595	5896	6644	7557	11561	14590	16701	16750	18672	23439
Share of Development(%)	56.0	64.4	61.0	58.5	48.9	49.5	45.2	49.8	50.0	43.2

Items \ Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Total Budget	42984	43841	41703	51545	57000	61875	84691	93042	123018	144162
Development	19436	19332	17508	21880	21600	24300	27177	36250	61750	67964
Ordinary	23549	24508	24195	29665	35400	37575	57514	56792	61268	76198
Share of Development(%)	45.2	44.1	42.0	42.4	37.9	39.3	32.1	39.0	50.2	47.1

Data: STATISTICAL ABSTRACT

1.6 Economic Policy and Historical Aspects in Syria

1.6.1 Economic Policy

In the beginning of the 1970s, a policy of economic liberalization was initiated including ease of restrictions on foreign trade and setting up of free trade zones in 1971 to attract both foreign and Syrian investment. In 1975, foreign oil companies were offered mining concessions under production sharing agreement. Then new public-private sector ventures were set up in tourism in the late 1970s and in the 1980s. The first such company was set up in agriculture in 1986.

Since the beginning of the 1990s, economic liberalization has been further pushed forward, especially in the encouragement of activities of the private sector which is expected to become the driving force in the economy. In 1991, Law No 10 for the Encouragement of Investment was promulgated to promote productive investment by both foreign and domestic investors with a wide range of incentives including tax exemptions and regulatory privileges, to generate an economic growth, create employment, raise exports and contribute to import substitution.

Syria has a multi-tier exchange rate with the Syrian pound pegged to the US dollar. However, the government policy is aimed at unifying the rate.

1.6.2 Historical Aspects of Economy

Since 1961, socio-economic development plan has been practiced through five year plans. The First Five Year Plan covered the period of 1961-1965, followed by the Second Five Year Plan (1966-1970) and the Third Five Year Plan (1971-1975). During the period of the Third Five Year Plan, owing to the oil price boom and the volumes of aid from Arab states, the Syrian economy achieved a considerably high growth rate of 13% per annum on average. Subsequently, the Fourth Five Year Plan (1976-1980) was planned to implement large-scale investment in expectation of massive Arab capital. The actually provided Arab capital was far less than expected, resulting in the actual annual growth rate of 6.2% on average though the target annual growth rate was 12%.

The Fifth Five Year Plan (1981-1985) put emphasis on self-efficiency in agriculture with the target annual growth rate of 7.7%. The resulting growth rate was, however, only 1.3% per annum on average much lower than the target, because of the stagnation of the Syrian economy due to a bad harvest and sharp drop in oil price. During this period, few new projects were started though the previously started projects were continued.

In the Sixth Five Year Plan (1986-1990), reflecting the previous performance, the emphasis was put only on the projects in operation and improvement of the existing industries, accordingly, agriculture and irrigation received increased

emphasis. In 1988 owing to decrease in earnings from oil export caused by drop in oil price and decrease in aid from Arab states, there occurred a serious shortage of foreign currency, resulting in the shortage of imported goods, especially, raw materials and producer goods, and consequent delay of projects in agriculture and industry. Under such a situation, inflation was in progress at the rate of 40-60% per annum. In 1989, the amount of exports of the private sector exceeded that of the public sector for the first time, indicating the results of the economic liberalization policy. In the meantime, the Deir-ez-Zor oil fields where production of light crude oil had started in the middle of the 1980s saw production grow to new level in 1989, contributing to the growth of the Syrian economy.

Since the Damascus Declaration in March 1991, the amount of aid from the Arab states such as Kuwait Fund and Saudi fund has been increased, having a favorable influence on the Syrian economy. Since the beginning of the 1990s, the Syrian economy has shown a steady growth owing to the economic liberalization policy mentioned above, smooth oil export, increase in aid from the Arab states and abundant harvests.

Chapter 2 Natural Conditions

2.1 Geographic Conditions

The Syrian Arab Republic has an area of 185,180 km^2 ranging between 32 degrees and 37 degrees north latitude and between 35 degrees and 42 degrees east longitude and borders with Turkey in the north, Iraq in the east, Lebanon in the west, and Palestine and Jordan in the south.
The main geological feature of Syria is a mountainous barrier parallel to the coastline which, although not very high, limits the rainfall beyond it.
Syria has steppe area of 60,000 m^2 which is equivalent to about one third of country area.
Syrian desert comprises 58 % of the national territory and receives less than 150 mm of rainfall per year.
Syrian coastline stretches 183 km along the Mediterranean Sea. The narrow coastal plain extends from Latakia in the north to Nahr El-Kebir in the south
Fig. 2.1-1 shows the locations of Syrian ports.

2.1.1 Latakia Port

Latakia Port located at 183 km south-west from Aleppo, the second largest city in Syria, is able to serve the maritime traffic for northern Syria.
Geographically, Latakia Port is situated between the West and the East.
North of Latakia Port, there is a beautiful beach used as a recreational and tourist.

2.1.2 Tartous Port

Tartous Port is located 96 km from Homs, 251 km from Damascus and 90 km from Latakia.
Arwad island is located about 3 km offshore to the west of Tartous Port.

2.1.3 New Port

The New Port is located between Arab Asshati and Shaikh Jabil. The distance from the Lebanese border to New Port is approximately 4.0 km.
The distance from Tartous to New Port is approximately 26 km.

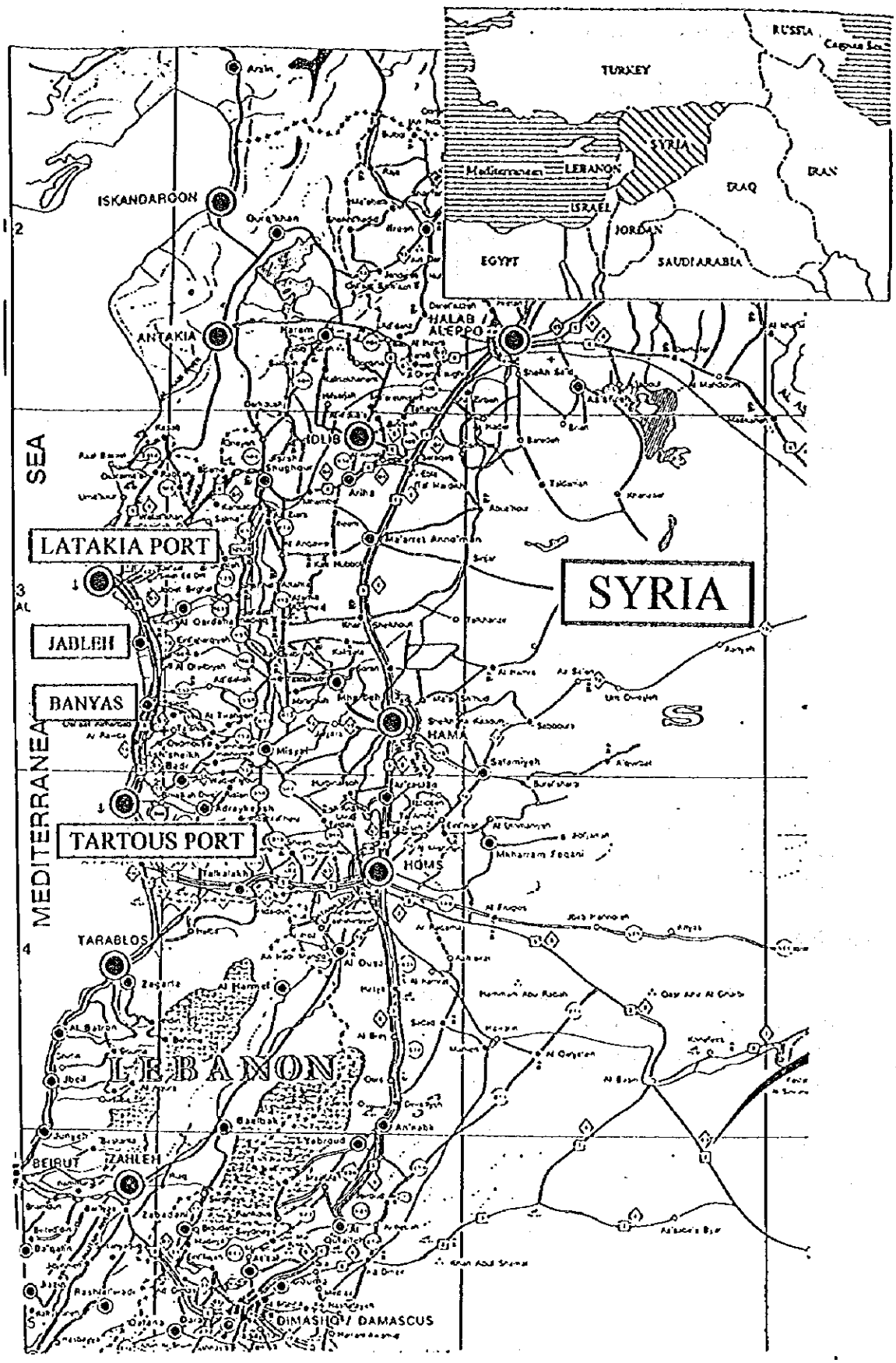

Fig. 2.1-1 Syrian Ports

2.2 Meteorological Conditions

2.2.1 Air Temperature

Table 2.2.1-1 shows the temperature records in 1992 at major cities in Syria.

Table 2.2.1-1 Temperature Records (1992)

	Absolute Minimum		Absolute Maximum		Ave. Min. (Degree C)	Ave.Max. (Degree C)	Ave. Mean (Degree C)
	Month	Degree C.	Month	Degree C.			
Damascus	2	-12.0	8	40.5	7.0	23.4	15.2
Palmyra	1	-7.2	9	40.6	11.4	24.1	17.5
Latakia	2	0.8	10	33.4	14.5	21.7	18.2
Aleppo	2	-7.0	8	42.0	10.4	22.2	16.1
Al-Kamishly	11	-6.7	7	42.6	10.9	23.7	17.2
Deir-ez-Zor	2	-5.4	7	42.8	12.4	25.2	18.4
Hama	1	-7.5	8	42.9	8.8	23.3	16.1

(1) Latakia

Table 2.2.1-2 shows the mean monthly air temperatures recorded from 1990 to 1994 at Latakia weather station located at approximately 10 km north from Latakia Port. The coldest month is February. The mean temperature of February for past 5 years is 11.2 degree. On the contrary, the warmest month is August and its mean temperature for past 5 years is 26.7 degree

Table 2.2.1-2 Monthly Temperature in Latakia (1990-1994)

Unit : Degree Centigrade

Month	Max. Average	Min. Average	Average
Jan.	15.2	7.5	11.4
Feb.	14.6	7.8	11.2
Mar.	18.0	10.1	14.1
Apr.	21.9	13.6	17.8
May	24.3	16.6	20.4
Jun.	25.9	20.4	23.2
Jul.	27.5	24.1	25.8
Aug.	29.0	24.3	26.7
Sep.	28.8	22.8	25.8
Oct.	28.1	19.3	23.7
Nov.	21.8	14.1	18.0
Dec.	16.6	9.2	12.9

(2) Tartous

Table 2.2.1-3 shows the air temperatures recorded at Tartous weather station located at approximately 5 km south from Tartous Port.

Table 2.2.1-3 Temperature in Tartous

Unit : Degree Centigrade

	Winter	Spring	Summer	Autumn	Annual
Average Temperature	12.7	17.8	25.4	21.8	19.4
Average Max. Temperature	16.6	21.7	29.0	26.2	23.4
Average Min. Temperature	9.1	13.0	21.1	16.9	15.0
Max. Temperature	28.5	39.0	41.0	38.0	41.0
Min. Temperature	-10.0	1.3	13.6	1.0	-1.0

2.2.2 Precipitation

Table 2.2.2-1 shows the precipitation records from 1988 to 1992 at major cities in Syria.

Table 2.2.2-1 Yearly Precipitation Records

Unit : mm

Station	1992	1991	1990	1989	1988
Damascus	216.9	164.8	100.9	60.8	215.1
Palmyra	103.0	132.6	92.1	86.7	271.4
Latakia	569.0	1044.4	362.6	566.5	1016.0
Aleppo	258.0	325.4	167.9	144.1	499.3
Al-Kamishly	448.6	459.5	240.7	235.0	646.2
Deir-ez-Zor	171.2	124.9	135.5	52.4	262.8
Hama	350.9	357.4	175.6	145.3	606.4

(1) Latakia

The average monthly precipitations from 1990 to 1994 are tabulated in Table 2.2.2-2. The annual average precipitation for past 5 years amounts to 641.6 mm. The precipitation falls out mostly from October to March (92 % of yearly rate). The most rainy month is December and its average precipitation for past 5 years is 131.3 mm which is equal to 20 % of annual precipitation. However, the rainfalls occur rarely and are practically absent from June to September. The precipitation rate may vary from year to year.

Table 2.2.2-2 Average Monthly Precipitation in Latakia (1990-1994)

Unit : mm

Month	Precipitation	Month	Precipitation
Jan.	128.3	Jul.	1.2
Feb.	104.9	Aug.	0.02
Mar.	63.6	Sep.	0.8
Apr.	20.4	Oct.	47.4
May	22.8	Nov.	113.9
Jun.	7.0	Dec.	131.3
		Total	641.6

(2) Tartous

Table 2.2.2-3 shows the average monthly precipitation records in Tartous from 1987 to 1991.

Table 2.2.2-3 Average Monthly Precipitation in Tartous (1987-1991)

Unit : mm

Month	Precipitation	Month	Precipitation
Jan.	131.4	Jul.	0
Feb.	139.3	Aug.	0.14
Mar.	110.4	Sep.	1.7
Apr.	34.0	Oct.	60.0
May	15.9	Nov.	106.4
Jun.	1.0	Dec.	127.7
		Total	727.9

2.2.3 Wind

(1) Latakia

The monthly maximum wind velocity from 1976 to 1985 is shown in Table 2.2.3-1. The north-east and east winds are mostly observed from October to February and the south and south-west winds from May to August.
Table 2.2.3-2 shows the distribution of wind direction. Fig. 2.2.3-1 depicts the wind rose.

Table 2.2.3-1 Monthly Maximum Wind Velocity in Latakia (1976-1985)

Unit : M/sec.

Month	Velocity	Month	Velocity
Jan.	21.2	Jul.	12.1
Feb.	20.3	Aug.	10.8
Mar.	16.9	Sep.	11.7
Apr.	17.0	Oct.	16.7
May	14.6	Nov.	17.0
Jun.	11.4	Dec.	19.4

Table 2.2.3-2 Wind Direction in Latakia

Unit : %

Month	Hour	N	NE	E	SE	S	SW	W	NW	Calm
Jan.	8	2	13	45	2	4	4	8	1	21
Feb.	8	8	12	22	3	6	3	8	2	36
Mar.	8	3	16	18	3	7	3	8	3	39
Apr.	8	8	5	11	3	10	7	12	6	38
May	8	11	2	7	1	22	12	10	2	33
Jun.	8	5	2	2	3	40	11	8	2	27
Jul.	8	0	1	1	3	49	17	6	1	22
Aug.	8	1	0	4	5	35	13	7	0	35
Sep.	8	5	4	14	5	19	10	8	2	33
Oct.	8	4	10	27	2	7	5	4	3	38
Nov.	8	5	9	40	4	2	3	6	1	30
Dec.	8	1	7	49	3	4	2	7	1	26

Remarks : Data for Sep. 1931-Aug. 1943, omitting 1939, 1940 and 1942.

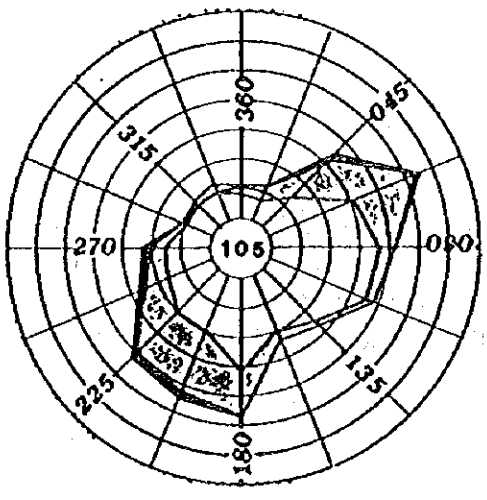

Fig. 2.2.3-1 Wind Rose at Latakia

(2) Tartous

The monthly maximum wind velocity from 1983 to 1992 is shown in Table 2.2.3-3.

Table 2.2.3-3 Monthly Maximum wind Velocity in Tartous (1983-1992)

Unit : M/sec.

Month	Velocity	Month	Velocity
Jan.	21.2	Jul.	12.1
Feb.	20.3	Aug.	10.8
Mar.	16.9	Sep.	11.7
Apr.	17.0	Oct.	16.7
May	14.6	Nov.	17.0
Jun.	11.4	Dec.	19.4

(3) New Port

Measurement of wind velocity and direction was conducted at New Port area in November and December 1995.
Fig. 2.2.3-1 shows the daily mean wind velocity at New Port.
Compared with the wind records in Tartous during the same period, it is found that the wind in New Port is stronger that of Tartous.
Easterly wind is predominant in New Port.

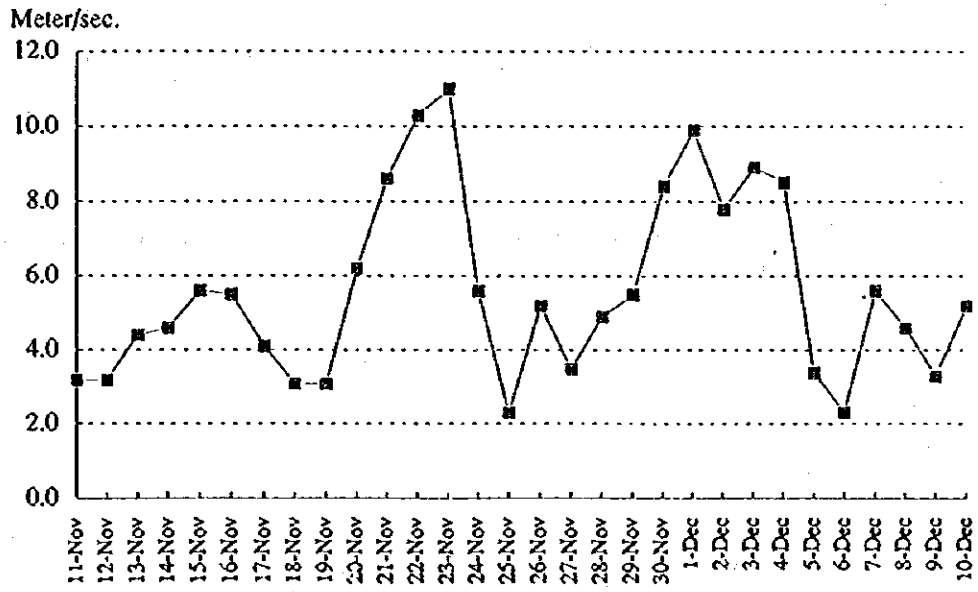

Fig. 2.2.3-1 Mean Wind Velocity in New Port

2.2.4 Humidity

Table 2.2.4-1 and Table 2.2.4-2 show the mean humidity in Latakia from 1990 to 1994 and that of Tartous from 1987 to 1991 respectively.

Table 2.2.4-1 Monthly Humidity in Latakia (1990-1994)

Unit : %

Month	Humidity	Month	Humidity
Jan.	62.8	Jul.	75.0
Feb.	60.8	Aug.	75.0
Mar.	65.0	Sep.	67.8
Apr.	65.6	Oct.	60.4
May	71.4	Nov.	58.6
Jun.	78.4	Dec.	63.2

Table 2.2.4-2 Monthly Humidity in Tartous (1987-1991)

Unit : %

Month	Humidity	Month	Humidity
Jan.	64.4	Jul.	75.6
Feb.	63.4	Aug.	73.2
Mar.	68.2	Sep.	71.0
Apr.	70.0	Oct.	67.0
May	71.4	Nov.	64.0
Jun.	74.8	Dec.	65.6

2.2.5 Earthquake

Seismologically, Syrian country is divided into 5 areas concerning the seismic probability as depicted Fig. 2.2.5-1.

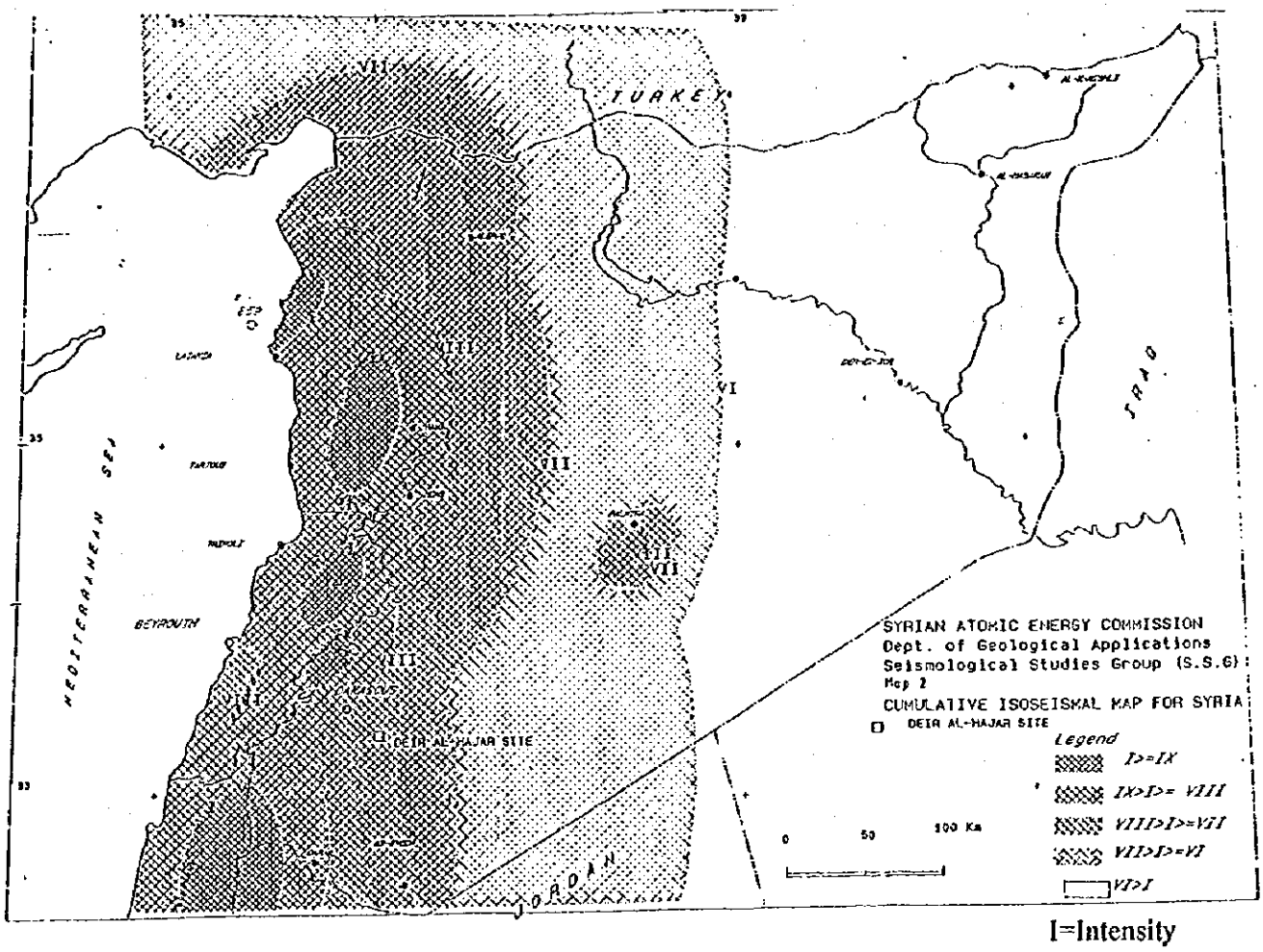

Fig. 2.2.5-1 Seismic Probability Zone