

TERMS OF REFERENCE
FOR
CONSULTING SERVICES (ASSISTANCE FOR SELECTING OPERATOR)
FOR
CAI MEP – THI VAI INTERNATIONAL PORT DEVELOPMENT PROJECT
(Draft)

1. General

This Terms of Reference (TOR) is prepared to provide the general scope of work for the international consultant who will provide Consulting Services for the Selection of Port Operator through Concession or Leasing Scheme that are required by the GOVN for the Cai Mep – Thi Vai International Port Development Project (the Project). In carrying out the services, the Consultant shall cooperate fully with the Project executing agency, the Ministry of Transport (MOT) / Project Management Unit 85(PMU85) and Vietnam National Maritime Bureau (VINAMARINE) of MOT.

2. Project Profile

The Project consists of the construction of two (2) berths of international container terminal and two (2) berths of international general cargo terminal (including dredging, reclamation and other port related facilities), the navigation channel of –12 to –14 m deep and the installation of quay side gantry cranes as main components of the Project.

The location and implementation schedule of the Project are shown in Figure 1,2,3 and 4, respectively.

The components of the Project are divided as follows:

Category 1: Civil and Building Works

Package 1: Construction of Port Facilities and Channel Dredging

(1) Lower Cai Mep International Container Terminal

- 1) Wharf
- 2) Terminal
- 3) Access Road

(2) Thi Vai International General Cargo Terminal

- 1) Wharf
- 2) Terminal
- 3) Access Road

(3) Navigation Channel

- 1) Dredging of Navigation Channel
- 2) Installation of Navigation Buoys



Package 2: Construction of Buildings

(1) Lower Cai Mep International Container Terminal

- 1) Administration Building and Amenity Block
- 2) Container Freight Station (CFS)
- 3) Maintenance Shop
- 4) Main Gate and Sub-Gate
- 5) Power Station and Fuel Station

(2) Thi Vai International General Cargo Terminal

- 1) Administration Building and Amenity Block
- 2) Warehouse and Transit Shed
- 3) Maintenance Shop
- 4) Main Gate and Sub-Gate
- 5) Power Station and Fuel Station

Category 2: Procurement of Equipment

Package 3: Equipment Procurement

- (1) Cargo Handling Equipment for Lower Cai Mep International Container Terminal
- (2) Cargo Handling Equipment for Thi Vai International General Cargo Terminal
- (3) Vessel Traffic Service (VTS) system

Category 3: Consulting Services

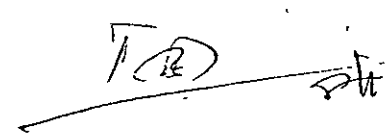
- (1) Detailed Design Study
- (2) Selection of Port Operator
- (3) Construction Supervision

3. Objectives of the Consulting Services for Selection of Port Operator

The objectives of Consulting Services are to prepare the most suitable concession/leasing (business) plan with analyzing potential risks both for the Project executing agency and concessionaire/leaser, to draft the necessary tender documents for the concession/lease, to provide necessary assistance to the Project executing agency in the pre-qualification of concessionaires/leaser including the evaluation of pre-qualification documents, in the invitation of bids for concession/lease, in contract negotiation with concessionaire/leaser and in handover and issuing commissioning certificate.

4. Scope of Services

4.1 General



In executing the Services, the Consultant shall follow the relevant procedures of the GOVN and JBIC. The Consultant shall assist the Project executing agency in all aspects of the work including issuing commissioning certificate for the concessionaire to commence operation.

The scope of the consulting services broadly consists of following works:

Stage-1 Preparation of Tender Documents

- (1) To Prepare Concession/Leasing (Business) Plan Alternatives
- (2) To Analyze Potential Risks of Each Alternatives
- (3) To Select the Most Suitable Concession/Leasing (Business) Plan with its Reasoning
- (4) To prepare Tender Documents

Stage-2 Tender Assistance

- (1) To Assist the Project executing agency in Pre-qualification of the Prospective Concessionaires/Leaser
- (2) To Assist the Project executing agency in Bid Evaluation
- (3) To Assist the Project executing agency in Contracting with Selected Concessionaire/Leaser, in Handover and in Issuing Commissioning Certificate.

The Consultant shall keep the Project executing agency and JBIC fully informed of all the important matters by means of monthly reports and meetings, as may be considered necessary for the satisfactory implementation of the Project.

The Tasks, which the Consultant shall undertake on behalf of and in collaboration with the Project executing agency are described in the following sections.

4.2 Scope of Consulting Services for Selection of Port Operator

4-2-1 Stage-1 Preparation of Tender Documents

- a) To Prepare Concession/Leasing (Business) Plan Alternatives
 - i To clarify the primary and secondary objectives of the privatization of the port.
 - ii To formulate the concession/leasing (business) plan alternatives including style of privatization, structure of payment to the government, performance target, operational demarcation between the Project executing agency and concessionaire/leaser including service, maintenance, employment, interaction among service providers, port authority's rights, risk sharing and limits on liability coverage and insurance, terminal handling charges including level of charges, built-in profit, competitiveness with other ports in the region, role of the government, payment to the government from terminal handling revenue, potential contractual conflicts including provision for dispute resolution, applicable laws, provisions for terminating the contract, terminology in the force major provisions, obligation for tax payment, bank guarantee as security before handover and performance guarantee, terminal handover scheme, terminal development scheme

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including improvement and expansion of the terminal, training program, introduction of computerized information system, operator's potential conflicts of interest and contractual change etc.

b) To Analyze Potential Risks of Each Alternatives

- i To identify all the risks involved in the proposed concession/leasing (business) plan alternatives-Country Risks (legal risk, economic risk, force major, political risk), Project Risks (construction risks, hand-over risks, operating risks, procurement risks, financial risks and social risks), Commercial or Traffic Risks and Regulatory Risks.
- ii To propose suitable risk sharing scheme with parties concerned (sponsors, concessionaire/leaser, customers, contractors suppliers and sub-contractors) for each alternatives.
- iii To analyze financial soundness of each concession/leasing (business) plan alternative both for sponsor and concessionaire through forecast financial statements including sensitivity analysis of proposed risk sharing scheme.

c) To Select the Most Suitable Concession (Business) Plan with Its Reasoning

- i To propose the selection criteria for proposed concession/leasing (business) plan.
- ii To analyze the advantage and disadvantage to the government of each alternative.
- iii To propose the most suitable concession/leasing (business) plan including potential risk management scheme.

d) Preparation of Tender Documents

- i Prepare the draft concession/lease agreements for the Terminal between CTPMB and terminal operator(s).
- ii Prepare the bid documents including prequalification documents consistent with laws and regulations of the GOVN.

4-2-2 Stage-2 Tender Assistance

a) To Assist the Project executing agency in pre-qualification of the Prospective Concessionaires/Leasers

- i To prepare documentation for use in inviting expressions of interest from potential bidders, including the procedures to be used to evaluate expressions of interest.
- ii To assist the Project executing agency to evaluate expressions of interest and to prepare recommendations on which bidders are to be invited to prepare a bid

b) To Assist the Project executing agency in Bid Evaluation

- i To prepare a complete set of bidding documents based on the proposed most suitable concession (business) plan with potential risk management scheme. These documents will include all concession and/or bidding documents to finance, construct, equip and operate the port as defined in the concession (business) plan.
- ii To assist the Project executing agency to prepare bid evaluation criteria.
- iii To assist the Project executing agency to evaluate bids in terms of legal, technical, financial and operational viability. For each concession/leasing contract, the consultant will prepare a report on the evaluation of bids and make recommendations of award of concession/lease.

c) To Assist the Project executing agency in Contracting with Selected Concessionaire/Leaser, in Handover and in Issuing Commissioning Certificate.

- i To assist the Project executing agency to prepare a negotiating strategy including handover and commissioning procedure.
- ii To assist the Project executing agency to negotiate a concession/leasing agreement.
- iii To assist the Project executing agency to handover and to issue commissioning certificate.

5 Schedule of the Services

The services for selection of port operator will be accomplished within 31 months.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1 st Stage																															
2 nd Stage																															

Note:

Stage 1: Preparation of Tender Documents

Stage 2: Tender Assistance

6 Reports and Documents

6.1 Reports and Documents submitted to MOT/PMU85

The Consultant shall write and submit the following reports and documents in English to MOT/PMU85:

TAD SA

- (1) Concession/Leasing (Business) Plan Alternatives
5 copies within 1 month after the completion
- (2) Analytical Report for Potential Risks of Each Alternatives
5 copies within 1 month after the completion
- (3) Prequalification Evaluation Report for Concession/Lease
5 copies within 1 month after closing date
- (4) Bid Evaluation Report for Concession/Lease
5 copies within 1 month after closing date
- (5) Concession/Leasing Contract between the Project executing agency and Selected Concessionaire/Leaser
5 copies within 1 month after the completion

6.2 Reports and Documents submitted to JB1C

The Consultant shall assist MOT/PMU85 in preparing reports to be submitted to JBIC by MOT/PMU85.

7. Required Experties

7.1 Expatriate

The required expatriate experts for the Selection of Port Operator will be, but not limited to, the following personnel and the total assignment man/months is estimated to be around 98 m/m.

(1) Team Leader/ Concession Specialist
(2) Deputy T.L./Port Engineer
(3) Legal Expert
(4) Marketing Expert
(5) Port Planning Expert
(6) Port Operation Expert
(7) Document Specialist
(8) Coordinator

7.2 Local Experts

The required local experts for the Selection of Port Operator will be, but not limited to, the following personnel and the total assignment man/months is estimated to be around 167 m/m.

(1) Co-Team Leader/Office Administrator
(2) Port Engineers
(3) Legal Experts

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(4) Port Planning Experts

(5) Document Specialists

In addition to the above Engineers/Specialists, the Consultant will employ local supporting staff such as, translators, secretaries, and others.

8. Obligation between MOT/PMU85 and the Consultant

- (1) In the case of a difference of opinion between MOT/PMU85 and the Consultant or any important matters involving professional judgment that might affect the proper evaluation or execution of the Project, MOT/PMU85 shall allow the Consultant to submit promptly to MOT/PMU85 a written report and, simultaneously, to submit a copy to JBIC. MOT/PMU85 shall forward the report to JBIC with its comments in time to allow JBIC to study it and communicate with MOT/PMU85 before any irreversible steps are taken in the matter. In cases of urgency, the Consultant shall have the right to request to MOT/PMU85 and/or JBIC that the matter be discussed immediately between MOT/PMU85 and JBIC.
- (2) MOT/PMU85 is responsible for supervising the Consultant's performance and ensuring that the Consultant carries out the assignment in accordance with the contract. Without assuming the responsibilities of MOT/PMU85 or the Consultant, JBIC may monitor the work as necessary in order to satisfy itself that it is being carried out in accordance with appropriate standards and is based on acceptable data. As appropriate, JBIC may take part in discussions between MOT/PMU85 and the Consultant. However, JBIC shall not be liable in any way for the implementation of the Project by reason of such monitoring or participation in implementation of the Project nor shall the Consultant be released from any responsibility for the Project by reason of JBIC's monitoring or participation in discussion.

9. Undertakings of MOT/PMU85

- (1) To assist with procedures for issuance of entry permits necessary for the Consultant's members to conduct the services.
- (2) To assign counterpart staff to obtain accommodation and facilities to assist the Consultants in conducting the services.
- (3) To ensure the safety of Consultants' staff at place of works.
- (4) To assist the Consultants' staff as the need arises for any medical services which may be required.
- (5) To arrange for duties and custom clearance exemption for equipment, instruments, tools and other articles to be brought into Vietnam in connection with the implementation of the services.
- (6) To assist in obtaining privileges and benefits including customs clearance for personal effects which may be brought into the Vietnam by the staff of the Consultant for the execution of the services
- (7) To assist in securing adequate office space to the Consultant.

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10. Obligation of Consultant Team

The Consultant Team, with their full responsibilities, commits to successfully carry out all works as mentioned in this TOR and other works relevant to achievement of the Project, and all members of the Consultant Team shall comply with legislation, law and regulations in Vietnam, except for any stipulations agreed between Government of Vietnam and Japan/or home country of such Consultant when carrying out their consulting services in Vietnam.

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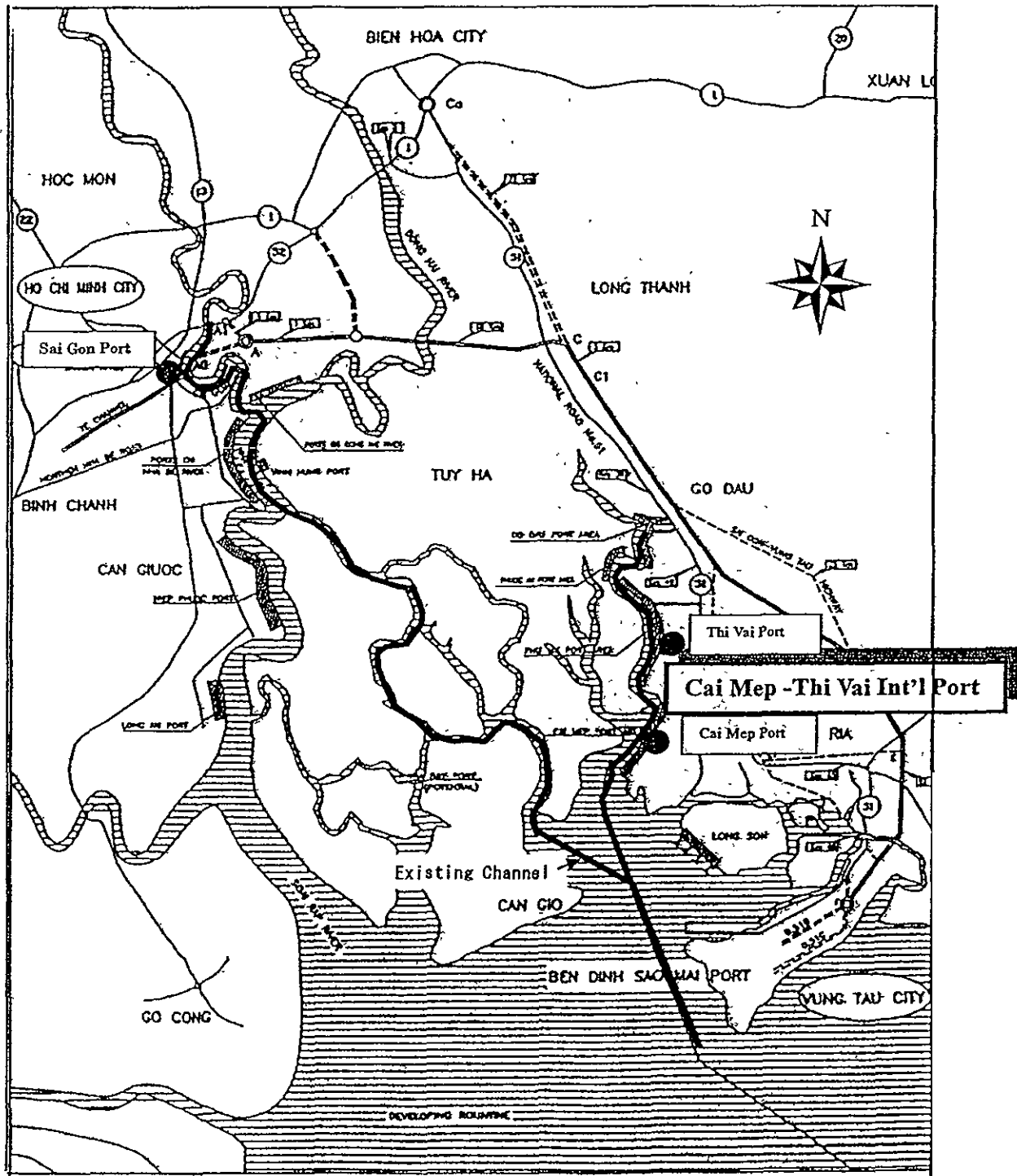


Figure 1 General Location Map of Cai Mep – Thi Vai International Port

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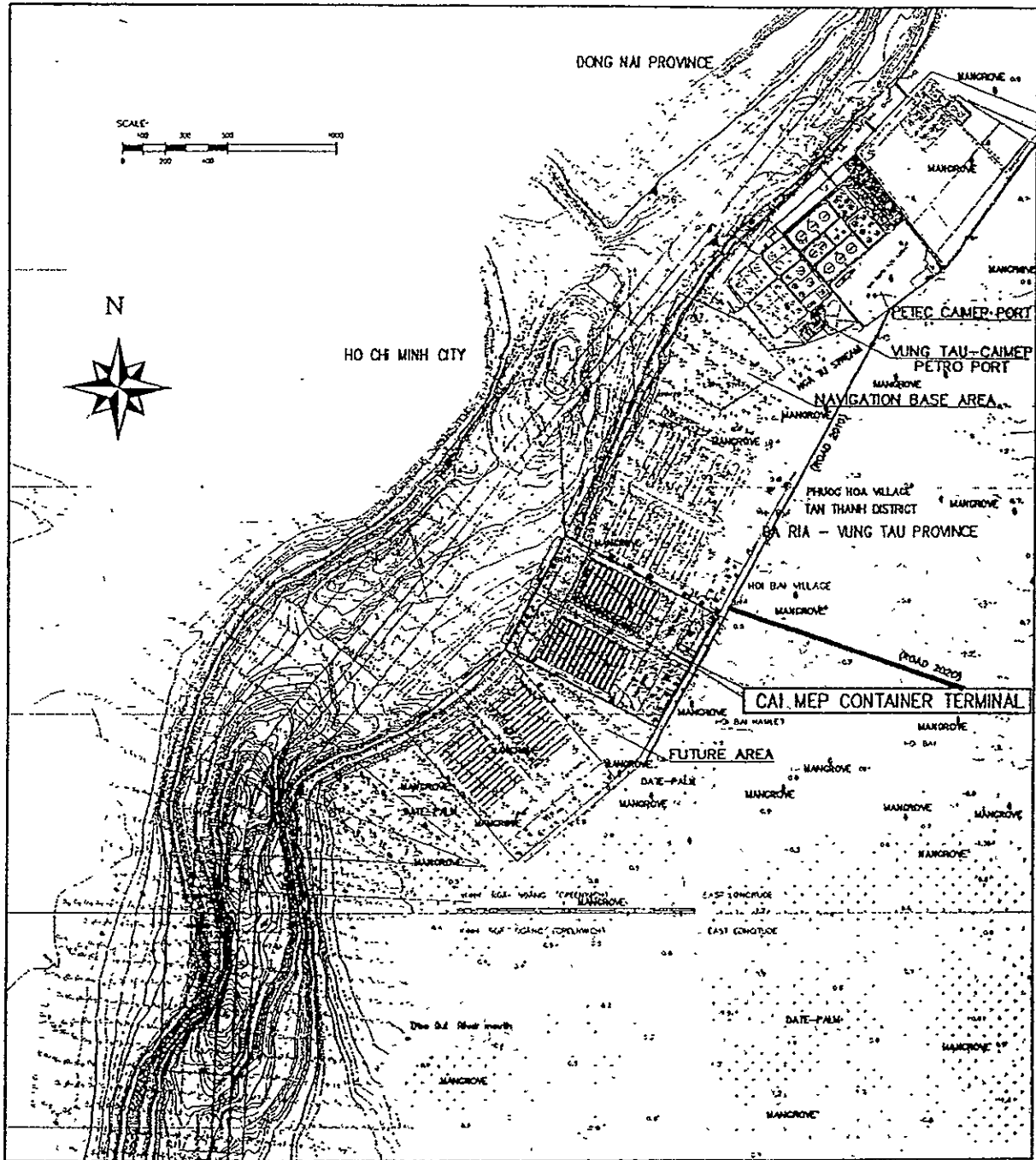


Figure 2. Detailed Location Map of Cai Mep Container Terminal

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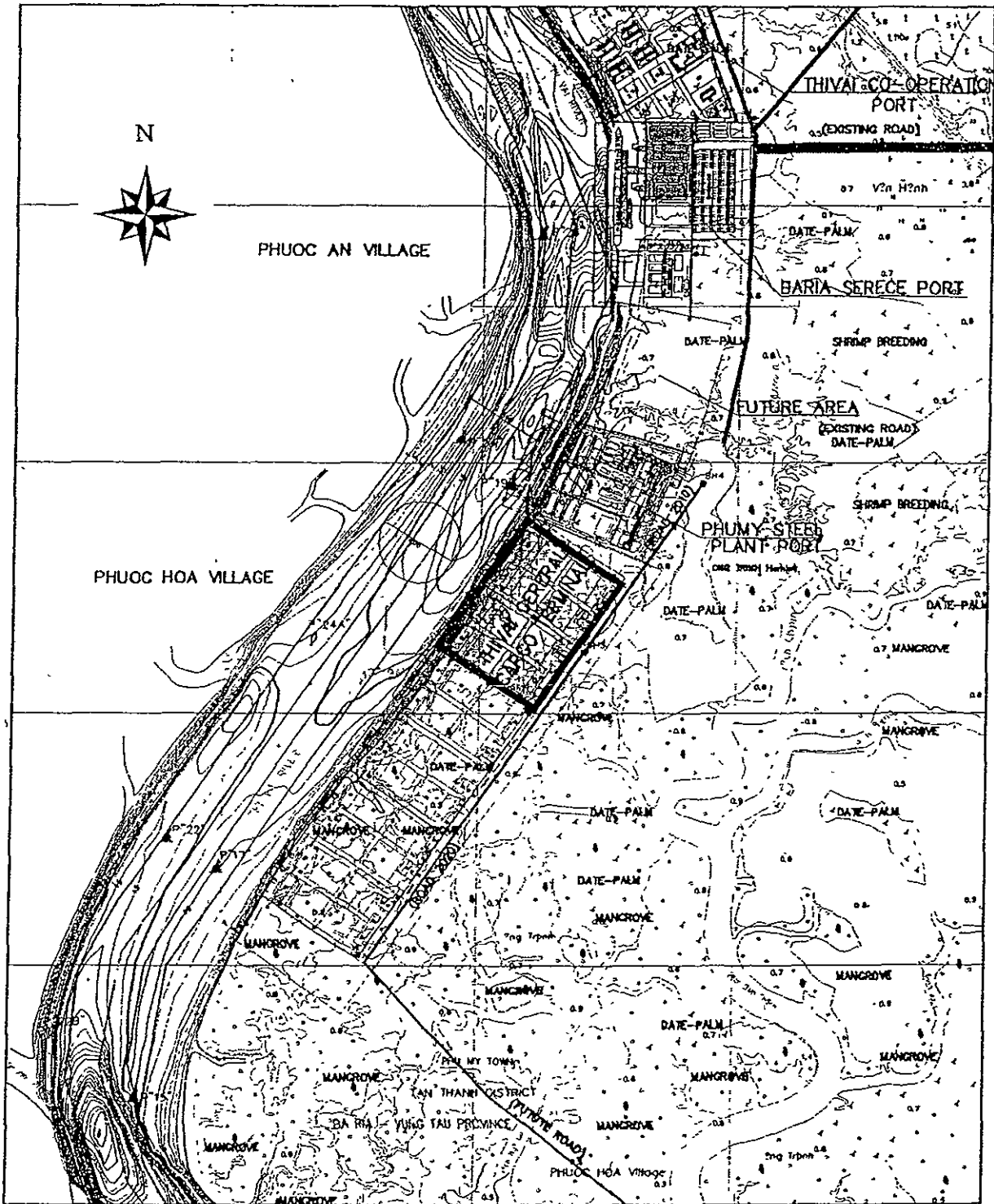


Figure 3. Detailed Location Map of Thi Vai General Cargo Terminal

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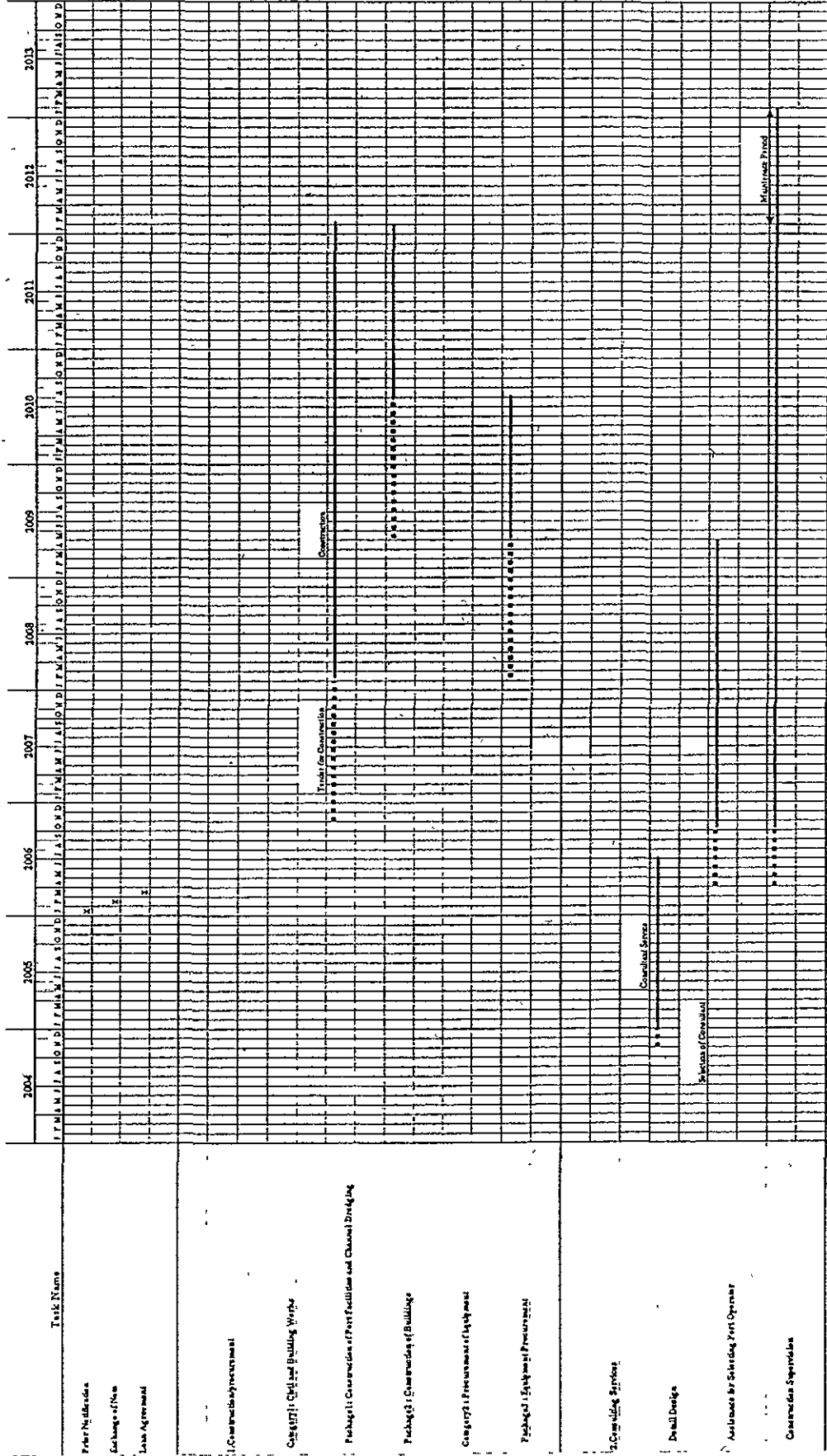
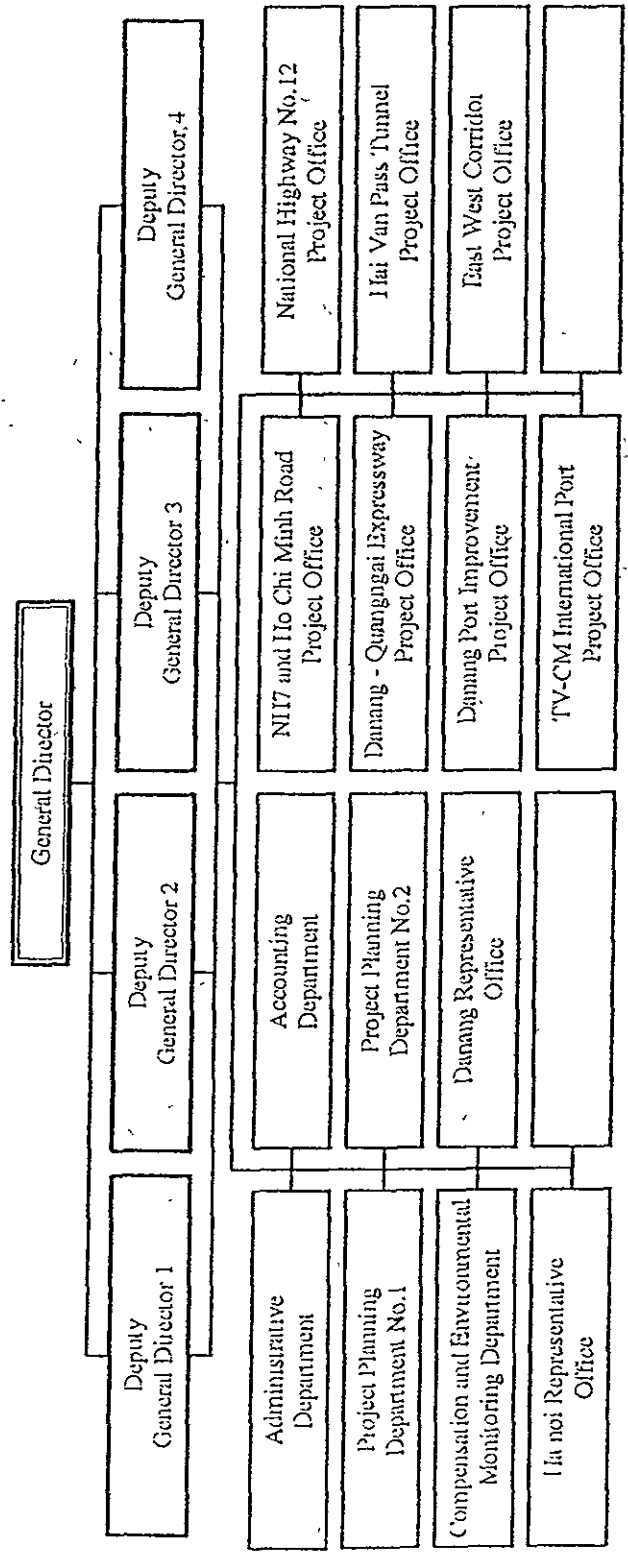


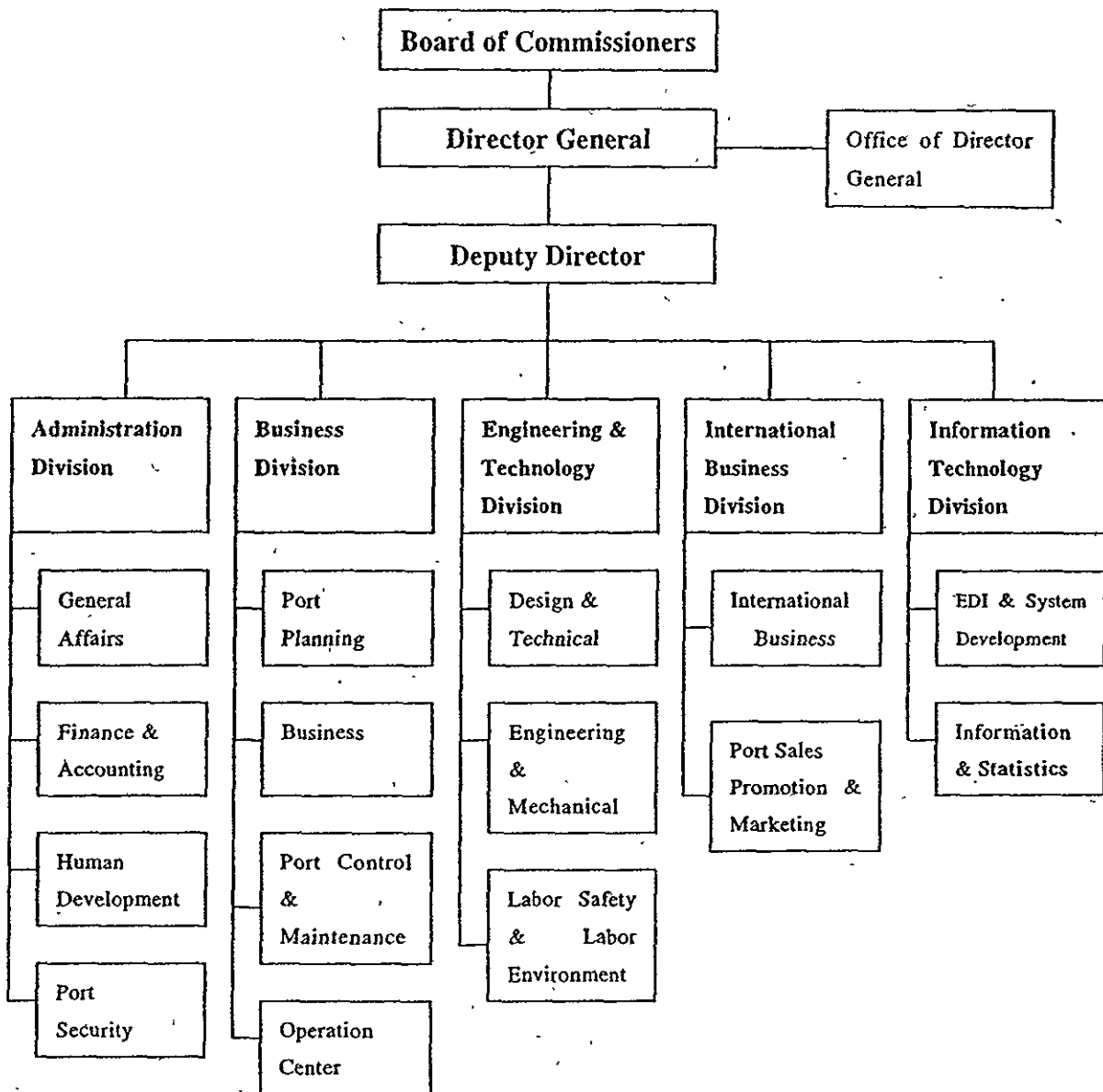
Figure 4 Implementation Schedule of the Project

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ANNEX 3.1 ORGANIZATION CHART OF PMU85



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Appendix X

Operation/Impact Indicators

Indicators	Target value (Target year*1 = 2013)
1. Cargo Throughput	(Container cargo) 0.36mil.TEU/year
	(General cargo) 0.78mil.ton/year
2. Berth Occupancy Ratio	(Container Cargo) 47% (General Cargo) 24%
3. Average Efficiency for Cargo Handling	(Container cargo) 53 TEU/hour/vessel
	(General cargo) 210ton/hour/vessel
4. Gross Tonnage of Calling Vessels at the Cai Mep-Thi Vai Port	(Container Cargo) 12,000,000 DWT/year
	(General Cargo) 2,600,000 DWT/year

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MINISTRY OF NATURAL RESOURCES
AND ENVIRONMENT
Ref. No 171/QĐ-BTNMT

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

Hanoi, date 04 November, 2003.

**DECISION OF MINISTER OF NATURAL RESOURCES & ENVIRONMENT
ON
APPROVAL OF ENVIRONMENT IMPACTS ASSESSMENT REPORT (EIA)
CAI MEP – THI VAI INTERNATIONAL PORT DEVELOPMENT PROJECT.**

MINISTER OF NATURAL RESOURCES & ENVIRONMENT

Pursuant to Article No. 18 of the Environment Protection Law dated December 27, 1993:

Pursuant to Decree No. 175/CP dated October 18, 1994 of the Prime Minister on the implementation of Environment Protection Law:

Pursuant to Decree No. 91/2002/ND-CP dated November 11, 2002 of the Prime Minister on regulation of the functions, responsibilities, authorities and structure organization of the Ministry of Natural Resources and Environment:

Based on the request for appraisal of ENVIRONMENT IMPACTS ASSESSMENT REPORT (EIA) submitted on August 18, 2003 by Maritime Project Management Unit No. 3 (MPMU3) of VINAMARINE;

In accordance with recommendations of the Appraisal Committee for EIA Report of Cai Mep – Thi Vai International Port Development Project at the meeting on October 20, 2003.

DECIDES:

Article 01. Approval for Cai Mep – Thi Vai International Port Development Project EIA Report reviewed and appraised by Appraisal Committee on October 20, 2003 and the contents that were revised and supplemented in accordance with the request by MPMU3 under the letter No. 106/BQL-HH III dated October 23, 2003.

Article 02. MPMU 3 shall be fully responsible for implementation of the contents of EIA Report and the following compulsory requirements:

1. Collection and treatment of dredged material and other solid wastes during construction and operation of the ports securing the sanitary requirement without any pollution to the environment.
2. Construction and installation of the Waste Water Treatment Facilities in order to ensure all the waste water sources during construction and operation of the ports complying with Vietnamese Standard on Environment TCVN 5945-1995 Class B and TCVN 6986 – 2001, column F1, in the correlative with $Q < 50M^3/s$ prior to discharge to Thi Vai river.





3. Application of appropriate construction methods in order not to endanger the Can Gio ecological area.
4. Regular check, close control and treatment of polluted substances caused by operation of the transportation means and machines in-out the ports.
5. Strict compliance with regulations stipulated in Circular No. 2262/TT-MTg of the Ministry of Science, Technology and Environment dated December 29, 1995 on the oil overflow happened in the ports areas and its vicinity in order to minimize the damages to human and environment.
6. The reparation and cleaning of the ships in the ports areas are not allowable.
7. Sufficient allocation of the budget for environmental protection activities and environmental monitoring programs as indicated in the EIA Report. The results of environmental monitoring shall be updated and stored for checking by Authorities concerned.
8. Any changes to the approved EIA Report shall be informed in writing to Environmental Management Organizations and other Authorities concerned for approval prior to implementation of the changes.

Article 03: EIA Report and Compulsory Requirements stipulated in the Article 02 above shall be the basis for Environmental Management Organizations and other Authorities to inspect and control the implementation of environmental protection activities of the Project.

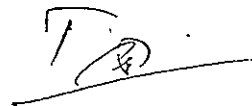
Article 04: Every six (06) months since the validity of this Decision and after completion of all environmental protection activities, MPMU3 shall be responsible for preparation of reports on the implementation of environmental protection activities for checking and direction by Environmental Management Organizations and other Authorities.

Article 05: EIA Appraisal Department in cooperation with National and Local (Ba Ria – Vung Tau) Environmental Management Organizations shall be responsible for inspection and control of the implementation of the environmental protection activities indicated in this EIA Report. Final consideration and certification of the above organizations shall be made for official operation of the Project.

Article 06: This Decision shall be valid from the date of signing.

Cc:
- MPMU 3
- Ba Ria – Vung Tau PC
- DONRE of Ba Ria – Vung Tau
- Files;

**On Behalf of Minister of
Ministry of Natural Resources & Environment
Vice Minister
(signed)
Pham Khoi Nguyen**




Comments to the EIA report dated October 2003

Please supplement and correct the followings, not deleting nor decreasing the information that the current EIA has. Possible environmental impact should be carefully described with objective and scientific analysis. Optimism should be avoided.

General

- 1) There is not sufficient ecological data that should be the basis for the impact evaluation of clearance of mangrove forest of 66 ha. The EIA should include a biological inventory covering mammals, birds, amphibians, reptiles, fish, and plants, based on the sufficient literature/interview/field surveys in/around the project area, and prediction of impact to them and necessary mitigation measures where feasible.
Note :The source of the description and list of mammals, birds, amphibians, reptiles, and fish of the EIA is "Report on ship channel of Thi Vai River Port-System Vol.5" dated July 1996, and the method, date, and location of the survey were not described in the report. It is unclear whether these species exist in the project site or not.
- 2) Alternative study is not included in the EIA study.
- 3) Impact of dumping activities and proposed dumping methods need further examination.
- 4) There is no impact analysis on adjacent mangrove area.
- 5) There need further impact study on fishery activities based on the detailed information of the fishery in Ganh Rai Bay and the port construction site.
- 6) Present condition (Chapter 3), Impact assessment (Chapter 4)" and Mitigation measures(Chapter 5) should be discussed being linked with each other. Impact assessment should be examined quantitatively where possible, based on the present baseline data describing in Chapter 3. Regarding Chapter 5, there is still there is still some unclear points such as how to mitigate impact on mangrove ecology within the port area, adjacent mangrove and impact on fishery activities in construction and operation phase. And as mitigation measures of ship accidents, Vessel Traffic Service should be included. In addition to that, Chapter 5 should provide more concrete information for each mitigation measure will be taken for what impact, where, by whom and when.

Expected format for Chapter 5 is as attached.





Chapter II

- 7) p.7 Please differentiate the scope of the current project and the scope of the future project (2020) in 2.2.1. Please state the scope of the EIA report covers.
- 8) p.7 Please confirm and correct some mistakes in figures regarding the project description such as “600x800m” (p.7), “port length will be 1900m”(p.14), “back fill to 2.0m”(p.77), “5.2m”(p.90).
- 9) p.8 Figure 2-1 is not appropriate to show the project location and boundary of Cai Mep- Thi Vai International Port. Please prepare the map for 2 ports which shows boundary of the current project and boundary of the future project.
- 10) p.9 Please add a map which show the location and geological feature of access roads.
- 11) p.20 Please delete the description of using ground water for the project.

Chapter III

- 12) p.46 Please add Fig. 3-5.
- 13) p.51 Please add Fig 3-10.
- 14) p.43 Please add “except TSP” to “almost pollutants are within the allowable limit”.
- 15) p.48 Please add the note regarding 2 TCVN referred in Table 3-24 (p.48).
- 16) p.53 Please add the Vietnamese standard for drinking water to the Table 3-31.
- 17) p.58 Please add data of the permissible level to Table 3-28(p.57) and Table 3-29.
- 18) p.58 Please add a map which shows the sampling points for sediment in Ganh Rai bay described in Table 3-29(p.58).
- 19) p.59-61 Please add the source for Table 3-32, Table 3-33, Table 3-42 and relative description. Please add the explanation of the location with map, date of the survey, method of the survey in result of which these species are listed. =>The source of these Table (fauna and flora) has not description about the method of survey, date of the survey, and location or scope of the survey. So the additional study will be conducted on these matters.
- 20) p.59-61 Please describe the feature of the ecology of the access road with the list of species.
- 21) p.59 Please add the list of mangrove species.
- 22) p.59 Please add the survey method of mangrove conducted by RDCPSE in May 2000 and July 2001 mentioned in p.59.
- 23) p.58 Please add a map which show the extent of Mangrove including adjacent area such as Can Gio mangrove reserve area.
- 24) p.58 Please describe the feature of mangrove eco-system of Can Gio mangrove area with comparison of the feature of the mangrove of project site.
- 25) p.59 Please add a the map where the birds described in Table 3-32 are observed. In the map, please show the location of Xuyen Moc conservation forest.

- 26) p.59 Please differentiate “rare” and “endangered” of Table 3-32 and add explanation of definition of “rare” and “endangered” using in Vietnam Red Book.
- 27) p. 60 Please add list of species for 29 species of Mammals. The table 3-33 includes only 11 species.
- 28) p.60 Please add the “dolphin” in the specie’s list which is mentioned in Chapter 4 (p.95) if it is observed with information of the observation date and what dolphin it is.
- 29) p.61 1st paragraph of p.61 include non-mammals species. Please describe the feature of mammals species observed in the project area.
- 30) p.61 Please add the list of reptiles and amphibians (25 species) mentioned. Please add information of “rare” and “endangered”.
- 31) p.61 Please add explanation of feature and ecology of each important species such as dominant species, rare and endangered species.
- 32) p.64 Please add a map which shows the sampling point of Table 3-38, 39, 40, and 41. Please add location of dredging area in the same map.
- 33) p.66 Please add the list of 84 fish species.
- 34) p.65 Please add information on the fish fauna in Ganh Rai Bay more specifically than that of mentioned as “south-east sea area”.
- 35) p.68- Please add the result of interview survey conducted July 2003 to section 3.4.
- 36) p.68- Please add the information of the number of the people who live in the project site and add the socio-economic feature of them to section 3.4.
- 37) p.68 Please add the line “others” to Table 3-43 and 3-44.
- 38) p.69 Please assess the project impact on the wells (2,770) in Phuoc Hoa Commune in Chapter 4.
- 39) p.72 Please add the detailed information of the fishery conducted in Ganh Rai Bay and project site. Please describe the measure of fishing and what kind of which they catch.
- 40) p.72 Please add the information of the situation of fishery and aquaculture that people who live in the project site.
- 41) p.74 Please add the forestry information that people in the project site do to (4).

Chapter 4

- 42) The description of Chapter 4 should be linked the related part of Chapter 3.
- 43) The impact analysis of the following issues should be included in Chapter 3.
 - Impact on each species (mammals, amphibians, reptiles, fish, and plants)
 - Impact on adjacent mangrove area causing by the blockage of the water
 - Impact on Can Gio Mangrove Reserve
- 44) Currently Chapter 4 is constituted by:
 - 4.1 Environment Impact in the Pre-Construction Phase
 - 4.2 Project Construction/installation and commissioning phase

- 4.3 Operation phase
- 4.4 Environmental impacts of accidental event
- 4.5 Impacts on socio-economic environment

This is a little confusing. Please give definition of 4.1. (Is this related to the design of the Project?) 4.4 is mainly belongs to operation phase (4.3) and 4.5 should be included each phase(4.1-4.3).

- 45) Impact score of "Beneficial environmental effect" is set as -50, while negative impact has scores of 20, 16, 8, 4, and 2. This is not reasonable nor appropriate. The reason of this rating should be clarified.
- 46) p. 76 Description of 4.1.1 is insufficient. Because loss of mangrove ecology is the biggest impact of the project, it should be discussed and examined more. Please describe the impact of the loss of mangrove referring the current condition described in Chapter 3, taking consideration of the role of mangrove ecology such as habitat for the wildlife, resource for the local people, purification of water, alleviation of climate change, etc.
- 47) p.76 Please make table which shows what area (m²) of the mangrove plantation forest, shrimp ponds, etc are lost for the project.
- 48) p.77 Description of 4.1.3 is insufficient. Please describe impact on the people within the project area into more details. Please describe the followings: Where are they supposed to go? What is the local authority's policy on resettlement? Can they easily change their jobs? To what extent resettlement is affected their life? What is the experience of other projects conducted in the same area?
- 49) p.77 Please add information regarding resettlement policy of Baria-Vung Tau province, especially support for illegal occupants.
- 50) p.78 The purpose of the Table 4-1 is not clear. If it is to summarize the impact during construction phase, the impacts is not caused by only "contaminants". The right column should be changed to "Impact & contaminants" and row for "social environment" is needed. Please add some more information based on Chapter 3. The followings are example.
 - "Increase of the turbidity during dredging and dumping" to Water environment
 - "Soil erosion at the adjacent area of the project site" to soil environment
 - "Soil erosion at the soil/sand exploitation area" to soil environment
 - "Loss of mangrove", "Loss of habitat" at the project site to Biological environment.
 - "Loss of vegetation at the soil/sand exploitation place" to Biological environment.
 - "Impact on the fish fauna through water pollution" to Biological environment
 - "Stop of fishing activities at port area and dredging area" to Social environment.
 - "Impact on fishing activities through the increase of water turbidity" to Social environment
 - "Impact on existing navigation of ships" to social environment
 - "Impact on the local community through the increase of workers" to Social environment

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- Other impact if necessary
- 51)p.79 Please refer the current condition of dust level and estimate the level of dust during construction.
- 52)p.80 "The haulage of a large amount..": Please estimate the amount of construction materials.
- 53)p.80 Emission Exhaust: Please describe the level of air pollutants referring the current condition.
- 54)p.83 Please add a map which shows the location of dredging activities. Please show the location of buoy "0".
- 55)p.84 Please show the source or basis of calculation of dredge volume of Table 4-5. Please note that the figure is a little different from JICA study.
- 56)p.84 Please estimate the water pollution level referring result of JICA study and/or the result of the water monitoring in the similar port project.
- 57)p.88 Please add a map of 3 dumping sites proposed as optimum options.
- 58)p.88 Please refer the soil quality described in Chapter 3 and the assess the chemicals from the dumping soil.
- 59)p.88 Please explain why the dumping site proposed in the JICA study is not appropriate. Note: In the discussion, you explained that, taking consideration of water tide, capacity, and water from Soan Rap River, the dumping location proposed in the JICA study is not good.
- 60)p.88 Please add a chart which shows material flow of construction soil, generated from dredging, excavation, etc based on the Feasibility study.
- 61)p.88 and 89 Please assess the impact on the fish fauna and benthos. Please compare some location options from view point of the impact on the fish fauna and benthos.
- 62)p.88 and 89 Please assess the impact on the fishing activities and aquaculture through water pollution and impact on the fish fauna and benthos.
- 63)p.88 and 89 Please assess the impact on the existing navigation of ships of the dredging and dumping activities.
- 64)p.90 Please check figures mentioned in the 4.2.2.3. For example +5.2m as final level of the Terminal.
- 65)p.91 Access Road Please add a map which shows the location of access road.
- 66)p.91 Access Road "It is planned that about 30% dredged materials from quay site and partly excavation materials will be used for upgrading this road." Please add the source of this plan.
- 67)p.91 Access Road "Certain plant species will thrive along road..." Please specify the plant species.
- 68)p.91 Solid Waste Please add the dredging soil with the volume.
- 69)p.93 There is description of Can Gio Mangrove but this should be described in

Chapter 3 in detail. In this section, the impact analysis on the Can Gio Mangrove should be included in addition to the impact on the mangrove in project site.

- 70)p.93 Please add a map which shows the boundary of Can Gio Mangrove area and extent of mangrove forest.
- 71)p.94 Habitat destruction Please specify habitat for what species referred in Chapter 3. Please assess impact on them one by one especially impact on the "important species" such as rare and endangered species, major species, species used by the local communities, etc taking consideration of the ecological feature of them and the capacity of the adjacent area.
- 72)p.94 Habitat destruction "As small communities will be died..." Please specify the species using "such as ..."
- 73)p.94 Habitat destruction "Bigger animals will migrate.." Please specify the species as bigger animals.
- 74)p. 94 Habitat Not only the size of the animal but also the ability to move should be examined.
- 75)p.95 Please add a map which show the affected area by dredging operation.
- 76)p.95 "all sessile life will be destroyed": Please add specific species. b and a if necessary
- 77)p.95 Please add impact analysis on 1) adjacent mangrove area through blockage of water current, 2) Can Gio Mangrove area through navigation of ships.
- 78)p.96 The purpose of the Table 4-9 is not clear. If it is to summarize the impact during construction phase, the impacts is not caused by only "contaminants". The right column should be changed to "Impact & contaminants" and row for "social environment" is needed. Please add some more information. The followings are example.
- Impact on ground water to water environment
 - Soil erosion through ship navigation to soil environment
 - Impact on adjacent mangrove area through blockage of water current
 - Impact on Can Gio Mangrove through soil erosion
 - Impact on the ship navigation through increase of traffic amount
 - Impact on fishing activities
- 79)p.97 Please analyze the impact on air quality through the increase of the traffic volume of National Highway No.1 and access road to it taking consideration of the current condition of the air quality described in Chapter 3.
- 80)p.98 Please add the source of Table 4-11 and add explanation how you calculate these volume.
- 81)p.98 Please add the definition of the "Inner bar" and "Offshore bar".
- 82)p.98 "Regarding the disposal of dredged material ... exceeding 23m". This seems not coherence with the description of p.88.
- 83)p.98 Please add a map which shows the dumping area "Lat 10°15'N/Lon 107°07'E".

84) p.123 The 5 km access road constructed within the scope of the project is not directly connecting from National Highway No.51. Please describe the start point and end point of the access road.

Chapter 5

85) Please review the list of mitigation measures after revise of impact assessment (Chapter 4).

86) Please describe mitigation measures for major impact described in Chapter 4.

87) Please replace the Table 5-1 to a new table that covers the following items:

- Environmental Impact
- Location where the impact occur such as port construction sites, access roads, NH51, rivers, adjacent area, Can Gio, river mouth, Ghan Rai bay
- Mitigation measures
- Responsibility of the mitigation measures
- Timing when the measures will be conducted
- Budget

88) p.142 Monitoring program should be examined after revision of Chapter 4. Monitoring items should respond to each major impact described in Chapter 4 as much as possible.

89) p.142 Monitoring program should be include the following information:

- Who will conduct actual monitoring activities for each phase
- Who has responsibility of the monitoring
- Report method
- Response mechanism in case of problem is reported


Chapter 6

90) p.152 Conclusion is the very important chapter and the project owner should clearly state that environmental impact and state the commitment for the mitigation measures. Optimism for environmental impact should be carefully avoided.

91) 4)-13) Please summarize the environmental impact and mitigation measures responding to it separating construction and operational phase. These descriptions should be revised based on the revised Chapter 4.

Appendix

Please attach data acquired through the additional environmental study to be conducted December 2003-May 2004.



**Terms of Reference of Additional Environmental Study of Cai Mep-Thi
Vai International Port Development Project**

1. BACKGROUND

To be described in 13 of "Minutes of Discussion" dated November 11, 2003.

2. OBJECTIVES

The objective of the supplemental survey is to provide the work for impact evaluation and mitigation measures with reliable data for satisfactory revision of the EIA. Based on the revised EIA report, JBIC will conduct the Environmental Appraisal of the Project. This will also be basis for preparing Environmental Management Plan during Detailed Design.

3. SCOPE OF WORK AND OUTPUT

3.1 Ecological Survey

3.1.1 Literature Survey

(1) Method

Collect and review all the related reports to the ecosystem in Cai Mep-Thi Vai area. These should include publications/reports by MONRE (MOSTE), DONREs (DOSTEs) of BRVT Province and Dong Nai Province, Ho Chi Minh City (Can Gio District People's Committee), ENTEC, Sub-Institute of Ecology and Biological Resources, Universities and Institutes, VIETSOVPETRO, UNESCO, WWF Indochina Programme Office, and Bird Life International, etc.

(2) Output

- 1) List of the reports used in the literature survey
- 2) Biological inventory: the scientific name, local name, and English name should be listed up for mammals, birds, amphibians, reptiles, fish, and plants with the indication on the degree of threat based on the Red Book of Vietnam. (Format: Attachment 1)

3.1.2 Interview Survey

(1) Interviewee

Local residents, fishermen, workers, researcher, etc. in and around the site and officers of Can Gio Mangrove Biosphere Reserve.

(2) Issues to be surveyed

- Occurrence (existence) of species
- Cultural/economic importance of species
- Response of species to likely impact (clearance of mangrove forest, noise, lighting during night, etc.)

(2) Output

Biological inventory: the scientific name, local name, and English name should be listed up for mammals, birds, amphibians, reptiles, fish, and plants with the indication on the degree of threat based on the Red Book of Vietnam. (Format: Attachment 1)

3.1.3 Field Survey

(1) Investigation Area

The entire Project sites in Cai Mep-Thi Vai area and its adjacent land area.

(A map should be prepared to show the investigation sites.)

(2) Frequency

Twice (once in dry season and rainy season, respectively)

(3) Method

a. Plant

Flora investigation should be done at various spots with different types of environment to prepare a species list and a vegetation type list.

b. Mammals, Amphibians, and Reptiles

Confirm the existence and distribution of species by finding the animals themselves, their footprints, dung, etc. The investigation should be conducted by a mission group that has expertise. Night time investigation should be employed.

c. Birds

Visual observation should be done at various spots (spot observation) with different type of the environment by a skilled mission group.

(4) Output

- Species inventory (Attachment 2, 3, 4)

Note: Revision of EIA

Related part of current version of ELA: 3.3, 4.1.1, 4.2.3 4.3.3, 5.1, 5.2

3.2 Study on Shipping Accident

(1) Investigation Area

River areas in Cai Mep-Thi Vai, and Ganh Rai Bay

(2) Method

Collect records of shipping accident from relevant organizations.

(3) Output

- Prepare tables that show the frequency and location of the accidents. (Attachment 5, 6, 7,)
- Prepare a map showing the locations of all shipping accidents in the tables above. Scale of the map should be 1:500,000.

3.3 Study on Site Selection for Dumping of Dredged Materials

3.3.1 Case Analysis for Dispersion of Turbid Water

Collect examples of the results of the prediction on the turbid water dispersion in and around the Ganh Rai Bay, which are derived from studies by JICA, Belgium.

Estimate the possible turbid water dispersion applying the obtained results to the candidate site for dumping in the Project.

3.3.2 Numerical Simulation of Turbid Water Dispersion

(1) Investigation Area

Ganh Rai Bay and neighboring open waters

(2) Method

Three dimensional model

(3) Output

Map showing the contour of turbid water dispersion, based on the results of numerical

T 10 sk

simulation. The scale of the map should be around 1:200,000. Put contours of SS concentration due to the impact into the map.

3.4.3 Ecological Survey on the Biological Community to Be Affected by the Dumping

(1) Investigation Area

Sea areas including the proposed dumping site and its adjacent area.

(A map should be prepared to show the investigation sites.)

(2) Frequency

Twice (once in dry season and rainy season, respectively)

(3) Method

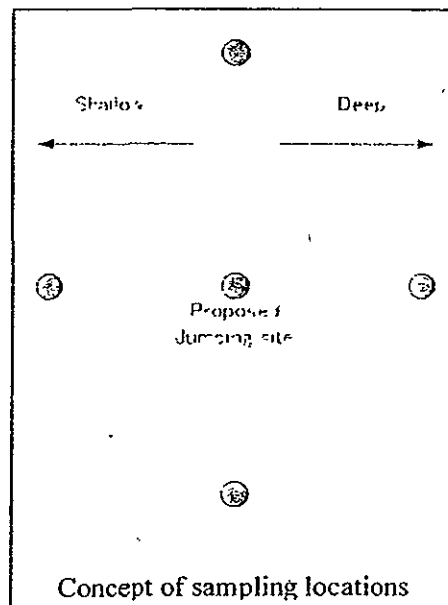
Hire a trawl fishing boat and conduct trawling at some sampling stations using a net employed ordinarily for fishing. Obtained samples will be analyzed to know the species composition of fish and shellfish, and maturity of gonad of each species by stations.

1) Sampling

- Twice (Dry and wet season)
- 5 sampling locations
- Employ a trawl fishing boat at the locality
- Employ a standard trawling method. Use the same net, same towing speed and towing time (30-45min.)

2) Measurement

- Species identification
- Number of individuals of each species
- Standard length, body weight (wet w.), sex, gonad weight. Maximum number of individuals of each species per sampling site is 30 inds.



(4) Output

Table and Graphs (Attachment 8, 9)

Evaluate the abundance of valuable species in the dumping site compared with those in neighboring waters.

Evaluate the dumping site as a spawning ground for valuable species compared with neighboring waters

Note: Revision of EIA

Related part of current version of EIA: 3.3.2, 4.2.2, 4.2.3, 4.5.3, 5.1

3.5 Survey on Fisheries

(3) Investigation Area

- Coastal communes and hamlets of H. Tan Thanh, and T.P. Vung Tau
- River areas in Cai Mep-Thi Vai, and Ganh Rai Bay

(4) Method

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T.A.
D.H.

- Literature survey
- Interviews with local fishermen using format

*Note: The number of the interviewees is desirable around 20% of the total fishermen.

(5) Output

1) Table (Attachment 10, 11)

- Number of fishermen and boats
- Types of fishing method
- Location of fishing ground by fishing method
- Approximate fishery yield per year by fishing method
- Economic damage estimated for fishermen

2) Maps showing the fishing ground by fishing method. The scale of the map should be around 1:500,000.

Note: Revision of EIA

Related part of current version of EIA: 3.4, 4.5, 5.1, 5.2

3.6 Confirmation about the number of resettlement and policy of the related local authorities

(1) Method:

Field survey and interview

(2) Output

- Number of project affected people, legal status of them, with map which shows distribution of them (Attachment 12)
- Resettlement Policy of related local authorities with related legal documents

3.7 Revision of the EIA report

Based on the additional studies and referring the comments made by JBIC mission, the revised EIA report should be prepared.

4. SURVEY SCHEDULE

The survey shall be conducted according to the following schedule:

Month 1: mobilization, literature survey, preparation for field survey

Month 2: literature survey, interviews, data analyses, 1st field survey in dry season

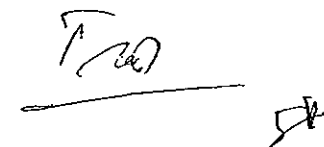
Month 3: literature survey, interviews, data analyses

Month 4: literature survey, interviews, data analyses

Month 5: data analyses, revised EIA report preparation

Month 6: 2nd field survey in rainy season, data analyses

revised EIA report preparation, public hearing meeting



Format for Output of Supplemented Environmental Survey

Ecological Survey
 Literature Survey

Biological Inventory

List up all the species of mammals, birds, amphibians, reptiles, fish and plants that are thought to occur in and around the Project site.

Table Biological Inventory of _____

Order	Family	Species name (Scientific name)	English name	Local name	State in Red Book	Information source	Year of observation	Location of observation	Remarks
					(1)	(2)			(3)

(1) The degree of threat evaluated by Red Book of Vietnam

(2) For reports / literature: author name, title of the thesis / report, publication year and name of journal / publisher.

For unwritten information: for example from interviews, name of resource person, job title (resident, fisherman, worker, officer)
 (3) Additional information, if any.

Interview Survey

To be included in the table above.

T *PK*

Attachment 2

Field Survey

Table Inventory of plants and their likely response to the impact of the Project

Order	Family	Scientific name	English name	Local name	Occurrence in quadrate (5m x 5m)									State in Red Book	Likely response to impact
					Quad. 1			Quad. 2			Quad. 3				
					No.	Height	Diameter	No.	Height	Diameter	No.	Height	Diameter		
					(1)	(2)	(3)								(4)

- (1) Number of trees or abundance of grasses (coverage (%))
- (2) Approximate mean height (m) for trees
- (3) Approximate mean diameter (cm) for trees at the height of 1 m.
- (4) Extinguishing or surviving around the Project site.

Attachment 3

Table Inventory of mammals, reptiles and amphibians, and their likely response to the impact of the Project

Order	Family	Scientific name	English name	Local name	Occurrence at survey line						State in Red Book	Likely response to impact
					Line-1		Line 2		Line 3			
					Abundance	Type of evidence	Abundance	Type of evidence	Abundance	Type of evidence		
					(1)	(2), A, F, D,....						(3)

(1) No. of individuals / 100 m of survey line estimated from observing animals themselves, footprints, dung, etc.

(2) A: Observation of animal itself

B: Footprint

D: Dung

Add necessary type of evidence, if any

(3) Extinct, escaping elsewhere, or surviving around the Project site

Table Inventory of birds and their likely response to the impact of the Project

Order	Family	Scientific name	English name	Local name	No. of individuals			State in Red Book	Likely response to impact
					Spot 1	Spot 2	Spot 3		
					(1)			(2)	

(1) No. of individuals counted per 1 hour of observation

(2) Extinguishing, escaping elsewhere, or surviving around the Project site

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Study on Shipping Accident

Attachment 5

Tabulate the number of shipping accident in rivers and marine areas of Ba Ria-Vung Tau Province based on data from relevant organizations

Table Shipping accident by causal factor in Ba Ria-Vung Tau Province

Accident due to (1)	Year	Number of cases				Dead	Injured
		Total	Serious	Heavy	Light		
Total	1998		(2)	(2)	(2)		
	1999						
	2000						
	2001						
	2002						
Navigators	1998						
	1999						
	2000						
	2001						
	2002						
Technical deficiency	1998						
	1999						
	2000						
	2001						
	2002						
Channel	1998						
	1999						
	2000						
	2001						
	2002						
Abnormal weather	1998						
	1999						
	2000						
	2001						
	2002						

(1) Follow the definition of Vietnamese national statistics on marine accidents for categorization

(2) Follow the definition of Vietnamese national statistics on marine accidents for classification

Table .Shipping accidents of local and foreign vessels in Ba Ria-Vung Tau Province water area

Accident of	Year	Number of cases			Dead	Injured
		Total	Serious	Heavy		
Total	1998					
	1999					
	2000					
	2001					
	2002					
Local vessel	1998					
	1999					
	2000					
	2001					
	2002					
Foreign vessel	1998					
	1999					
	2000					
	2001					
	2002					

Type of shipping accident in Ba Ria-Vung Tau Province water area

	Year	Number of cases				Dead	Injured
		Total	Serious	Heavy	Light		
Total	1998						
	1999						
	2000						
	2001						
	2002						
Collision	1998						
	1999						
	2000						
	2001						
	2002						
Fender-bender	1998						
	1999						
	2000						
	2001						
	2002						
Grounding, hidden rocks	1998						
	1999						
	2000						
	2001						
	2002						
Pierced hull	1998						
	1999						
	2000						
	2001						
	2002						
Fire	1998						
	1999						
	2000						
	2001						
	2002						

Site Selection for Dumping
 Ecological Survey

Attachment 8

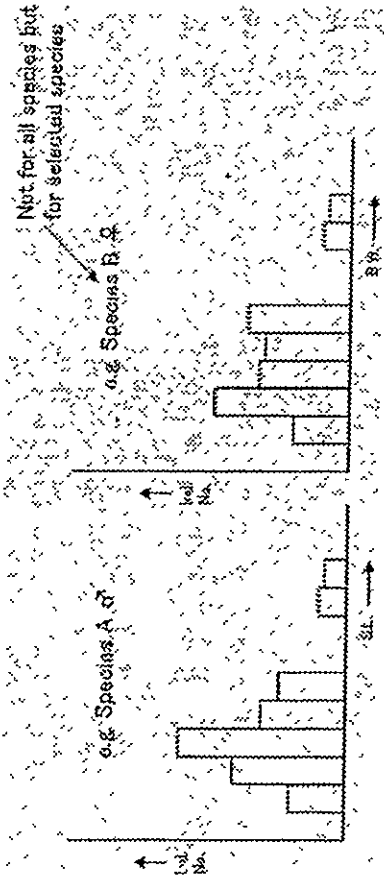
1) St. _____ in wet season

Species	Ind. No.	S.L.	B.W.	Sex	G.W.	G.I.
Species A	1					
	2					
	3					
	.					
	.					
	.					
	30					
(Total ind. No. caught: _____)						
Species B	1					
	2					
	3					
	.					
	.					
	.					
	30					
(Total ind. No. caught: _____)						

*Same Table for dry season

Attachment 9

Histograms for Selected Species (Example)



*The same histogram which shows Individual number and Gonad Index, should be prepared.

Note: Gonad Index (GI)

$$GI = G.W. / (S.L.)^3$$

where, G.W.: Gonad weight (g),

S. L.: Standard length (cm)

T.P.

SH

Result of the interview with local fishermen
 Survey on Fisheries

Result of the interview with local fishermen

Date: _____

Place: _____

Interviewer: _____

Interviewee: _____

Name, _____
 Address (Name of Commune & Hamlet), _____

Type of Fishery: _____

Please show a map which shows the project area and Ghan Rai Bay and let the interviewee show the approximate area of fishing activities.

Location of fishing boats	No. of boats	No. of set nets	Approx. Yield per fisherman per yr. (VND)	Other income if any	Application for existing support from PPC such as loans	Estimated number of fishermen of this type of fishery in your locality	Estimated number of boats employed for this type of fishery in your locality	Remarks

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Attachment 11

Table by type of fishing method

Type of fishing method	No. of fishermen	No. of boats	Approx. Yield per fisherman per yr. (VND)	Likely response to the impact	Estimated economic loss due to the Project (VND/fisherman/yr.)	Application for existing support from PPC such as loans
Trawling (1)				(2) A, B or C		
Gill net (1)						
Set net (1)						

(1) Photographs or illustrations for every fishing gear should be attached to the report.

(2) A: Extinguishing, B: Moving elsewhere, C: Remaining

Attachment 12

Resettlement

Tabulate the information on all Project-Affected-People by household.

Household no.	Name of Commune	Name of Hamlet	Asset to be affected (1)	No. of family member			Occupation	Income	Legal status	Remarks
1										
2										
3										
4										
.										
.										
20										

(1) What is affected by the project, land or house

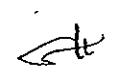
(2) With or without the land-use right.

Prepare a map showing the location of all households above. The scale of the map should be around 1:10,000.

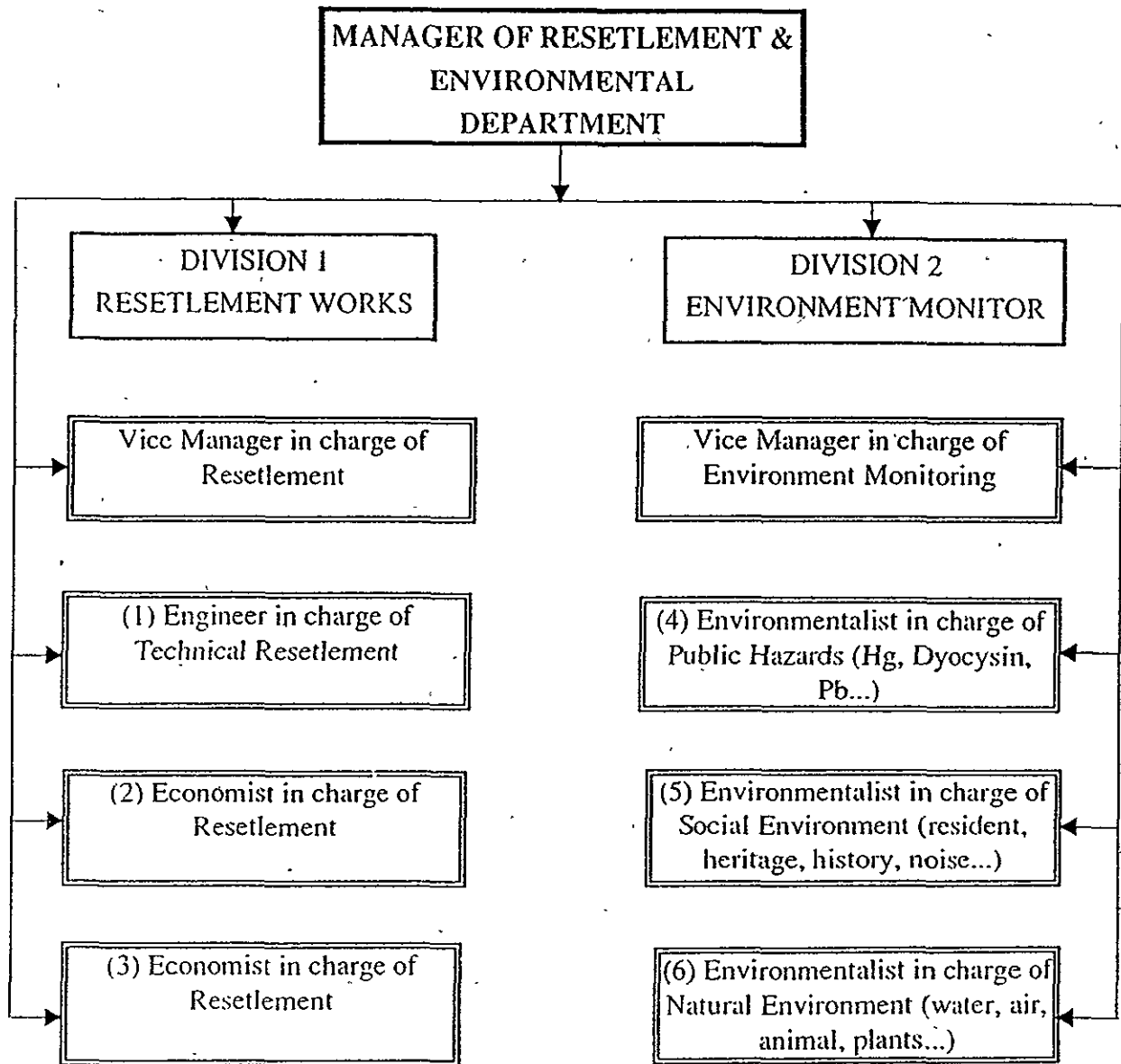
Appendix XIV

Schedule for Revised EIA Report

Actions	Responsibilities	Schedule
Contract with Consultant	PMU85	November 30
Conducting literature surveys	Consultant under PMU85	From December 2003 To May 2004
Conducting field survey (dry season, rainy season)		
Conducting interview survey		
Compiling report		
Public hearing	PMU85 and Consultant with cooperation with local authorities	May 2004
Reviewing the report	PMU85	May 2004
Submission of the report	PMU85	June 2004

TED 

ORGANIZATION CHART OF RESETTLEMENT AND ENVIRONMENTAL DEPARTMENT



Notes: The tasks of each position shall be as follow:

- For Manager of the Department
 - + To manage general resettlement works and environment monitoring
 - + To discuss with projects managers, consultant and contractors to summarize resettlement and environment reports for submission to General Director Board of PMU
- For Vice Manager of the Department
 - + To assist Manager to deal with assigned works
 - + To manage Division in charge
- For Engineer (1)
 - To monitor and settle issues relating to Resettlement and Compensation of Projects
- For Economist (2) & (3)
 - To monitor and settle issues relating to current regulations, policies, pricing and compensation program
- For Environmentalist (4), (5) and (6)
 - To be in charge of each environmental subjects including Society, Nature and Public Hazard.

OUTLINES OF ENVIRONMENTAL MANAGEMENT PLAN FOR CAI MEP-THI VAI INTERNATIONAL PORT DEVELOPMENT PROJECT (Draft)

1. Introduction
2. Project Description
3. Summary of the current condition of the environment (baseline data)
 - 3.1 Physical Environment
 - 3.2 Biological Environment
 - 3.3 Socioeconomic Environment

*This part is based on the final EIA and supplemented by the environmental baseline data collection conducted in the additional environmental study and in the 1st stage study of Detailed Design.

4. Summary of the Impact

- 4.1 Construction Phase
- 4.2 Operational Phase

*This part is based on the final EIA..

5. Environmental Mitigation Measures

*This section should set out clear and achievable targets, and quantitative indicators of the level of mitigation required. Each measure should be briefly described in relation to the impact and conditions under which it is required. These should be referred to designs, development activities, equipment descriptions, and operating procedures and implementation responsibilities. All mitigation measures recommended in the JICA study and EIA, comments and requirements from MONRE should be carefully examined and incorporated into this section.

6. Environmental Monitoring Plan

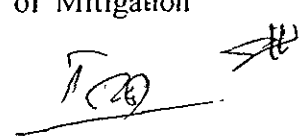
- 6.1 Monitoring Plan in the Construction Phase
- 6.2 Monitoring Plan in the Operational Phase

*Monitoring items, monitoring measures, expected frequency, monitoring executing agencies, feedback mechanism, responsible agency who response to the result of monitoring should be clarified in order to secure adaptive management.

7. Environmental awareness promotion, education and training programs

*Environmental awareness promotions, education and training programs for construction workers and supervise and operational staff will be included.

8. Description of the Responsibilities and Authorities for Implementation of Mitigation Measures and Monitoring Requirements



*This section should specify the institutional arrangements for implementation – taking account of the local conditions. Responsibilities for mitigation and monitoring shall be defined along with arrangements for information flow, and for coordination between agencies responsible for mitigation. EMP specifies the organizations and individuals that will be responsible for undertaking the mitigating and monitoring measures, e.g., for enforcement of remedial actions, monitoring, training, and financing. The EMP may propose institutional strengthening activities including establishment of appropriate organization arrangements, appointment of key staff and consultants; and arrangements for counterpart funding and only ending when necessary.

9. Work Plan

*This section should specify staffing chart for the environmental management section established within the Project Management Unit, and other related work, proposed schedules of participation by the project team members, and activities and inputs of related government agencies. The responsibilities and requirements of contractors should be clearly addressed to ensure integration into legal requirements and bidding/contract documents—EMP requirements should be integrated into such documents to ensure that contractors are clear with their obligations—where supervision identifies inadequacies in their implementation such documents provide a basis for enforcement and reporting. Implementation of major environmental covenants should be linked to disbursement conditions.

10. Cost Estimates


*This section provides the costs of implementation of EMP. These should be specified for both the initial and recurring expenses for implementing all measures defined in the EMP, integrated into the total project costs and factored into loan negotiations. All costs—including administrative design and consultancy, and operational and maintenance costs—resulting from meeting required standards or modifying project design should be captured. A budgeting plan should be attached to resolve the issues of how those costs are to be met.

11. Mechanisms for feedback and adjustment

The section should outline the procedures and mechanisms that will be used to modify and reshape the project in the light of monitoring results. A feedback mechanism, with proposed timing and procedures, should be included in the EMP to provide for modifications to the Project, and the executing agencies.

12. Consideration for preparing the Detailed Design and Tender Documents

The section should extract the elements of EMP that should be reflected to the Detailed Design and Tender Documents which is prepared to the 2nd study stage.

120 

Environmental Checklist of Cai Mep-Thi Vai International Port Development Project¹

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	1) Have EIA reports been officially completed? 2) Have EIA reports been approved by authorities of the host country's government? 3) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? 4) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	1) The EIA has officially completed in October 2003 and submitted to the MONRE. 2) EIA have approved by MONRE November 4 2003. 3) The followings are main requirements made by MONRE: - Collection and treatment of dredged material and other solid wastes during construction and operation of ports securing the sanitary requirement without any pollution to the environment - Construction and installation of the Waste Water Treatment Facilities - Application of appropriate construction methods in order not to endanger the Can Gio ecological area, etc. 4) Dumping location will require the permissions from Ba Ria-Vung Tau Provincial People's Committee. The Project owner should obtain an environmental permit after the environmental compliance monitoring of 2 times a year in the operation phase, which is valid for the following 5 years. A certificate concerning fire-fighting facilities should be secured from Police of BR-VT PC after completion of the construction.
	(2) Explanation to the Public	1) Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public? 2) Are proper responses made to comments from the public and regulatory authorities?	1) A public hearing meeting was held by VINAMARINE in July 2003 to explain the Project to local authorities and residents. 2) No objections arose from the local residents against the Project. PMU85 will respond to reasonable comments from the public and regulatory authorities.

¹ This Environmental Checklist is mainly made from the information acquired in the JBIC Fact Finding Mission and Appraisal Mission. This will be supplemented based on the revised EIA.

Appendix XVII

<p>2 Mitigation Measures</p>	<p>(1) Air Quality</p>	<p>1) Do air pollutants, such as sulfur oxides (SO_x), nitrogen oxides (NO_x), and soot and dust emitted from various sources, such as ships, vehicles, and the ancillary facilities comply with the country's emission standards and ambient air quality standards?</p>	<p>1) Concentrations of pollutants, such as sulfur oxides (SO_x) and nitrogen oxides (NO_x) emitted from various sources, such as ships, vehicles, and the ancillary facilities will comply with the TCYN 5937/1995 (ambient air quality standards) but dust concentration will exceed the ambient standard value as same as the present situation. In Vietnamese common practice, the level of the concentration is required not to increase due to the implementation of the project, when the existing background level exceeds the environmental standard values.</p>
	<p>(2) Water Quality</p>	<p>1) Do general effluents from the related facilities comply with the country's effluent standards and ambient water quality standards? 2) Do effluents from ships and ancillary facilities (e.g., dock) comply with the country's effluent standards and ambient water quality standards? 3) Are adequate measures taken to prevent spills and discharges of materials, such as oils and hazardous materials to the surrounding water areas? 4) Is there a possibility that oceanographic changes, such as alteration of ocean currents, and reduction in seawater exchange rates (deterioration of seawater circulation) due to modification of water areas, such as shoreline modifications, reduction in water areas, and creation of new water areas will cause changes in water temperature and water quality?</p>	<p>1) Yes. General effluents from the related facilities will be treated with a treatment facility in the port area to comply with the TCYN 5945/1995 and 6984/2001 (effluent quality standards). 2) Yes. Effluents from ships and ancillary facilities are led to a reception facility in the port area to be treated with activated sludge method to comply with the effluent quality standards. 3) Yes. Belt zones, drain pipes, and drainage are installed to prevent spills and discharges of materials, such as oils and hazardous materials to the surrounding water areas. Floating skimmer, oil fence will be installed. 4) There is little possibility that changes occur in current flow and water exchange rates due to the port construction because of the alignment of shoreline.</p>

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	<p>5) In the case of the projects including land reclamation, are adequate measures taken to prevent contamination of surface water, seawater, and groundwater by leachates from the reclamation areas?</p>	<p>5) Yes. In addition to the regular water quality monitoring survey, prior to the soil dumping, the revetments which can keep dumping soils in the area to be reclaimed will be constructed. Uncontaminated soil will be used for the material will be used for the material of reclamation. Groundwater quality at present exceeds the criteria TCVN 5944/1995 in pH, and coliform number. Aluminum and salinity also show significantly high values. But local residents do not rely on the groundwater for domestic water use (they use rainwater and/or drinking water distributed by car). A landfill site in Phuoc-Hoa is used for dumping of non-hazardous solid wastes. The landfill of hazardous materials will be done based on a contract with a specific facility, e.g. Song Xanh Co., that has already been approved for such an operation.</p>
	<p>1) Are wastes from ships and the related facilities properly treated and disposed of in accordance with the country's standards? 2) Is offshore dumping of dredged materials and soils properly performed in accordance with the country's standards to prevent impacts on the surrounding waters? 3) Are adequate measures taken to prevent discharge or dumping of hazardous materials to the surrounding water areas?</p>	<p>1) Wastes from ships and the related facilities will be received at land-based reception facility to be treated and disposed of. Non-hazardous wastes will be transferred to the landfill site in Phuoc Hoa District or others in Ba Ria - Vung Tau Province. Hazardous materials will be transported to a specific facility for such materials in Phuoc Hoa. 2) The final location of the dumping site has not been decided yet. the followings are the candidates. - Dumping site proposed in the JICA study (5km offshore) - Dumping site proposed in the EIA report (15-20km offshore) During the dumping operation, water quality monitoring survey will be conducted to regulate the dumping operation. 3) Hazardous materials are collected in labeled container, then taken to the specific facility for such materials.</p>
<p>2 Mitigation Measures</p>	<p>(4) Noise and Vibration</p>	<p>1) Past examples suggest that the future noise and vibrations will meet the Vietnamese standards.</p>

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Appendix XVII

	(5) Odor	<p>1) Are there any odor sources? Are adequate odor control measures taken?</p>	<p>1) Yes. Considerably high concentration of hydrogen sulphide in the air is reported. The likely cause is anaerobic decomposition of organic matter in the water. The field reconnaissance detected no odor in the project site. The project will reduce the source of hydrogen sulphide due to the decrease of the anaerobic water area, such as the eutrophicated wetlands and ponds, through the conversion into the land area.</p>
	(6) Sediment	<p>1) Are adequate measures taken to prevent contamination of sediments by discharges or dumping of materials, such as hazardous materials from ships and the related facilities?</p>	<p>1) Yes. Hazardous materials from ships and the related facilities will be received in the reception facility in the port and not expected to cause the contamination of sediments.</p>
<p>3 Natural Environment</p>	<p>(1) Protected Areas</p>	<p>1) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?</p>	<p>1) The project sites face Can Gio Mangrove Biosphere Reserve (Decision No. 8413/QN-UB, Dec. 2001) over the river. It has the total area of 75,740 ha including 4,721 ha of core zone and 41,139 ha of buffer zone. Accidents may directly affect the Reserve. On the other hand, the new port will provide the opportunity of visual monitoring on mangrove.</p>

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	<p>1) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)?</p> <p>2) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions?</p>	<p>1) The port area locates in mangrove forests. The mangrove forest is a secondary forest of 7 - 10 years old with average height of 3 m, maximum height of 6 m, average tree diameter of 3 - 4 cm, average density of 1.17 trees/sq.meter, and coverage of 85 %. A total of 772,200 trees are expected to be cut down in the area of 66 ha which corresponds to 5.5 % of the total mangrove area in Phuoc Hoa district.</p>
<p>(2) Ecosystem</p>	<p>3) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?</p> <p>4) Is there a possibility that the project will adversely affect aquatic organisms? If significant impacts are anticipated, are adequate protection measures taken to reduce the impacts on aquatic organisms?</p> <p>5) Is there a possibility that the project will adversely affect vegetation and wildlife of coastal zones? If significant impacts are anticipated, are adequate measures taken to reduce the impacts on vegetation and wildlife?</p>	<p>2) In the EIA, there are several endangered species and vulnerable species. However, according to the limited information that JBIC could acquire during fact finding mission and appraisal mission, there is no evidence to indicate the inhibition of endangered species designated in Red Book in Vietnam in the project site at present, though there are some rare species particularly in Can Gio Mangrove Biosphere Reserve.</p> <p>3) Reforestation will be done with mangrove based on the plan prepared by PMU Forest Conservation of BR-VT Province. PMU85 will assist its implementation through the compensation for mangrove.</p> <p>4) Effluents from ships and land-based facilities are received in the reception facility and treated before the discharge to prevent adverse effects on the aquatic ecosystem.</p> <p>5) According to EIA, the project will compensate the mangrove to be cut down (540 million VND), and assist the mangrove plantation program. There is a possibility that some wildlife species reduce their population according to the reduction of mangrove forest.</p>
<p>(3) Hydrology</p>	<p>1) Is there a possibility that installation of port and harbor facilities will cause oceanographic changes? Is there a possibility that installation of the facilities will adversely affect oceanographic conditions, such as induced currents, waves, and tidal currents?</p>	<p>1) There is little possibility that changes occur in current flow and water exchange rates due to the port construction because of the alignment of shoreline and piled structure of berths.</p>

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	(4) Topography and Geology	<p>1) Is there a possibility that installation of port and harbor facilities will cause a large-scale alteration of topographic and geologic features in the surrounding areas or elimination of natural beaches?</p>	<p>1) The secondary mangrove forest of 66 ha will be removed to prepare the port area. An access road of 5 km long will be widened to have 6 lanes. Riverbank mangroves are replaced with concrete wall. The Project, however, cause no large-scale alteration of topographic and geologic features.</p>
<p>+ Social Environment</p>	(1) Resettlement	<p>1) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? 2) Is adequate explanation on relocation and compensation given to affected persons prior to resettlement? 3) Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? 4) Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? 5) Are agreements with the affected persons obtained prior to resettlement? 6) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? 7) Is a plan developed to monitor the impacts of resettlement?</p>	<p>1) There are 20 households in Thi Vai and Cai Mep sites respectively, which are to be relocated. They include residents without permit. The exact number is still unknown and is being investigated. All residents are supposed to be aware of the necessity to relocate following the national rules i.e. Decree 22/1998/ND-CP, Circular 145/1998/TT-BTC, and Decision 592/OD-GTVT. 2) An explanation on relocation of aquacultural ponds and other existing facilities and compensation was given to Project-Affected People (PAP) in Tan Thanh District. Compensation will be made just before the commencement of the construction work. 3) A Resettlement Plan will be developed by Provincial People's Committee (PPC) and PMU85 jointly. Compensation fee will be calculated by Compensation Committee under the PPC. 4) There is no particular vulnerable groups or persons in the project area. 5) PAP will accept the compensation for resettlement. Limited interviews by JBIC mission members show that they seem to agree to move elsewhere. 6) An organizational framework has been established by the central government involving the PPC to implement resettlement. PPC will prepare the resettlement plan with PMU85 that pays the compensation. 7) Environmental monitoring will be done including the social environmental parameters. Monitoring on the quality of life of relocated people may be done, if required.</p>

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<p>1) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? 2) Is there a possibility that changes in water uses (including fisheries and recreational uses) in the surrounding areas due to project will adversely affect the livelihoods of inhabitants? 3) Is there a possibility that port and harbor facilities will adversely affect the existing water traffic and road traffic in the surrounding areas? 4) Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are considerations given to public health, if necessary?</p>	<p>1) In a short-range view, income of the local people will increase, because the priority in the employment of the port construction workers is given to local residents. In a long-range view, reduction of agricultural labors may occur, though no mitigation measures is proposed. The People's Committee of Phuoc Hoa Commune is willing to have a policy of long-term training plan for local young workforce. 2) There a possibility that increased ship navigation obstructs fishery operations, though the fisheries are not active in the project area. 3) Traffic in Route 51 may suffer from the increased cargo-transportation activity. Mitigation measures will be necessary, such as installation of traffic signs and traffic guidance by policemen. 4) Camps, will be prepared for alien workers to isolate them from the local residents. Infrastructure such as portable toilet will be installed together with the treatment plans for wastes and effluents. The camps will provide first aid and medical facilities to employee, which will be used for residents in emergency cases.</p>
<p>(3) Heritage</p>	<p>1) No archeological, historical, cultural, and religious heritage sites is reported.</p>
<p>(4) Landscape</p>	<p>1) No adverse effect is expected.</p>
<p>(5) Ethnic Minorities and Indigenous Peoples</p>	<p>1) No ethnic minorities and indigenous people exists.</p>

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<p>1) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>2) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>3) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p> <p>4) If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?</p>	<p>1) At present, dust exceeds the ambient air quality standard value. No predicted value is reported for the dust concentration during construction. Proposed countermeasures include repairment of road, water-spraying to trucks, application of cover on the material transported. No adverse effect of gas and noise emission is expected because the surrounding area is the mangrove forest and categorized as the industrial zone. When noise level exceeds the criteria, more strict application of speed limit and maintenance of vehicles and construction machines will be introduced. Drainage system will contribute to reduce the turbidity and consequently the impact on the aquatic ecosystem.</p> <p>2) Measures against generation of dust, noise, vibration, turbid water, and harmful wastes are proposed to minimize the impact on the natural environment (ecosystem). Mangrove replantation plan will be developed by the Department of Agriculture and Rural Development of Ba Ria-Vung Tau Province.</p> <p>3) Camps will be prepared for alien workers to isolate them from the local residents.</p> <p>4) First aid and medical facilities will be provided to employees. Proper explanation will also be provided to workers.</p>
<p>5 Others</p>	<p>1) In-plant monitoring on noise and effluents during the operation phase and ambient environmental monitoring on noise, effluents, river sediment, plankton, benthos, terrestrial vegetation, and socio-environmental situation through pre-construction phase to operation phase are planned. In addition, necessary parameters will be involved in the monitoring plan considering comments from the public.</p> <p>2) Involvement of comments from the public and other relevant organizations will realize the appropriate monitoring methodology. Proper methods for the field measurement on chemical parameters have been described in a circular by MOSTE..</p> <p>3) The monitoring activity involve many governmental organizations to conduct adequate monitoring.</p> <p>4) MOSTE Circular mentioned in 2) above stipulates that the monitoring should be conducted 2 times a year and the result should be reported once a year to DONRE of the province.</p>

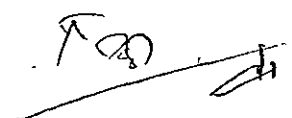
Appendix XVII

<p>6 Note</p>	<p>Note on Using Environmental Checklist</p>	<p>1) Where necessary, impacts on groundwater hydrology (groundwater level drawdown and salinization) that may be caused by alteration of topography, such as land reclamation and canal excavation should be considered, and impacts, such as land subsidence that may be caused by groundwater uses should be considered. If significant impacts are anticipated, adequate mitigation measures should be taken. 2) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, and global warming).</p>	<p>1) The impact on the groundwater hydrology will not be significant. 2) Not applicable. Special attention: Preventive measures from shipping accidents Statistic data shows the occurrence of shipping accident of very high frequency in the Vung Tau water area (19 events in the recent 10 years including 6 events that have caused the significant volume of oil spill). Once a big accident happens, it may cause a terrible adverse effects on the surrounding area. Thorough provision, such as Vessel Traffic Service (VTS) must be introduced to prevent such a tragedy.</p>
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TCB

SCHEDULE OF RESETTLEMENT WORKS

Work Description	Schedule (From month/year – to month/year)	Responsible Agencies /Related Agencies
Initial survey to prepare plans for resettlement	August, 2004	PC of BR-VT and PMU85.
Establishment of Compensation Committees	April, 2005	PC of BR-VT
Formal Notification of the Project to to the Project Affected People (PAPs)	July, 2005	Ditto
Demarcation of Right of Way	-	-
Consultation with PAPs	July to August, 2005	Ditto
Preparing the Resettlement Area Plan	July to August, 2005	Ditto
Construction of Resettlement Area	-	-
Detailed Measurement Survey of each households of PAPs	April to May, 2005	Ditto
Decision of Compensation rate	September, 2005	Ditto
Payment of Compensation	September, 2005	Ditto
Physical resettlement	October, 2005	Ditto



Summarize the result of the Interview survey in July 2003

The Interview survey conducted from 11-13 July 2003 by team survey of IHM. The places of interview survey are Phu My and Phuoc Hoa commune, where project will building.

The content of interviewing following:

1. In the area project have any historical monument, archaeological, graves?

Yes No

2. If yes, please to show:

The name of historical monument: The numbers of graves:

The impact of the project on tourism, belief:

many few

3. Flora in area

- Plant

Crop plant Technical crop Fruit-tree

- Forest

Artificial forest Natural forest

- Rare plant

Timber Medicinal plant other plant

4. Fauna in area

Animal species endemic

5. Aquaculture

Yes No

6. The impact of the project on ecosystem

- Terrestrial ecosystem

Bird animal forest tree crop plant

- Aquatic ecosystem

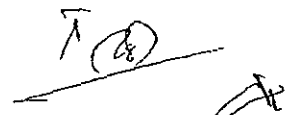
Shrimp fish Aquaculture

7. Opinion on project

agree

do not agree

other idea



The number of people were interview: 18

The list interviewed:

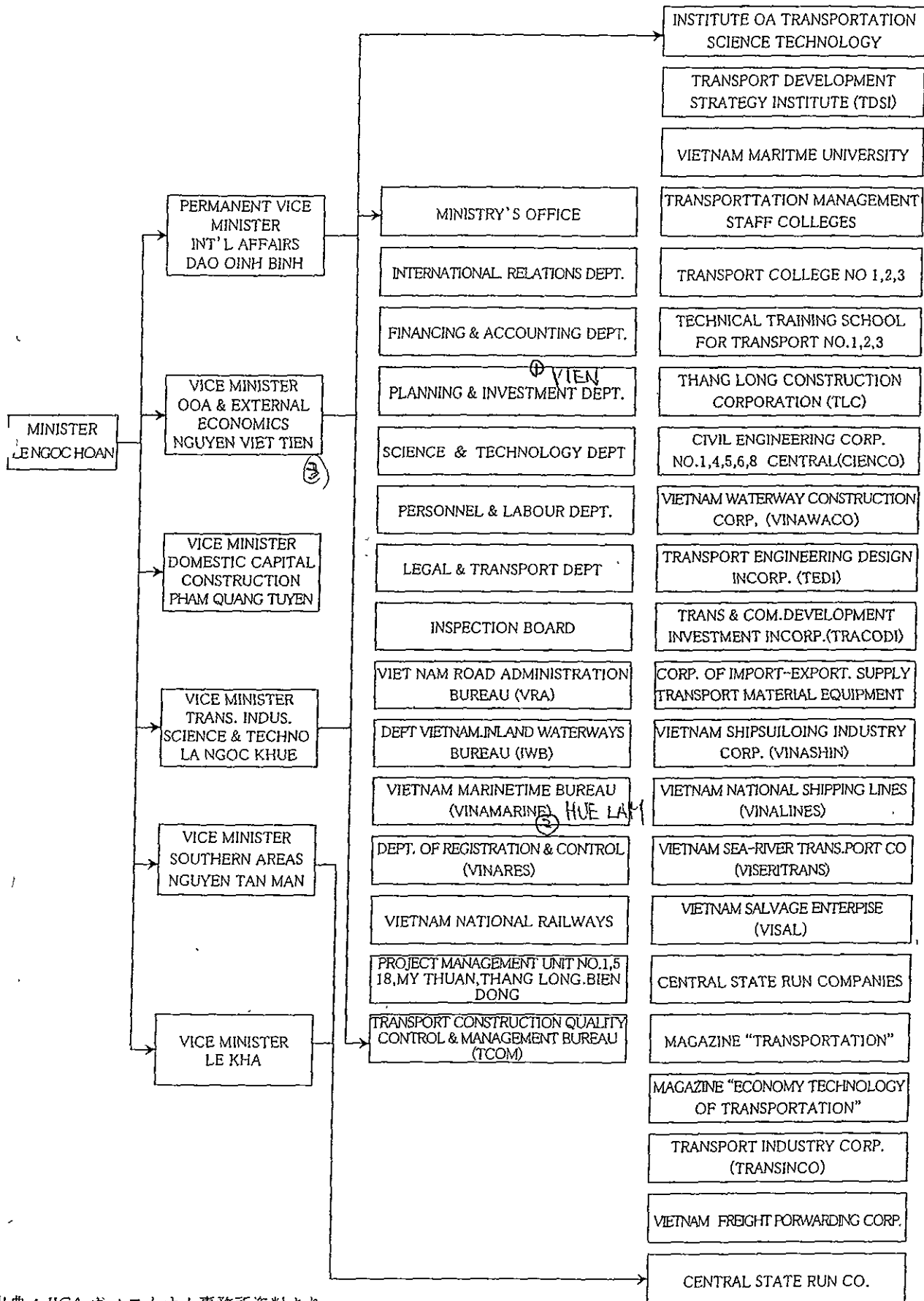
No	Name	Address
1	Nguyen Duc Vien	Ong Trinh Village, Tan Thanh
2	Tran Van Ngo	Van Hanh Village, Tan Thanh
3	Tran Van An	Ong Trinh Village, Tan Thanh
4	Nguyen Van Dung	Van Hanh Village, Tan Thanh
5	Nguyen Van Hao	Hoi Phuoc Village, Tan Thanh
6	Mrs. In	Hoi Phuoc Village, Tan Thanh
7	Mai Van Hien	Hoi Phuoc Village, Tan Thanh
8	Nam Trang	Hoi Thanh Village, Tan Thanh
9	Phan Van Tai	Hoi Thanh Village, Tan Thanh
10	Tran Minh Quyen	Van Hanh Village, Tan Thanh
11	Tran Van Hoan	Ong Trinh Village, Tan Thanh
12	Hoang Duc Binh	Van Hanh Village, Tan Thanh
13	Dang Xuan Hinh	Ong Trinh Village, Tan Thanh
14	Nguyen Van Hien	Ngoc Ha Village, Phu My, Tan Thanh
15	Huynh Van Phung	Van Hanh Village, Tan Thanh
16	Nguyen Cong Duong	Ong Trinh Village, Tan Thanh
17	Dang Vinh	Van Hanh Village, Tan Thanh
18	Ban Son	Ong Trinh Village, Tan Thanh

Summarize of the result of field surey are show in the table below:

No	Content	Result
1	In the area project have any historical monument, archaeological, graves?	No (17) Yes (1)
	The name of historical monument:	No (17)
	The numbers of graves:	Yes (1)
2	The impact of the project on tourism, behest	
	- many - few	Many (0) few (18)
3	Flora in area	
	Plant Crop plant, Technical crop. Fruit- tree	Crop plant (0)

5/4

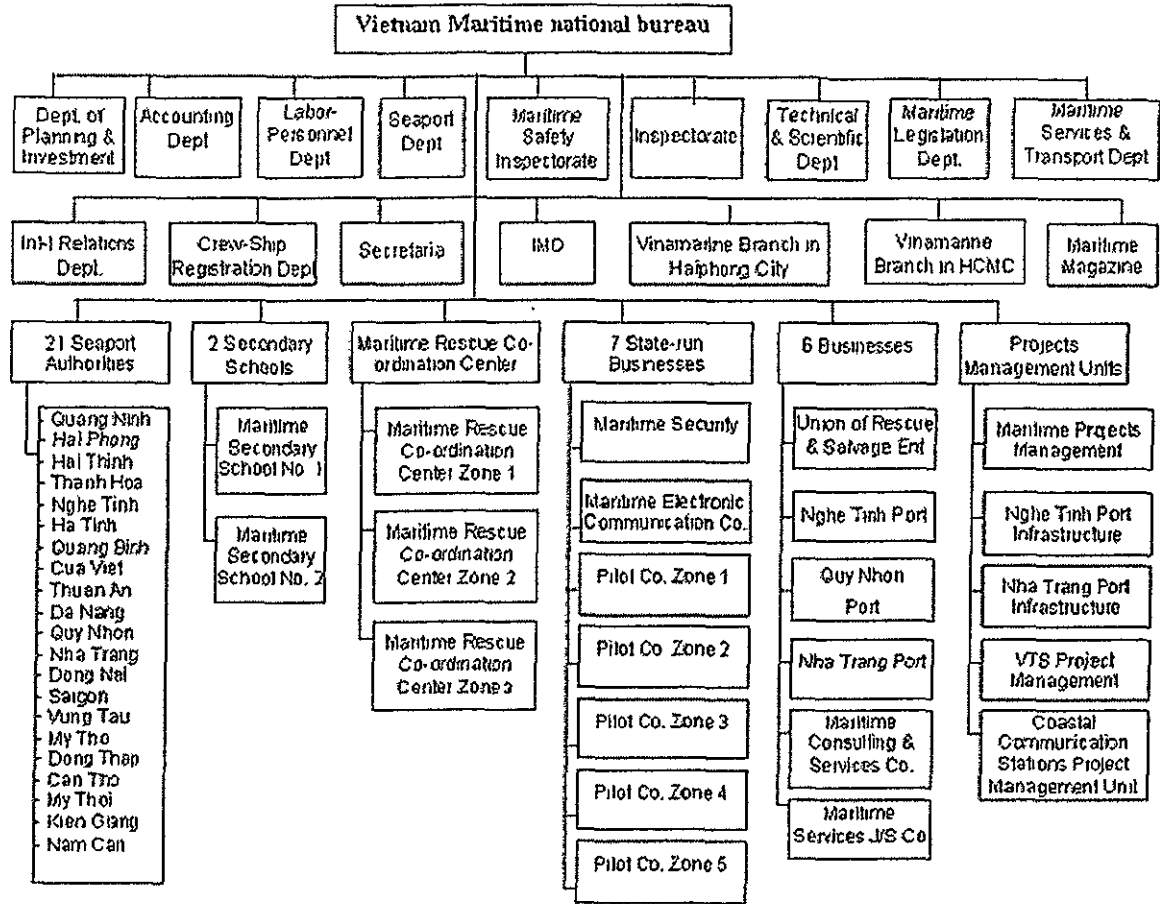
添付資料 11: 参考資料



出典：JICA ヴィエトナム事務所資料より

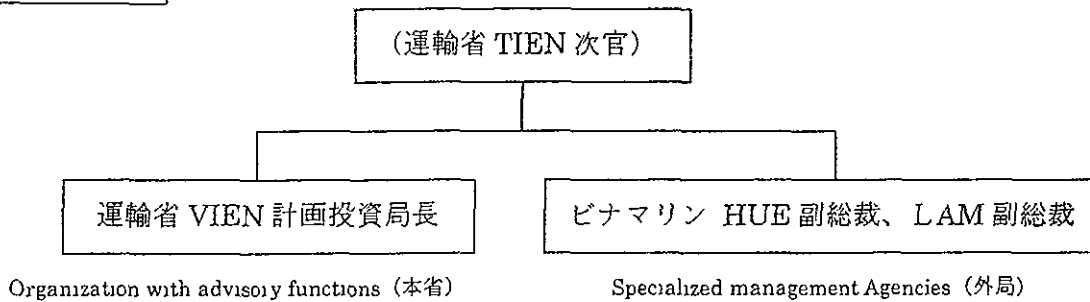
MOT 組織図

VINAMARINE 組織図



ベトナム政府ホームページより

南部港湾C/P



Organization with advisory functions (本省)

Specialized management Agencies (外局)

カイメップ・チーバイ港開発事業

Cai Mep-Thi Vai International Port Construction

2004年3月4日

国際協力銀行 開発第2部第2班

1. F/Sの有無	2002年12月 JICAによる“ヴィエトナム国南部港湾開発計画調査 最終報告書”作成
2 プロジェクトの背景と必要性	<ul style="list-style-type: none"> ・ベトナムは、我が国と同様に南北に長い海洋国家である。しかし、効率的な貿易を行うための深水港がなく、主要港湾の多くは河口を溯った都市部に建設されているため、長大航路の浚渫や曳航費用等の港湾維持費用が割高であるなどの問題を抱えている。 ・ベトナムはドイモイ政策を導入して以来、急速な発展を遂げており、とりわけ、本プロジェクトサイトが位置するカイメップ・チーバイ地区を含むベトナムの南部重点経済地域（SFEA・ホーチミン市、ビンズオン省、ドンナイ省及びバリア・ブンタオ省から構成）は、人口8.8百万人（全国の11%）、2002年におけるGDP 104兆ドン（全国の36%）、対外貿易額は全国の56.4%、資本投資額は全国の46.6%、海外直接投資（FDI）は、全国プロジェクト件数の67.8%・登録資本の84.7%を占めておりベトナム経済の中心地域となっている。 ・しかしながら、SFEAの主要港湾であるサイゴン港群（サイゴン港、タンカン港、ベンゲ港、VICT及びカットライ港）が位置するホーチミン市内外は、後背地が狭隘であり港湾施設の拡大の余地がない。加えて水深が浅いため大型船の入港が制限されており効率的な貨物輸送ができない状況にある。 ・したがって、SFEAにおいて増大する貨物需要を満たし、さらにサイゴン港群の混雑を解消するためには、水深が深く大型船の入港が可能であり、また工業団地計画が進行しており将来増加する貨物需要に対応した交通インフラ等の整備が可能なカイメップ・チーバイ地区にコンテナ貨物及び一般貨物を扱う港湾を新たに建設し、物流の効率化を図る必要がある。
3. 事業の概要 (1) 計画概要	<p>①事業目的</p> <p>ベトナム南部（バリア・ブンタオ省）のカイメップ・チーバイ地区にコンテナ及び一般貨物ターミナルを建設することにより、同国において増大する貨物需要に対応し、同国の経済発展を促すもの。</p> <p>②事業計画の概要</p> <p>カイメップ・チーバイ地区における港湾開発にかかる建設、資機材及び役務の調達</p> <ul style="list-style-type: none"> ・コンテナターミナルの建設（300m×2バース：カイメップ地区） ・一般貨物ターミナルの建設（300m×2バース：チーバイ地区） ・荷役機器の調達 ・泊地浚渫、航路整備 ・アクセス道路建設（5km） ・コンサルティング・サービス

(2) 所要資金			外貨	内貨	合計																																																																																																																																										
	借款額 (案)																																																																																																																																														
百万円																																																																																																																																															
	土木工事		10,798	2,887	13,685																																																																																																																																										
	荷役機器調達		7,951	164	8,115																																																																																																																																										
	ターミナル上屋建設		1,233	762	1,995																																																																																																																																										
	プライス・エスカレーション		1,778	0	1,778																																																																																																																																										
	物的予備費		1,743	373	2,116																																																																																																																																										
	コンサルティング・サービス		1,235	1,654	2,889																																																																																																																																										
	建中金利		2,057	0	2,057																																																																																																																																										
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	用地取得費・補償費		0	1,785	1,785																																																																																																																																										
	事業管理費		1,340	522	1,862																																																																																																																																										
	合計		28,134	10,976	39,110																																																																																																																																										
	単位 百万円 為替レート 1ドル=119円、1ドル=15,500トン、1円=130トン プライス・エスカレーション率：外貨1.4%/年、内貨0%/年 物的予備費率・10%（土木工事及び上屋建設）5%（荷役機器）																																																																																																																																														
(3) 工期・工程	<table border="1"> <thead> <tr> <th></th> <th>2004</th> <th>2005</th> <th>2006</th> <th>2007</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> </tr> </thead> <tbody> <tr> <td>詳細設計</td> <td></td> <td>■</td> <td>■</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>コンサルタント選定</td> <td></td> <td></td> <td>■</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>コンサルティング・サービス</td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>埠頭・浚渫工事入札</td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>埠頭・浚渫工事</td> <td></td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>荷役機器入札</td> <td></td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>荷役機器調達</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>港湾施設入札</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>港湾施設建設</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>オペレーター選定補助コンサル・サービス</td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> <tr> <td>オペレーター選定</td> <td></td> <td></td> <td></td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> <td>■</td> </tr> </tbody> </table>												2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	詳細設計		■	■								コンサルタント選定			■								コンサルティング・サービス			■	■	■	■	■	■	■	■	埠頭・浚渫工事入札				■	■	■	■	■	■	■	埠頭・浚渫工事					■	■	■	■	■	■	荷役機器入札					■	■	■	■	■	■	荷役機器調達						■	■	■	■	■	港湾施設入札							■	■	■	■	港湾施設建設								■	■	■	オペレーター選定補助コンサル・サービス				■	■	■	■	■	■	■	オペレーター選定				■	■	■	■	■	■	■
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	※詳細設計は JICA 連携 D/D により実施し、2005年3月に L/A が調印されると仮定。																																																																																																																																														
(4) 実施機関	<ul style="list-style-type: none"> ・ 運輸省 (MOT)、PMU85 ・ 新しく設立される予定の港湾管理者 (Port Management Body, PMB) が本港の管理を行い、民間のオペレーターがリース契約により本港の操業・運営を行う予定。 																																																																																																																																														
(5) 実施体制	請負方式にて実施 (STEP の場合は日本タイド) を予定																																																																																																																																														
(6) 事業効果	< 定性的効果 > ・ 物流の効率化、投資促進効果、海難事故の減少 < 定量的効果 > ・ EIRR 16.1% (費用) プロジェクト費用、運営・管理費 (便益) 滞船時間の短縮、内陸輸送コストの節減等 ・ FIRR : 7.9% (費用) プロジェクト費用、運営・管理費 (便益) 港湾荷役手数料収入 プロジェクトライフ : 30年																																																																																																																																														

(7) 環境に対する影響／用地取得・住民移転	<ul style="list-style-type: none"> ・カテゴリ区分 本事業には、1999年10月版環境ガイドラインが適用され、同ガイドライン上A種。 ・環境区分 対象外 ・EIA 2003年10月作成され、自然資源環境省により2003年11月承認済み。(環境配慮にかかる追加調査結果を踏まえたEIA改訂版は2004年6月完成予定であり、本EIAをもとに環境管理計画策定予定。) ・用地取得・住民移転 11世帯の住民移転が必要。 ・合計61haのマングローブ林が伐採されるが、省の植林計画に従い、再植林される。
(8) WID 配慮/人口・エイズ関連/社会的配慮	特になし。
(9) 無償/技協/NGOとの連携	JICAとの連携 D/D 候補案件
4 留意点	<ul style="list-style-type: none"> ・本事業では、港湾オペレーターの導入が計画されていることから、ベトナム政府による当該オペレーターの選定手続きを補助し、我が国を含めた外国民間資本からの港湾運営技術の移転を容易にする必要がある。
5. 成熟度ならびに採り上げの可否	成熟度が高く、来年度 JICA 連携 D/D 対象案件として採り上げ可。
6 今後のスケジュール	
7. 備考	適用条件(案)・本邦技術活用条件(STEP)適用候補案件

ベトナム南部港湾の所要図面枚数の見積

工 種	図面枚数	図面内訳
J) パッケージ 港湾施設、航路浚渫工事	1504	
(1) カイメリア国際コンテナターミナル	464	
1) 岸壁工事		
a 栈橋 (L=600m, B=50m)	64	全体図2、主要構造8、配筋図24、詳細図 (防舷材、ホラート、車止、防食工等)25、クレーンレール5
b 栈橋背面土留め壁 (L=600m)	20	全体図1、主要構造1、断面詳細図18 (pitch 20m, 2 sections per drawing 1 2)
c 栈橋連絡橋 (L=90x4=360m, W=20m)	23	全体図1、主要構造2、下部工詳細図5、上部工詳細図10、付帯設備 (ガートレール、照明) 5
d 旧地浚渫 (L=600m, W=50m)	20	全体図1、主要構造1、断面詳細図18 (pitch 20m, 2 sections per drawing 1 2)
2) ターミナル工事		
a 埋立て、地盤改良 (39ha)	45	埋立て主要図2、断面詳細図36 (pitch 20m, 1 sections per drawing 1 2)、地盤改良主要図2、詳細図5
b 外周捨石護岸 (L=1,900m)	58	主要図1、断面詳細図57 (pitch 20m, 2 sections per drawing x 1 2)
c 附帯施設	25	給水5、電気5、下水排水5、フェンス5、照明5
3) 港湾取付け道路 工事		
a 取付け道路、カルハート (L=10,000m)	140	主要図5、断面詳細図120 (pitch 50m, 2 sections per drawing x 1 2)、付帯工 (排水) 5、付帯設備 (ガートレール、照明、標識等) 詳細図10
b 橋梁	48	主要図1、構造2、下部工詳細図8、下部工配筋図12、上部工詳細図5、上部工配筋図10、付帯工5、仮設図5
4) 給電、給水取付け工事(港湾用地外部との取り付け)		
a 給電取付け	13	主要図1、系統図2、詳細図10
b 給水取付け	8	主要図1、系統図2、詳細図5
(2) チーハイ国際雑貨ターミナル	301	
1) 岸壁工事		
a 栈橋 (L=600m, W=40m,)	46	全体図2、主要構造8、配筋図16、詳細図 (防舷材、ホラート、車止、防食工等)15、クレーンレール5
b 栈橋背面土留め壁 (L=600m)	22	全体図1、主要構造3、断面詳細図18 (pitch 20m, 2 sections per drawing 1 2)
c 旧地浚渫 (L=600m, W=50m)	20	全体図1、主要構造1、断面詳細図18 (pitch 20m, 2 sections per drawing 1 2)
2) ターミナル工事		
a 埋立て、地盤改良 (25ha)	45	埋立て主要図2、断面詳細図36 (pitch 20m, 1 sections per drawing 1 2)、地盤改良主要図2、詳細図5
b 外周捨石護岸 (L=1,440m)	45	主要図1、断面詳細図44 (pitch 20m, 2 sections per drawing x 1 2)
c 附帯施設	25	給水5、電気5、下水排水5、フェンス5、照明5
3) 港湾取付け道路 工事		
a 取付け道路、カルハート (L=5,000m)	80	主要図5、断面詳細図60 (pitch 50m, 2 sections per drawing x 1 2)、付帯工 (排水) 5、付帯設備 (ガートレール、照明、標識等) 詳細図10
4) 給電、給水取付け工事(港湾用地外部との取り付け)		
a 給電取付け	10	主要図1、系統図2、詳細図7
b 給水取付け	8	主要図1、系統図2、詳細図5
(3) 航路浚渫工事	739	
1) 河川部 (L=12,000m)	183	主要図3、断面詳細図180 (pitch 50m, 2 sections per drawing x 1 5)
2) 海洋部 (L=26,000m)	315	主要図3、断面詳細図312 (pitch 50m, 2 sections per drawing x 1 2)
3) 土捨て場 (10,000m x 10,000m)	241	主要図1、断面詳細図240 (pitch 50m, 1 sections per drawing x 1 2)

工 種	図面枚数	図面内訳
(2) チャーハイ国際雑貨ターミナル	179	
1) 建築工事		
a 倉庫 (8,000m2)	17	全体図2、主要構造図5、詳細図 10
b 荷捌き場 (8,000m2)	17	全体図2、主要構造図5、詳細図 10
c 管理棟 (3,600m2)	22	全体図2、主要構造図5、詳細図 15
d 休憩棟 (2,400m2)	17	全体図2、主要構造図5、詳細図 10
e メンテナンスシヨノブ (800m2)	14	全体図1、主要構造図3、詳細図 10
f メインゲート、守衛棟 (1,500m2)	9	全体図1、主要構造図3、詳細図 5
g サフゲート、守衛室 (750m2)	9	全体図1、主要構造図3、詳細図 5
h 受変電施設 (300m2)	9	全体図1、主要構造図3、詳細図 5
i 給油施設 (400m2)	9	全体図1、主要構造図3、詳細図 5
2) ヤード舗装工事		
a 屋外蔵置ヤード (115,200m2)	21	全体図1、主要構造図5、詳細図 15
b ヤード内道路 (85,600m2)	21	全体図1、主要構造図5、詳細図 15
c その他 (22,450m2)	14	全体図1、主要構造図3、詳細図 10
3 Pac 3 機械調達	29	
(1) カイメノブ国際コンテナターミナル	8	荷役機械8種類 x 各姿図 1 枚
(2) チャーハイ国際雑貨ターミナル	11	荷役機械11種類 x 各姿図 1 枚
(3) VTSシステム	10	配置図 2、機材詳細図 8
Total	1905	

工 種		図面枚数	図面内訳
2 パッケージ2 建築、舗装工事		372	
(1) カイマップ国際コンテナターミナル		193	
1) 建築工事			
a	管理棟、休憩棟(9,400m2)	27	全体図2、主要構造図5、詳細図 20
b	コンテナプラットフォーム(6,000m2)	21	全体図1、主要構造図5、詳細図 15
c	メンテナンスシヨブ(1,750m2)	9	全体図1、主要構造図3、詳細図 5
d	メインゲート、守衛棟(1,500m2)	9	全体図1、主要構造図3、詳細図 5
e	サブゲート、守衛室(1,050m2)	9	全体図1、主要構造図3、詳細図 5
f	受変電施設(300m2)	9	全体図1、主要構造図3、詳細図 5
g	給油施設(300m2)	9	全体図1、主要構造図3、詳細図 5
2) ヤード舗装工事			
a	コンテナ蔵置ヤード(117,200m2)	14	全体図1、主要構造図3、詳細図 10
b	トランスフォーマークレーン走行帯(52,760m2)	14	全体図1、主要構造図3、詳細図 10
c	冷凍コンテナ電源施設(400m2)	9	全体図1、主要構造図3、詳細図 5
d	荷役機械ヤード(2,800m2)	9	全体図1、主要構造図3、詳細図 5
e	トラック待機ヤード(2000m2)	9	全体図1、主要構造図3、詳細図 5
f	コンテナ洗浄ヤード(300m2)	9	全体図1、主要構造図3、詳細図 3
g	ヤード内道路(150,000m2)	14	全体図1、主要構造図3、詳細図 10
h	その他(51,540m2)	21	全体図1、主要構造図5、詳細図 15
i	将来ヤードエリア(52,090m2)	1	全体図1

