14-C. ENGINEERING DESIGN AND COST ESTIMATE

14-C-1 Berth Structures

Type of Structure

498. Considering soil conditions and gentle slope of seabed topography which is more or less uniform throughout the Tanjung Priok Port area, the SPP type structure is considered suitable and adopted for the basic design of berth structure of car terminal, multipurpose berth and passenger terminal. The steel pipe pile (SPP) of 900 mm F will be driven up to 30 m depth. Steel pipe pile supports the upper super structure of reinforced concrete deck by point bearing of the soil foundation.

499. The characteristics of the Steel Pipe Pile (SPP) type are summarized as follows.

	Steel Pipe Pile (SPP) structure
Evaluation	Simple and economical in cost and construction method and period
Advantage	• Volume of reclamation works will be minimal. • Sheet Pile driving works and reclamation works can be progressed separately at the same time. • Dredging works should be able to progress separately from pile driving works.
Disadvantage	• Corrosion of SPP should be considered. • Additional retaining wall is required for reclamation works

500. Typical cross section of the wharf of the automobile terminal by SPP is shown in Figure 14-C-1. This cross section of wharf structures is applicable to the multipurpose berth and passenger terminal berth to be developed in the Ancol west area.

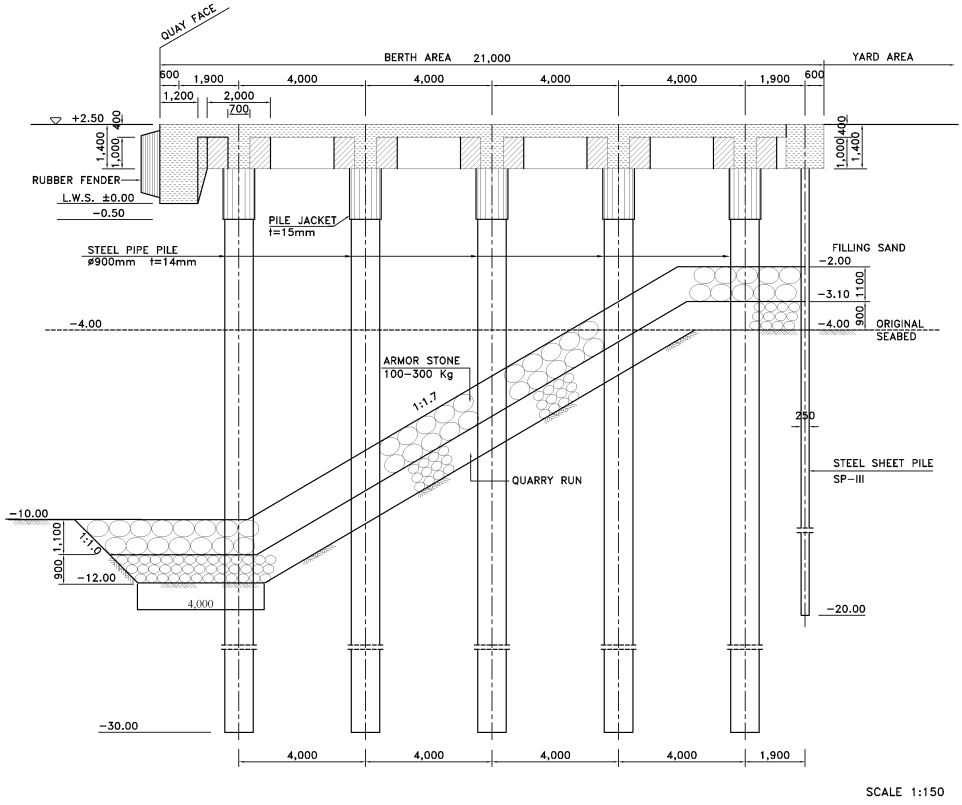


Figure 14-C-1 Typical Cross Section of Automobile Terminal Wharf

14-C-2 Design of Reconstruction of Breakwater

Design Condition

501. The design wave height and period of high-frequency higher wave can be set as $H_{1/3}$ = 1.5 m, T = 6.0 s, Wave incidence: North direction. The low frequency wave (return period of the design wave is 30 years) is adopted for examining the stability of breakwater and the design section thereof. The design deepwater wave height and equivalent deepwater wave height in front of the assumed breakwater is set as $H_{1/3}$ = 2.5 m, T = 8.5 s, Wave incidence: North direction.

502. Design crest elevation of the new breakwaters to be constructed should be set as DL+2.50 m.

Location of New Breakwater

503. The new break water is planned to be relocated about 200-250m offshore from the existing breakwater in order to obtain the sufficient width of the two ways ships traffic and turning basin area.

Design of New Breakwater

504. The new breakwater is planned on the upper layer of clay at the sea bed depth of around -5.0 m. The existing sea bed clay material of upper layer is planned to be replaced with fine sandy soil in the thickness of 7 m as soil improvement of breakwater foundation. The typical section of the proposed new breakwater is shown in Figure 14-C-2.

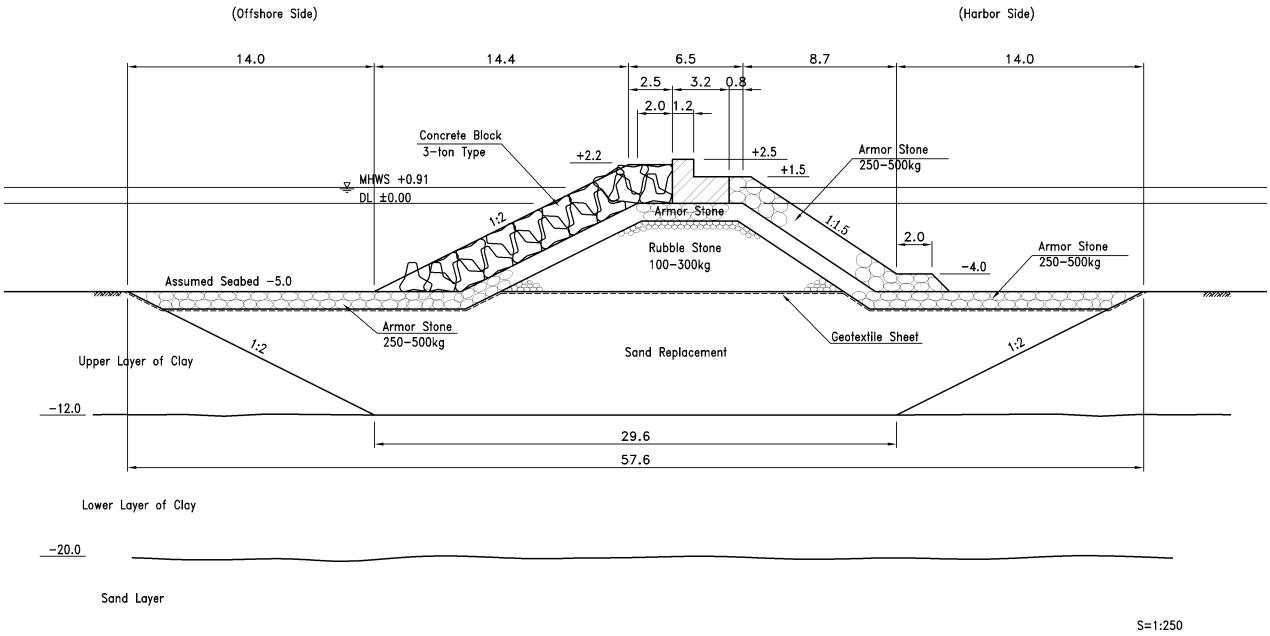


Figure 14-C-2 Typical Section of Proposed New Breakwater

Results of Calmness Study

505. The results of calmness study show that the planned alignment and relocation program of breakwaters and port facilities at respective development stages provide the cover ratio over 99 % under the target wave height 0.5 m at all points in Tanjung Priok Port.

14-C-3 Navigation Channel Widening and Deepening

Capital Dredging Volume

506. The total dredging volume for widening and deepening of the channel and basin of Tanjung Priok Port amounts to around 12,000 million cubic meters. (The extra dredging of 0.5 m in depth is considered in order to achieve the design depth of the channel and basin.)

Table 14-C-1 Dredging Volume for Channel and Basin Improvement

Section	Description	Dredging Volume
Access Channel outside port	D: -14 m, W: 300 m, L = 2.7 km	2,430,000 m
Inner Port North Channel	D: -14 m, W: 300 m, L = 2.1 km	3,875,000 m
Central Turning Basin	D: -14 m, Circle Dia = 560 m	1,950,000 m
Car Terminal Basin Area	D: -10 m, Circle Dia = 400 m	503,000 m
Sub Total	(Total dredging area = 1,750,000 m^2)	**8,758,000 m**
Central Turning Basin (2^{nd} phase)	D: -14 m, W: 300 m, L: 940 m	300,000 m
Channel and Basin related to East-Ancol area development	D : -7.5~10m	2,970,000 m
Total		**12,028,000 m**

Dredging fleet arrangement

507. A cutter suction dredger 1,200 m3/hr and 2 hopper barges of 2,000 m3 capacity will be utilized for channel dredging works.

Disposal Area

508. The disposal area as approved by ADPEL for the dredged material from Tanjung Priok Port is located in the area called Muara Gembong. The water depth of this disposal site ranges from 7 to 10 meters.

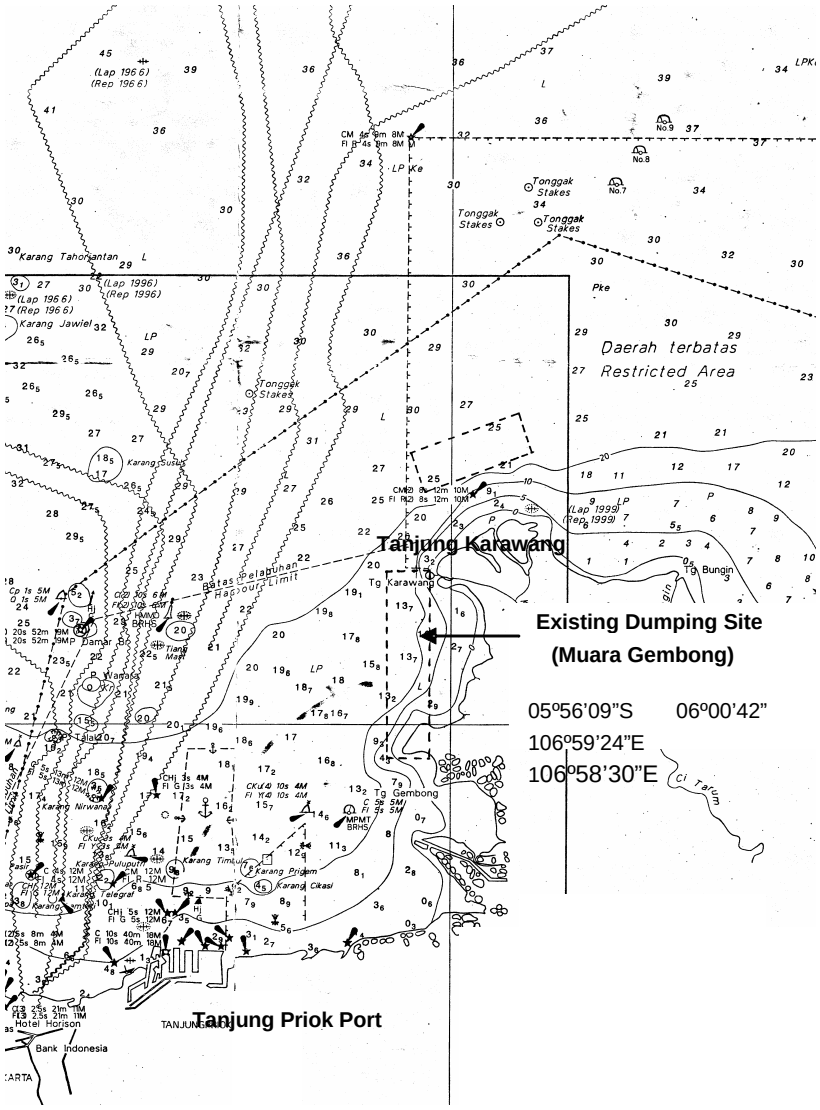


Figure 14-C-3 Location Map of Disposal Area of Dredged Material of Tanjung Priok

Work period

	Design Dredging Volume	Work Period including Over dredging
Access Channel:	2,430,000 m^3	14.9 months, say 15 months
North Channel :	3,875,000 m^3	23.8 months, say 24 months
Central Basin :	1,950,000 m^3	12.0 months
East-Ancol	2,970,000 m^3	18.3months

14-C-4 Port inner road works

Access Road between the existing arterial Road and Automobile terminal

509. There is no need to newly develop an access road to the automobile terminal because the existing road can be utilized by car carriers. However, the existing road should be improved by overlay with concrete pavement on the existing asphalt pavement.

Port Inner Road Improvement

510. The existing port inner road is heavily congested with large trucks, container trailers, public buses, business vehicles and motorcycles.

511. In order to improve the present traffic congestion the following measures are proposed.

- Some of the unused buildings and area will be demolished for open space of cargo storage and public road area.
- All traffic should be one way on the main road Jl. Pelabuhan Raya to Gate No.9.
- Gate No.9 should be replaced on Jl. Banda in order to connect the elevated road from JORR northern extension, i.e., Eastern Port Access Highway.
- Gate No.3 will be demolished for vehicle use (passengers only)
- The existing road along the boundary fence is widened and some of the existing parking area is relocated to improve the traffic flow.

14-C-5 Project Cost Estimate

512. The basic prices are as of December 2002 and the following foreign exchange rate is applied for estimating the project cost considering the current trend in the market as of June 2003.

- 1 USD = 8,500 Rupiah = 120 Yen (1 Yen = 70.83 Rupiah)

513. The project cost in each phase described in the next section is estimated as follows: It should be noted that these figures are for the components selected in the feasibility study, and thus they do not include port access road such as Eastern Access Port Highway as well as urban development components which are included in the Master Plan.

Table 14-C-2 Cost Estimate for Urgent Rehabilitation Plan of Tanjung Priok

million Rp

	Local	Foreign	Total	Remarks
Total Construction Cost (Direct & Indirect) (TC)				
~2008				
Breakwater (Dam Tengah)	94,470	103,560	198,029	
Breakwater (Dam Barat)	14,310	15,687	29,997	
Access Channel (-14 m, 300 m)	9,693	80,762	90,455	
North Channel (-14 m, 300 m)	15,457	128,788	144,245	
Improvement of Central Basin	7,778	64,809	72,588	
Car Terminal	83,599	55,974	139,573	
Infrastructure	58,657	46,358	105,015	
Superstructure	24,942	9,616	34,558	Terminal Operator (Private)
Improvement of Port Related Road	47,390	33,934	81,324	
Gate Improvement	42,746		42,746	
Sub Total	**315,444**	**483,514**	**798,958**	
~2012				
Breakwater (Dam Tengah)	60,860	66,716	127,576	
Improvement of Central Basin	1,197	9,971	11,167	
Ancol Development	1,103,948	533,587	1,637,535	
Breakwater for Ancol Development	57,077	62,568	119,645	
New Access Channel and Basin for Anc	11,849	98,725	110,574	
Multi-purpose Terminal	325,272	128,056	453,327	
(Land Development)	131,377	21,105	152,482	Ancol Developer (Private)
(Terminal Construction)	193,895	106,950	300,845	
Passenger Terminal	106,091	46,551	152,642	
(Land Development)	36,257	4,684	40,941	Ancol Developer (Private)
(Terminal Construction)	69,834	41,867	111,701	
Port-related Zone	119,091	59,417	178,508	Ancol Developer (Private)
Ancol Access Road	484,568	138,270	622,838	50% shared by Ancol Developer
Port Re-development	154,287	94,731	249,018	
Cargo handling Equipment	4,400	39,600	44,000	Private
Sub Total	**1,324,691**	**744,605**	**2,069,295**	
(Access Channel to Nusantara)	51,089	91,889	142,978	(Excluded in FS)
(Total)	1,375,779	836,494	2,212,273	
Total (FS Components)	**1,640,134**	**1,228,119**	**2,868,253**	
Contingency	164,013	122,812	286,825	10% of TC
Consulting Services	131,013	96,468	227,480	
VAT (10%)	193,516	144,740	338,256	
Administration Cost	73,683		73,683	Including Compensation
Grand Total	**2,202,359**	**1,592,138**	**3,794,497**	

14-D. PROJECT IMPLEMENTATION SCHEDULE

514. Project components of the Urgent Rehabilitation Plan of Tanjung Priok is divided two packages as follows:

Package-1: Projects up to 2008

- Automobile Terminal Development
- Channel and Basin Improvement
- Port Inner Road Improvement

515. Project implementation period will be 5 years including project preparation and 30 months of construction works. The car terminal facility should be operational in 2006. The other facility should be in 2008.

Package-2: Projects up to 2012

- Extension of Breakwater (Dam Tengah)
- Improvement of Central Basin dredging up to -14m

- Breakwater for Ancol Development
- New Access Channel Development by dredging up to -10m
- Multipurpose Berth Construction and expansion
- Passenger Terminal Development
- Ancol Access Road Development and Extension
- Re-development of the existing port area (Inter-island container terminal at Pier III and berth 101 north)

516. Project implementation period will be 5 years including project preparation and 36 months of construction works. The facility should be operational by 2012.

517. The construction schedule of Package-1 project is prepared in Table 14-D-1 based on the following assumption.

- The executing agency is the Directorate General of Sea Communications, Ministry of Communications. The executing agency will arrange the project finance by the beginning of the 1st quarter of 2004 and begin to procure consultants.
- For the urgent rehabilitation project, the work schedule includes the detailed design and tender assistant period of about eighteen (18) months, construction period of thirty three (33) months and maintenance period of twelve (12) months. The total period of the project is estimated at 66 months.
- Based on the request from port users, the automobile terminal facilities should be commissioned by the end of 2006, and channel dredging and breakwater reconstruction works should be completed in 2008, assuming that the consulting service would be started in the last quarter of 2004.
- The construction work of the Car Carrier Terminal should be started earlier than other channel/basin dredging and breakwater demolition / reconstruction works. The construction works of the automobile terminal should commence in the last quarter of the year 2005 and be completed by the end of 2006.
- The improvement works of port inner road will be started in 2006 and completed in 2007.

518. The construction schedule of Package-2 project is prepared in Table 14-D-2 based on the following assumption.

- The financial arrangement for the short term development projects should commence from 2005 and engineering study including the design and tender documents preparation should be completed in 2007.
- The construction works should be started from 2009 and completed in 2011 in order to make facilities operational in 2012.

Table 14-D-1 Construction Schedule for Package-1 Projects (up to 2008)

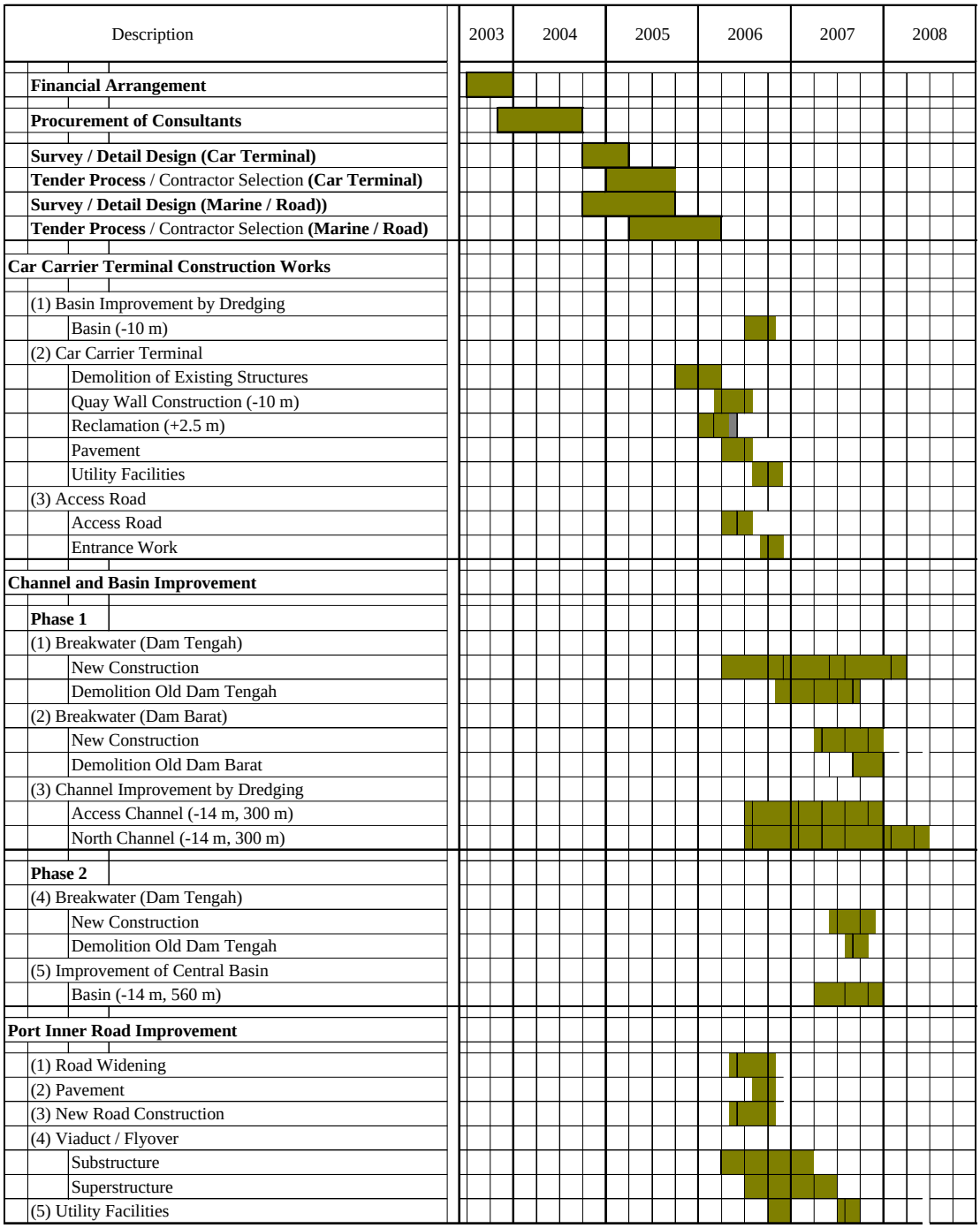


Table 14-D-2 Construction Schedule for Package-2 Projects (up to 2012)

Description	2006	2007	2008	2009	2010	2011	2012
Construction Works up to 2012							
(1) Breakwater (Dam Tengah)							
New Construction of Dam Citra							
Demolition Old Dam Citra							
(2) Improvement of Central Basin							
Basin (-14 m) Dredging							
(3) Breakwater for Ancol Development							
New Construction (980 /1,370 m)							
Demolition Old Dam Barat							
(4) New Access Channel by Dredging							
Access Channel (-10 m, 120 m)							
New Basin (-10 m, 400 m)							
New Basin (-7.5 m, 300 m)							
(5) Multi-purpose Terminal Development & Expansion							
Quay Wall Construction (-10 m)							
Revetment for Reclamation							
Reclamation (+2.5 m)							
Pavement							
Utility Facilities							
(6) Passenger Terminal							
Quay Wall Construction (-7.5 m)							
Revetment for Reclamation							
Reclamation (+2.5 m)							
Pavement							
Utility Facilities							
(7) Port-related Zone							
Revetment for Reclamation							
Revetment for Reclamation							
Reclamation (+2.5 m)							
Surface Pavement							
(8) Ancol Access Road							
Access Road (Ancol)							
Substructure							
Superstructure							
Access Road (Offshore Island) & extension							
Substructure							
Superstructure							
Access Road (Bridge over sea)							
Substructure							
Superstructure							
Utility Facilities							
(9) Port Re-development							
Dermaga 101 Utara							
Demolition of Existing Structures							
Revetment							
Surface Pavement							
Lapangan Multi Terminal							
Demolition of Existing Structures							
Quay Wall (-9 m)							
Surface Pavement							

14-E. MANAGEMENT AND OPERATION OF PORT FACILITIES

14-E-1 Development and Operation Scheme

General

519. Development and operation scheme for the proposed projects is basically set based on the "Scheme of Development, Operation and Management of Port Facilities" described in 13-D.

Automobile terminal

520. As for the automobile terminal development in Tanjung Priok port, it is not feasible for a private sector to cover the whole cost including infrastructure because the profit coming from handling charge will be relatively low due to uncertainty of future demand of export/import volume of cars as well as the need to remain competitive with other major ports in ASEAN countries. Thus, IPC2 should bear the initial development cost of infrastructure while private sector will bear the development cost of superstructure together with operation of the terminal. Figure 14-E-1 shows some alternatives for the terminal development and operation.

521. The followings are characteristics of each alternatives:

	Alternative-1	Alternative-2
Involvement of DKB	IPC2 obtains the vacant land by paying compensation to DKB, before development and operation of the automobile terminal.	Joint implementation between IPC2 and DKB remaining the current status of each body to the land. (e.g. establishment of joint implementation body such as "Terminal Holding Company")
Terminal Operator	Stevedoring origin	Carrier (Shipping line) origin (e.g. establishment of "Terminal Operating Company" who leases the terminal infrastructure from "Terminal Holding Company")

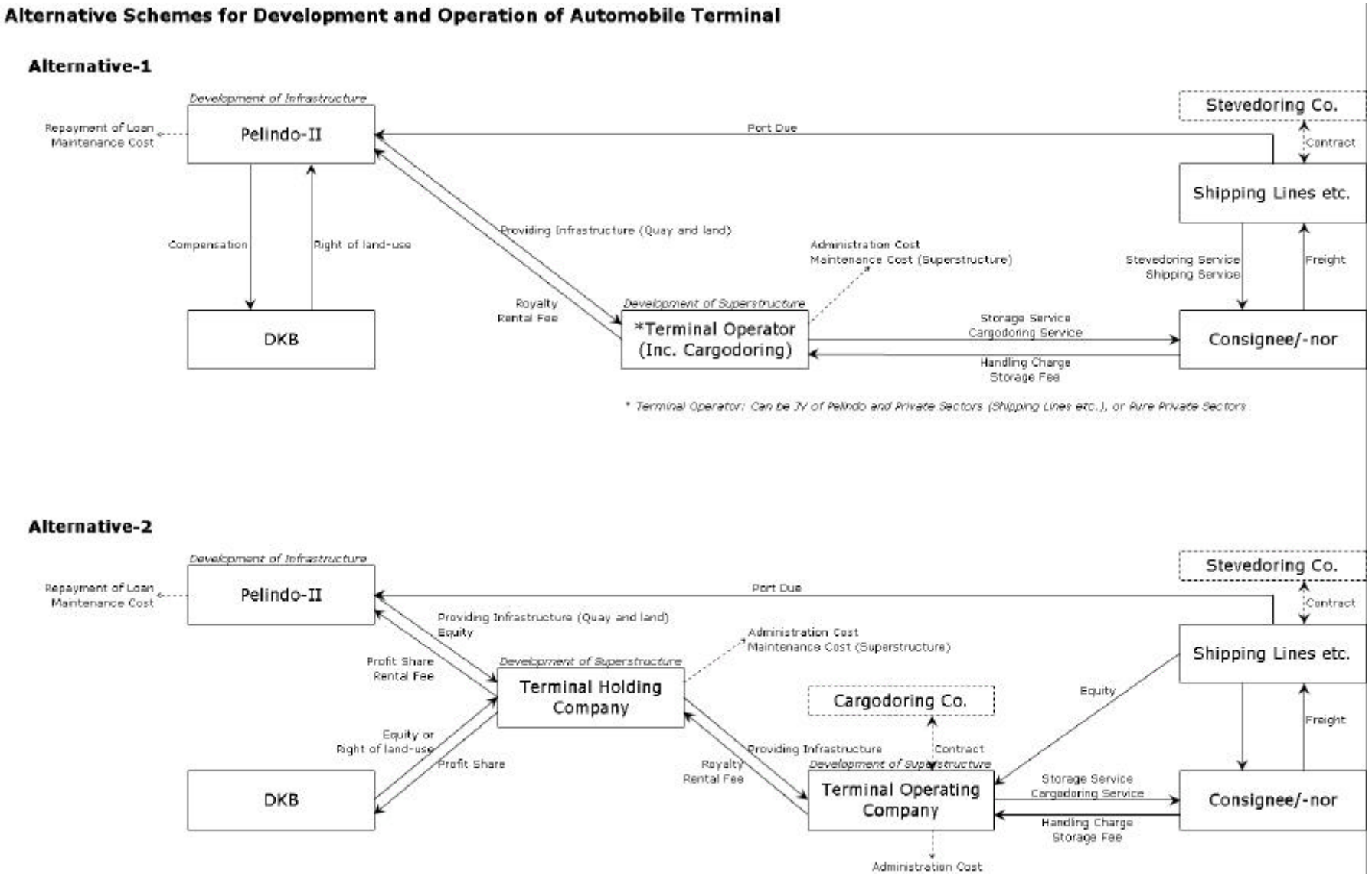


Figure 14-E-1 Alternative Schemes for Development and Operation of Automobile terminal

14-E-2 Cost Allocation and Implementation Scheme

522. There will be on-lending to IPC2 for the development of inner channel and basin, Automobile terminal (infrastructure) and port inner road in line with the "Basic Scheme of Development, Operation and Management of Port Facilities" described in 13-D, while the executing agency of the proposed project component will be likely DGSC.

Table 14-E-1 Possible Development Scheme

Project Components	Executing Agency for Development	Remarks
Access Channel	DGSC	
Breakwater Reconstruction	DGSC	
Inner Channel and Basin	DGSC	On –Lending to IPC 2
Automobile Terminal	DGSC	On –Lending to IPC 2
Port Inner Road	DGSC	On –Lending to IPC 2

523. The Directorate General of Sea Communications, MOC Government of Indonesia which is in charge of planning, development, management, operating the project and other relevant administrative matters according to the Shipping Law (UU No.21/1992),.Government Regulation of Port Affairs (PP No.69/2001), could be the executing agency of the project.

524. On the other hand, Indonesian Port Corporation is acting as a port management body for commercial ports. All the rights and obligations of operation/management on ports facilities of Tanjung Priok are under IPC2.

14-F. ECONOMIC ANALYSIS

Prerequisites of Analysis

525. All benefits and costs in the economic analysis are evaluated using economic prices based on the border price concept. Feasibility of the project is assessed by the Economic Internal Rate of Return (EIRR) in a cost benefit analysis. The prerequisites of economic analysis are as follows:

- The project life of the short-term development is assumed to be 31 years after the completion and construction will take 3 years, so that economic analysis is implemented for 34 years from 2004 to 2037.
- The foreign exchange rate adopted for this analysis is US$1.00=Rp.8500.
- The port project and the highway project are evaluated independently.
- The cost of installation on gantry cranes up to 2005 in Tanjung Priok port is out of investment of this project.

Benefit

526. As benefits brought about by the short-term plans, the following items are identified. In this study the monetary benefits are calculated.

1) Savings in ship and cargo staying cost for cargo handling
2) Savings in sea transportation cost
3) Savings in handling cost by Midstream Operation for the excess cargoes
4) Savings in land transportation cost

5) Savings in time cost of vehicle and cargo on land transportation
6) Reduction of cargo damage and accident at the port
7) Promotion of regional economic development
8) Increase in employment opportunities and income
9) Reduction of the traffic congestion in the port area

527. For the port development project, 1), 2) and 3) are calculated as a benefit, and for the road development project, 4) and 5) are evaluated.

Costs of the Projects

528. Project costs are composed of construction and maintenance costs.

Evaluation of the Projects

529. The EIRRs of the Urgent Development Plan and the Short-term Port Development Plans are calculated as 33.0% and 18.2% for the port and 25.1% for the road respectively. (It is generally accepted that discount rate for infrastructure projects is set as 15%.) Therefore, these development projects of the master plans are viable from the viewpoint of the national economy.

Table 14-F-1 EIRRs of Short-term Development Plans on Tanjung Priok Port

Project	Cost (IRR=15%)	Benefit (IRR=15%)	B/C (IRR=15%)	EIRR
Package-1 (up to 2008)	546 billion Rp.	1,722 billion Rp.	3.15	33.0%
Package-2 (up to 2012)	1,493 billion Rp.	1,873 billion Rp.	1.25	18.2%
(ref.) Road Project – Short-Term Development Plan	292 billion Rp.	716 billion Rp.	2.45	25.1%

Figures of cost and Benefit were discounted with IRR.
Package-1: Projects up to 2008 (Excluding Ancol Project)
Package-2: Projects up to 2012 (Including Ancol Project)

14-G. FINANCIAL ANALYSIS

14-G-1 Financial Analysis for Automobile terminal

Capital Cost

530. The roles of IPC2 and terminal operator are as follows based on the concept of cost allocation.

Table 14-G-1 Implementation Scheme

Facility	IPC2	Terminal Operator
Basin Improvement	●	
Demolition of existing structure	●	
Quay wall	●	
Reclamation	●	
Pavement		●
Utility Facilities		●
Access Road to Automobile terminal	●	
Operation		●

Operational Revenues and Cost

531. As for revenue and expenditure, the study team gave due consideration to the following matters;

- Terminal operator who operates automobile terminal pays a royalty to IPC2. Royalty is assumed to be 20% of terminal operator's gross revenue.
- Terminal operator also pays land rental fee every year. (Land rental fee is set as 4,300 million Rp which is calculated assuming a rate of 50,000 Rp/ m^2 for area of 8.6ha.)
- IPC2 pays some compensation (equivalent to the above land rental fee in maximum) to DKB until 2022, since DKB has a right of use of land until 2022 where the automobile terminal is located.

Table 14-G-2 Classification of Revenues from Port Activities

		IPC2	Terminal Operator
Port Due		●	
Terminal Charge	Cargodoring Charge		●
	Storage Fee (around 5 days)		●

Fund Raising

532. Fund Raising is assumed as follows for IPC-2 and terminal operator:

		IPC-2	Terminal Operator
Loan	Kind of loan	Soft loan	Hard loan
	Amount	15% of total capital cost	30% of total initial capital cost
	Loan period	30 years including a grace period of 10 years	10 years
	Interest rate	2.0%	15.0%
	Repayment	Fixed amount repayment of principal	Fixed amount repayment of principal
Equity (Self fund)		15% of total cost	30% of total initial capital cost
Weighted average interest rate		1.7 % 2.0% x 0.85	10.5 % 15.0% x 0.70

Evaluation of FIRR

Table 14-G-3 Sensitivity of FIRR on Terminal Charge and Demand

Terminal Charge	Cost	Royalty	Demand	Whole	IPC2	TO
16$	+10%	20%	±0%	10.21%	4.47%	21.40%
			-10%	8.50%	3.74%	17.01%
			-20%	6.68%	2.70%	12.43%
			-30%	4.70%	1.57%	7.41%
15$	+10%	20%	±0%	9.31%	4.39%	19.22%
			-10%	7.64%	3.43%	15.04%
			-20%	5.86%	2.40%	10.62%
			-30%	3.90%	1.29%	5.65%
14$	+10%	20%	±0%	8.38%	4.07%	17.01%
			-10%	6.76%	3.12%	13.02%
			-20%	5.00%	2.10%	8.73%
			-30%	3.05%	1.00%	3.73%
13$	+10%	20%	±0%	7.43%	3.73%	14.75%
			-10%	5.83%	2.80%	10.93%
			-20%	4.10%	1.80%	6.72%
			-30%	2.15%	0.70%	1.55%
12$	+10%	20%	±0%	6.43%	3.39%	12.43%
			-10%	4.83%	2.47%	8.73%
			-20%	3.15%	1.48%	4.52%
			-30%	1.19%	0.40%	-
11$	+10%	20%	±0%	5.38%	3.04%	10.01%
			-10%	3.84%	2.13%	6.37%
			-20%	2.12%	1.15%	2.01%
			-30%	0.13%	0.08%	-

Note : Terminal charge is cargodoring charge and storage fee per unit of car with around 12 metric ton.

533. Relation between terminal charge and FIRR is shown in Figure 14-G-1, assuming the case in which costs increase by 10 % and demands decrease by 10%.

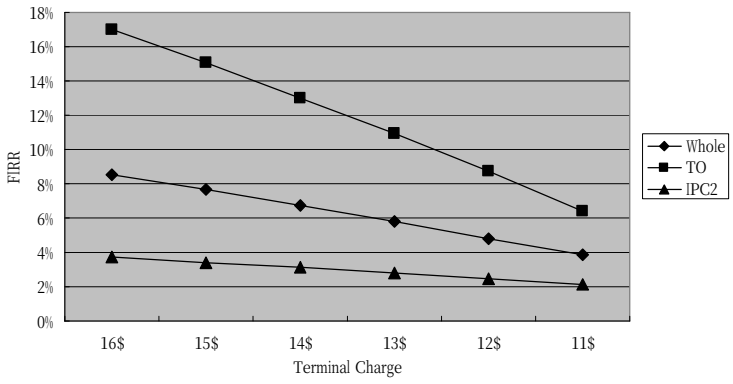


Figure 14-G-1 Relation between Terminal Charge and FIRR

534. Judging from the minimum profit for IPC2 (FIRR > 2%) and comparison of handling charges among other major ports in ASEAN countries, it is considered that **13US$ per unit of car** (around 12 metric ton) including cargodoring charge and storage fee is feasible and favorable.

535. On the basis of 13US$/unit terminal charge, fluctuation of FIRR for public sector (i.e. IPC-2) is summarized in Table 14-G-4. Since the FIRR exceeds the weighted averaged interest rate in all cases, automobile terminal of IPC2 side is deemed to be financially viable.

Table 14-G-4 Sensitivity Analysis on FIRR of IPC-2 (Terminal charge=13US$/unit)

Case		FIRR (IPC2)
Cost	Revenue	
0%	0%	4.51%
0%	-10%	3.54%
+10%	0%	3.73%
+10%	-10%	2.80%

536. Results of the sensitivity analysis on FIRR are summarized in Table 14-G-5. Since the FIRR exceeds the weighted averaged interest rate in all cases, automobile terminal of terminal operator side is deemed to be financially viable.

Table 14-G-5 Sensitivity Analysis on FIRR of Terminal Operator (Terminal charge=13US$/unit)

Case		FIRR (Terminal Operator)
Cost	Revenue	
0%	0%	15.95%
0%	-10%	11.89%
+10%	0%	14.75%
+10%	-10%	10.93%

Financial Soundness

537. Projected financial statements and financial indicators for IPC2 and terminal operator are shown in Figure 14-G-3 and Figure 14-G-3.

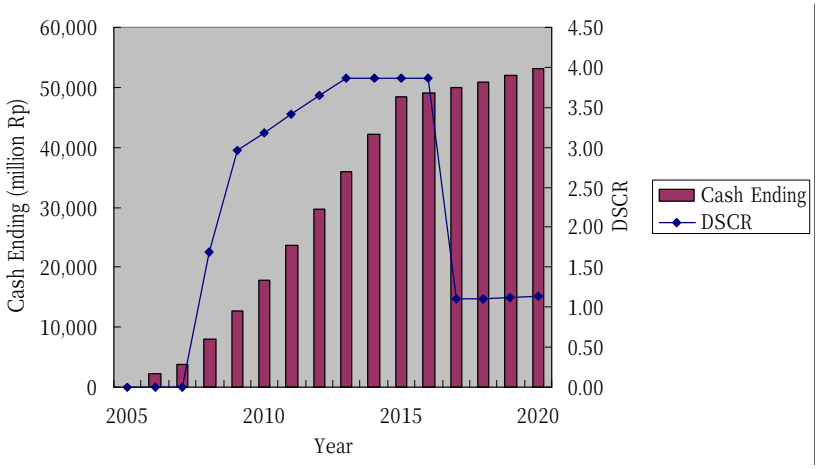


Figure 14-G-2 Cash Ending (million Rp) and DSCR (IPC2)

538. In case of projected IPC2's financial statement, the indicators of cash balance are satisfied. Debt service coverage ratio exceeds 1.0 after 2008. IPC2 should prepare self-fund of 19,000 billion Rp to ease the cash flow shortage in the initial stage of the project.

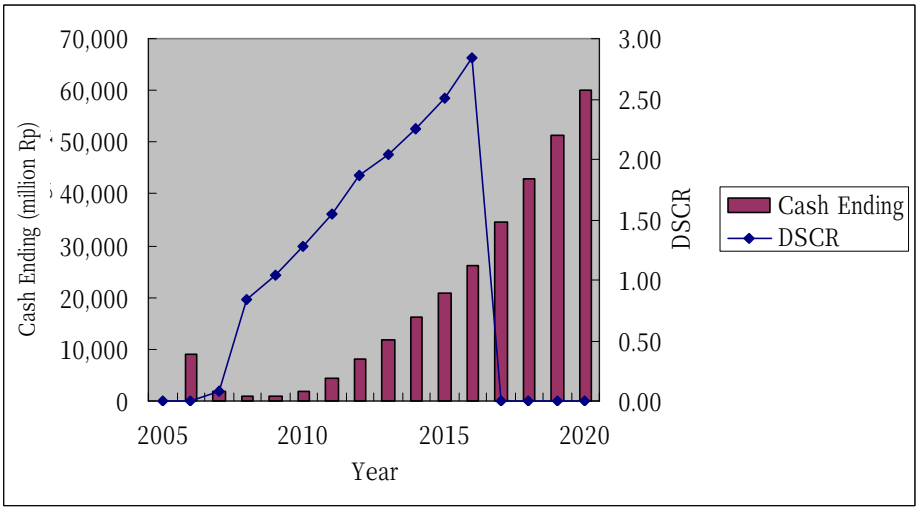


Figure 14-G-3 Cash Ending (million Rp) and DSCR (Terminal Operator)

539. In case of projected terminal operator's financial statement, the indicators of cash balance are satisfied. Debt service coverage ratio exceeds 1.0 after 2009. Terminal operator should prepare self-fund of 24,500 billion Rp to ease the cash flow shortage in the initial stage of the project.

Fluctuation of Land Rental Fee

540. Assuming compensation of 4,300 million Rp per year (equivalent to land rental fee), cash ending is shown in Figure 14-G-4.

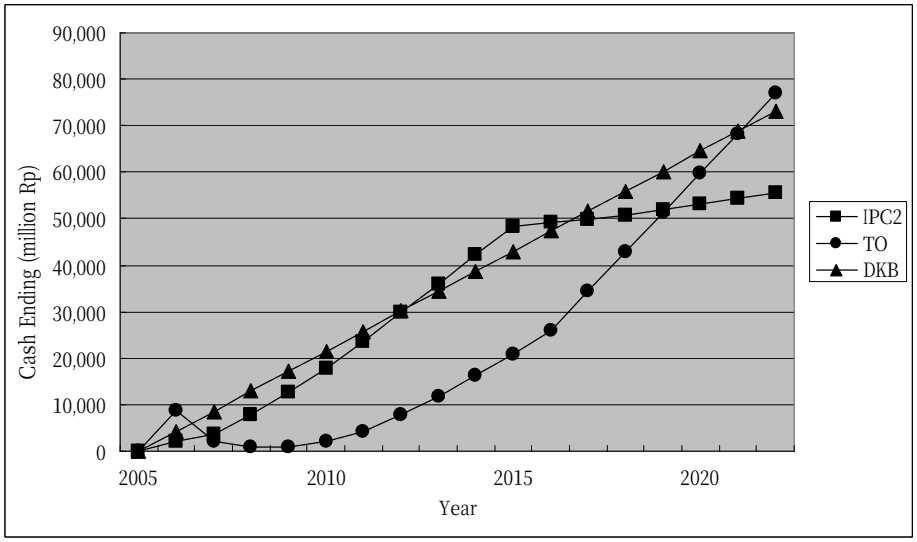


Figure 14-G-4 Cash Ending (Annual Compensation = 4,300 million Rp)

541. Alternative case in which compensation of 45,000 million Rp is paid in the first year is shown in Figure 14-G-5.

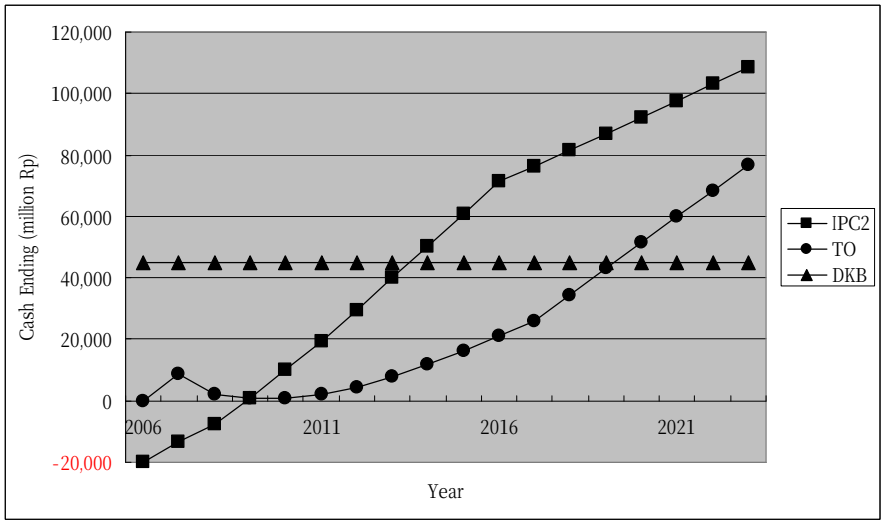


Figure 14-G-5 Cash Ending (Lump-sum Compensation = 45,000 million Rp)

14-G-2 Financial Analysis for Automobile Terminal (Alternative Case)

542. Study team analyzed an alternative scheme for development and operation of the automobile terminal as described in Figure 14-E-1.

Capital Cost

543. The roles of IPC-2 and private sector are as follows based on the concept of cost allocation.

Table 14-G-6 Implementation Scheme

Facility	IPC2	Terminal Operating Company	Terminal Holding Company
Basin Improvement	●		
Demolition of existing structure	●		
Quay wall	●		
Reclamation	●		
Pavement		●	
Utility Facilities		●	
Equipment		●	
Access Road to Car terminal	●		
Operation		●	

Operational Revenues and Cost

544. As for revenue and expenditure, the study team gave due consideration on the following matters;

- Terminal operating company receives 13US$ per unit of car (around 12 metric ton) as handling charge and storage fee.
- Terminal operating company pays royalty of 25% of gross revenue to terminal holding company.

- Terminal operating company also pays land rental fee every year. (Land rental fee is set as 4,300 million Rp which is calculated assuming a rate of 50,000 Rp/ m^2 for area of 8.6ha.)
- IPC2 and DKB hold respective shares of 60% and 40% in the terminal holding company. IPC2 and DKB receive profit share according to these shares.

Evaluation of FIRR

545. A sensitivity analysis is conducted to grasp the impact of unexpected changes on the viability of the project (See Table 14-G-7). Since the FIRR exceeds the weighted averaged interest rate in all cases, this project is deemed to be financially viable.

Table 14-G-7 Sensitivity Analysis

Case		FIRR	
		IPC2	Terminal Operating Company
Cost	Revenue		
0%	0%	5.54%	13.95%
0%	-10%	4.50%	10.83%
+10%	0%	4.69%	12.87%
+10%	-10%	3.70%	9.93%

Financial Statement

546. In cases of projected financial statements, the indicators of cash flow are satisfied. Cash ending is shown in Figure 14-G-6.

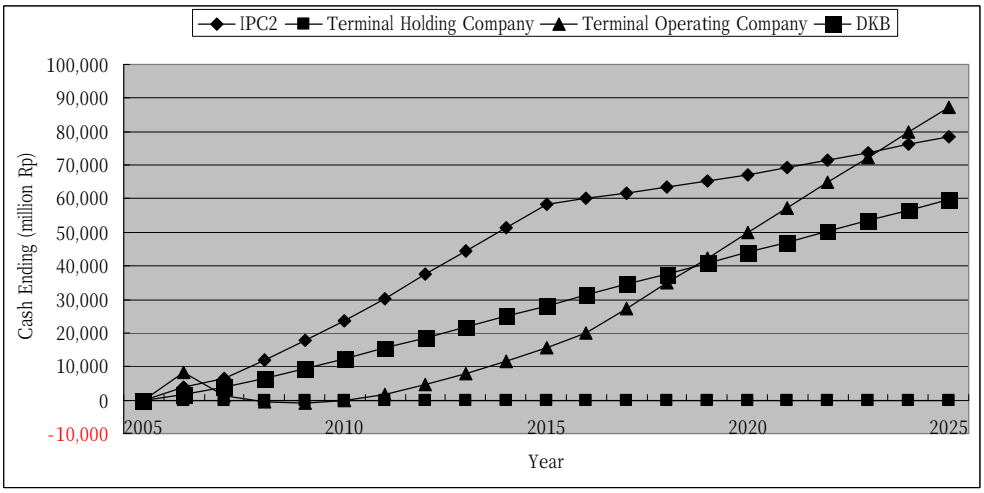


Figure 14-G-6 Cash Ending of Each Body

14-G-3 Financial Analysis of Tanjung Priok Urgent Project (Whole Project excluding Ancol)

Capital Cost

547. The roles of IPC2 and private sector are as follows based on the concept of cost allocation.

Table 14-G-8 Implementation Scheme

Project	Public Sector		Private Sector
	Central Government	IPC2	
Channel and Basin improvement			
Breakwater	●		
Access Channel Improvement	●		
Inner Channel Improvement		●	
Improvement of Central Basin		●	
Automobile terminal			
Infrastructure		●	
Superstructure			●
Port Related Road Improvement		●	

Operational Revenues and Cost

548. Revenues and cost are estimated based on the following assumptions: Improved access channel, inner channel and central basin will start to be operated in 2008. Container demand will reach to capacity in 2012. General and Bag demand will reach to capacity in 2010. Automobile export/import has been described in a previous section.

549. As for revenue and expenditure, the study team gave due consideration to the following matters;

- Automobile terminal operator pays a royalty to IPC2. Royalty is assumed to be 20% of terminal operator's gross revenue.
- Automobile terminal operator also pays land rental fee every year. (Land rental fee is set as 4,300 million Rp which is calculated assuming a rate of 50,000 Rp/ m^2 for area of 8.6ha.)
- IPC2 pays some compensation (equivalent to the above land rental fee in maximum) to DKB until 2022, since DKB has a right of use of land until 2022 where the automobile terminal is located.
- Container cargo increases by around 600,000TEU, of which 430,000TEU is handled in JICT and 170,000 TEU in Koja.
- IPC2 receives 15% of gross revenue and 49% of net profit from JICT.
- IPC2 receives 52% of gross revenue from Koja.
- General and bag cargo increases by 1,400,000 tons.
- Annual maintenance cost is estimated that infrastructure is 1% of the original construction cost and equipment is 5% of it.
- Depreciation is estimated that civil structure is 40 years and equipment is 20 years.
- Tax is 20% of income.

Evaluation of FIRR (Public Sector)

550. Results of the sensitivity analysis on FIRR are shown in Table 14-G-9. Since the FIRR exceeds the weighted averaged interest rate in all cases, this project is deemed to be financially viable.

Table 14-G-9 Sensitivity Analysis (Public Sector) (Whole Project excluding Ancol)

Case		FIRR
Cost	Revenue	
0%	0%	10.67%
0%	-10%	9.03%
+10%	0%	9.66%
+10%	-10%	8.10%

Financial Soundness IPC2

551. Projected financial statements and financial indicators for IPC2 are shown in as follows.

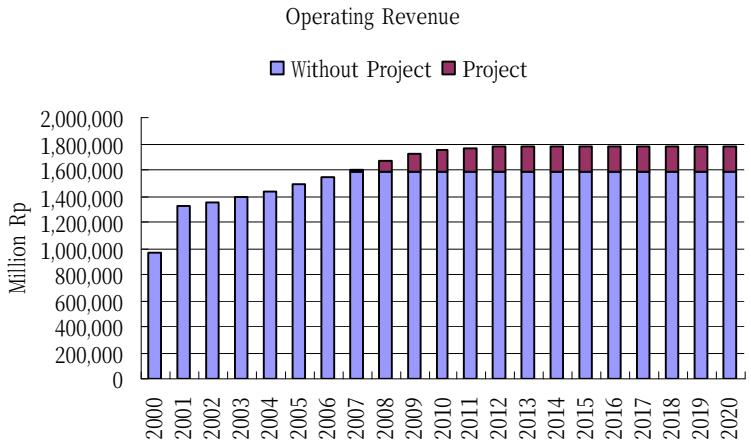


Figure 14-G-7 Operating Revenue

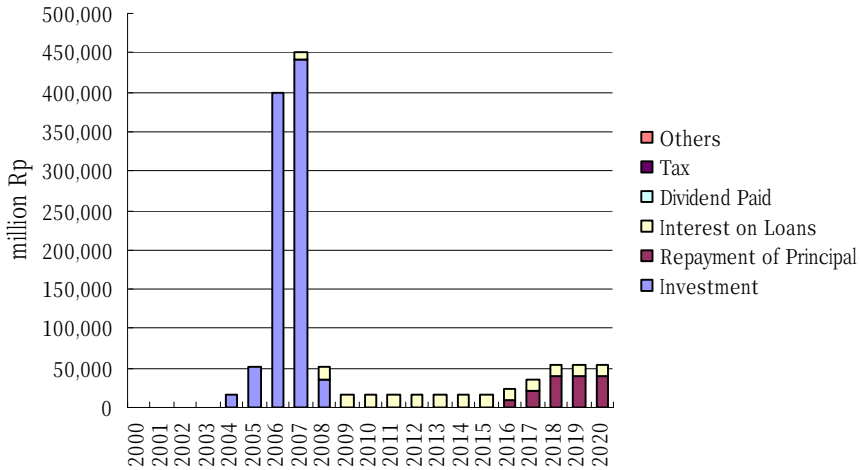


Figure 14-G-8 Cash Outflow (Project Itself)

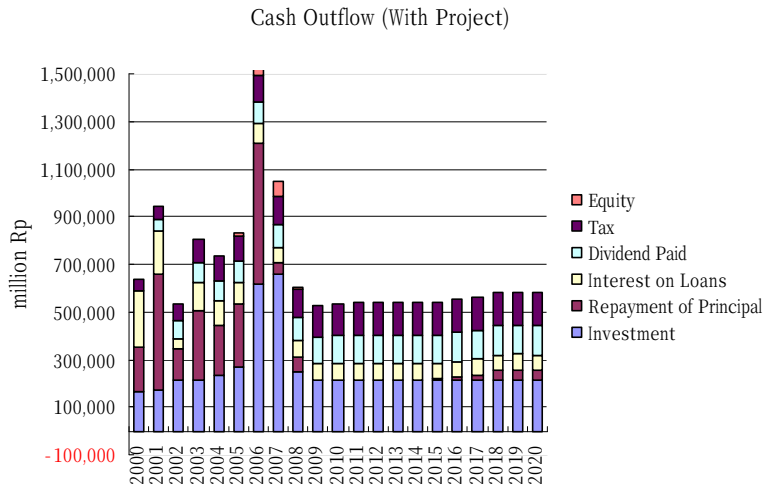


Figure 14-G-9 Cash Outflow (With Project)

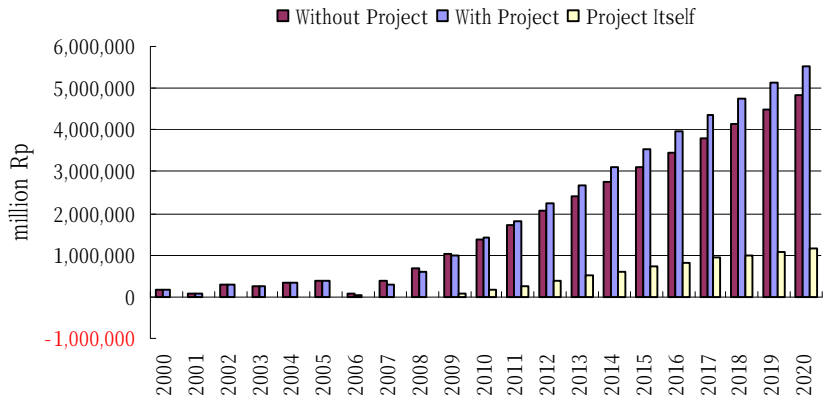


Figure 14-G-10 Cash Ending

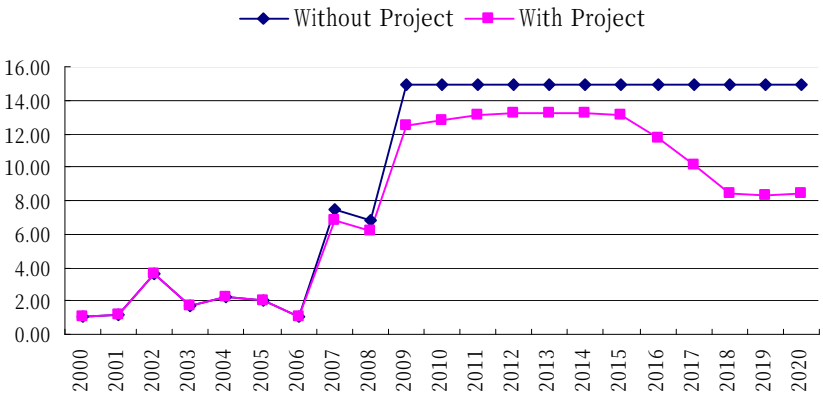


Figure 14-G-11 Debt Service Coverage Ratio

552. In case of projected IPC2's financial statement, the indicators of cashflow are satisfied. In case of with project, debt service coverage ratio exceeds 1.0 during project period.

553. Judging from above analysis, this project can be regard as financially feasible. However, IPC2 and terminal operator should make efforts to heighten the quality of the service, to improve cargo handling efficiency, to secure the forecast cargo volume, and to reduce operating

expenses.

14-G-4 Financial Analysis of Tanjung Priok Urgent Project (Whole Project including Ancol)

Capital Cost

554. The roles of IPC2 and private sector are as follows based on the concept of cost allocation.

Table 14-G-10 Implementation Scheme

Project	Public Sector		Private Sector
	Central Government	IPC2	
Channel and Basin improvement			
Breakwater	●		
Access Channel Improvement	●		
Inner Channel Improvement		●	
Improvement of Central Basin		●	
Automobile terminal			
Infrastructure		●	
Superstructure			●
Port Related Road Improvement		●	
Ancol			
Breakwater	●		
Access Channel Improvement	●		
Inner Channel Improvement		●	
Improvement of Central Basin		●	
Multi Terminal		●	
Passenger Terminal		●	

555. As for revenue and expenditure, the study team gave due consideration to the following matters;

- Automobile terminal operator pays a royalty to IPC2. Royalty is assumed to be 20% of terminal operator's gross revenue.
- Automobile terminal operator also pays land rental fee every year. (Land rental fee is set as 4,300 million Rp which is calculated assuming a rate of 50,000 Rp/ m^2 for area of 8.6ha.)
- IPC2 pays some compensation (equivalent to the above land rental fee in maximum) to DKB until 2022, since DKB has a right of use of land until 2022 where the automobile terminal is located.
- Container cargo increases by around 600,000TEU, of which 430,000TEU is handled in JICT and 170,000 TEU in Koja.
- IPC2 receives 15% of gross revenue and 49% of net profit from JICT.
- IPC2 receives 52% of gross revenue from Koja.
- General and bag cargo increases by 5,000,000 tons.
- Annual maintenance cost is estimated that infrastructure is 1% of the original construction cost and equipment is 5% of it.
- Depreciation is estimated that civil structure is 40 years and equipment is 20 years.

- Tax is 20% of income.

Evaluation of FIRR (Public Sector)

556. Results of FIRR in the sensitivity analysis are summarized in Table 14-G-9. Since the FIRR exceeds the weighted averaged interest rate in all cases, this project is deemed to be financially viable.

Table 14-G-11 Sensitivity Analysis (Public Sector) (Whole Project including Ancol)

Case		FIRR
Cost	Revenue	
0%	0%	4.34%
0%	-10%	2.85%
+10%	0%	3.41%
+10%	-10%	2.00%

Financial Soundness IPC2

557. Projected financial statements and financial indicators for IPC2 are shown as follows.

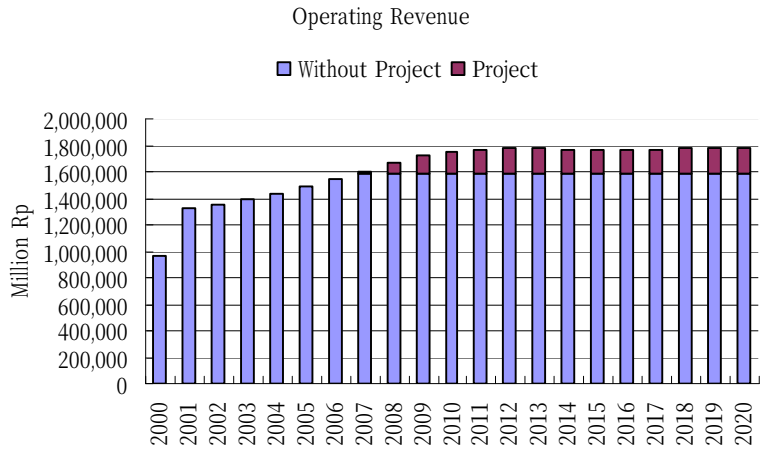


Figure 14-G-12 Operating Revenue

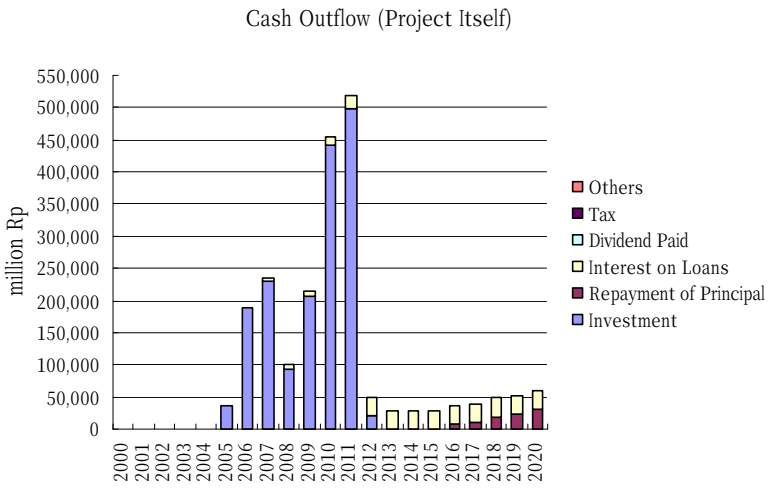


Figure 14-G-13 Cash Outflow (Project Itself)

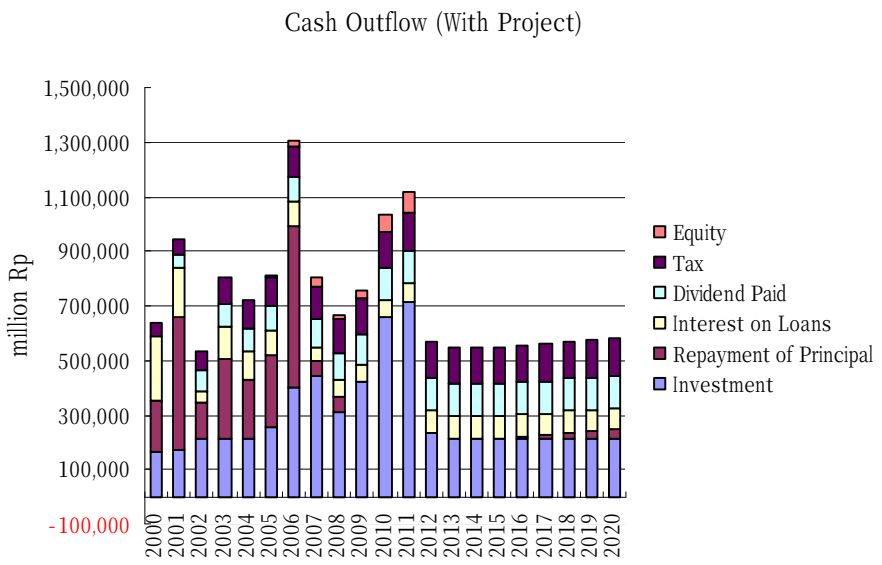


Figure 14-G-14 Cash Outflow (With Project)

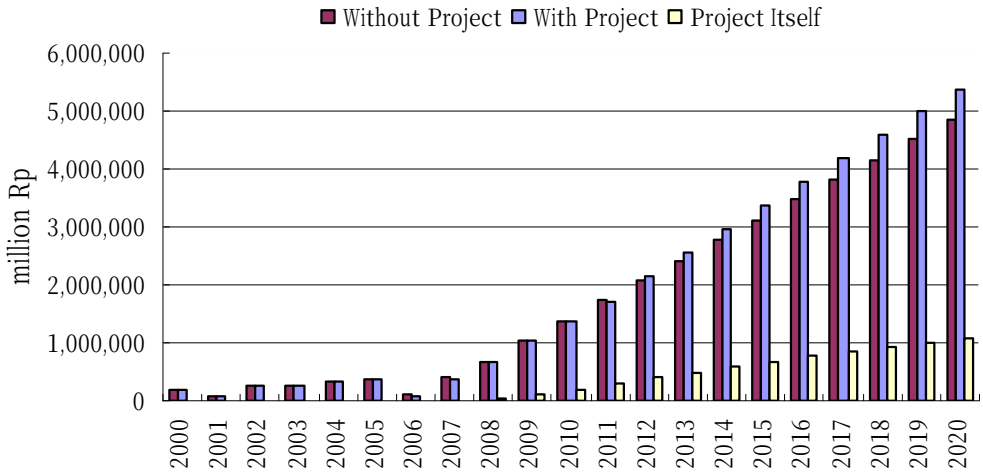


Figure 14-G-15 Cash Ending

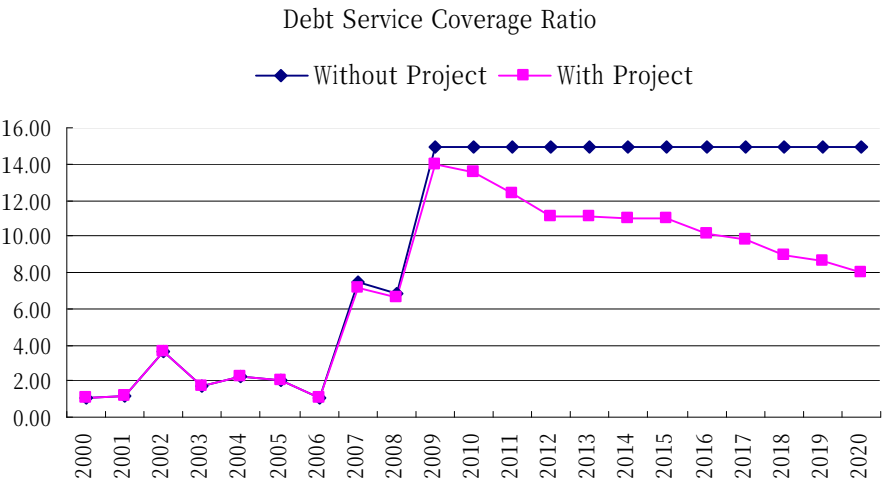


Figure 14-G-16 Debt Service Coverage Ratio

558. In case of projected IPC2's financial statement, the indicators of cashflow are satisfied. In case of with project, debt service coverage ratio exceeds 1.0 during project period.

559. Judging from above analysis, this project can be regard as financially feasible. However, IPC2 and terminal operator should make efforts to heighten the quality of the service, to improve cargo handling efficiency, to secure the forecast cargo volume, and to reduce operating expenses.

14-H. ENVIRONMENTAL IMPACT ASSESSMENT

560. The objectives of Environmental Impact Assessment (EIA) are summarized as follows:

- To identify project components which cause potential important impact on the environment;
- To identify environmental baseline, particularly to be affected by important impacts;
- To predict and evaluate important impact on the environment; and
- To recommend environmental management and monitoring plan.

561. The EIA Study is conducted for the following works, which are the proposed project components of the Short-Term Project toward 2012:

- Widening the Main Channel and Turning Basin
- Car Dedicated Terminal Development
- Passenger Terminal Relocation
- Ancol Development (New Passenger Terminal, Multi Purpose terminal and Access Road)
- Port Inner Road Improvement
- East-west port Highway Development Linking with JORR.

562. Result of environmental impact is summarized in the following Matrix table.

Table 14-H-1 Matrix Table

			Pre-Construction	Construction							Operation and Maintenance				Overall Evaluation
				Off Shore Work			On Land Work								
			Land Acquisition/Resettlement	Dredging	Breakwater	Reclamination	Multi Purpose Terminal Development	Port Access Road Development	Mobilization/Demobilization of Material and Equipment	Man Power Mobilization	Terminal Operation	Existing Breakwater	Maintenance Dredging	Port Access Road	
Physical-Chemical Environment	(1)	Air Pollution		-C	-C	-C	-B	-B	-C		-C			-C	-C
	(2)	Sea Water Quality		-B	-C	-B					-C	+C	-C		-C
	(3)	Noise and Vibration		-C	-C	-C	-C	-C						-C	-C
	(4)	Water Supply								-C	-B				-C
	(5)	Domestic Water Pollution								-C	-B				-C
	(6)	Waste and Garbage		-B	-C					-C	-B				-C
	(7)	Hydrological Situation (Run Off)					-C								D
Biological Environment	(1)	Aquatic Flora and Fauna				-C							-C		-C
	(2)	Terrestrial Flora and Fauna													D
Social Environment	(1)	Land Use	+C	-C											+C
	(2)	Resettlement	-C												D
	(3)	Economic Activity								+B	+B			+B	+B
	(4)	Traffic activity		-C	-C	-C			-B			+B		+B	+B
	(5)	Social Interaction, Culture and Security								-C	-C			-C	-C
	(6)	Split of Community												+C	+C

Note:
A: Serious impact B: Medium impact
C: Small impact
D: No impact +: Positive impact -: Negative impact

Pre-Construction Phase

Resettlement

563. People residing along the road especially Jl. Jampea will be relocated because construction of Fly Over on the road may require land acquisition.

Construction Phase

Air Quality

564. Construction equipment for "Off shore work" and "On land work" will generate air pollution especially dust pollution. Existing air quality is poor, and further air pollution would negatively affect the health of residents. However, since the main factor affecting the air quality is the existing traffic condition, the port development work will not seriously aggravate the present situation.

Sea Water Quality

565. Dredging and reclamation work during the construction stage will generate turbid water. Turbid water also affects water quality at the dumping area when disposing dredged materials.

566. According to a simulation, widening the navigation area and opening the mouth will improve the current condition as sea water will flow through three mouths.

567. If oil leakage from vessels engaged in construction works and domestic wastewater can be managed appropriately, sea water quality will be aggravated by turbid water only.

Noise and Vibration

568. Noise level caused by operation of construction equipment is estimated at around 111dBA. Based on simulations, noise level below 70dBA (Standard for port area, regulated by DKI) will be registered 112m from the construction area, and a level below 65dBA (Standard for residential area, regulated by DKI) 355m from the construction area. Noise disturbance will not affect the residential area.

Water Supply

569. Requirement of water supply is estimated to be around 66m^3/day. If the contractor uses a deep well to meet this demand, it will affect residents' ground water resources are limited, especially during the dry season.

Domestic Water Pollution

570. The construction workers will generate domestic wastewater, which is estimated at approximately 50m^3/day; in addition, huge wastewater discharges will be generated from DKI Jakarta. If this wastewater is uncontrolled or untreated, this condition will degrade the working environment.

Waste and Garbage

571. Construction waste should be disposed properly. The workers will also generate solid waste/ garbage of approximately 45m^3/day. If waste is not treated by the contractor, sanitation conditions will deteriorate. Solid/liquid garbage will attract flies, rats, and cockroaches.

Hydrological Situation (Run Off)

572. Land reform (terminal facility and all port facilities) will generate increasing run-off of 1.2 m^3/sec until 2012. It is necessary to have a suitable drainage design to avoid overflow or flood.

Biological Condition

573. Dredging activities and relocation of breakwater may generate sedimentation in the surrounding port area. It may deprive the habitants of benthos, however, these are mainly common species. There are few fishery activities especially for commercial use.

Economic Activity

574. Job and business opportunities are expected to increase, thereby stimulating economic activities.

Traffic Activity

575. Mobilization and demobilization of heavy vehicles and construction material will increase traffic density, especially on local roads that cross communities from/to Tanjung Priok Port. However, road improvement plan itself can mitigate traffic conditions. As a result, intensity of negative impact will be reduced.

Operation Phase

Air Pollution

576. Port operation work will increase the traffic volume and this will affect the health condition of people in the area.

Sea Water Quality

577. Oil or fuel leakage from ship activity and leachate will also degrade seawater quality or canal. However, widening of the channel/basin and opening the mouth are expected to improve water circulation.

Noise and Vibration

578. Operation of cargo handling equipment and road traffic will increase noise level to approximately 70-80 dBA. This impact may affect the workers and the residents.

Water Supply

579. Port and port-related activities will require water supply of 850m^3/day of water supply. If the port management uses ground water or PDAM to meet this demand, it will affect other port activities and residents because ground water and PDAM capacity are limited.

Domestic Water Pollution

580. Domestic wastewater generated by port activities is estimated at around 600m^3/day. If this wastewater is uncontrolled or untreated, it will degrade the working and living environment.

Waste and garbage

581. Port activity will also generate solid waste/garbage of around 2,500kg/day. Port management must introduce an adequate treatment system for this waste to prevent a negative impact on the environment.

Biological Condition

582. Marine pollution, such as domestic/sewage pollutant, leachate and oil spills, discharge from ship ballast or turbid water caused by maintenance dredging work will occur during the operation phase.

Economic Activity

583. Port development will provide job opportunities for residents. However most residents are unskilled. Even if all these seeking work cannot be employed by the port, various business opportunities such as food services, transportation services or other individual business will be created.

Traffic Activity

584. Operation of Flyover (Jl. Yos Sudarso), Road Improvement, Access Road from/to Port area will reduce traffic congestion. And widening of the navigation area will improve the sea traffic condition.

Social Interaction, Culture and Security

585. The local residents such as Tanjung Priok or Koja communities are very heterogeneous. They are open community with job mobility, however, if there is a high rate of unemployment or if local residents have to compete with newcomers for jobs, jealousy or friction may arise.

Split of Community

586. Increasing traffic density will split the community. However, road construction and rehabilitation will improve traffic conditions, and which results in reducing the traffic of community roads.

Environmental Management and Monitoring Plan

587. The Environmental Management Plan is prepared in order to prevent and to mitigate significant negative impacts.

588. Environmental Monitoring Plan is prepared to evaluate the Environmental Management Plan and whether construction work and/or port are carried out in compliance with the Environmental Management Plan and related regulations.

589. Proposed Environmental Management/Monitoring Plan is summarized below:

Table 14-H-2 Proposed Environmental Management and Monitoring Plan

Type of Impact	Environmental Management Plan	Environmental Monitoring Plan
Pre-Construction		
Social Environment	✓To establish the Committee in order to solve land acquisition and social confliction. ✓To hold public hearing with the residents	✓Monitor of aspiration/opinion of the residents
Construction Phase and Operation Phase		
Water Pollution	✓To arrange the construction schedule to minimize negative impact such as spreading turbid water. ✓To control oil leakage. ✓To treat contaminated dredging materials if necessary.	✓Monitor water quality by observation or measurement. ✓Monitor soil contamination
Air Pollution	✓To select environmental friendly equipment to minimize the impact ✓To maintain the construction/operation equipment ✓To spray water to prevent dust pollution	✓Monitor air quality by measurement and observation ✓Interview with residents and workers
Noise Disturbance	✓To select environmental friendly equipment to minimize the impact ✓To prepare ear protector for the workers ✓To establish sound barrier	✓Monitor noise level ✓Interview with residents and workers
Water Supply	✓To consider the capacity and quality of water supply ✓To supply pipeline or mobile water tank	✓Monitor water quality ✓Interview with the workers
Wastewater and waste/Garbage	✓To keep construction site clean ✓To prepare mobile toilet or temporal treatment facilities of wastewater ✓To dispose and/or recycle construction waste properly	✓Monitor water quality ✓Interview with residents and workers
Biological Environment	✓To minimize the negative impact such as turbid water	✓Monitor spread of turbid water ✓Monitor biological condition
Social Environment	✓To cooperate with police in order to keep security ✓To prepare a parking area and loading/unloading facility for construction materials and equipment vehicles within the project area to minimize or avoid traffic congestion ✓To arrange mobilization and demobilization of equipment at night ✓To inform of job and business opportunities the residents and local government	✓Monitor traffic condition ✓Interview with residents and local government

CHAPTER-15. FEASIBILITY STUDY ON URGENT DEVELOPMENT PLAN OF BOJONEGARA

15-A. CONCEPT AND COMPONENTS OF URGENT REHABILITATION PLAN OF BOJONEGARA NEW PORT

15-A-1 Concept of Urgent Development Plan of Bojonegara New Port

590. In this chapter, the feasibility of Bojonegara new port will be examined centering on the economic and financial analysis. Based on these analyses, an appropriate development plan including management scheme will be proposed.

591. Based on the demand analysis and the port capacity analysis, the required berthing facilities have been set in the Master Plan (2025) and Short-term Plan (2012). According to the plans, two (2) container berths (CT1 and CT2) should be operated in 2010, while one (1) multi purpose berth should be operated in 2008.

592. Considering the main purpose of the development of Bojonegara is to improve the container terminal capacity for the Greater Jakarta Metropolitan area, it is nonsense to exclude the container terminal project from the feasibility study. Moreover, the container terminal is sure to make the project of Bojonegara profitable. Thus, the target year of the feasibility study should be 2010.

15-A-2 Components of Urgent Development Plan of Bojonegara New Port

593. The following projects have been selected as urgent development projects of Bojonegara new port on the basis of the Master Plan and Short-term Development Plan putting priority on “Coping with increasing cargo demands”, “Impact to the national/regional economy”, and “Viability of the project”.

- Development of a container terminal for the purpose of accommodating increase of container cargo as well as release of the burden of Tanjung Priok port
- Development of a multi purpose terminal for the purpose of accommodating the cargo demand generated from regional development

594. A port access road to/from the existing toll road network is a dispensable component to commence operation of the new port, i.e. by 2008. However, the road development should be implemented by Kimpraswil as a national road since the road itself is outside of the port and benefits regional development of Banten peninsula area.

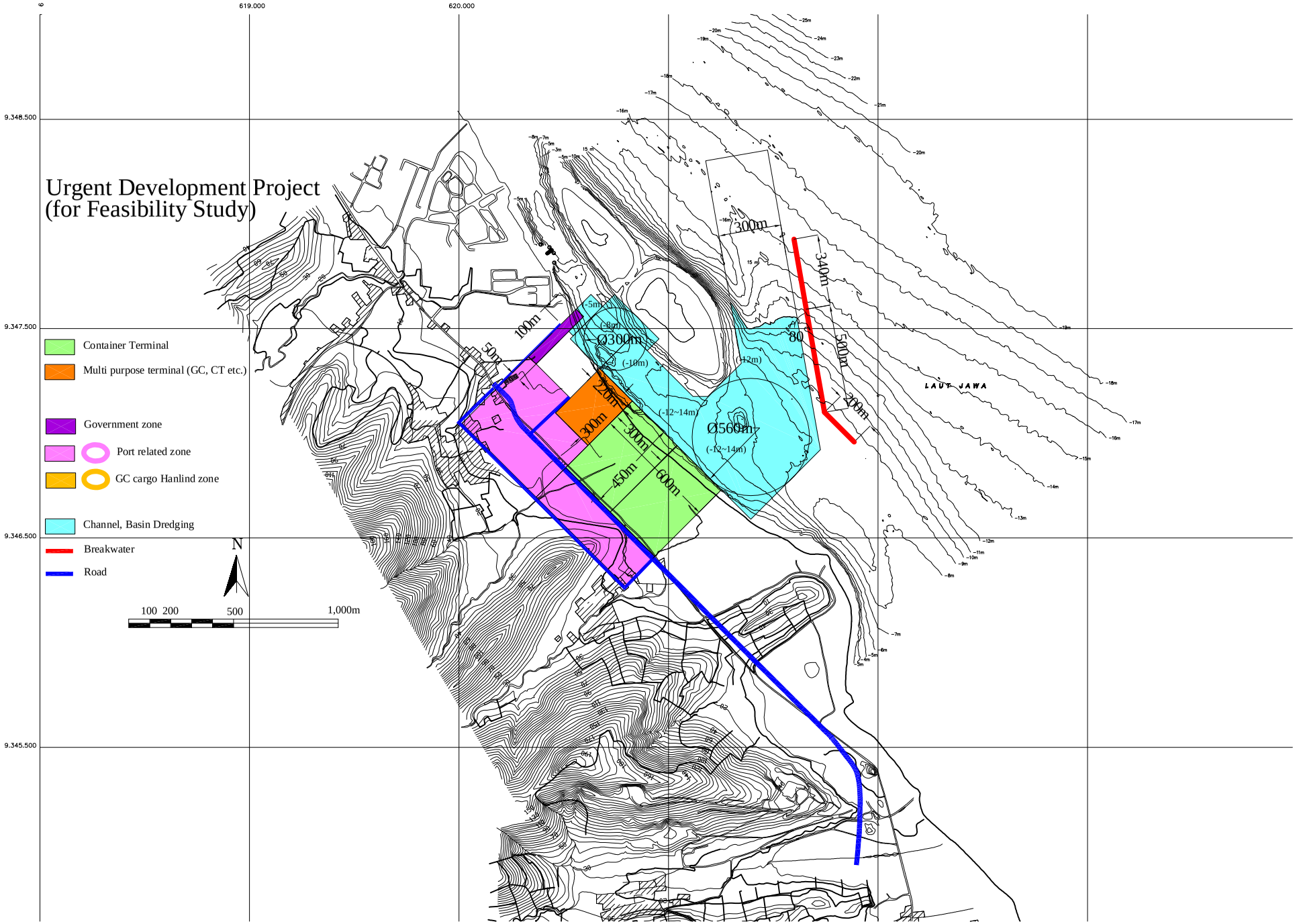
595. Project components are described in Table 15-A-1.

Table 15-A-1 Description of Project Components

Project Component	Proposed Year of Operation	Remarks
Container Terminal Development	2010~	Should be operated by 2010. Some additional equipment will be deployed in 2011.
Multi Purpose Terminal Development	2008	Should be operated by 2008
Breakwater, Channel and Basin Development	2008~	Implemented by phased construction
A port access road to/from the existing toll road should be completed by 2008. The road will be developed by Kimpraswil as a national road.		

596. Layouts of the project components are shown in Figure 15-A-1.

Figure 15-A-1 Layout Plan of Urgent Development Project of Bojonegara New Port


Urgent Development Project
(for Feasibility Study)
Container Terminal
Multi purpose terminal (GC, CT etc.)
Government zone
Port related zone
GC cargo Hanlind zone
Channel, Basin Dredging
Breakwater
Road
N
100 200 500 1,000m
619.000
620.000
9.348.500
9.347.500
9.346.500
9.345.500
300m
340m
500m
80
200m
100m
50m
Ø300m
(-10m)
220m
300m
300m
450m
600m
(-12~14m)
Ø500m
(-12~14m)
LAUT JAWA

15-B. REQUIREMENT & LAYOUT OF THE PORT FACILITIES

Container Terminal

597. The container berth facilities in 2010 are 2 berths with the total quay length of 600m (300m x 2 berths) and with a depth of -12m in the initial stage. (Dredging up to -14m will be conducted in future.)

Table 15-B-1 Depth of Container Terminal

Item	Depth of Terminal	Remarks
Apron	65 meters	Quay side Gantry Crane Span 30 m and Back Reach Maneuvering Space 35 m
Marshalling Area	227 meters	1 Lane width 25.26 meters for RTGs Operation. 25.24m x 9 Lane=227m
Container Yard Main Passage	58 meters	Including Trailer Waiting Area
Terminal Facilities and Building Area	100 meters	Office Building, C.F.S, Gate Booth, Maintenance Shop, and Power Station etc
Total	450 meters	
Empty Container Stacking Area (Outside of the terminal)	50 meters	Railway or container stacking area

Multi Purpose Terminal

598. The multi purpose berth facility in 2010 is 1 berth with the quay length of 220m and with the depth of -10m based on the Master Plan.

Breakwater, Channel and Basin

599. According to the tranquility analysis, the breakwater with the length of around 1,000m should be developed in order to operate CT2 with 98.0% satisfying operational performance standard (over 97.5%).

600. On the other hand, in order to operate only Multi Purpose Terminal, which will be realized in 2008, no breakwater is needed with the sufficient operational performance of 98.2%. However, without the breakwater, the operational performance of CT1 alone will be 95.5%, less than the required performance 97.5% as shown below. In order to operate CT1 effectively, a breakwater with the length of at least 500m is necessary.

Port Supporting Area

Governmental Zone

601. As Bojonegara is a totally new port, not only a branch office of IPC-II with a pilot station but also other governmental function/facilities such as customs clearance, quarantine, police, fire fighting need to be developed in the port area.

602. Although another study will be necessary to decide the dimensions of these facilities, an area of around 1ha within the port will be allocated as the governmental zone.

Port Related Zone

603. Power supply, water supply and drainage system are other key components of infrastructure in the development area. Well-developed access to these facilities will greatly improve the development potential in/around the port.

604. In addition, the following functions/facilities should be introduced in/around the port in order to enhance the activity of the new port:

- Empty container stacking area
- Logistic center such as truck terminal, cargo distribution center with some processing facilities etc.
- Welfare facilities for port workers and seamen
- Port related companies' offices such as shipping agency, stevedoring etc.
- Amenity such as port park, shopping center etc.

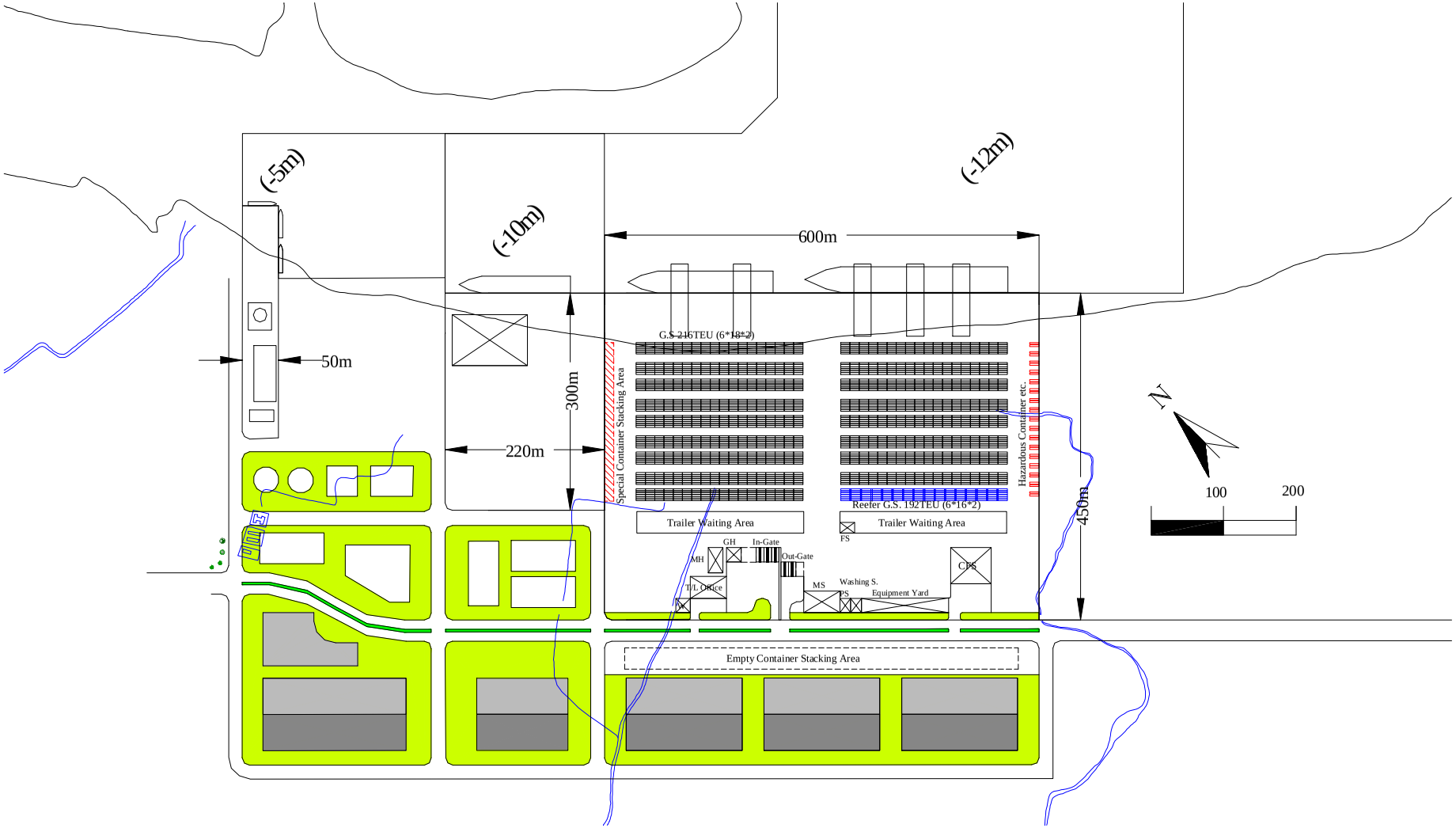


Figure 15-B-1 Layout of Urgent Development Plan for Bojonegara (up to 2010)

15-C. ENGINEERING DESIGN AND COST ESTIMATE

15-C-1 Berth Structures of Container Terminal Berth, and Multi purpose Berth

605. Considering soil conditions and gentle slope of seabed topography, the caisson type structure is considered more economic and suitable among the other alternatives and is adopted for the preliminary design of the container berth and multipurpose berth foundation. The characteristic of the caisson type berth foundation is summarized below

Table 15-C-1 Bojonegara Quay Wall of Container Wharf

	Caisson Type Structure
Evaluation	• Complicated method, but economical, reasonable construction period.
Advantage	• Materials are available locally. (Economical) • Relatively suitable to deeper water depth • Maintenance is easy and structure is relatively durable
Disadvantage	• Caisson yard or floating dock is required for fabrication. • Large floating equipment is required during installation. • The construction works are complicated to make level of mound for caisson installation and to set exact position for installation. • Construction period may be longer. • Large volume of rock material is required for dredging before caisson installation.

606. Figure 15-C-1 and Figure 15-C-2 shows the typical section of caisson foundation of the container berth and multipurpose berth with a different water depth and crown height from the container berth.

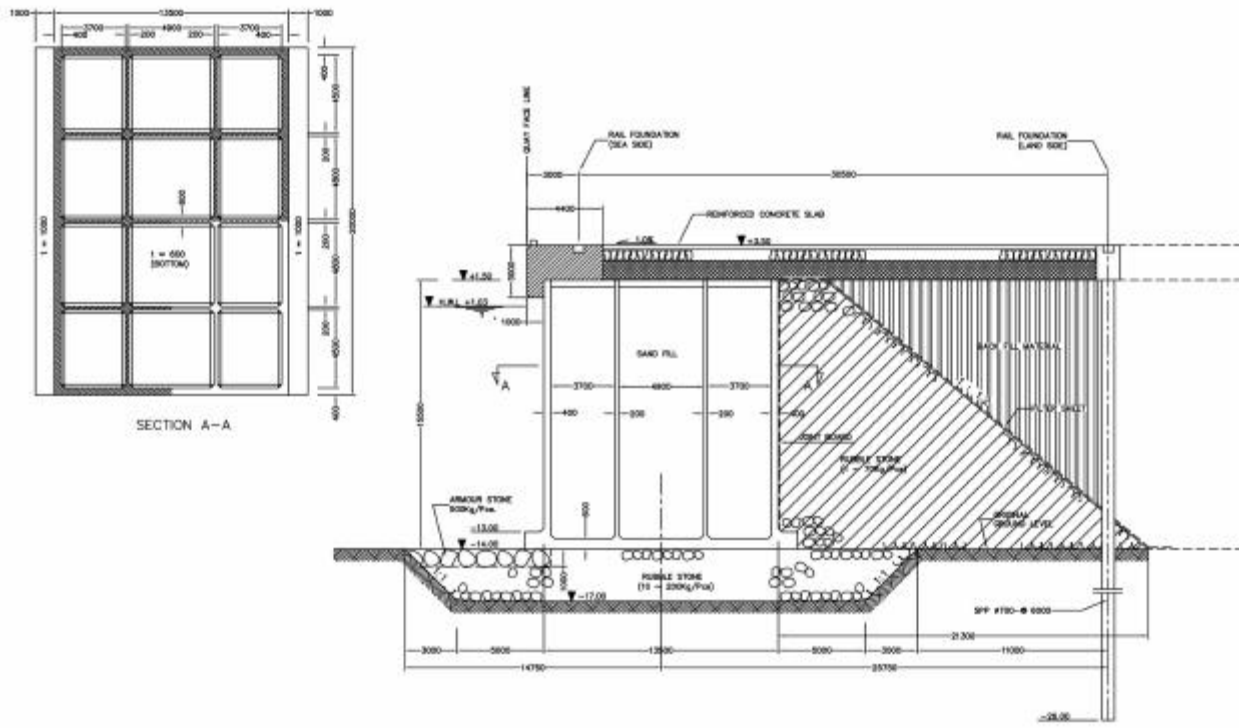


Figure 15-C-1 Bojonegara Quay Wall of Container Berth (Concrete Caisson, LWS-14 m)

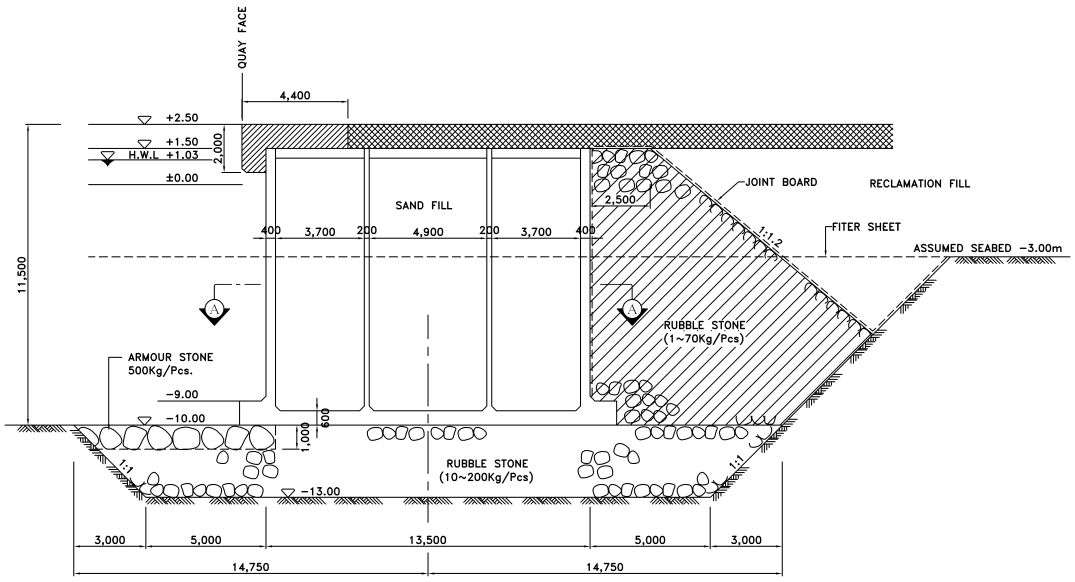


Figure 15-C-2 Bojonegara Quay Wall of Multi Purpose Berth (Concrete Caisson, -10 m)

15-C-2 Breakwater construction

607. The design wave height and period of high-frequency higher wave can be set as $H_{1/3}$ = 1.5 m, T = 6.0 s, Wave incidence: North direction. The low frequency wave (return period of the design wave is 30 years) is adopted for examining the stability of breakwater and the design section thereof. The design deepwater wave height and equivalent deepwater wave height in front of the assumed breakwater is set as $H_{1/3}$ = 3.0 m, T = 9.5 s, Wave incidence: East direction.

608. Design crest elevation of the new breakwaters to be constructed should be set as DL+2.40 m.

609. The breakwater is planned to obtain the required calmness of the specified period of container handling under the wave height of 50 cm during the rough weather season. Breakwater dimensions and other details are found in the "Supporting Report of Engineering Study".

610. A breakwater in the initial stage will be positioned so that the port entrance will face the north. Breakwater will be extended to the south-east direction in line with the future container terminal development.

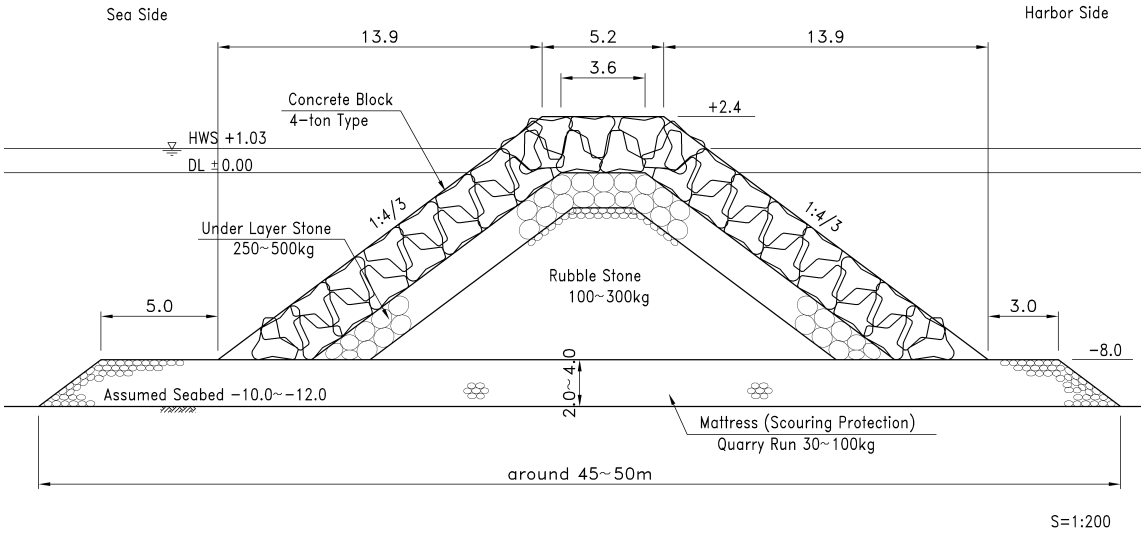


Figure 15-C-3 Typical Section of Bojonegara Breakwater

15-C-3 Navigation Channel Widening and Deepening

611. The existing sea bed depth of the planned berthing area and entrance channel and basin will be increased to – 8 to –12 m. Detailed soil investigation and marine geophysical survey are carried out to determine the suitable type of dredging equipment and methods. As a result, the dredging works are planned to carry out by grab dredgers with hopper barge. (Refer to "Supporting Report of Engineering Study" for details.),

612. The soil conditions from the seabed indicate that the dredged material is not suitable for use as reclamation material. It is planned to obtain such reclamation material from out side of the port area.

Capital Dredging Volume

Soil Conditions	Dredging Volume (m3)
Alluvium Component	2,904,000 m^3
Weathered Rock Component	638,000 m^3

Note) Dredging volume include over dredging volume about 10% of the designed dredging volume.

Dredging fleet arrangement

613. Dredger fleet for the dredging work at the Bojonegara site is planned to be carried out by grab dredgers with hopper barge. Dredger fleet is assumed to be mobilized from Singapore.

Grab Dredger	800 GT Class, 1,600 HP
Light Bucket for dredging of soft clay (alluvium):	23 m^3 (weight 38ton)
Heavy Bucket for dredging of Weathered Rock:	9 m^3 (weight 85ton)
Anchor Boat	65 GT Class, 150 HP
Hopper Barge	Capacity: 1,500 m^3
Tug Boat (Pusher)	200 GT Class, 1,600 HP

Disposal Area

614. As the disposal area of the dredged material, the two locations of the disposal areas were recommended in the previous process of Bojonegara development and the use of those locations have been already approved by ADPEL (as of 30 May 1997). The location of the disposal area is shown in the "Supporting Report of Engineering Study".

Work period

615. Total period required for Dredging of Alluvium Component including over dredging

- Gross volume: 2,640,000 m^3 x 110 % = 2,904,000 m^3 for Alluvium
- 2,904,000 /189,000 = 15.4 month

616. Total period required for Dredging of Weathered Rock Component

- Gross volume: 580,000 m^3 x 110 % = 638,000 m^3 for Weathered Rock
- 638,000/36,120 = 17.7 month

617. Considering the rough sea condition of Java Sea in the rainy season, the total working period will be at least 36 months (3 years).

15-C-4 Diversion Canal

618. This canal will be important especially after the port facilities to be developed in the project commence operations to avoid flooding of the port area and access road in the neighboring areas. The canal will be constructed as part of the urgent development project.

Catchment Area and Rainfall

619. In order to avoid flooding of the reclaimed land area during the rainy seasons, a series of diversion channels is necessary. The catchment area of each stream is measured as follows.

	Area	Area named
1	2.2 km^2	A_1
2	1.9 km^2	A_2
3	0.8 km^2	A_3
4	3.6 km^2	A_4

Distribution of Discharge Flow

620. The run-off flows from Areas 1 - 3 are to be diverted to Kali Sumur located in Area 4 by a diversion channel along the shoreline. It is assumed that the run-off discharge can be distributed to each channel as follows.

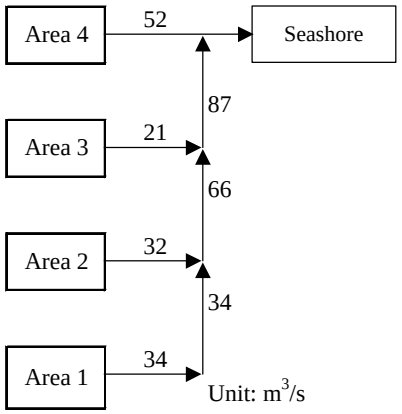


Figure 15-C-4 Distribution of Discharge Flow

15-C-5 Project Cost Estimate

621. The project cost in each phase described in the next section is estimated as follows: It should be noted that these figures are for the components selected in the feasibility study, and thus they do not include access road.

Table 15-C-2 Cost Estimate for Urgent Development Plan of Bojonegara

million Rp

	Local	Foreign	Total	Remarks
Total Construction Cost (Direct & Indirect) (TC)				
~2008				
Dredging Channel/Basin (up to -10 m)	15,604	119,151	134,754	
Multi-purpose Terminal (Infrastructure)	49,912	28,042	77,954	
Government Zone	10,095	6,076	16,171	
Port-related Zone	3,145	37	3,182	
Port-related Road	15,301	7,280	22,582	
Building Works	6,190	4,127	10,316	
Utility Supply	2,165	8,200	10,365	
Diversion Canal	5,217	2,247	7,464	
Cargo Handling Equipment (Multi Purpose Terminal	1,034	9,306	10,340	Private
Sub Total	**108,663**	**184,466**	**293,129**	
~2010				
Breakwater	85,888	142,603	228,491	
Dredging Channel/Basin (-10 m～-12 m)	19,807	74,245	94,052	
Container Terminal; B1, B2	262,551	128,348	390,899	
Infrastructure	143,607	77,688	221,295	
Superstructure	118,944	50,659	169,604	Terminal Operator
Port-related Zone	6,155	72	6,227	
Utility Supply	8,289	32,696	40,985	
Cargo Handling Equipment (Container Terminal)	36,013	324,116	360,128	Terminal Operator
Sub Total	**418,702**	**702,079**	**1,120,781**	
Total (FS Components)	**527,365**	**886,545**	**1,413,910**	
Contingency	52,737	88,654	141,391	10% of TC
Consulting Services	40,522	55,920	96,442	
VAT (10%)	62,062	103,112	165,174	
Administration Cost	42,075		42,075	Including Compensation
Grand Total	**724,761**	**1,134,231**	**1,858,992**	

15-D. PROJECT IMPLEMENTATION SCHEDULE

622. Project components of the Urgent Development Plan of Bojonegara new port is divided two packages as follows:

Package-1 (up to 2008)

- Multi purpose terminal development
- Dredging channel and basin up to -10m

Package-2 (Up to 2010)

- Container terminal development
- Dredging channel and basin up to -12m
- Breakwater development

623. The required period for implementing the planned project of urgent and short term development is estimated as follows:

Table 15-D-1 Time Period for Implementing Urgent and Short Term Development Project

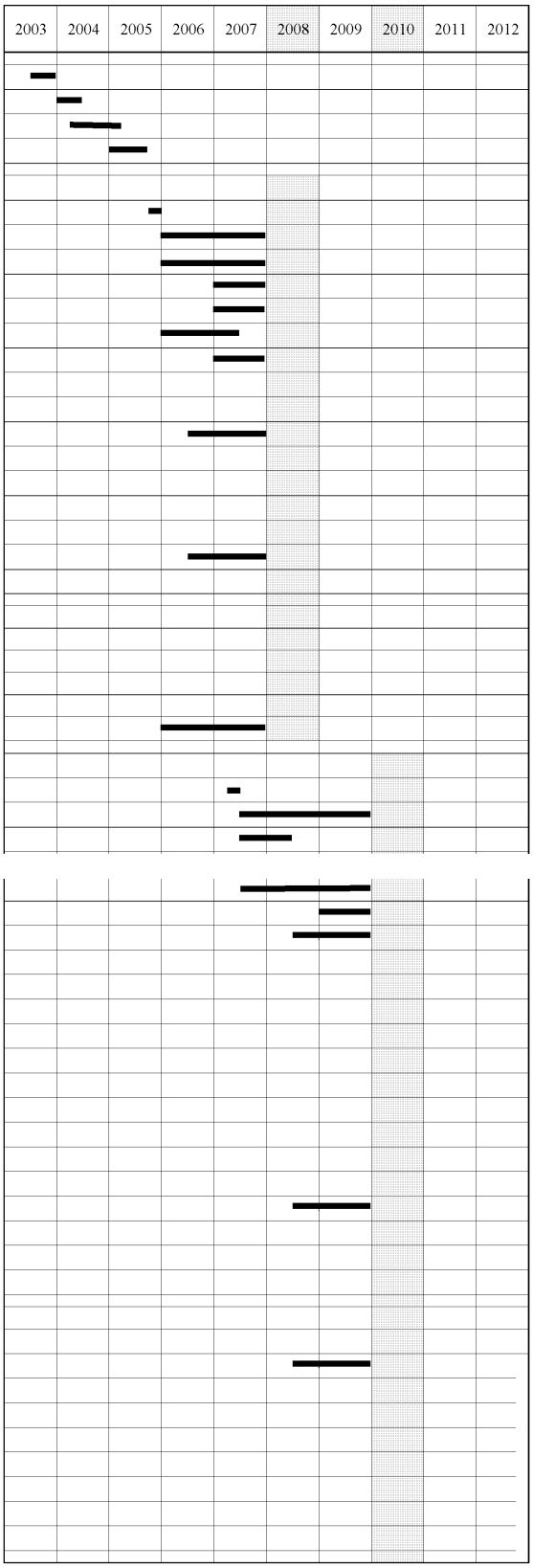
Activities	Period
Project formation by IPC2 and other agencies	3 months after M/P, F/S
GOI, MOC, Provincial government appraisal	6 months
Financial arrangement, Land Acquisition, and Environmental Clearance by executing agency	12 months
Selection of Consultant	9 months
Detailed Design and Tender Documents preparation	12 months
Selection of Contractor	9 months
Construction works	48 months

- Package-1
  - Financial arrangement should commence from 2003.
  - Engineering study including the design and tender documents preparation should be completed in 2004-2005.
  - Construction works will be started from 2006 and be completed in 2007 except parts of the channel dredging. The required port facilities should be made operational in 2008.
- Package-2
  - Financial arrangement should commence from 2004. Preparation for concession scheme development will be carried out in 2004.
  - Engineering study including the design and tender documents preparation should be carried out in 2005-2006. Tender and negotiation process for concession agreement will be also carried out during the same period.
  - Construction works will be started from the latter half of 2007 and be completed in 2009. Container terminal facilities should be made operational in 2010.

624. The construction schedule of the urgent development plan of the Bojonegara Port is shown in the following Table.

Table 15-D-2 Construction Schedule of the Urgent Development Plan

Description	Unit	Quantity
Financial Arrangement, EIA Clearance		
Employment of Consultants by executing agency		
Detail Design and Tender Document Preparation		
Tender Process and Contractor Selection		
Urgent Development Plan (by 2008)		
(1) Mobilization and Demobilization	l.s.	1
(2) Dredging Channel/Basin (up to -10 m)	m^3	2,320,000
(3) Multi-purpose Terminal	m	220
(4) Berthing Facility for Service Crafts at the Governn	m	50
(5) On land facility of Port-related Zone	m^2	80,800
(6) Port-related Road inside port area	m^2	33,150
(7) Building Works		
Transit Shed	m^2	4,500
IPC2 Office	m^2	1,500
(8) Utility Supply		
Power Supply	m^2	66,000
Lighting System	m^2	66,000
Water Supply, Sewarage, Firefighting	m^2	66,000
Environmental Treatment Facilities	l.s.	1
(9) Diversion Canal	m^3	93,060
Direct Construction Cost (Urgent by 2008)		
Cargo Handling Equipment		
(1) Mobile Crane	unit	2
(2) Reach Stacker	unit	1
(3) Forklift	unit	7
Procurement of Equipment Direct Cost		
Access Road Construction to Port (National Road)	m	12,480
Short-term Development Plan (by 2010)		
(1) Mobilization and Demobilization	l.s.	1
(2) Breakwater	m	1,040
(3) Dredging Channel/Basin (up to -12 m)	m^3	1,388,000
(5) Container Terminal; B1, B2	m	600
(6) Port-related Zone	m^2	275,000
(7) Building Works		
Terminal Office	m^2	4,500
Maintenance Shop	m^2	1,500
Equipment Yards	m^2	2,400
Container Freight Station (CFS)	m^2	2,800
Power Station	m^2	300
Fuel Station	m^2	300
Container Washing Station	m^2	300
Water Supply Facility	m^2	400
Marine House (Seamens Club)	m^2	700
Gate Building with weight bridge	lane	10
(8) Utility Supply		
Power Supply	m^2	270,000
Lighting System	m^2	270,000
Water Supply, Sewarage, Firefighting	m^2	270,000
Total Direct Construction Cost (DC) of Short Term		
Container Handling Equipment		
(1) Gantry Cranes	unit	5
(2) Transfer Crane	unit	18
(3) Prime Mover		
Tractors	uni	32
Chassis	uni	38
(4) Reach Stacker	uni	1
(5) Forklift	uni	15



15-E. MANAGEMENT AND OPERATION OF PORT FACILITIES

15-E-1 Port Administration

625. Since Bojonegara new port will be established as a commercial port within the jurisdiction of IPC-II, port management body should be IPC-II. A branch office of IPC-II will be located in the new port.

626. The roles of the port management body are follows:

- Own basic and necessary port infrastructure as breakwater, channel, public berths and maintain them properly (Excluding some facilities under the concession agreement with private sector)
- Own necessary land for proper port management and lease them to port related entities with a proper control system
- Provide port services such as piloting
- Collect port dues
- Collect data and information of cargo handling in effective manner

627. As Bojonegara is a totally new port, not only a branch office of IPC-II with a pilot station but also other governmental function/facilities such as customs clearance, quarantine, police, fire fighting need to be developed in the port area.

628. Port area of the land side is rather difficult to be defined at this moment. However, at least the terminal area including container terminal, multi purpose terminal should be strictly under the control of port management body in terms of security. In this context, gate of the port should be located at the entrance of each terminal as shown in below. Port gate as in Tanjung Priok is undesirable in terms of securing smooth traffic around the port including through traffic. This is common in some major ports in Asian countries such as Japan, Korea etc.

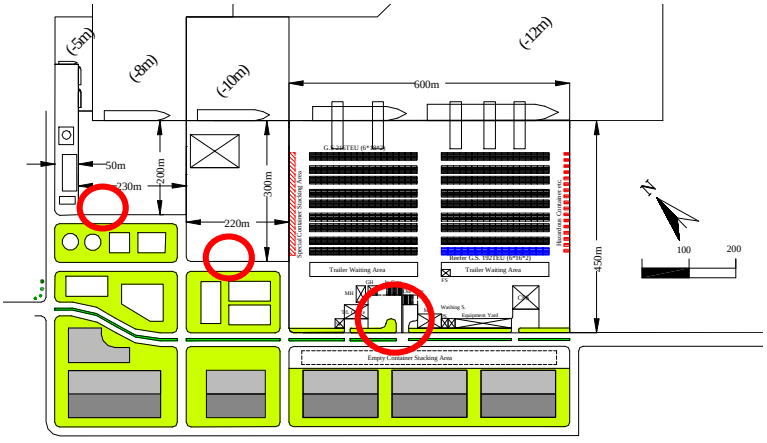


Figure 15-E-1 Location of the Gate

Security

629. Security of cargoes is a crucial to operate the port. The port sometimes loses its credibility by trivial accidents, which will be a big handicap to attract cargo. Thus, a reliable security system should be introduced by the time of operation.

Operational Efficiency

630. As for terminal operation, especially container terminal, high performance/productivity should be pursued to secure rapid service and cost performance. This is very important to attract cargo especially for new port in Bojonegara because of the weakness in terms of its location, i.e., far from the west Java industrial area.

631. In terms of container cargo, high productivity will be attained by the following measures:

- Reducing container dwelling time in the yard
- Lowering container stacking height for easiness of picking

632. To reduce dwelling time in the container yard, smooth customs clearance is a must. Proper customs clearance system should be established by the time of operation under the cooperation and coordination with customs office. It should be accompanied with the best use of EDI. It is also important to reduce the dwelling time of empty container. Some special area for stacking empty containers should be provided by design.

633. Taking world-wide trend of automation and labor-saving devices which mentioned in Chapter-12, it is recommended to examine minutely the current manning scales in some advanced terminals, not to simply follow the sample scale of JICT and Koja. In a few years from now, technology developments, especially those of container handling technology, will be beyond our imagination. The outlook and vision on how a container terminal should be in the future will decide the failure or success of terminal management. Thus, it is recommended to peruse concession documents by applicants for public bidding for a new terminal focusing on this point.

Role of Public Sector and Private Sector

634. As examined later in the section of financial analysis, private participation scheme should be introduced to the development and operation of the container terminal. However, the Multi Purpose Terminal should be developed and managed directly by IPC-II for the moment.

Institutional Setting

635. To increase the attractiveness of the port as well as to promote better management, the following measures should be taken:

- Introduction of EDI system for speedy document works as well as for easy access to the port
- Providing competitive tariff with the transparent price setting system (This will be examined further in later stage of the study based on the financial analysis.)

15-F. ECONOMIC ANALYSIS

Prerequisites of Analysis

636. The prerequisites of economic analysis are as follows:

- The project life of the short-term development is assumed to be 31 years after the completion and construction will take 3 years, so that economic analysis is implemented for 34 years from 2004 to 2037.

Benefit

637. As benefits brought about by the short-term plan, the following items are identified. In this study the monetary benefits are calculated.

1) Savings in ship and cargo staying cost for cargo handling
2) Savings in sea transportation cost
3) Savings in handling cost by Midstream Operation for the excess cargoes
4) Reduction of cargo damage and accident at the port
5) Promotion of regional economic development
6) Increase in employment opportunities and income
7) Reduction of the traffic congestion in the port area

638. For the port development project, 1), 2) and 3) are calculated as a benefit.

Costs of the Projects

639. The items that should be considered as costs of the projects are construction cost, maintenance and administration cost.

Evaluation of the Projects

640. Based on the results, the EIRR of the Short-term Development Plan is calculated as 17.9%. (It is generally accepted that discount rate for infrastructure projects is set as 15%.) Therefore, these development projects of the master plans are viable from the viewpoint of the national economy.

Table 15-F-1 EIRR of Short-term Development Plan on Bojonegara Port

	Cost (IRR=15%)	Benefit (IRR=15%)	B/C (IRR=15%)	EIRR
Port Project	862 billion Rp.	1,074 billion Rp.	1.25	17.9%

Figures of cost and Benefit were discounted with IRR.

15-G. FINANCIAL ANALYSIS

15-G-1 Base Case

Capital Cost

641. The roles of IPC-2 and private sector are as follows based on the concept of cost allocation.

Table 15-G-1 Implementation Scheme

Facility		Public Sector		Private Sector
		Central Government	IPC2	
Breakwater		●		
Access Channel		●		
Inner Channel & Basin			●	
Container Terminal	Quay		●	
	Reclamation		●	
	Pavement			●
	Utility and Facilities			●
	Gantry Crane			●
	Equipment			●
Multi Terminal			●	
Port-related Road			●	

Operational Revenue and Cost

642. As for revenue, the study team gave due consideration on the following matters;

- Port tariff should be discounted from the current tariff so that Bojonegara holds competitiveness among ASEAN's major ports. Here, the study team set the tariff in Bojonegara new port as around 60% of the current tariff.
- Private sector who operates container terminal pays royalty to IPC2 according to the gross annual revenue.
- Average revenue per TEU including handling and storage are set as 117% of container handling charge at quay side considering the real situation in Tg.Priok.
- Annual maintenance cost is estimated that infrastructure is 1% of the original construction cost and equipment is 5% of it.
- Depreciation is estimated that civil structure is 40 years and equipment is 20 years.
- Tax is 20% of income.

Fund Raising

643. Fund Raising is assumed as follows for IPC-2 and terminal operator:

		IPC-2	Terminal Operator
Loan	Kind of loan	Soft loan	Hard loan
	Amount	15% of total capital cost	30% of total initial capital cost
	Loan period	30 years including a grace period of 10 years	10 years
	Interest rate	2.0%	15.0%
	Repayment	Fixed amount repayment of principal	Fixed amount repayment of principal
Equity (Self fund)		15% of total cost	30% of total initial capital cost
Weighted average interest rate		1.7 % 2.0%×0.85	10.5 % 15.0%×0.70

Evaluation of FIRR (Public Sector)

644. Results of the sensitivity analysis on FIRR are shown in Table 15-G-2. Since the FIRR exceeds the weighted averaged interest rate in all cases, this project is deemed to be financially viable using soft loan.

Table 15-G-2 Sensitivity Analysis (Public Sector)

Case		FIRR (Public Sector)
Cost	Revenue	
0%	0%	5.99%
0%	-10%	5.05%
+10%	0%	5.29%
+10%	-10%	4.38%

Evaluation of FIRR (Terminal Operator)

645. Results of the sensitivity analysis on FIRR are shown in Table 15-G-3. Since the FIRR exceeds the weighted averaged interest rate in all cases, this project is deemed to be financially viable.

Table 15-G-3 Sensitivity Analysis (Private Sector)

Case		FIRR (Private Sector)
Cost	Revenue	
0%	0%	18.68%
0%	-10%	15.12%
+10%	0%	17.22%
+10%	-10%	13.91%

Financial Soundness

646. In case of projected IPC2's financial statement, the indicators of cash balance in 2006-2011 are not satisfied. As mentioned above, IPC2 should prepare self-fund to help cashflow shortage in initial stage of the project. On the other hand, in case of projected Terminal operator's financial statement, they are satisfied.

647. In case of projected Terminal operator's financial statement, they are also satisfied. As mentioned above, the financial condition will be satisfactory regarding Bojonegara project.

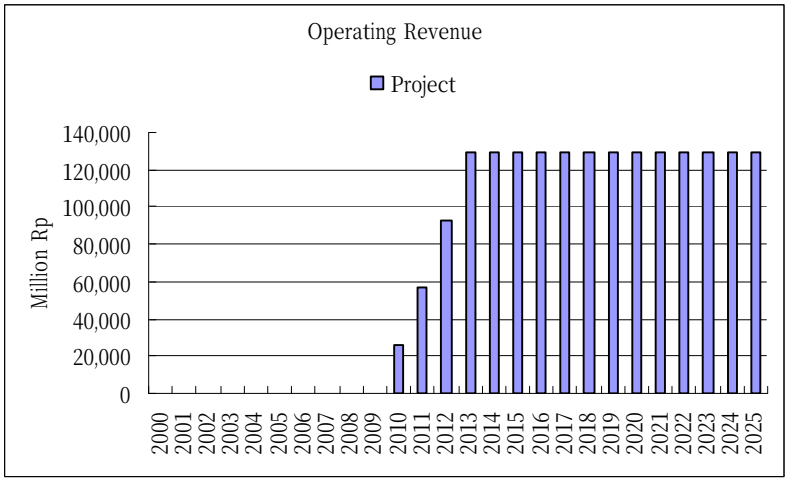


Figure 15-G-1 Operating Revenue

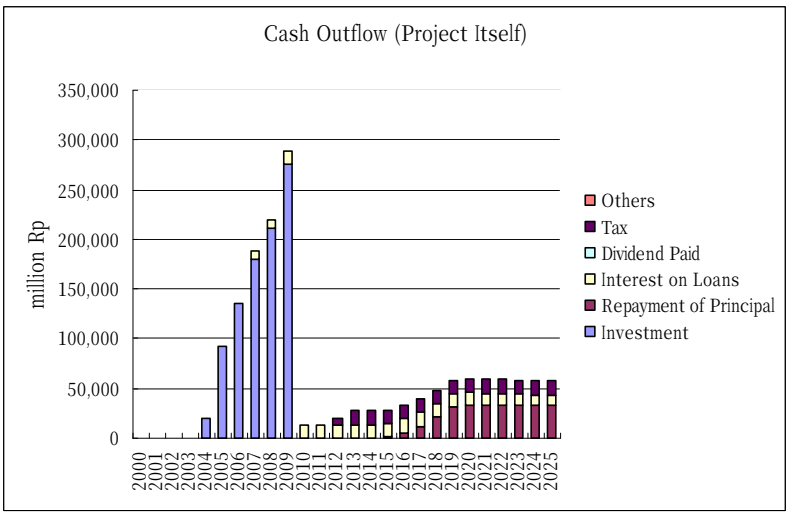


Figure 15-G-2 Cash Outflow

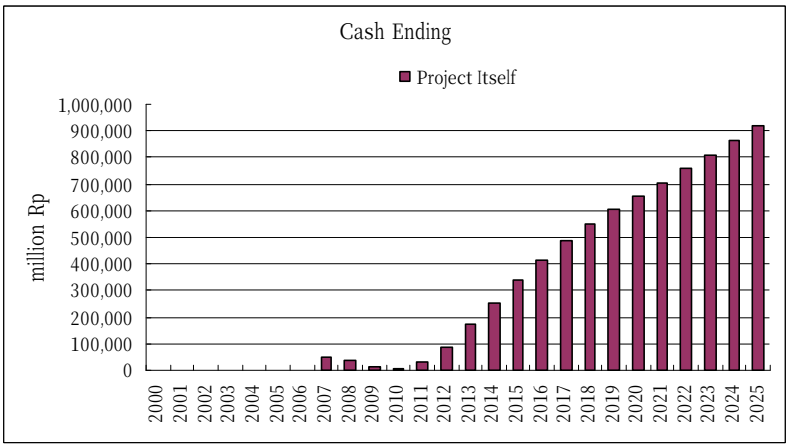


Figure 15-G-3 Cash Ending

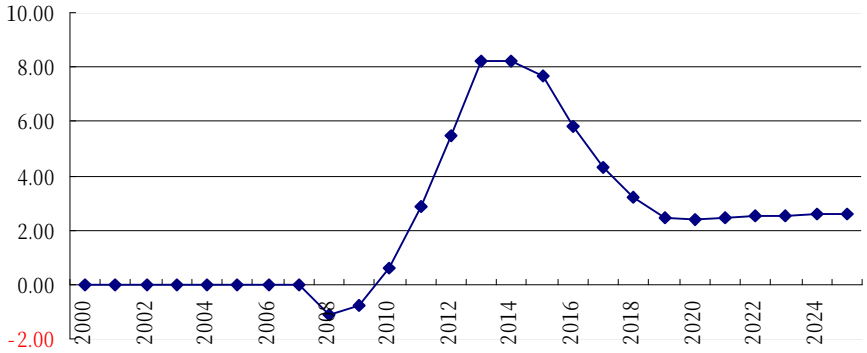


Figure 15-G-4 Debt Service Coverage Ratio

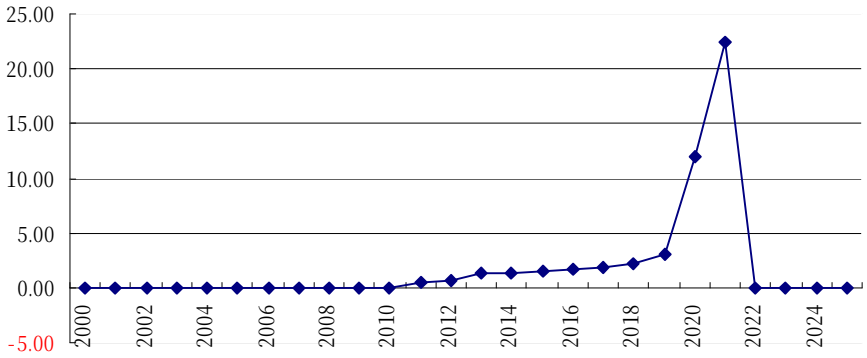


Figure 15-G-5 Debt Service Coverage Ratio

15-G-2 Optional Case

648. The study team examined an alternative implementation scheme as shown in Table 15-G-4, in which the responsibility for quay construction and reclamation for the container terminal would be in the hands of the in private sector.

Table 15-G-4 Implementation Scheme

Facility		Public Sector		Private Sector
		Central Government	IPC2	
Breakwater		●		
Channel & Basin			●	
Container Terminal	Quay			●
	Reclamation			●
	Pavement			●
	Utility and Facilities			●
	Gantry Crane			●
	Equipment			●
Multi Terminal			●	
Port-related Road			●	

Evaluation of FIRR (Public Sector)

649. Results of the sensitivity analysis on FIRR are shown in Table 15-G-2. Since the FIRR exceeds the weighted averaged interest rate in all cases, this project is deemed to be financially

viable.

Table 15-G-5 Sensitivity Analysis (Public Sector) (Optional Case)

Case		IPC2
Cost	Revenue	
0%	0%	7.78%
0%	-10%	6.79%
+10%	0%	7.04%
+10%	-10%	6.08%

Evaluation of FIRR (Terminal Operator)

650. On the other hand, the FIRR of a terminal operator does not exceed the weighted averaged interest rate and the project is deemed not to be financially viable. To make this scheme financing viable, for example, the tariff should be raised.

Table 15-G-6 Sensitivity Analysis (Private Sector) (Optional Case)

Case		Private Sector
Cost	Revenue	
0%	0%	12.63%
0%	-10%	9.91%
+10%	0%	11.55%
+10%	-10%	8.96%

15-H. ENVIRONMENTAL IMPACT ASSESSMENT

651. The EIA Study is conducted for the following works, which are the proposed project components of the Urgent Development Project toward 2010:

- Container Terminal Development
- Multi Purpose Terminal Development
- Breakwater, Channel and Basin Development
- Port Access Road Development

652. Result of environmental impact is summarized in the following Matrix table.

Table 15-H-1 Summarized Overall Evaluation

			Pre-Construction	Construction							Operation and Maintenance				Overall Evaluation
				Off Shore Work			On Land Work		Mobilization/Demobilization of Material and Equipment	Man Power Mobilization					
			Land Acquisition/Resettlement	Dredging	Breakwater	Reclamination	Container/Multi Purpose Terminal Development	Port Access Road Development			Container/Multi Purpose Terminal Development	Existing Breakwater	Maintenance Dredging	Port Access Road	
Physical-Chemical Environment	(1)	Air Pollution		-C	-C	-C	-C	-C	-C		-C		-C	-C	-C
	(2)	Sea Water Quality		-B	-C	-C					-C				-C
	(3)	Noise and Vibration		-C	-C	-C	-C	-C			-C			-C	-C
	(4)	Water Supply								-C	-C				-C
	(5)	Domestic Water Pollution								-C	-C				-C
	(6)	Waste and Garbage		-B						-C	-C				-C
	(7)	Hydrological Situation (Run Off)					-C	-C							D
Biological Environment	(1)	Aquatic Flora and Fauna		-B	-C	-C					-C		-C		-C
	(2)	Terrestrial Flora and Fauna					-C								-C
Social Environment	(1)	Land Use	+C												+C
	(2)	Resettlement	-B												-C
	(3)	Economic Activity								+C	+B			+B	+B
	(4)	Traffic activity		-C	-C				-B		-C				-C
	(5)	Social Interaction, Culture and Security								-C	-C			-C	-C
	(6)	Split of Community												-C	-C

Note:
A: Serious impact B: Medium impact
C: Small impact
D: No impact +: Positive impact -: Negative impact

Pre-Construction Phase

Land Use

653. Pulo Ampel government hopes Bojonegara Port Project can be one of Banten Province's central growth areas. Suitable land use plan of the project in harmony with local development plan gives positive impact to area development orientation.

Resettlement

654. IPC2 has already purchased most of land of the planning area toward 2010, however, some residents have not given up their land and complain of the proposed relocation site because it is far from the port area and/or complain of the standard of compensation. If these complaints continue, social conflicts between the residents and IPC2 could arise.

Construction Phase

Air Quality

655. Construction tools such as vehicles and heavy equipment including vessels for dredging and reclamation that use diesel or gasoline will generate exhaust gas such as SOx, CO, NOx. And such as unloading and transporting process of reclamation material will generate particulate and suspended dust. The impact may spread to the nearest project activity and along the roadside from/to Cilegon Intersection.

Sea Water Quality

656. Dredging and reclamation works during the construction stage will generate turbid water. According to a simulation, turbid water may spread around 1km long the coastal line. Breakwater can block off turbid water to spread toward offshore, however, sedimentation may occur outside breakwater.

Noise and Vibration

657. Noise level caused by operation of construction equipment is estimated at around 111dBA. Based on simulations, noise level below 70dBA (Standard for port area, central government regulation) will be registered 112m from the construction area, and a level below 65dBA (Standard for residential area, central government regulation) 355m from the construction area. Noise disturbance will not affect the residential area.

Water Supply

658. Requirement of water supply is estimated to be around 66m^3/day. If the contractor uses a deep well to meet this demand, it will affect residents' ground water resources are limited, especially during the dry season.

Domestic Water Pollution

659. The construction workers will generate domestic wastewater, which is estimated at approximately 50m^3/day. If this wastewater is uncontrolled or untreated, it will degrade the working environment.

Waste and Garbage

660. Construction waste should be disposed properly. The workers will also generate solid waste/ garbage of approximately 45m^3/day. If waste is not treated by the contractor, sanitation conditions will deteriorate.

Hydrological Situation (Run Off)

661. Land reform (terminal facility and all port facilities) will generate increasing run-off of 0.6 m^3/sec until 2010. It is necessary to have a suitable drainage design to avoid overflow or flood.

Biological Condition

662. Port Development will degrade the habitation of mangrove forest and coral reef, these remain only around P.Kali. Port facilities, especially the breakwater, are arranged considering minimizing negative impact to the remaining mangrove and coral reef

663. Dredging activities and relocation of breakwater may generate sedimentation in the surrounding port area. It may deprive the habitants of benthos and may affect plankton and fish.

Economic Activity

664. Job and business opportunities are expected to increase, thereby stimulating economic activities.

Traffic Condition

665. Construction activity will increase sea traffic. An increase in sea accidents, those including fishing boats, may occur.

666. Mobilization and demobilization of heavy vehicles, material transport, will increase traffic density, especially on local roads that crosses communities either from/to Bojonegara or Merak.

Socio Interaction and Culture

667. The outside workers may affect resident manner to be consumptive people. But the workers usually stay in the base camp. The local residents have a close relation each other. If they are not satisfied with job opportunities or if they have to compete with newcomers, jealousy or friction may arise.

Operation Phase

Air Pollution

668. Increasing traffic volume may generate air pollution and may be cumulative with fuel combustion from ship and other port facility machinery. This condition may generate air pollution.

Sea Water Quality

669. Oil or fuel leakage from ship activity and leachate will also degrade seawater quality.

Noise and Vibration

670. Operation of ship machine, port tools and road traffic will increase noise level to approximately 70-80 dBA. This impact may affect the workers and the residents.

Water Supply

671. Port and port-related activities will require water supply of around 400m^3/day. In this time, Bojonegara area is still outside PAM's service area. If port activity uses deep wells in order to fulfill water demands, this condition will decrease groundwater capacity.

Domestic Water Pollution

672. Domestic waste water generated by port activity is estimated at around 270 m^3/day.

Waste and garbage

673. Port activity will also produce solid waste/garbage of around 1500kg/day. Port management must introduce an adequate treatment system for this waste to prevent a negative impact on the environment.

Biological Condition

674. Marine pollution, such as domestic/sewage pollutant, leachate and oil spills, discharge from ship ballast or turbid water caused by maintenance dredging work will occur during the operation phase. Especially these impacts affect the remaining mangrove forest and coral reef.

Economic Activity

675. Port development will provide job opportunities for residents. However most residents are unskilled. Even if all these seeking work cannot be employed by the port, various business opportunities such as food services, transportation services or other individual business will be created.

Traffic Activity

676. Port activity may increase traffic volume. The impact would be predicted increasing traffic accidents as well as sea accidents.

Social Interaction, Culture and Security

677. The outside workers may affect resident manner to be consumptive people. But the workers usually stay in the base camp. The local residents have a close relation each other. If they are not satisfied with job opportunities or if they have to compete with newcomers, jealousy or friction may arise.

Split of Community

678. Increasing traffic density will split the community. High density and heavy volume of vehicles passing the community will make crossing roads difficult for the residents, especially the children.

Environmental Management and Monitoring Plan

679. Proposed Environmental Management/Monitoring Plan is summarized below:

Table 15-H-2 Proposed Environmental Management and Monitoring Plan

Type of Impact	Environmental Management Plan	Environmental Monitoring Plan
Pre-Construction		
Social Environment	✓To establish the Committee in order to solve land acquisition and social confliction. ✓To hold public hearing with the residents	✓Monitor of aspiration/opinion of the residents
Construction Phase and Operation Phase		
Water Pollution	✓To arrange the construction schedule to minimize negative impact such as spreading turbid water. ✓To control oil leakage.	✓Monitor water quality by observation or measurement. ✓Monitor soil contamination
Air Pollution	✓To select environmental friendly equipment to minimize the impact ✓To maintain the construction/operation equipment ✓To spray water to prevent dust pollution	✓Monitor air quality by measurement and observation ✓Interview with residents and workers
Noise Disturbance	✓To select environmental friendly equipment to minimize the impact ✓To prepare ear protector for the workers ✓To establish sound barrier	✓Monitor noise level ✓Interview with residents and workers
Water Supply	✓To consider the capacity and quality of water supply ✓To supply pipeline or mobile water tank	✓Monitor water quality ✓Interview with the workers
Wastewater and waste/Garbage	✓To keep construction site clean ✓To prepare mobile toilet or temporal treatment facilities of wastewater ✓To dispose and/or recycle construction waste properly	✓Monitor water quality ✓Interview with residents and workers
Biological Environment	✓To minimize the negative impact such as turbid water ✓To conserve the remaining mangrove forest and coral reef around P. Kali	✓Monitor spread of turbid water ✓Monitor biological condition
Social Environment	✓To cooperate with police in order to keep security ✓To prepare a parking area and loading/unloading facility for construction materials and equipment vehicles within the project area to minimize or avoid traffic congestion ✓To arrange mobilization and demobilization of equipment at night ✓To inform of job and business opportunities the residents and local government	✓Monitor traffic condition ✓Interview with residents and local government

CHAPTER-16. FINANCIAL VIABILITY ASSESSMENT OF PORT RELATED ORGANIZATIONS

16-A. FINANCIAL STRUCTURE OF IPC2 AND TANJUNG PRIOK PORT

General

680. Flowchart of revenue and expenditure based on port activities is shown in Figure 16-A-1.

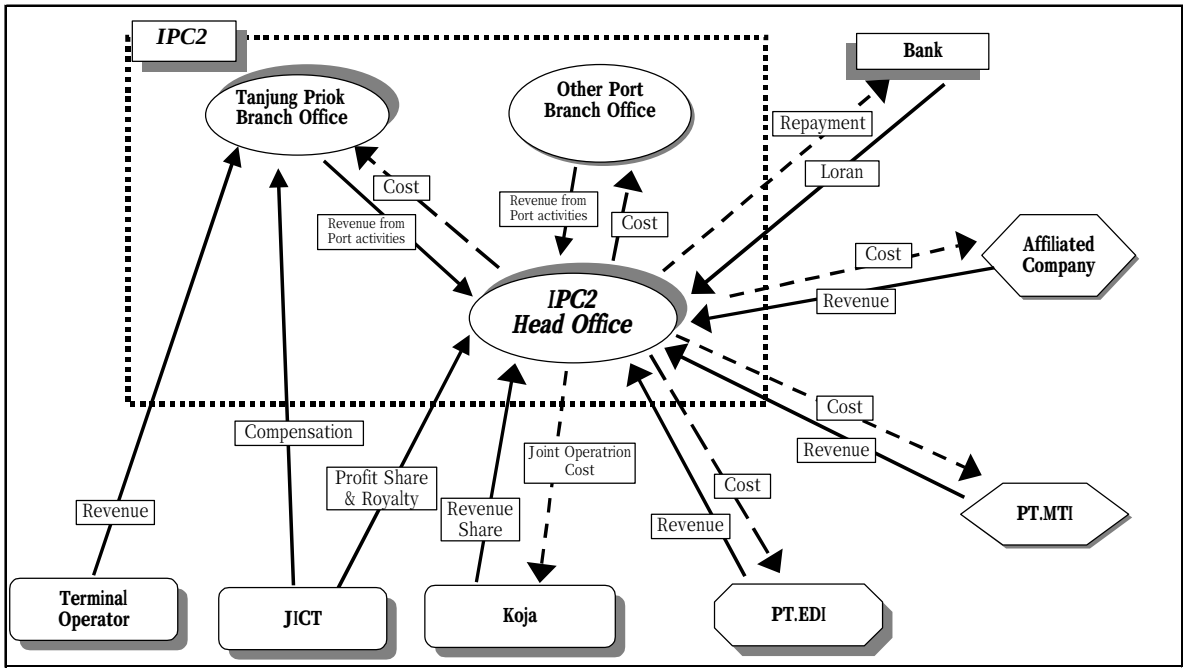


Figure 16-A-1 Flowchart of Revenue and Expenditure

681. Income statement of IPC2 is shown in Table 16-A-1.

Table 16-A-1 Income Statement of IPC2

(000,000Rp)

	2,000	2,001	2,002
Operation Revenue	763,133	1,027,606	1,090,473
Operation Expenses	527,712	671,309	768,607
Operation Profit	235,421	356,297	321,866
Non-operation Revenue	231,984	296,864	312,457
Non-operation Expenses	358,855	224,442	158,335
Non-operation Profit	-126,871	72,422	154,122
Profit before income tax	108,550	428,719	475,988
Tax	25,476	71,574	91,073
Net Profit	83,074	357,145	384,915

682. Income statement of Tanjung Priok Branch Office (IPC2) is shown in Table 16-A-2.

Table 16-A-2 Income Statement of Tanjung Priok Branch Office

(000,000Rp)

	2,000	2,001	2,002
Operation Revenue	301,617	413,756	456,194
Operation Expenses	178,276	196,971	218,201
Operation Profit	123,341	216,785	237,993
Non-0peration Revenue	58,024	77,857	72,771
Non-operation Expenses	5,199	7,314	14,859
Non-operation Profit	52,825	70,543	57,912
Profit before income tax	176,166	287,328	295,905
Tax			
Net Profit	176,166	287,328	295,905

Revenue

683. Details of IPC2 revenue including operation revenue and non-operation revenue are shown in Table 16-A-3 and Figure 16-A-2. In case of IPC2 revenue in 2002, revenue from port activity amounts to 43%, and revenue from JICT, Koja and MTI amount to 36%. There is no subsidy from the central government.

Table 16-A-3 IPC2 Revenue Sources

(000,000Rp)

	2,000		2,001		2,002	
Vessel Service	289,124	29%	415,184	31%	389,496	28%
Piling Facilities	51,499	5%	62,170	5%	58,491	4%
Equipment	0	0%	31,674	2%	30,001	2%
Terminal Service	76,622	8%	66,673	5%	47,702	3%
Container Service	72,055	7%	100,603	8%	117,898	8%
Land building	38,403	4%	40,161	3%	66,675	5%
Special Berth Port	40,865	4%	38,575	3%	23,353	2%
Other Facilities	57,440	6%	66,556	5%	73,912	5%
Compensation from JICT	37,012	4%	53,113	4%	51,153	4%
Joint Operation(Koja)	141,268	14%	203,636	15%	208,000	15%
MTI	0	0%	0	0%	34,184	2%
Affiliated Company	78,669	8%	89,387	7%	103,465	7%
Revenue Reduction	-119,824	-12%	-140,126	-11%	-113,857	-8%
Royalty of JICT	78,750	8%	115,182	9%	110,393	8%
Profit Share from JICT	126,804	13%	175,162	13%	153,458	11%
Others	26,430	3%	6,520	0%	48,606	3%
Total	995,117	100%	1,324,470	100%	1,402,930	100%

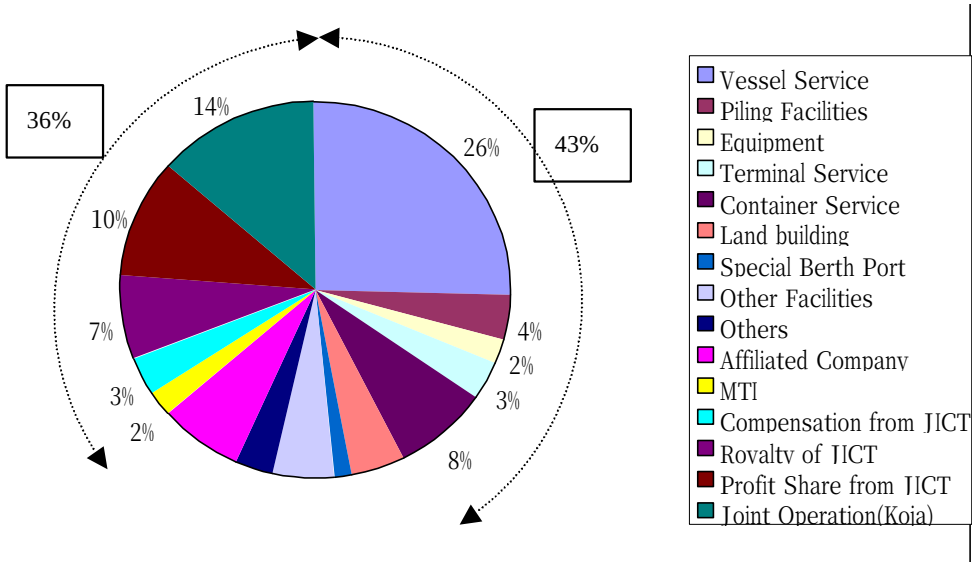


Figure 16-A-2 IPC2 Revenue Resources in 2002

684. Portion of revenue from Tanjung Priok port is shown in Table 16-A-4. Tanjung Priok Port is included revenue from JICT, Koja, and MTI. Tanjung Priok Port occupies around 80% of IPC2.

Table 16-A-4 Portion of Revenue from Tanjung Priok Port

	2000	2001	2002
IPC2	995,117	1,324,470	1,402,930
Tanjung Priok Port	784,363	1,072,634	1,136,172
	79%	81%	81%

Expenditure

685. Details of IPC2 expenditures are shown in Table 16-A-5 and Figure 16-A-3.

Table 16-A-5 IPC2 Expenditures

(000,000Rp)

	2000		2001		2002	
Personnel	97,438	11%	132,918	15%	143,481	15%
Administration	147,175	17%	188,627	21%	214,281	23%
Maintenance	41,783	5%	71,046	8%	86,172	9%
Depreciation	94,787	11%	96,963	11%	105,602	11%
Insurance & Rental	31,660	4%	33,085	4%	31,437	3%
Joint Operation Cost	46,030	5%	70,192	8%	76,746	8%
Company Child Cost	68,839	8%	78,478	9%	110,888	12%
Bank Interest	241,497	27%	190,403	21%	146,672	16%
Others	117,358	13%	34,039	4%	11,663	1%
Total	886,567	100%	895,751	100%	926,942	100%

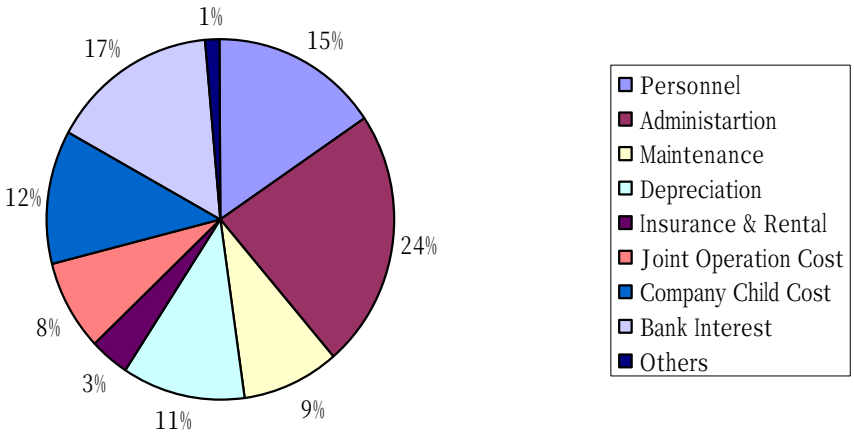


Figure 16-A-3 IPC2 Expenditures in 2002

686. Expenditures at Tanjung Priok port are shown in Table 16-A-6. Figures of Tanjung Priok include joint-operation cost and bank interest. Tanjung Priok occupies around 60% of IPC2.

Table 16-A-6 Portion of Expenditure from Tanjung Priok Port

	2000	2001	2002
IPC2	886,567	895,751	926,942
Tanjung Priok	539,842	543,358	567,366
	61%	61%	61%

Financial Condition

687. Revenue and expenditure of IPC2 and Tanjung Priok port is shown in Figure 16-A-4.

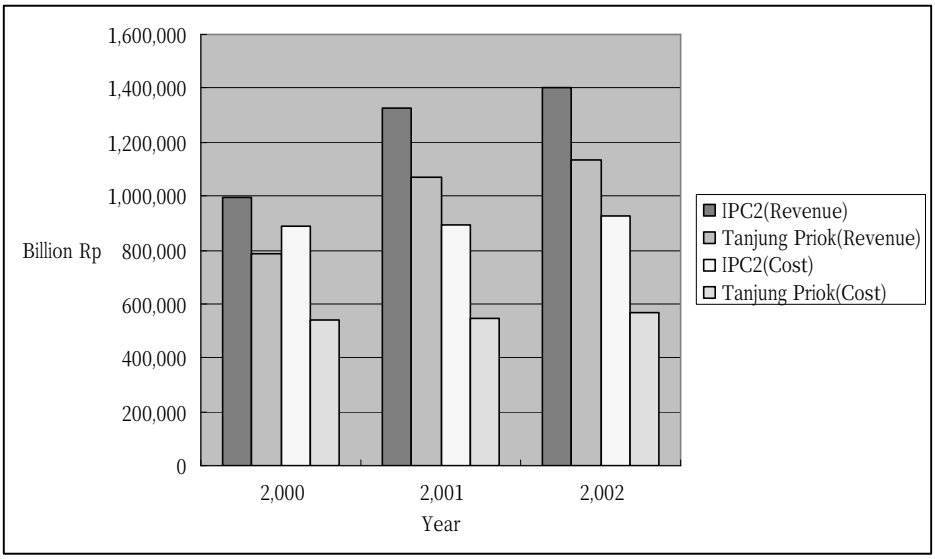


Figure 16-A-4 Revenue and Expenditure

Debt

688. IPC2 has three kinds of debt as shown in Table 16-A-7. Repayment schedule is shown in Table 16-A-8.

Table 16-A-7 Capital Fund Raising for Investment

	IMTN	Bank Mandiri	IBRD
Date of Issue	15 April 1997	4 March 1996	18 June 1985
Lender/Creditor	Investor	PT. Bank Mandiri	International Bank for Reconstruction Development
Amount	US$ 200 million	356 billion Rp	114.5 billion Rp
Interest	8.06%	19.5%	7%
Purpose	- Construction of Container Yards at Tanjung Priok, Panjang, Pontianak and Palembang - Bojonegara	- Construction of Koja Container Yard	- Construction of Container Yard at Tanjung Priok - Port Facilities Rehabilitation at Tanjung Priok, Teluk Bayur, Panjang, Palembang, and Pontianak
Amount due at 31st December 2002	US$ 113 million	310BRp	28BRp
Maturity Date	15th April 2002	31st December 2008	1st July 2005

Table 16-A-8 Repayment Schedule

	2002	2003	2004	2005	2006	2007	2008	Total
IMTN	10M$	23M$	16M$	20MM$	54M$	-	-	123M$
Bank Mandiri	19BRp	51BRp	45BRp	55BRp	50BRp	50BRp	60Brp	329BRp
IBRD	11BRp	10BRp	9BRp	9BRp	-	-	-	39BRp

IMTN

689. The current balance of Indonesia Medium Term Notes (IMTN) bonds is equivalent to US$113million. The bonds were issued on April 15, 1997 at a nominal value of US$200 million and prevailing annual interest as of the balance sheet data is 8.06%. The principal and interest matured on April 15, 2002.

690. IPC2 had not yet finished the repayment of 113 million US$ as of June 2003 and creditors of the bonds accepted re-scheduling until 2006. Thus, IPC2 cannot get a new loan of US$50 million or more without agreement of creditors until 2006. It also seems unlikely that creditors would allow IPC2 to repay principal and interest of a new loan until 2006.

691. If IPC2 needs funds for an urgent project, soft loan at small interest and long grace period would be effective.

Bank Mandiri

692. Loan from Bank Mandiri was obtained to support the IPC2's working capital. This loan is subject to interest at floating rate of 19 % per year. The principal of the loan of 242 billion Rp will mature on 31st December 2008, while the remainder of 87 billon Rp will mature on 31st December 2005.

IBRD

693. Loan was provided to finance the IPC2's investment through the Government of Republic of Indonesia. This loan were originated from overseas creditors and given to the Government of the Republic of Indonesia in the form of multilateral or bilateral cooperationship, which is then channeled to the IPC2. The last installment of the loan will be matured on 1st July 2005.

16-B. PORT RELATED EXPENDITURE AND REVENUE IN THE GOVERNMENT BUDGET

National Budget of MOC (Ministry of Communication) and DGSC

694. In the year 2003, the sea transportation sector (DGSC) has a 23 % share in the whole MOC's budget, which amounts to around 467 billion Rp.

695. In formulating its budget in the recent years, DGSC places great emphasis on the following fields of sea transportation:

- To develop pioneer sea transportation routes
- To develop and maintain/repair seaport facilities
- To ensure safety of navigation
- To improve skill of operation labors

696. According to above policy, DGSC allocates own budget among the following fields:

Table 16-B-1 Allocation of DGSC Budget in the year 2003

Unit: million Rp.

Items of DGSC's Budget	2003 (SAT3)	Number of Projects
A. Assistance to Pioneer routes	176,556	25 Projects
B. Development of Seaports' facilities	177,950	40 Development Projects
Rehabilitation of Seaports' facilities	30,318	10 Rehabilitation Projects
C. Improvement of Navigable condition	29,792	17 Improvement Projects
Rehabilitation of Navigable condition	51,895	26 Rehabilitation Projects
TOTAL	466,511	

Source: Planning Division of DGSC

Note: Amount of the budget excludes the foreign currency portion from foreign assistance but includes the local portion into foreign assistance projects.

697. One of strategies of DGSC is to develop or improve seaports' facilities. Item B is allocated to public ports, which are categorized into two cases: In investment for non-commercial ports (so-called "small ports"), and in some special cases, investment in IPCs' seaports (commercial ports). A typical example of the latter case is to provide local portion for foreign assistance such as JBIC loan. Another example is an allocation for lower-profitable projects of IPC's commercial ports, however, this is rare case and just one project in 2003.

698. As to item C in afore-shown Table 16-B-1, major purpose is to ensure maritime safety, for examples introducing navigation aid system. DGSC plans some maintenance dredging under item C, allocating a budget of 24 billion Rp in 2003 to carry out 6 projects.

Budget for Seaport Sub-sector

699. As to the investment for port sub-sector, the historical trend of the national budget for port sub-sector is shown in below, indicating large fluctuation year by year and heavy dependence on foreign loans.

Table 16-B-2 Historical Trend of DGSC Budget for Seaport Sub-Sector

Unit: Billion Rp.

	94/95	95/96	96/97	97/98	98/99	99/2000	2000/01	2001/02	2002/03
Total	257.5	226.8	240.6	160.8	207.1	186.5	97.3	113.6	589.8
Foreign Loan	133.6	102.0	104.1	105.8	140.9	151.1	78.1	ND	380.6
Own Budget (a)	124.0	124.8	136.5	55.0	66.2	35.4	19.2	ND	209.3
Inflation, GDP deflator (annual %)	ND	ND	ND	13%(97)	75%(98)	14%(99)	11%(00)	13%(01)	ND

Source: JICA Preparatory Study Team (94/95 -98/99 data), DGSC (99/2000 – 2002/03 data), World Bank (GDP deflator)

(a) Own budget includes the local portion into foreign assistance projects.

Revenue of Seaport Sub-sector

700. As to the revenue from port operational activities, the central government can charge calling vessels a kind of port dues.

701. In the whole Indonesia, revenues by all KANPEL offices (under the central government) amount to 346 billion Rp. in the year of 2002.

702. On the other hand, operational revenue/cost by IPCs are as follows:

Table 16-B-3 Operational Revenue/Cost by IPCs in 2000

Unit: billion Rp.

Item	IPC I	IPC II	IPC III	IPC IV
Operating Revenue-Net	287	969	877	136
Operating Cost	162	528	447	79

Source: Annual Reports and Financial Reports in 2000 by IPC I – IPC IV

Expenditure and Revenue Structure of the Local Government

703. The revenues/expenditures of local governments vary widely according to differences in financial backgrounds/conditions. Moreover, the transportation sector has only a small portion of the total investment outlays of local government.

704. Although the decentralization scheme was carried out from 2000, the provincial governments have yet to play a large role, for example, in road administration. Since local governments lack adequate funds, road development projects will likely require subsidies from the central government.

705. Incidentally, the central government provided West Java province with 3,388.4 billion Rp in subsidies, which represented 81.3 % of the income of the province in 2000. Investment in the transport sector reached 298.9 billion Rp, or 25.7 % of the total investment in the province. Regarding Banten province, relevant data are not available, but since the share of the road sector in GRDP for this province is similar to that of West Java, investment in the transport sector can be estimated at 77.1 billion Rp. Based on Indonesian trends, it is further estimated that about 60%, or 45 billion Rp, of this investment goes into road development.

706. In accordance with the Regional Government Law (Law No. 22 in 1999) and the Financial Balance between Central and Regional Government Law (Law No.25 in 1999), the Indonesian government is moving towards enforcement of the decentralization policy. However, MOC/DGSC are still now establishing a detailed procedure on transferring some responsibilities

to local governments. Thus, it is unlikely that local governments will be investing in public ports for the time being.

16-C. FUND RAISING FOR INVESTMENT OF METROPOLITAN PORT

707. The existing port of Tanjung Priok and the new port of Bojonegara are targeted for development. To realize these development plans, IPC2 will have to prepare sufficient funds.

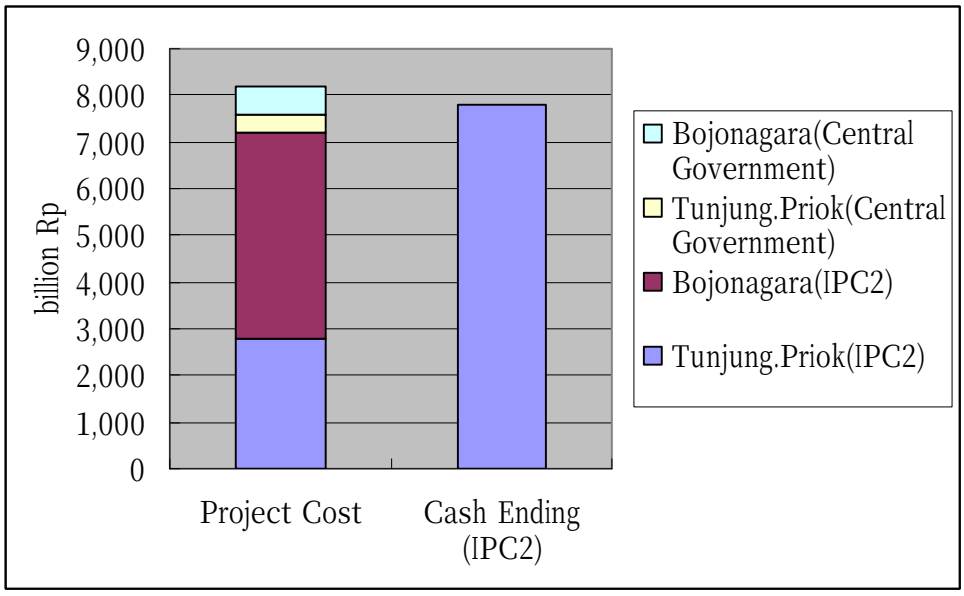
708. As the financial situation of IPC-2 will have been tough for the time being, the proposed urgent projects both for Tanjung Priok port and Bojonegera new port should be implemented optimizing soft loans which have advantages of low interest as well as long grace period.

709. When the urgent project as well as the short term project of Tanjung Priok and Bojonegara will be carried out, IPC2 could make around 7,800 billion Rp in 2025. While when the long term project will be carried out, public sector will need 8,200 billion Rp until 2025 and if breakwater and access channel are burdened by central government, project cost of central government would be 100 billion Rp and IPC2 would be 7,200 billion Rp.

710. Therefore, long term project can be covered by revenue of urgent and short term project. However, it is also essential that the financial burden of IPC-2 should be lowered to keep good port management and operation, and in this connection, private funds should be utilized properly and effectively. In case that beneficiaries by the port development are able to be specified in such case as development of turning basin in front of specific terminal, they should pay for a part of the project cost in accordance with the extent of their benefit. And when the project risk is considered to be relatively low, e.g. in case of expanding container terminal, there will be a possibility to introduce complete BOT scheme for infrastructure development.

711. For access road development, local government as well as related public sector should be involved and bear a fair share of the construction cost.

Table 16-C-1Fund Condition in 2025



CHAPTER-17. INSTITUTIONAL VIABILITY OF PORT RELATED ORGANIZATION

17-A. ANALYSIS ON THE FACTORS IMPEDING TRADE FACILITATION

712. Based on the interviews with several trading companies, major factors impeding trade facilitation in Indonesia can be itemized as below and detailed descriptions are shown in Table 17-A-1 together with the port related matters. Some of them are closely related to the investment climate.

- Tariff
- Production Cost
- Logistic (Time and Cost)
- Infrastructure
- Security
- Banking
- Standardization
- Trade Promotion Incentive
- Law Enforcement and Transparency

Table 17-A-1 Factors Impeding Trade Facilitation

Item	Description	Port Related Matters
Tariff	Duties and tax are the most obvious barrier to free trade. Free trade, especially in AFTA, will expedite trading activity among relevant countries, which could achieve sustainable economic development for both countries.	–
Production Cost	Production cost has been increasing due to the hike of labor and electricity cost, materials/parts procurement cost.	–
Logistic (Time and Cost)	Congestion and inefficiency in logistic route, such as in port and road, impede reliable distribution in trade. And high logistic cost reduce the competitiveness of Indonesian products in the world market.	(Time Factor) Transit/dwelling time of cargo in the port area is long and unreliable due to inefficiency of shipping operation, cargo handling, customs clearance and land transport management as well as complicated documentation. It reportedly takes over 10 days to clear customs. EDI system is not operated effectively. (Cost Factor) Almost all kinds of dues and charges in the port are high compared to other major ASEAN ports, such as handling tariff which decide in the negotiation between stevedoring and consignee/-nor, Terminal Handling Charge (THC), customs clearance fee etc. Unofficial payments are also sometimes required.
Infrastructure	Infrastructure such as ports, roads and electric power generation are becoming overloaded, and water supply and sewage system are not sufficiently provided.	Existing port facilities cannot accommodate future export/import cargo demand. In case of trade of automobiles in AFTA, there is not enough space to handle them in Tanjung Priok. Improvement and/or development of port facilities are urgent, however, the current financial problem as well as an absence of proper planning, evaluation and coordination system are preventing prompt action.
Security	There are still some uncertainties.	Pilferage in a container terminal is often reported.
Banking	Banking sector remains fragile. Solvency problems at a number of banks continue.	–
Standardization	Failure in catching up with international standardization would be a barrier to trade. (e.g. Emission control of automobile has not yet been standardized in Indonesia, which would be some burden to export/import automobiles.)	–
Trade Promotion Incentive	There is no comprehensive tax holiday system and/or incentive measure to promote trading activity. On the contrary, many local governments have enacted taxes as revenue-raising measures ("retribusi"), which acts to discourage trading activity.	Free trade zone or export processing zone has not yet been developed in or adjacent to the port. Such zones are often seen in other Asian ports to attract industry and increase trade competitiveness.
Law Enforcement and Transparency	A lack of transparency and widespread corruption, collusion and nepotism are significant problems for companies doing business in Indonesia.	There is a lack of transparency in setting charge for cargo handling, customs clearance etc.

17-B. ANALYSIS ON THE CURRENT PORT ADMINISTRATION AND MANAGEMENT

713. "Institutions" are defined as rules of various port related activities such as laws, regulations and working procedures. "Organizations", are broadly divided into the public and private sector. MOC (Ministry of Communication) and MOSOC (Ministry of State-owned Corporation; BUMN) as well as IPC by way of state-owned companies belong to the public sector. Meanwhile, the private sector is composed of widespread parties. Table 17-B-1 summarizes responsibilities/roles of above organizations in case of commercial ports.

Table 17-B-1 Responsibilities/Roles of Organizations

	DGSC/ MOC	IPC	Port Service Providers	Other Gov. Organizations
Port Planning				
1.Development Policy for port sector	○			
2..Planning of Port Development/Improvement	○	○		
Port Development				
1.Construction & Maintenance of Infrastructure				
■Non-profitable facilities, Maritime Safety Facilities	○			
■Profitable facilities		○	○	
2.Construction & Maintenance of Superstructure		○	○	
Port Management and Operation				
1.Security Control in Port Area	○	○	○	
2.Charge, Due Collection	○	○		
3.Berthing Arrangement		○		
4.Permission for Use		○		
Port Service				
1.Pilotage & Towage		○		
2.Cargo Handling, Storage		○	○	
3.Lighterage		○	○	
4.Mooring		○		
5.Water Supply, .Garbage Collection		○		
Other Port Administration				
1.Coast Guard				○
2.Port State Control	○			○
3.CIQ (Customs Clearance, .Immigration and Quarantine)				○

Source: Study Team

Note: a) ○indicates executing agency or participant in cost allocation

b) ▭ indicates the concept of cost allocation scheme by the Study Team

714. As a great quantity of rules exist among the various organizations in Table 17-B-1, subsequent sub-chapters focus on the following issues:

- Planning procedure for port development/operation
- Investment procedure for port development, Budget Planning procedure
- Approval/Permission, Supervision/Monitoring by public organizations
- External/Internal audit
- Collection/Analysis Procedure of Statistic/Data from relevant port activities

17-B-1 Planning Procedure

715. The new decree "Port Affairs (PP No. 69 in 2001)" stipulates that Port Organizer (IPC, local Government Office/Unit, etc.) shall draft a master plan for port development and submit it to the central or local governments for the approval.

716. The above improvement of the planning system has made other problems more obvious. For example, a comprehensive port statistics system is indispensable .Therefore, improvement of existing system is urgent.

717. In other words, the existing statistics system has some difficulties/problems to correctly appraise each port plan, and to step up port plans efficiently. Because nobody can evaluate a port activity/performance without reliable statistics

17-B-2 Investment procedure together with Budget Planning Procedure

718. Due to limited financing resources, efficient investment is an important issue. For commercial ports, IPC is responsible for formulating its own investment program, which is approved by the central government.

719. IPC formulates financing program on the basis of its management policies by the board, which draws up financing resources. The said program becomes effective upon the approval by MOSOC (Ministry of State-owned Companies; BUMN). However, MOSOC has not expertise which evaluates an investment program for the port development/operation. On the other hand, MOC/DGSC has few opportunities of monitoring the said program although MOC/DGSC is the sole responsible organization on port and maritime affairs.

720. In investing to port facilities, IPCs (Pelindo) should make every effort to seek financing resources because there is no subsidy from the central government in principle.

721. Port sector is the main engine of the Indonesian economy. Needless to say, sufficient capital investment is constantly required in order to support the growth of maritime transport.

722. As described in the main report, the income generated by IPC2 & IPC3 almost reaches 1,000 billion Rp. It is presumed that such large incomes of IPC2 & IPC3 are also supported by container operation. On the other hand, IPC1 and IPC4 mainly operate non-container cargo such as primary-products, raw materials and regional goods transportation.

723. As to so-called "non-commercial port", the total income/revenue from these small ports is reported to be just 346 billion Rp. in 2002. Average revenue per one "non-commercial port" is supposed to be less one-tenth (1/10) of an average IPC1's ports.

724. In other words, the regional disparities in Indonesia will expand without a steady cost allocation policy for port development, because ports in developing regions have difficulty in raising investment funds. Such difficulties in financing power are more and more obvious because the central government seems to consider that port management bodies should be self-supporting.

725. Under these circumstances, the Study proposes a cost allocation scheme for the urgent projects at Tg. Priok port. **Figure 17-B-1** briefly outlines impacts on the national finances and IPC2's own financing situation when the proposed urgent project at Tg. Priok port is implemented.

726. As shown in the figure, the proposed urgent project enables the capacity of Tg. Priok to increase up-to the maximum-level. In addition, the revenue of IPC2 will increase. As a result, dividend and tax are estimated to be boosted significantly.

727. In addition, increased productivity of port activities will result in larger profitability of IPCs. Therefore, it is vital for IPCs to strengthen above capabilities such as capacities of evaluating/auditing private sector's productivities/financial situations.

728. Moreover, under above-mentioned favorable scenario in **Figure 17-B-1**, it is expected that considerable amount of the earnings will be produced to IPC2 on the cash flow basis (here, "cash balance"). Therefore, the said earnings to be generated by Tg. Priok project which could be as the capital expenditures for other port in Greater Jakarta Metropolitan area.

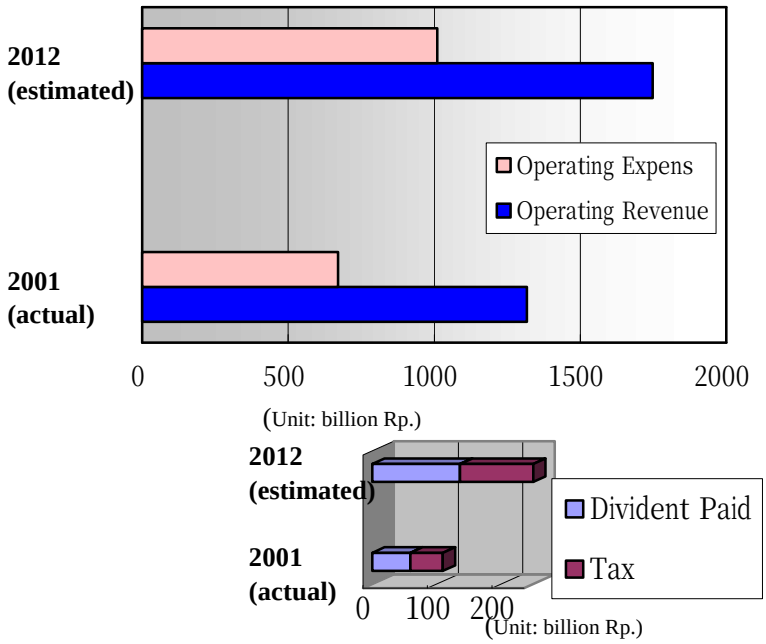


Figure 17-B-1 Improvement of Revenue/Expense structure of IPC2 & Contribution to the national finances

729. Moreover, the Study has proposed the concept of cost allocation-scheme for port development, which has clearly defined the responsibilities/roles of the central government (MOC/DGSC). In order to materialize the said cost allocation-scheme, it is necessary for MOC/DGSC to monitor IPC's investment program more effectively. Because, it is vital for both investment program (IPC and MOC/DGSC) to coordinate with each other. MOC/DGSC are able to understand IPC's investment programs in relation to their port activities/performances.

730. On the other hand, budgeting system for non-commercial port can proceed according to Ministerial Decree No.4 in year 2003. In this case, local governments integrate proposals/ requests from state's branches, coordinating each with other sectors' projects. There is a possibility that such integrated proposals including multi-sector will be significant, because the said integrated proposal is composed of so-called "small-scale" projects, and such component-projects are able to keep step with each other.

731. Typical problems are observed in access road development/improvement for Tanjung Priok and Bojonegara. In the case of commercial ports within the jurisdiction of IPC, the related

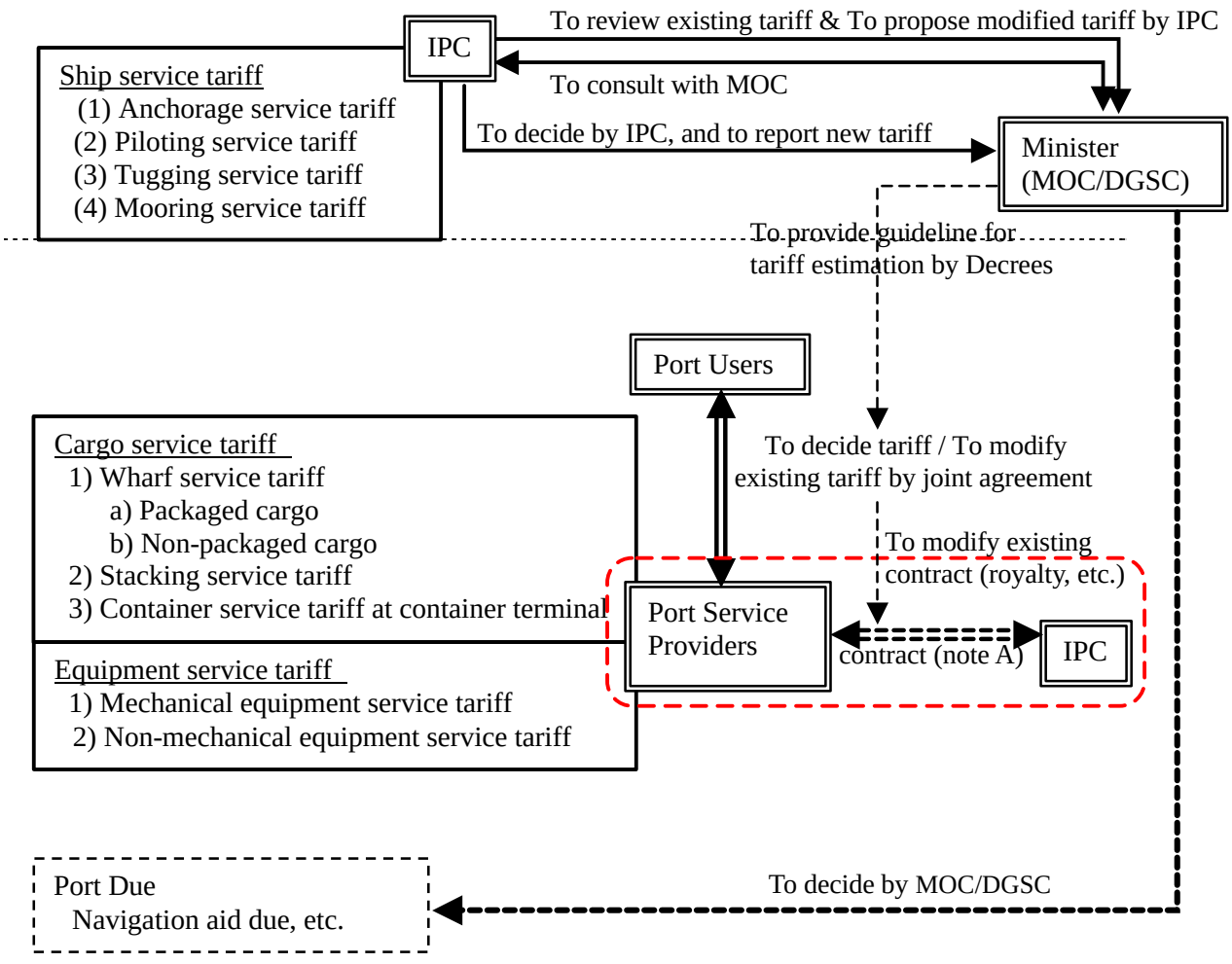
projects to be coordinated mostly belong to the category of "large-scale" plans/programs, and it is considered that central government i.e. MOC/DGSC should perform a key part for coordinating such related projects more effectively.

17-B-3 Approval/Permission, Supervision/Monitoring Procedure

732. To manage commercial ports, IPC can take a great number of administrative measures/procedures to ensure that the private sector carries out efficient and safe operation.

733. The following Figure 17-B-2 shows typical procedures for deciding port tariffs, which are categorized into three (3) types broadly, according to relevant decrees/regulations. The reason why the Study focuses on tariff system is that the existing tariff system intends to weigh widespread performances of the private sector such as operational, financial, technical angles.

734. As to the decision of ship service tariff, IPC is able to decide the tariff after consulting with MOC.



Source; Study Team
Note A; Above figure illustrates the case of "conventional terminal contact" in Tanjung Priok Port.

Figure 17-B-2 Decision Procedure of Tariff

735. As to "cargo and equipment services' tariff ", in case of the tariff in conventional terminal at Tanjung Priok Port, the basis of its tariff was a joint agreement between the Indonesian Associations concerned such as Stevedoring Company Association, Importer/ Exporter associations, etc., however the roles of IPC/MOC seem to be unclear in this process of such tariff decision.

736. On the other hand, IPC and MOC are able to participate in deciding the handling charge of JICT and KOJA. In such process, terminal operators are able to propose new tariff to IPC, then IPC evaluates its proposal after consulting with terminal users as well as MOC.

737. A validity of tariff structure and its decision procedure should be evaluated at all kinds of afore-mentioned tariffs. However, existing procedures have some difficulties to assess the whole tariff structure due to the shortcomings of performance/statistics data.

738. The administrative procedures which mainly aim at supervising/monitoring private sector are as follows;

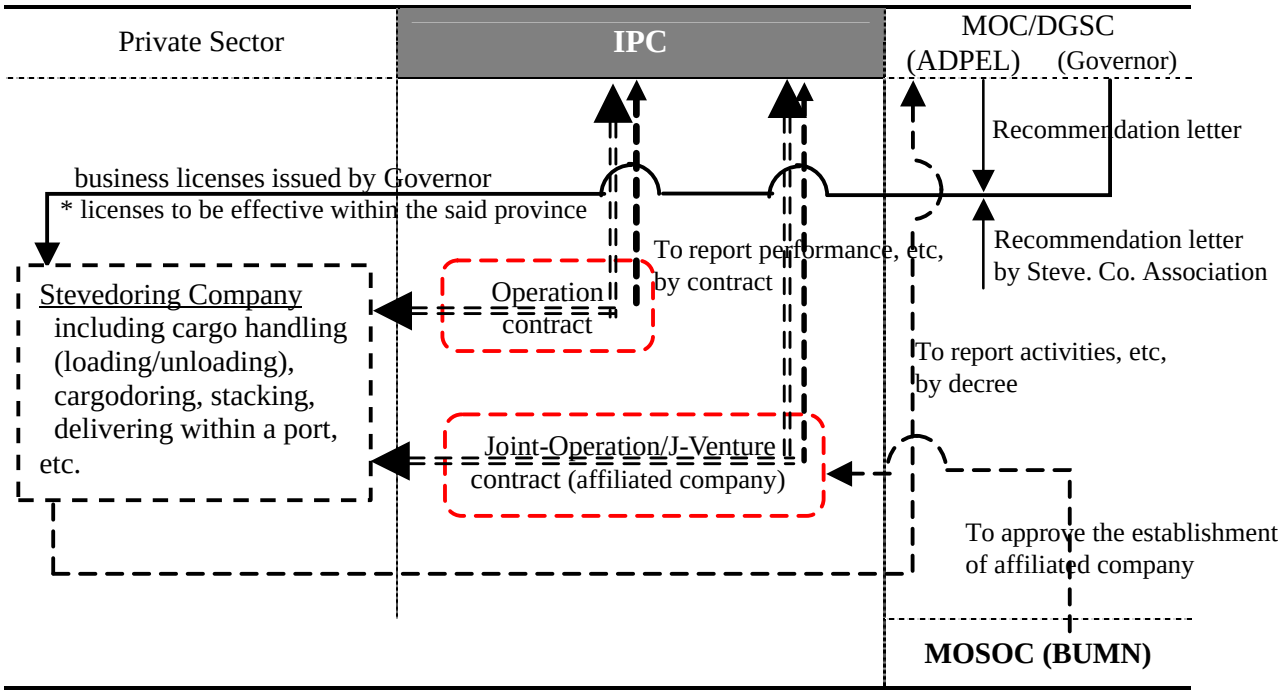


Figure 17-B-3 Supervision/Monitoring Procedure for Terminal Operation Activities

739. As shown in Figure 17-B-3, port service providers (terminal operators, etc.) are required to report to their performance and other activities according to their contract between IPC and operators. IPC evaluates operators' performance and decides whether or not to review operator's contracts.

740. Afore-mentioned procedures are considered to be formulated on the basis of the following concepts/principles: "Cost Basis Evaluation", "Deregulation by the public sector" and "Assessing Service Level".

Cost Basis Evaluation

741. Port tariffs seem to be evaluated in consideration of management/operational costs, depreciation cost as well as a certain profit, etc. In other words, the private sector (port service providers) can flexibly set up the rates according to their financial condition/situation.

742. Since each port service provider has different managerial/operational conditions, it is vital to comprehensively grasp the condition/performance of each port service provider in order that "Cost Basis Evaluation" functions well as indicators for estimating tariffs.

Deregulation by public sector (central government and IPCs)

743. The said concept suggests that the public sector shall not regulate in the field of "competitive theory", and the government and IPCs should respect the initiative of port service providers as much as possible. However, it is considered that the current tariff system does not effect a reduction in the rates despite the deregulation/privatization.

Assessing Service Level

744. In case of a reduction in the tariff, port service providers and IPCs should strive to maintain the quality of services for users.

745. From the above-perspectives, assessing service level/quality and evaluating tariff are inseparable. However existing decrees/notifications do not necessarily stipulate detailed procedures for assessing service level/quality. Therefore, it is vital to formulate more appropriate criteria for assessing service level.

746. Comprehensive Evaluation/Monitoring of the Private Sector through appropriate Port Tariff

747. The central government and IPCs are making every effort to comprehensively evaluate the operational, technical, financial, and other relevant performances of the private sector for an appropriate port tariff.

748. However, above Indonesian public sector has yet to acquire skill in evaluating all the performances/data of the private sector. The port tariff is regarded as a typical issue.

749. Figure 17-B-4 indicates typical tariff rates in Tg. Priok. Remarkable rise in its rates has been in effect for the last 7 to 8 years.

750. As indicated in the figure, the rapid increase in the tariff for ocean-going ships, and container handling charges are creating serious problems for the trading industry.

751. Therefore, it is paramount to evaluate the tariff, and to assess service level/quality simultaneously. In such case, the monitoring of service providers is key factor because their "operating", "investing" and "financing" activities should be justly analyzed in order to conduct "Cost Basis Evaluation", "Service Level Assessment" effectively.

752. The Study recommends the improvements of data collecting and processing system in order to solve shortcomings of existing system. Such modified port statistics will be effective for assessing performance activities of port service providers. Therefore, the public sector should put emphasis on establishing the said modified port statistics.

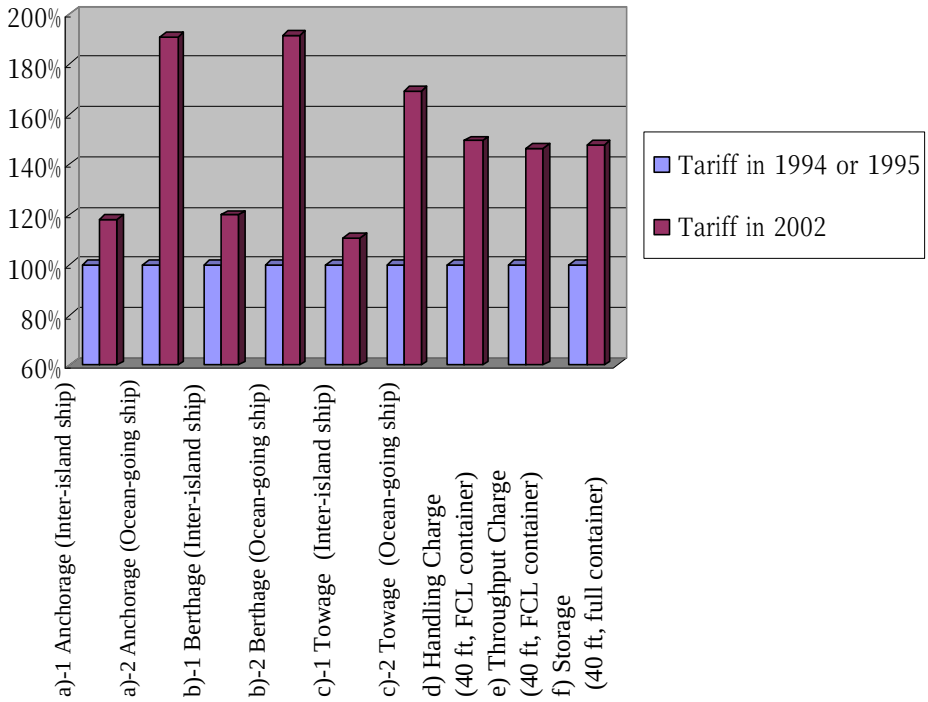
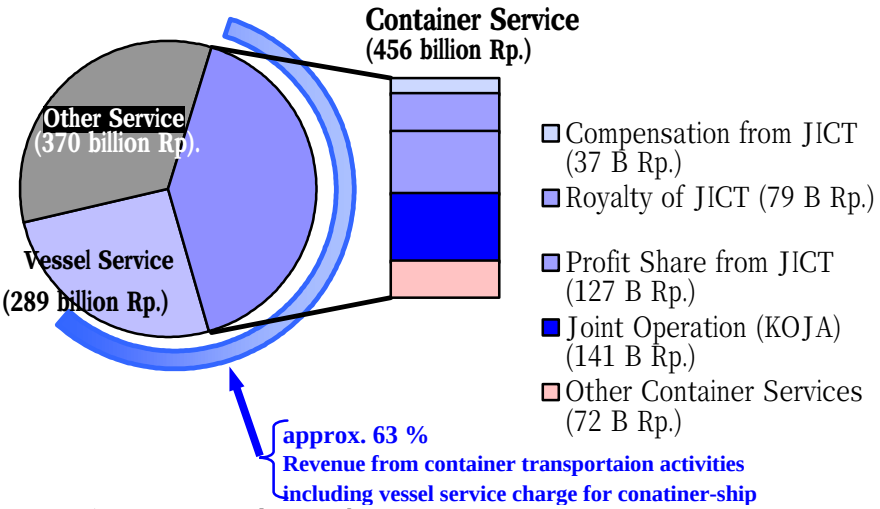


Figure 17-B-4 Change in Port Tariffs at Tg. Priok since mid-1990s

17-B-4 External/Internal Audit Procedure

753. In the port sector, the public sector should enhance its auditing/ monitoring of the private sector. It is desirable that an audit be conducted together with above cross-checking of port statistics, relevant performance data.

754. An outline of IPC2 revenue in 2000 is given in Figure 17-B-5. The income from container service accounts for around 40 % of the total revenue.



note) Source; Annual Report by IPC2
Revenue before discount for large customer

Figure 17-B-5 Summary of IPC2 Revenue in 2000

755. In the year of 2000, both JICT and KOJA terminals generated a huge amount of income for IPC2, over 300 billion Rp. exceeding the total revenue of IPC1. Such container facilities will bring in more income for IPC2 when the proposed project is carried out. For instance, the Study estimated that the container handling volume in 2012 will increase by around 70 % over the year 2000.

756. Currently such various data/statistics and financial statements are separately processed/ evaluated by relevant organizations such as DGSC, ADPEL, IPC and MSOC. For instance, a cross-checking system of financial conditions compared with operational performances is not necessarily effective at present.

757. In this context, the integrated capacity building program is required which enables to audit financial conditions of private sector as well as to assess their performances, and cross-checking statistics.

17-C. ANALYSIS ON THE CURRENT PORT RELATED STATISTICS TOGETHER WITH PROCESSING SYSTEM OF DATA AND INFORMATION

1) Purpose of Port Statistics

758. To carry out the demand forecast, properly categorized data on cargo/passenger is required as follows:

- Commodity-wise cargo volume by categories of import /export /domestic-loading/ and domestic-unloading
- Origin/destination wise cargo volume by the above categories

759. From the viewpoint of port facility planning, we need ship data and productivity data of port facility as follows:

- Arrival ship data such as draft, LOA by vessel type, and waiting time for berthing by reason
- Berth productivity – BOR (Berth Occupancy Ratio), ton (TEU) per berth
- Productivity of other port facilities – SOR (Shed Occupancy Ratio), YOR (Yard Occupancy Ratio), TEU (ton) per crane

760. From the viewpoint of formulating effective port administration and/or management plans, we need productivity data of port facility as mentioned above as well as handling productivity data as follows:

- Berth productivity – BOR (Berth Occupancy Ratio), ton(TEU) per berth, ratio of effective time to berthing time
- Productivity of other port facilities – SOR (Shed Occupancy Ratio), YOR (Yard Occupancy Ratio), TEU (ton) per crane
- Handling productivity – TEU (ton) per crane per hour, (TGH (ton/gang/hour))

761. As for TGH data, it is often difficult to evaluate because the number of gangs is often not clear and it varies according to the type and commodity of cargo.

2) Evaluation of Data Collecting System

762. SIMOPPEL system itself would be a good hierarchical system for data collecting, however, based on the observation and experience of the study team, the following points need to be tackled:

- Complete computerization and data sharing system among related entities

  There are still some cases in which data is exchanged by paper. Figures are apt to be input incorrectly in this way. Furthermore, it is difficult to share data and keep data consistent. When unified Excel Format will be provided in user-friendly as well as easy-processing form, situation will be greatly improved. Even small stevedoring companies should be able to input data.

- Simplification of data

  Complicated input data is contrary to the concept of user-friendliness. It is desirable that a more simplified system be adopted, i.e., only the minimum required data should be selected.

- Compulsory data collection system

  A data collection should be compulsory for the terminal operators and stevedoring companies. Accordingly, compulsory data collection should be included in their contracts as well as a penalty clause to ensure compliance.

- Consolidated responsibility for data collecting

  Consolidated responsibility should be attached to an appropriate body. In case of commercial port, a branch office should appoint/establish a sole responsible unit for data collection/process and all kinds of data should be integrated in that unit in cooperation with other related divisions such as operating division, pilot division.

3) Evaluation of Data Processing System

a) Available Data

763. The following data has been provided to the study team:

- "*Penetapan Rencana Alokasi Tambat Kapal dan Kegiatan Bongkar Muat*" based on PPKB (*Permintaan Pelayanan Kapal & Barang:* Request of ship and cargo service) which covers all ships that arrived at the port including International Container Terminal (JICT and Koja) and special wharves as well as non-cargo handling vessels such as docking – hereinafter referred to as "PPKB data"
- "*Kinerja Pelayanan Kapal dan Barang*" obtained based on the report from stevedoring/terminal operator and/or *Pangkalan*, which covers ships that arrived at public conventional berths for cargo handling (including 009 berth (MTI terminal) and excluding passenger terminal) – hereinafter referred to as "Kinerja data"
- "*Laporan Harian Pemanduan Gerakan Kapal dan Keterlambatan Pelayanan Pemanduan*", which records piloting and tug service provided to each vessel – hereinafter referred to as "Piloting data"

b) Common Issues/Problems

764. All data is available in the form of Excel Sheet, however, this electrical data is not optimized for the following reasons:

- Some data is not input by value data but text data. For example, date/time data and cargo volume is input as "01/03-11,02", "167BOX-330-BOX" or "755GC". This data must be converted to value data before being processed, which is troublesome work. Data should be input by value data from the initial input stage.
- There is no uniformity in names of commodities, port names, berth names etc. Accordingly, the same names/categories will be identified as the different names/categories depending on whom is inputting it. The name should not be different according to the person who inputs it. Therefore, uniform coding table of commodity, port names and so on must be prepared and shared/used by all related entities.
- Incorrect input especially in date/time data. To avoid this mistake, special check columns which automatically calculate the difference such as waiting time, approaching time should be established. Misspelling is also found in the data, which resulted in the same situation as above-mentioned.
- Lack of integrated data. The above three data items, for example, should complement each other and should be integrated for easy processing. Port facility data provided by technical division can be also integrated into the same system. This will ensure that the port facility data and berth name data used by PPSA remain consistent. The system should be also improved so that "Kinerja data" can be added to PPKB data.

17-D. ENHANCEMENT OF INSTITUTIONAL CAPACITY

17-D-1 Action Program for Improvement of Import/Export Logistics in Jakarta Metropolitan Port

765. Based on the analysis of the factors impeding trade facilitation, the study team recommends the following action plan for the improvement of imp0rt/export logistics in Tanjung Priok port.

To reduce the transit/dwelling time of cargo in the port area

766. Transit/dwelling time of cargo in the port area is long and unreliable due to inefficiency of shipping operation, cargo handling, customs clearance and land transport management as well as complicated documentation. It reportedly takes over 10 days to clear customs. EDI system is not operated effectively.

Necessary Action in the short term

767. In order to reduce the transit/dwelling time in the port area, the following measures are recommended.

- Consolidation of customs offices in the port area. There are 3 customs offices in the port areas, which should be integrated to one customs office with single window procedure of customs clearance as well as sole and transparent system.
- EDI system can expedite document procedures in the port including customs clearance. EDI system has already been established in Tanjung Priok, however, it is not fully utilized and optimized yet. It is important to brush up the existing EDI system with close coordination and cooperation of the customs office.
- To provide sufficient berth windows for port users such as shipping agency and to increase availability of berth for port users. This can reduce undesirable waiting time

on the sea side as well as on the land side and in order to do that, the following measures are necessary:

- To re-organize and consolidate the existing terminal operators in order that 5 to 10 berths are available for each terminal operator.
- To reduce berthing time by changing berth fee collecting from day charge to time charge system
- To improve handling productivity at quay side. This can be realized not only by improving gang/crane productivity but also by controlling direct transport to/from the quay side without use of yard/transit shed. To promote the use of yard/transit shed with some incentive will be necessary.
- To establish an effective land traffic management system as well as improvement of roads in/around the port.

To secure transparency of port related charge

768. Almost all kinds of dues and charges in the port are high compared to other ASEAN major ports, such as handling tariff, Terminal Handling Charge (THC), customs clearance fee etc. Unofficial payment are also sometimes required. Furthermore, there is a lack of transparency in setting charge for cargo handling, customs clearance etc.

Necessary Action in the short term

769. Transparency of port related charges will result in a more reasonable charge in the long run. The following measures can increase transparency:

- To re-examine the existing tariff and port charge system and establish a more appropriate system by referring to tariffs in Asian ports.
- Based on the above examination, DGSC should formulate the revised concept/system about tariff and port charge and open it to the public.
- IPC sets the maximum tariff and port charge according to the concept/system and sets up a claims office to handle cases of excessive charging.

To control development spaces according to the proper master plan as well as land-use plan

770. Existing port facilities cannot accommodate future export/import cargo demand. For example, there is not enough space to handle the trade of automobiles in Tanjung Priok. Improvement and/or development of port facilities are urgent, however, the current financial problem as well as an absence of proper planning, evaluation and a coordination system are delaying action.

Necessary Action in the short term

- To develop an automobile terminal with sufficient vehicle stacking space optimizing the existing land of redundant use
- To formulate a master plan as well as land-use plan of the port as earliest possible in order to prevent unregulated development in the port area.
- To produce and keep vacant spaces in the ports, especially for Tanjung Priok, effectively for the future development

To enhance port security

771. Pilferage in container terminals is often reported. Recently, container security initiative (CSI) has been discussed on a global basis.

Necessary Action in the short term

- To set up a security committee composed of related organization in order to prevent such incident as pilferage in the port
- The committee will meet regularly to discuss problems reported from related offices as well as port users, measures to be taken and recommendation to improve the situation.
- To introduce sufficient hardware for the port security such as fence and ITV which can be monitored from a central office, as well as constant surveillance system in actual site.

To develop special economic zone with close linkage of the ports

772. Free trade zone or export processing zone has not yet been developed in or adjacent to the port. Such zones are often seen in other Asian ports to attract industry and increase trade competitiveness.

Necessary Action in the short term

- To develop special economic zone adjacent to Bojonegara new port, in which the various merits for export/import industry shall be explored and realized
- Within the special economic zone, free business activities are ensured since tariffs, and taxes are exempted on goods brought in while international logistics activities are available to generate high added value through series like processing, assembly, exhibition, sales, etc. As a consequence, Bojonegara new port is expected to operate beyond simple functions like stevedoring and storing but emerge as an international logistics port by developing related sectors such as trade and banking by attracting foreign investment and creating jobs through such international logistics value-added activities.

17-D-2 Recommendation on Data Collecting and Processing System

To Unify Commodity Classification

773. Commodity is essential data for demand forecast as well as evaluation of handling productivity. However, cargo statistics in Indonesia have no fixed commodity classification system so far. The study team analyzed past years' commodity-wise statistics and found that number of commodities listed in the statistics reached one hundred and eighty one (181).

774. Commodity classification by packing type is not sufficient for carrying out traffic demand forecast because this classification system is not necessarily related with port facility classification such as cargo handling equipment and storage facility. For example, both crude palm oil and gasoline are in general classified into liquid bulk cargo category in the packing type classification system. However, these two commodities are usually handled independently and require special storage facilities.

775. On the other hand, subdivision of commodities does not necessarily give better information for planning works. For instance, Besi Bars (steel bars), Besi Beton (steel bars for

concrete) and Besi Ulir (steel bars deformed) can be regarded practically as the same commodity in the port planning.

776. Suitability for transportation by containers should also be taken into consideration for setting up cargo classification. Containerizable commodities should be clearly classified.

777. The study team proposes a commodity classification system as shown in Table 17-D-1. A relational table between commodity and packing type is also necessary to be prepared for the sake of aggregation by packing type.

Table 17-D-1 Proposed Commodity Classification

10 Agricultural and Fishery Products	**50 Metal, steel and machinery**
11 Rice	51 Steel and steel products
12 Wheat	52 scrap
13 Other grain (beans, maize, corn), and powder	53 Machinery
14 Crude Palm Oil (CPO)	54 Transportation vehicle
15 Cattle feed	55 Car parts
16 Flower, Fruit and Vegetable	56 Aluminum
17 Fish	57 Construction equipment
18 Live Animal	58 Other metal products
19 Other Agri/Fishery products	**60 Textile and textile manufactures**
20 Lumber and wood products	61 Textile fiber
21 Logs	62 Garment
22 Lumber	63 Other textile goods
23 Plywood	**70 Food stuffs**
24 Pulp	71 Sugar
25 Paper and paper products	72 Drinks
26 Other wood products	73 Bottles
30 Minerals	74 Edible and cooking Oil
31 Cement, clinker and gypsum	75 Other food stuffs
32 Fertilizer	**80 Other manufactured goods**
33 Soda ash, sulfur	81 Furniture
34 Coal	82 Electronic equipment
35 Salt	83 Electronic parts
36 Copper, Nickel, Mg, etc	84 Ceramics
37 Stone, sand and clay	85 Glass
38 Other minerals and goods	86 Personal effect
40 Crude oil and petroleum	87 Other manufactured goods
41 Crude oil	**90 Other cargo**
42 LPG	91 Brick
43 Gasoline and other fuel	92 Construction materials
44 Asphalt	93 Other Cargo
45 Chemical products	**00** Unknown
46 Lubricant	
47 Plastic and plastic products	
48 Rubber and rubber products	
49 Other Petro-chemical products	

To Utilize Manifest Data

778. So far, origin-destination country data has not been obtained/collected. This data is also useful for the analysis of trade and for the demand forecast as is the case with commodity data. It is considered that the O-D country data can be obtained from manifest data, so stevedoring and/or shipping agents should cooperate with IPC2 to provide such data.

To Simplify Data Input

779. A simplified data format with the minimum data input is desirable. This makes input work easy for all end users and will make the system sustainable.

780. As for TGH data, it is often difficult to evaluate because the number of gangs is often not clear and it varies according to the type and commodity of cargo. Berth productivity can be evaluated using indicators such as ton per meter, thus TGH can be omitted from data input.

To Realize Integrated Computerization

781. When unified Excel Format will be provided in user-friendly as well as easy-processing form, situation will be greatly improved. Even small stevedoring companies should be able to input data. It is also effective to establish a consistent database in cooperation with the related division including Operation Division, Pilot Division and Technique Division.

To Establish Compulsory Data Collecting System

782. A data collection should be compulsory for the terminal operators and stevedoring companies. Accordingly, compulsory data collection should be included in their contracts as well as a penalty clause to ensure compliance.

To Consolidate Responsibility for Data Collection/Process and Formulating Port Statistics

783. In terms of data and statistics related to a specific port, a branch office should appoint/establish a sole responsible body for data collection/process as well as formulate port statistics. All kinds of data related to the port should be integrated in that body in cooperation with other related division. The study team recommends Information Division should be the responsible body for data processing and formulating statistics.

To Enhance Capability of Data Processing and Expertise of Statistics

784. In order to achieve a sustainable system, capabilities of data processing as well as expertise of port statistics should be enhanced providing suitable training to the related staff.

17-D-3 Concept for "Port Affairs Information Unit" Established in DGSC and/or IPC

785. The objectives of "capacity building" are to improve "organizational performances" for achieving successful development of the port sector. Generally, a capacity building program has targets and countermeasures, to reach these targets.

786. Figure 17-D-1 and Figure 17-D-2 show the basic targets and countermeasures to resolve/ease the problems in large Indonesian ports.

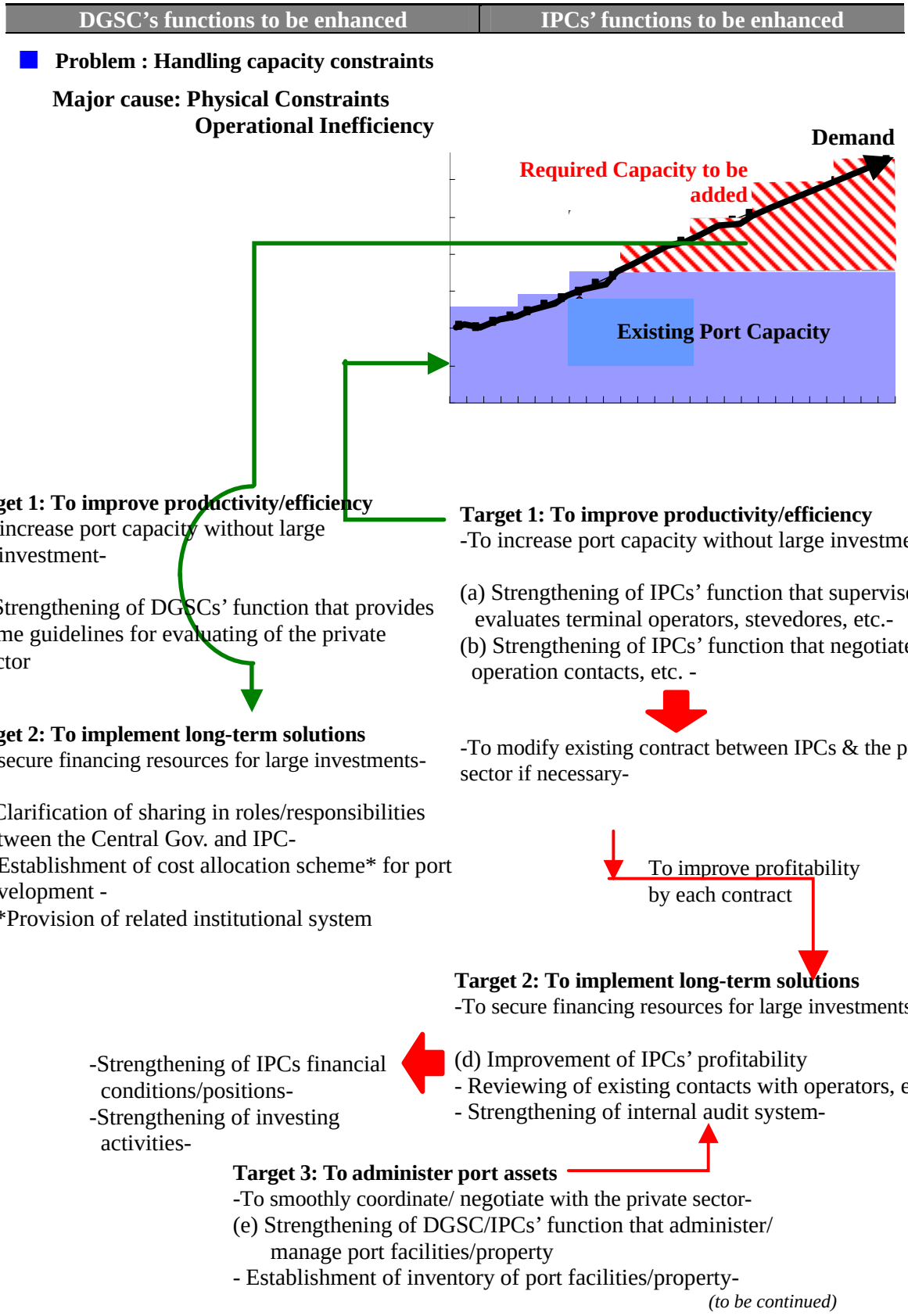


Figure 17-D-1 Illustration of Targets in "Capacity Building Program"

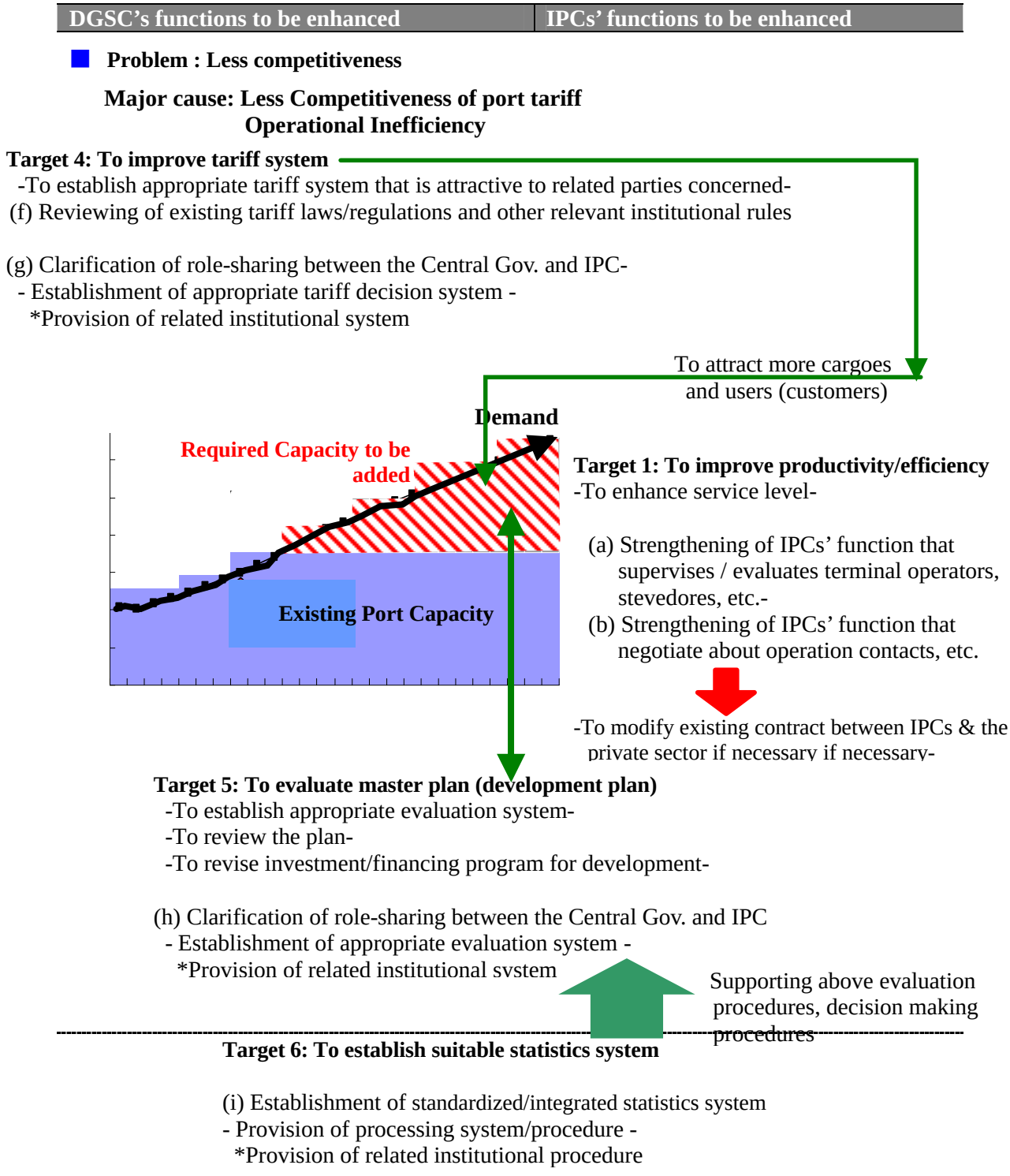


Figure 17-D-2 Illustration of Targets in "Capacity Building Program"

787. As shown in above Figures, the various targets in the capacity building program cannot all be realized simultaneously. Some targets can be realized in the short term, while others will be achieved in the middle/long term.

788. The objective of the proposed capacity building program should be narrowed down to specified fields. In the Study, the following issues are given first priority;

- Port Statistics;
- Inventory of port facilities/property;
- Performance data (results/achievements of the private sector).

789. The above issues should be considered urgently. Because they can be applied to various fields of port administration. The public and private sectors need access to a broad range of reliable data/ information on port activities.

790. Therefore, as a first step, the proposed program aims at enhancing the procedures of the collecting/processing of above essential information. Second step is to strengthen the capability of evaluating the said data/information for the supervising/auditing port service providers.

791. Needless to say, such easier access to reliable data will lead its customers to trust the Indonesian port sector. The MOC/DGSC/IPCs will take a big step toward the solution of the afore-mentioned problems when the said program is launched.

792. It is proposed to establish a new unit which is solely responsible for managing all kinds of information on port affairs. The said unit will control/manage afore-mentioned data/information, and be responsible for implementing the proposed capacity building program. An outline of the said program is given below.

17-D-4 Proposed Program for Administration & Management Skill Enhancement

793. Title of the skill enhancement program (*provisional name*) is as follows:

Project Title:	**Administrative and managerial improvement in port affairs toward trade facilitation and enhancement of port competitiveness**

1) Objectives of the A & M skill enhancement program

794. In Indonesia, the port administration system is not necessarily efficient for timely responding to the accelerated reforms of managerial/operational system such as “Privatization” and “Decentralization” in spite of every effort of the agencies concerned.

795. Under these circumstances, the said program aims at strengthening capacities of collecting/processing port affairs’ information/data as well as enhancing capabilities of analyzing/evaluating such basic information/data. Because, the efficiency of the port administration is strongly required in the various fields such as port planning, financial affairs, property/asset management, management/operation of facilities and supervision guidance of the private sector. Moreover, the program also aims at supporting necessary improvements of institutional framework, self-supporting improvements of port administrative affairs in future.

2) Background

796. Based on findings of the JICA development study (The Study for Development of Greater Jakarta Metropolitan Ports, -Dec. 2003), the following issues need to be resolved urgently:

797. As to the fields of port planning, expenditure/budget control, some policies were materialized as the fruits of “the Study on Port Development Strategy in the Republic Indonesia

(Mar. 99)" by JICA. For instance, "National Port System" stipulates the port classification and procedures of port planning. However, the existing statistics system has some difficulties/ problems to correctly appraise each port plan, and to step up port plans efficiently. Because nobody can evaluate a port activity/performance without reliable statistics

798. Some administrative improvements on the basis of above "port development strategy study" have been observed in the fields of port financial affairs, management/operation and supervising/ auditing private sector. However, "port statistics" and "performance/financial statements" are not sufficiently evaluated/assessed by public sector such as DGSC and IPCs (Pelindos).

3) Outline of the A & M skill enhancement program

a) Inspection/examination of detailed administrative system

799. In this program, Indonesian side will examine details of port administrative system through a chain of the private sector, Pelindos and the central government with the assistance of foreign experts. Such examination will concentrate on "port statistics" and "financial situations of private sector/IPCs", because both of them could be widely applied to various fields of the port administration. As a result of such examination, detailed format of such data/information will be considered. Regulatory procedures of collecting/processing will also be drawn up.

b) Establishment of implementing unit for the program

800. It is necessary to establish a new unit "Port Affairs Information Unit (*provisional name*)" in DGSC. A new system "Port Affairs Information System (*provisional name*)" will be provided with making good use of IT technology. The new unit and system will be key factors which transfer improved contents/procedures of port administration throughout the country. For the purpose of the above enhancement program, the new unit will formulate training programs which utilize the following Indonesian guidelines/manuals.

c) Provision of Indonesian manuals, guidelines

801. Manuals will be composed of detailed formats, regulatory procedures of collecting/computer aided processing port affairs data. Moreover, guidelines will introduce some methods and basic knowledge regarding evaluation/ analysis of such basic data in order to determine port administrative affairs more efficiently.

4) Major activities of the program

a) Establishment of "Port Affairs Information Unit (provisional name)"

802. First of all, afore-mentioned new unit will be established in DGSC. The new unit will have sole responsibility for the following activities.

b) Recipient of technology transfer team

803. Foreign technical cooperation experts will be dispatched by international aid agencies. Such technology transfer team will be composed of long-term and short term experts such as Port statistics/EDI expert, Port administration/Port financial affairs expert, Port planning expert, Port operation expert, Port administration/Property management expert, Port administration/Port tariff policy expert.

c) Inspection/examination of detailed administrative system

804. Together, the new unit and expert team will carry out the following inspection/examination: What are detailed contents of existing information/data (port statistics, inventory of port facilities/property, productivity/performance data, financial conditions and information on tariff etc.)? How are such data/information processed? How are such data/information utilized in the port administration?

805. Above inspection/examination will be conducted at each stage by private companies, Pelindos (Indonesian Port Corporations), the central government, and also by business fields.

d) Training of staff of the Port Affairs Information Unit

806. The technology transfer of the following elementary knowledge/theories/know-how will be conducted by foreign experts and through overseas training: the basic knowledge on transportation administration including port sector, the know-how of analyses of basic port data, the theories/know-how of decision-making and evaluating/assessing achievements of port affairs, and also required knowledge/know-how regarding the below "Port Affairs Information System".

e) Establishment of the "Port Affairs Information System (provisional name)"

807. "Port Affairs Information System (provisional name)" will be established in order to control all port affairs information more efficiently. Such system will enable the public sector to comprehensively compile the huge volume of port affairs data making full use of IT/EDI technologies. In addition, the new unit will provide appropriate training program/manuals of such system in order to spread it throughout the country.

f) Provision of guidelines regarding port administrative procedures

808. The new unit together with foreign experts will provide guidelines regarding port administrative procedures to collect/compile information/data, methods of evaluating processed data. Such guidelines will be formulated reflecting problems identified by above-mentioned inspection/examination.

g) Formulation of training program

809. As a part of the self-supporting scheme, the said A & M enhancement program will include a training program to enable the Indonesian side to continuously transfer its technologies/know-how from a new unit into IPCs, ADPELs and local port management bodies in future.

5) Outcome of the program

- Establishment of a new organization that is able to control and analyze all port affairs information,
- Establishment of a new information system that enables comprehensive evaluation of port activities due to its standardized format, integrated contents
- Fostering of administrative officials who have the skill to evaluate/asses basic data/information
- Establishment of a technology transfer scheme from the central government (a new unit) into IPCs, local governments, etc.

6) Procedure of Administration & Management Skill Enhancement Program

810. As described previously, this program will consist of "Long/Short term experts", "Training program" and "Provision of equipment".

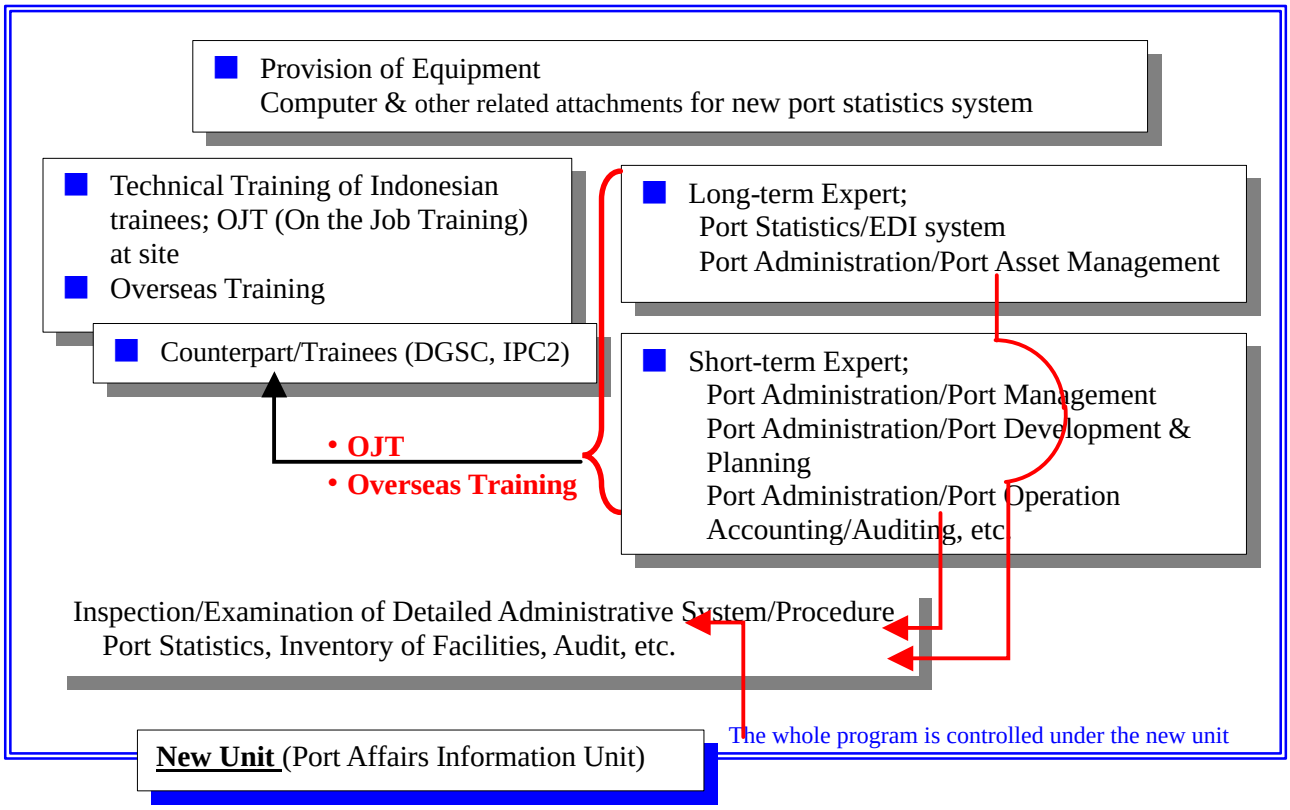


Figure 17-D-3 Illustration of Administration & Management Skill Enhancement Program

811. Figure 17-D-3 shows above component parts of this "A & M Skill Enhancement Program". Most important part is the "new unit ((Port Affairs Information Unit)" which will manage the whole program with the assistance of foreign technical experts.

812. This program will cover Tanjung Priok port in the initial stage. Thus, trial run of the new statistics system will be launched at Tanjung Priok port, and detailed examination of administrative procedures will also be conducted. Therefore, it is desired that a new unit of DGSC be combined with officers of IPC2 (HQ office and Tanjung Priok branch office).

813. One of the major objectives is to introduce a new statistics system. As to the responsible body for the statistics system, it is proposed that an information division of a port branch office be appointed for collecting/compiling relevant data. On the other hand, the new unit will be established in DGSC which is solely responsible for providing unified format/processing procedure, etc.

814. To introduce the new port statistics system, a long term expert (Port Statistics/EDI system) will examine the following subjects together with the new unit:

- Unification of commodity classification
- Utilization of manifest data

- Simplification of data input
- Integrated computerization

815. On the other hand, the new unit should play an important role in the regulatory examination, which includes the following item

- Establishment of compulsory data collecting system
- Delegation of responsibility for data collection/process and formulating port statistics

816. Port Asset Management expert will further research into the inventory of port facilities, the administration of assets, etc. This great importance in the age of "Decentralization" and "Privatization" where facilities/rights will likely be transferred.

817. The major objectives are to establish a modified statistics system, to enhance the capability of assessing various performances in the port sector. Therefore, the program is wide-ranging in scope.

818. Short term experts are expected to deeply examine Indonesian administrative rules/ procedures in their expertise fields.

819. Another task of foreign experts is to conduct OJT (On the Job Training) in their expertise fields. It is possible that the following issues may arise during OJT;

- Validity of such wide-ranging data
- How to process these various data for analyses?

820. Foreign experts and the new unit will advice, complementary information and other relevant input. Similarly, in the case of overseas training, curricula / material will cover a number of different fields. Proposed program scheme be able to cope with any request from counterparts since there are diverse experts.

821. Moreover, the new statistics system will enable the public sector to easily compile/process the distribution data in any style. In the course of this program, more favorable procedures are expected to be obtained through OJT.

822. On the other hand, responsibilities of DGSC are to provide/ establish institutional framework such as enacting/amending laws/regulations in timely response to the reforms in the port-sector. In particular, tariff-decision/ evaluation procedures and cost-sharing scheme for port projects need to be modified/instituted urgently.

823. The training program can be divided into two categories such as "basic training" and "specialized training".

824. The contents of "basic training" cover a wide-range of fields in the port sector. The objectives of this "basic training" are given below.

825. The technology transfer of the following elementary knowledge/theories/know-how will be conducted by foreign experts and through overseas training: basic knowledge on the transportation administration including port sector, the know-how of analyses of basic port data, the theories/know-how of decision-making and evaluating/assessing achievements of port affairs, and also required knowledge/know-how regarding the "Port Affairs Information System".

826. "Specialized training" will mainly consist of "case-study" exercises. For instance, financial analyses will be conducted on the basis of IPC's financial statements, sensitivity analysis will be done on the relationship between tariff-rate and financial viabilities of both public/private sides, etc. The objectives of this "specialized training" are given below;

- The public sector (MOC, IPCs) obtains various data/information such as port statistics, performance data. In addition, evaluating financial condition of the private sector has great importance in terms of the relationship between its profitability and the validity of its tariff, cross-checking among their performances, statistics and operating revenue/expenditure, etc.
- Moreover, the public sector will also enhance its ability to audit/monitor the private sector.. It is desirable that such audit is conducted together with above cross-checking of port statistics.

827. In relation to the training, the following curricula are expected to be conducted by foreign experts:

- Port development policy/Development investment policy
- Port privatization
- Port Management & Operation
- Port Planning
- Economical and Financial Analyses
- Accounting/Auditing
- System analysis
- International maritime transport/Maritime business
- Transport Economics

828. Candidates for training should be selected from upper-middle to higher management class as well as staff class in the business fields of statistics, planning and finance. Training for the former class should be provided in the first period of the program and the latter class in the second half of the program.

829. Period of the program is planned 5 years and its schedule is outlined as follows: