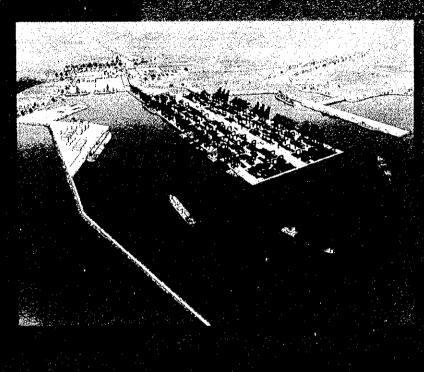
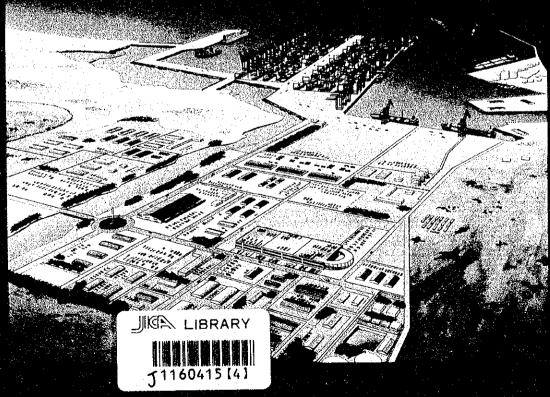
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
DIRECTORATE GENERAL OF PORTS AND MARITIME AFFAIRS
MINISTRY OF TRANSPORT AND HOUSING

FINAL REPORT
FOR
THE MASTER PLAN
STUDY OF
SALALAH PORT AND
ITS HINTERLAND
IN THE SULTANATE OF
OMAN

VOL.I December 2000





THE OVERSEAS COASTAL AREA DEVELOPMENT INSTITUTE OF JAPAN (OCDI)
SANYO TECHNO MARINE, INC

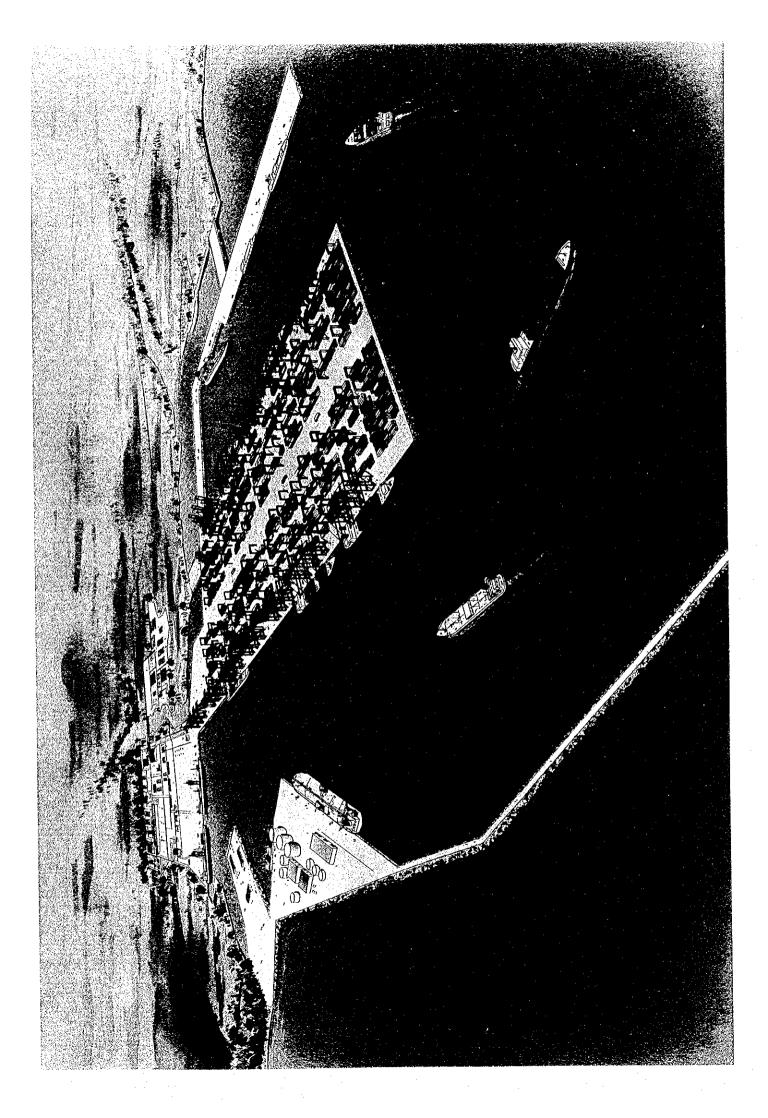
Exchange Rate
US \$ 1.00=R.O. 0.385
US\$ 1.00=\frac{2}{105.8}
(As of September 2000)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
DIRECTORATE GENERAL OF PORTS AND MARITIME AFFAIRS
MINISTRY OF TRANSPORT AND HOUSING

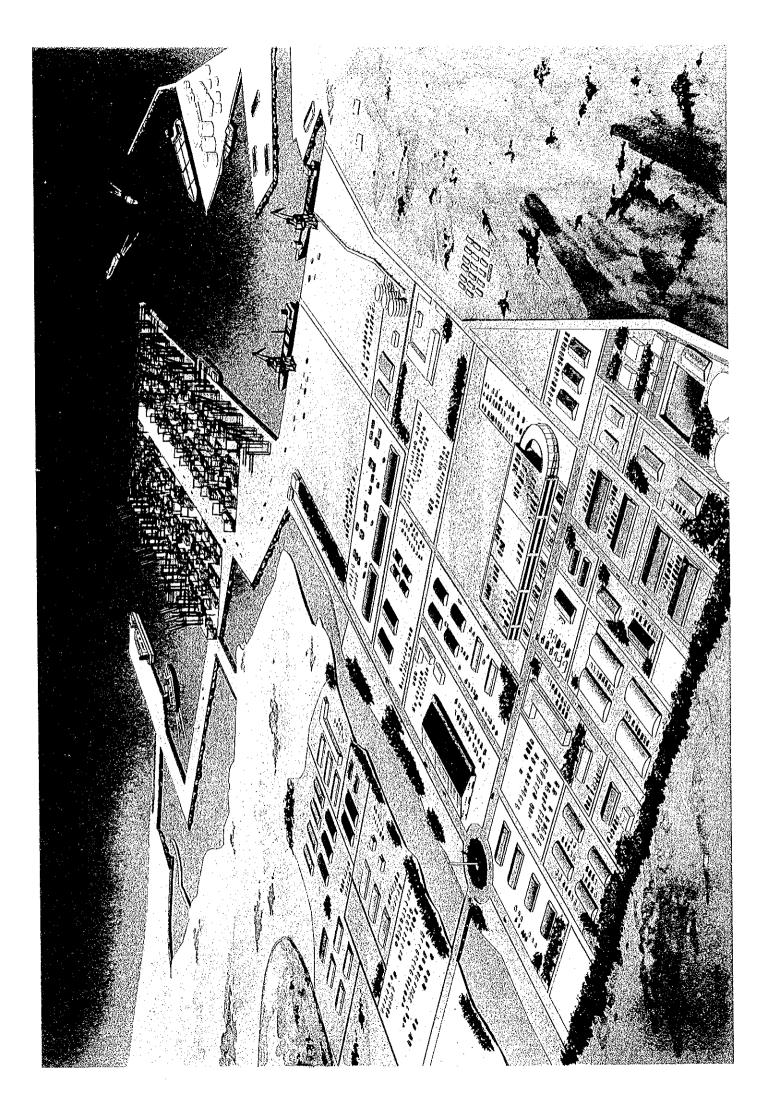
# VOL.I December 2000

# FINAL REPORT FOR THE MASTER PLAN STUDY OF SALALAH PORT AND ITS HINTERLAND IN THE SULTANATE OF OMAN

1160415 [4]







#### **PREFACE**

In response to a request from the Government of the Sultanate of Oman, the Government of Japan decided to conduct a study on The Master Plan Study of Salalah Port and Its Hinterland in the Sultanate of Oman and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Hidehiko Kuroda of the Overseas Coastal Area Development Institute of Japan (OCDI) to Oman, three times between December 1999 and September 2000.

The team held discussions with the officials concerned of the Government of Oman and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Ministry of Transport and Housing of the Omani Government and other authorities concerned for their close cooperation extended to the study team.

December 2000

Kunihiko Saito

President

Japan International Cooperation Agency

#### LETTER OF TRANSMITTAL

December 2000

Mr. Kunihiko Saito
President
Japan International Cooperation Agency

Dear Mr. Saito:

It is my great pleasure to submit herewith the Final Report of the Study on The Master Plan Study of Salalah Port and Its Hinterland in the Sultanate of Oman.

The study team of the Overseas Coastal Area Development Institute of Japan (OCDI) conducted surveys in the Sultanate of Oman over the period between December 1999 and September 2000 as per the contract with the Japan International Cooperation Agency.

The study team compiled this report, which proposes a master plan of Salalah Port and its hinterland up to the year 2020, through close consultations with officials of the Ministry of Transport and Housing of the Omani Government and other authorities concerned.

On behalf of the study team, I would like to express my heartfelt appreciation to the Ministry of Transport and Housing and other authorities concerned for their cooperation, assistance, and heartfelt hospitality extended to the study team.

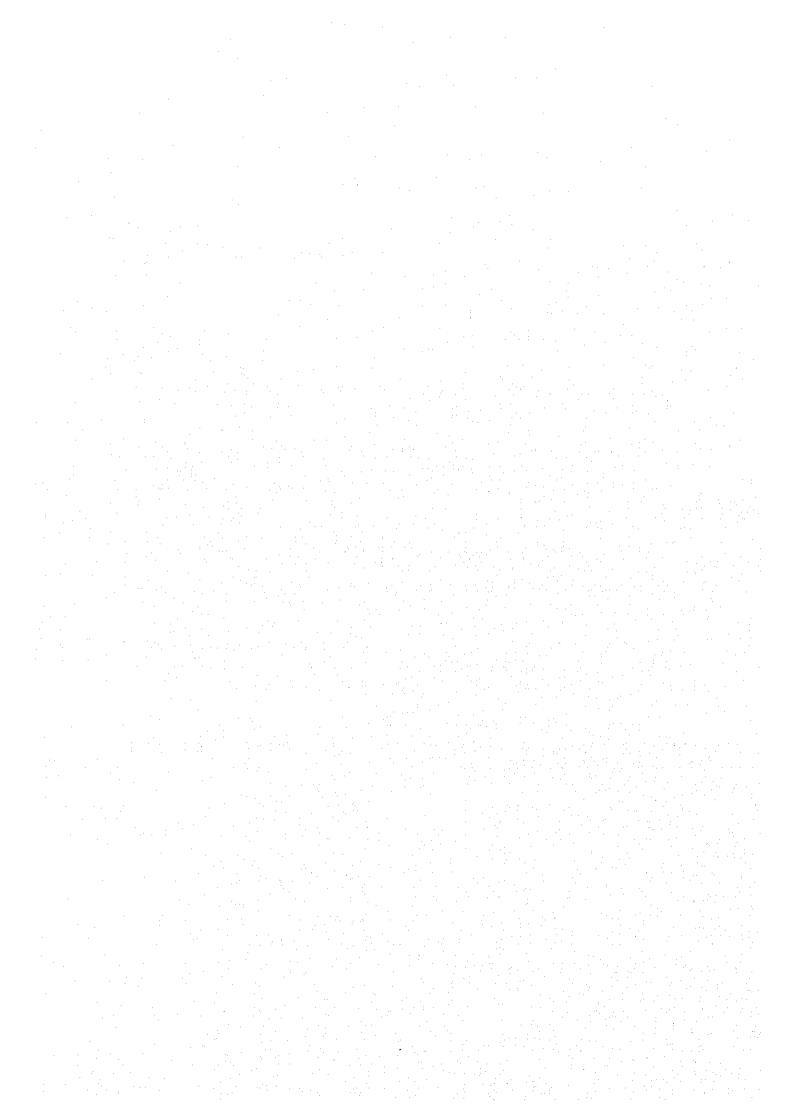
I am also greatly grateful to the Japan International Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Transport, and the Embassy of Japan in Oman for valuable suggestions and assistance through this study.

Yours faithfully,

Hidehiko Kuroda

Team Leader

The Master Plan Study of Salalah Port and Its Hinterland in the Sultanate of Oman



#### CONTENTS

Vol.	I
------	---

Ex	ecutive Summary	····· E-1
P <sub>o</sub>	art 1 Introduction	
ıa	it 1 introduction	
1	Introduction	1 1
2· 2	Background of the Study ·····	2 1
<del>-</del>	Abbreviations	2 1
٠.	7. COTO TALLIO ILS	3-1
Рa	ert 2 Present Conditions	
X 44	11 2 1 resent Conditions	-
4.	Socioeconomic Conditions in Oman	4.1
••	4.1 Economic Indicators	1 1
	4.2 National Development Plan	1.6
٠.	4.3 Industrial Development Policy	
	4.4 Port Development Policy	4 10
	4.5 Labor Market	4 25
		····· <del>4</del> -2J
5.	Present Conditions of Port Salalah and its Hinterland	5_1
	5.1 Land-use in the Hinterland	5.1
	5.2 Industrial Activities in the Hinterland	
	5.3 Natural resources around the Hinterland	
	5.4 Inland Transport Network	5 19
	5.5 Industrial Infrastructure in the Hinterland·····	5-20
	5.6 Labor Market in the Hinterland ·····	
	5.7 Existing Port Facilities	5_41
	5.8 Port Cargo Throughput·····	5-55
	5.9 Calling Vessels ·····	5-66
	5.10 Cargo Handling System	5-71
	5.11 Productivity of Facilities	5 7/
	5.12 Existing Development Plans	5-77
	5.13 Maintenance Program	583
	5.13 Maintenance Program  5.14 Design Criteria	5-86
	5.15 Construction Cost	5_8s
6.		
•	6.1 Port Administration in Oman	
	TITE TO THE TOTAL OF THE TOTAL	. O-1

		•
•		
	6.2 Administration of Port Salalah6-5	
	6.3 Financial Status of SPS 6-10	
	6.4 Tariff	
•	6.5 Port Services 6-15	
	6.6 Scenario Setting6-16	*.
7.	Socioeconomic Conditions of the Surrounding Countries7-1	
	7.1 Socioeconomic Backgrounds 7-1	
	7.2 Port Development Projects	
	7.3 Industrial Development Projects	
	7.4 International Shipping Trend	
8.	Natural Conditions around Port Salalah8-1	
· .	8.1 Meteorology 8.1	
	8.2 Oceanography	
	8.3 Topography	
	8.4 Bathymetry	
	8.5 Siltation and Shoreline	
	8.6 Geophysical Surveys 8-22	
	8.7 Geotechnical Surveys 8-52	
9.	Socioeconomic Framework of Oman9-1	
	9.1 Population 9-1	
	9.2 Gross Domestic Products9-2	
	9.3 Scenario Setting ————————————————————————————————————	
	2.3 occimio ocumg	
10	Sociogramamia Eramonyork of the Sumounding Countries	
10.	Socioeconomic Framework of the Surrounding Countries	
	10.1 Regional Economic Prospects 10-1 10.2 The World and the Region in 2020 10-3	
	10.2 The world and the Region in 2020	
•	10.3 Scenario Setting	

#### List of Tables

Vol. I

Table	4.1.1	Total Population by Governorate & Region	·
		(Mid - Year Estimate)	
Table	4.3.1	The Sectoral Relative Shares to GDP	4-11
Table	4.4.1	Port Development Policy of the Fifth Five-Year	
* : *:		Development Plan · · · · · · · · · · · · · · · · · · ·	· 4-21
Table	4.4.2	Investment Allocation for the Port Sector	
		in the Five-Year Plans	4-21
Table	4.4.3	Official Investment by Ports	· <b>4-</b> 23
Table	4.4.4	Projects Proposed for the Sixth Five-Year Plan	4-24
Table	4.5.1	Labor Supply and Demand Balance (1995-2000)	4-27
Table	5.1.1	Existing Land-Use Situation (1995)	5-1
Table	5.1.2	Additional Land Requirement	·· 5-2
Table	5.2.1	Position of Industrial Activities in Dhofar	5-8
Table	5.2.2	Position of Dhofar Manufacturing Industry in 1997	. 5-9
Table	5.2.3	Production and Export of Manufacturing Industry in Dhofar	5-10
Table	5.2.4	Export of Agricultural Produce in Dhofar, 1998	- 5-11
Table	5.2.5	Fish Unloaded by Traditional Fishery in Dhofar, 1998	5-12
Table	5.2.6	Number of Registered Enterprise by Capital, Trading Sector	
		at the End of 1998	. 5-13
Table	5.2.7	Number of Tourists in Dhofar	
Table	5.4.1	Length of Road by Type	5-18
Table	5.4.2	Domestic Flight Schedule	5-21
Table	5.4.3	Volume of Passenger and Cargo in Airport (in 1998)	5-23
Table	5.5.1	Installed Capacity, Production and Consumption	
		of Electric Power in Dhofar Region	. 5-33
Table	5.5.2	Consumption of Electric Power by Sector	5-34
Table	5.5.3	Monthly Change in the Pattern	
		of Electric Power Consumption, Dhofar	· 5-35
Table	5.5.4	Production and Consumption of Water in Dhofar Region	- 5-36
Table	5.5.5	Number of Telephone lines Installed	. 5-37
Table	5.5.6	Production and Usage of Natural Gas	5-38

			•
5-42	5.6.1 Omani Population in Dhofar Region by Age Group	e 5	Table
	5.6.2 Employment by Industrial Sector in Dhofar Region, 1997	e 5	Table
	5.7.1 Berths in Port Salalah ·····	e 5	Table
5-45	5.7.2 Container Yard and Storage in Port Salalah	e 5	Table
	5.7.3 Berths in Sultan Qaboos Port ·····	e 5	Table
	5.7.4 Container Yard and Storage in Sultan Qaboos Port	e 5	Table
	5.7.5 Main Berthing Facilities in Al-Fahal Port	e 5	Table
	5.7.6 Berthing Facilities in Sur (Qalhat) Port	e 5	Table
	5.8.1 Export/Import Volume Handled in Salalah Port	e 5	Table
5-56	by Cargo Styles in 1999		
5-57	5.8.2 Cargo Handling Volume in Salalah Port	e 5	Table
<b>.</b>	5.8.3 Container Handling Volume at Salalah Container Terminal	e 5	Table
5-58	in 1999		1.
0 00	5.8.4 Cargo Handling Volume by Launch/Ship	e 5	Table
5-59	at Salalah Conventional Terminal		
And the second second	5.8.5 Cargo Volume by Cargo Type in Sultan Qaboos in 1999	e 5	Table
	5.8.6 Cargo Handling Volume in Sultan Qaboos Port		Table
4.5	5.8.7 Container Handling Volume in Sultan Qaboos Port	100	Table
0-04	5.8.8 Origin and Destination of Container Cargo	:	Table
5-64	in Sultan Qaboos Port		
	5.9.1 Cruise Vessel Called at Salalah Port in 1999	e 5	Table
	5.9.2 Cruise Vessel Called at Sultan Qaboos Port in 1999	5	Table
	5.10.1 Cargo Handling Equipment in Port Salalah		Table
	5.11.1 Productivity of SPS Container Terminal (Nov. – Dec. 1999)		Table
	5.11.2 Productivity of the Conventional Terminal in Port Salalah (19		Table
	5.13.1 Present Conditions of the Existing Port Facilities		Table
10 Aug	5.13.2 Ongoing Repair and Maintenance Projects		Table
100	5.15.1 List of Construction Costs in Salalah	٠.	Table
	6.1.1 Classification of Ports		Table
	6.1.2 Management Scheme of Port Sultan Qaboos		Table
6 A	6.2.1 Share-Holders of SPS		Table
	6.2.2 Number of Employees of SPS as of 1st July of 2000		Table
	6.2.3 Number of Employees by Age		Table
	6.2.4 Total Number of Employees per Department as of July 1998.		Table
the second second second	6.3.1 Income and expenditure of SPS		Table
	6.3.2 Comparison of Revenues from Conventional Terminal		Table

	. *		
Table	6.4.1	Existing Tariff Table (Marine Charges)	6-13
Table	6.4.2	Tariff Table Before Revision (Marine Charges)	
Table	6.4.3	Charges Loading and Discharging of Container	
Table	6.4.4	Charges Stevedoring and Quay Handling	
Table	6.6.1	Case-1(Single Terminal Operator)	
Table	6.6.2	Case-2(Multiple Terminal Operators)	
Table	7.1.1	Economic Situation of the Surrounding Countries	
Table	7.2.1	Growth of Container Throughput in the Surrounding Areas	7₊9
Table	7.2.2	Throughput in Major Container Ports in the Surrounding Areas	·· 7 <b>-</b> 9
Table	7.2.3	Major Port Development Projects in the Surrounding Areas	7-10
Table	7.2.4	Cargo Throughput of Dubai	7-11
Table	7.2.5	Port Facilities of Dubai	7-12
Table	7.2.6	Breakdown of Container Throughput of Dubai in 1997	7-13
Table	7.2.7	Comparison of Containers during Jan-Oct 1998 & 1999	7-14
Table	7.2.8	Comparison of Export-Import Containers	
Table	7.2.9	Cargo Throughput of Aden	7-15
Table	7.2.10	Port Facilities of ACT	
Table	7.2.11	Port Facilities of Khor Fakkan	
Table	7.2.12	Container Throughput of Khor Fakkan	· 7-17
Table	7.2.13	Port Facilities of Fujairah	
Table	7.4.1	Number of Ships and Container Slots of New Maersk	and the second of the
Table	7.4.2	Top Ten Container Operators (by slots operated)	
Table	The State of the	Carrying Capacity of International Alliances at the End of 1999	· ·
Table		Evolution of Container Trades·····	
Table		Evolution of Container Capacities	
Table	and the second	Latest Container Capacity by Size of Vessel	
1 1 1 4 1 4 1 4 1 1	7.4.7	Imbalance on the East Asia/US routes during 9 months, 1994-95	
in a second	7.4.8	New Buildings by Year of Delivery	
Table	and the same of the	Top 20 Container Carriers Ranked by TEU Capacity Deployed	
Table	the state of the second	Monthly Mean for Meteorological Data at Salalah	A company of the comp
Table	and the second	Cyclones Recorded in the Vicinity of Salalah	
Table	100000000000000000000000000000000000000	Sea Water Temperature in Vicinity of Salalah	
Table		Shallow Water Effect Coefficient	
Table	4 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Designed Wave Height and Period	
Table			and the second second
Table	8.6.2	Observed Current Occurrence at Salalah Port (1)	• 0•40

		4		
	Table	8.6.3	Observed Current Occurrence at Salalah Port (2)	8-49
	Table	8.6.4	Observed Current Occurrence at Salalah Port (3)	8-50
	Table	8.6.5	Harmonic Tidal Analysis ·····	
	Table	8.7.1	Coordinates and Elevations of Borehole Locations	8-53
	Table	8.7.2	Summary of Laboratory Test Results (1)	8-63
	Table	8.7.3	Summary of Laboratory Test Results (2)	8-64
•	Table	8.7.4	Summary of Laboratory Test Results (3)	
	Table	8.7.5	Summary of Laboratory Test Results (4)	
	Table	8.7.6	Summary of Laboratory Test Results (5)	
	Table	8.7.7	Summary of Laboratory Test Results (6)	
	Table	8.7.8	Summary of Laboratory Test Results (7)	8-69
. "	Table	8.7.9	Summary of Laboratory Test Results (8)	and the second of the second of the
	Table	8.7.10	Summary of Laboratory Test Results (9)	
	Table	8.7.11	Summary of Laboratory Test Results (10)	
	Table	9.1.1	Total Population in the Target Years	
	Table	9.1.2	Population in Dhofar Region	
	Table		Sectoral Shares to GDP	· -
	Table	9.2.2	GDP at 1988Constant Prices in 2003, 2010 and 2020	
	Table	9.2.3	GRDP at 1988 Constant Prices in 2003,2010 and 2020	
	Table	9.3.1	GDP Assumptions	
•		10.1.1	Forecast on Middle East and North Africa Economy	
			(by the World Bank)·····	10-2
	Table	10.1.2	Forecast on South Asia Economy (by the World Bank)	
	Table	10.1.3	Forecast on Sub-Saharan Africa Economy (by the World Bank)	et i great e de la Companya de la Co
	Table	10.2.1	GDP growth rate	20.0
			(Average annual growth in percent; based on 1992 PPPs)	10-5
	Table	10.2.2	Population Growth Rate (Average annual growth in percent)	
	Table	10.3.1	GDP Growth Forecast and Latest Performance	,
			in the Surrounding Region	10-7
	Table	10.3.2	GDP Growth, 2001-2020 (Basis of Demand Forecast)	
•.				
•		6 g - 1		

### List of Figures

Vol. I

Fig.	4.1.1	Population in Oman	4-1
Fig.	4.1.2	Population by Government & Region	4-1
Fig.	4.1.3	Number of Civil Government Employees	··· 4-2
Fig.	4.1.4	Number of Non-Omani Workers in Private Sector	
		by Nationality in 1998 ·····	4-3
Fig.	4.1.5	Number of Non-Omani Workers in Private Sector	
e de la companya de l		by Activities in 1998 ·····	···· 4-3
Fig.	4.1.6	GDP at Current Prices and its' Components	4-4
Fig.	4.1.7	GDP at 1988 Constant Prices and its' Components	···· <b>4-</b> 5
Fig.	4.4.1	Conceptual Objectives of Port Development	
Fig.	5.1.1	Salalah Structure Plan Final Structure Plan (2015)	
Fig.	5.4.1	Import Foreign Trade Share by Mode	5-24
Fig.	5.4.2	Export Foreign Trade Share by Mode	5-24
Fig.	5.4.3	Road Network in Oman	··· 5-25
Fig.	5.4.4	Road Network around Salalah and	
, 1 T		Proposed Salalah Bypass Route	5-26
Fig.	5.4.5	Location Map of Air Port	··· 5-27
Fig.	5.4.6	Oil and Gas Pineline Network in Oman	$\cdots 5$ - $28$
Fig.	5.5.1	33KV GRID SYSTEM	··· 5 <b>-</b> 39
Fig.	5.5.2	Salalah Electric Power Plant Capacity and Load Growth	5-40
Fig.	5.7.1	Layout Plan of Salalah Port ·····	5-46
Fig.	5.7.2	Layout Plan of Sultan Qaboos Port	···· 5-49
Fig.	5.7.3	Layout Plan of Al Fahal Port	5-52
Fig.	5.7.4	Tt Dlam of Cohom Domt	5.59
Fig.	5.7.5	Layout Plan of Sur (Qalhat) Port	··· 5-54
Fig.	5.8.1	Container Share by Handling Type in Salalah Port	5-55
Fig.	5.8.2	Container Share by Service Route in Salalah Port	
Fig.	5.8.3	Cargo Volume in Salalah Conventional Terminal	5-56
Fig.	5.8.4	Total Cargo Handling Volume in Sultan Qaboos Port	5-6
Fig.	5.8.5	Container Handling Volume in Sultan Qaboos Port	5-67
Fig.	5.8.6	Origin and Destination of Import Container Cargo in 1998	5-62
Fig	5.8.7	Cargo Handling Volume in Al-Fahal Port	5-68

	Fig.	5.8.8	Number of Calling Vessel in Al-Fahal Port	F OF
	Fig.	5.9.1	Number of Calling Vessels in Salalah Port	
	Fig.	5.9.2		9-66
	118.	3.7.2	Number of Calling Container Vessels in Salalah Port by Size in 1999	F 07
	Fig.	5.9.3		··· 5-67
	118.	5.7.5	Number of Calling Vessels in Conventional Port by Size in 1999	F 05
٠	Fig.	5.9.4		1.0
	Fig.	5.9.5	Number of Calling Vessels in Sultan Qaboos Port	
	_		Number of Calling Vessels except Container by Size	
	Fig.	5.9.6	Number of Calling Container Vessels by Size	
	Fig.	5.11.1	Crane Productivity	··· 5-75
	Fig.	5.12.1	H.P.A. Layout Plan	··· 5-78
	Fig.	5.12.2	Eastward Extension	··· 5 <b>-</b> 79
	Fig.		Eastward Extension  Northward Expansion  Concession Area	··· 5-80
	Fig.	5.12.4	Concession Area	··· 5-82
	Fig.	8.1.1	Salalah Port Annual Wind Rose	···· 8-3
	Fig.	the second of	Tide Information of Salalah Port	
	Fig.	8.2.2	Research Flow for Wave Hindcasting	
26 26	Fig.	8.2.3	Schematic Figure of Wind Wave	··· 8-10
	Fig.	8.2.4	Wave Hindcasting Data Example	··· 8-12
	Fig.	8.2.5	Probability of Wave Exceedance	
	Fig.	8.5.1	Plan of Entire Survey Area	··· 8-19
	Fig.	8.5.2	Typical Cross Section of Survey Area	
	Fig.	8.6.1	Geological Map of Oman ·····	··· 8-23
	Fig.	8.6.2	General Location Diagram ····	··· 8-29
	Fig.	8.6.3	Run Line Diagram	··· 8-30
	Fig.	8.6.4	Bathymetric Chart	8-31
	Fig.	8.6.5	Isopach Chart·····	8-33
	Fig.	8.6.6	Track Chart	··· 8-35
	Fig.	8.6.7	Survey Record Example (1)	··· 8 <b>-</b> 37
	Fig.	8.6.8	Survey Record Example (2)	8-38
**	Fig.	8.6.9	Equipment Layout Diagram	
	Fig.	8 .6.10	Vessel Offset Diagram	
	Fig.	8.6.11	Current and Tide Measurements Data (1)	
	Fig.	8.6.12	Current and Tide Measurements Data (2)	
	Fig.	8.6.13	Current and Tide Measurements Data (3)	
	Fig.	8.6.14	Observed Current Progressive Vector Plot (1)	
				<b>○                                    </b>
• . "				
	e e e e e e e e e e e e e e e e e e e			

Fig. 8.6.15       Observed Current Progressive Vector Plot (2)       8-45         Fig. 8.6.16       Observed Current Progressive Vector Plot (3)       8-46         Fig. 8.7.1       Borehole Locations       8-55         Fig. 8.7.2       Legends for Soil and Rock       8-57	
Fig. 8.6.16       Observed Current Progressive Vector Plot (3)       8-46         Fig. 8.7.1       Borehole Locations       8-55	
Fig. 8.6.16       Observed Current Progressive Vector Plot (3)       8-46         Fig. 8.7.1       Borehole Locations       8-55	
Fig. 8.6.16       Observed Current Progressive Vector Plot (3)       8-46         Fig. 8.7.1       Borehole Locations       8-55	
Fig. 8.6.16       Observed Current Progressive Vector Plot (3)       8-46         Fig. 8.7.1       Borehole Locations       8-55	
Fig. 8.6.16       Observed Current Progressive Vector Plot (3)       8-46         Fig. 8.7.1       Borehole Locations       8-55	
Fig. 8.7.1 Borehole Locations 8-55	
Fig. 8.7.2       Legends for Soil and Rock       8-57         Fig. 8.7.3       Soil Profile (1)       8-58	
Fig. 8.7.4 Soil Profile (2)	
Fig. 8.7.5 Rock Strength Profiles (1)	
Fig. 8.7.6 Rock Strength Profiles (2)	•
Fig. 8.7.7 Rock Strength Profiles (3)	
Fig. 9.2.1 GDP Estimates at Current Prices	
	•
	*
andre de l'Artine de la Colombia de la Maria de la Colombia de la Colombia de la Colombia de la Colombia de la La colombia de la Co	
	•
医抗性性 化二氯甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基	

#### **Executive Summary**

#### 1. Goals of Port Development

- Port Salalah should aim to become a leading container port in the Indian Ocean Rim.
- Currently Maersk/Sealand is the dominant user of the port, and 99% of the container throughput is transshipment. However, it will be necessary to attract diversified users and increase local cargo in order to achieve economic development in the Hinterland.
- A successful port development scenario should be able to attract diversified users and encourage industrial development in the Hinterland.
- Port Salalah will have to cater for even larger container vessels if it aims to become the leading container port in the region. The master plan therefore proposes 8,000 TEU vessels as the maximum design ship.
- The conventional terminals are more closely related to the regional economy than the container terminals are. Consequently, they should be developed and operated to complement industrial development in the Hinterland.

#### 2. Goals of Industrial Development

- Taking into account its strategic location and its potential as a container hub, Salalah should aim to become a regional distribution center.
- If proper policies are adopted, distribution functions can bring about local production. Industrial development scenario identifies local production as a key factor in Salalah's development.
  - 1) First, policies need to be focused on the development of the distribution industry.
  - 2) The proposed free zone is the most effective means to achieve that goal. Various incentives need to be provided to prospective investors.
  - 3) Close links with other distribution centers including Mazuyunah FZ and Salalah Airport need to be established by means of bonded transportation.
  - 4) Transition to local production should be encouraged taking advantage of the experience gained through the distribution business activities.

#### 3. Demand Forecast

#### (1) Transshipment container

- The catchment area of Port Salalah is considered to be the Middle East, the Indian sub-continent, and South/East Africa. Major competitors are Dubai, Aden, and Singapore.
- After analyzing economic indicators and Salalah's competitiveness, the Study Team concluded that the transshipment throughput would be likely to reach 2.5-3 million TEUs in 2005 and 5-6million TEUs in 2020.

#### (2) Local cargo

- Dhofar is considered to be the catchment area for bulk and general cargo, while Al Wusta is also included for container cargo.
- Since the proposed industrial scenario envisages a great evolution in the local economy, macro estimation by regression analysis is not appropriate. A set of micro estimations was thus employed in the demand forecast.
- The annual throughput in 2020 is estimated to reach 1.5 million tons in the "without" case (without the development of port-related industries), while it will reach 4.3-6.4 million tons in the "with" case (with the development of port-related industries).

#### (3) Capacity of the existing facilities

- The quay-side capacity of the container terminal is estimated to be 2.3 million TEUs a year, while the yard-side capacity is estimated to be 2-3.4 million TEUs a year depending on the ratio of transshipment incidence. The existing container terminal will be able to handle 2 million TEUs a year even if it deals with a sizable increase of local cargo.
- The berth occupancy of the general cargo wharf, Berths 1-4, is 40%. These berths can handle another half a million tons of bulk cargo if the cargo mix does not greatly change.

#### 4. Problem Areas in Port Management

- Port development in Oman is implemented on an individual project basis without a national port development plan. It is important to prioritize port projects from the viewpoint of nationwide port development. In this way, government funds allocation can be optimized without duplication of investment.
- The container terminal is handling an increasing volume of container, over 600 thousand TEUs in 1999. The throughput, however, is still far below the capacity. It is therefore imperative to increase the cargo volume. Attraction of new customers and expansion of the feeder network are urgently needed.
- The conventional terminal was losing money until SPS took control. Under the management of MOTH, revenues in 1997 totaled R.O. 0.7 million, which covered only half of the total expenditure. Productivity and facilities require attention as well.

#### 5. Master Plan for 2020

Facility	Dimensions
Additional berths	18m draft container quay: 1,050m
	16m draft container quay: 1,750m
	Passenger berth: 350m
	Government berth: 800m
	(Future expansion: 980m with 12m depth)
Additional terminal area	112ha
	(Additional 42ha for future expansion)
Handling equipment	Container: 15 gantries (18 rows), 9 gantries (22 rows),
	48 RTGs, 96 yard tractors
	Conventional: 1 grab bucket crane
Container handling capacity	6 million TEUs/year
Breakwater	2,550 m
Dredging	17,393,000 m <sup>3</sup>
	(Additional 331,000 m <sup>2</sup> for future expansion)
Reclamation	15,062,000 m <sup>3</sup>
	(Additional 7,271,000 m <sup>2</sup> for future expansion)
Total cost	R.O. 310 million.
	Foreign currency: R.O. 197million (64%)
	Local currency: R.O. 113million (36%)

#### 6. Phased Planning

- The Study Team classified the port development projects into the following three phases taking into account the demand forecast and the risks entailed:
  - Phase 1: Container terminal expansion and creation of the government berths (short term)
  - Phase 2: Further expansion of the container terminal, installment of cargo handling equipment in the new bulk terminal, and creation of a passenger terminal (long term)
  - Phase 3: Overall port development (future expansion)
- Two alternatives were prepared for the short-term development within the scope of the master plan for 2020. One is the northward expansion (Plan A) and the other is the eastward extension (Plan B).
- The two alternatives were evaluated from various viewpoints. The conclusion is that Plan B is undoubtedly superior to Plan A from the viewpoints of flexible terminal operation, vessels waiting time, and wave disturbance. Plan A does not provide sufficient berth availability.
- Plan A provides little spare capacity and thus will require further expansion right after its completion.

Plan B provides a spare capacity sufficient enough to respond to the demand up to 2008-2009. Depth alongside of 18m will be an attractive feature vis-à-vis competitors.

Facility	Plan A	Plan B
Additional berths	16m draft container quay:	18m draft container quay:
	700m	1,050m
	Government berth: 800m	Government berth: 800m
Additional terminal area	28ha	42ha
Handling equipment	Six gantry cranes (18 rows)	Nine gantry cranes (22
	12 RTGs	rows)
	24 yard tractors	18 RTGs
		36 yard tractors
	3 million TEUs/year	3.5 million TEUs/year
capacity		
Breakwater	1,200m	2,550m
Dredging	13,779,000 m <sup>3</sup>	6,722,000 m <sup>3</sup>
Reclamation	3,060,000 m <sup>3</sup>	7,003,000 m <sup>3</sup>
Total cost	R.O. 118 million	R.O. 164 million
	Foreign currency:	Foreign currency:
	R.O. 78 million	R.O. 90 million
	Local currency:	Local currency:
	R.O. 40 million	R.O. 74 million

#### 7. Industrial Development Plan

- (1) Development principles
  - To develop Salalah as a regional distribution center taking advantage of its strategic location and its potential as a container hub
  - To develop a well-coordinated network with free zones and export processing zones in the region including Mazuyunah FZ, Salalah Airport, Raysut Industrial Estate, and Jebel Ali FZ
  - To sustain the economic development of Salalah by encouraging local production

#### (2) Industrial promotion

- To offer attractive environments for investment and business activities including the following measures:

Regulatory changes to attract investment

Improvement of business environment

Establishment of industrial infrastructure

To work towards establishing a network with other free zones and regional distribution centers including the following:

Bonded cargo transport among Salalah FZ, Mazuyunah FZ, Salalah Airport, Raysut Industrial Estate, and Jebel Ali FZ

To encourage local production considering the following factors:

Competitive utility price

Related facilities (such as testing and certification functions, and facilities to support research and development)

Flexible application of the "Omanization" policy

#### (3) Development scenarios

- As a result of the analysis of prospective markets accessible from Salalah, and the possible change in the competitive position of Salalah with the current exporting, importing and distributing countries, the Study prepared two levels of development sizes, namely, Scenario (1) and Scenario (2).
- Scenario (1) assumes the markets, for which the access from Salalah will be definitely advantageous compared with the access from Dubai. The scenario also assumes the use of available resources as a basis for promotion of local production. Since this scenario entails relatively low risks, the Study Team proposes that it should be used as a planning basis of the master plan.
- Scenario (2) assumes an overwhelming advantageous position of Salalah over the competitors (particularly Dubai). This scenario is recommended to be used to figure out the area which needs to be reserved for future considerations in expectation of fully achieved potentials.

#### (4) Investment

- R.O. 120 (scenario 1)-200 million (scenario 2) is needed to provide factories with water and space. The following infrastructure is required to achieve the economic growth of scenario 1:

Industrial water: 12,700m<sup>3</sup>/day, R.O.41million Land for industrial use: 739ha, R.O. 79 million

#### (5) Economic impacts

- Benefits for the Omani economy are made up of the following:
  - 1) Increase in GDP by R.O. 1,100-1,700 million in 2020
  - 2) Increase in foreign currency earnings and/or savings by R.O. 250-400 million in 2020
  - 3) Additional creation of 28-39 thousand jobs in 2020

#### 8. Project Evaluation

#### (1) Financial analysis

- FIRR (Financial Internal Rate of Return) of the proposed container terminal development for SPS is over 14 % based on a financing and management scheme similar to that applied in the existing container terminal.

#### (2) Economic analysis

- EIRR (Economic Internal Rate of Return) of the port development is 6.7-10.1 % depending on the assumptions and EIRR of the entire Salalah development (development of the port and port-related industries) is over 33 % (excluding the

- costs of the government berths and bridge).
- Proposed Salalah development is recommendable from a viewpoint of the national economy on condition that appropriate industrial promotion measures are taken in a timely manner.

#### 9. Environmental Consideration

#### (1) Currents

- The results of a simulation indicate that the proposed port development will have little impact on the current pattern except a slight change (max 10 cm/s) of current velocity around the extended breakwater. No stagnated area is expected to appear.

#### (2) Water quality

- The extent of pollution in the sea caused by industrial wastewater was simulated with COD as the indicator. Since the project area is open to the ocean, it was found that the proposed port development would have little impact on water quality in the sea.
- COD will increase by only 0.2 mg/l around the project area.

#### (3) Coastal erosion

- According to the simulation, coasts between the fishery harbor and the mangrove community will slightly move forward during the short-term development.
- The coasts will then stabilize throughout the long-term development and the future expansion.
- Therefore, the proposed port development will have little impact on the coastal line. The surrounding coasts will experience only seasonal retreats as seen now.

#### (4) Mangrove culture

- Coastal erosion will have little impact on the mangrove culture.
- Industrial development will increase car traffic between the port and the city and thus may impact on the living environments of birds and other creatures.

#### (5) Land use

- Development projects are proposed only in the port area and industrial area, far away from the city center.
- Most of the project sites are either on arid land or in areas around wadis with little vegetation. Therefore, the proposed port development will have little impact on land use as long as the development proceeds in line with the Salalah Structure Plan.

#### 10. Recommendations

#### (1) Port development

- Under the present terminal concession scheme, a terminal developer can make a sufficient profit from the container transshipment business but growth of the regional economy will not be sufficiently realized.
- Industrial development therefore needs to be vigorously promoted making full use of the business environments improved by the container transshipment activity. The

- GSO should take appropriate measures to ensure successful industrial development.
- Port Salalah needs to retain a spare capacity of 300-400 thousand TEUs a year to respond to potential demand. A policy decision needs to be made when the spare capacity comes close to that level.
- To aggressively market the port as a transshipment hub, the port should have additional spare capacity. Therefore, an expansion project should add at least 600-800 thousand TEUs a year.
- Expansion of the conventional terminal should keep pace with industrial development in the Hinterland. However, the new bulk terminal has a large spare capacity and the outlook for the industrial development depends on various factors including private investment and competition with neighboring countries. It is therefore important to reevaluate those factors when making a final decision on the projects envisaged in the long-term plan.
- Wave observation needs to be carried out for a sustained period of time to obtain basic data for future port development.

#### (2) Industrial development

- To develop Salalah as a regional distribution center taking advantage of its strategic location
- To develop a well-coordinated network with free zones and export processing zones in the region including Mazuyunah FZ, Salalah Airport, Raysut Industrial Estate, and Jebel Ali FZ
- To sustain the economic development of Salalah by encouraging local production
- To offer attractive environments for investment and business activities
- To work towards establishing a network with other free zones and regional distribution centers

#### (3) Port management

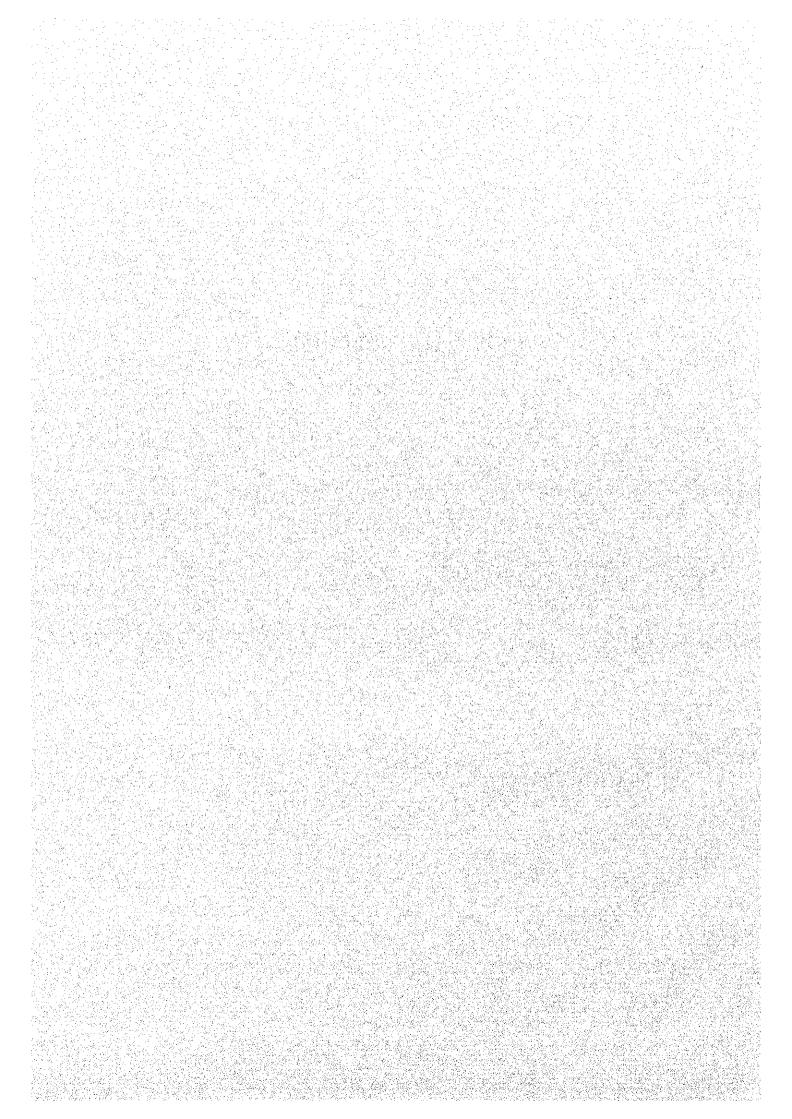
- A national port development plan is needed to efficiently promote port development. In this regard, port statistics system should include more data items. An efficient coordination system among the authorities concerned also needs to be established.
- In order to reconcile the interests of various port users and to promote port operation from a viewpoint of regional development, "Port Committee" should be established with the participation of SPS, GSO, users, and local business people. PPRC is expected to fulfill this function as well as coordinating the pace of investment for the port and the free zone activities.
- To attract new customers and increase throughput, it should be clearly publicized that every user can receive the same services in Port Salalah.
- In order to achieve efficient terminal operation, container terminals should be operated on an "open use" basis with SPS as the sole operator.

- The conventional terminal supports the regional economy, though it is not profitable. GSO therefore needs to provide and lease infrastructure with a favorable tariff. The "Port Users Meeting" is currently participated by SPS and users but its coordinating function can be strengthened if government officials are also invited in the meeting. Productivity and tariff levels of the port have to be competitive with other ports including Port Qaboos.
- Discount of the basic rate and reduction of volume discount deserve consideration in order for Port Salalah to develop as a common-user port. Establishment of a regular meeting with customers, introduction of new equipment, and an increase in the base cargo is also needed.

#### (4) Environmental consideration

- Initial Environmental Examination (IEE) was carried out in the Study to evaluate environmental impacts in such a depth as is appropriate for a master plan. Environmental impact assessment needs to be done at a later stage within the scope of F/S or D/D.
- Reliable data on the environmental conditions of the project area are currently not available. In order to assess the impacts of the development, continuous monitoring of the environment needs to start before the master plan is implemented.
- The proposed Salalah development encompasses port development as well as related Hinterland development, and thus involves various ministries. Private entities involved in the development will also increase. Consequently, an appropriate coordination mechanism should be established including the government and the private sector.

# Part 1 Introduction



#### 1. Introduction

In response to the request of the Government of the Sultanate of Oman (hereinafter referred to as "GSO"), the Government of Japan (hereinafter referred to as "GOJ") has decided to conduct the Master Plan Study of Salalah Port and Its Hinterland Development in the Sultanate of Oman (hereinafter referred to as "the Study").

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official implementation agency of technical cooperation programs of GOJ, dispatched a preparatory study team to Oman in April 1999, and reached an agreement with GSO on the scope of study.

JICA dispatched a full-scale study team (hereinafter referred to as "the Study Team") in December, 1999 to carry out the Study. The Study Team, after arriving at Muscat on December 9, held a series of discussions with pertinent agencies of the GSO on the detailed plan of the Study shown in the Inception Report. On December 21, both sides agreed that the Study would proceed in line with the Inception Report.

The Study Team proceeded to the first stage of the Study as agreed to, and prepared the Progress Report which summarizes the interviews and data gathering works carried out since December. The Study Team presented the Progress Report to the Omani side on February 20 at the coordination committee chaired by Mr. Jamal T. Aziz, Director General, Directorate General of Ports and Maritime Affairs, Ministry of Transport and Housing (hereinafter referred to as "MOTH"). The coordination committee accepted the Progress Report with some observations and agreed that the Study would proceed basically in line with the Progress Report.

The Study Team then prepared the Interim Report compiling the analysis carried out in Japan. It included the basic directions of development for the port and its Hinterland as well as the analysis of the natural conditions and environments around the port. The Study Team presented the Interim Report to the Coordination Committee on June 6 chaired by Mr. Jamal T. Aziz, Director General, Directorate General of Ports and Maritime Affairs, MOTH. The Coordination Committee was convened again on June 11 to exchange views on the Study. The coordination committee accepted the Interim Report with some observations and agreed that the Study would proceed basically in line with the Interim Report.

The Study Team prepared this Draft Final Report compiling all the study findings and data analysis. This report also includes recommendations on the policy mix to be taken for the Salalah development. The Study Team will finalize this report taking account of the views and comments of the GSO.

#### 2. Background of the Study

Oman is located close to one of the busiest shipping routes linking Europe and the Far East. Until recently, however, it had not fully took advantage of this strategic location, with only a limited volume of container cargo handled in Port Sultan Qaboos.

The situation changed dramatically when GSO signed a concession agreement with Sea-Land Service, Inc. on the development and management of a container transshipment hub terminal. Since then, the potential of Port Salalah has started to materialize, culminating in the opening of the first deep-water container terminal in November 1998.

GSO and private companies jointly established Salalah Port Services (hereinafter referred to as "SPS") to operate the newly created container terminal. SPS now operates four 16m berths equipped with six super post-panamax cranes, handling around 80 thousands TEUs a month and aiming to reach two million TEUs a year in the near future.

International shipping has long been a highly competitive business. For that reason, major shipping companies are keen to call at more efficient terminals to reduce the operation cost. Thanks to its strategic location, Port Salalah has very good prospects for developing into a major container transshipment hub, if properly expanded and managed. It can count on the Indian sub-continent, the Middle East, and the Eastern Africa as prospective markets.

However, container transshipment is getting intensely competitive in this region with Salalah and Aden joining the competition. Proper planning, development, and marketing are therefore imperative to attract new customers.

Various industrial development projects are either under way, or in a planning stage around Port Salalah, in line with the basic policy of GSO to decrease its dependence on petroleum industries through diversification of the economy. When a new bulk cargo/general cargo terminal is operational, it will serve as a catalyst for industrial development in the hinterland. The hinterland area of Port Salalah should be developed in a well-coordinated manner to create job opportunities and enhance the regional economy.

Based on the situations surrounding Port Salalah, a comprehensive strategy encompassing interaction between the port and the hinterland is needed more than ever.

#### 3. Abbreviations

ABP Associated British Ports
ACT Aden Container Terminal
APL American President Line
BOT Built-Operate-Transfer

BTC British Transport Commission
BTDB British Transport and Docks Board

CIS the Commonwealth of Independent States

CMA Compgnie Maritime de Afretement

DGPMA Director General of Ports and Maritime Affairs

DPA Dubai Port Authority
DWT Dead Weight Ton

EPZ Export Processing Zone
ETA Estimated Time of Arrival

FDRC Felixstowe Dock & Railway Company

FTZ Free Trade Zone

GCC Gulf Cooperation Council
GDP Gross Domestic Product
GNP Gross National Product

GNVQ General National Vocational Qualification

GRDP Gross Regional Domestic Product

GRT Gross Registered Ton

GSO the Government of the Sultanate of Oman

GWT Gross Weight Ton

H.P. Horse Power

JICA Japan International Cooperation Agency

LOA Length Overall

MOAF Ministry of Agriculture and Fisheries
MOCI Ministry of Commerce and Industry
MONE Ministry of National Economy
MOTH Ministry of Transport and Housing

MOL Mitsui O.S.K. Line
MOOG Ministry of Oil and Gas

MPA Maritime &Port Authority of Singapore

NOL Neptune Orient Line

NVQ National Vocational Qualification

NYK Nippon Yusen Kaisha

OCIPED Omani Center for Investment Promotion & Export Development
OECD the Organization for Economic Cooperation and Development

PEIE Public Establishment for Industrial Estates

PIL Pacific International Line

P&ON P&O Nedlloyd

PPRC Port Planning and Regulatory Committee

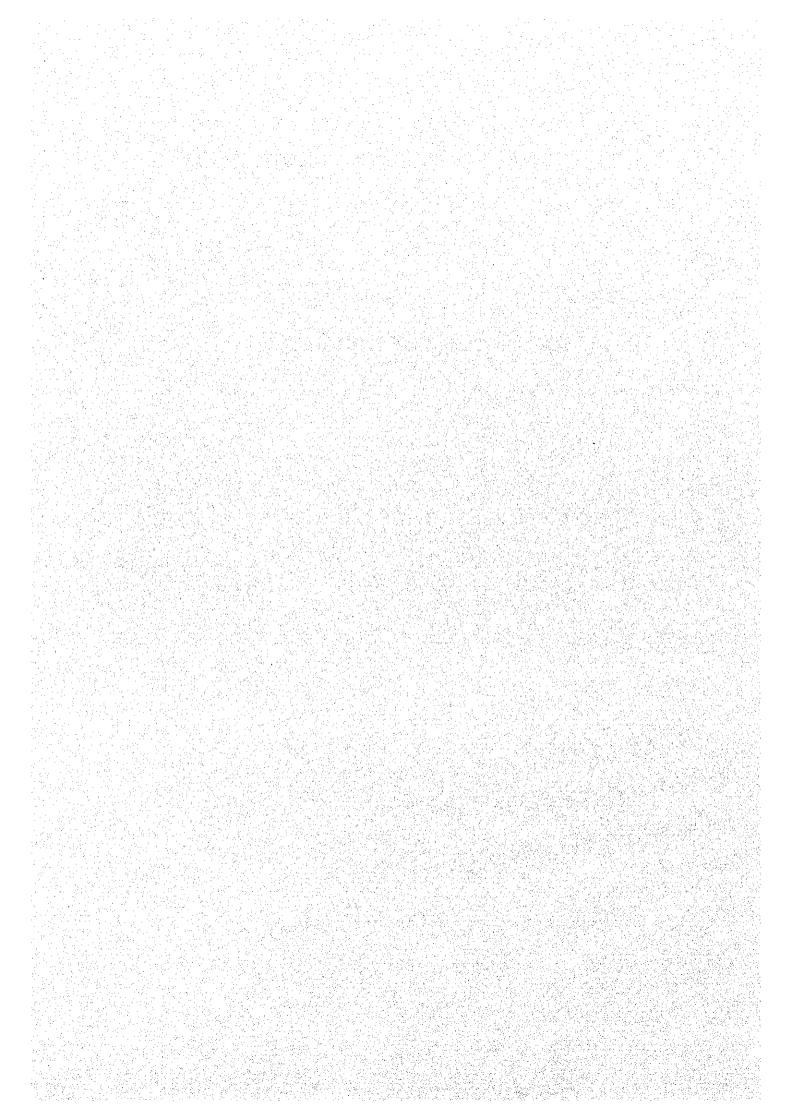
PSA Port of Singapore Authority PSC Port Services Corporation

R.O. Rial Omani

ROP Royal Oman Police
RTG. Rubber Tired Gantry
SPS Salalah Port Services Co.
TEU Twenty feet Equivalent Unit
UASC United Arab Shipping Co.

VHF Very High Frequency

## **Part 2 Present Conditions**



#### 4. Socioeconomic Conditions in Oman

#### 4.1 Economic Indicators

#### 4.1.1 Population

As of 1998, the total population in Oman is estimated at 2.287 million including a non-Omani population of 602,000. The average growth rate per annum in the past twenty years (1978-1998) is 4.6%. Men account for 58.3 % of the population while women represent 41.7%. When the non-Omani population is excluded, men account for 50.9 % of the population and women 49.1 %. Figure 4.1.1 shows the population in Oman, Figure 4.1.2 and Table 4.1.1 show the population by governorate and region.

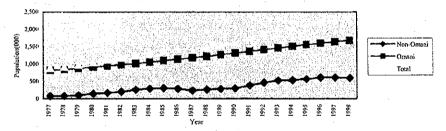


Figure 4.1.1 Population in Oman

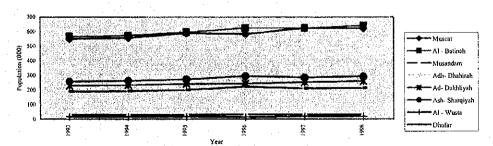


Figure 4.1.2 Population by Governorate & Region

Table 4.1.1 Total Population by Governorate & Region (Mid - Year Estimate)

Unit(000 peoples)

Year	Muscat	Al – Batinah	Musandam	Adh- Dhahirah	Ad- Dakhliyah	Ash- Sharqiyah	Al – Wusta	Dhofar	Total
1993	549	565	29	181	230	258	17	189	2018
1994	557	573	29	184	234	263	17	192	2049
1995	589	595	30	192	242	272	18	201	2139
1996	582	624	32	200	245	295	15	222	2215
1997	625	625	32	202	253	287	19	212	2255
1998	622	640	33	205	261	293	- 19	214	2287

Source: 1993-1998: Ministry of National Economy

Number of civil government employees is approximately 106,000 including 34,000 non-Omanis. Average growth rates per annum of total civil government employees in the past ten years (1988-1998) are 4.06% for Omani and 1.16% for non-Omani. In the private sector, 46,200 Omanis and 482,500 non-Omanis are employed respectively. Figure 4.1.3, 4.1.4 and 4.1.5 show the number of civil government employees, the number of workers in the private sector by nationality and the number of non-Omani workers in the private sector by activities.

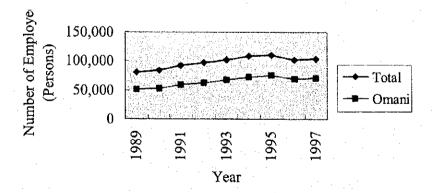


Figure 4.1.3 Number of Civil Government Employees

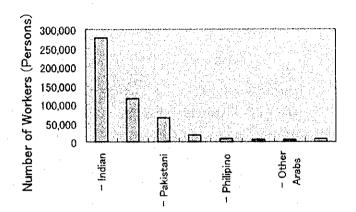


Figure 4.1.4 Number of Non-Omani Workers in Private Sector by Nationality in 1998

Source: Ministry of National Economy

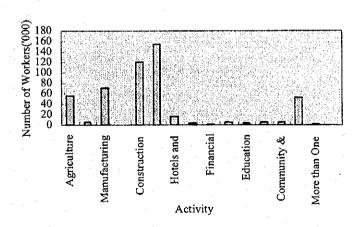


Figure 4.1.5 Number of Non-Omani Workers in Private Sector by Activities in 1998

#### 4.1.2 Gross Domestic Product (GDP)

Oil was discovered at Fashud in 1964. In 1967, development of the oil field at Fashud and commercial export of oil commenced, which expanded the Omani economy. According to estimates by the World Bank, the gross national product (GNP) of Oman increased 9.5% per annum from 1970 to 1985.

The average annual growth rates of GDP at current prices and 1988 constant prices in the past ten years (1988-1998) are approximately 5.4% and 5.3%, respectively. As to each sector of the GDP at current prices, the growth rates in the last ten years are approximately 2.8% for total petroleum activity, 3.5% for agriculture & fishing, 6.8% for industry activities, and 7.0% for services activities. As to the constant price in 1988, the growth rate of GDP in last ten years are approximately 4.0% for total petroleum activity, 4.9% for agriculture & fishing, 6.6% for industry activities, and 6.1% for services activities.

Figures 4.1.6 and 4.1.7show GDP at current prices and constant prices with their components from 1988 to 1998.

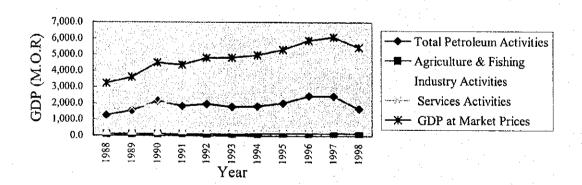


Figure 4.1.6 GDP at Current Prices and its' Components

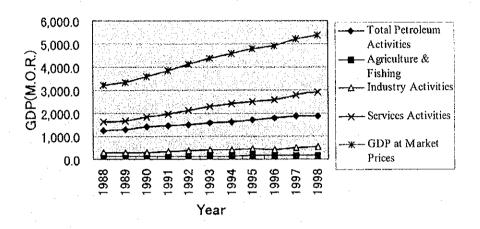


Figure 4.1.7 GDP at 1988 Constant Prices and its' Components

#### 4.2 National Development Plan

#### 4.2.1 The Fifth Five-Year Development Plan

The GSO changed its economic policy in 1970 and since then it has maintained an open door policy to encourage economic development. This principle was reflected to the Oman's Development Strategy which was established in 1975.

From 1975 to 1995, four Five-year Development plans have been established to realize Oman's Development Strategy.

The targets of the First Five-year Development Plan were A) to establish essential infrastructure, such as Government buildings, power stations and communication center, B) to increase the absorptive capacity of the economy, C) to lay the foundation for a competitive private-sectorled economy.

The Second Five-year Development Plan aimed at completion of the infrastructure needed to modernize the economy and raise living standards.

The Third Five-year Development Plan was intended to augment the achievement of previous plans.

The Fourth Five-year Development Plan concentrated primarily on broadening and diversifying the production base of the economy and private sector development.

Considering the fundamental goals and the principles of the Fifth Five-year Development Plan which are ratified by Royal Decree 1/96, the overall objectives of the Fifth Five-year are as follows:

- -1 To work towards achieving a balance between government revenue and expenditure in order to achieve a balanced budget by the end of the Plan period.
- -2 To increase the average production rates of crude oil to 880,000 barrels per day throughout the period of the Plan without affecting the technical requirements aimed at prolonging the estimated duration of oil as long as possible.
- -3 To achieve an average annual GDP growth rate of (4.6%) at current prices in order to maintain the current level of per capita income, as a minimum.
- -4 To diversify the sources of national income through an increase in the GDP share of the non-oil sectors to 68.6% by the end of the year 2000.

- -5 To encourage domestic and foreign private investment as part of the private sector based development strategy and increase the private sector's share of total investment in the plan to 53.3%.
- -6 To undertake the necessary steps for the development and promotion of natural-gasbased projects.
- -7 To implement privatization programs in the services sector in accordance with the policies and controls established for this purpose.
- -8 To control inflationary pressures during the period of the Plan so that the average annual inflation rate does not exceed (1.0%).
- -9 To accord special importance to human resources development through the provision of the necessary resources required for the implementation of the strategies and programs approved for this purpose.
- -10 To increase the participation rate of the national labor force in the labor market through the adoption of a set of policies and programs aimed at the realization of this goal.

#### 4.2.2 Vision for Oman's Economy

During the transition to the new development plan (the Fifth Five Development Plan) in 1995, a conference, namely A Vision Conference: Oman 2020, was held in Muscat to establish economic polices for the next 25 years and prepare for the Fifth Five-year Development plan.

The main objectives of the economic polices are as follows:

- (1) Creation of a Stable Macroeconomic Framework.
  - Establishment of a balance between public revenue and expenditure.
  - Increasing savings rates and accumulating financial reserves.
  - Continued adherence to the current monetary policies pertaining to interest rate; preserving the value of the Omani Rial; controlling inflation; and balancing the current account.
  - Enhancing relationships, systems and institutions that foster free competition.
- (2) Developing Government's Role in Providing Basic Services.
  - Enhancement of Government's role in the provision and improvement of the level and quality of basic services.
  - Enhancing Government's role as a strategic guide for achieving sustainable

development.

- Providing a stable macroeconomic framework.
- Diminishing Government involvement in the provision of public services, e.g. power.

#### (3) Development of Human Resources.

- Upgrading the levels of education systems.
- Promotion of educational and vocational training.
- Establishing compatibility among outputs of different educational and training systems, the inputs needed by the labor market.
- Enhancement of woman's participation in the labor market.
- Provision of high quality health care for Omani citizens.
- Development of labor market mechanisms aimed at increasing the level of the workforce's participation in the economy.

#### (4) Enhancing Economic Diversification.

- The achievement of an optimum utilization of available natural resource, and the through the distinguished strategy location of the Sultanate.
- Promotion of Oman's export industries and services.
- Adoption of high value-added strategies.
- Utilization of advanced technologies.

#### (5) Development of the Private Sector.

- Continued adherence to private sector development and the privatization policies of services enterprises according to clear and specific rules.
- Elimination of procedural and administrative barriers obstructing private capital entry to the various production and service sectors.
- Development of trade investment laws.
- Encouragement of foreign investment.
- Guaranteeing free competition in all economic activities.
- Importing and developing technology.

#### (6) Enhancing Oman's Standard of living.

- Lessening of differences in living standards among different regions and groups.
- Extending the scope of social security.
- Encouraging self-reliance and enhancing communities.

#### (7) Enhancing Integration of the Omani Economy with the Global Economy.

- Strengthening Oman's economic relations with GCC countries.
- Encouragement of the free flow of goods and factors of production.
- Upgrading advanced technology skills of the national workforce.

- Assimilating modern technologies.
- Joining the World Trade Organization.
- Strengthening Oman's international economic relations with its friends, and economic blocks in a way that serves the Sultanate's interests.