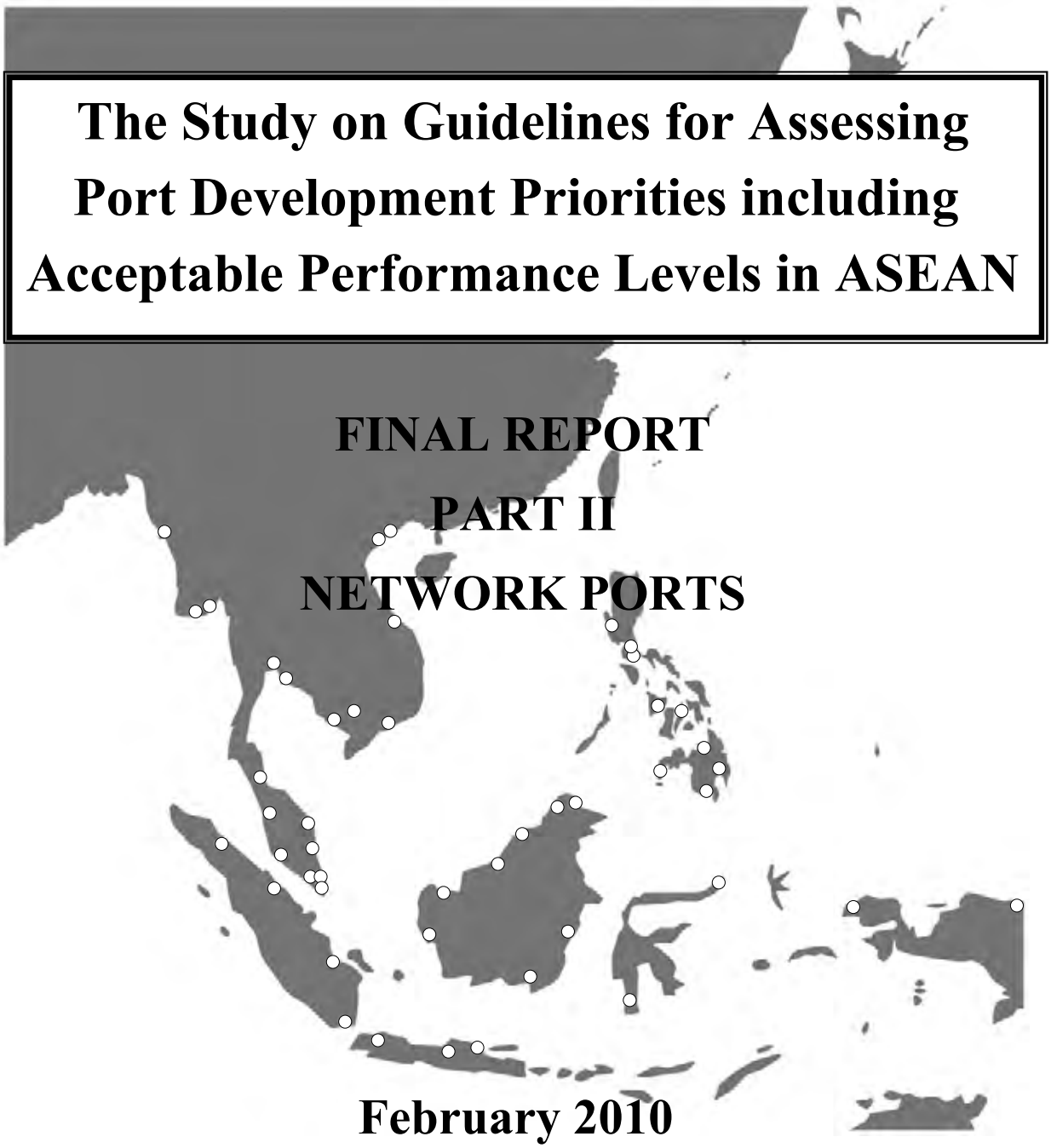
ASEAN Maritime Transport Working Group

The Study on Guidelines for Assessing Port Development Priorities including Acceptable Performance Levels in ASEAN



FINAL REPORT

PART II

NETWORK PORTS

February 2010

Japan International Cooperation Agency

The Overseas Coastal Area Development Institute of Japan (OCDI)

Mitsubishi Research Institute, Inc. (MRI)

ASEAN Maritime Transport Working Group

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Part 2 NETWORK PORTS

1. Brunei

1.1 Muara Port

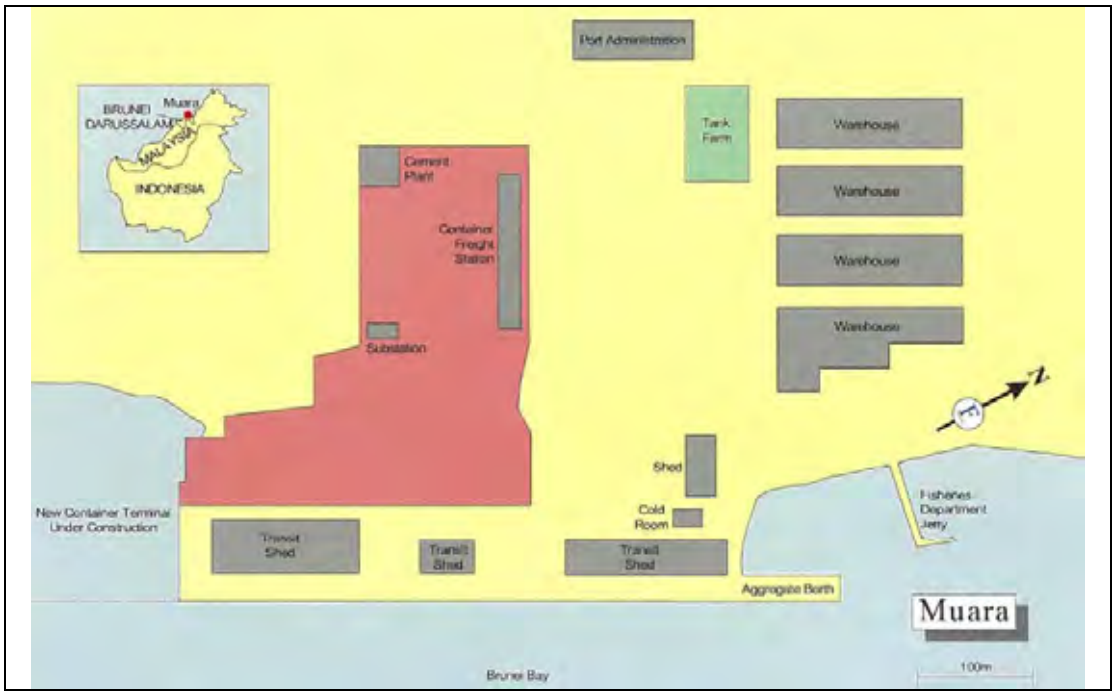
(1) Outline of the Port

(a) Location and Roles

Port of Muara is located at Brunei Bay, facing the South China Sea at 05° 01'N and 115 ° 04'E, approximately 27 km east from Bandar Seri Begawan, the capital of Muara.

The Port of Muara is an international and gateway port of Brunei Darussalam.

Figure 1.1-1 Location of Muara Port



Source: Firplay

Figure 1.1-2 Terminal Layout

(b) Operation and Management

Port of Muara is under the management of the Ministry of Communications. The Ports Department is responsible for providing and managing port services and facilities.

(2) Use of the Port

(a) Cargo Throughput

The annual cargo throughput at Port of Muara has been around 0.9 - 1.0 million tons in recent years. Table 1.1-1 shows the annual cargo throughput at the port in 2008.

Table 1.1-1 Annual Cargo Throughput at the Port of Muara

(Unit: metric tons)

	General Cargo	Container	Total	Container (in TEUs)
Export (outbound)	9,673	16,934	26,607	45,116
Import (inbound)	444,161	477,265	921,426	45,257
Total	453,834	494,199	948,033	90,372

Source: Data provided by the Port of Muara

(b) Ship Calls

The annual number of ship calls was 1,733 in 2008.

Table 1.1-2 Ship Calls at the Port of Muara in 2008

Conventional Ship	Container Vessel	Passenger Ship	Total
1,380	334	19	1,733

Source: Questionnaire

(c) Port Procedures

Permission to enter the port is under the control of the Marine Department, a harbor master, at the Ministry of Communications. Vessels should forward their initial estimated time of arrivals (ETA) to the Marine Department at least 1 day prior to arrival.

Currently, customs and Ports Department are developing a computer system to be integrated for ‘one stop service’ for CIQ and port documentation.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The vessels enter the port through the Muara Channel. The length of the approach channel is 4.8 km, the width is 180 m. The minimum depth of the channel is 13 m.

The tidal range is 2 m on average. There are three anchorages available; Outer Harbor (Water depth: 14 m, Space: 100 ha), Inner Harbor (Water depth: 14 m, Space: 78 ha), Tanjong Selirong for loading logs (Water depth: 6.5 m, Space: 225 ha).

ii) Pilot

Pilotage is compulsory for all vessels and available between 07:00 and 22:00.

(b) Terminals

There are a container terminal and a conventional terminal. A passenger terminal is located inside the conventional terminal.

Table 1.1-3 Terminals at the Port of Muara

Terminal	Application	Management	Quay		Cargo Throughput in 2008 (ton)
			Length (m)	Depth (m)	
Container Terminal	Container	Ports Department	250	12.5	494,199
Conventional Terminal	General Cargo		611	12.5	453,834
Total			861		948,033

Source: Questionnaire

[Container Terminal]

The container terminal is situated on the west side of the port, adjoining the conventional terminal. The container terminal has been operated by ICTSI (International Container Services, Inc.) since June of 2008.

Container Throughput

Container throughput in 2008 was 90,372 TEUs (494,199 tons), a decrease of 8.7 % compared to the throughput in 2007 in TEU base.

Table 1.1-4 Container Throughput at Container Terminal

Name of Network Port		Muara Port			
Name of Terminal		Muara Container Termnal			
Type of Terminal		Container Terminal			
Container Throughput		Year 2008		Year 2007	
	Total TEUs	90,372		98,989	
	Total Boxes				
	Total Tonnage (tons)	494,199		480,384	
	Landed Containers TEUs	Total TEUs	45,257	Total TEUs	51,423
		Laden TEUs	44,806	Laden TEUs	47,628
		Empty TEUs	450	Empty TEUs	3,795
	Imported Containers	Total TEUs	45,257	Total TEUs	51,423
		Laden TEUs	44,806	Laden TEUs	47,628
		Empty TEUs	450	Empty TEUs	3,795
	Domestic Containers	Total TEUs	0	Total TEUs	0
		Laden TEUs	0	Laden TEUs	0
		Empty TEUs	0	Empty TEUs	0
	Shipped Containers TEUs	Total TEUs	45,116	Total TEUs	47,566
		Laden TEUs	5,537	Laden TEUs	9,597
		Empty TEUs	39,578	Empty TEUs	37,969
	Exported Containers	Total TEUs	45,116	Total TEUs	47,566
		Laden TEUs	5,537	Laden TEUs	9,597
		Empty TEUs	39,578	Empty TEUs	37,969
	Domestic Containers	Total TEUs	0	Total TEUs	0
		Laden TEUs	0	Laden TEUs	0
		Empty TEUs	0	Empty TEUs	0
	Transshipment Ratio	4.3%			

Source: Questionnaire

Facilities

The terminal was constructed in 1994. There are 2 berths; the total quay length is 250 m, and the water depth is 12.5 m.

Two Panamax-size quay-side gantry cranes (lifting capacity: 40.6 tons) and 7 reach stackers are installed.

The area for the container yard is 7.3 ha and the number of ground slots is 3,069 TEUs. The storage capacity for laden containers is 3,000 TEUs and the storage capacity for empty containers is 2,500. 145 reefer plugs are installed.

Operation

The gross productivity of the quay-side gantry cranes is 26 moves/hour/crane.

Stevedoring services are available 24 hours a day in three shifts. And there are 2 gates available around the clock.

[Conventional Terminal]

The conventional terminal is situated on the east side of the port, adjoining the container terminal. The terminal is operated by three stevedoring companies commissioned by the Ports Department.

Cargo Throughput

Cargo throughput was 458,834 tons in 2008. Its main commodities are cement, steel products, bitumen and vehicles.

Facilities

The terminal has 6 berths, a total quay length of 611 m, and a water depth of 12.5 m. Two mobile cranes are installed.

(4) Landside Transportation

The port is connected directly by the express way to its hinterland. Trucks and trailers are used for landside transportation. Railway is not applicable.

2. Cambodia

2.1 Phnom Penh Port

(1) Outline of the Port

(a) Location and Roles

Port of Phnom Penh was developed as a gateway port to the capital of Cambodia and is located on the right bank of Tonle Sap River. Distance is 332 km from the mouth of Mekong River and 100km from the Vietnam Cambodia border. Main cargos of the port are general cargo, garments, petroleum products and construction materials. Passenger terminal serves for Mekong cruise ships call at Phnom Penh.

Water level of Mekong River rises to 10m above the datum in the rainy season and about 0.5m in dry season. Channel in the river is maintained to keep the depth of 4.2m under the datum line throughout a year, which enables the navigation of 2,000 DWT class vessels.

Source: Cambodia Map, Periplus Editions Ltd.

Figure 2.1-1 Location of Ports of Phnom Penh and Sihanoukville

(b) Operation and Management

Ministry of Public Works and Transport (MPWT) is responsible for maritime administration and dredging in Cambodia. Waterways Department is in charge of river channel maintenance and Inland Waterway Transport Department is responsible for river ship traffic. Merchant Marine Department administers ship entry to ports, seafarer certificate, ship registration and other maritime affairs.

Port Authority is called Phnom Penh Autonomous Port (PPAP), state owned enterprises, which is managed by the Board of Directors consists of members form MPWT, Council of Ministers, Ministry of Economy and Finance, Ministry of Commerce, Phnom Penh City, PPAP employee, and General Director of PPAP.

(2) Use of the Port

(a) Cargo Throughput

The exports from Phnom Penh Port are garments (49%), agricultural products (20%), and others (31%) in 2007. The imports are construction materials (36%), food products (20%), garment materials (21%), and others (23%). Container throughput in 2007 was 47,319 TEUs of which empty containers were 57% of exported containers and 26% of imported containers.

Table 2.1-1 Phnom Penh Port Throughput

(tons, TEUs)

Cargo	Import	Export	Fuel Import	Total	Container (TEU)
2007	297,561	97,781	724,303	1,119,645	47,349
2006	236,265	68,719	645,941	950,925	38,233
2005	215,741	53,278	481,545	750,564	30,281

Source: PPAP

(b) Ship Calls

Number of shipcalls at Phnom Penh Port was 1536 in 2007, of which container ships accounted for 505. Shipping lines serving for Phnom Penh Port were Sovereign Base Logistic Co., China Shipping, Hai Minh, and GEMADEPT. Average size of container ships was 520GT, oil tanker 240 GT and passenger boat 580 GT.

Table 2.1-2 Shipcalls at Phnom Penh Port

(Number of Ships)

Shipcalls	Container	Oil/Gas Tanker	S/L (Barge)	Passenger	Others	Total
2007	505	903	66	59	3	1,536
2006	359	854	68	40	0	1,321
2005	272	708	96	43	0	1,119

Source: KAMSAB

(Gross ton)

Gross Tonnage	Container	Oil/Gas Tanker	S/L (Barge)	Passenger	Others	Total
2007	261,390	214,616	37,568	34,171	1,814	549,559
2006	223,782	188,537	13,203	27,366	0	452,888
2005	199,566	146,020	16,328	26,688	0	388,602

(c) Port Procedures

MPWT gives port entry permission through KAMSAB (Kampuchea Shipping Agency & Brokers). Application for port entry is submitted by paper and electronic data exchange is not available.

(3) Port Facilities

(a) Waterway

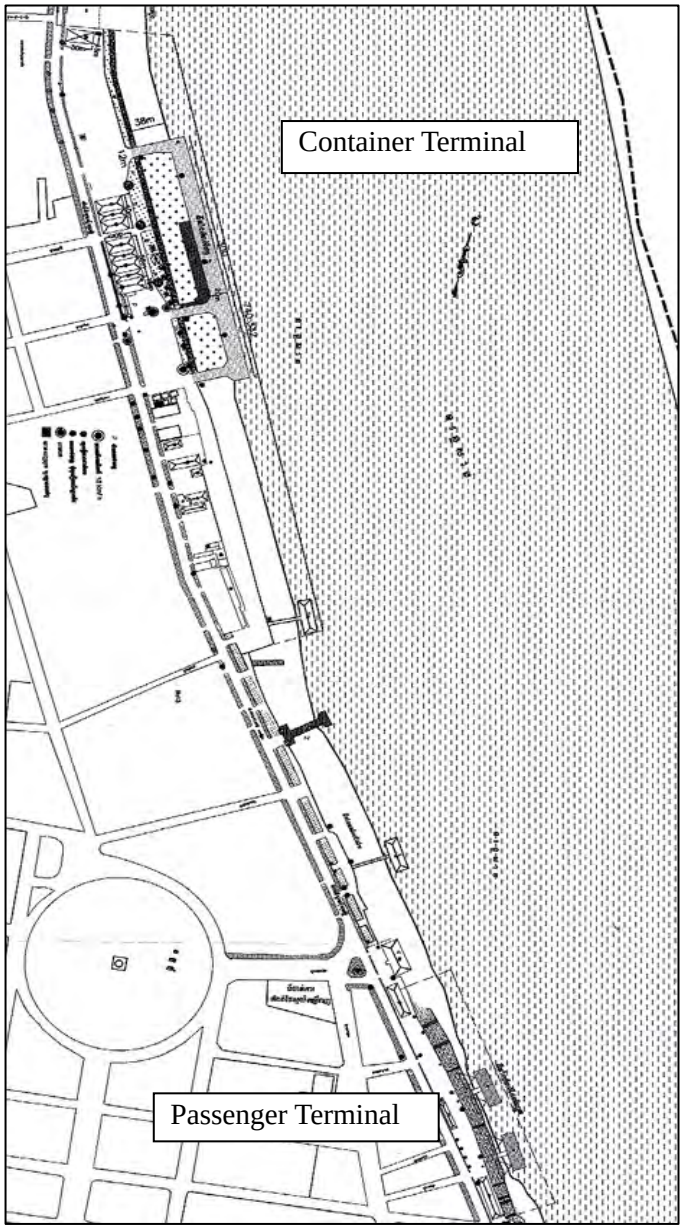
Channels in the Mekong River are maintained by dredgers of Phnom Penh Autonomous Port under supervision of Waterways Department, MPWT. Maintenance dredging was executed every year. Maintenance depth is 4.2m under the datum line.

Pilotage is compulsory for all foreign vessels on the Mekong River. Pilot service is provided by Phnom Penh Autonomous Port.

(b) Terminals

Phnom Penh Port has a container terminal and passenger terminal near the city center. Jetties for local services are located on the upstream of Chroy Changvarb Bridge. Seven oil tanker

terminals are located between 4km to13km upstream of the bridge.



Source: PPAP

Figure 2.1-2 Location of Terminals in Phnom Penh Port

[Container Terminal]

Container berth has a length of 300m and a width of 20m, where three barges can be moored simultaneously. Containers are loaded and unloaded by floating cranes with a lifting capacity of 100 tons and 80 tons, or by mobile cranes.

[Passenger terminal]

Two pontoons located at 1km downstream from the container berth, which were rehabilitated in 1996 and has a size of 45m x 15m, are used for passenger terminal in Phnom Penh Port.

[Domestic Terminal]

Small jetties are built along 1km of the right bank of Tonle Sap River. These small facilities are used for river boats to/from Siem Reap, Kratie, Stung Treng and Kampong Cham. Total length of the jetties are reported to be 333m but there is no particular place of domestic terminal.

[Oil tanker jetties]

There are seven private oil tanker terminals in the section from 4km to 13km upstream of Chroy Changvarb Bridge. The jetties were designed to accommodate 600-1000 DWT class tankers from Vietnam or Thailand. Average size of calling oil tankers was 650 DWT.

[Inland Container Depots]

PPAP has built and operated a container depot at 3.5km north of the present container berth with an area of 92 000m^2

(4) Landside Transportation

Phnom Penh Port is located in the middle of downtown, so truck traffic is not allowed in the day time except some trucks operated by PPAP. Railway is not available at Phnom Penh Port.

(5) Future Plans

Present Phnom Penh Port is designed for conventional ships and not suitable for container handling without quay cranes. New container terminal is therefore planned at 25 km downstream from Phnom Penh, and may be developed by the assistance from China. Construction of new terminal will be launched in 2010 and expected to complete by 2012. New terminal is planned with a length of 300m, an area of 12ha, and a capacity of 300,000 TEUs.

2.2 Sihanoukville Port

(1) Outline of the Port

(a) Location and Roles

Port of Sihanoukville is located on the east coast of Kompong Som Bay and the biggest gateway seaport to the country. Distance from Phnom Penh is 230km by the national road no.4. Railway also connects the port to Phnom Penh, but is not in a good condition.

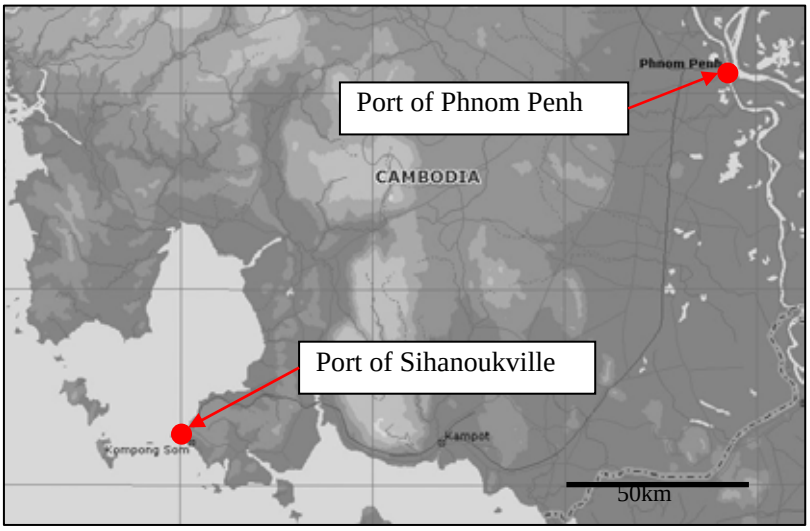


Figure 2.2-1 Location of Sihanoukville Port

(b) Operation and Management

Ministry of Public Works and Transport (MPWT) is responsible for port entry permission through KAMSAB. Port Authority is called Port Autonomy of Sihanoukville (PAS), state owned enterprises, which is managed by the Board of Directors consists of members form MPWT, Council of Ministers, Ministry of Economy and Finance, Ministry of Commerce, Sihanoukville City, PAS employee, and General Director of PAS.

(2) Use of the Port

(a) Cargo Throughput

Total cargo throughput of Sihanoukville port was 2,060,000 tons in 2008, of which exports amounted to 380,000 tons and imports 1,680,000 tons. Containerized ratio of export cargos was 99% and it was 56% of the import cargos. Non-containerized imports were oil products, cement and steel materials. Container throughput was 259,000 TEUs in 2008, of which imported containers accounted for 129,000 TEUs and exported container 130,000 TEUs.

Table 2.2-1 Cargo Throughput of Sihanoukville Port (2008)

(tons)

Cargo	Container	General/ Break Bulk	Coal	Fuel Oil	Total
Export	373,271	4,002	-	-	377,273
Import	941,288	162,045	125,066	452,294	1,680,693
Total	1,314,559	166,047	125,066	452,294	2,057,966

Table 2.2-2 Container Throughput of Sihanoukville Port

(TEUs)

Cargo	2005	2006	2007	2008
Export	105,286	113,950	126,733	129,157
Laden	52,814	62,340	69,388	66,559
Empty	52,472	51,610	57,345	62,598
Import	105,855	117,086	126,538	129,618
Laden	86,034	93,155	101,474	109,960
Empty	19,821	23,931	25,064	19,658
Total	211,141	231,036	253,271	258,775

Source: PAS

(b) Ship Calls

Number of shipcalls at Sihanoukville Port was 971 in 2008, of which container ships was 480, conventional ships 242, tankers 232 and passenger ships 17.

Table 2.2-3 Shipcalls at Sihanoukville Port

	Container Ships	Conventional Ships	Tankers	Passenger ships	Total
2008	480	242	232	17	971
2007	491	184	201	5	881
2006	509	251	152	32	944
2005	433	121	132	5	691

Source: PAS

(c) Port Procedures

MPWT gives port entry permission through KAMSAB (Kampuchea Shipping Agency & Brokers). Application for port entry is submitted by paper and electronic data exchange is not available. PAS installs cargo information and other necessary data in to their computer by themselves. Customs introduced ASYCUDA（Automated SYstem for CUstoms DAta）since May 2008, which is not connected to the PAS system. One stop service was introduced including the customs, port authority, CAMCONTROL (Ministry of Commerce) and immigration.

(3) Port Facilities

(a) Waterway

Approach channel to Sihanoukville Port was dredged to have a length of 1,000m, width of 150m and water depth of 10m. Ship turning basin was also dredged and have a depth of 10 m and diameter of 360m. Maximum size of calling vessels is 20,000 DWT. Approach channel to the tanker jetties have a width of 500m and depth of 10m, and maximum size of calling tankers is 30,000 DWT.

Pilotage is compulsory for all ships entering Sihanoukville Port except ships for domestic services. Harbor Department of PAS provides Pilotage service.

(b) Terminals

There are three terminals in Sihanoukville Port, namely Old Jetty built in 1960, New Wharf developed in 1966, and New Container Terminal inaugurated in 2007. Private oil companies have oil jetties, those are located on the coast 7km north of Sihanoukville Port.

New Container Terminal has a berth length of 400m and a terminal area of 109,000 m2. Two

quay gantry cranes were installed in 2009.

Table 2.2-4 Terminals of Sihanoukville Port

Terminal	Type	Berth Length	Depth	Max Ship Draft	Max DWT	Area (m2)	Quay Cranes
Old Jetty	GC & Passenger	290m	9.0m	8.4m	20,000	-	-
New Wharf	Container & GC	350m	8.5m	7.6m	20,000	85,000	-
New Ex, Terminal	Container	400m	10.3m	8.1m	20,000	109,000	2
Tanker Terminal	Oil Product	200m	11.3m	9.2m	30,000	-	-

Source: PAS

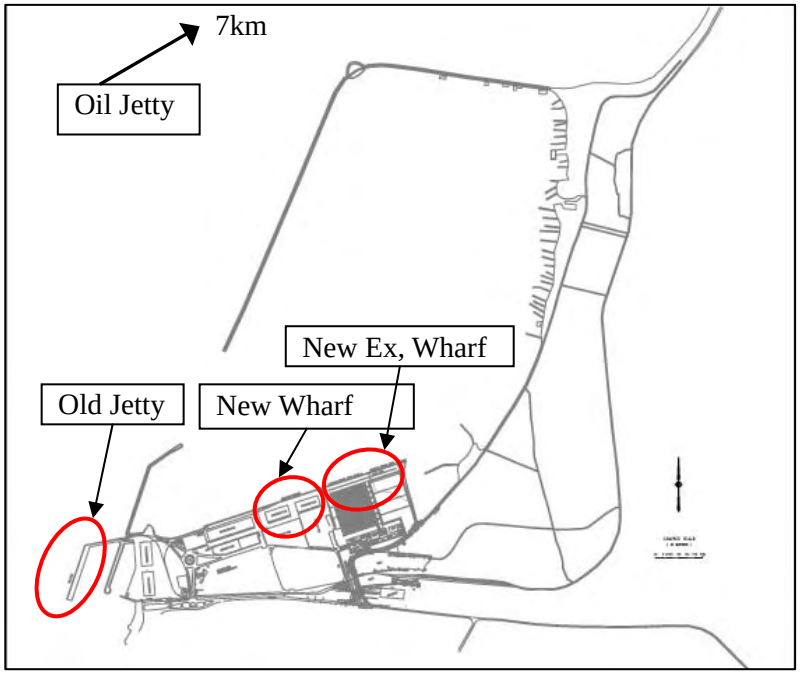


Figure 2.2-2 Location of Terminals in Sihanoukville Port

(4) Landside Transportation

Distance from Sihanoukville Port to Phnom Penh is 230 km by road and 290km by railway. National road no.4 is a two lane road and the railway is a single track in a deteriorated condition. Long truck queues appear in front of the gate of container terminal in weekend due to ship schedule calling at port. Rehabilitation of railway is on-going by the assistance of ADB.

(5) Future Plans

New container terminal opened in 2007 and quay gantry cranes were installed in 2009. Without quay cranes, the port handled 260,000 TEUs in 2008. Taking into account low productivity of container handling, it is indispensable to improve the operation to meet their future demand. Development of the Sihanoukville Port SEZ (Special Economic Zone) is on-going, which will be operated in close connection with the port and encourage the use of port.

3. Indonesia

3.1 Belawan Port

(1) Outline of the Port

(a) Location and Roles

Belawan Port is located on the bank of the Belawan River which runs to Malacca Straight. The port is about 13.5 km upstream from the mouth of the river. (03°47' 00"South, 98°42' 48"East)

Medan City, the capital of North Sumatra Province is about 30km from the port. This port is the largest port in the north part of Sumatra Island, and is the gateway for cargoes of North Sumatra Province and neighboring provinces.

Figure 3.1-1 Location of Belawan Port

(b) Operation and Management

Belawan Port is under the management of PT(persero) Pelabuhan Indonesia I(PELINDO-I), whose headquarter is located in Medan. Belawan International Container Terminal (BICT), one of a branch of PELINDO-I, is the direct manager of the container terminals. Belawan Port Branch of PELINDO-I is the manager of other facilities such as the general cargo terminals and the approach channel.

(2) Use of the Port

(a) Cargo Throughput

The annual amount of cargoes in the general cargo terminal has been around 13-15 million tons in recent years. International cargoes are less than half of total cargoes, but are increasing. As for container cargo, the amount of international cargoes is larger than domestic ones. The cargoes are distributed and collected in North Sumatra Province as well as in Ache Province in northern Sumatra and in Liau Province in central Sumatra.

Major goods of container cargoes are agricultural and forest products for export. Flours, Soy Beans, Chemical Products, Parts, and Fertilizes are imported in containers. Containers are handled in the general cargo terminals as well as in the container cargo terminals.

Table 3.1-1 Annual Cargo Handling in Belawan Port (2008)

(Unit: 000tons)

Terminal	Amount
General Cargo Terminal	14,974
Container Terminal	5,120

Source: Questionnaire

Table 3.1-2 Annual Cargo Handling in Belawan Port (General Cargo Terminals)

(Unit: 000tons)

	2004	2005	2006	2007	2008
International	5,727	6,403	6,697	6,163	7,021
Domestic	8,089	8,089	7,154	7,288	7,952
Total	13,817	14,493	13,851	13,452	14,973

Source: Belawan Port

Table 3.1-3 Annual Cargo Handling in Belawan Port (Container Terminals)

(Unit: (Upper) TEUs, (Lower) Boxes)

	2004	2005	2006	2007	2008
International	274,031	282,074	304,002	320,539	352,522
	213,019	218,113	237,703	251,168	278,051
Domestic	245,756	238,943	255,904	260,839	237,547
	226,455	215,418	223,759	221,510	204,300

Source: Belawan Port

(b) Ship Calls

Annual number of calls on the general cargo terminals was 4,245, and 812 on the container terminals in 2008.

Table 3.1-4 Annual Ship Calls in Belawan Port (General Cargo Terminals)

	2004	2005	2006	2007	2008
International	2,020	1,570	1,306	1,318	1,734
Domestic	2,675	3,004	2,707	2,689	2,511
Total	4,695	4,574	4,013	4,007	4,245

Source: Belawan Port

Table 3.1-5 Annual Ship Calls in Belawan Port (Container Terminals)

	2004	2005	2006	2007	2008
International	395	456	569	548	506
Domestic	338	382	360	349	306
Total	733	838	929	897	812

Source: Belawan Port

(c) Port Procedures

An agent is required to submit an application form to ADPEL, which is the harbor master, 1 day before the entry to the port. An agent is also required to come to a one-stop counter of PELINDO for the use of port facilities. Pilot, berthing, yard and warehouse, other ship services are provided by PELINDO.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The approach channel of Belawan Port is about 12nm long, and it takes one hour by vessel. The depth of the channel is 8.7m LSW. Tidal range is 1.8m. The berths of terminals are 9～10mLSW. Vessels deeper than 8mLSW are restricted to one way traffic.

ii) Pilot

Pilot Service is compulsory for vessels larger than 500 GT.

(b) Terminals

i) Outline

Belawan Port has three general cargo terminals and two container terminals. The international container terminal and the domestic container terminals are on a line and are separated by fence.

Table 3.1-6 Terminals in Belawan Port

Terminal	Quay Wall	Yard	
General Cargo			
Belawan Lama	L=689m, 5m-7mLSW	9,833m^2	
Ujung Baru	L=1,670m, 9mLSW	20,907m^2	Incl. Passenger wharf
Citra	L=625m, 5-8mLSW	8,938m^2	
IKD	L=300m	7,500m^2	
Container			
International	L=500m, 11mLSW	Total	
Domestic	L=350m, 11mLSW	15,220m^2	

Source: Belawan Port

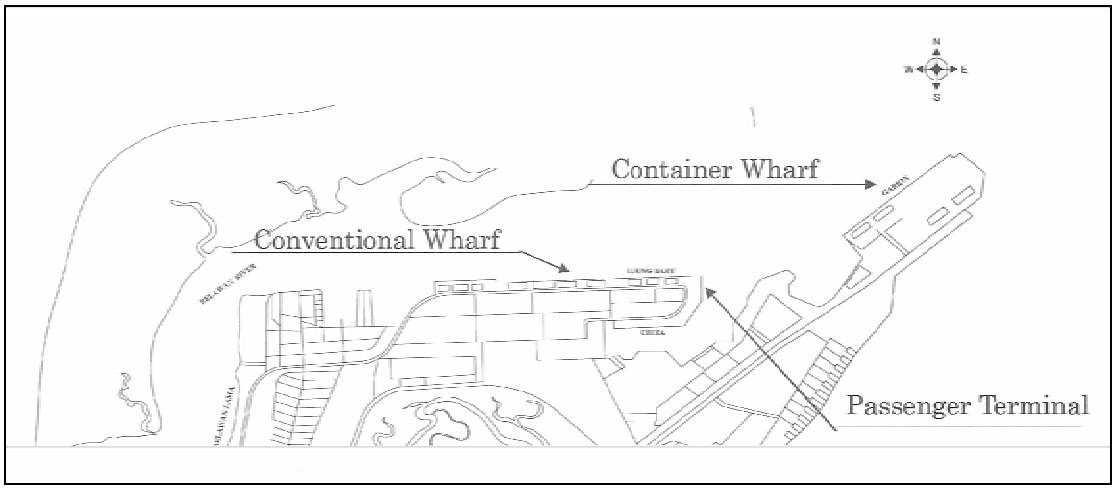


Figure 3.1-2 Layout of Terminals in Belawan Port

ii) Container Terminal

Belawan International Container Terminal operates both the International Container Terminal (L=500m, 2 berths) and Domestic Container Terminal (L=500m, 2 berths).

Container cargo

All international container cargoes are handled in the International Container Terminal.

Table 3.1-7 Container Cargo in Belawan Port

	Year 2008		Year 2007	
Total TEUs		352,522		320,515
Total Boxes		278,051		251,144
Total Tonnage (tons)		5,120,839		5,062,407
Landed Containers TEUs	Total TEUs	292,629	Total TEUs	287,437
	Laden TEUs	262,756	Laden TEUs	256,809
	Empty TEUs	29,873	Empty TEUs	30,628
Imported Containers	Total TEUs	173,060	Total TEUs	154,726
	Laden TEUs	143,617	Laden TEUs	125,378
	Empty TEUs	29,443	Empty TEUs	29,348
Domestic Containers	Total TEUs	119,569	Total TEUs	132,711
	Laden TEUs	119,139	Laden TEUs	131,431
	Empty TEUs	430	Empty TEUs	1,280
Shipped Containers TEUs	Total TEUs	296,856	Total TEUs	287,883
	Laden TEUs	227,797	Laden TEUs	220,303
	Empty TEUs	69,059	Empty TEUs	67,580
Exported Containers	Total TEUs	179,456	Total TEUs	159,791
	Laden TEUs	163,789	Laden TEUs	156,208
	Empty TEUs	15,667	Empty TEUs	3,583
Domestic Containers	Total TEUs	117,400	Total TEUs	128,092
	Laden TEUs	64,008	Laden TEUs	64,095
	Empty TEUs	53,392	Empty TEUs	63,997
Transshipment Ratio	N/A			

Source: Questionnaire

Ship Calls

International liner services in Belawan Port are a shuttle route to Singapore and round routes to Malaysia and Singapore. Domestic liners are to/from Jakarta and Surabaya.

Table 3.1-8 Liner Service to/from Belawan Port (as of May 2009)

(International)

Name of Vessel	Call Port	Ship Calls in May
MV.SINER BIAK	SNG	6
BHATRA BHUM	SNG	5
MSC.CALCUTTA	SNG	3
MV.MSC FEDERICA	SNG	2
MV.DA FU	PKW	5
MV.VASCO DA GAMA	PKN	4
MCP.VIENNA	PKN	3
MV.MAERSK ABERDEEN	PNG	2
	TPP	2

Note) SNG: Singapore PKW: Port Klang West PKN: Port Klang North
PNG: Penang TPP: Tanjung Pelapas

Facility

4 quay cranes and 2 quay cranes are installed in International Terminal and Domestic Terminal, respectively. Cranes are old and their capacities are low. Each crane can handle 23 boxes per hour at maximum. 7 transtainers and 4 transtainers are installed in two terminals, but their capacities are also low.

The yard has 8,600TEU slots, but the rate of occupancy is only 60%.

(4) Landside Transportation

Truck and trailers are the only means of transportation on the land side for public terminals. Medan-Belawan Toll Road is used for transportation. The ramp of this toll road is located 5km from the port.

Railway comes to a private terminal to carry Palm Old twice a day.

(5) Future Plans

There is a plan to extend a wharf of the International Container Terminal as much as 350m. The work will start in 2010 and will be completed in 3 years.

Industrial zone is currently located along the toll road. The local government has a plan to develop an industrial park in the back yard of the port.

3.2 Dumai Port

(1) Outline of the Port

(a) Location and Roles

Dumai Port is located in the middle of Sumatra Island, and facing Strait of Malacca. There is a small island named 'PulauRupat' between the port and the Strait. It becomes a natural breakwater of Dumai Port.

Dumai Port is about 5 hours by vehicle from Pukanbaru City, the capital of Liau Province. Dumai Port is mainly used for Crude Oil, Crude Palm Oil (CPO) and their products which are main products of Liau Province.

Few containers are handled in Dumai Port, and no liner vessel calls on the port.

Figure 3.2-1 Location of Dumai Port

(b) Operation and Management

Dumai Port is under the management of Dumai Port Branch of PT(persero) Pelabuhan Indonesia I(PELINDO-I), whose headquarter is located in Medan City in Sumatra Island.

PELINDO operates the Palm Oil Wharf, Old Wharf, New Wharf, and Passenger Jetties. It also leases lands of backyard of wharves to private companies for storage facilities for palm oil and cement.

Stevedores handle cargoes in the Old Wharf and New Wharf using their own cranes.

There are private terminals where Crude Oil, Gasoline, Crude Palm Oil are handled. They will be competitor of PELIND after new port regulation becomes effective in 2010.

(2) Use of the Port

(a) Cargo Throughput

About 80% of the cargoes in PELINDO Terminals are Palm Oil (CPO and its products), 10% are Fertilizer, and 10% are General Cargo. International cargoes represent about 80% of the total amount, 90% of which are for export.

As much as 5.5 million tons of CPO is Exported annually, and its main destinations are India, Middle East, and Europe. Thailand and Malaysia are the destinations in ASEAN countries. The major import commodity is Fertilizer which is used for palm trees. It is imported from China, Europe, India, and Russia.

There are very few containers. Container cargoes for Liau Province are handled in Belawan Port. (It takes 14 hours by trailer between Dumai Port and Pukanbaru, the capital of Liau)

Table 3.2-1 Annual Cargo Handling in Dumai Port (PELINDO Terminals)

(unit: 000tons)

Direction	2003	2004	2005	2006	2007
Import					
International	388	387	374	418	443
Domestic	3,858	4,131	4,460	5,255	4,379
Export					
International	870	991	1,034	926	897
Domestic	179	468	414	306	449
Total	5,295	5,977	6,282	6,905	6,168

Source: Dumai Port

(b) Ship Calls

No liner cargo ship calls on Dumai Port. All cargoes are carried in trampers. Small passenger boats from domestic ports and international ports sometimes call the port. International shuttle boats bring passengers to Malacca Port, Klan Port, and Dikson Port. Domestic passenger boats round to Batam Port, Belawan Port, and others. These boats carry only passengers.

There is a plan that the local government will develop a ferry terminal to the west of Dumai Port.

Table 3.2-2 Annual Call to Dumai Port

(Unit: (Upper) Call, (Lower) 000GT)

2003	2004	2005	2006	2007
6,163	6,376	6,287	6,055	5,865
29,427	29,960	28,253	27,386	27,329

Source: Dumai Port

(c) Port Procedures

Permission to enter the port is under the control of ADPEL, which is a harbor master. The procedure to obtain port service is the same as that in other ports in Indonesia.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The approach channel starts east of Pulau Rupat Island. The length is 55mm. The width is 255m – 1.7km. The depth is more than 16mLSW and is sufficient for all vessels including Crude Oil Tankers.

This channel has a hair-pin-curve to the southwest of PulauRupat Island because there are shallows.

ii) Pilot

Pilot service is compulsory for vessels larger than 500GT by the national regulation. It takes 4 hours for channel piloting. A sea pilot rides from the beginning of the channel to the front of the port, and a harbor pilot rides from the port front to berths.

(b) Terminals

PELINDO has three wharves for cargo and 2 jetties for passengers.

Wharf A is the oldest wharf and the depth is 5-7mLSW. (Designed depth is 9mLSW). No crane is equipped and general cargoes such as bags of fertilizer are loaded/ unloaded in the old style.

Wharf B is used for CPO. The pipes run between the wharf and the storage tanks in the backyard.

Wharf C is a multipurpose terminal. Planned length is 400m, while the current length is 100m. Stevedore companies bring truck-cranes for handling general cargoes, bag cargoes, and lumber.

Table 3.2-3 Terminals in Dumai Port

Name	Quay wall	Yard
A：General Cargo Wharf (Old Wharf)	L=348m, 9mLSW	D=16m
B: Palm Oil	L=400m, 11mLSW	D=18m
C: Multi Purpose Wharf (New Wharf)	L=100m, 10mLSW	D=25m
Passenger	L=10m x 2, 10mLSW	D=10m

Source: Dumai Port

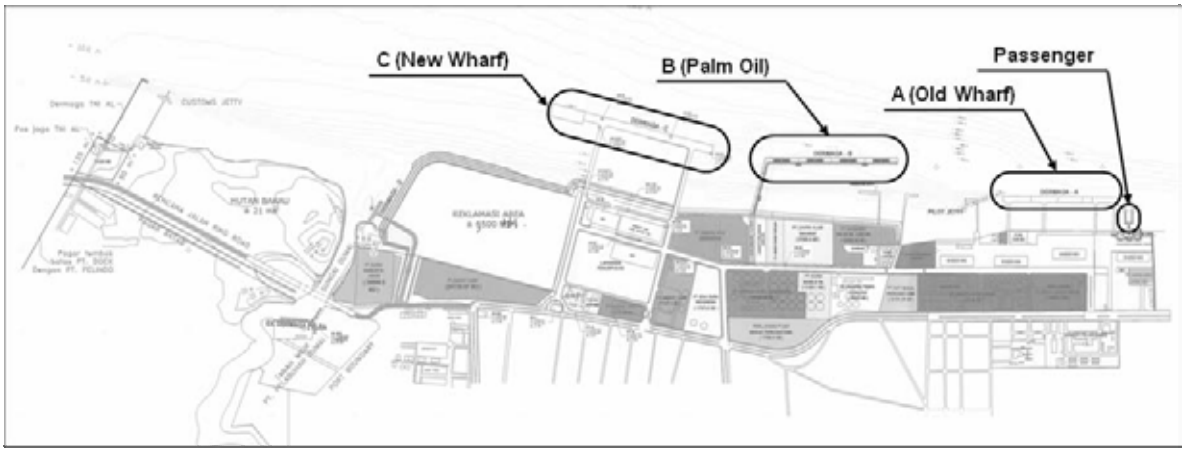


Figure 3.2-2 Layout of Terminals in Dumai Port

(4) Landside Transportation

CPO factories are located 1-2 hours from the port, and the commodities are carried by tank-truck. The road between Dumai Port and Pukanbaru is a 2-lane paved road which passes through a mountain as area. Congestion sometimes occurs, but is not serious because traffic volume is small.

Crude Oil is carried though a pipe from the oil spring to the private terminals in the port.

(5) Future Plans

New Wharf (Multipurpose) is planned to be 400m long thoughit is curentry 100m. Additional 100m is under construction with Japanese ODA. This wharf will be used for container handling in future if containers are carried to this port.

CPO is handled in the Old Wharf and New Wharf as well as in the CPO Wharf.Old Wharf is used for domestic cargo. Vessels sometimes have to wait for berthing because of congestion.

The capacity to move CPO from the tanks to the wharf is not high, but will be improved after the construction of new pipes in 2009.

3.3 Tanjung Priok Port

(1) Outline of the Port

(a) Location and Roles

Tanjung Priok Port (TPP) is located in the east part of Java Island and in DKI Jakarta, the capital of Indonesia. (06^{o} 06'00"South, 106^{o} 53'00"East) The total area of TTP is 604ha and total length of the berths is 13,444.6m. It is reported that TTP handles half of the total cargoes in Indonesia. (Source: PELINDO-II Corporate Profile)

Figure 3.3-1 Location of Tanjung Priok Port

(b) Operation and Management

TPP is under the management of PT (persero) Pelabuhan Indonesia II(PELINDO-II), which is located within the area of TPP.

The operations of terminals in TPP are consigned to companies. This method is used only in TPP among the ports of PELINDO-II. Machines for cargo handling and warehouses belong to these companies.

PELINDO terminals are categorized into Conventional terminals, JICT terminals and KOJA terminals. Conventional terminals are under the control of TPP Branch of PELINDO-II. JICT and KOJA terminals are operated by Joint companies of PELIND-II and private enterprises.

The Car terminal which is the first car terminal in Indonesia was opened in December 2007. This terminal is used to export cars to Thailand, Vietnam, and other countries.

Besides PELINDO terminals, some terminals in the area of TPP are managed by private companies.

(2) Use of the Port

(a) Cargo Throughput

TPP is the largest port in Indonesia and the center of cargo movement within Indonesia and to/from Indonesia. The volume of cargoes increases year by year. The ratio of landed cargoes is larger than shipped cargoes. Container handling is also increasing.

Table 3.3-1 Annual Cargo Handling in Tanjung Priok Port(Conventional Terminals, by direction)

(unit: 000tons)

Terminal	Direction	2003	2004	2005	2006	2007
Conventional	Landed					
	International	11,327	12,161	11,739	11,551	11,996
	Domestic	13,847	13,547	13,054	14,021	15,788
	Shipped					
	International	4,329	5,676	7,623	7,216	7,379
	Domestic	3,807	4,689	5,738	5,948	6,817
	Total	33,310	36,073	38,154	38,736	41,980

Source: TPP

Table 3.3-2 Annual Cargo Handling in Tanjung Priok Port(Conventional Terminals, by type)

(unit: 000tons)

Terminal	Type	2003	2004	2005	2006	2007
Conventional	General	5,952	4,035	5,532	7,866	7,889
	Bag	2,374	1,434	1,821	1,160	1,763
	Liquid	10,486	11,035	9,147	8,614	6,333
	Dry Bulk	7,107	10,178	9,969	10,741	8,200
	Container	7,391	9,391	11,685	10,355	10,491

Source: TPP

Table 3.3-3 Annual Container Handling in Tanjung Priok Port

(Unit: (Upper) 000TEU, (Lower) 000BOX)

Terminal	2003	2004	2005	2006	2007	2008
JICT	1,503	1636	1,470	1,619	1,821	1,996
	1,002	1133	994	1085	1,212	N/A
KOJA	547	615	521	583	703	704
	365	439	348	391	479	N/A
Conventional	707	997	1,286	1,217	1,165	1,284
	621	855	1,060	1,023	987	N/A
Total	2,757	3,248	3,277	3,419	3,689	3,984
	1,988	2,427	2,402	2,499	2,678	N/A

Source: TPP, Questionnaire

(b) Ship Calls

Annual number of calls to TPP has been around 16～18 thousand in recent years. International calls are about one third of total calls, but are 70% in terms of tonnage due to the fact that international vessels are large.

Table 3.3-4 Annual Calls to Tanjung Priok Port

(Unit: (Upper) Call, (Lower) 000GT)

Type	2003	2004	2005	2006	2007
International	4,657	4,843	5,269	5,351	5,775
(Ocean Going)	56,889	57,572	61,191	59,331	61,024
Domestic	10,980	11,311	12,105	10,863	12,054
(Inter Islands)	32,085	29,963	28,613	27,496	28,006
Total	15,637	16,154	17,374	16,214	17,829
	88,974	87,535	89,804	86,827	89,030

Source: TPP

(c) Port Procedures

Application for vessel entry and berthing is submitted to a one-stop information system called PORTNET. This system is internet-based. When a user (an agent) inputs data in the online application form in the system, this data is transferred to the Harbor Master, Customs, Immigration, Quarantine, and PELINDO. Each authority is required to reply regarding permission with in five hours. PELINDO allocates the berth for the vessel and shows this information on the Web. This information system is a pilot system, and is planned to be used in all major ports in Indonesia.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The depth of the approach channel is 14mLSW. The depth of the anchorage is 9～13mLSW. Maximum tidal range is 1.7m.

The entrance to the port is narrow and the width of the channel is only 125m. Therefore the channel traffic is one-way, and vessels are controlled for entering the port by requested order. Traffic within the port is two-directional.

Construction is planned to widen the entrance of the port to 300m, and is now ready for bidding (as of June, 2009). Breakwaters will also be shifted as much as 500m toward the ocean in order to widen the waterway in the port.

ii) Pilot

Pilot Service is compulsory for vessels larger than 15GT. PELINDO has 7 pilot boats and 15 tugboats.

(b) Terminals

Two terminals which JICT operates and one terminal which TPK KOJA operates are container terminals.

Conventional terminals consist of a container terminal which is called MTI terminal, multipurpose terminals, liquid bulk terminals, dry bulk terminals, and a passenger boat terminal.

Terminal operations are controlled by each operator. MTI, KOJA, and JCIT each have independent operation system

Table 3.3-5 Major terminals in Tanjung Priok Port

Name	Cargo type	Quay wall
JICT Terminal -1	Container	L=1,629m, D=8.5～14m
JICT Terminal -2	Container	L=510m, D=8～11m
KOJA Terminal	Container	L=650m, D=14m
MTI Terminal	Container	L=404m, D=9m
Multipurpose Terminals	General Liquid Bulk Dry Bulk Container	N/A
Passenger Boat Terminal	Passenger	N/A

Source: TPP, Questionnaire

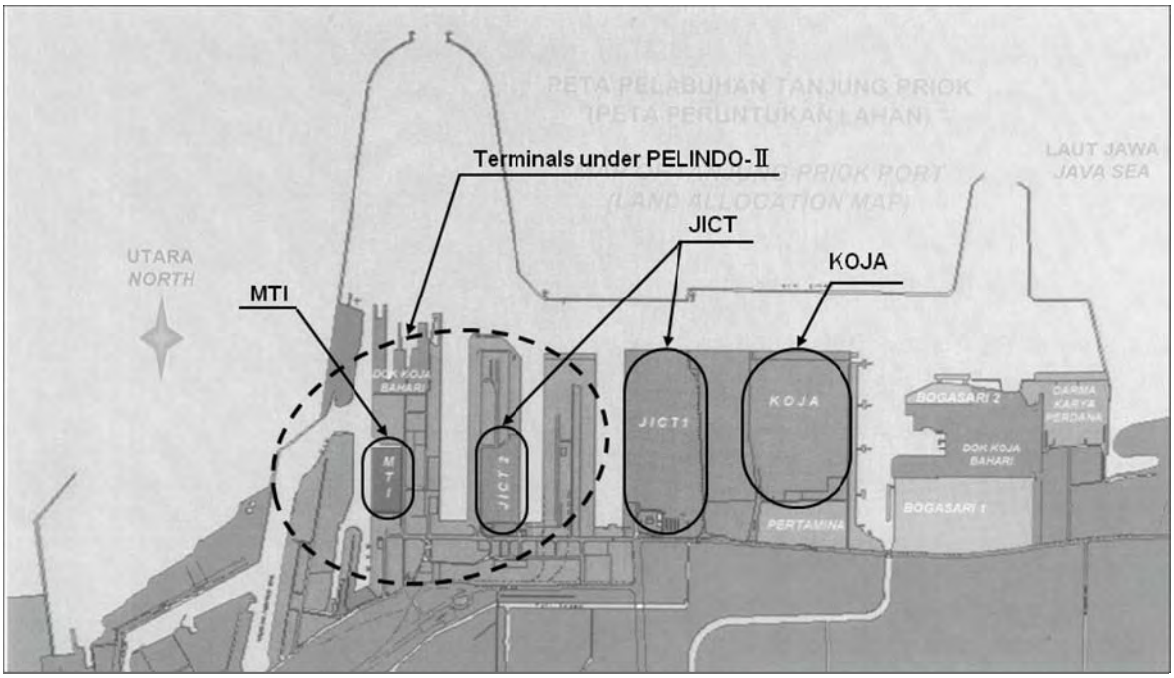


Figure 3.3-2 Layout of Terminals in Tanjung Priok Port

[JICT Termianl]

Jakarta International Container Terminal (JICT) is a terminal operator is which Huchison Port Holdings has a 51% share and PELINDO-II contributed 49%.

JICT Terminal-1 has a total of six berths, one area has four berths and another two. Every berth has Super Panamax quay cranes. The capability of the crane is 29 boxes /hour per crane.

JICT terminal has routes to North America and Middle East. The largest vessel size which ever berthed was 5000TEU.

Container yard is currently being expanded (as of July 2009). The yard currently has 8 container lanes and is planned to have 20 lanes.

There is no CFS in the yard. No cargo is containerized or de-containerized within the yard. CDS (Container Distribution Station) which MTI operates is used if the containerization/ de-containerization is needed in the port area.

JICT Terminal-2 was under reconstruction at the time of the site survey (June 2009).

[KOJA Terminal]

Terminal Petikemas KOJA is a terminal operator in which PELINDO-II holds a 52% share and Huchison Port Holdings 48%。

KOJA Terminal has 3 berths. They have 6 quay cranes, of which one is Super Panamax, two are Post Panamax, and three are Panamax cranes. The Container yard is 21.8ha, and has slots for 4,400 TEUs. The terminal has 3 lanes for import and 3 lanes for export. The capacity is about 700 thousand TEUs per year.

All of container cargoes handled in this terminal are international cargoes. Half of them move to/from Singapore, and the rest move to/from China, Japan, Korea, and Australia.

Table 3.3-6 Container Cargo in KOJA Terminal in Tanjung Priok Port

	Year 2008		Year 2007	
Total TEUs		704,618		702,861
Total Boxes		472,731		478,907
Total Tonnage (tons)				
Landed Containers TEUs	Total TEUs		Total TEUs	
	Laden TEUs		Laden TEUs	
	Empty TEUs		Empty TEUs	
Imported Containers	Total TEUs	377,644	Total TEUs	365,999
	Laden TEUs	365,764	Laden TEUs	344,714
	Empty TEUs	11,880	Empty TEUs	21,285
Domestic Containers	Total TEUs		Total TEUs	
	Laden TEUs		Laden TEUs	
	Empty TEUs		Empty TEUs	
Shipped Containers TEUs	Total TEUs		Total TEUs	
	Laden TEUs		Laden TEUs	
	Empty TEUs		Empty TEUs	
Exported Containers	Total TEUs	326,974	Total TEUs	336,862
	Laden TEUs	253,817	Laden TEUs	279,928
	Empty TEUs	73,158	Empty TEUs	56,934
Domestic Containers	Total TEUs		Total TEUs	
	Laden TEUs		Laden TEUs	
	Empty TEUs		Empty TEUs	
Transshipment Ratio	1%			

Source: Questionnaire

[MTI Terminal]

PT. Multi Terminal Indonesia (MTI) is a terminal operator. PELINDO-II contributes 99% to MTI. MTI Terminal has two berths and its theoretical maximum vessel size is about 14,500DWT.

It has 4 quay cranes, and the maximum weight each crane can pick up is 35 tons. Each crane can handle 26 boxes per hour. The area of the container yard is 6 ha and the yard has slots for 1,589TEUs. The terminal has 3 lanes for import and 3 lanes for export.

All vessels are international ones for Singapore, Malaysia, and Thailand.

Table 3.3-7 Container Cargo in MTI Terminal in Tanjung Priok Port

	Year 2008		Year 2007	
Total TEUs		175,511		135,019
Total Boxes		122,913		96,865
Total Tonnage (tons)		2,125,791		1,670,511
Landed Containers TEUs	Total TEUs	83,252	Total TEUs	64,918
	Laden TEUs	78,470	Laden TEUs	55,034
	Empty TEUs	4,782	Empty TEUs	9,884
Imported Containers	Total TEUs	83,252	Total TEUs	64,918
	Laden TEUs	78,470	Laden TEUs	55,034
	Empty TEUs	4,782	Empty TEUs	9,884
Domestic Containers	Total TEUs	0	Total TEUs	0
	Laden TEUs	0	Laden TEUs	0
	Empty TEUs	0	Empty TEUs	0
Shipped Containers TEUs	Total TEUs	92,259	Total TEUs	70,101
	Laden TEUs	76,081	Laden TEUs	61,257
	Empty TEUs	16,178	Empty TEUs	8,844
Exported Containers	Total TEUs	92,259	Total TEUs	70,101
	Laden TEUs	76,081	Laden TEUs	61,257
	Empty TEUs	16,178	Empty TEUs	8,844
Domestic Containers	Total TEUs	0	Total TEUs	0
	Laden TEUs	0	Laden TEUs	0
	Empty TEUs	0	Empty TEUs	0
Transshipment Ratio	N/A			

Source: Questionnaire

(4) Landside Transportation

There are toll roads connecting to BOGOR, CHIKAMPEK, CIKARANG, where large industrial zones were developed. These toll roads are not currently connected to the port directly, but the construction will starts in 2010 for extending Jakarta Outer Ring Road (JORR) to the port area. This elevated toll road will have a ramp in the wharf where JICT and KOCA have terminals. Container trailers will run directly to/from the container terminals in future.

Cargo railway comes from Bandon and Surabaya. There is a cargo station named 'PASOSO Terminal' in the backyard of the terminal. The containers in the railway are shifted to/from container trailers by top- lifters and moved to JICT and KOJA terminals. This cargo train is used only for containers. One train has 12 chasses, each of which carries one 40-foot-container. The trains run once a day for Bandon and twice a day for Surabaya. They run at night and are not operated on Sunday. There is a dry port with custom in Bandon.

Most containers are not consolidated within Tanjung Priok Port. If consolidation is necessary, forwarders use two CDS's (Container Distribution Station) which are operated by MTI.

(5) Future Plans

The breakwater is planned to be shifted toward the ocean to expand the water area of the port. New wharves are also planned. Toll roads and a railway will be extended for direct access to the container terminals.

Trailers and cars will be monitored at the gates by using RFID. Pilot study is conducted at Gate No.9.