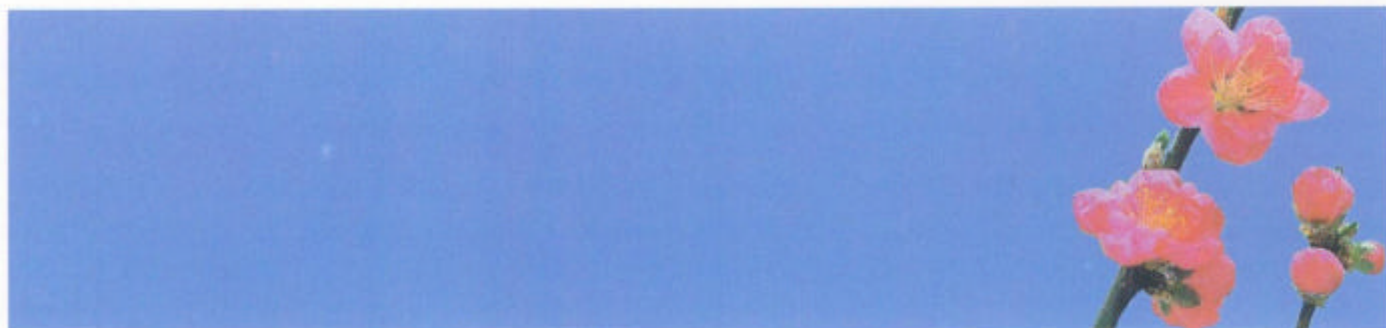


Main Report (I) : Present Situation

Final



The Study on the Red River Inland Waterway Transport System in the Socialist Republic of Vietnam



March 2003

**The Overseas Coastal Area Development Institute of Japan (OCDI)
Japan Port Consultants, Ltd. (JPC)**

SSF

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Japan International Cooperation Agency (JICA)
Ministry of Transport (MOT)

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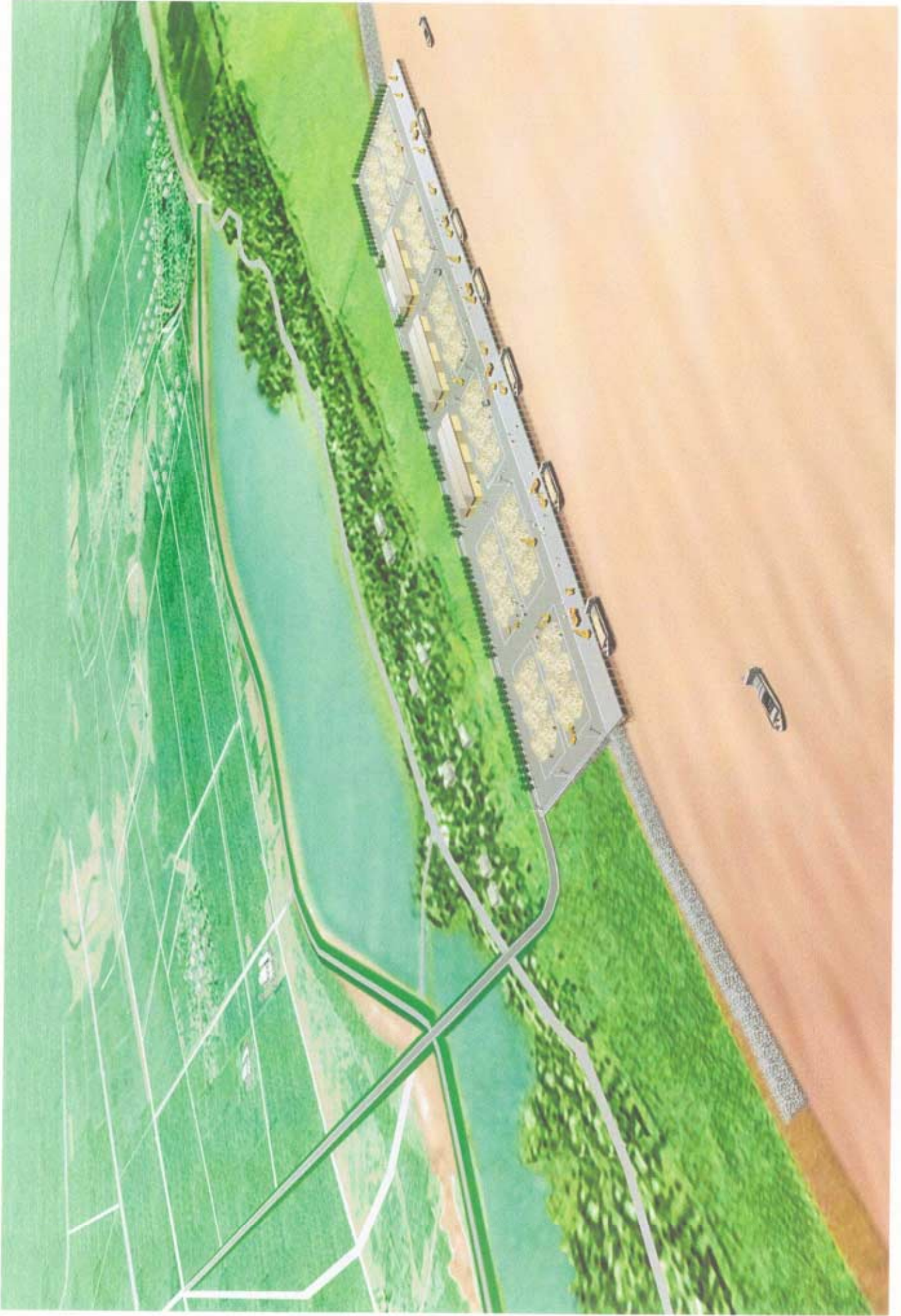
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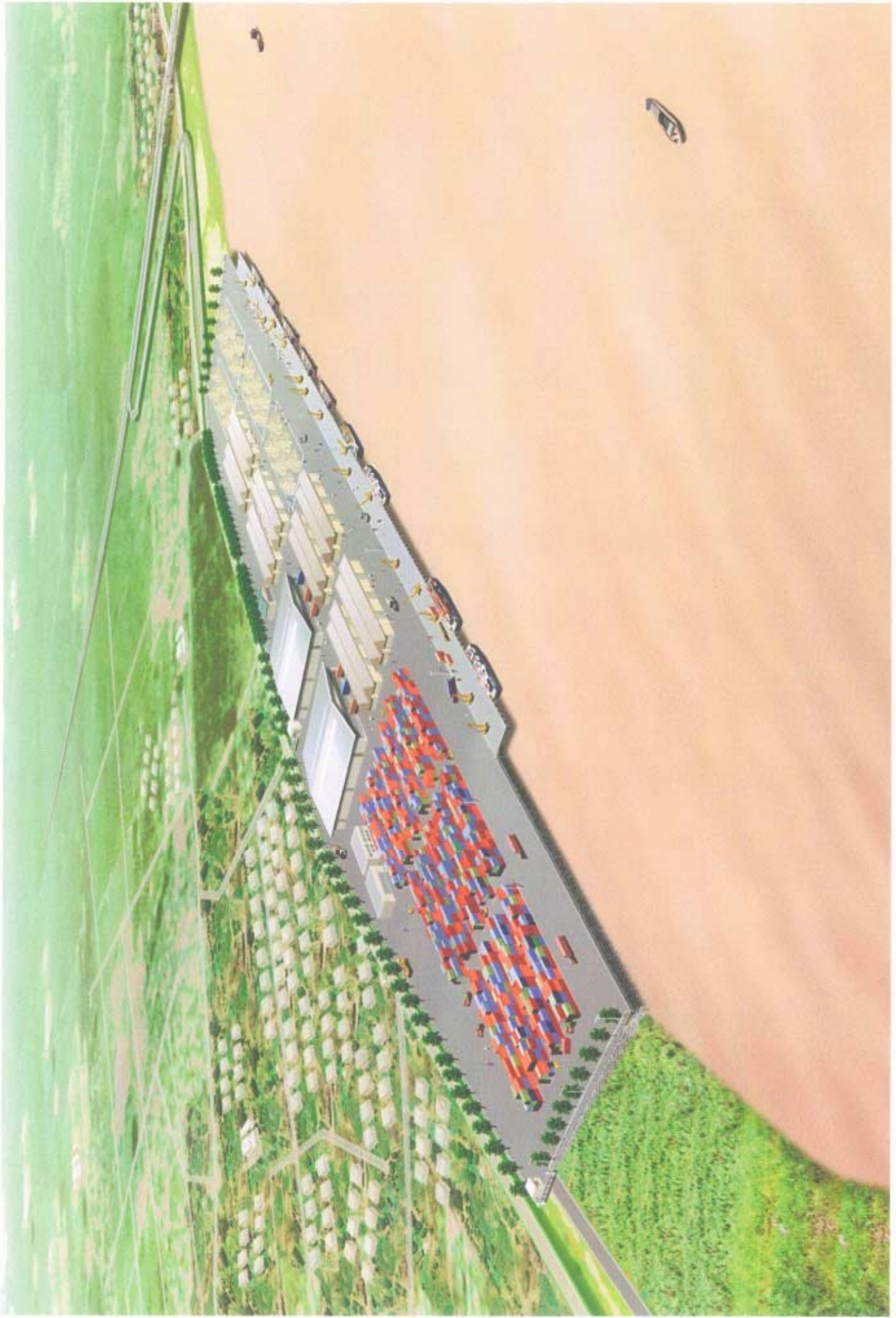
Master Plan of Hanoi Port (2020)



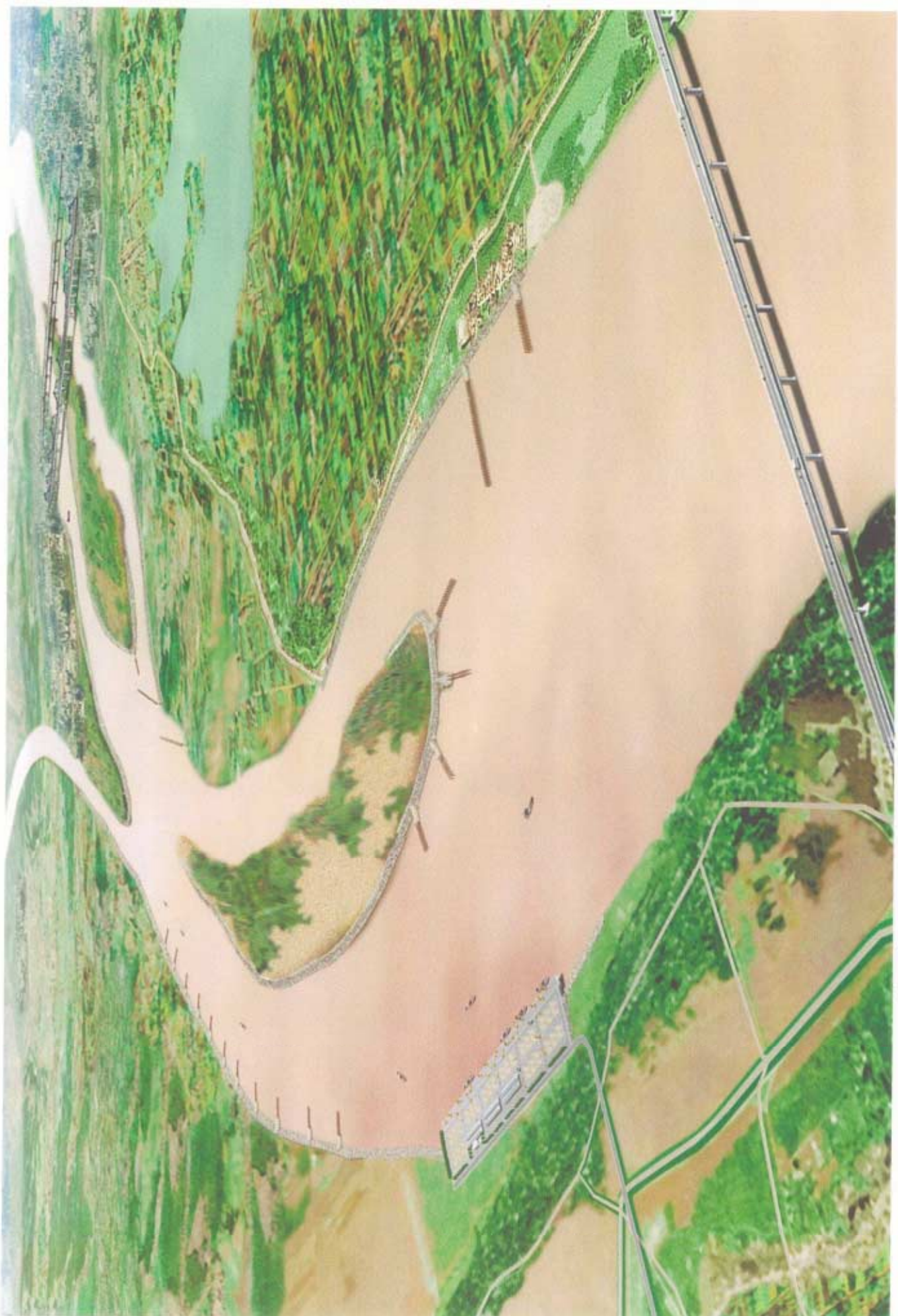
Master Plan of Khuyen Luong Port (2020)



Master Plan of New North Port (2020)



Master Plan of New East Port (2020)



Master Plan of Channel Stabilization Facilities (2020)

PREFACE

In response to a request from the Government of the Socialist Republic of Vietnam, the Government of Japan decided to conduct a study on the Red River Inland Waterway Transport System in the Socialist Republic of Vietnam and entrusted the study to the Japan International Cooperation Agency (JICA).

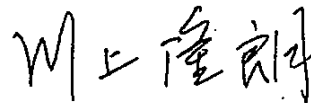
JICA dispatched a study team to Vietnam three times between December 2001 and January 2003, which was headed by Mr. Takechiho Tabata (December 2001 - June 2002) and Mr. Hisao Ouchi (June 2002 - January 2003) of the Overseas Coastal Area Development Institute of Japan (OCDI), and was comprised of OCDI and Japan Port Consultants, Ltd. (JPC).

The team held discussions with the officials concerned of the Government of the Socialist Republic of Vietnam and conducted field surveys at the study area. Upon returning to Japan, the study 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 Government of the Socialist Republic of Vietnam for their close cooperation extended to the study team.

March 2003



Takao Kawakami
President
Japan International Cooperation Agency

LETTER OF TRANSMITTAL

March 2003

Mr. Takao Kawakami
President
Japan International Cooperation Agency

Dear Mr. Kawakami:

It is my great pleasure to submit herewith the Final Report of the Study on the Red River Inland Waterway Transport System in the Socialist Republic of Vietnam.

The study team comprised of the Overseas Coastal Area Development Institute of Japan (OCDI) and Japan Port Consultants, Ltd. (JPC) conducted surveys in Vietnam over the period between December 2001 and January 2003 as per the contract with the Japan International Cooperation Agency (JICA).

The study team compiled this report, which proposes the Long-term Strategy for the Inland Waterway Transport (IWT) System in the Red River Delta for the year 2020 as well as the Master Plan and the Short-term Development Plan for the IWT System in the Red River segment through Hanoi for the year 2020 and 2010 respectively, through close consultations with officials of the Ministry of Transport (MOT) and other authorities concerned of the Vietnamese Government.

On behalf of the study team, I would like to express my heartfelt appreciation to MOT and other authorities concerned of the Government of the Socialist Republic of Vietnam for their diligent cooperation and assistance and for the heartfelt hospitality extended to the study team.

I am also very grateful to your Agency, the Ministry of Foreign Affairs, the Ministry of Land, Infrastructure and Transport and the Embassy of Japan in Vietnam for valuable suggestions and assistance through this study.

Yours faithfully,

久内 久夫

Hisao Ouchi
Team Leader

The Study on the Red River Inland Waterway Transport
System in the Socialist Republic of Vietnam

ABBREVIATION LIST

AAGR	Average Annual Growth Rate
ADB	Asian Development Bank
AFTA	ASEAN Free Trade Agreement
APA	ASEAN Ports Association
ASEAN	Association of South East Asian Nations
BCR	Benefit Cost Ratio
BOT	Build, Operate and Transfer
CCTDI	Consulting Center for Transport Development Investment under TDSI
CCWACO	Consulting Company of Waterway Construction under VN Waterway Construction Corp
CFS	Container Freight Station
CIF	Cost, Insurance and Freight
CMB	Construction Consulting Company for Maritime Building under VINAMARINE
CSW	Channel Stabilization Works
CV	Cheval Vapeur (French expression, = HP: horse power)
CY	Container Yard
DC	Distribution Center
DNC Canal	Day - Ninh Co Canal
DSI	Development Strategy Institute under MPI
DWT	Dead Weight Tonnage
EDI	Electronic Data Interchange
EIA	Environment Impact Assessment
EPZ	Export Processing Zone
E/S	Engineering Service
ETA	Estimated Time of Arrival
FCL	Full Container Load
FDI	Foreign Direct Investment
FIRR	Financial Internal Rate of Return
FOB	Free on Board
GDP	Gross Domestic Product
GOJ	Government of Japan
GOV	Government of the Socialist Republic of Vietnam
GPS	Global Positioning System
GRT	Gross Registered Tonnage
GSO	General Statistical Office
GT	Gross Tonnage
HCMC	Ho Chi Minh City
HDI	Human Development Index
HHWL	Highest High Water Level

HNPC	Hanoi People's Committee
HWL5%	5% Occurrence Water Level
ICD	Inland Clearance Depot
IMO	International Maritime Organization
IRR	Internal Rate of Return
IW	Inland Waterway
IWMS	Inland Waterway Management Station
IWPA	Inland Waterway Port Authority
IWT	Inland Waterway Transport
IZ	Industrial Zone
JBIC	Japan Bank for International Cooperation
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
JP¥	Japanese Yen
JPC	Japan Port Consultants, Ltd.
LAD	Least Available Depth of waterway
LAW	Least Available Width of waterway
LCL	Less than Container Load
LOA	Length Overall
LSD	National Land Survey Datum
LWL95%	95% Occurrence Water Level
MARD	Ministry of Agriculture and Rural Development
MIS	Management Information System
MOC	Ministry of Construction
MOSTE	Ministry of Science, Technology and Environment
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
MWL	Mean Water Level
N3	Confluence/Bifurcation
NFEA	Northern Focal Economic Area
MT	Metric Ton
NPV	Net Present Value
NOWATRANCO	Northern Waterway Transport Corporation
OCDI	Overseas Coastal Area Development Institute of Japan
O-D	Origin and Destination
ODA	Official Development Assistance
PAX	Passenger
PC	People's Committee
P/L	Profit/Loss
PMU	Project Management Unit
PMU-Waterways	Project Management Unit of Waterways

Q	Water Discharge
QGC	Quay-side Gantry Crane
RO/RO	Roll-on Roll-off
RTG	Rubber-Tired Gantry
RRD	Red River Delta
SBSTI	Shipbuilding Science & Technology Institute under VINASHIN
SCF	Standard Conversion Factor
SDL	National Survey Datum
Sh	Hydraulic Section
SOC	Ship Operation Cost
SOE	State-owned Enterprise
SPM	Suspended Particulate Matter
SRV	Sea-cum-river Vessel
SS	Suspended Solid
S/W	Scope of Work
SWR	Shadow Wage Rate
TDSI	Transport Development Strategy Institute under MOT
TEDI	Transport Engineering Design Incorporation
TEDI-Port	Port & Waterway Engineering Consultants under TEDI
TEDI-Wecco	Waterway Engineering Consultants under TEDI
TEU	Twenty-foot Equivalent Unit
US\$	US Dollar
VAT	Value Added Tax
VCCI	Vietnam Chamber of Commerce and Industry
VICT	Vietnam International Container Terminals
VINALINES	Vietnam National Shipping Lines
VINAMARINE	Vietnam National Maritime Bureau
VINASHIN	Vietnam Shipbuilding Industry Corporation
VINAWACO	Vietnam Waterway Construction Corporation
VITRANSS	Vietnam Transport Strategy Study
VIWA	Vietnam Inland Waterway Administration
VMRCC	Vietnam Maritime Regional Coordination Center
VMS	Vietnam Maritime Safety Agency
VN	Vietnam
VND	Vietnam Dong
VOC	Vehicle Operation Cost
VR	Vietnam Railway
VR	Vietnam Register
VRA	Vietnam Road Administration
VTMS	Vessel Traffic Management System

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INTRODUCTION

INTRODUCTION

A Introduction

In response to a request from the Government of the Socialist Republic of Vietnam (hereinafter referred to as "GOV"), the Government of Japan (hereinafter referred to as "GOJ") has decided to conduct the Study on the Red River Inland Waterway Transport System in the Socialist Republic of Vietnam (hereinafter referred to as "the Study").

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of GOJ, dispatched a preparatory study team to Vietnam in August 2001, and reached an agreement with GOV on the scope of the Study.

JICA dispatched a full-scale study team (hereinafter referred to as "the Study Team") in December 2001 to carry out the Study. The reports submitted to the Vietnamese side through the Ministry of Transport by the Study Team are as follows:

- | | |
|------------------------|----------------------------|
| - Inception Report | Submitted in December 2001 |
| - Progress Report (I) | Submitted in March 2002 |
| - Interim Report | Submitted in July 2002 |
| - Progress Report (II) | Submitted in October 2002 |
| - Draft Final Report | Submitted in January 2003 |
| - Final Report | Completed in March 2003 |

B Background of the Study

Vietnam has been undergoing major economic changes and transition from a centrally planned economic system to a more market oriented economy since the formal adoption of "Doi Moi" in 1986. Deregulating policies towards a market economy have greatly encouraged economic development in Vietnam and the capacity of the transport sector has to be increased to cope with the transport demand.

Reflecting the above situation, the Inland Waterway Transport (hereinafter referred to as "IWT") system in the Red River Delta is expected to play an important role in the socio-economic development in Vietnam by making full use of its peculiarity as an environment friendly and cost effective mode of transport.

However, the IWT system in the entire Red River Delta and the segment through Hanoi in particular is facing difficulties such as insufficiency of port facilities and related services as well as instability of navigation channel and the riverbank erosion due to hydrological effects and sedimentation.

Furthermore, the improvement of the Red River segment through Hanoi is expected to be a part of the anniversary celebration of "1000 years of Thang Long - Hanoi".

Taking into account the above situation, a comprehensive study on the Red River Inland Waterway Transport System is needed more than ever.

C Objectives of the Study

The objectives of the Study are:

- (1) To formulate a long-term strategy for the IWT system in the Red River Delta for the year 2020.
- (2) To formulate a master plan for the IWT system in the Red River segment through Hanoi for the year 2020.
- (3) To formulate a short-term development plan for the IWT system in the Red River segment through Hanoi for the year 2010.
- (4) To conduct a feasibility study on the priority projects.
- (5) To undertake relevant technology transfer to Vietnamese counterpart personnel in the course of the Study.

D Study Area

The Study covers the entire Red River Delta for the Long-term Strategy and the Hanoi segment for the Master Plan and the Short-term Development Plan.

E Study Schedule

Work schedule of the Study is shown in **Figure I-1**.

The Study on the Red River Inland Waterway Transport System

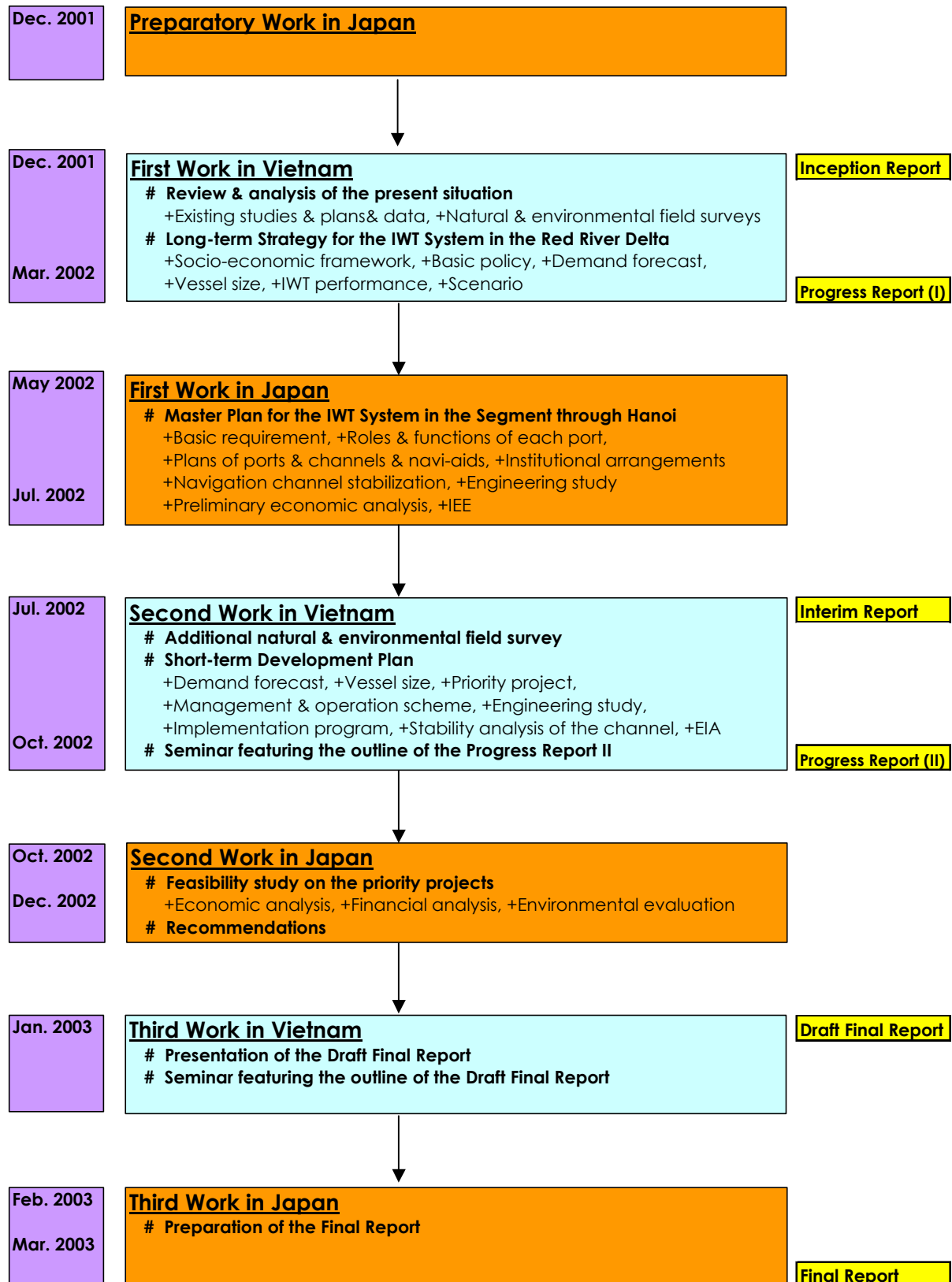


Figure I-1 Study Schedule

F Members of Steering Committee, Counterparts and the Study Team

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Note) (*): Steering Committee member (**): Counterparts

Japanese Side

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Mr. Tadasu Okude	Mechanical Engineering (July 2002 -)
Mr. Masayuki Fujiki	Coordination (December 2001 - January 2002)

G Composition of the Reports

Final Report of this Study consists of Summary Report, Main Reports of (I), (II), (III) and Appendix to the Main Reports.

Summary Report

Main Report (I): Present Situation

Main Report (II): Long-term Strategy and Master Plan

Main Report (III): Short-term Development Plan, Feasibility Study and Recommendations

Appendix