CHAPTER-6. CURRENT SITUATION OF PORTS IN THE STUDY AREA

6-A. OVERVIEW OF PORT ADMINISTRATION SYSTEM IN THE STUDY AREA

89. Number and classification of ports, which were initially identified in the Shipping Law (UU No.21/1992), have been changed and modified in line with the activities of each port. However, regarding the actual number of ports at present, there appears to be some confusion and discrepancy among governmental documents. In spite of that, the Study team has attempted to count the number of the ports in the Study Area based on several documents as shown in Table 6-A-1.

Table 6-A-1 Number of Ports in the Study Area

Province	Public Port			Special Wharf/Port			Ferry Port	Total
	(IPC2)	(Gov.)	Total	(IPC2)	(Gov.)	Total	(Gov.)	
Jakarta DKI	2	3	5	5	4	9	0	14
Banten	1	6	7	33	4	37	1	45
West Java	1	9	10		4	4	0	14
Total	4	18	22	38	12	50	1	73

Source: DGSC, IPC2

90. Public ports which are used commercially (called commercial ports) are managed and operated by IPC, while non-commercial public ports are under the management of the central government. (Recently, the role of local government on the port management has been discussed and some ports will be expected under the control of local government in the stream of decentralization. In the Study area, commercial ports count five (5), i.e., Tanjung Priok, Sunda Kelapa, and Kalibaru in Jakarta DKI, Banten/Ciwandan in Banten province, and Cirebon in West Java province. In Table 6-A-1, it is noted that many special dedicated private wharves/ports are located in Banten province, especially concentrating in the Banten peninsula where it is easy to secure a sufficient water depth. Figure 6-A-1 shows the location of the public ports.

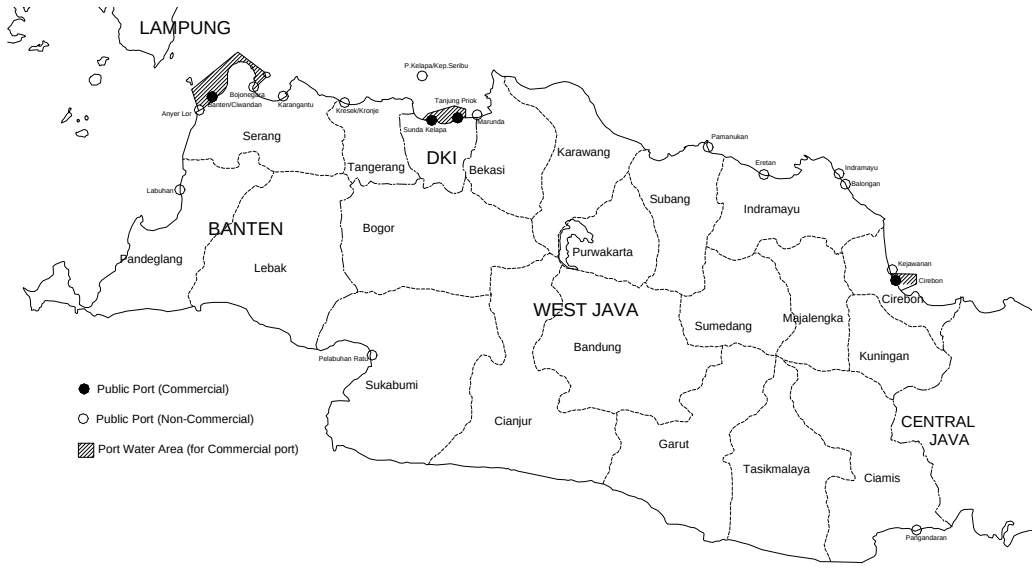


Figure 6-A-1 Location of the Public Ports in the Study Area

91. The four (4) public commercial ports in the Study area are directly managed by four branch offices (*Cabang*) of IPC-II in Tanjung Priok, Banten, Cirebon and Sunda Kelapa. Kalibaru, a small port on the east side of Tanjung Priok, is under the jurisdiction of Cabang Sunda kelapa. The branch office also has responsibility for special wharves located in the port working/interest area in order to provide unified and safe services. The other public ports, i.e., non-commercial ports, are managed by the transportation office (*Dinas Perhubungan*) of the local government, although this function formerly belonged to the central government branch office called *"Kanwil"*.

92. Special port/wharf is governed by central/local government (called "special port") or IPC (called "special wharf"), depending on whether it is located within the Port Working/Interest Area of commercial port or not. Ferry port is governed by DGLC - MOC as a part of the road infrastructure network.

6-B. PORT MANAGEMENT IN THE STUDY AREA

6-B-1 Organization of IPC2

93. IPC2 is one of the state owned port corporations under the Government consisting of the Ministry of Communications and Ministry of State-Owned Enterprise. IPC2 manages and operates the Head office, 12 branches (Ports of TG. Priok, Panjang, Palembang, Teluk Bayur, Pontianak, Cirebon, Banten, Jambi, Bengkulu, Sunda Kelapa, TG. Pandan and Pangkal Balam), 1 port training center and 6 affiliated companies. Its objective is to conduct the business pertaining to the port or the interest of the state and the public by implementing development plans in line with the national economic and social development plan and to render efficient services and facilities to all port users on a fair basis.

94. Head office of IPC2 is managed by the Board of Commissioners and Managing Director, assisted by Board of Directors, Corporate Secretary, Head of Internal Supervision Unit and Senior Managers of the various service and operational departments who are responsible for day to day management and operations. IPC2 head office has commercial, technical, financial and personnel and general affairs departments. There are about 3,300 permanent employees.

95. Port Branch of Tanjung Priok is managed by the General Manager, who is assisted by Assistant General Manager of Quality Control and Assistant General Manager of Procurement.

6-B-2 Affiliated Companies of IPC2

96. IPC2 is engaged in a wide range of businesses, such as the provision of water, electric and fuel supplies, management of hospital and port training center. Further, IPC2 has affiliated companies which are engaged in port services and to which IPC2 is extending investment, joint operation and joint-venture or dispatch of a supervisor or director. These affiliated companies are shown in Table 6-B-1.

Table 6-B-1 List of Affiliated Companies of IPC2

	Joint Operation/Management		Legal Entity in association with Cooperative of Maritime Employee		Legal Entity in association with Private/Foreign	
Name	KOJA Container Terminal	Merakmas Terminal	PT. Port Hospital	PT. Multi Terminal Indonesia	PT. Jakarta International Container Terminal	PT. Electronic Data Interchange Indonesia
Kind of Service	Container terminal	Multipurpose terminal	Hospital	Conventional terminal and other cargo handling	Container terminal	EDI Indonesia
Establish-ment	March 26, 1999	February 10, 1999	May 1, 1999	April 10, 2002	October 6, 1998	January 23, 1996
Persons from IPC2	510 Persons	4 Persons	260 Persons	112 Persons	2 Persons	4 Persons

97. Conventional terminal operations including stevedoring work is undertaken by the IPC2's affiliated company (PT. Multi Terminal Indonesia for Berth No. 009) and 14 terminal operators. Terminal operators are private companies and obtain the right of operation for each conventional berth from IPC II through a five-year contract.

6-B-3 Port Management System

Organizations Related to Port Activity

98. Port activities cover various functions. There are many port related government agencies as shown in Table 6-B-2.

Table 6-B-2 Port Related Government Agencies

Government Agency	Explanation
Port Administrator	Port Administrator (ADPEL) is responsible for coordinating all institutions at port. ADPEL is also responsible for the safety of shipping, supplying of navigation aids and the security.
Harbormaster	Harbormaster is responsible for ensuring the safety of port activities.
Coast Guard	Coast Guard is responsible for sea and coast security. Coast Guard is under the coordination of DGSC (Directorate General of Sea Communication).
Customs	Customs is responsible for foreign exchange /import duty on import commodities.
Port Police	Port Police coordinates the security at port for government and private interest.
Immigration	Immigration is responsible for the migration legality inspection proved by the legality of passport.
Quarantine	Quarantine carries out cargo/animal inspection in order to prevent the spread of diseases.
Port Health Center	Port Health Center provides medical check for ships' crews.

Port Related Services

99. "First Come, First Serve" policy is adopted for vessels calling at Tanjung Priok port. The allocation of conventional berth is decided by the assistant manager of ship and cargo service division according to the information for ship's call prepared by shipping agent, which must submitted 24 hours before the arrival of vessel.

100. Discharging/loading of cargoes from/to vessels to/from landside/waterside is carried out by the terminal operators. The terminal operator is in charge of shifting cargoes between quay and sheds/warehouses/open storages by forklifts, trucks and trailers. Cargo is transported from/to yards and shed to/from forwarders by the trucking companies.

101. Discharging/loading of containers using gantry cranes and ship cranes is carried out by the terminal operators including JICT and Koja Container Terminal. The terminal operators also transport imported containers from quay side to CY/shed, while export containers are moved from stuffing areas/CFS to CY by the trucking companies.

102. Passenger service is provided by PT. PELNI. IPC2 provides the passenger terminal facility for the public use and imposes related port charges on the passenger vessels.

103. Other port related services are as follows:

- Hydrographic Survey and Dredging
- Information System
- Vessel Traffic Information Services (VTIS)
- Pilotage and Tug service
- Water and Electricity Supply and Telephone Service
- Customs Clearance

6-B-4 Port Dues & Tariff for Container Cargo

General

104. The port tariff system of Indonesia was revised in 2000 resulting in an average tariff hike of 30%. The new tariff system reflects handling efficiency and the situation of surrounding ports. As for the application of new tariff system, details were provided in the decree signed by the president director of IPC. After that, handling tariffs of international container were revised in 2002.

105. The port tariff system is composed of the following 4 items.

- Decree of the Ministry of Communications
- Tariff on Shipping Service
- Tariff on Cargo and Container in a Container Terminal
- Tariff on Other Services in a Port

106. The tariff on international cargo is being displayed in US$ while tariff for domestic cargo is in Rupiah. The latter is basically set at 50% of the former and the exchange rate is not stable. Therefore, independent tariff is often being applied. For example, there is a 14% discrepancy in the container service tariff for domestic cargo between Tanjung Priok and Makassar as shown in the following table.

Table 6-B-3 Loading/Unloading Charge of Domestic Container Cargo

(Rp/TEU)

Name	FCL	LCL	Transshipment
Tanjung Priok	240,000	400,000	155,000
Makassar	201,500	338,000	130,000

Container Handling Service Tariffs at Container Terminal

107. The port tariff of IPC II was raised by 30% in May 2000. And then, in October 2002, the tariff rates of international container terminal such as JICT and KOJA were increased by 15%. Loading and unloading service tariffs of ICP II are given in the attached table.

Table 6-B-4 Loading/Unloading of Container

Unit: US$

No	Description	JICT & Koja		Others		Remarks
		20'	40'	20'	40'	
1	FCL Container					
	a. With terminal crane	93	139	81	121	Per Box
	b. With ship's Gear	83	125	73	109	Per Box
2	LCL Container					
	a. With terminal crane	155	233	135	203	Per Box
	b. With ship's Gear	140	210	127	191	Per Box
3	Transshipment Container					
	a. With terminal crane	56	84	52	78	Per Box
	b. With ship's Gear	50	75	44	66	Per Box
4	Shifting Container					
	a. With terminal crane					
	1) Without landing	34	51	30	45	Per Box
	2) With landing	58	87	51	76	Per Box
	b. With ship's Gear					
	1) Without landing	25	39	23	35	Per Box
	2) With landing	49	73	43	64	Per Box

Note) As of September 2002. 15% increased in October 2002

Container Handling Service Tariffs at Conventional Terminal

108. The ports in IPC II are classified into three types. The port of Tanjung Priok belongs to the first type while the ports of Panjang, Palembang and Pontianak belong to the second. The remaining port falls into the third class.

Table 6-B-5 Outline of Tariff System at Conventional Terminal

Unit: Rupiah

No	Description	Tanjung Priok		Panjang, Palembang, Pontianak		Others	
		20'	40'	20'	40'	20'	40'
1	FCL Container	110,000	165,000	104,000	156,000	100,000	150,000
2	LCL Container	179,000	268,500	170,500	255,750	163,000	244,500
3	Tariff according to Activities						
	a.Stevedoring	40,000	60,000	39,000	58,500	37,000	55,500
	b.Hauling/Trucking	25,000	37,500	23,000	34,500	22,000	33,000
	c.Lift on/Lift off	21,000	31,500	21,000	31,500	20,000	30,000

4	Tariff of Other Services						
	a.Container Shifting						
	- With Landing on Wharf	60,000	90,000	58,500	87,750	55,500	83,250
	- Without Landing on Wharf	38,000	57,000	37,000	55,500	35,000	52,500
	b.Transhipment Container	58,000	87,000	52,500	78,750	46,000	69,000
	---------						
	g. Overweight/overwidth/overlength						
	1) FCL	220,000	330,000	208,000	312,000	185,000	277,500
	2) LCL	358,000	537,000	341,000	511,500	300,000	450,000
	3) Shifting						
	- With Landing on Wharf	131,000	196,500	116,000	174,000	106,000	159,000
	- Without Landing on Wharf	201,000	301,500	182,500	273,750	166,000	249,000

Financial Situation of IPC2

109. All financial indicators were increasing year by year till 1997 but this trend was interrupted in 1998 due to the Asian crisis. In 2001 financial indicators look stable. Operating Revenue-Net increased suddenly in 1998 and returned to its traditional level in 1999. The 1998 level was regained in both 2000 and 2001. Operational Cost also increased in 1998 but returned to historical levels after 1999.

110. Branch ports in IPC II submit budgets to the head quarters and report financial indicators at the end of the fiscal year. The port of Tanjung Priok dominates in all items. Concerning Profit Before Tax, the port occupied 48% and 53% in 2000 and 2001 respectively among branch ports that reported a positive balance. Other than Tanjung Priok, the ports of Panjang and Banten have also been doing well.

111. For reference, the comparison of IPC's financial performance is shown below.

Table 6-B-6 Financial Performance of Port in 2000

Unit: million Rupiah

Item	IPC I	IPC II	IPC III	IPC IV
Operational Revenue-Net	286,797	968,689	876,846	135,761
Operational Cost	161,963	527,713	446,652	78,754
Cargo Volime(000 ton)	n.a.	122,707	13,953	n.a.
Profit before tax	222,912	222,272	494,092	35,805
State income tax	62,385	25,476	148,667	13,442
Net income	160,527	193,281	25,267	22,362
Total assets	920,561	4,334,076	2,233,380	697,551
Net Income/Total Asstes(%)	17%	4%	1%	3%
Net Income/Cargo Volume(Rp./ton)	n.a.	1,575	1,811	n.a.

Source:Auual Reports and Financial Reports of IPC I-IV

6-C. PORT ACTIVITIES IN THE PAST

6-C-1 Calling Vessels

Table 6-C-1 Ship Calls at Ports in the Study Area

	Tg. Priok		Banten		Sunda Kelapa		Cirebon		Total	
	Unit	GRT('000)	Unit	GRT('000)	Unit	GRT('000)	Unit	GRT('000)	Unit	GRT('000)
1991	12,106	42,212	2,571	11,016	8,955	2,437	1,802	1,364	25,434	57,029
1992	12,359	49,670	2,618	11,911	8,200	1,558	1,831	2,103	25,008	65,242
1993	12,245	51,214	2,679	12,415	8,435	3,089	2,363	2,256	25,722	68,974
1994	14,002	59,367	3,005	13,608	8,873	2,801	2,567	2,918	28,447	78,694
1995	13,114	63,880	3,932	17,471	7,676	1,563	2,111	1,937	26,833	84,851
1996	14,288	69,736	3,709	18,712	5,758	1,429	2,108	1,670	25,863	91,547
1997	15,137	74,508	3,266	20,180	5,983	1,758	1,825	1,509	26,211	97,955
1998	14,113	74,066	3,054	16,990	4,413	1,089	1,710	1,409	23,290	93,554
1999	14,807	79,522	3,635	20,836	4,747	1,300	1,860	1,467	25,049	103,125
2000	16,381	86,419	3,930	21,852	5,730	2,069	1,760	1,462	27,801	111,802
2001	17,068	89,284	3,332	16,524	6,061	2,499	1,669	1,578	28,130	109,885

Source: IPC2

6-C-2 Cargo Throughput

112. Cargo Throughput of the four ports are summarized and shown in Table 6-C-2. Total 75.7 million tons of cargo were loaded and unloaded at the four ports in 2001, which is 6.8 per cent below the previous year's throughput. The cargo volume had been increasing year by year before the crisis, then suddenly dropped by 8.2 per cent in 1998. Fortunately the cargo throughput began to increase in 1999 and 2000, but again decreased in 2001.

Table 6-C-2 Cargo Throughput by Port in the Study Area

(Unit: Thousand Ton)

Year	Tg. Priok	Banten	Sunda Kelapa	Cirebon	Total
1991	24,903	10,447	3,541	1,024	39,915
1992	29,001	11,261	3,429	1,246	44,937
1993	31,481	11,857	4,000	1,281	48,619
1994	33,791	12,812	4,182	1,413	52,198
1995	37,988	15,321	3,987	1,538	58,834
1996	40,212	17,297	3,631	1,677	62,817
1997	42,431	20,467	4,272	1,863	69,033
1998	38,344	20,583	2,637	1,813	63,377
1999	43,437	23,456	2,845	1,833	71,571
2000	49,816	26,401	3,237	1,752	81,206
2001	50,913	19,503	3,351	1,962	75,729

Source: PT. (Persero) Pelabuhan Indonesia II

113. Throughputs by packing type at the four ports are shown in Table 6-C-3. Packing types are categorized into the six groups; General cargo, Bag cargo, Liquid Bulk cargo, Dry Bulk cargo, Container, and Others. Container as one of the packing types has the largest share of 27.3 % in the combined throughputs at the four metropolitan ports in 2001. Dry bulk cargo follows with 25.4 % of the total, while liquid bulk cargo has a 23.8 % share.

114. The share of container has been increasing since 1991 when it was 16.4 %. On the other hand, shares of bulk cargoes have been relatively stable, 23.1% for liquid bulk cargo and 17.9 % for dry bulk cargo in 1991.

Table 6-C-3 Cargo Throughput by Packing Type in the Study Area

Table Cargo Throughput by Packing Type at Study Ports (1991 - 2001)

(Unit:Thousand Ton)

DESCRIPTION			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Throughput at Port of Banten			10,448	11,262	11,857	12,812	15,321	17,297	20,467	20,583	23,456	26,401	19,503
General Cargo		Ton	1,485	1,157	1,434	1,297	849	1,053	1,382	1,068	1,607	1,412	660
Bag Cargo		Ton	2	1	6	57	70	633	53	137	192	145	69
Liquid Cargo		Ton	1,420	1,685	1,940	3,643	5,448	5,848	7,140	7,388	7,810	8,928	7,589
Dry Bulk Cargo		Ton	7,423	8,296	8,334	7,696	8,835	9,658	11,774	11,896	13,639	15,676	10,804
Containerized Cargo		Ton	2.9	0.7	1.0	0.4	0.5	0.7	0.5	7.0	105.0	181.0	297
		(1,000 Teu)	0.4	0.1	0.1	0.3	0.1	0.1	0.1	1.0	10.0	16.0	24
Others		Ton	115	122	142	119	118	104	117	87	103	59	84
Throughput at Port of Sunda Kelapa			3,541	3,429	4,000	4,182	3,987	3,631	4,272	2,637	2,845	3,237	3,351
General Cargo		Ton	1,360	1,364	1,564	1,555	1,075	996	829	629	699	740	751
Bag Cargo		Ton	598	577	591	497	667	754	754	688	616	594	982
*Liquid Cargo		Ton									43	28	164
Dry Bulk Cargo		Ton						231	695	2			180
Containerized Cargo		Ton											
		(1,000 Teu)											
Others		Ton	1,583	1,488	1,845	2,130	2,245	1,650	1,994	1,318	1,487	1,875	1,274
Throughput at Port of Cirebon			1,024	1,246	1,281	1,413	1,538	1,678	1,863	1,813	1,833	1,752	1,962
General Cargo		Ton	240	345	304	310	244	260	205	229	204	275	228
Bag Cargo		Ton	481	483	467	398	427	490	508	558	458	355	576
*Liquid Cargo		Ton	7	0	71	142	221	242	228	185	207	148	156
Dry Bulk Cargo		Ton	296	418	399	563	625	670	915	840	964	973	1,002
Containerized Cargo		Ton	0	0	0	0.1	0.3	1.7	0	1.0	0	0.5	0
		(1,000 Teu)	0	0	0	0.1	0.2	0.4	0	0.1	0	0.1	0
Others		Ton	0	0	40	0	21	14	7	0	0	1	0
Throughput at Port of Tg. Priok			24,903	29,002	31,481	33,791	37,988	40,212	42,431	38,344	43,437	49,816	50,913
General Cargo		Ton	4,077	4,705	5,203	5,048	6,998	8,355	8,078	6,212	6,255	8,692	9,421
Bag Cargo		Ton	3,044	2,845	2,884	3,301	3,317	3,390	2,715	3,111	3,263	1,665	3,769
Liquid Bulk Cargo		Ton	7,782	8,567	9,103	8,359	8,591	8,259	8,813	8,934	9,258	9,726	10,094
Dry Bulk Cargo		Ton	3,410	4,565	4,719	5,661	5,459	4,949	6,292	5,118	5,242	6,929	7,268
Container	(Conventional Wharf.)	Ton	781	458	612	993	1,438	1,845	2,141	1,646	2,657	4,620	2,447
		(1,000 Teu)	115	51	100	106	201	183	238	188	257	403	769
Others			0	0	0	0	0	0	0	0	0	0	0
	(Container Terminal)	Ton	5,809	7,862	8,960	10,429	12,185	13,414	14,392	13,323	16,762	18,184	17,914
		(1,000 Teu)	621	815	978	1,164	1,300	1,421	1,631	1,712	1,855	2,019	1,989
Total Throughput at Major Metropolitan Ports			39,916	44,939	48,619	52,198	58,834	62,817	69,033	63,377	71,571	81,206	75,729
General Cargo		Ton	7,162	7,571	8,505	8,210	9,166	10,664	10,494	8,138	8,765	11,119	11,060
Bag Cargo		Ton	4,125	3,906	3,948	4,253	4,481	5,267	4,030	4,494	4,529	2,759	5,396
Liquid Bulk Cargo		Ton	9,209	10,252	11,114	12,144	14,260	14,349	16,181	16,507	17,318	18,830	18,003
Dry Bulk Cargo		Ton	11,129	13,279	13,452	13,920	14,919	15,508	19,676	17,856	19,845	23,578	19,254
Container	(Conventional Wharf.)	Ton	784	459	613	993	1,439	1,847	2,142	1,654	2,762	4,801	2,744
		(1,000 Teu)	115	51	100	106	201	183	238	189	267	419	793
Others			1,698	1,610	2,027	2,249	2,384	1,768	2,118	1,405	1,590	1,935	1,358
	(Container Terminal)	Ton	5,809	7,862	8,960	10,429	12,185	13,414	14,392	13,323	16,762	18,184	17,914
		(1,000 Teu)	621	815	978	1,164	1,300	1,421	1,631	1,712	1,855	2,019	1,989

Source: Pt. (Persero) PELABUHAN INDONESIA II

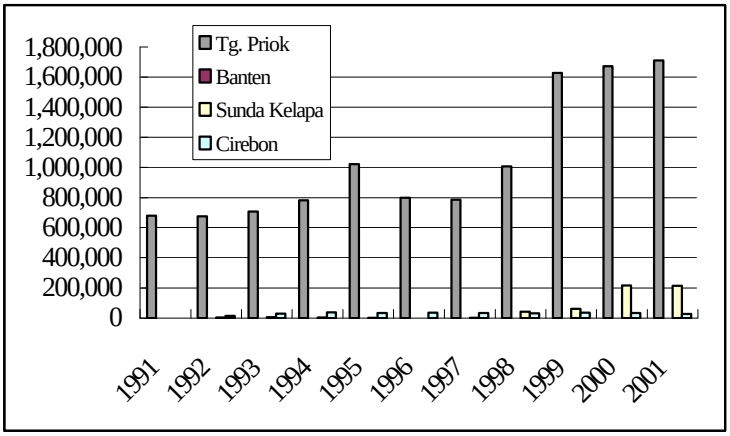
6-C-3 Passenger Movement

115. In the study area, passenger ships call at three ports regularly; Tanjung Priok, Sunda Kelapa, and Cirebon. No passenger vessels come to the Port of Banten. Total of 1,950,939 passengers embarked and disembarked at the three ports in 2001.

(Unit: persons)

	Tg. Priok	Banten	Sunda Kelapa	Cirebon	Total
1991	678,649	-	-	-	678,649
1992	674,004	-	3,458	13,040	690,502
1993	707,074	-	6,606	28,490	742,170
1994	781,373	-	3,151	37,125	821,649
1995	1,022,590	-	2,864	32,297	1,057,751
1996	799,681	-	-	33,641	833,322
1997	785,441	-	2,864	32,297	820,602
1998	1,005,980	-	42,398	30,335	1,078,713
1999	1,628,190	-	62,123	34,389	1,724,702
2000	1,671,920	-	215,716	31,883	1,919,519
2001	1,709,368	-	213,992	27,579	1,950,939

Source: PT. (Persero) Pelabuhan Indonesia II



6-D. DETAIL SITUATION OF TANJUNG PRIOK PORT

6-D-1 Port Facilities & Equipment

Channels, Basins and Breakwater

116. Tanjung Priok has a 424ha water area (within the port/breakwater) and a 604ha land area (inside of the port boundary). Configuration of channels, basins and breakwaters is summarized in Table 6-D-1. Figure 6-D-1 shows the layout of the port facilities.

Table 6-D-1 Configuration of Port Facilities

Channels	Location	L (m)	W (m)	Area (ha)	D (m)
Channel -I	DKP ~ North of Port I Basin	3,840	100	38.400	10.0 - 14.0
Channel -II	North of Port I Basin ~ Port Entrance	1,700	100	17.000	14.0
Channel -III	Access to/from the Port	1,463	125	18.288	14.0
Channel -IV	Oil terminal	990	50	4.950	12.0
Channel -V	Kali Japat	1,700	75	12.750	6.0
Total		9,693		91.388	

Basins	L (m)	W (m)	Area (ha)	D (m)
Nusantaral -I	1,700	105	17.850	4.0 - 6.0
Nusantaral -II	1,020	55	5.610	4.0 - 4.0
Port -I	1,080	170	18.360	4.0 - 10.0
Port -II	1,020	142	14.484	4.0 - 12.0
Port -III	1,040	185	19.240	10.0 - 11.5
North Koja Front Basin	265	150	3.975	14.0
TPK Koja Front Basin	450	150	6.750	14.0
Total			86.269	

Source: Pelindo II

Breakwater	L (m)
Nusantara BW -I	591
Nusantara BW -II	659
West BW	1,750
East BW -I	1,479
East BW -II	228
East BW -III	934
East BW -IV	98
East BW -V	1,548
Bogasari BW -West	713
Bogasari BW -East	1,507
Total	9,507

Berths, Yards and Warehouses

117. Public berths are owned by IPC-II while special dedicated private berths are owned by the private sector. However, management of public berths is carried out by three (3) entities, i.e., IPC-II, JICT and Koja CT. Berth length is summarized in Table 6-D-2, while dimensions and characteristics of each berth are shown in Table 6-D-3.

Table 6-D-2 Berth Length

	L (m)
Pelindo II	7,737
JICT	1,637
Koja CT	450
Private	773
Total	10,597

Source: Pelindo II

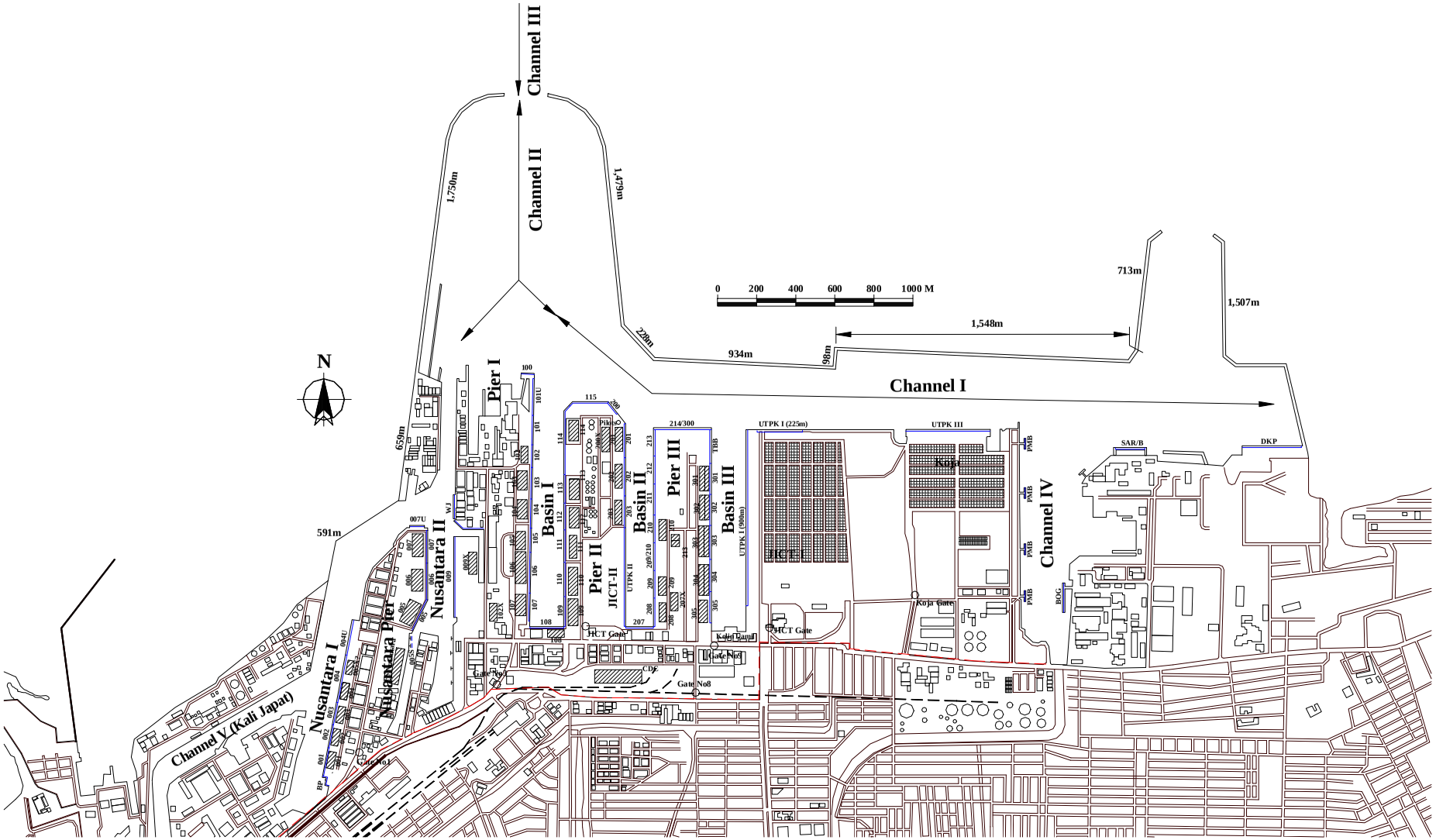


Figure 6-D-1 Layout of the Facilities of Tanjung Priok

Table 6-D-3 Details of Berths

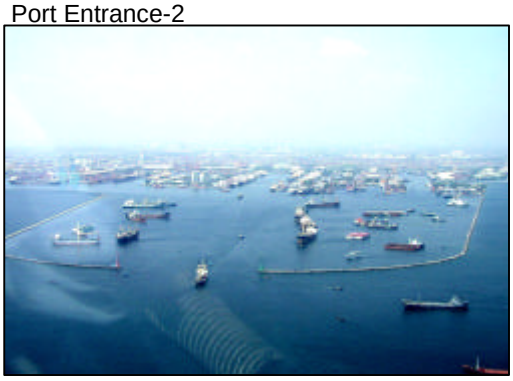
Type	Berth Name	Explanation	Length (m)	Num. of Berth	Draft (m)	T/O	Cargo Type (% as of Mar.02)					Unl/Ld (% as of Mar.02 Exc.CT)	Throughput (box)				
							Bag	LB	DB	GC	Unit.	Major Commodity	Unload	Load	Mar.01	Sep.02	Mar.02
Conv'l	BP	Beaching Point	35.0	1	2.5	Non T/O					100%	Heavy eq.	49%	51%			
Conv'l	001		163.0	1	6.0	T/O(A)	11%			23%	66%	Plywood, Rice	45%	55%	24		
Conv'l	002		130.0	1	6.0	T/O(A)	8%			56%	36%	Plywood, Paper, GC, Rice	67%	33%	108	18	
Conv'l	003		130.0	1	6.0	T/O(A)	9%		26%		65%	Clinker, Pulp, Gypsum, CT	51%	49%			27
Conv'l	004		260.0	2	6.0	T/O(B)	4%	34%	39%	14%	9%	CPO, Clay, Coal	96%	4%	150	215	
Conv'l	004U	KBN	195.0	1	6.0	T/O(B)		39%	28%	34%		CPO, Sand, Gypsum	98%	2%			
Conv'l	005S	2 Jetty, South of 005	11.0	2	5.0	DUT											
Conv'l	005		180.0	1	7.0	T/O(C)			12%	29%	59%	Plywood, GC, Sand, CT	39%	61%	924	1,361	1,608
Conv'l	006		180.0	1	7.0	T/O(C)			5%	41%	53%	GC, Plywood, Sulfer, CT	36%	64%	4,522	2,789	2,544
Conv'l	007		180.0	1	7.0	T/O(C)				22%	78%	Plywood, GC, CT	57%	43%	2,631	942	2,338
Conv'l	007U		75.0	1	5.0	DUT											
Container	009	Utama VTP, front of EX 009	404.0	2	8.0	MPT					100%	CT			6,726	7,010	6,531
Conv'l	WJ	PT. Wali Jaya (Kali Mati)	100.0	1	4.0	Non T/O			100%			Sand, Coal	100%				
Conv'l	100	EX 100	62.0	1	6.0	T/O(D)		94%		6%		CPO	94%	6%			
Conv'l	101U		200.0	1	10.0	T/O(D)			84%	12%	5%	Cement, Clinker	3%	97%			
Conv'l	101	EX 101	121.0	1	7.0	T/O(D)		33%	10%		57%	Ammonium, Soybean, Cow	100%		267	301	
Conv'l	102		121.0	1	7.0	T/O(D)	5%	38%	14%	17%	27%	CPO, GC, Cement	66%	34%		17	
Conv'l	103		159.0	1	7.0	T/O(E)		26%		5%	69%	CPO, CT	98%	2%	2,710	4,241	4,775
Conv'l	104		155.0	1	7.0	T/O(E)					100%	CT			2,759	3,563	3,391
Conv'l	105		140.0	1	7.0	T/O(E)		11%			89%	CPO, CT	100%		2,257	2,676	2,485
Conv'l	106		201.0	1	7.0	DUT						Passenger			221		
Conv'l	107		128.0	1	7.0	DUT						Passenger					
Conv'l	108		175.0	2	3.5	T/O(F)	5%	14%		64%	17%	GC, Oil	35%	65%		5	
Conv'l	109		155.0	1	7.0	T/O(F)	10%	12%		38%	41%	GC, Plywood, Rice, CPO	61%	39%			
Conv'l	110		166.0	1	7.0	T/O(F)	9%	6%		53%	32%	GC, Plywood, Mobil, Pulp	56%	44%	916		
Conv'l	111		153.0	1	7.0	T/O(G)		5%		77%	18%	GC, CT	37%	63%	2,314	3,507	326
Conv'l	112		151.0	1	7.0	T/O(G)		43%		43%	14%	GC, Oil prod., CPO, CT	61%	39%		452	317
Conv'l	113		138.0	1	7.0	T/O(G)		30%	6%	3%	61%	Soda ash, Palm, Oil prod., GC, CT	77%	23%	2,884	2,567	3,103
Conv'l	114	114 & 113/114 (SS)	376.0	2	7.0	DUT			74%	7%	19%	Sement, Soybean, CT	100%	0%	529		300
Conv'l	115	Syahbandar, EX 115	177.0	1	8.0	T/O(P)			4%	49%	48%	Pulp, Cement, GC	51%	49%	604		30
Conv'l	200	EX 200	80.0	1	5.0	T/O(P)	19%	45%		19%	17%	CPO, Sement, Cousitic soda	50%	50%			
Conv'l	201		167.0	1	9.0	T/O(H)			64%		36%	Clinker, CT		100%	702	953	306
Conv'l	202		170.0	1	9.0	T/O(H)				3%	97%	Pulp, Paper, Plywood, Coil, CT	47%	53%	1,895	1,212	423
Conv'l	203		158.0	1	9.0	T/O(H)		8%		18%	74%	GC, Plywood, CT	38%	62%	200	732	874
Container	UTPK2	JICT	510.0	3	9.0	JICT						CT			17,537	15,406	17,645
Conv'l	207		141.0	2	4.0	DUT		48%		21%	31%	CPO, Construction mat.	83%	17%			
Conv'l	208		159.0	1	9.0	T/O(I)				79%	21%	GC, CT	100%			425	271
Conv'l	209		140.0	1	9.0	T/O(I)	26%		22%	39%	13%	GC, Soda ash, CT	93%	7%			
Conv'l	209/210		140.0	1	9.0	T/O(I)	16%			5%	79%	Wood, Pulp, Fertilizer, CT	81%	19%	1,500	852	
Conv'l	210		140.0	1	9.0	T/O(K)	36%				64%	Sugar, Pulp, , Paper,	85%	15%			
Conv'l	211	EX 211	152.5	1	9.0	T/O(K)	62%	7%	21%	10%		Sugar, Rice, Coil, Soda ash	100%				7
Conv'l	212	EX Pertamina Gulf	145.0	1	9.0	T/O(L)			32%		68%	Cement, Clinker, CT	0%	100%	2,931	2,797	2,496
Conv'l	213		140.0	1	9.0	T/O(L)					100%	Cement, CT	82%	18%	2,305	2,544	3,006
Conv'l	214/300	EX Gudan Arang	300.0	2	12.0	DUT	14%		52%		33%	Corn, Fertilizer, Sugar, CT	100%		799	50	4,740
Conv'l	TBB	Terminal Besi Bekas	195.0	1	12.0	Non T/O			100%			Scrap steel	100%				
Conv'l	301		160.0	1	12.0	T/O(N)			51%	6%	43%	Cement, Pulp, Animal feed, CT	33%	67%	2,381	1,753	2,034
Conv'l	302		160.0	1	12.0	T/O(N)			11%	30%	59%	Steel, Pulp, Clinker, GC, CT	88%	12%	21	482	1,037
Conv'l	303		163.0	1	12.0	T/O(J)				47%	53%	GC, Steel, CT	45%	55%	1,411		2,114
Conv'l	304		160.0	1	12.0	T/O(J)				36%	64%	GC, Soybean, CT	79%	21%	4,606	1,529	2,665
Conv'l	305		160.0	1	12.0	T/O(J)			24%	10%	66%	Cement, GC, CT	42%	58%		2,470	1,326
Other	Kolin Lamil	Navy use			3.0												
Other	President Wharf				5.0												
Container	UTPK1W	JICT	900.0	4	11.0	JICT						CT			85,438	73,455	80,036
Container	UTPK1N	JICT	225.0	1	14.0	JICT						CT					
Container	UTPK3	Koja	450.0	2	14.0	Koja						CT			33,424	28,347	31,237
Special	PMB	4 Jetty	100.0	4	9.0	KHUSUS		100%				Chemical, Oil	100%				
Special	BOG	BOGASARI	175.0	1	10.0	KHUSUS			100%			Wheat, Rice	57%	43%			
Special	SAR/B	Sarpindo/BOGASARI	187.0	1	10.0	KHUSUS			100%			Wheat	97%	3%			
Special	DKP	PT. DKP	276.0	1	9.0	KHUSUS		100%				Chemical prod.	100%	0%			

Figure 6-D-2 Aerial View of Tanjung Priok Port

Aerial View of Tanjung Priok (1) (As of June 2002)

Port Entrance-1

Port Entrance-2



From West to East

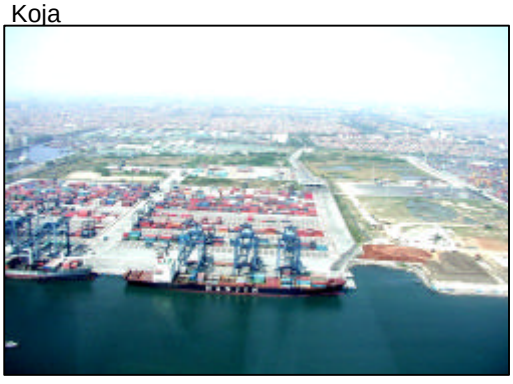
Pier-I

Pier-II

Pier-III

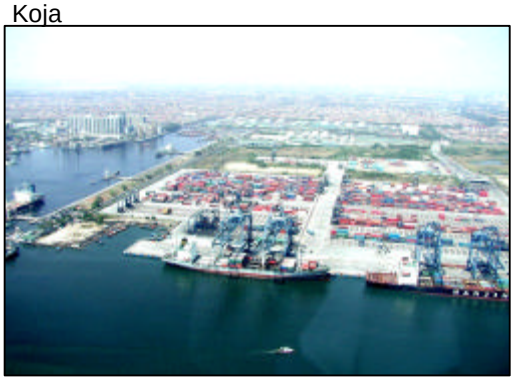
JICT-1

Koja



Aerial View of Tanjung Priok (2) (As of June 2002)

Koja



Pertamina & Bogasari

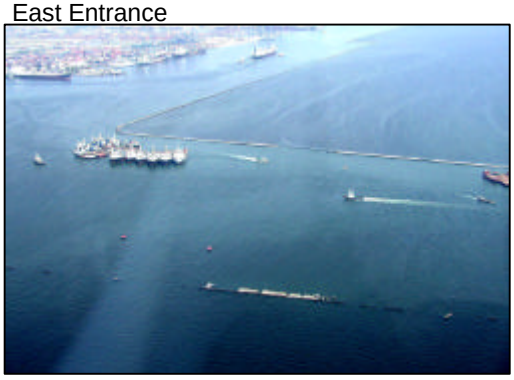
Pertamina & Bogasari

Sarpindo & DKB

DKB-IV

DKP

East Entrance



Kalibaru

Aerial View of Tanjung Priok (3) (As of June 2002)

Nusantara Entrance

Nusantara Pier

Nusantara-II Basin

PLN

Rukindo

East Ancol

Martadinata Road

JICT Intersection

6-D-2 Navigational Situation in the Port

118. Regarding navigation system, VTIS (Vessel Traffic Information System) has been introduced in Tanjung Priok, however, it is not well utilized for actual navigation being used just as a communication system. Furthermore, the current VTIS system does not correspond to AIS (Automatic Identification System).

119. There is a general regulation for navigation, PP No.81/2000, while unwritten rules exist in the port. According to the pilots of Tanjung Priok, the following information/rules are crucial for navigation:

- There are 12 tug boats and 6 pilot boats mooring mainly at berth No.200. The number of pilots is around thirty (30) and there are two (2) shifts, one from early morning to 18:00 and the other from 18:00 until early morning.
- Ship waiting area is located outside of the port/breakwater and at both sides of the channel II.
- All channels in the port are one way except for small ship. Ships can pass each other only outside of the port.
- The only operational entrance, the west entrance (depth of -14m), accommodates commercial ships. East entrance is used only for very small ship such as fisher boat, tug boat etc due to the insufficient water depth (around -5m).
- The number of tug boats that must accompany a ship within the port is determined as follows:

  LOA >= 150m 3 tug boats
  LOA < 150m 2 tug boats

- Maximum LOA of ship to be navigated in the whole port is around 300m. Maximum LOA in each channel and basin is defined as shown in Figure 6-D-3. Location and size of turning basin is also described in the same Figure.
- Average ship speed in the port is around 2 to 3 knots due to the use of tug boats within the port. Thus, for example, it takes more than 1 hour for a container ship to enter the port and berth at Koja terminal.
- Ship bow should point in the departure direction (head out mooring) when mooring at the quay considering emergency evacuation.
- First priority for berthing is given to passenger ships followed by container ships and naval ships.

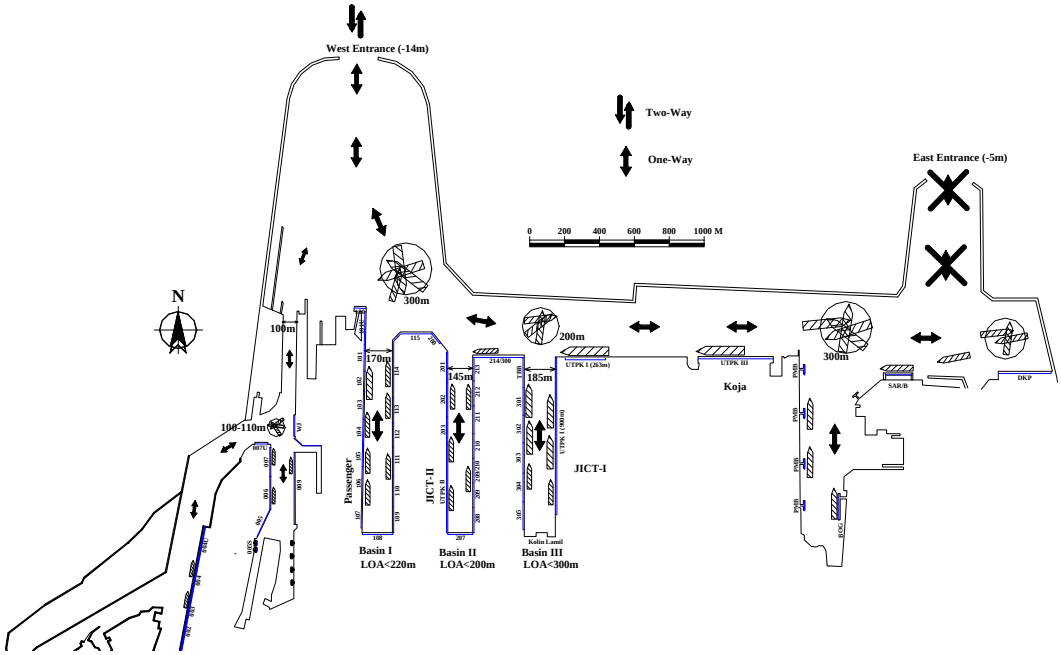


Figure 6-D-3 Ship Maneuvering

120. Judging from the above, smooth shipping operation is not always secured in Tanjung Priok. These tight shipping operations mainly stem from insufficient channel width and maneuvering areas as well as the narrow basin between the wharves.

121. According to the pilots, there is a total of 80 ship arrivals/departures per day on average and 100 ship arrivals/departures per day in the maximum case. This latter figure seems to be reaching the limit of the port capacity in terms of smooth operation. The pilots raise the following critical issues/problems from the point of view of shipping operation.

- Narrow water area for ship transiting and maneuvering

  Main turning basins cannot help being located on the main transit route and it is impossible to secure two way transit in any water area in the port. The port cannot cope with the future increase in ship calls under this situation. If the number of ship calls exceed 100 per day on average, shipping operation especially for liner services would be very hard to manage due to serious congestion in the port. Even liner vessels would be forced to wait for a berth reducing the productivity of the port as a whole. It is necessary to relocate the breakwater and to expand water area for safe, smooth and efficient shipping operation.

- One gate operation

  This means that all passages in the port are *dead ends*, and from the same point abovementioned, it is urgent to ensure at least two gate operation.

6-D-3 Port Traffic

Total Throughput by Trade Type

122. Cargo throughputs by trade type are shown in Table 6-D-4 with figure. Total about 42 million tons (excluding oil discharged) are handled at Tanjung Priok Port. Volume of incoming cargo has been exceeding that of outgoing cargo for both international and domestic.

123. Cargo throughput in 1998 showed a significant drop from the previous year, in particular, the import cargo volume fell to less than two thirds of the previous year's level.

Table 6-D-4 Cargo Throughputs by Trade Type

Year	International		Inter-island		Total	Oil Discharged
	Import	Export	Unloading	Loading		
1991	9,295,204	3,891,509	3,037,751	1,959,896	18,184,360	
1992	10,570,081	5,933,409	3,042,780	2,366,119	21,912,389	
1993	11,544,182	6,160,031	3,119,312	2,975,157	23,798,682	
1994	14,270,818	5,614,000	4,019,213	2,900,622	26,804,653	
1995	16,876,038	6,194,197	4,632,498	3,234,871	30,937,604	
1996	17,302,693	6,847,220	5,183,364	3,880,976	33,214,253	7,021,669
1997	19,113,402	7,177,126	5,353,272	3,617,288	35,261,088	7,314,424
1998	12,264,579	11,926,299	3,736,236	2,976,396	30,903,510	7,439,257
1999	15,403,368	13,499,273	4,265,880	3,166,075	36,334,596	7,101,655
2000	17,963,684	13,144,711	6,503,499	4,241,469	41,853,363	8,109,458
2001	20,474,026	13,381,286	4,117,747	4,339,334	42,312,393	8,462,246

Source: "PORT TRAFFIC up to December 2000" Page 4. PT. Pelabuhan Indonesia II

Total Throughput by Packing Type

124. Throughput by packing type is shown in the following table. Total throughput has nearly doubled during the last ten years, but throughput levels of bag cargo and liquid bulk cargo have remained almost unchanged for the past decade. Average annual growth rates by packing type are as follows; General Cargo 8.7%, Bag Cargo 2.2 %, Liquid Bulk cargo 2.6 %, Dry Bulk Cargo 7.9 %, and Container 11.9 %.

Table 6-D-5 Cargo Throughput by Packing Type

(Unit:Thousand Ton)

	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
General Cargo	4,077	4,705	5,203	5,048	6,998	8,355	8,078	6,212	6,255	8,692	9,421
Bag Cargo	3044	2845	2884	3301	3317	3390	2715	3111	3263	1665	3769
Liquid Bulk Cargo	7,782	8,567	9,103	8,359	8,591	8,259	8,813	8,934	9,258	9,726	10,094
Dry Bulk Cargo	3,410	4,565	4,719	5,661	5,459	4,949	6,292	5,118	5,242	6,929	7,268
Total Container	6,590	8,320	9,572	11,422	13,623	15,259	16,533	14,969	19,419	22,804	20,361
Total	**24,903**	**29,002**	**31,481**	**33,791**	**37,988**	**40,212**	**42,431**	**38,344**	**43,437**	**49,816**	**50,913**

Container Cargo Movement by Terminal

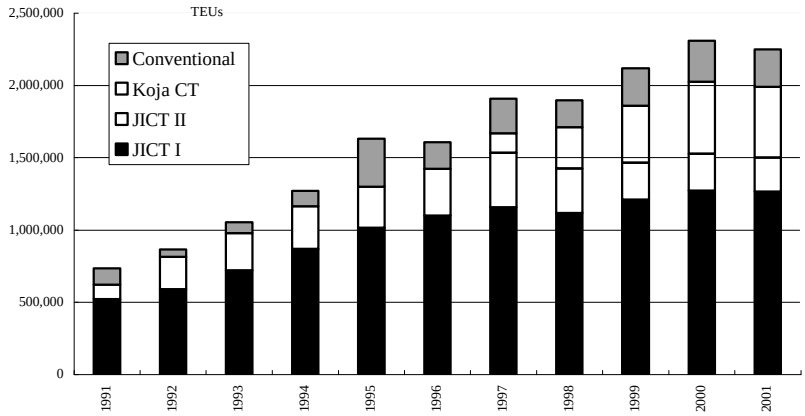
125. Total of 2.25 million TEUs containers passed through the TG. Priok Port in 2001. There are three dedicated container terminals: JICT I & II, and KOJA terminal. These dedicated container terminals handled mainly international containers. Conventional berths are also used for handling containers, which are mainly for inter-island traffic.

126. Market shares among the terminals are as follows: JICT takes two thirds of the total market. KOJA terminal has a 22 % share, but its share has been increasingly year by year. Throughput at conventional berths has been unstable for the past decade, but accounted for 12% in 2001.

Table 6-D-6 Container Cargo Movement by Terminal

unit: TEU

Year	JICT I		JICT II		Koja CT		Conventional		Total
1991	522,792	71%	98,776	13%			114,802	16%	736,370
1992	591,796	68%	224,063	26%			50,858	6%	866,717
1993	723,122	69%	255,183	24%			75,847	7%	1,054,152
1994	871,710	69%	292,422	23%			105,962	8%	1,270,094
1995	1,016,027	62%	284,099	17%			330,194	20%	1,630,320
1996	1,101,530	69%	322,553	20%			182,714	11%	1,606,797
1997	1,157,293	61%	375,784	20%	137,817	7%	237,817	12%	1,908,711
1998	1,119,284	59%	305,663	16%	287,789	15%	185,333	10%	1,898,069
1999	1,210,890	57%	255,147	12%	394,195	19%	258,315	12%	2,118,547
2000	1,273,712	55%	254,001	11%	496,279	21%	285,980	12%	2,309,972
2001	1,266,840	56%	233,379	10%	490,120	22%	261,124	12%	2,251,463



6-D-4 Shipping Lines and Stevedoring Companies

127. At the end of July, 2002, 58 ports in the North Europe, the Mediterranean Sea-front, and the East Europe are connected with Jakarta through direct services. The shipping lines providing these direct services are: Maersk Sealand Line, Grand Alliance, CMA-CGM and some joint operators (ANL, Gold Star, Lykes and Mafret), Norasia.

128. ANL is still maintaining its name but has merged with CMA-CGM. CMA-CGM is the largest container operator of the French flag. The line and its associates are maintaining direct ties with Europe and Mediterranean ports. OOCL and the other three lines of the Grand Alliance are also playing an important role in maintaining a direct route to North Europe and Mediterranean Ports from Jakarta.

129. There are various kinds of services connecting major islands of this country, including 44 inter-island routes connecting 30 regional and local ports. The shipping lines serving the routes are: Salma Pacific Indonesia Lines (SPIL), Perayaran Meratus (Meratus), Panurjwan, JP Lines (PT. Jayakusuma Perdana Lines), Heung-A Shipping. These four lines are exclusively serving the inter-island traffic. JPL is an agent /operator of Evergreen-Uniglory Line.

130. There are many stevedoring companies in Tanjung Priok, major of which are functioning as terminal operators as described in next part. Most of cargo handling equipment in the port is owned by the major stevedoring companies. Small scaled companies provide a gang of workers to the terminal operators and/or IPC on a contract basis.

6-D-5 Terminal Operation

Conventional Terminal

131. Most of the conventional terminals are managed and operated by 14 terminal operators. Each terminal operator has a right to carry out conventional cargo handling operations including container cargo handling at each terminal through the contract between IPC2 and each private company. Table 6-D-7 is a list of terminal operators. The fact that fixed berths are assigned to each operator should be noted.

Table 6-D-7 List of Terminal Operators

No.	Name of Company		Berth No.
1	Terminal Operator – A	PT. Hamparan Jala Segara	001, 002, 003
2	Terminal Operator – B	PT. Srikreasi Unggul Persada	004, 004-U
3	Terminal Operator – C	PT. Prima Nur Panurjwan	005, 006, 007
4	Terminal Operator – D	PT. Batu Pajar Nusantara	100, 101-U, 101, 102
5	Terminal Operator – E	PT. Adipurusa	103, 104, 105
6	Terminal Operator – F	PT. Mahardi Sarana Tama	108, 109, 110
7	Terminal Operator – G	PT. Dwipa Hasta Utama	111, 112, 113
8	Terminal Operator – H	PT. Andalan Tama	201, 202, 203
9	Terminal Operator – I	PT. Gemar Laut Biru	208, 209
10	Terminal Operator – J	PT. Tangguh Samudera Jaya	303, 304, 305
11	Terminal Operator – K	PT. Indo Daya Abadi Sakti	210, 211
12	Terminal Operator – L	PT. Olah Jasa Andal	212, 213
13	Terminal Operator – N	PT. Darma Lautan Nusantara	301, 302
14	Terminal Operator – P	PT. Tri Mulya Baruna Perkasa	115, 200

132. This "Terminal Operators System" for the conventional terminal at Tanjung Priok commenced in the mid 1990s based on the IPC2's policy of joint business, management and operation with the third party. Major items in a contract agreement between IPC2 and a terminal operator are as follows:

- Period of agreement is five (5) years.
- The Second Party (terminal operator) covers the operation and maintenance, royalty payment, mechanical and non-mechanical stevedoring equipment supply, fee and tax payment, stevedoring experts and operational workers supply, as well as responsibility for the third party handling cargo in the terminal. Working hours are 24 hours a day, 7 days a week and 365 days a year
- The First Party (IPC2) has responsibilities of berth allocation of vessels, as well as pilotage and tug service.
- IPC2 will receive royalty from the revenue of anchorage, stacking, and mechanical equipment service.
- Annual target of cargo throughput is determined. (This target seems to be calculated based on IPC2's "Target for Quality of Services" as follows)

Container Cargo	18 B/C/H
General Cargo (GC)	32 T/G/H
Bagged Cargo (BC)	36 T/G/H
Unitized Cargo (UC)	45 T/G/H
Liquid Bulk (CC)	150 T/G/H
Dry Bulk (CK)	100 T/G/H

133. In addition to the terminals operated by 14 terminal operators, there is a multi-purpose-used terminal, berth No.009. This terminal is managed and operated by an affiliated company of IPC2 which was established in April 2002 based on cooperation of maritime employee scheme between IPC2 and PT. Multi Terminal Indonesia. The terminal is equipped with two gantry cranes and two transtainers, and mainly handles container cargo. Recorded handling volume at berth No.009 in 2001 was about 70,000 TEUs.

Container Terminal

134. In 1997, IPC2 underwent a privatization process through partial strategic partnership of its container terminal units to improve the efficiency and container service provision and to upgrade the management and technology, as well as increase ship and container service performance in the ports. IPC2 determined that the privatization scope should cover the container terminal units. The major items of agreement between the first party and the second party can be summarized as follows: Period of agreement is 20 years. Basically, development of a new terminal including berths and super-structure is the responsibility of the second party, while dredging of the main channel and basin is the responsibility of the first party. Period of tariff adjustment is every 2 years. Royalty is 10% of revenue.

135. Tanjung Priok port has two full-scale container terminals: Jakarta International Container Terminal (Terminals of I and II, JICT) and Koja Container Terminal. Both terminals are separately managed and operated by affiliated companies of IPC2.

PT. Jakarta International Container Terminal

136. PT Jakarta International Container Terminal (PT JICT) is an affiliated company of IPC2 and established based on a joint venture scheme between IPC2 and Grosbeak PT. Hong Kong Ltd. on March 1999. Shareholding structure of PT. JICT consists of IPC2 (48%), Grosbeak PT. JICT (51%) and Tanjung Priok Maritime employees Cooperative (1%).

Koja Container Terminal

137. Koja Container Terminal (Koja CT) is an affiliated company of IPC2 and established based on a joint operation scheme between IPC2 and PT. Ocean Container Terminal on March 1999. Shareholding structure of Koja CT consists of IPC2 (52.12%) and PT Ocean Container Terminal (47.88%).

Computerized Terminal Management System

138. To support container handling performance, the computerization management application system has been introduced at both container terminals, which is mainly utilized for the following activities: Yard and Ship Planning, Yard and Ship Operation, Gate House, Billing, and EDI.

139. EDI Indonesia's line of business is outlined in Decree of Minister for Tourism, Post and Telecommunications NO.KM/89/HK/501/ppt-95 dated 6 December 1995. According to this decree, EDI Indonesia provides information technology-based technical and consultancy

services and network installation related to export-import processes, supply chains, and distribution within the scope of port operations and telecommunications.

Berth Occupancy

140. Monthly/annual Berth Occupancy Ratio (BOR) is provided by IPC-II, but their calculation method is somewhat different than standard one. Usually, monthly BOR can be calculated by the following two methods: Second method is suitable in case of evaluating long sequential berth.

- BOR (1): (S Berthing Time for No.(i) berth) / (24hr * 30(31)days * number of berth in No.(i) berth) - berth wise BOR
- BOR (2): (S (Berthing Time * LOA(m)) for No.(i) berth) / (24hr * 30(31)days * berth length (m) of No.(i) berth) - berth length wise BOR

141. Therefore, the Study team calculated BOR again using PPKB (Request of service for ship and cargo) based data "*Penetapan Rencana Alokasi Tambat Kapal dan Kegiatan Bongkar Muat*". Based on the results, the following observations can be made. (See Table 6-D-8):

- Berths in Basin I & II, especially those located at the inner part of basin have a low BOR level. This is likely due to the narrow space of basins, which would put the limits on the number of ship calls to the basins.
- 009 (MTI terminal), 107 ~109, UTPKII (JICTII terminal), 207 ~ 209, 305, for example, are under 50% of berth wise BOR, and far below 50% of berth length wise BOR in March 2002. (See Table 6-D-8 and Figure 6-D-4)
- Berths such as No.115 and 007U are not being well utilized, which seems to be because of the narrow maneuvering area in front of them.

Table 6-D-8 Berth Occupancy Ratio

Berth Name	Num. of Berth	Length	BOR(1) - berth wise		BOR (2) - berth length wise	
			Mar.02	3 months	Mar.02	3 months
BP	1	35	36.8%	33.2%	54.6%	48.3%
WJ	3	100	35.1%	42.9%	65.4%	77.4%
107	1	128	12.2%	17.7%	7.0%	9.2%
114	2	376	66.8%	54.0%	48.1%	36.8%
207	1	141	45.1%	45.6%	18.5%	19.2%
214/300	2	300	54.8%	57.5%	54.5%	59.4%
TBB	2	195	62.4%	33.6%	87.2%	46.7%
PMB	4	100	79.0%	89.8%	-	-
BOG	1	175	77.4%	60.2%	65.1%	52.7%
SAR/B	2	187	95.9%	81.7%	-	-
DKP	2	276	18.9%	22.9%	15.2%	17.8%
Terminal Operator's Berth	46	5,886	61.9%	64.9%	50.2%	48.8%
001-003	3	423	71.7%	66.6%	35.1%	30.5%
004-004U	4	455	53.6%	50.5%	30.6%	28.9%
005-007	6	540	65.2%	67.1%	58.9%	56.9%
100-102	4	504	75.2%	72.0%	70.7%	65.5%
103-105	3	454	60.0%	57.0%	39.7%	36.7%
108-110	5	496	56.8%	88.1%	50.4%	53.4%
111-113	4	442	58.6%	62.3%	49.3%	53.7%
115-200	2	257	43.5%	59.8%	30.1%	44.8%
201-203	3	495	53.7%	53.1%	48.7%	46.9%
208-209	3	439	41.4%	50.9%	33.9%	37.9%
210-211	2	293	73.6%	70.6%	62.0%	58.2%
212-213	2	285	71.0%	66.2%	64.3%	56.9%
301-302	2	320	85.3%	79.5%	76.1%	70.5%
303-305	3	483	64.9%	56.2%	56.2%	48.1%
JICT1	5	1,125	56.7%	56.0%	43.9%	42.9%
JICT2	2	510	40.3%	39.6%	23.4%	22.2%
Koja	2	450	60.3%	58.9%	45.7%	45.1%
MTI	2	404	42.9%	43.6%	17.5%	18.6%
Pass	1	201	68.8%	66.8%	43.5%	41.3%
Source: PPKB data (3 months: Mar 2001, Sep 2001and Mar 2002)						

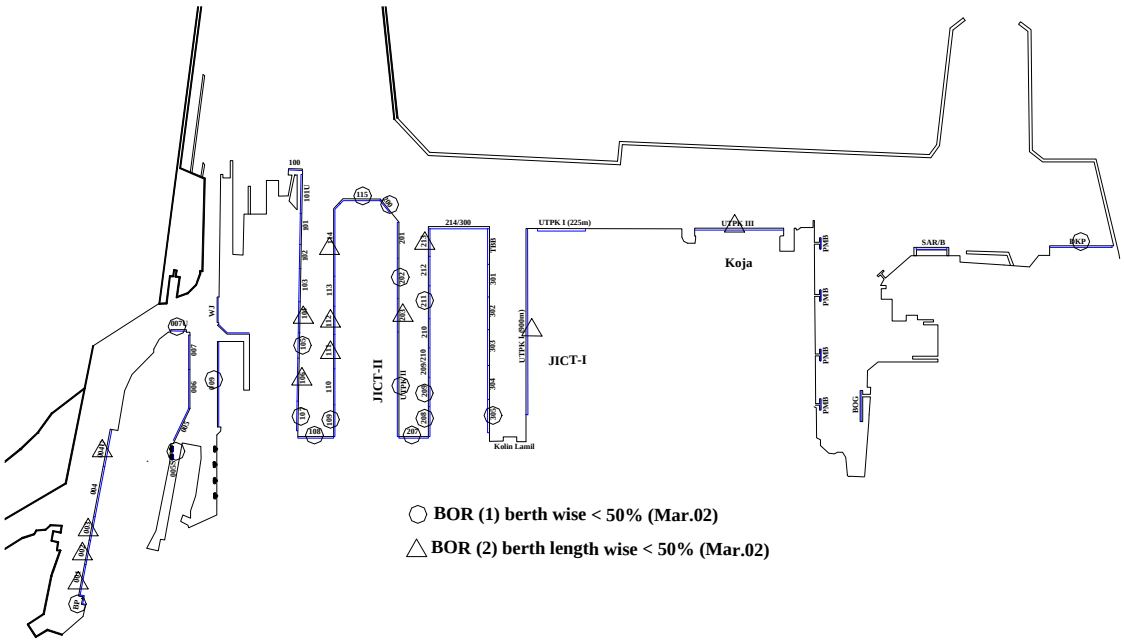


Figure 6-D-4 Low Berth Occupancy Ratio (March 2002)

Waiting Time

142. Waiting time is calculated using "*Kinerja Pelayanan Kapal dan Barang"* (Realization of Ship and Cargo Service) data except JICT, the result of which is shown in Table 6-D-9. Ship data for UTPK3 (Koja container terminal) was obtained from TPK Koja, and is included in the table. As for JICT terminal, only average waiting time was available, which is shown in the margin of the table.

143. With regard to container vessels, waiting time is almost negligible, however, there are some cases in which vessels have to wait for berthing judging from Koja terminal data. Moreover, average waiting time has been increasing recently.

144. With regard to conventional berth, there are a lot of berths with an average waiting time of over 12 hours, and most are concentrated in Basin I. This is due to the heavy congestion in the main channel, especially in front of Basin I.

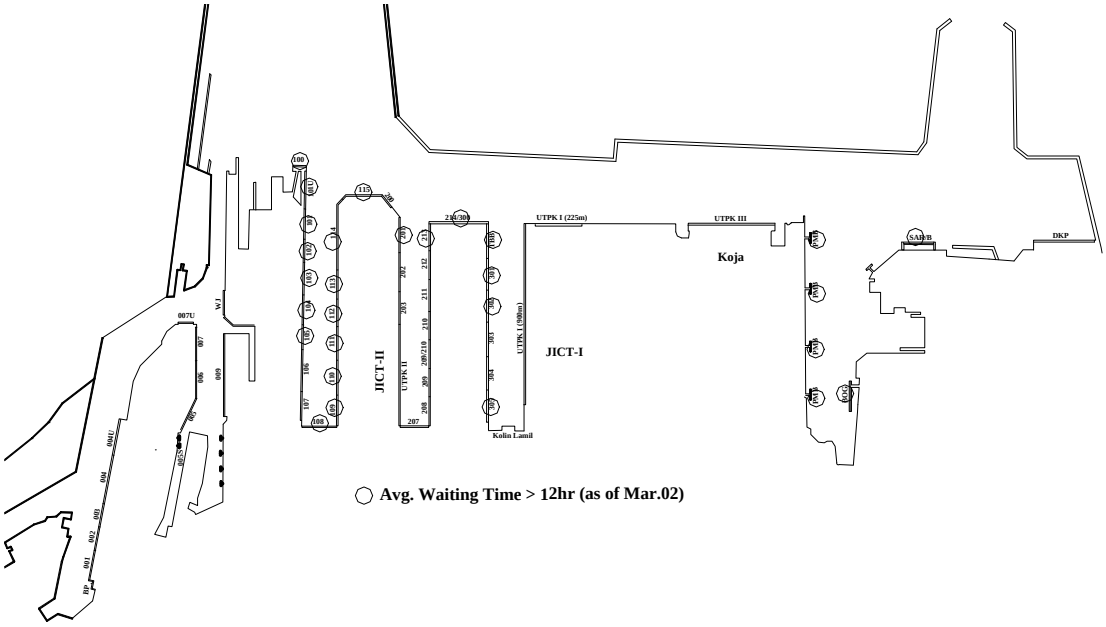


Figure 6-D-5 Average Waiting Time Over 12 hours (March 2002)

Handling Productivity

145. Handling productivity is shown in Table 6-D-10, which include "volume/ET(effective time)" meaning ton/ship/hr (TSH), average "BT(berthing time)-ET" meaning idling and non-operating time, and its ratio "ET/BT".

146. Although TSH varies among the berths, it is safe to say that handling productivity itself is relatively high. Most bag cargo and general cargo enjoy more than 30 ton/ship/hr, and most dry bulk cargo enjoys more than 100 ton/ship/hr. Rather less productivity (50-100 ton/ship/hr) can been seen in liquid bulk cargo. According to the Operational Division in the Tanjung Priok branch office of IPC2, ton/gang/hr (TGH) can be calculated as follows considering number of gangs, which satisfies the target TGH in Tanjung Priok.

Cargo Type	TGH (ton/gang/hr)	Target TGH in Tg. Priok
Bag cargo	37.34	36
Liquid bulk cargo	150.03	150
Dry bulk Cargo	101.84	100
General Cargo	33.30	32

Source: IPC2

147. Concerning idling and non-operating time, comparatively less BT-ET can be seen in Basin II, berth No. 200, 203, 208, 211, 212 and 213, and in Basin III, berth No. 302, 303 and 304, however, it can be said that BT-ET is long as a whole. There are a lot of berths with more than 10 hours of BT-ET especially on the west side of the port. This implies that there is less motivation for a stevedoring company to increase cargo handling productivity.

Unloading/loading Type

148. Table 6-D-11 shows terminal-wise data of unloading/loading type. Cargoes by direct transport to/from the berth have a large share of total cargo, which means yards and warehouses are not fully utilized. This situation is closely related to the concentration of road traffic at certain times: the long queue of trucks causes traffic jams.

Table 6-D-9 Waiting Time (As of Mar. & Sep. 2001, Mar. 2002)

Berth Name	Length	Num. of Berth	Mar. 2001			Sep. 2001			Mar. 2002															
			WT(hr)	Num. /Call	Ave. WT (hr)	WT(hr)	Num. /Call	Ave. WT (hr)	WT(hr)	Num. /Call	Ave. WT (hr)	0-	2-	4-	6-	8-	10-	12-	14-	16-	18-	20-	22-	>24hr
BP	35	1	93	30	3.1	558	14	39.9	89	14	6.4	5	2		2	1	2	1					1	
001	163	1	106	15	7.1	79	16	4.9	128	15	8.5	3	2	1	1	1	1	1	2	1	2			
002	130	1	64	12	5.3	63	10	6.3	162	18	9.0	4	2	1	2		2	1	3		1	1	1	
003	130	1	69	9	7.7	57	11	5.2	108	16	6.8	3	2	2	3		2	3	1					
004	260	2	183	34	5.4	323	51	6.3	197	40	4.9	10	11	5	4	4	1	1	3	1				
004U	195	1	116	21	5.5				88	16	5.5	5	5	1		1		2			2			
005S	11	2																						
005	180	1	99	22	4.5	190	39	4.9	288	36	8.0	3	9	4	3	2	5	1	5	3			1	
006	180	1	55	21	2.6	151	26	5.8	175	21	8.3	3	5	1	2	1	2	3	1		1	1	1	
007	180	1	177	25	7.1	89	22	4.0	302	28	10.8	1	4	2	3	1	3	4	5		2	1	2	
007U	75	1	71	11	6.5																			
009	404	2	90	33	2.7	132	33	4.0	241	44	5.5	9	11	5	3	9	1	4	2					
WJ	100	1	350	78	4.5	321	57	5.6	110	41	2.7	11	22	1	3	3	1							
100	62	1	1,278	27	47.3	660	16	41.3	669	15	44.6	1	2						3	1				8
101U	200	1				351	5	70.2	143	5	28.6	1	1			1								2
101	121	1				269	11	24.5	37	4	9.3	1	1			1								1
102	121	1	154	13	11.8	251	13	19.3	588	22	26.7	4	5	1	2	1	1					1		7
103	159	1	656	19	34.5	331	13	25.5	175	11	15.9	2	3		1	1		1			1			2
104	155	1	104	8	13.0	275	15	18.3	653	14	46.6	1	2				2		1					8
105	140	1	452	13	34.8	626	27	23.2	433	18	24.1	1	4		1	3	1					1	3	4
106	201	1																						
107	128	1	433	5	86.6	99	3	33.0																
108	175	2	1,544	38	40.6	1,735	34	51.0	589	21	28.0	2				3	2	1	1	1	1		3	7
109	155	1	908	17	53.4	623	12	51.9	283	10	28.3	2	1		2				1					4
110	166	1	243	14	17.4	362	21	17.2	567	21	27.0	1	3	4		1			4		1			7
111	153	1	749	14	53.5	950	19	50.0	560	21	26.7	2	4		1			2	1		1		3	7
112	151	1	528	18	29.3	762	18	42.3	659	23	28.7	4		3	1			1			2		1	11
113	138	1	523	23	22.7	1,002	30	33.4	361	25	14.4	6	5	2	1	2				2				7
114	376	2	769	18	42.7	229	16	14.3	794	13	61.1	3			1			1			1			7
115	177	1	208	11	18.9	271	16	16.9	265	8	33.1	1					1	1					1	4
200	80	1	6	9	0.7	229	13	17.6	86	10	8.6	2	2		1	2					1	2		
201	167	1	27	8	3.4	253	9	28.1	82	5	16.4	1	2											2
202	170	1	4	6	0.7	41	6	6.8	70	7	10.0	2	2		1				1					1
203	158	1	19	8	2.4	277	9	30.8	98	10	9.8	2	3	2					1					2
UTPK2 (*)	510	3																						
207	141	2	15	11	1.4	52	9	5.8	150	14	10.7	7	1			1			1	1				3
208	159	1	14	15	0.9	119	16	7.4	126	13	9.7	2	4	2					1		2		1	1
209	140	1	39	9	4.3	32	10	3.2	79	9	8.8	3	3			1								2
209/210	140	1	37	10	3.7	197	10	19.7	48	8	6.0	3	3						1					1
210	140	1	3	16	0.2	87	9	9.7	129	14	9.2	6	1			2			1	2				2
211	153	1	41	6	6.8	158	8	19.8	51	8	6.4	4	1		1					1				1
212	145	1	14	13	1.1	311	12	25.9	143	14	10.2	5	3	1		1				1			1	2
213	140	1	48	15	3.2	172	10	17.2	192	13	14.8	3	1	1		1	1		1			1		4
214/300	300	2	20	6	3.3	171	12	14.3	590	17	34.7	2	4	2	1			1						7
TBB	195	1	10	3	3.3	16	3	5.3	387	6	64.5		3											3
301	160	1	198	14	14.1	109	8	13.6	283	13	21.8	3	2			2							2	4
302	160	1	78	8	9.8	181	10	18.1	197	11	17.9	4	2		1					1			1	2
303	163	1	470	12	39.2	206	8	25.8	44	14	3.1	6	3	3	1			1						
304	160	1	175	14	12.5	55	11	5.0	79	16	4.9	7	7											2
305	160	1	173	9	19.2	110	10	11.0	242	10	24.2	3		1	1	1	1			1				2
UTPK1 (*)	1,125	5	Ave. WT of UTPK1&2: Y2000 = 0.4hr, Y2001 = 1.2hr																					
UTPK3	450	2	75	50	1.5	85	41	2.1	127	57	2.2	38	8	3	4	2	2							
PMB	100	4				1,633	36	45.4	2,213	53	41.8	7	9	4	3		1	2	1		1	1	1	23
BOG	175	1				366	12	30.5	477	5	95.4				1									4
SAR/B	187	1				2,836	9	315.1	1,221	8	152.6										1			7
DKP	276	1				1,442	14	103.0	146	21	7.0	6	7		2	2	1		1					2
AVERAGE	10,675	70	11,488	791	14.5	19,897	843	23.6	15,924	876	18.2	205	177	52	53	51	33	32	42	16	20	9	23	163

Source: Tanjung Priok Branch Office of Pelind II, except JICT for UTPK 1&3, Koja CT for UTPK3

Table 6-D-10 Handling Productivity (As of March 2002)

Cargo Handling Productivity (except container) - As of March 2002 -

Berth Name	BT (Berthing Time)				ET (Effective Time)				Avg. BT-ET (hr)	Avg. ET/BT	Cargo Type (% as of Mar.02)					Volume (ton)				cf. CT (box)	Volume/ET (ton/ship/hr)			
	Bag	LB	DB	GC	Bag	LB	DB	GC			Bag	LB	DB	GC	Unit.	Bag	LB	DB	GC		Bag	LB	DB	GC
BP									156.4	9%					100%									
001	141			307	89			172	39.5	56%	11%			23%	66%	4,653			2,454		52			14
002	139			932	75			166	57.9	59%	8%			56%	36%	3,205			2,400		43			14
003	90		264		37		210		19.6	68%	9%		26%		65%	1,350		22,700		27	36		108	
004	88	759	855	320	50	480	296	110	28.7	48%	4%	34%	39%	14%	9%	500	25,703	26,540	1,660		10	54	90	15
004U		410	293	360		282	125	78	36.1	55%		39%	28%	34%			17,132	20,800	1,172			61	166	15
005S																								
005			220	516			89	325	22.2	48%			12%	29%	59%			5,100	13,416	1,608			57	41
006			60	461			25	265	26.9	50%			5%	41%	53%			1,500	8,409	2,544			60	32
007				388				227	35.5	44%				22%	78%				6,057	2,338				27
007U																								
009									14.6	30%					100%					6,531				
WJ			2,370				588		33.6	29%			100%					55,664					95	
100		456		29		232		15	17.0	51%		94%		6%			15,992		1,100			69		73
101U			482	67			240	40	57.2	49%			84%	12%	5%			98,650	3,500				411	88
101		41	12			20	6		16.0	49%		33%	10%		57%		2,700	996				135	166	
102	40	331	124	146	25	165	61	92	19.4	50%	5%	38%	14%	17%	27%	3,057	13,481	10,300	8,731		122	82	169	95
103		117		24		70		10	23.1	42%		26%		5%	69%		4,500		144	4,775		64		14
104									24.9	50%					100%					3,391				
105		112				70			30.8	43%		11%			89%		2,000			2,485		29		
106																								
107																								
108	45	128		598	20	65		328	20.8	52%	5%	14%		64%	17%	1,200	2,969		20,444		60	46		62
109	60	78		236	52	40		150	27.6	58%	10%	12%		38%	41%	5,250	3,000		8,113		101	75		54
110	104	74		647	51	40		377	26.4	55%	9%	6%		53%	32%	2,320	3,999		30,233		45	100		80
111		41		619		20		344	17.7	53%		5%		77%	18%		1,900		23,924	326		95		70
112		338		339		155		214	15.7	53%		43%		43%	14%		17,080		20,095	317		110		94
113		230	42	23		110	20	10	17.6	44%		30%	6%	3%	61%		13,990	4,504	410	3,103		127	225	41
114			830	82			400	59	43.4	50%			74%	7%	19%			67,183	3,655	300			168	62
115			34	470			15	78	90.6	41%			4%	49%	48%			3,400	4,300	30			227	55
200	88	212		88	77	177		68	7.7	82%	19%	45%		19%	17%	5,704	11,196		3,110		74	63		46
201			379				322		25.8	81%			64%		36%			83,500		306			259	
202				9				7	14.3	75%				3%	97%				1,724	423				246
203		25		57		21		49	7.9	81%		8%		18%	74%		1,500		5,585	874		71		114
JICT2																				17,645				
207		282		121		234		50	14.9	67%		48%		21%	31%		10,433		908			45		18
208				212				181	3.6	79%				79%	21%				19,572	271				108
209	110		90	161	53		82	138	10.6	82%	26%		22%	39%	13%	2,600		14,006	20,752		49		171	150
209/210	96			31	75			24	18.4	79%	16%			5%	79%	5,000			916		67			38
210	254				222				10.3	80%	36%				64%	19,258					87			
211	407	47	136	62	363	43	120	57	8.6	90%	62%	7%	21%	10%		35,558	2,136	11,220	15,147	7	98	50	94	266
212			192				178		8.7	78%			32%		68%			53,000		2,496			298	
213									7.8	83%					100%					3,006				
214/300	112		415		100		328		9.5	80%	14%		52%		33%	11,969		47,531		4,740	120		145	
TBB			870				704		20.8	78%			100%					69,090					98	
301			321	36			230	20	14.8	70%			51%	6%	43%			36,093	1,844	2,034			157	92
302			36	98			25	91	6.0	77%			11%	30%	59%			5,000	27,050	1,037			200	297
303				307				258	9.7	78%				47%	53%				27,414	2,114				106
304				229				191	8.8	75%				36%	64%				17,062	2,665				89
305			115	46			93	40	14.4	70%			24%	10%	66%			18,339	11,777	1,326			197	294
JICT1																				80,036				
Koja																				31,237				
PMB		1,554				1,499			1.1	95%		100%					790,759					528		
BOG			413				407		1.2	98%			100%					62,776					154	
SAR/B			713				705		1.0	98%			100%					251,500					357	
DKP		257				236			1.0	89%		100%					45,138					191		
Total	1,774	5,492	9,266	8,021	1,289	3,959	5,269	4,234	22.8	60%						101,624	985,608	969,392	313,078	177,992	79	249	184	74

*** BT: Berthing Time, ET: Effective Time**

Table 6-D-11 Berth-wise Unloading/Loading Type (As of Mar. & Sep. 2001, Mar. 2002)

(Throughput '000ton)

	Unloading Type/Method (Non-container cargo)					Loading Type/Method (Non-container cargo)					Loading Type/Method (Non-container cargo)				
	Direct	Pipe	W/H	Yard	Total	Direct	Pipe	W/H	Yard	Total	Direct	Pipe	W/H	Yard	Total
001-003	387		13	8	409	140		89	31	260	527		103	39	668
004-004U	1,002		0	14	1,017	32		2	2	36	1,034		2	16	1,053
005-007	74		143	43	260	65		292	43	399	139		434	86	659
100-102	1,036	26	0	9	1,071	1,302	22	3	8	1,335	2,338	48	3	16	2,406
103-105	38	13	2		53						38	13	2		53
108-110	399		147	93	639	188	6	337	110	641	587	6	485	203	1,280
111-113	165	102	163	85	516	44		170	98	312	209	102	334	184	829
115-200	261	27	4	10	302	476	55		1	532	737	81	4	11	834
201-203	58	17	149		224	677		112	57	846	735	17	261	57	1,070
208-209	273		246	263	782	81		60	10	151	355		306	272	933
210-211	618			72	690	399	26	19	3	447	1,017	26	19	74	1,137
212-213	203	6	23		233	321	40		10	371	525	46	23	10	604
301-302	565		29	38	633	590		29	9	628	1,156		58	48	1,261
303-305	242		310	44	597	655		76	0	730	897		386	44	1,328
WJ	828			25	853	1				1	829			25	854
107	4		8		12				13	13	4		8	13	26
114	263	415	70	115	863	28		34	3	66	292	415	105	118	929
207	132			2	134	11		3	5	19	143		3	7	153
214/300	654			35	689	85				85	739			35	774
TBB	288			188	476	34				34	321			188	509
PMB	156	9,028			9,183						156	9,028			9,183
BOG		275			275		256			256		532			532
SAR/B	124	2,864			2,988	36	32	5		74	160	2,896	5		3,062
DKP		682			682		1			1		683			683
BP	1			3	4	0	0		9	10	2	0		12	13
Others	478			8	486	1				1	479			8	487
Total	8,250	13,455	1,310	1,055	24,070	5,167	438	1,232	411	7,249	13,417	13,893	2,542	1,466	31,318
Sub Total (001~305)	6,151	191	1,232	705	8,278	4,972	148	1,189	380	6,690	11,123	339	2,421	1,085	14,968

(Share of each handling type)

	Unloading Type/Method (Non-container cargo)					Loading Type/Method (Non-container cargo)					Loading Type/Method (Non-container cargo)				
	Direct	Pipe	W/H	Yard	Total	Direct	Pipe	W/H	Yard	Total	Direct	Pipe	W/H	Yard	Total
001-003	95%		3%	2%	100%	54%		34%	12%	100%	79%		15%	6%	100%
004-004U	99%		0%	1%	100%	89%		6%	5%	100%	98%		0%	2%	100%
005-007	28%		55%	17%	100%	16%		73%	11%	100%	21%		66%	13%	100%
100-102	97%	2%	0%	1%	100%	98%	2%	0%	1%	100%	97%	2%	0%	1%	100%
103-105	72%	24%	4%		100%						72%	24%	4%		100%
108-110	62%		23%	15%	100%	29%	1%	53%	17%	100%	46%	0%	38%	16%	100%
111-113	32%	20%	32%	17%	100%	14%		55%	31%	100%	25%	12%	40%	22%	100%
115-200	86%	9%	1%	3%	100%	90%	10%		0%	100%	88%	10%	0%	1%	100%
201-203	26%	7%	67%		100%	80%		13%	7%	100%	69%	2%	24%	5%	100%
208-209	35%		31%	34%	100%	54%		40%	6%	100%	38%		33%	29%	100%
210-211	90%			10%	100%	89%	6%	4%	1%	100%	89%	2%	2%	7%	100%
212-213	87%	3%	10%		100%	87%	11%		3%	100%	87%	8%	4%	2%	100%
301-302	89%		5%	6%	100%	94%		5%	1%	100%	92%		5%	4%	100%
303-305	41%		52%	7%	100%	90%		10%	0%	100%	68%		29%	3%	100%
WJ	97%			3%	100%	100%				100%	97%			3%	100%
107	35%		65%		100%				100%	100%	17%		31%	53%	100%
114	31%	48%	8%	13%	100%	43%		52%	5%	100%	31%	45%	11%	13%	100%
207	99%			1%	100%	57%		15%	29%	100%	94%		2%	5%	100%
214/300	95%			5%	100%	100%				100%	96%			4%	100%
TBB	60%			40%	100%	100%				100%	63%			37%	100%
PMB	2%	98%			100%						2%	98%			100%
BOG		100%			100%		100%			100%		100%			100%
SAR/B	4%	96%			100%	49%	43%	7%		100%	5%	95%	0%		100%
DKP		100%			100%		100%			100%		100%			100%
BP	28%			72%	100%	5%	4%		91%	100%	11%	3%		86%	100%
Others	98%			2%	100%	100%				100%	98%			2%	100%
Total	34%	56%	5%	4%	100%	71%	6%	17%	6%	100%	43%	44%	8%	5%	100%
Sub Total (001~305)	74%	2%	15%	9%	100%	74%	2%	18%	6%	100%	74%	2%	16%	7%	100%

* Caluculated by PPKB data (3 months = Mar.01, Se.01, Mar.02)

Unit: ton

Cement (Unload)

	Direct	Pipe	Yard	Total
003				
006				
007				
101U				
101				
102				
108				
109				
110				
114	29,153	35,476		64,629
115				
200				
203				
209				
210				
212				
213				
302				
304				
305				
Total	29,153	35,476		64,629
	45%	55%	0%	100%

(Load)

Direct	Pipe	Yard	Total
3,200			3,200
1,500			1,500
1,600			1,600
109,516			109,516
34,000			34,000
1,100			1,100
5,550		2,200	7,750
2,250			2,250
5,800			5,800
50,018	10,000		60,018
12,450			12,450
16,598			16,598
2,600			2,600
10,050			10,050
3,800	10,000		13,800
		2,500	2,500
8,000			8,000
17,500			17,500
3,000			3,000
288,532	20,000	4,700	313,232
92%	6%	2%	100%

Bag Cement (Unload)

	Direct	Pipe	Yard	Total
005				
006				
110				
115				
200				
201				
211	5,800			5,800
210				
Total	5,800			5,800
	100%	0%	0%	100%

(Load)

Direct	Pipe	Yard	Total
2,000			2,000
2,000			2,000
1,000			1,000
5,904			5,904
2,904			2,904
13,655			13,655
20,000			20,000
47,463			47,463
100%	0%	0%	100%

Bulk Cement (Unload)

Unl-type	Direct	Pipe	Yard	Total
100				
101U				
101				
102				
114	68,152	18,409		86,561
210				
212				
213				
301				
302				
303	68,152	18,409		86,561
Total	68,152	18,409		86,561
	79%	21%	0%	100%

(Load)

Direct	Pipe	Yard	Total
800			800
28,350			28,350
800	5,500		6,300
4,220			4,220
22,500			22,500
2,193			2,193
850			850
60,000			60,000
850			850
6,000			6,000
126,563	5,500		132,063
96%	4%	0%	100%

Gypsum (Unload)

	Direct	Pipe	Yard	Total
WJ	6,500			6,500
Total	6,500			6,500
	100%	0%	0%	100%

(Load)

Direct	Pipe	Yard	Total
none			

*** Figures are total of 3 months PPKB data (Mar.01, Sep.01, Mar.02).**

Clinker (Unload)

Ld-type	Direct	Pipe	Yard	Total
003	0			0
101U	0			0
101	0			0
102	0			0
114	0			0
115	0			0
201	0			0
211	0			0
212	0			0
214/300	0			0
TBB	0			0
302	0			0
303	0			0
Total	0	0	0	0

(Load)

Direct	Pipe	Yard	Total
13,000			13,000
61,500			61,500
46,500			46,500
3,200			3,200
7,000			7,000
39,700			39,700
123,500			123,500
20,000			20,000
73,500			73,500
21,000			21,000
8,384			8,384
49,000			49,000
131,500			131,500
597,784			597,784
100%	0%	0%	100%

Soda Ash (Unload)

Unl-type	Direct	Pipe	Yard	Total
114		4,014	4,504	8,518
209			22,991	22,991
210	14,006			14,006
212	6,270			6,270
214/300	17,863			17,863
Total	38,139	4,014	27,495	69,648
	55%	6%	39%	100%

(Load)

Direct	Pipe	Yard	Total
	none		

CPO (Crude Palm Oil) (Unload)

	Direct	Pipe	Yard	Total
004	58,812			58,812
004U	22,836			22,836
100	68,945	3,472	995	73,412
101	20,872			20,872
102	8,190	3,001		11,191
103	9,488			9,488
108	2,001			2,001
109	3,000			3,000
111	4,082			4,082
112	9,940	5,551		15,491
113	5,255			5,255
114	1,000			1,000
115	13,171			13,171
200	14,963	4,011		18,974
207	31,354			31,354
210	12,940			12,940
211	2,136			2,136
212	997			997
Total	289,982	16,035	995	307,012
	94%	5%	0%	100%

(Load)

Direct	Pipe	Yard	Total
7,400			7,400
	3,650		3,650
1,925			1,925
9,325	3,650		12,975
72%	28%	0%	100%

Sand (Unload)

	Direct	Pipe	Yard	Total
001	15,865			15,865
004	1,600			1,600
004U	41,000			41,000
005S	10,000		2,000	12,000
WJ	154,737		6,200	160,937
999	109,400			109,400
Total	332,602		8,200	340,802
	98%	0%	2%	100%

(Load)

Direct	Pipe	Yard	Total
	none		

General Cargo (Unload)

B'th GP	Direct	W/H	Yard	総計
114		73	165	238
001-003	10,188	642	1,191	12,021
004-004U	7,276	30		7,306
005-007	8,609	11,789	6,656	27,054
108-110	19,356	23,371	6,216	48,943
111-113		16,839	7,784	24,623
201-203	3,723	9,119		12,842
208-209		378	3,261	3,639
301-302	7,927		0	7,927
303-305	0	13,612	4,684	18,296
総計	57,079	75,853	29,957	162,889
	35%	47%	18%	100%

General Cargo (Load)

Ld-type	Direct	W/H	Yard	総計
BP			170	170
107			3,374	3,374
114		8,614	545	9,159
207	826	680	307	1,813
001-003	13,773	20,300	4,652	38,725
004-004U	7,870	497	450	8,817
005-007	5,740	71,700	10,675	88,115
100-102	14,507		1,100	15,607
108-110	19,783	84,356	22,291	126,430
111-113	300	42,611	24,581	67,492
115-200	3,800		250	4,050
201-203	15,580	27,970	14,151	57,701
208-209		14,955	2,046	17,001
210-211		500	704	1,204
301-302	22,173	6,391	2,000	30,564
303-305	4,200	18,182	23	22,405
999	250			250
総計	108,802	296,756	87,219	492,877
	22%	60%	18%	100%

Container Terminal Performance

Productivities

149. Container terminal facilities and productivities in Tanjung Priok were summarized in earlier mentioned Table 4-C-8 together with the other major container terminals in Indonesia. Comments on the productivities are summarized as follows:

- Berth Occupancy Ratio (BOR) is relatively low in whole JICT terminal. This is partly because JICT-II is located at the inner side of Basin II and physically the number of ships berthing to JICT-II is limited. According to the monthly data, described in Table 6-D-8, BOR of JICT-II is below 30%.
- Berthing Time (BT) and Effective Time (ET) seems to be reasonable in Koja terminal. 2.4 hours for idling and non-operating time in average is also reasonable.
- Crane productivity data for JICT and Koja container terminal are shown in the following table. Productivity (20~25) is low by international standards. Average number of cranes used for one ship is under 2, which is partly due to the relatively small ship size.

Table 6-D-12 Crane Productivity in Container Terminal

Terminal	BCH (box/crane/hr)		BSH (box/ship/hr)		Avg. No. Crane/ship	
	2000	2001	2000	2001	2000	2001
JICT	20.18	20.56	32.02	40.08	1.59	1.95
Koja	24.81	25.71	28.01	30.76	1.13	1.20

Source: JICT, TPK Koja

- Yard Occupancy Ratio (YOR) seems to be moderate since 70 ~ 80% is considered to be the maximum YOR in general.
- Yard Dwell Time (YDT) for import container is long, 10~12 days in JICT. Apparently, a problem in customs clearance is significantly increasing YDT. YDT should be improved in order to secure the efficiency of yard operation.

Vessel Size Distribution

150. Vessel size distribution for container vessels can be described as in Figure 6-D-6 and Figure 6-D-7, which is drawn by the analysis of monthly ship data (PPKB based data) for March 2001 and March 2002. The maximum size of vessels is -12m for draft and 300m for LOA, which is partly due to the narrow channels and tuning basins.

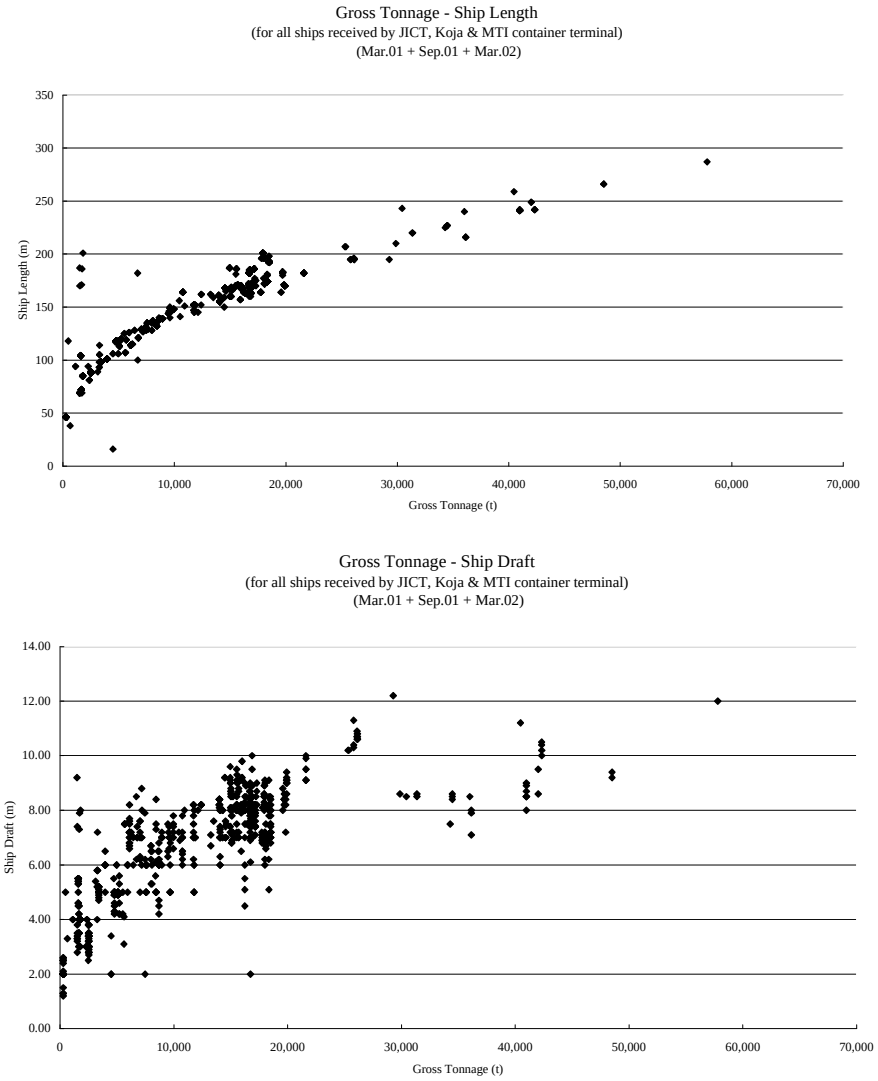


Figure 6-D-6 Ship Size Distribution of Container Vessels

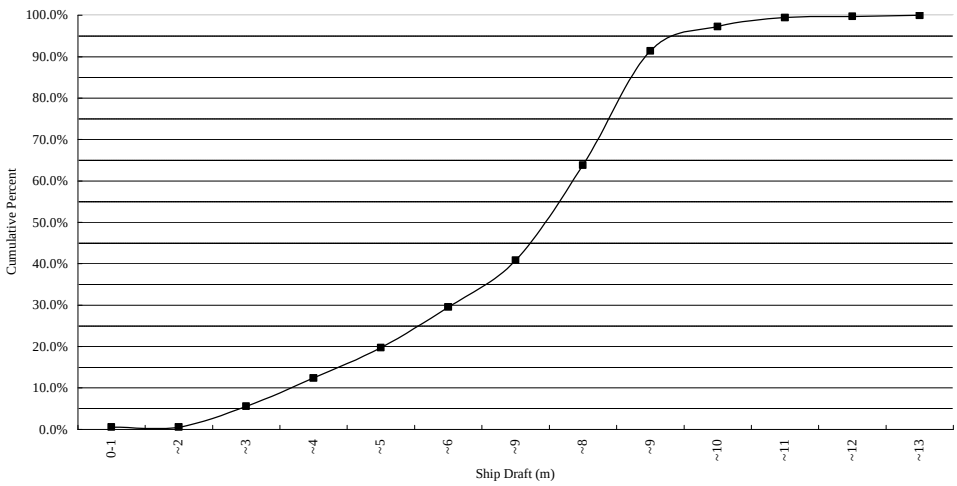


Figure 6-D-7 Ship Size Cumulative Curve for Container Vessels (1)

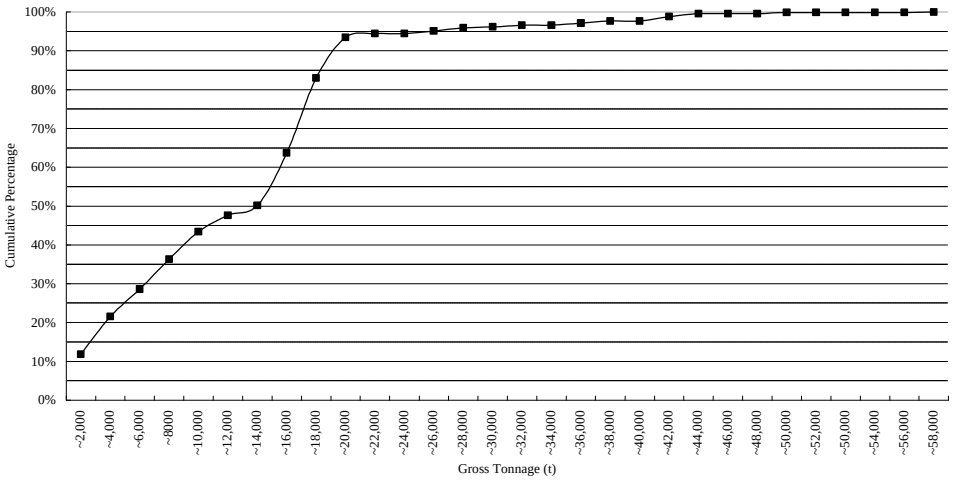


Figure 6-D-8 Ship Size Cumulative Curve for Container Vessels (2)

6-D-6 Hinterland and Origin-Destination of Container Cargo

Hinterland of Tanjung Priok

151. Container hinterlands of Port of Tanjung Priok were analyzed through series of interviews with shipping operators and major consignees and operational records provided by terminal operators.

152. Information on the hinterlands is useful and necessary for understanding the present port activities and determination of functional allocation between plural ports in the planning process of future port developments.

153. Container hinterland of Port of Tanjung Priok is defined as an area of land where containers unloaded at the port are devanned and/or where containers to be loaded at the said port are vanned.

154. It is safe to say that the hinterlands of the port of Tanjung Priok in general consist of DKI Jakarta, West Java Province and Banten Province. Disaggregating these provinces into regency level, however, is more appropriate for the transportation analysis of the specific port and for the functional apportionment among ports. For this reason, DKI Jakarta is divided into five districts; North, Central, West, East and South, and West Java Province and Banten Province should be disaggregated into 20 regencies.

155. In addition, a traffic count survey was carried out at JICT intersection on August 16, 2002 by the study team, which gives another view of container hinterland of Tanjung Priok. The results are summarized in Table 6-D-13.

Table 6-D-13 Distribution of Container Cargo

		OD Survey		Shipping Line		Terminal Company		GRDP
		Traffic	%	Import	Export	A	B	(Industry)
Jakarta		3,963	34.8%	29.0%	23.0%	59.4%	72.0%	37.1%
	South JKT	143	1.3%		1.0%			
	East JKT	1,778	15.6%	7.1%	2.0%			
	Central JKT	294	2.6%		6.0%	57.4%		
	West JKT	907	8.0%	9.5%		0.1%		
	North JKT	842	7.4%	12.4%	14.0%	1.9%	72.0%	
Tangerang		1,389	12.2%	14.9%	28.0%	2.0%	11.5%	13.0%
Serang		897	7.9%	7.9%	2.0%			6.5%
Bogor		970	8.5%	18.1%	3.0%	1.1%		8.5%
Bandung		1,073	9.4%	3.0%	9.0%	1.1%		15.9%
Cirebon					10.0%	0.1%		3.6%
Purwakarta				7.5%	3.0%	0.2%	3.4%	1.2%
Karawang				3.3%	11.0%			3.3%
Bekasi		2,824	24.8%	16.3%	11.0%	2.5%	13.1%	11.0%
Other Area		285	2.5%			33.6%		37.0%
Total		11,402	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Import Origin and Export Destination

156. Management of Koja terminal provided the study team with the Port of Destination/Origin table which reveals the name of vessel and the name of port as well as number of containers loaded at the said port for import to Tanjung Priok and number of containers to be discharged at each port for export from Jakarta during January 2002 and May 2002.

157. Study Team summarized the information and tabulated tables shown in Table 6-D-14 and Table 6-D-15. Vessels which came to KOJA terminal loaded import containers to Indonesia at 34 foreign ports and vessels which departed from KOJA terminal discharged export containers at 36 foreign ports during above mentioned five month period.

Table 6-D-14 Import Origin (Koja, Jan.-May 2002)

Unit: Box

Code	Country	Jan.02	Feb. 02	Mar. 02	Apr. 02	May. 02	TOTAL	%
11	Malaysia	646	755	265	323	673	2,662	3.95%
12	Thailand	574	569	582	486	583	2,794	4.14%
13	Indonesia	11	32	47	13	15	118	0.18%
14	Singapore	4,706	4,314	4,354	3,466	4,025	20,865	30.95%
15	Philipines	46	157	449	510	817	1,979	2.94%
21	Japan	1,449	1,820	2,120	1,926	2,235	9,550	14.17%
22	Korea	636	1,012	2,318	2,113	1,987	8,066	11.97%
24	Taiwan	1,499	1,130	1,227	1,467	1,126	6,449	9.57%
25	Hongkong	462	433	478	488	434	2,295	3.40%
	Rest of Asia	0	0	4	1	0	5	0.01%
	Asia	10,029	10,222	11,844	10,793	11,895	**54,783**	81.27%
201	**USA**	61	79	39	10	0	**189**	0.28%
	Europe	0	0	0	72	0	**72**	0.11%
	Arab & MidEast	0	0	0	148	0	**148**	0.22%
501	**South Africa**	0	306	226	0	193	**725**	1.08%
	Oceania	1,200	1,696	778	593	1,453	**5,720**	8.49%
999	**Unknown**	877	1,891	1,211	740	1,054	**5,773**	8.56%
	Total	12,167	14,194	14,098	12,356	14,595	**67,410**	100.00%

Source: KOJA Terminal, compiled by Study Team

Table 6-D-15 Export Destination (Koja, Jan.-May 2002)

(Unit: Box)

Code	Country	Jan. 02	Feb. 02	Mar. 02	Apr. 02	May. 02	TOTAL	%
11	Malaysia	2,398	1,723	1,672	1,914	2,466	10,173	14.32%
12	Thailand	295	243	266	181	271	1,256	1.77%
13	Indonesia	12	3	191	235	185	626	0.88%
14	Singapore	4,313	3,782	4,423	3,603	4,300	20,421	28.74%
15	Philipines	30	64	759	893	932	2,678	3.77%
21	Japan	1,275	1,307	1,562	1,434	1,398	6,976	9.82%
22	Korea	1,643	1,542	2,490	2,384	2,866	10,925	15.38%
24	Taiwan	351	330	357	438	532	2,008	2.83%
25	Hongkong	1,423	1,193	1,363	1,533	1,635	7,147	10.06%
99	Rest of Asia	38	50	38	105	37	268	0.38%
	Asia	11,778	10,237	13,121	12,720	14,622	**62,478**	87.94%
201	**USA**	60	28	26	6	27	**147**	0.21%
	Europe	540	576	453	774	653	**2,996**	4.22%
411	**Arab & MidEast**	0	0	0	30	0	**30**	0.04%
	Africa	144	182	125	117	148	**716**	1.01%
601	**Australia**	163	261	353	485	578	**1,840**	2.59%
999	**Unknown**	459	580	92	1,020	687	**2,838**	3.99%
	Total	13,144	11,864	14,170	15,152	16,715	**71,045**	100.00%

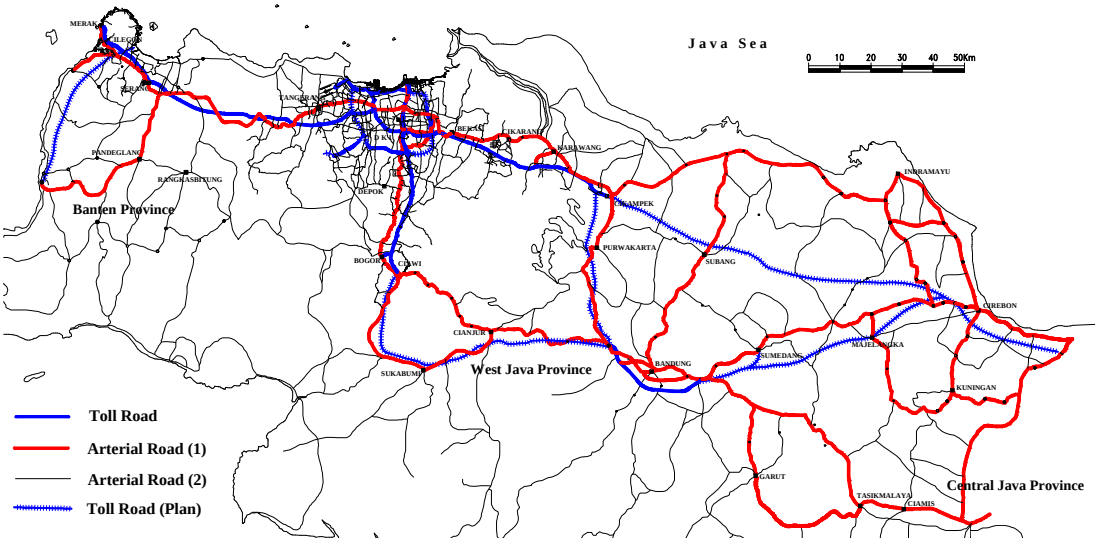
Source: KOJA Terminal, compiled by Study Team

6-D-7 Land Transport to/from the port

Road Network and Traffic

158. The primary traffic flow to/from Tanjung Priok Port through the presently available road network is expected to be as follows:

- Traffic entering from the west, i.e. from Tangerang would use the route of Tangerang – Jakarta – Grogol – Pluit – Tanjung Priok toll road through the harbour toll road.
- The traffic coming from the south would use the Jagorawi – Cawang – Tanjung Priok toll road.
- The traffic coming from Central Java would use the route of Cikampek – Cawang – Tanjung Priok (Cirebon – Cikampek – Jakarta) and from West Java would use Purwakarta – Cikampek or Bandung – Subang – Cikampek – Jakarta



Railway Network and Traffic

159. The railway began to transport containers from 1987 between the Tanjung Priok (Pasoso deposit operated by PT. Multi Terminal Indonesia) and Bandung Gedebage dry port terminal in an effort to relieve burden for highway traffic. Gedebage is located in the suburbs of Bandung city, 187km to the south east of Jakarta.

160. At present 4 - 5 trains from Tanjung Priok to Bandung are operated at night. The train take about 6-7hrs to travel between two ports. Each train consists of 17 wagons* with one 40ft container on each wagon, equivalent to 33 TEUs per one way trip, so the capacity can be calculated as follows: (*The 17 wagons per trip is the limitation of the distance of spool lines provided at periodical stations of the railway.)

- Daily capacity: 33 TEUs x 5 trips of one way x 2 =330 TEUs/day
- Annual traffic capacity: 330 x 365 days = 120,450 TEUs from both ways

161. In 2001, the railway carried 23,156 TEU from Bandung to Tanjung Priok and 18,027 TEU from Tanjung Priok. In the last ten years the total container volume transported from Bandung was 298,115 TEUs and that from Tanjung Priok was 249,889 TEUs. Cargo volume has been decreasing recently (See Table 6-D-16.). Inbound and outbound are unbalanced because plenty of empty containers are carried to Gedebage deposit from Tanjung Priok. The large volume of containers was carried mainly by trucks because it is faster than railway transport taking around 4 hrs between Bandung and Jakarta. In addition, it is more flexible than railway in that it can offer door to door service.

Table 6-D-16 Freight volume at Gedebage Terminal, 1992to2001

	Loaded						Unloaded						Total
	20'		40'		TEU	'000 ton	20'		40'		TEU	'000 ton	TEU
	Full	Empty	Full	Empty			Full	Empty	Full	Empty			
1992	11,303	310	3,664	6,012	25,825	371	1,634	10,225	1,844	5,318	26,183	252	52,010
1993	13,490	202	6,012	7,374	30,848	446	2,829	10,383	3,056	5,373	30,070	309	60,918
1994	14,591	109	7,374	7,687	30,766	456	2,610	11,322	3,118	5,727	31,622	320	62,388
1995	15,734	7	7,687	7,646	31,127	466	1,271	13,654	1,330	5,653	28,891	264	60,018
1996	17,083	7	7,646	8,618	34,326	515	1,438	13,435	824	5,721	27,963	123	62,289
1997	17,126	13	8,618	7,679	32,509	499	1,074	13,136	671	5,279	26,110	93	58,619
1998	14,519	12	7,679	7,741	30,037	450	455	10,108	119	4,912	20,625	175	50,662
1999	14,756	15	7,741	8,233	31,267	469	1,315	8,907	141	4,814	20,132	177	51,399
2000	14,136	46	8,233	7,004	28,254	423	1,853	7,899	460	4,797	20,266	186	48,520
2001	13,109	51	7,004	4,970	23,156	347	3,116	6,893	156	3,853	18,027	172	41,183

Source: PERUSAHAAN UMUM KERETA API

162. The tariff of one-way between Gedebage terminal and Tanjung Priok for a one-way trip is shown as follows.

20'(Full)	469,000Rp
40'(Full)	750,500Rp
20'(Empty)	222,000Rp
40'(Empty)	371,000Rp

163. The Study team estimates freight rate for 20' containers from Bandung to Tanjung Priok. Results show the railway freight rate is lower than truck freight rate.

Railway

Tanjung Priok	222,000 (Railway) →	Gedebage Deposit	300,000 (Truck) →	Bandung (Industry)
	← 469,000 (Railway)		← 300,000 (Truck)	

Freight Rate = 1,291,000Rp

Truck

Tanjung Priok	Truck (Empty) →	Bandung (Industry)
	← Truck (Full)	

Freight Rate = 1,600,000Rp

164. PT. KAI plans to increase the traffic capacity of containers by increasing the number of daily trips. Since 2002, single track between Cikanpeck to Purwakarta has been developed to double tracks. Furthermore, the section between Jakarta and Cikanpeck already has double tracks and there is a plan to expand it to double-double tracks.

Container Inland Deposit

165. Container inland deposit facilities are operated by private companies in/around Tanjung Priok. Their locations, as shown in Figure 6-D-9, are scattered and many of them are along the are in the east side of the port.

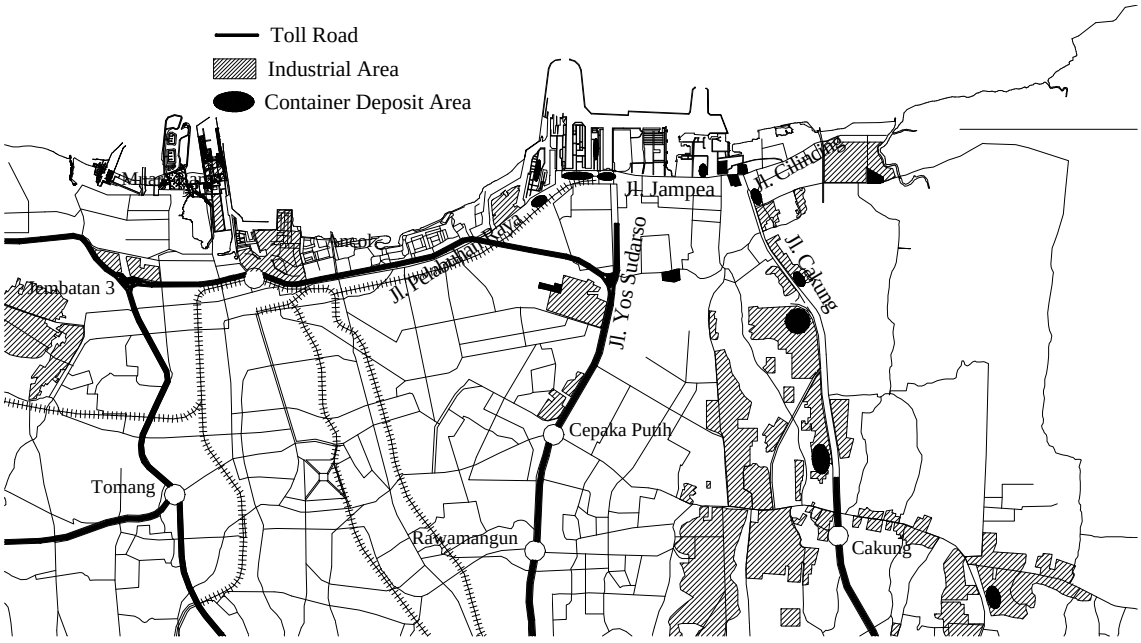


Figure 6-D-9 Container Deposit Location

6-D-8 On-going and/or Future Development Projects

166. According to the Strategies for 2002-2006, the principle port development projects to be carried out in the short term (2003 ~ 2006) are as follows:

- Wharf construction in north KBN, ex ARSA etc.
- Yard construction (including demolition of some warehouses)
- Opening of east channel through improvement of breakwater
- Improving road network through widening, restructuring, new construction such as flyover road etc.

167. Concerning the container terminals, JICT and Koja CT are developing their terminals and the facilities will be improved as shown in Table 6-D-17. (JICT-II will be not developed)

Table 6-D-17 Developing Facilities

		Existing	End 2002	End 2003	End 2004	End 2005
Berth	JICT-I	900m (-11m) 225m (-14m)	900m (-11m) 400m (-14m)	900m (-11m) 700m (-14m)	900m (-11m) 700m (-14m)	900m (-11m) 700m (-14m)
	JICT-II	510m (-8.6m)	510m (-8.6m)	510m (-8.6m)	510m (-8.6m)	510m (-8.6m)
	Koja	450m (-14m)	450m (-14m)	650m (-14m)	650m (-14m)	650m (-14m)
Yard	JICT-I	32ha	37ha	43ha	49ha	64ha
	JICT-II	9ha	9ha	9ha	9ha	9ha
	Koja	21ha	21ha	24ha	24ha	24ha
Gantry Crane	JICT-I	10	17	17	18	18
	JICT-II	4	4	4	4	4
	Koja	5	5	6	6	6
RTG	JICT-I	31	39	45	50	50
	JICT-II	11	11	11	11	11
	Koja	21	21	21	21	21

6-E. SITUATION OF OTHER PORTS

Banten/Ciwandan

168. Banten area had been functioning as a transit place for international trade since the 16th century, hence, the port, whose location is not clear, had enjoyed prosperity with foreign trade of such as spices. This old Banten port was destroyed by the Dutch in 1813 and has not functioned since then. In 19th century, a new port was built in Merak as a public port for inter-island trading, however, it has been managed by DGLC as a ferry port linking Sumatra and Java island since 1973. The public port of Merak had just functioned to provide port services to a special port/wharf owned by Pertamina and other private companies, and in 1981, the port with a new name of Banten established with the area from Cigading to Merak, followed by expansion of the “port working area” from Anyer to Bojonegara in 1983. The first public wharf, excluding Merak ferry port, was constructed in 1988 in the district of Ciwandan.

Banten/Merakmas

169. Merakmas is one of the special dedicated ports/wharves managed by a paper company, PT. Indah Kiat Pulp & Paper Corporation. The port exists in the area of Banten port, thus under the jurisdiction of IPC-II, located to the north of Merak ferry port. The port has been in operation since 1999, handling containers and other construction materials. The major container commodity is paper, waste paper for import and new paper products for export.

Cirebon

170. The port is located on the most eastern side of West Java province. From the 1860s to 1880s, in order to support increasing trade at that time, Dutch colonial government built the port (Basin I) utilizing an original small port. Corresponding to the investment for such industries as sugar, cigarette etc., the colonial government expanded the port building Basin II in 1919. In 1927, Netherlands government issued a decree delineating the boundaries of the port working area. At that time, the Cirebon port was under the Semarang port. The port came under the jurisdiction of Tanjung Priok port in 1957.

Sunda Kelapa

171. Port of Sunda Kelapa is a natural port, located in the estuary of Ciliwung River in the Jakarta Bay. The port was established in 1527 as an ancient international sailing point during the Portuguese period. Being close to the center of Jakarta City, the port is very busy with many traditional ships (*Rakyat*) handling cargo such as daily consumption goods, timber and

construction materials for inter-island bases. Due to its long history, the port has become a tourist destination.

6-F. BOJONEGARA DEVELOPMENT

172. Development concept of Bojonegara area was initially introduced in the early 1990's by IPC-II, being followed by the Feasibility Study on Bojonegara Port Development (MBK, April 1995). The report forecasted that container throughput in Bojonegara would reach 3.4 million in 2010 and 8.1 million TEU in 2020. To accommodate this future container demand, the report proposed a staging plan. The stage-1 development is shown in Figure 6-F-1, which involves building 600m of quays, 6 cranes and 5,570 ground slots together with the breakwater. To meet the demand after 10 years, they recommended providing at least 1,800m of quays with at least 18 cranes and other supporting facilities and equipment.

173. Figure 6-F-2 shows the layout plan of stage-5 after 10-year development. Proposed major port facilities are listed in Table 6-F-1.

Table 6-F-1 Proposed Port Facilities

	Stage 1(A)	Stage 2	Stage 3	Stage 4	Stage 5
Berth Length (m)	600	900	1,200	1,500	1,800
Crane No.	6	8	12	14	16
Area (ha)	27	40.5	54	67.5	72
Capacity ('000TEU)	615	903	1,430	1,730	2,100

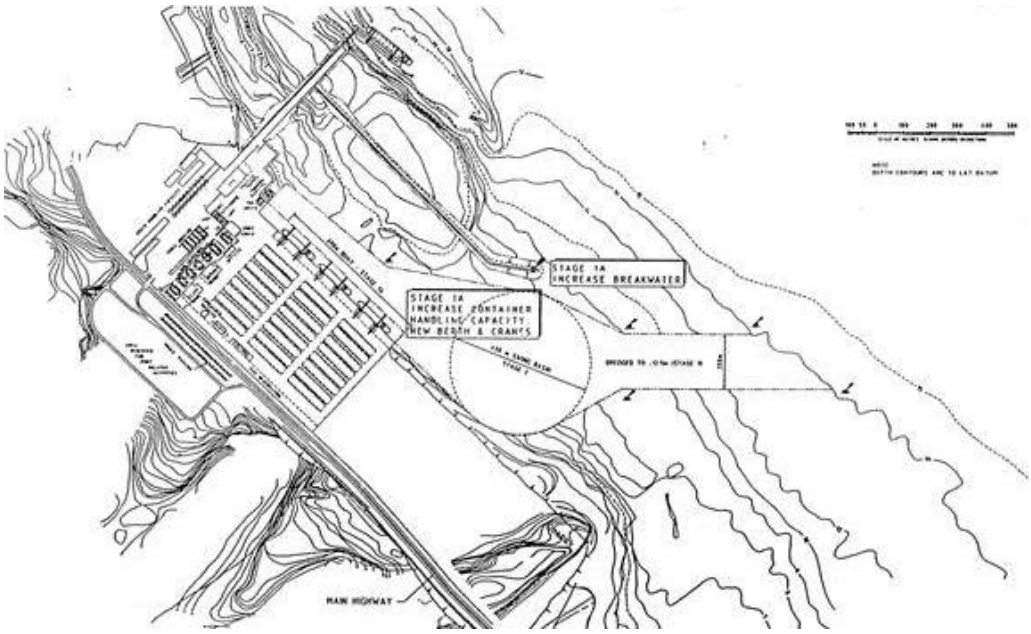


Figure 6-F-1 Original Plan of Bojonegara Development (Stage-1)

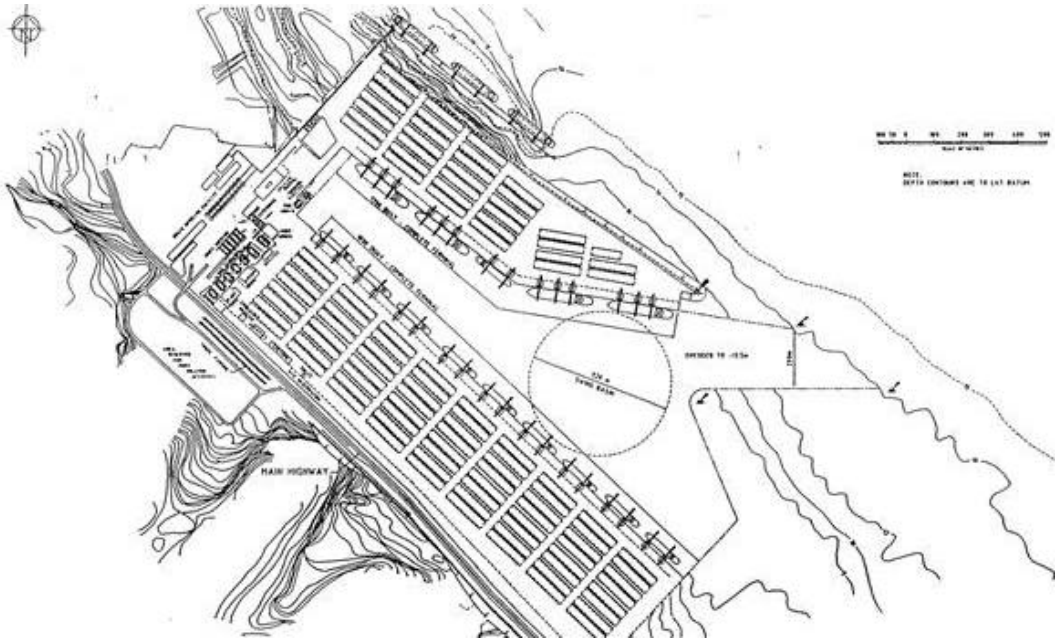


Figure 6-F-2 Original Plan of Bojonegara Development (Stage-5, After 10 Years)

174. WB's study report in 1996 reviewed the above MBK's study and recommended a strategy of "Tanjung Priok then Banten region", meaning "first complete CT III in Tanjung Priok and then concentrate all future development in the Banten area". It was the same direction as in the MBK's study, however, the report did not insist on a specific site in Banten region merely mentioning a new location outside Jakarta, at Bojonegara, Ciwandan or any other site that could be developed in this area. Container throughput in 2018 was forecasted at 9.8 million TEU together with Tanjung Priok and Bojonegara. The initial container terminal development in Bojonegara which would involve the construction of 1,000m of quays providing container handling capacity of 1.25million TEU was illustrated in the report, which corresponded with the proposal in the MBK's report.

6-G. CRITICAL REVIEW OF PAST STUDIES AND PLANS OF THE MAJOR PORTS

175. The following studies in the past were reviewed in the study. Detailed comments are found in the Main Report I.

- The Study of Privatization of Jakarta International Container Terminal at Tanjung Priok Port in 1991
- The Master Plan and Feasibility Study of Bojonegara Port Development from 1993 to 1997
- The Feasibility Study of the Cirebon Port Development in 1997
- The Study for Ports Development Strategy for the Southern Sumatra and Western Java Region.
- The Feasibility Study of Development Plan of Bulk Terminal and Container Terminal of Tanjung Priok Port in 2000

Figure 6-G-1 Aerial View of Bojonegara New Port Site

Aerial View of Bojonegara (As of June 2002)

Access Road

CHAPTER-7. TRENDS AND PROSPECTS OF PORT DEMAND

7-A. SOCIO-ECONOMIC FRAMEWORK

Population

176. The World Bank has been publishing not only the historical trend of population but also a long term population projection of each country. According to this projection, the annual population growth rates in Indonesia will continue to decline, and become 1.00 % in 2015, and 0.90 % after 2020. Although population growth rates will decline, total population in Indonesia will continue to grow and will reach 275 million people in 2025, which is 1.31 times larger than that in 2000.

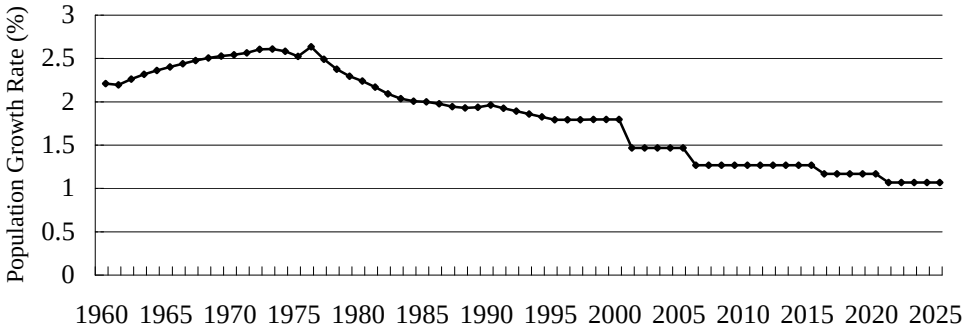
177. Historical trend and future projection of Indonesia's population and its annual growth rates are shown in Table 7-A-1.

Table 7-A-1 Historical Trend and Projection of Indonesia's Population

(Unit: ' 000)

	1980	-1990	-2000	2001-05	2006-15	2016-20	2021-25
Population	148,303	178,232	210,421	224,459	250,408	263,181	275,239
Growth Rate		1.84%	1.66%	1.30%	1.10%	1.00%	0.90%

Source: World Development Indicators 2002, World Bank



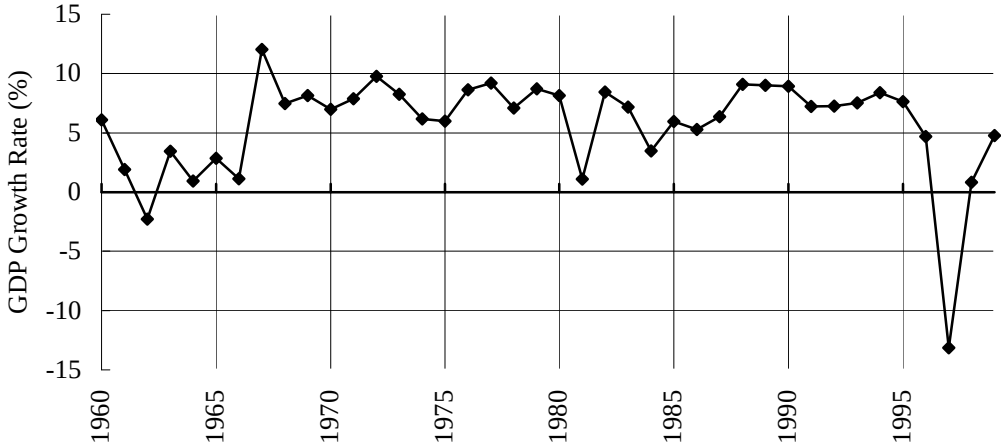
GDP Growth Rate

178. On annual basis, the plan called REPETA is made for each fiscal year based on the PROPENAS in its duration. According to the draft of REPETA for 2003, macro-economic indicators are predicted as in Table 7-A-2. In reflecting the recent economic slowdown and increasing inflation, the economic growth rate target is re-estimated lower than the original such as from 6-7% to 5-6% of GDP growth in 2004, while inflation rate in the same year is revised from original 3-5% to 7-9%.

Table 7-A-2 Macro-economic Indicators

Indicator	1999	2000	2001	2002	2003	2004	2005
Inflation rate, CPI (%)	2.0%	9.4%	12.5%	9-10%	8-10%	7-9%	6-8%
Exchange rate (Rp/US$)	7,809	8,438	10,255	8,750	8,550	8,500	8,500
GDP growth (%)	0.3%	4.9%	3.3%	3.5-4.5%	4.5-5.5%	5-6%	5.5-6.5%
GDP per/c (at 1998 constant, Rp)	4,785.0	4,967.0	5,058.0	5,186.0	5,370.0	5,588.0	5,843.0
GDP per/c growth		3.8%	1.8%	2.5%	3.5%	4.1%	4.6%
Current account deficit / GDP (%)	4.0%	3.2%	3.7%	2.5%	1.0%	-0.1%	-1.0%
Total investment (% in GNI)	12.5%	19.3%	20.5%	22.2%	24.7%	28.3%	28.3%
Private	7.2%	11.2%	13.8%	15.9%	17.0%	19.1%	21.4%
Government	5.3%	4.6%	3.9%	4.6%	5.3%	5.7%	5.2%

Source: REPETA for 2003 (National Annual Plan)



Source: World Development Indicator 2002, World Bank

Figure 7-A-1 Historical Trend of GDP Growth Rates of Indonesia

179. The framework of the REPETA for 2003 is rather challenging setting a GDP growth rate of around 6% in 2005. However, 5-6% economic growth in the middle and long term appears to be an appropriate target when we considered the following points:

- Indonesia needs a sustained period of strong economic growth to provide employment opportunities to Indonesia's millions of unemployed and under-employed workers.
- Economists calculate that Indonesia's labor force is increasing by 2.2-2.7% a year, a growth rate equivalent to 2-2.5 million new job seekers each year. BAPPENAS estimates that 4% GDP growth translates into an increase in the demand for labor of 2.4%, or 2.2 million new job opportunities per year.
- Rapid and sustained GDP growth is the key to reducing Indonesia's debt/GDP ratio as well as the GOI's debt servicing burden. World Bank report in May 2000 noted that Indonesia could reduce its debt/GDP ratio to approximately 50% with annual GDP growth rates of 6%.

180. In this study, the JICA study team assumes that Indonesia’s GDP growth rate in 2003 will be nearly same as that in 2002, and that a 6 % growth rate will be realized in 2006. It is also assumed that the 6 % growth rate will be maintained afterwards through 2012, and then will slightly decline in line with the declining the population growth rate.

181. Future GDP growth rates of the trade partners were taken and extrapolated from the World Bank estimate for 2010. It is assumed in this study that the GDP growth rates of the trade partners' will decrease by one percentage point after 2013 because population growth rates in respective trade partners have been decreasing.

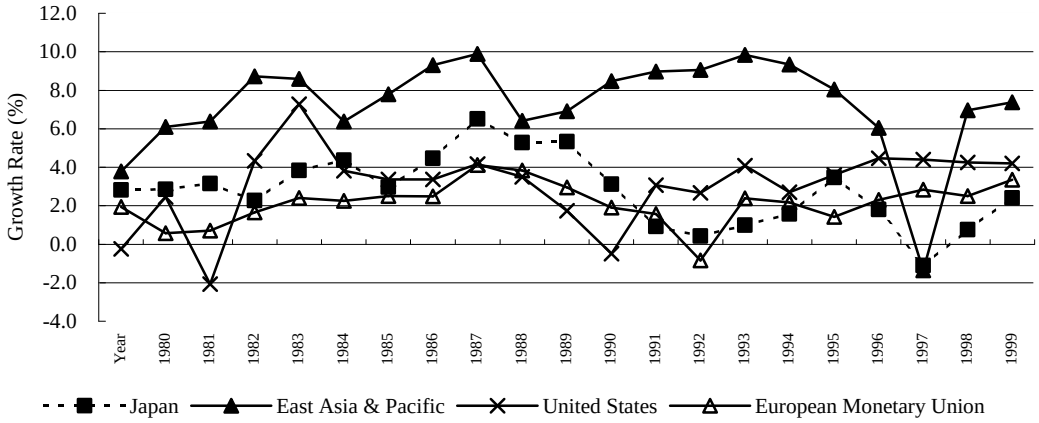


Figure 7-A-2 Growth Rates of Major Trade Partners

182. The assumed GDP growth rates of Indonesia and trade partners by case are shown in Table II-2. The growth rates of the high case are set at 0.5 percentage point higher, and those of the low case are 0.5 percentage point lower, than those of the basic case, respectively.

Basic Case

Year	2000	2001	2002	2003	2004	2005	2006-12	2013-25
Indonesia	4.90%	3.30%	4.00%	4.00%	5.00%	5.50%	6.00%	5.00%

Trade Partners	1991-2000	2001-12	2013-25
United States	3.71%	2.70%	1.70%
G4 Europe	1.57%	2.30%	1.30%
JAPAN	1.07%	2.00%	1.00%
East Asia and Pacific	6.92%	6.00%	5.00%

High Case

Year	2000	2001	2002	2003	2004	2005	2006-12	2013-25
Indonesia	4.90%	3.30%	4.50%	4.50%	5.50%	6.00%	6.50%	5.50%

Trade Partners	1991-2000	2001-12	2013-25
United States	3.71%	3.20%	2.20%
G4 Europe	1.57%	2.80%	1.80%
JAPAN	1.07%	2.50%	1.50%
East Asia and Pacific	6.92%	6.50%	5.50%

Low Case

Year	2000	2001	2002	2003	2004	2005	2006-12	2013-25
Indonesia	4.90%	3.30%	3.50%	3.50%	4.50%	5.00%	5.50%	4.50%

Trade Partners	1991-2000	2001-12	2013-25
United States	3.71%	2.20%	1.20%
G4 Europe	1.57%	1.80%	0.80%
JAPAN	1.07%	1.50%	0.50%
East Asia and Pacific	6.92%	5.50%	4.50%

7-B. FORECAST OF CARGO DEMAND BY PACKING TYPE

183. Indonesian Port Corporation II publishes annual port statistics on port activities under its jurisdiction. Cargo tonnage handled at each port is disaggregated into packing types, which are categorized into six groups; General cargo, Bag cargo, Liquid Bulk cargo, Dry Bulk cargo, Container, and Others. Information on trade type such as loading/unloading, and by commodity-wise are not available.

184. Methodologies for forecasting vary according to the package types, and are summarized in Table 7-B-1.

185. Regarding ”General Cargo” and “Bag Cargo”, a unique methodology is adapted in this study. Unlike bulk cargo, non-bulk cargo such as container, general cargo and bag cargo is distributed widely. It is possible that the hinterlands of each port overlap with one another, although the hinterland of Tanjung Priok Port is much larger than those of the other metropolitan ports.

186. Non-bulk cargo has another common tendency; most can be containerized. Cargoes which are transported in the form of general cargo or bag cargo can be transported in containers in the future although some of the non-bulk cargoes are ultimately not suitable for container transport.

187. Taking into consideration the facts mentioned above and future possibility of transportation network development in the metropolitan area, total volume of the non-bulk cargoes of the 4 ports is going to be forecast, and then the container tonnage will be subtracted from the total non-bulk cargoes. Resulting combined tonnage of general and bag cargo will be allocated among the 4 metropolitan ports based on the present market share and future potential of each port.

188. The JICA study team constructed and applied a multiple regression model with a dummy variable for these historical trend data in order to forecast the non-bulk cargo tonnage through 2012. High coefficient of determination (R2=0.922) was obtained. For the period of 2013-2025, a growth model was applied, and the JICA study team assumed that the annual growth rates of the non-bulk cargo would be less than GRDP growth rates of the hinterland. This assumption stems from the well known tendency of decreasing elasticity of demand against GRDP in the long run.

189. Methodology to allocate the obtained total tonnage into the general cargo and the bag cargo at a given port will be explained in the latter part of this report. Resulting volume by package type for 4 metropolitan ports are summarized in Table 7-B-2 and Figure 7-B-1

Table 7-B-1 Methodologies applied for forecasting by package type

By Packing Type, Tanjung Priok

Container	Multiple regression model against trade partners' weighted GDP and Dummy for export tonnage, then convert to TEU using average weight/stuffed TEU and % of empty container. Number of TEU is assumed as same for export and import. Domestic traffic is forecast in the same way as international traffic. Applied regressors are national GDP for loading and hinterland GRDP for unloading containers, respectively.
Bag＋General	1. Combined tonnage of non-bulk cargo at Tg Priok、Sunda Kelapa, Banten and Cirebon is regressed against Hinterland GRDP and Dummy to get 2012 estimate. Annual growth model is then applied to obtain the 2025 non-bulk cargo estimate. 2. Subtracting the pre-estimated container cargo tonnage of the metropolitan ports. 3. Allotment to the 4 ports based on the present shares and future potential.
Dry Bulk	Multiple regression against Hinterland GRDP and Dummy
Liquid Bulk	Correlation analysis between Hinterland Population

By Packing Type, Sunda Kelapa

Liquid Bulk	Null
Dry Bulk	Null
Container	Null
Bag + General	Same as Tanjung Priok

By Packing Type, Banten

Liquid Bulk	Multiple regression model against West Java GRDP and Dummy
Dry Bulk	Multiple regression model against West Java GRDP and Dummy
Container	Same growth ratio as Tanjung Priok Port
Bag + General	Same as Tanjung Priok

By Packing Type, Cirebon

Liquid Bulk	Present level
Dry Bulk	Multiple regression model against West Java GRDP and Dummy
Container	Past Record
Bag + General	Same as Tanjung Priok

Table 7-B-2 Cargo Tonnage by Package Type

Basic Case (Unit: ' 000 Ton)

		2000	2012	2025
Container	Total	21,133	42,545	79,466
Bag + General	Total	13,878	22,351	28,591
Liquid Bulk	Total	18,830	33,049	60,370
	Tg Priok	9,726	11,644	14,046
	Banten	8,928	21,255	46,174
	Sunda Kelapa	28	0	0
	Cirebon	148	150	150
Dry Bulk	Total	23,578	33,452	58,470
	Tg Priok	6,929	11,004	20,129
	Banten	15,676	20,288	33,908
	Sunda Kelapa	0	0	0
	Cirebon	973	2,160	4,433
Others	Total	1,935	2,048	2,000
	Tg Priok	0	0	0
	Banten	59	48	0
	Sunda Kelapa	1,875	2,000	2,000
	Cirebon	1	0	0
Total	Total	79,354	133,445	228,897

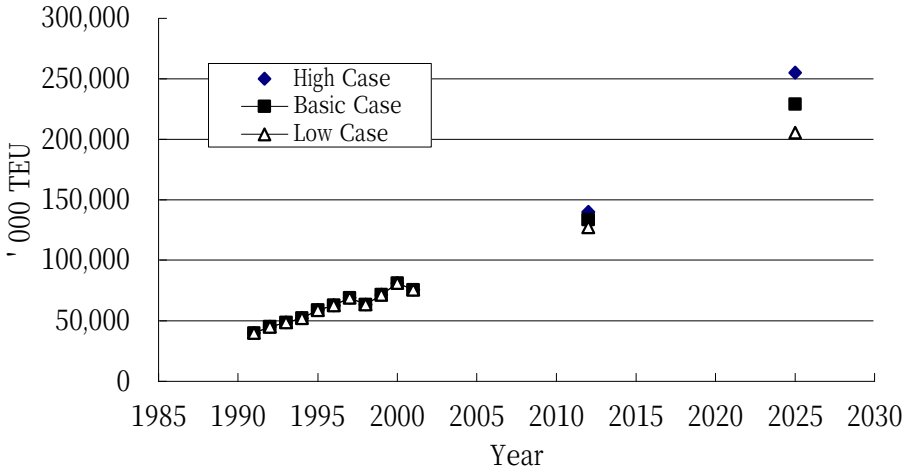


Figure 7-B-1 Total Throughput at Major Metropolitan Ports

Table 7-B-3 Forecast of International Container Throughput, Tanjung Priok

(Unit: ' 000)

Case	Year	Export		Import		Total	
		Ton	TEU	Ton	TEU	Ton	TEU
High Case	2000	8,111	1,014	10,602	1,059	18,713	2,073
	2012	18,808	2,292	20,322	2,292	39,130	4,584
	2025	31,635	3,855	43,910	3,855	75,545	7,710
Basic Case	2000	8,111	1,014	10,602	1,059	18,713	2,073
	2012	17,140	2,089	19,134	2,089	36,273	4,177
	2025	26,795	3,265	38,851	3,265	65,646	6,530
Low Case	2000	8,111	1,014	10,602	1,059	18,713	2,073
	2012	15,558	1,896	18,000	1,896	33,558	3,792
	2025	22,487	2,740	34,317	2,740	56,803	5,480

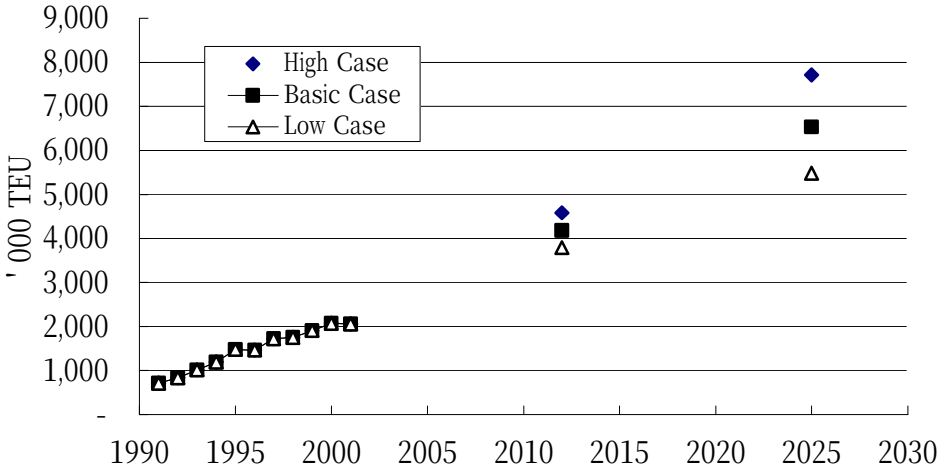
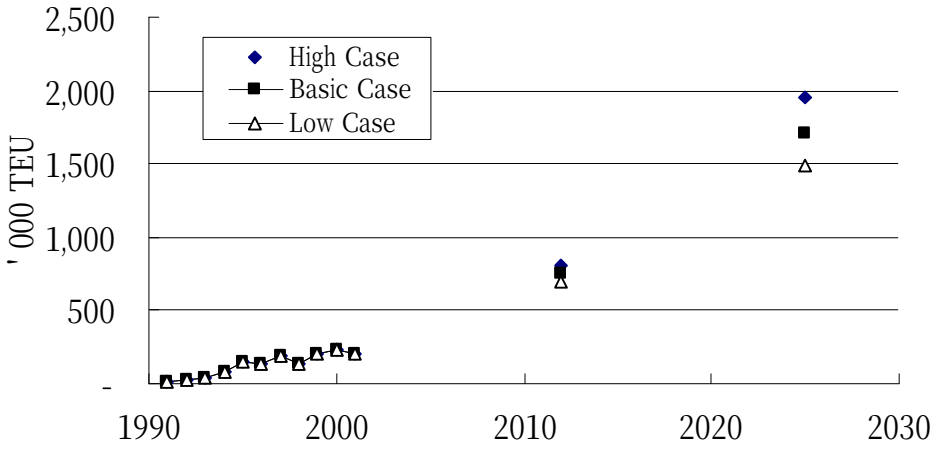


Table 7-B-4 Summary of Demand Forecast of Domestic Container, Tanjung

(Unit: ' 000)

Case	Year	Domestic Loading		Domestic Unloading		Total	
		Ton	TEU	Ton	TEU	Ton	TEU
High Case	2000	1,347	108	891	129	2,238	237
	2012	4,016	406	2,067	406	6,083	811
	2025	9,675	977	4,806	977	14,481	1,955
Basic Case	2000	1,347	108	891	129	2,238	237
	2012	3,731	377	1,929	377	5,660	754
	2025	8,461	855	4,219	855	12,680	1,709
Low Case	2000	1,347	108	891	129	2,238	237
	2012	3,459	349	1,797	349	5,256	699
	2025	7,373	745	3,692	745	11,066	1,490



190. As for container transshipment, the locally borne international container volumes were forecast by a multiple regression model with Indonesian GDP as a regressor. Resulting volumes of locally borne export/import containers in eastern Indonesia are about 150 thousand TEUs in 2012, and 340 thousand TEUs in 2025. Even if all of them are transshipped at Tanjung Priok Port, the transshipment ratio of the inter-island containers will be less than 5% in the target years. Thus, the study team excluded the category of transshipment container from the forecasted demand because their volume could be minimal and also there is a possibility it has been included in the forecast of international and domestic containers.

7-C. FORECAST OF CARGO DEMAND BY COMMODITIES IN TANJUNG PRIOK

191. Methodologies applied for demand forecasting, which are summarized in Table 7-C-1, vary according to the commodity type, and basically follow the methods utilized in the previous report. Statistical data sources for forecasting have not been limited to Indonesian sources; databases of international institutions such as the World Bank, FAO, IEA have been reviewed for reference. Outcomes of the future demands are also cross checked with Asian and international standpoints.

Table 7-C-1 Methodologies for Forecasting by Major Commodity/Traffic Type

Commodity	Methodology
Container	As shown by package type
Rice	Production and consumption of rice in Indonesia are checked first. The former is forecast by time series analysis, and the latter is regressed against population. Import makes up for the shortage, 40% of which will pass through the port of Tanjung Priok. Past records are also taken into consideration for the domestic trade forecast.
Wheat	Import volume is regressed against GDP per capita and Dummy. Share of Tg Priok is set at 57.2 % of the total import. Export volume is forecast by the past record, and domestic portions are calculated on ratio to the import vol.
Other Grain	Deficit between domestic production and consumption will increase at a 4.3% annual growth rate up to 2012, and 3.3 % afterward. Fifty five percent of the total national import will pass through Tg Priok Port. Total tonnage at the port is 1.2 times larger than the import volume.
Crude Palm Oil	Regressed against Hinterland Population.
Cement	Domestic consumption is regressed against construction sector's GDP. Export of cement/clinker will grow at the same rate as the economic growth rate in Asia & Pacific. When utilization rate reaches 100%, export volume decreases as domestic demand increases. Expansion of production capacity is taken into consideration. Tg Priok Port will handle 30% of national export. Gypsum is 4% of the total production. 33% of required gypsum will pass through Tg Priok Port. 63.8% of the required volume will be obtained through foreign market. Ratio of domestic loading against the domestic consumption is 2.4 % and that of domestic unloading is 2 %.
Gasoline and Other Fuel	Growth model with annual growth of 1.6%
Steel and Steel Products	Domestic consumption of steel products is regressed against Hinterland GRDP and Dummy. National import of steel and steel products is then regressed against the domestic consumption. Tg Priok Port will handle 40% of the national import of this cargo. Cargo volumes of export and domestic trade are also added up.
Stone, Sand and Clay	Regressed against Hinterland GRDP and Dummy.
Others	Difference between the total and sum of individual forecast.
Exported/Imported Cars	Based on interviews and logistic plan of 4 car assemblers, congregated market share of which is around 60 % in 2005. Annual growth rate of Ex/Im CBU cars is 4.5% after 2006.
Passenger	Regressed against population, GDP per capita, and Dummy. After 2006 the number of passengers will grow at the same rate of population growth. International passengers are added up based on past records.
Ro/Ro	Freight and vehicle traffic is regressed against GRDP of the hinterland, and passenger traffic is forecast by a growth model with annual growth of 4.0% up to 2011, and 3.0 % afterward.

192. Demand forecast for major cargoes, which corresponds to the basic case, is summarized in Table 7-C-2.

Table 7-C-2 Summary of Demand Forecast by Major Commodity/Traffic Type

(Unit: ' 000 Ton, Vehicle, Pax)

				2012	2025
Cargo	By Packing Type		Y 2000		
		Liquid Bulk	9,726	11,644	14,046
		Dry Bulk	6,929	11,004	20,129
		Container	20,951	41,933	78,326
		Bag + General	10,357	16,246	20,389
		Total	47,963	80,827	132,890
	By Major Commodity		Y 1999		
		Container	19,419	41,933	78,326
		Rice	1,027	1,500	1,500
		Wheat	1,426	3,976	6,847
		Other Grain	1,331	2,188	3,782
		Crude Palm Oil	1,402	2,386	3,480
		Cement	4,514	6,909	9,473
		Gasoline and Other Fuel	6,557	8,060	9,907
		Steel and Steel Products	1,554	4,167	9,233
		Stone, Sand and Clay	535	1,727	4,089
		Exported/Imported Cars		207	391
		Others	5,672	7,981	6,253
		Total	43,437	80,827	132,890
Passenger			Y 2000		
		Domestic	1,672	2,282	2,592
		International	0	200	400
Ro/Ro (Overflow from Existing Capacity)					
		Freight	-	4,801	15,442
		Vehicle	-	1,391	4,475