6. Philippines

6.1 Manila Port

(1) Outline of the Port

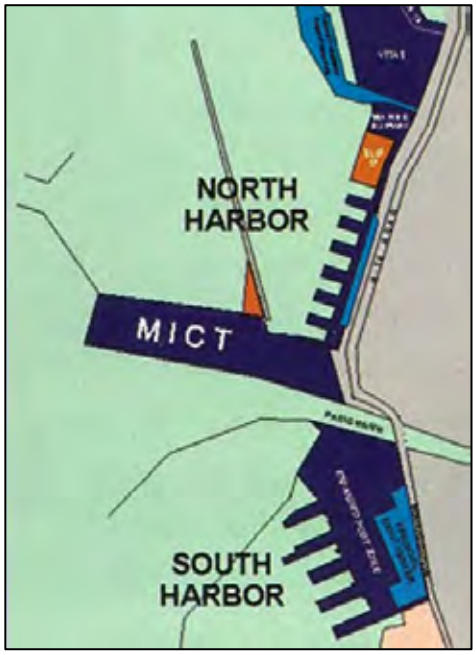
(a) Location and Roles

Port of Manila is located at the west end of the City of Manila and facing directly to Manila Bay.

The port is the Philippines' premier port, playing important roles in the economic activities as a gateway and transit port in the Philippines.

The port has a shoreline of 2 km and is protected by some 3,048 m of rock barriers enclosing approximately 600 ha of anchorage; the port is divided up into the South Harbor, Manila International Container Terminal (MICT) and North Harbor.

Figure 6.1-1 Location of Manila Port



Source: PPA

Figure 6.1-2 Terminal Layout

(b) Operation and Management

Port of Manila is under the management of the Port District Office Manila/Northern Luzon of the Philippine Ports Authority (PPA). PPA is a government-owned corporation and responsible for the planning, development, financing, operation and maintenance of ports and port districts for the entire country.

(2) Use of the Port

(a) Cargo Throughput

The total amount of annual cargo throughput at the Port of Manila reached 40 million tons in 2008, excluding cargoes handled at anchorages.

Table 6.1-1 Annual Cargo Throughput at the Port of Manila

(Unit: ton)

	Break Bulk	Bulk	Container	Total	Container (TEU)
International	1,939,848	1,128,785	20,413,135	23,481,768	2,196,269
Export	9,874	24,187	6,408,540	6,442,601	1,091,838
Import	1,929,974	1,104,598	14,004,595	17,039,167	1,104,431
Domestic	2,378,393	1,144,954	13,298,036	16,821,383	800,753
Outbound	1,215,393	169,193	8,118,973	9,503,559	416,559
Inbound	1,163,000	975,761	5,179,063	7,317,824	384,194
Total	4,318,241	2,273,739	33,711,171	40,303,151	2,997,022

Source: Questionnaire

(b) Ship calls

The annual number of ship calls was 9,375 in 2008. Table 6.1-2 shows the figures of ship calls at each terminal.

Table 6.1-2 Ship Calls at the Port of Manila in 2008

	Total	South Harbor	MICT	North Harbor
Foreign	3,868	1,445	2,025	398
Domestic	5,507	730	87	4,690
Total	9,375	2,175	2,112	5,088

Source: PPA HP

(c) Port Procedures

Permission to enter the port is under the control of PPA. Vessels should forward their estimated time of arrivals (ETA) to PPA 24 hours prior to arrival.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

Two approach channels, the South Harbor Fairway and North Harbor Fairway, are available. The length of the South Harbor Fairway is 4,850 m, the width is 1,852 m, and the water depth is 12 m. Meanwhile, the length of the North Harbor Fairway is 2,222 m, the width is 100 m, the water depth is 10 m, and the maximum vessel size is 14,000 DWT. A lot of anchorages (more than ten) are available at the port.

The tidal range is 1.5 m on average.

ii) Pilot

Pilotage is compulsory for vessels larger than 100 GT.

(b) Terminals

The port is divided up into three terminals; the South Harbor, the Manila International Container Terminal (MICT) and the North Harbor.

Table 6.1-3 Terminals at the Port of Manila

Name of Terminals		Type of Terminal	Total Berth Length (m)	in 2008			
				Shipcalls	Total DWT	Total Cargo (tons)	Container (TEUs)
1	South Harbor						
1.1	Pier 3, Pier 5	Container	825	1,075	19,994,152	4,378,479	743,555
1.2	Pier 9, Pier 13	General Cargo	795	381	2,725,472	900,268	-
1.3	Pier 15	Ro-Ro	366	719	3,342,838	1,550,802	102,923
	Sub-Total		1,986	2,175	26,062,462	6,829,549	846,478
2	MICT	Container	1,300	2,112	38,891,142	16,731,735	1,519,077
3	North Harbor	Multipurpose	6,175	5,088	12,168,793	16,741,867	631,467
	Total		9,461	9,375	77,122,397	40,303,151	2,997,022

Source: Questionnaire

<<South Harbor>>

Outline

South Harbor is situated on the south of the Port of Manila, and divided up into 3 areas; the container terminal with Pier 3 and Pier 5, the general cargo terminal with Pier 9 and Pier 13, and the Ro-Ro terminal with Pier 15.

The South Harbor has been operated by ATI (Asian Terminals Incorporated) since 1998 under the management of the Port Management Office-South Harbor of PPA.

［Container Terminal（Pier 3, Pier 5）］

Container Throughput

Container throughput in 2008 was 743,555 TEUs, a decrease of 3.3 % compared to the throughput in 2007.

Table 6.1-4 Container Throughput at the Container Terminal of South Harbor

Name of Network Port		Port of Manila			
Name of Terminal		Pier 3 & Pier 5 of South Harbor			
Type of Terminal		Container Terminal			
Container Throughput		Year 2008		Year 2007	
	Total TEUs	743,555		768,632	
	Total Boxes				
	Total Tonnage (tons)	4,377,595		5,164,898	
	Landed Containers TEUs	Total TEUs	396,186	Total TEUs	436,436
		Laden TEUs	395,155	Laden TEUs	433,713
		Empty TEUs	1,031	Empty TEUs	2,723
	Imported Containers	Total TEUs	395,990	Total TEUs	436,436
		Laden TEUs	394,959	Laden TEUs	433,713
		Empty TEUs	1,031	Empty TEUs	2,723
	Domestic Containers	Total TEUs	196	Total TEUs	0
		Laden TEUs	196	Laden TEUs	0
		Empty TEUs	0	Empty TEUs	0
	Shipped Containers TEUs	Total TEUs	347,369	Total TEUs	332,196
		Laden TEUs	50,051	Laden TEUs	73,164
		Empty TEUs	297,318	Empty TEUs	259,032
	Exported Containers	Total TEUs	346,994	Total TEUs	332,196
		Laden TEUs	49,676	Laden TEUs	73,164
		Empty TEUs	297,318	Empty TEUs	259,032
	Domestic Containers	Total TEUs	375	Total TEUs	0
		Laden TEUs	375	Laden TEUs	0
		Empty TEUs	0	Empty TEUs	0
	Transshipment Ratio				

Source: Questionnaire

Facilities

The container terminal has 2 berths, a total quay length of 825 m, and the water depth is 12 m. The annual container handling capacity is 780,000 TEUs.

Seven quay-side gantry cranes (lifting capacity: 40 tons and outreach: 40 m) are installed. And 19 transfer cranes, 3 reach stackers and 10 top/side lifters are used. These equipment are owned by ATI.

The total area is 16 ha. The number of ground slots is 5,490 TEUs (for laden containers: 2,848 TEUs, for empty containers: 2,642 TEUs) . 232 reefer plugs are installed.

Operation

The gross and net productivity of the quay-side gantry cranes are 25 and 26 moves/hour/crane respectively. The berth productivity is 40 - 45 moves/hour/berth.

Stevedoring services are available 24 hours a day in two shifts. And there are 8 gates available around the clock.

[General Cargo Terminal (Pier 9, Pier 13)]

Pier 9 and Pier 13 are used for general cargo handling. There are 12 berths, a total quay length of 795 m, and the water depth is 7 - 9 m.

The cargo throughput in 2008 was about 900 thousand tons, an increase of 14 % compared to the throughput in 2007.

[Ro-Ro Terminal (pier 15)]

Pier 15 is used for a Ro-Ro Terminal. It has 5 berths, a total quay length of 366 m, and the water depth is 10.7 m.

The cargo throughput in 2008 was about 1.55 million tons; most of the cargoes (1.54 million tons) were containers. The container throughput in 2008 was 102,923 TEUs, a decrease of 8 % compared to the container throughput in 2007.

<<MICT (Manila International Container Terminal)>>

MICT is situated between the South Harbor and North Harbor, at 14^{o} 33' 25"N and 120^{o} 55' 45"E. It is the biggest container terminal and mainly handles export and import containers.

MICT has been operated by ICTSI (International Container Terminal Services, Inc.) since 1988 under the management of the MICT Field office of PPA.

Cargo Throughput

The cargo throughput in 2008 was 16,731,735 tons, comprised of 5,194 tons of general cargoes and 16,726,541 tons of containers, i.e. containers accounted for more than 99.9 % of the total. Table 6.1-5 shows container throughput in 2008 and 2007.

Table 6.1-5 Container Throughput at MICT

Name of Network Port		Port of Manila			
Name of Terminal		MICT			
Type of Terminal		Container Terminal			
Container Throughput		Year 2008		Year 2007	
	Total TEUs	1,519,077		1,371,731	
	Total Boxes				
	Total Tonnage (tons)	16,726,541		15,253,114	
	Landed Containers TEUs	Total TEUs	733,307	Total TEUs	659,512
		Laden TEUs	712,585	Laden TEUs	637,881
		Empty TEUs	20,722	Empty TEUs	21,631
	Imported Containers	Total TEUs	708,441	Total TEUs	653,938
		Laden TEUs	696,760	Laden TEUs	634,410
		Empty TEUs	11,681	Empty TEUs	19,528
	Domestic Containers	Total TEUs	24,866	Total TEUs	5,574
		Laden TEUs	15,825	Laden TEUs	3,471
		Empty TEUs	9,041	Empty TEUs	2,103
	Shipped Containers TEUs	Total TEUs	785,770	Total TEUs	712,219
		Laden TEUs	462,900	Laden TEUs	436,260
		Empty TEUs	322,870	Empty TEUs	275,959
	Exported Containers	Total TEUs	744,844	Total TEUs	703,502
		Laden TEUs	433,979	Laden TEUs	429,949
		Empty TEUs	310,865	Empty TEUs	273,553
	Domestic Containers	Total TEUs	40,926	Total TEUs	8,717
		Laden TEUs	28,921	Laden TEUs	6,311
		Empty TEUs	12,005	Empty TEUs	2,406
	Transshipment Ratio				

Source: Questionnaire

Facilities

The terminal has 5 berths, a total quay length of 1,300 m, and the water depth is 12 m. The annual container handling capacity is 1,500,000 TEUs.

Ten quay-side gantry cranes (lifting capacity: 40 tons and outreach: 44 m) are installed. And 32 transfer cranes, 14 reach stackers and 51 top/side lifters are used.

The total area is 75.4 ha, of which 37 ha is used for the container yard. The number of ground slots is 9,478 TEUs and the storage capacity is 31,626 TEUs. 972 reefer plugs are installed.

<<North Harbor>>

North Harbor is situated in the north part of the Port of Manila. It is a multipurpose terminal, handling mainly domestic cargoes.

Cargo Throughput

The cargo throughput in 2008 was 16,741,867 tons, comprised of 3,397,386 tons general cargoes, 2,273,739 tons of bulk cargoes and 11,070,742 tons (631,467 TEUs) of containers.

Facilities

The terminal has 68 berths, a total quay length of 5,200 m, and the water depth is 5 - 6 m. Quay-side gantry cranes are not installed. The total area is 54 ha, of which 9.7 ha is used for the container yard.

Improvement Project

An improvement project of the North Harbor is being carried out by PPA. The total budget for the project cost is estimated at PHP 20 billion.

(4) Landside Transportation

The port is connected to the north and the south expressways through major road networks. And the Pasig River Waterways are available for inland waterway transport. But railway is not applicable.

6.2 Batangas Port

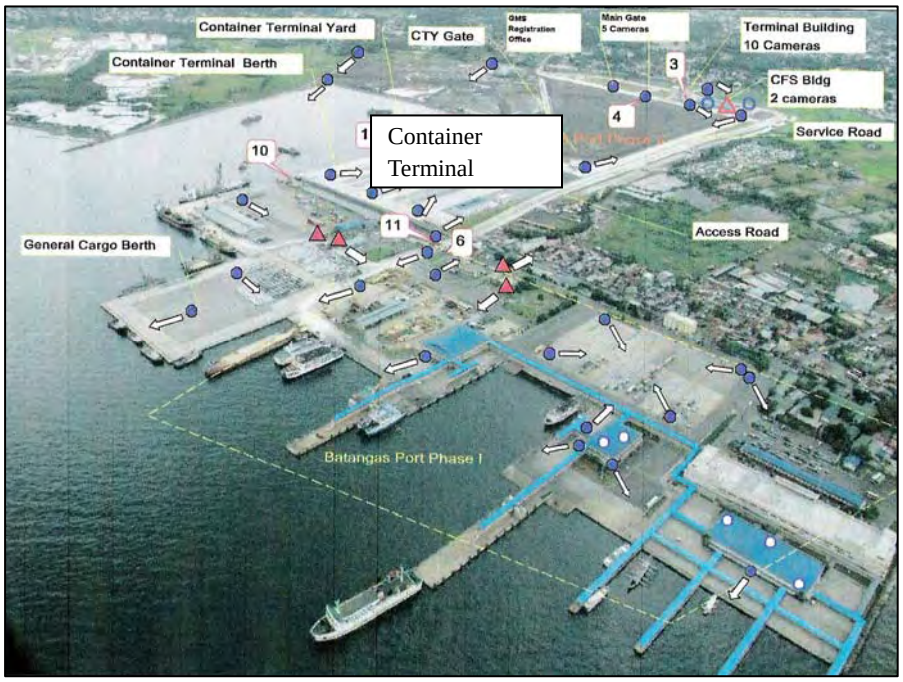
(1) Outline of the Port

(a) Location and Roles

Port of Batangas is located in the south of Luzon Island at 13° 45'N and 121° 02'E, opposite the north shore of Mindoro Island, 110 km south of Manila. The hinterland is mainly in the area called CALABARZON (Cavite, Laguna, Batangas, Rizal and Quezon Provinces).

With the completion of the Batangas Port Development Project Phase I and Phase II, the port is expected to complement the Port of Manila.

Figure 6.2-1 Location of Batangas Port



Source: Port of Batangas

Figure 6.2-2 Terminal Layout

(b) Operation and Management

Port of Batangas is under the management of the Port Management Office-Batangas in the Port District Office-Southern Luzon of the Philippine Ports Authority (PPA).

(2) Use of the Port

(a) Cargo Throughput

The annual cargo throughput at the Port of Batangas was 606 thousand tons in 2008.

Table 6.2-1 Annual Cargo Throughput at the Port of Batangas

(Unit: Metric Ton)

	Break Bulk	Bulk	Container	Total	Container (TEU)
International	280,090	139,946	90	420,126	9
Export	1,803	49,399	0	51,202	0
Import	278,287	90,547	90	368,924	9
Domestic	66,919	111,033	8,548	186,500	488
Outbound	50,888	7,865	4,682	63,435	232
Inbound	16,031	103,168	3,866	123,065	256
Total	347,009	250,979	8,638	606,626	497

Source: Questionnaire

(b) Ship calls

A total of 26,991 ships (155 international and 26,836 domestic ships) entered the port in 2008. The number of ship calls is almost the same compared to the number in 2007.

Table 6.2-2 Ship calls at the Port of Batangas in 2008 and 2007

	2008			2007		
	Ro-Ro	Non Ro-Ro	Total	Ro-Ro	Non Ro-Ro	Total
Foreign	0	155	155	0	152	152
Domestic	13,129	13,707	26,836	13,027	12,481	25,508
Total	13,129	13,707	26,991	13,027	12,633	25,660

Source: Questionnaire

(c) Port Procedures

Permission to enter the port is under the control of PPA. Application for berths must be made 24 hours prior to arrival for regular callers and 36 hours prior to arrival for trampers.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The width of the approach channel is 350 m, and the diameter of the turning basin is 400 m. VTMS (Vessel Traffic Management System) is installed supported by 4 radio stations, covering the whole area of Batangas Bay. The anchorage area is 0.37 km from the shoreline, southwest of the piers with the depth of 27.4 to 32.9 m.

The tidal range is 1.8 m on average.

ii) Pilot

Pilotage is compulsory for vessels larger than 100 GT. Pilots belong to the Batangas Harbor Pilots Association of Batangas City.

(b) Terminals

The Port of Batangas was improved and developed through the Batangas Port Development Project Phase I and Phase II:

Phase I

Based on the 1981 Feasibility Study conducted by JICA, Phase I Project was implemented. Phase I included the rehabilitation and development of the Ro-Ro/Ferry terminal, the multipurpose terminal and the domestic general cargo berth. The Phase I Project covering an area of 22 ha was completed in 1999.

Phase II

Phase II Project, covering an area of 128 ha, was commenced in 2002, and the international container terminal, whose annual capacity is 400,000 TEUs, was developed in 2005.

Now there are five terminals as shown inTable 6.2-3.

Table 6.2-3 Terminals at the Port of Batangas

Terminal	Management	Quay		Cargo Throughput in 2008 (ton)
		Length (m)	Water Depth (m)	
Container Terminal	PPA	450	13	8,638
International Break Bulk Berth		185	10.5	597,988
Multipurpose Terminal		230	12	
Domestic General Cargo Terminal		470	7.3	
Ro-Ro/Ferry Terminal		1,354	4 - 5	
Total		2,689		606,626

Source: Brochure of the Port of Batangas

[Container Terminal]

Container Throughput

Container throughput was 572 TEUs in 2007 and 497 in 2008, still staying at a low level.

Table 6.2-4 Container Throughput at the Container Terminal

	Year 2008		Year 2007	
Total TEUs	497		572	
Total Boxes				
Total Tonnage (tons)	8,638		8,160	
Landed Containers TEUs	Total TEUs	265	Total TEUs	293
	Laden TEUs	212	Laden TEUs	231
	Empty TEUs	53	Empty TEUs	62
Imported Containers	Total TEUs	9	Total TEUs	21
	Laden TEUs	5	Laden TEUs	19
	Empty TEUs	4	Empty TEUs	2
Domestic Containers	Total TEUs	256	Total TEUs	272
	Laden TEUs	207	Laden TEUs	212
	Empty TEUs	49	Empty TEUs	60
Shipped Containers TEUs	Total TEUs	232	Total TEUs	279
	Laden TEUs	226	Laden TEUs	265
	Empty TEUs	6	Empty TEUs	14
Exported Containers	Total TEUs	0	Total TEUs	0
	Laden TEUs	0	Laden TEUs	0
	Empty TEUs	0	Empty TEUs	0
Domestic Containers	Total TEUs	232	Total TEUs	279
	Laden TEUs	226	Laden TEUs	265
	Empty TEUs	6	Empty TEUs	14
Transshipment Ratio				

Source: Questionnaire

Facilities

The container terminal has 2 berths, a total quay length of 450 m, and the water depth is 13 m. The annual container handling capacity is 400,000 TEUs.

Two quay-side gantry cranes (lifting capacity: 51 tons and outreach: 42.8 m, applicable to 17 rows) and 4 transfer cranes are installed. 480 TEUs of refrigerated containers can be stored.

The area of 6.6 ha is used for the container yard. The number of ground slots is 7,152 TEUs.

Operation

The terminal is operated by ATI (Asian Terminals Incorporated) under a one year contract.

[Ro-Ro and Ferry Terminal]

The Port of Batangas also plays a role as a gateway to the islands of MIMAROPA (Mindolo, Marinduque, Romblon and Palawan), the Viasayas and Mindanao.

There are 6 Ro-Ro berths and 8 ferry berths, and more than 4 million passengers used the terminal in 2008. Cargo throughput by Ro-Ro vessels was 9,220 tons in 2008.

Table 6.2-5 Ro-Ro and Ferry Terminal

	Berth			Destination	Number of Passengers in 2008
	Number	Length	Water Depth		
Ro-Ro	6	680 m	5 m	Calapan (Mindolo), Odiongan/Romblon, etc.	2,958,524
Ferry	8	674 m	4 m	Calapan, etc.	1,332,097
Total	14	1,354 m			4,290,621

Source: PMO, PPH HP

(4) Landside Transportation

An access road to a tollway with 3 lanes was completed in 2007. The port will be connected to South Luzon Expressway from Manila via the tollway after the completion of the remaining 7.8 km section.

6.3 Subic Port

(1) Outline of the Port

(a) Location and Roles

Subic Port is located on the west coast of central Luzon in the Subic Bay shielded from the South China Sea by the Redondo Peninsula. (14° 48'12" North, 120 ° 15'55" East)

Subic Bay was formerly used for a US Naval base until its conversion in 1992 just after the withdrawal of US Navy to Subic Bay Freeport in accordance with the Bases Conversion and Development Act. The Subic Special Economic Zone (SSEZ) was established in Subic Freeport which has a seaport and an airport with incentives for inducing new industries. Currently industries such as electronics and shipbuilding are located at SSEZ.

The Philippine government promotes the economic development of the Subic –Clark Area and is developing new container terminals in Subic Port and Subic-Tarlac-Clark Expressway, which is already in operation.

Figure 6.3-1 Location of Subic Port

Figure 6.3-2 Layout of Terminals in Subic Port

(b) Operation and Management

Subic Port is administrated by the Subic Bay Metropolitan Authority (SBMA). SBMA was established to attract local and foreign investment and to establish and regulate the operation and maintainance of utilities, services, and infrastructure. SBMA is autonomous in operations within SSEZ and its organization consists of various departments including Financial Planning&Budget, Planning&Development, Seaport Department, Airport, Management Information System, Locator Registration&Licensing, Law Enforcement, Fire Department, Market Research, Ecology Center. Among those departments, Seaport Department is in charge of port administration.

SBMA is under the jurisdiction of the Bases Conversion and Development Authority, while the Philippine Ports Authority and Cebu Ports Authority are under the jurisdiction of Department of

Transportation and Communications.

(2) Use of the Port

(a) Cargo Throughput

The cargo throughput of Subic Port in 2008 was as shown in Table 2.1-1.

Table 6.3-1 Cargo Throughput of Subic Port in 2008

Container (TEU)	Dry Bulk/ Break Bulk (tons)	Liquid (litters)	Total (tons)
29,370	1,558,367	1,283,113,304	3,135,180

Note: Total cargo throughput is estimated with the assumption that 1TEU is equivalent to 10 tons and 1,000 litter is equivalent to 1 ton.

Source: Questionnaire

(b) Ship calls

The number of ships calling Subic Port in 2008 was 1,893 in total. The ship calls by ship type are as shown in Table 6.3-2.

Table 6.3-2 Ship Calls of Subic Port in 2008

	Total	Container	Conventional	Dry Bulk	Tanker	Passenger	RORO	Others
Foreign	1,007	123	373	44	66	11	16	374
Domestic	886	0	177	10	550	1	0	148
Total	1,893	123	550	54	616	12	16	522

Source: : Questionnaire

(c) Port Procedures

The port entry clearance is given by SBMA. Although Subic Port is in a free zone, customs clearance is required when transporting cargo across the boundary of the free zone.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The main approach channel of Subic Port is the Grande Island Channel, 1km long, 800m wide, and 47m to 60m. The channel has no restrictions for ships' entry and needs no maintenance dredging.

Seven anchorages are specified in Subic Bay and even the shallowest anchorage, Zone Foxtret, has s depth of 18m.

ii) Pilot

Pilotage is compulsory for all foreign and domestic ships entering Subic Port which are 500 GT or over. Six pilots and 2 pilot boats are available in the port.

iii) Tugboat Service

Tug services are provided by a private company. Five tug boats are available in Subic Port on average. In case that additional tug boats are needed, tug boats in Makila Port are used.

(b) Terminals

Subic Port has container terminals (NCT-1 and NCT-2), multipupose terminals (Marine Terminal, Boton Terminal), a dry bulk terminal (Layte Terminal), and a liquid terminal (POL Pier). The function, size, and performances of those facilities are as shown in Table 6.3-3.

NCT-2 is not yet operational as the terminal operator has not been.

Table 6.3-3 Major Terminals in Subic Port

Terminal Name	Function	Administrator	Quay Length(m)	Ship Call	Cargo Throughput (ton)
Alava	Multipurpose	SBMA	701	123	4,539
Bravo	Multipurpose	SBMA	411	65	13,500
Rivela	Multipurpose	SBMA	906	184	28,145
Boton	Multipurpose	SBMA	648	71	326,420
Sattler	Multipurpose	SBMA	180	42	24,882
Marine	Multipurpose	SBMA	764	422	820,731
Layte	Dry Bulk	SBMA	300	42	336,527
Nabasan	Multipurpose	SBMA	180	7	3,623
NCT-1	Container	SBMA	280	83	29,370 (TEU)
NCT-2	Container	SBMA	280	—	—
POLPier	Liquid	SBMA	253	718	1,283,113,304 (litter)

Source: Questionnaire

[New Container Terminal – 1 (NCT-1)]

Outline

NCT-1 is located in the center of Subic Bay and to the west of Subic Airport, handling international containers. The terminal is operated by Subic Bay International Terminal Corporation (SBITC). SBITC is an affiliate of the ICTSI Group.

Container Throughput

Container throughput in 2008 was 29 thousand TEUs, 19 percent less than the previous year.

Table 6.3-4 Container Throughput of NCT-1 in 2007 and 2008

	2008			2007		
	Total	Laden	Empty	Total	Laden	Empty
Inward	15,234	15,138	96	18,544	18,516	28
International	14,984	14,888	96	18,347	18,319	28
Domestic	0	0	0	0	0	0
Outward	14,137	6,047	8,090	17,907	6,442	11,465
International	14,137	6,047	8,090	14,137	6,047	8,090
Domestic	0	0	0	0	0	0
Total	29,370	21,185	8,186	36,451	24,958	11,493
International	29,121	20,935	8,186	32,484	24,366	8,118
Domestic	0	0	0	0	0	0

unit: TEU
Source: Questionnaire

Terminal Facilities

The quay of the terminal has 1 berth and is 280m long and 13m deep with 42m–wide quay side apron, 3.2 ha container yard, and an annual handling capacity of 300 thousand TEUs. The terminal is equipped with 2 post-panamax quayside gantry cranes with a lifting capacity of 40.6 tons and with an outreach of 37m.

The terminal has 82 reefer plugs. The major equipment for cargo handling in the yard is 4 reach stackers and 7 top lifters. NCT-1 was constructed in 2005.

Operation

SBICT, as the terminal operator, provides services such as berthing, stevedoring, stacking export containers, delivering import containers. The land of the container yard is owned by SBMA and leased to SBICT. The quayside cranes and yard equipment are owned by SBMA and SBICT, respectively.

The gross productivity of quayside crane is 25-26moves/hour/crane and the net productivity is 27-29moves/hour/crane.

The cargo handling services are provided 24 hours a day on request, normally with 1 shift from 8:00 to 17:00. One gate with 6 lanes is open around the clock.

[POL Pier]
Outline

POL Pier is located in the northern part of Subic Port and handles petroleum.

Facilities

POL pier is a mooring facility with pier structure that is 253m long and 12.8m deep.

Performance

The cargo throughput was 1,283 million litters in 2008. 718 tankers called the terminal.

(4) Landside Transportation

Two-lane access road links to the terminal and is available 24 hours a day. The distance to the main road in SBMA's premises is 3.2km.

The distance to the gate of the Subic-Clark-Tarlac Expressway is approx.18 km.

6.4 Cebu Port

(1) Outline of the Port

(a) Location and Roles

Cebu Port is located on the east coast of the central area of Cebu Island facing a channel between Cebu Island and Mactan Island. (10° 18' North, 123° 55' East). The Port is the second busiest port in the Philippines and strategically acts as a gateway supporting the economic activities in Cebu Island and Visayas.

Figure 6.4-1 Location of Cebu Port

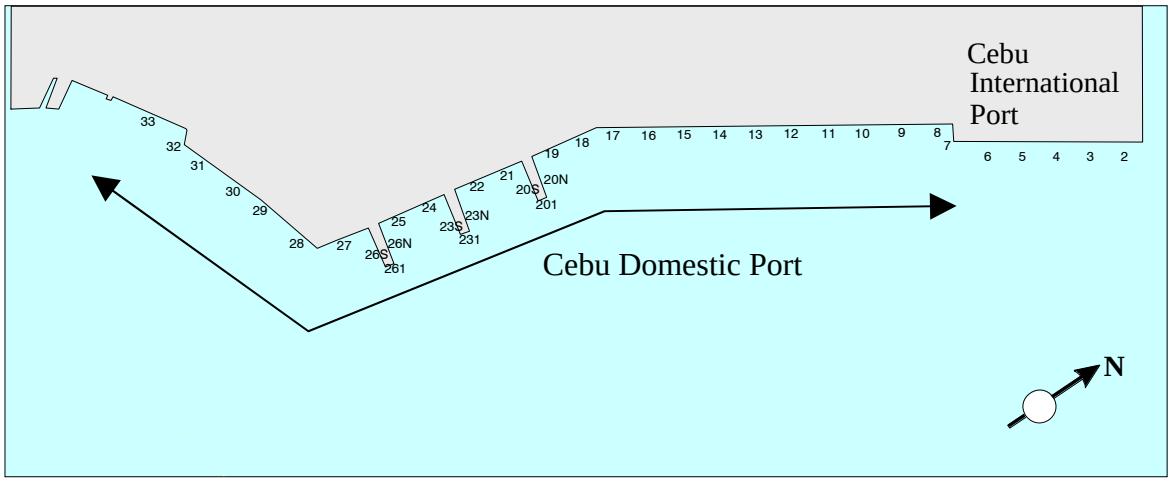


Figure 6.4-2 Layout of Terminals in Cebu Port

(b) Operation and Management

Cebu Port is administrated by the Cebu Port Authority (CPA). CPA was established in accordance with Republic Act 7621 enacted in 1992. After taking over the tasks from the Philippine Ports Authority, CPA started full operation in 1996. In addition to Cebu Port, CPA administrate all the ports in the Province of Cebu

(2) Use of the Port

(a) Cargo Throughput

The cargo throughput of Cebu Port in 2004 through 2008 is as shown in Table 6.4.-1.

Table 6.4-1 Cargo Throughput of Cebu Port in 2004 through 2008

		2004	2005	2006	2007	2008
Container	Int'l	120,281	128,802	146,459	169,190	157,633
(TEUs)	Domestic	332,548	345,107	316,415	371,486	338,196
	Total	452,829	473,909	462,874	540,676	495,829
Non-container	Int'l	4,160,952	4,703,955	5,317,656	5,680,926	5,425,518
(tons)	Domestic	16,056,216	15,151,748	15,157,883	16,315,629	15,964,995
	Total	20,217,168	19,855,703	20,475,539	21,996,555	21,390,513

Source: CPA

(b) Ship calls

The number of ships calling Cebu Port from 2004 through 2008 are shown in Table 6.4-2.

Table 6.4-2 Ship Calls of Cebu Port in 2004 through 2008

	2004	2005	2006	2007	2008
Foreign	793	714	768	806	757
Domestic	85,181	79,687	68,096	68,996	68,959
Total	85,974	80,401	68,864	69,802	69,716

Source: CPA

(c) Port Procedures

The port entry clearance is given by CPA.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The approach channels of Cebu Port are the South Approach Channel and the Northeastern Approach Channel. The Northeastern Approach Channel is retricted by bridges connecting between Cebu Island and Mactan Island and the clearance under the bridge is 25m.

The tidal range is 1.5m. No maintenance dredging is needed.

ii) Pilot

Pilotage is compulsory for the ships entering Cebu Port and provided by the pilots belonging to Cebu Pilots Association. Ten pilots are available.

(b) Terminals

Cebu Port consists of Cebu International Port (CIP) and Cebu Domestic Port. The function, size, and performances of those facilities are as shown in Table 6.4-3.

Table 6.4-3 Major Terminals in Cebu Port

Terminal Name	Function	Administrator	Quay Length(m)
Cebu International Port	Multipurpose	CPA(MO-1)	690
Cebu Domestic Port	Multipurpose	CPA(MO-2,3,4,5)	3,838
Total			4,528

Source: CPA

[Cebu International Port (CIP)]

Outline

CIP is located in the nortern part of Cebu Port and handles international cargo. The yards are separated into a container yard and a yard for non-container cargo. The quay in front of the

container yard is sometimes used for loading/discharging non-container cargo. The terminal is operated by Oriental Port and Allied Services Corp. (OPASCOR), a cargo handler commissioned by CPA.

Facilities

The quay of the terminal is 690m long and 8.5m deep. The terminal has an area of 14ha.

The container yard has 594 ground slots of which 36 slots are for reefer containers. The terminal is equipped with 3 quayside gantry cranes and RTGs as yard operatio equipment. Quayside gantry cranes and yard operation equipment are owned by OPASCOR.

Landside Transportation

A main road lies just behind the terminal and passable 24hours. As there are no railway links, all the cargo is transported by trucks.

Documentation

One-Stop Shop is established and the officers of CPA's Management Office, customs, Philippine Export Zone Authority (PEZA), and OPASCOR are stationed in the same building. A bank is also situated in the same building.

[Cebu Domestic Port]
Outline

Cebu Domestic Port is located in the southern part of Cebu Port and handles break bulk cargo, containers, and passengers.

Facilities

The quay of the terminal is 3,838m long in total and 6.6m deep. The terminal has an area of 21ha and 5 passenger terminal sheds.

(4) Future Plan

New Cebu Port is planned to be developed in Consolacion/Liloan region, 10km northward from existing Cebu Port. The new port is planned to have international container and multipurpose terminals.

6.5 Iloilo Port

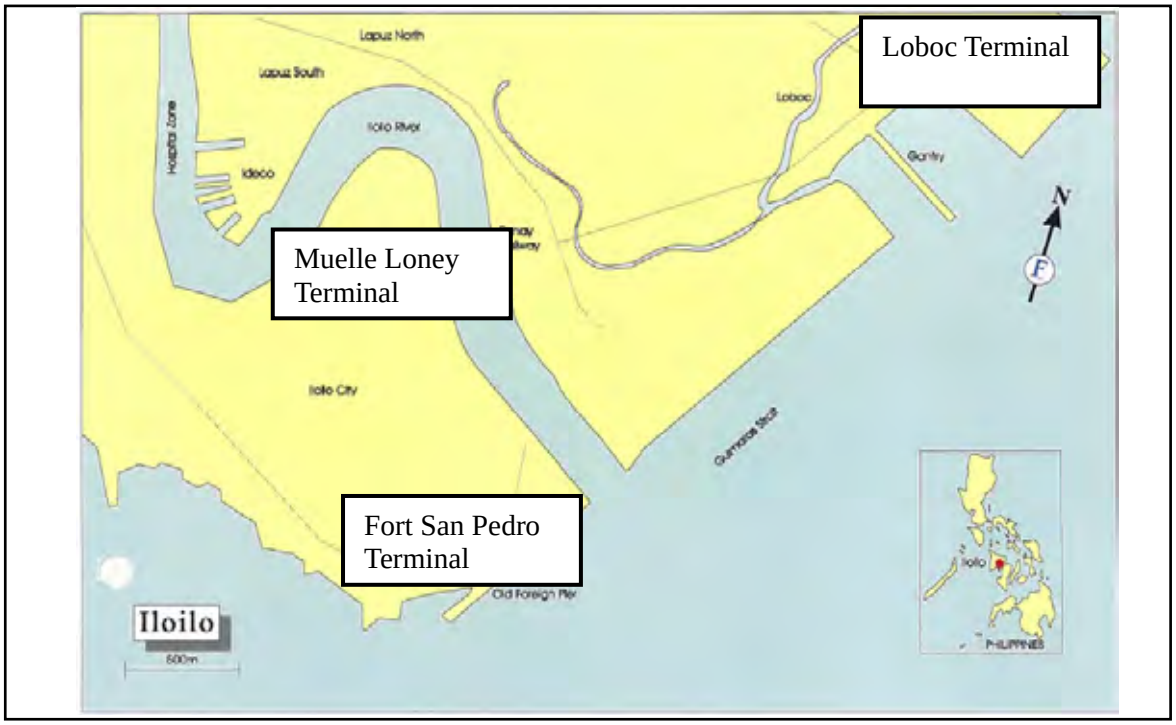
(1) Outline of the Port

(a) Location and Roles

Port of Iloilo is located on the south-east coast of Panay Island, at 10° 41'N and 122° 35'E, opposite Guimaras Island. The port is a regional base port, supporting the economic activities of both Panay Island and Guimaras Island.

There are three terminals: Loboc, Fort San Pedro and Muelle Loney, and these terminals are located separately.

Figure 6.5-1 Location of Iloilo Port



Source: PMO-Iloilo

Figure 6.5-2 Terminal Layout

(b) Operation and Management

Port of Iloilo is under the management of the Port Management Office-Iloilo in the Port District Office-Visayas of the Philippine Ports Authority (PPA).

(2) Use of the Port

(a) Cargo Throughput

The annual cargo throughput at the Port of Iloilo was about 2.2 million tons in 2008.

Table 6.5-1 Annual Cargo Throughput at the Port of Iloilo

(Unit: Metric Ton)

	Break Bulk	Bulk	Container	Total	Container (TEU)
International	45,257	238,172	0	283,429	0
Export	0	8,080	0	8,080	0
Import	45,257	230,092	0	275,349	0
Domestic	972,917	0	980,443	1,953,360	81,936
Outbound	289,143	0	259,974	549,117	40,307
Inbound	683,774	0	720,469	1,404,243	41,629
Total	1,018,174	238,172	980,443	2,236,789	81,936

Source: Questionnaire

(b) Ship Calls

A total of 9,150 ships (38 international and 9,150 domestic ships) entered the port in 2008. The number of ship calls is almost the same compared to the number in 2007 (29 international and 10,023 domestic ships: Total 10,052 ships).

Table 6.5-2 Ship calls at the Port of Iloilo in 2008 and 2007

	Loboc	Fort San Pedro	Muelle Loney		Total
	(Non Ro-Ro)	(Non Ro-Ro)	(Non Ro-Ro)	Ro-Ro	
Foreign	38	0	0	0	38
Domestic	651	1,145	7,012	304	9,112
Total	689	1,145	7,012	304	9,150

Source: Questionnaire

(c) Port Procedures

Permission to enter the port is under the control of PPA. Application for berths must be made 24 hours prior to arrival for regular callers and 36 hours prior to arrival for trampers.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

Vessels can enter the Port of Iloilo through the approach channel called Bondolan Point. The length is 1 mile and the width is 1,400 m. The planned depth is 22 m at MLLW, but the present depth is 8.7 m MLLW. The anchorage is designated at 10o 41’ 49”N and 122o 35’ 48”E. The water depth of the anchorage is 22 m below MLLW.

The tidal range is 2.5 m on average.

ii) Pilot

Pilotage is compulsory for vessels larger than 100 GT. Iloilo Harbor Pilots Association has 6 pilots and 3 pilot boats.

(b) Terminals

There are three terminals: Loboc, Fort San Pedro and Muelle Loney, and these terminals are located separately.

Table 6.5-3 Terminals at the Port of Iloilo

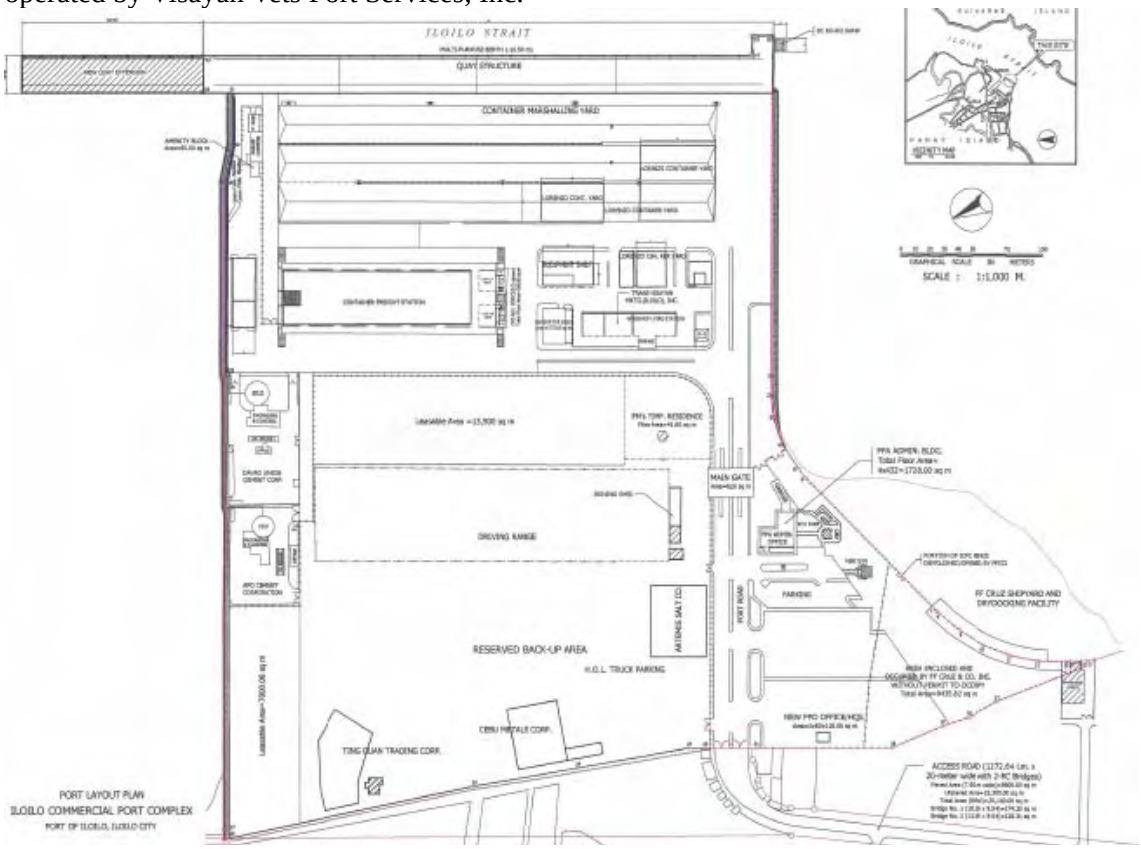
Terminal	Application	Management	Quay		Cargo Throughput in 2008 (ton)
			Length (m)	Water Depth (m)	
Loboc	Multipurpose	PMO-Iloilo, PDO-Visayas of PPA	526	10.5	1,006,916
Fort San Pedro	Multipurpose		634	6.0	791,085
Muelle Loney	Conventional		3,000	4.0	438,788
Total			4,160	9,150	2,236,789

Source: Questionnaire

[Loboc Terminal]

Loboc Terminal is situated in the north part of the Port of Iloilo. It is a multipurpose terminal called Iloilo Commercial Port Complex, and container, breakbulk and bulk cargoes are handled.

The terminal is managed by Terminal Management Office-Loboc of PMO-Iloilo, and operated by Visayan Vets Port Services, Inc.



Source: PMO-Iloilo

Figure 6.5-3 Layout of Loboc Terminal

Cargo Throughput

Cargo throughput in 2008 was around 1 million tons, including 42,142 TEUs (426,407 tons) of containers.

Table 6.5-4 Cargo Throughput at Loboc Terminal in 2008

(Unit: Metric Ton)

	Break Bulk	Bulk	Container	Total	Container (TEU)
International	45,257	238,172	0	283,429	0
Export	0	8,080	0	8,080	0
Import	45,257	230,092	0	275,349	0
Domestic	297,080	0	426,407	723,487	42,142
Outbound	51,527	0	72,597	124,124	21,360
Inbound	245,553	0	353,810	599,363	20,782
Total	342,337	238,172	426,407	1,006,916	42,142

Source: Questionnaire

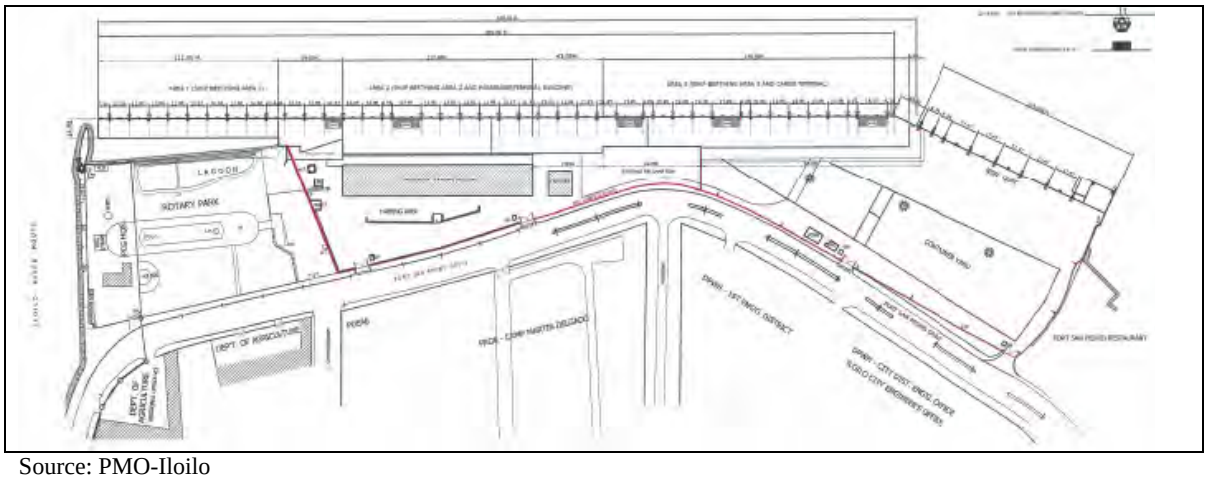
Facilities

The length of the terminal is 526 m, the width of the apron is 26.26 m and the water depth is 10.5 m. The area of the yard is 2.75 ha. Quay-side gantry cranes are not installed.

[Fort San Pedro Terminal]

Fort San Pedro Terminal is situated in the south part of the Port of Iloilo. It is a multipurpose terminal, and container, breakbulk and bulk cargoes are handled.

The terminal is managed by Terminal Management Office-Fort San Pedro of PMO-Iloilo, and operated by Iloilo Integrated Arrastre Services Corporation.



Source: PMO-Iloilo

Figure 6.5-4 Layout of Fort San Pedro Terminal

Cargo Throughput

Only domestic cargoes are handled at Fort San Pedro Terminal. Cargo throughput in 2008 was about 367 thousand tons, including 39,794 TEUs (554,036 tons) containers.

Table 6.5-5 Cargo Throughput at Fort San Pedro Terminal in 2008

(Unit: Metric Ton)

	Break Bulk	Bulk	Container	Total	Container (TEU)
Domestic	237,049	0	554,036	791,085	39,794
Outbound	89,055	0	187,377	276,432	18,947
Inbound	147,994	0	366,659	514,653	20,847

Source: Questionnaire

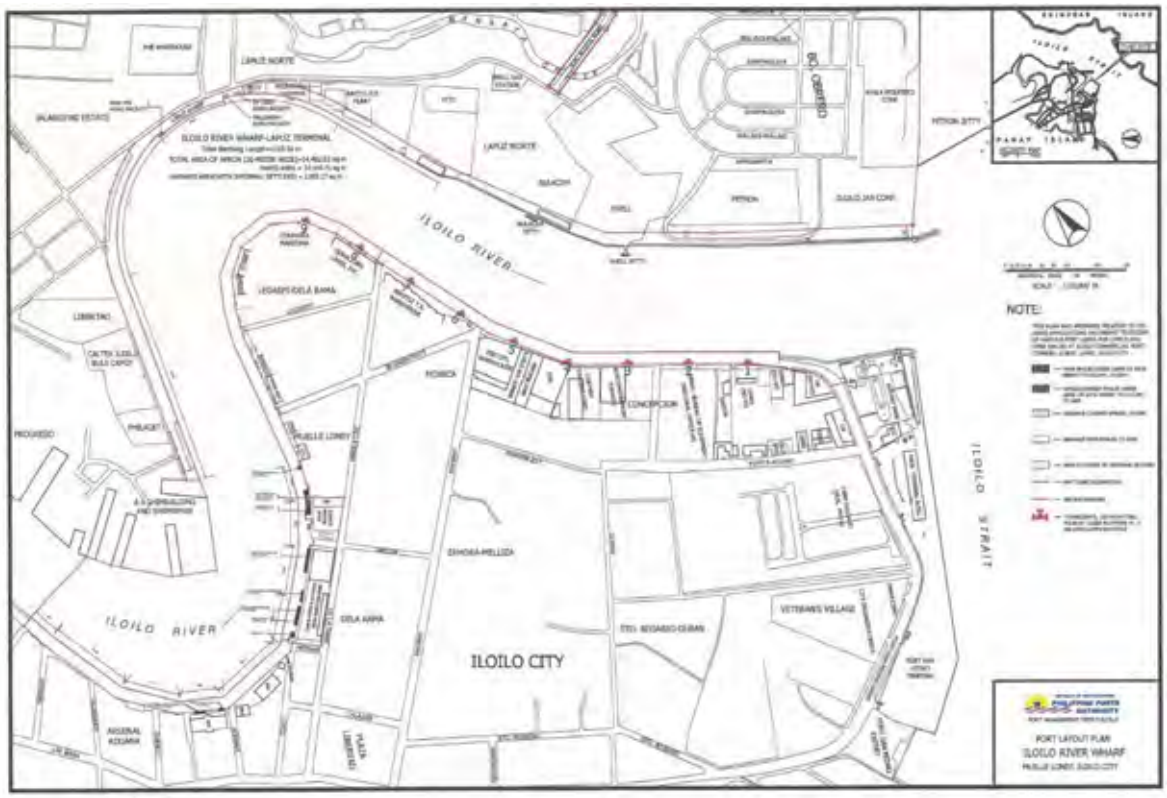
Facilities

The length of the terminal is 634 m, the width of the apron is 20 m and the water depth is 6 m. The area of the yard is 1.7 ha. Quay-side gantry cranes are not installed.

[Muelle Loney Terminal]

Muelle Loney Terminal is situated in the center part of the Port of Iloilo, along the right bank of the Iloilo River. Containers have not been handled since 2005.

The terminal is managed by the Terminal Management Office-Muelle Loney of PMO-Iloilo, and operated by Prudential Customers Brokerage Services, Inc.



Source: PMO-Iloilo

Figure 6.5-5 Layout of Muelle Loney Terminal

Cargo Throughput

Only domestic breakbulk cargoes are handled at Muelle Loney Terminal. Cargo throughput in 2008 was about 439 thousand tons.

Facilities

The length of the terminal is 3,000 m and the water depth is 4 m. Quay-side gantry cranes are not installed.

(4) Landside Transportation

An access road with one lane is available to the port 24 hours a day. Trucks and trailers are used for the landside transportation. Railway is not applicable.

6.6 Cagayan de Oro Port

(1) Outline of the Port

(a) Location and Roles

Cagayan de Oro Port is located in the northern area of Mindanao Island facing the Macajalar Bay. (08° 32' North, 124° 40' East) The Port is the largest port in northern Mindanao and acts as a gateway and supports the economic activities in Cagayande Oro City and Provinces of Misamis Oriental, Bukidnon, Camiguin, and Agusan del Norte.

Figure 6.6-1 Location of Cagayan de Oro Port

(b) Operation and Management

Cagayan de Oro Port is administrated by PPA-PMO Cagayan de Oro. Cargo handling is implemented by a cargo handling operator (CHO) commisoned by PPA.

(2) Use of the Port

(a) Cargo Throughput

The cargo throughput of Cagayan de Oro in 2008 is shown in Table 6.6-1.

Table 6.6-1 Cargo Throughput of Cagayan de Oro Port in 2008

(unit: tons)

	Container	Break Bulk	Dry Bulk + Liquid	Ro-Ro	Total	Container (TEU)
International	283,293	202,345	231,387	0	717,025	
Export	158,472	48,343	120,808	0	327,623	13,636
Import	124,821	154,002	110,579	0	389,402	12,821
Transshipment	0	0	0	0	0	0
Domestic	1,807,330	816,245	200,626	2,457	2,826,658	123,750
Total	2,090,623	1,018,590	432,013	2,457	3,543,683	150,207

Source: Questionnaire

(b) Ship calls

The number of ships calling Cagayan de Oro Port in 2008 was 2,299 in total of which 154 were by foreign ships and 2,145 were by domestic ships.

(c) Port Procedures

The port entry clearance is given by PPA-PMO Cagayan de Oro which is in charge of harbor master's tasks. The ship or ship agency is requested to notify the harbor master of the estimated time of arrival and the ship particulars in 48 hours and 24 hours is advance of the arrival. The time required for getting clearance is normally 5 to 30 minutes.

One-Stop Services are implemented by establishing unified counter, Port Integrated Clearance Office (CIPO), on the ground floor of the office building of PPA-PMO Cagayan de Oro for the acceptance of paper-based applications. The officers of PPA, the Department of Environment & Natural Resources, plant quarantine, and the Vehicles Agency are stationed in CIPO. As the offices of customs and quarantine are situated nearby, the officers of those authorities are not stationed in CIPO. The office of immigration is situated downtown and away from the port.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

As Cagayan de Oro Port faces the Macajalar Bay which is quite deep, there is no restriction in terms of the depth of approach channel of the port. Although the river mouth of the Cagayan de Oro River exists in the vicinity of the terminal, the port is free from serious sedimentation and does not require maintenance dredging.

Five anchorages are specified and each anchorage has a depth of 60 fathoms (approx. 110m) or more.

ii) Pilot

Pilotage is compulsory for all the foreign ships and domestic ships of 500 GT or over. Piotage is provided by a private organization, Cagayan Harbor Pilots Inc.

iii) Tugboat Service

Tug services are provided by two private companies, Marcoso Tug Services Inc. and Harbor Star Shipping Services Inc.

(b) Terminals

Cagayan de Oro Port consists of one multipurpose terminal which has consecutive berths with a total length of 1,152m.

Table 6.6-2 Major Terminals in Cagayan de Oro Port

Terminal Name	Function	Cargo Handling Operator	Quay Length(m)	Ship Call	Cargo Throughput (ton)
Cagayan de Oro	Multipurpose	Oroport	1,152	2,299	3,543,139

Source: Questionnaire

[Cagayan de Oro Terminal]

Outline

Cagayan de Oro Terminal handles container, break bulk, dry bulk, and liquid cargo. Although Ro/Ro ships call the terminal, loading/discharging with roll-on/roll-of operations is not implemented due to lack of appropriate ramps. The quay is not divided into the sections dedicated to the respective package types of cargo nor international/domestic.

Container Throughput

Container throughput in 2008 was 150 thousand TEUs (2.1 milion tons), an increase of approx. 50% over the previous year in both imports and exports of laden containers. Meanwhile, the outward and inward domestic container throughput decreased by 17 percent and 10 percent, repectively. According to PPA-PMO Cagayan de Oro, Mindanao Container Terminal (MCT) located on the opposite coast of the same bay of Macajalar attracts containers, but might not be able to satisfy the demand for berth windows required by shipping lines due to the shortage of quay length (currently only 300m), and that may be result in an increase of international containers at Cagaya de Oro Port.

No transshipped container from a foreign ship to another foreign ship is handled at Cagayan de Oro.

Table 6.6-3 Container Throughput of Cagayan de Oro Port in 2007 and 2008

	2008			2007		
	Total	Laden	Empty	Total	Laden	Empty
Inward	73,741	59,188	14,553	80,869	61,215	19,654
International	12,821	10,632	2,189	9,410	7,030	2,380
Domestic	60,920	48,556	12,364	71,459	54,185	17,274
Outward	76,466	63,437	13,029	81,120	70,185	10,935
International	13,636	11,803	1,833	8,794	8,014	780
Domestic	62,830	51,634	11,196	72,326	62,171	10,155
Total	150,207	122,625	27,582	161,989	131,400	30,589
International	26,457	22,435	4,022	18,204	15,044	3,160
Domestic	123,750	100,190	23,560	143,785	116,356	27,429

Unit : TEU
Source: Questionnaire

※ Performances of Mindanao Container Terminal (MCT)
MCT is a container terminal administrated by Phividec Industrial Authority (PIA).
MCT started operation as a container terminal in 2006. The container throughputs in recent years are shown below.

38,000 TEU in 2006
80,000 TEU in 2007
109,000 TEU in 2008 (International : Domestic = 25 % : 75 %)

Non-container Cargo

The major commodities are rice and fertilizer for import; fruit, vegetable, and molasses for export; various general goods for imboud and outbound domestic cargo; grains including corn and molasses for outbound domestic cargo.

Facilities

The quay of the terminals is 1,152m long and 12.3m deep with a quayside apron width of 20m and has a fixed Ro/Ro ramp with a size of 10.5m by 12.5m. The terminal is equipped with a quayside gantry crane with a lifting capacity of 35 tons and an outreach of 11 rows of containers and two mobile cranes with lifting capacities of 25 tons and 45 tons.

The yards of the terminal have an area of 1.7ha in total. The container yard has 612 TEUs of ground slots with a storage capacity of 2,215 TEUs and 126 reefer plugs. The major equipment for yard operation is two transfer cranes and two reach stackers.

The yard area of 2.3ha was reclamated in 2007 and is still unpaved. Storage tanks for molasses with a total capacity of 10,000 tons are installed next to this yard and connected to the quay with pipelines. The molasses produced in the hinterland of the port is stored temporary in the

tanks and mainly transported to the domestic markets.

The CFS installed in the terminals has partly been converted into a cold storage. Cartons of bananas and pinapples on pallets are temporary stored in the cold storage, loaded on cold storage ships on pallets, and exported to foreign countries including Japan and the Middle East.

In addition to the CFS, one of three transit sheds was converted to a new passenger terminal to replace the passenger terminal which was both Old and small. This conversion for passenger terminal was implemented with PPA's own budget.

Source: PPA-PMO Cagayan de Oro

Figure 6.6-2 Layout of Cagayan de Oro Terminal

Operation

Oroport provides cargohandling services as a cargo handling operator in operations in ship-to-shore, yards, and transit sheds.

The land of the terminal, yards, and transit sheds are owned by PPA. The quayside gantry cranes, yard equipment, cold storage, weighing bridges, hoppers used for packing bulk cargo into bags are owned by Oroport. The storage tanks for molasses are also owned by a private company.

The gross productivity of the quayside crane is 21moves/hour/crane and the net productivity is 17moves/hour/crane. The cargo handling services are provided 24 hours a day using 3 shifts.

The terminal has 5 gates. Gate1 is for passengers, Gate2 is for trucks, Gate3 is for accessing the port management office and PICO, Gate4 is for non-cargo vehicles, and Gate5 is equipped with weighing bridges and used for trucks. Gate4 acts as the Access Control Center equipped with a computer system to centralize the processing of security for non-cargo vehicles and pedestrians/port users other than passengers.

(4) Landside Transportation

Two-lane access roads are connected to the terminal and is available 24 hours a day. Main roads are 4km away from the port. The traffic through the access road is currently restricted due to the renovation of a market situated along the access road. The vehicles to/from the port are forced to make detours.

(5) Future Plan

PPA plans to expand the existing terminal southward.

Figure 6.6-3 Accsess Road and Planned Area for Expansion

6.7 Davao Port

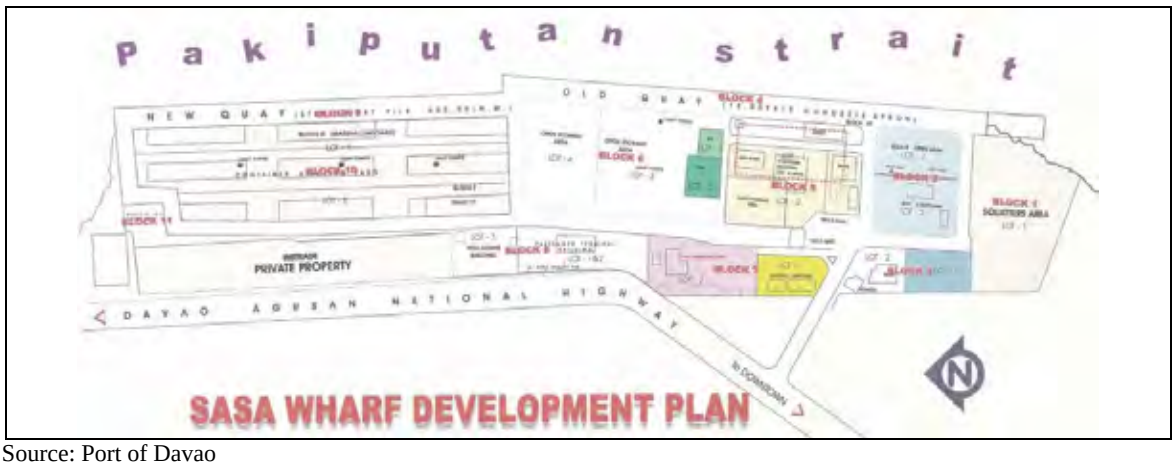
(1) Outline of the Port

(a) Location and Roles

Port of Davao is located on the south-east coast of Mindanao Island, at 7° 07'N and 125° 40'E, opposite Samal Island across Pakiputan Strait. The port is the largest port in Mindanao Island, supporting the economic activities of Southern Mindanao.

The wharf of the port is called Sasa Wharf, comprised of the Old Quay and New Quay.

Figure 6.7-1 Location of Davao Port



Source: Port of Davao

Figure 6.7-2 Terminal Layout

(b) Operation and Management

Port of Davao is under the management of the Port Management Office-Davao in the Port District Office-Southern Mindanao of the Philippine Ports Authority (PPA).

(2) Use of the Port

(a) Cargo Throughput

The annual cargo throughput at the Port of Davao was about 3.6 million tons in 2008.

Table 6.7-1 Annual Cargo Throughput at the Port of Davao

(Unit: Metric Ton)

	Break Bulk	Bulk	Container	Total	Container (TEU)
International	6,663	93,738	1,906,277	2,006,678	237,107
Export	0	15,300	1,264,314	1,279,614	121,798
Import	6,663	78,438	641,963	727,064	115,309
Domestic	127,368	0	1,463,350	1,590,718	111,899
Outbound	27,465	0	624,911	652,376	51,974
Inbound	99,903	0	838,439	938,342	59,925
Total	134,031	93,738	3,369,627	3,597,396	349,006

Source: Questionnaire

(b) Ship calls

A total of 861 ships (370 international and 491 domestic ships) entered the port in 2008. The number of ship calls is almost the same compared to the number in 2007 (373 international and 538 domestic ships: total 911 ships).

(c) Port Procedures

Permission to enter the port is under the control of PPA. Application for berths must be made 24 hours prior to arrival for regular callers and 36 hours prior to arrival for trampers.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

There are two approach channels available; one is Pakiputan Strait Channel and the other is Pujada Bay Channel.

Pakiputan Strait - Davao City	Length: 2.7 km Width: 370 m (navigable) Planned Depth: 31.1 - 36.6 m Present Depth: 31.1 - 36.6 m Max DWT: 30,000 GRT
Pujada Bay Channel Entrance - Mati. Davao Oriental	Length: 6.7 km Width: 3,000 m (navigable) Planned Depth: 47.5 m Present Depth: max. 155.4 m Max DWT: 150,000 GRT

ii) Pilot

Pilotage is compulsory for vessels larger than 500 GT. Ten pilots belong to the Davao Harbor Pilots Association.

(b) Terminals

The terminal called Sasa Wharf is comprised of two quays; the Old Quay and New Quay. General cargoes are handled mainly at the Old Quay and containers are handled mainly at the New Quay, but the roles of these quays are not divided clearly.

Table 6.7-2 Terminals at the Port of Davao

Terminal	Application	Management	Quay		Cargo Throughput in 2008 (ton)
			Length (m)	Water Depth (m)	
Sasa Wharf		PMO-Davao, PDO- Southern Mindanao of PPA	(1,103)		
Old Quay	Multipurpose		575	9.5–10.0	3,597,396
New Quay	Multipurpose		528	13.0	

Source: Questionnaire

[Sasa Wharf]

Cargo Throughput

Cargo throughput in 2008 was around 3.6 million tons, and containers accounted for 94 % of the total.

Table 6.7-3 Container Throughput at Sasa Wharf

Name of Network Port		Port of Davao			
Name of Terminal		Sasa Wharf			
Type of Terminal		Container Terminal			
Container Throughput		Year 2008		Year 2007	
	Total TEUs	349,006		298,675	
	Total Boxes				
	Total Tonnage (tons)	3,369,627		3,077,182	
	Landed Containers TEUs	Total TEUs	175,234	Total TEUs	150,653
		Laden TEUs	91,005	Laden TEUs	86,174
		Empty TEUs	84,229	Empty TEUs	64,479
	Imported Containers	Total TEUs	115,309	Total TEUs	91,118
		Laden TEUs	43,888	Laden TEUs	39,521
		Empty TEUs	71,421	Empty TEUs	51,597
	Domestic Containers	Total TEUs	59,925	Total TEUs	59,535
		Laden TEUs	47,117	Laden TEUs	46,653
		Empty TEUs	12,808	Empty TEUs	12,882
	Shipped Containers TEUs	Total TEUs	173,772	Total TEUs	148,022
		Laden TEUs	128,799	Laden TEUs	106,212
		Empty TEUs	44,973	Empty TEUs	41,810
	Exported Containers	Total TEUs	121,798	Total TEUs	91,424
		Laden TEUs	93,249	Laden TEUs	68,910
		Empty TEUs	28,549	Empty TEUs	22,514
	Domestic Containers	Total TEUs	51,974	Total TEUs	56,598
		Laden TEUs	35,550	Laden TEUs	37,302
		Empty TEUs	16,424	Empty TEUs	19,296
	Transshipment Ratio				

Source: Questionnaire

Facilities

The total length of Sasa Wharf is 1,103 m, and the water depth at the Old Quay is 9.5 - 10 m and the water depth at the New Quay is 13 m.

The total area is 16.7 ha and the area of 8.6 ha is used for the container yard. Quay-side gantry cranes are not installed.

Operation

The terminal is operated by Davao Integrated Port Stevedoring Services Corp., an affiliate of ICTSI and Filipinas Port Services, Inc.

Stevedoring services are available 24 hours a day in two shifts. And there is 1 gate available around the clock.

(4) Landside Transportation

An access road with two lanes is only 100 m from the trunk road, AH26, and available 24 hours a day. Trucks and trailers are used for the landside transportation. Railway is not applicable.

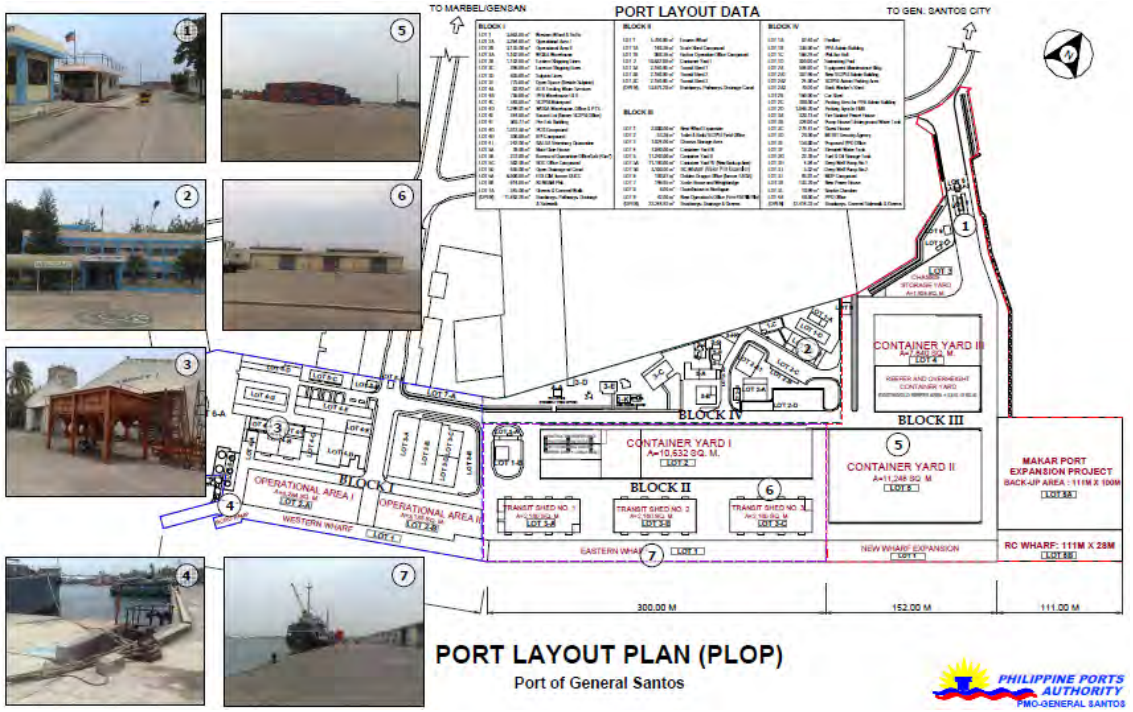
6.8 General Santos Port

(1) Outline of the Port

(a) Location and Roles

Port of General Santos is located on the north of Sarangani bay, in the south of Mindanao Island, at 06° 06'N and 125° 09'E, approximately 2 km from General Santos City. The port is a regional base port, supporting the economic activities of South Cotabato Province.

Figure 6.8-1 Location of General Santos Port



Source: Port of General Santos

Figure 6.8-2 Terminal Layout

(b) Operation and Management

Port of General Santos is under the management of the Port Management Office-General Santos in the Port District Office-Southern Mindanao of the Philippine Ports Authority (PPA).

(2) Use of the Port

(a) Cargo Throughput

The annual cargo throughput at the Port of General Santos was about 1.9 million tons in 2008.

Table 6.8-1 Annual Cargo Throughput at the Port of General Santos

(Unit: Metric ton)

	Breakbulk	Bulk	Container	Total
Foreign	111,733	102,380	414,962	629,075
Export	423	16,511	294,546	311,480
Import	111,310	85,869	120,416	317,595
Domestic	181,881	58,241	1,067,657	1,307,779
Outbound	71,060	27,407	560,035	658,502
Inbound	110,821	30,834	507,622	649,277
Total	293,614	160,621	1,482,619	1,936,854

Source: Questionnaire

(b) Ship calls

A total of 978 ships (278 international and 700 domestic ships) entered the port in 2008. The number of ship calls is almost the same compared to the number in 2007 (193 international and 743 domestic ships: total 936 ships).

(c) Port Procedures

Permission to enter the port is under the control of PPA. Application for berths must be made 24 hours prior to arrival.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

The port is approached from the south south-west and entered between Tampuan Point and Sumbang Point. The length of the channel is 33 km and the maximum width is 16 km. The maximum vessel size is 32,774 DWT. There are five anchorages to the south of the port.

The tidal range is 0.741 m on average.

ii) Pilot

Pilotage is compulsory for vessels larger than 500 GT. Six pilots belong to the General Santos Harbor Pilots' Association.

(b) Terminals

There are four wharves at the Port of General Santos. Containers, breakbulk, dry bulk and liquid bulk cargoes are handled at the wharves.

Table 6.8-2 Terminals at the Port of General Santos

Terminal	Application	Management	Wharf	
			Length (m)	Water Depth (m)
Port of General Santos		PMO-General Santos,	(851)	
Western Wharf	Multipurpose	PDO- Southern Mindanao	288	8.5
Eastern Wharf	- ditto -	of PPA	300	8.5
New Wharf	- ditto -		152	12.0
RC Wharf	- ditto -		111	12.0

Source: Questionnaire

Cargo Throughput

Cargo throughput in 2008 was around 1.9 million tons, and containers accounted for 77 % of the total. Table 6.8-3 shows details of the container throughput at the Port of General Santos.

Table 6.8-3 Container Throughput at Port of General Santos

Name of Network Port		Port of General Santos			
Name of Terminal		Base Port			
Type of Terminal		Multipurpose			
Container Throughput		Year 2008		Year 2007	
	Total TEUs	113,886		103,577	
	Total Boxes	137,942		182,073	
	Total Tonnage (tons)	1,482,619		1,238,128	
	Landed Containers TEUs	Total TEUs	56,354	Total TEUs	51,417
		Laden TEUs	32,440	Laden TEUs	29,760
		Empty TEUs	23,914	Empty TEUs	21,657
	Imported Containers	Total TEUs	11,441	Total TEUs	6,903
		Laden TEUs	5,641	Laden TEUs	4,566
		Empty TEUs	5,800	Empty TEUs	2,337
	Domestic Containers	Total TEUs	44,913	Total TEUs	44,514
		Laden TEUs	26,799	Laden TEUs	25,194
		Empty TEUs	18,114	Empty TEUs	19,320
	Shipped Containers TEUs	Total TEUs	57,532	Total TEUs	52,160
		Laden TEUs	46,567	Laden TEUs	42,597
		Empty TEUs	10,965	Empty TEUs	9,563
	Exported Containers	Total TEUs	17,720	Total TEUs	9,925
		Laden TEUs	15,793	Laden TEUs	8,950
		Empty TEUs	1,927	Empty TEUs	975
	Domestic Containers	Total TEUs	39,812	Total TEUs	42,235
		Laden TEUs	30,774	Laden TEUs	33,647
		Empty TEUs	9,038	Empty TEUs	8,588

Source: Questionnaire

Facilities

The total length of the wharf is 851 m, and the water depth at the old wharf is 8.5 m and the water depth at the new wharf is 12 m.

There are two reach stackers. Quay-side gantry cranes are not installed.

There are three container yards in the port and the total area of them is 3.0 ha. The storage capacity for containers is 7,056 TEUs and 204 reefer plugs are installed.

Operation

The terminal is operated by South Cotabato Integrated Port Services Inc.

Stevedoring services are available 24 hours a day in three shifts. And there is 1 gate available around the clock.

(4) Landside Transportation

An access road with four lanes is 500 m from the trunk road, and available 24 hours a day. Trucks and trailers are used for the landside transportation. Railway is not applicable.

6.9 Zamboanga Port

(1) Outline of the Port

(a) Location and Roles

Port of Zamboanga is located on the southernmost tip of the Zamboanga Peninsula, in south-west Mindanao at 06° 54'N and 122° 04'E, facing the Strait of Basilan. It is 460 nautical miles south of Manila, 365 nautical miles northwest of Kota Kinabaru, Malaysia and 345 nautical miles away from Manado, Indonesia.

The port plays a role not only as a shipping port of local products like copra and rubber, but also as a gateway to the neighboring countries called BIM.

Figure 6.9-1 Location of Zamboanga Port

Source: Port of Zamboanga

Figure 6.9-2 Terminal Layout

(b) Operation and Management

Port of Zamboanga is under the management of the Port Management Office-Zamboanga in the Port District Office-Southern Mindanao of the Philippine Ports Authority (PPA).

(2) Use of the Port

(a) Cargo Throughput

The annual cargo throughput at the Port of Zamboanga was about 1.9 million tons in 2008.

Table 6.9-1 Annual Cargo Throughput at Port of Zamboanga

(Unit: Metric Ton)

	Breakbulk	Bulk	Container	Total
Foreign	88,461	39,805	0	128,266
Export	550	0	0	550
Import	87,911	39,805	0	127,716
Domestic	594,233	0	852,707	1,446,940
Outbound	312,722	0	299,550	612,272
Inbound	281,511	0	553,157	834,668
Total	682,694	39,805	852,707	1,575,206

Source: Questionnaire

(b) Ship Calls

A total of 6,766 ships (72 international and 6,694 domestic ships) entered the port in 2008. The number of ship calls is almost the same compared to the number in 2007 (71 international and 7,727 domestic ships: total 7,798 ships).

Table 6.9-2 Ship Calls at Port of Zamboanga in 2008

	Ro-Ro	Non Ro-Ro	Total
Foreign	0	72	72
Domestic	1,089	5,605	6,694
Total	1,089	5,677	6,766

(c) Port Procedures

Permission to enter the port is under the control of PPA. Application for berths must be made 36 hours prior to arrival.

(3) Port Facilities

(a) Waterway

i) Approach Channel and Anchorage

Vessels to the port enter through Zamboanga Channel. The length of the channel is 7 km, the width is 1.8 km and the water depth is 62 m.

The tidal range is 1.7 m on average.

ii) Pilot

Pilotage is compulsory for vessels larger than 100 GT. Pilots belong to the Zamboanga Harbor Pilots' Association.

(b) Terminals

Outline

The length of the berth is 1,720 m, and a part of the berth (the length is 500 m) is used for container handling. The water depth of the berth is 5 to 10 m.

Table 6.9-3 Terminals at the Port of Zamboanga

Terminal	Application	Management	Berth	
			Length (m)	Water Depth (m)
Base Port	Container	PMO-Zamboanga, PDO- Southern Mindanao of PPA	500	10
Base Port	Ro-Ro, Breakbulk, Others		1,220	5 - 10

Source: Questionnaire

Container Throughput

The container throughput in 2008 was 64,960 TEUs, an increase of 2 % compared to the throughput in 2007.

Table 6.9-4 Container Throughput at Port of Zamboanga

Name of Network Port		Port of Zamboanga			
Name of Terminal		Container Terminal (Base Port)			
Type of Terminal		Container Terminal			
Container Throughput		Year 2008		Year 2007	
	Total TEUs	64,960		63,675	
	Total Boxes	75,988		75,897	
	Total Tonnage (tons)	852,707		873,841	
	Landed Containers TEUs	Total TEUs	32,623	Total TEUs	31,716
		Laden TEUs	31,238	Laden TEUs	30,124
		Empty TEUs	1,385	Empty TEUs	1,592
	Shipped Containers TEUs	Total TEUs	32,337	Total TEUs	31,959
		Laden TEUs	16,883	Laden TEUs	17,098
		Empty TEUs	15,454	Empty TEUs	14,861

Source: Questionnaire

Facilities

There are one mobile crane and one top lifter.

The area of 1.2 ha is used for the container yard. The number of ground slots is 192 TEUs, and the storage capacity for laden containers is 1,000 TEUs and the storage capacity for empty containers is 1,500 TEUs. 2 reefer plugs are installed. The annual container handling capacity is 70,000 TEUs.

Operation

The terminal is operated by Zamboanga City Integrated Port Services, Inc. (ZCIPSI).

Stevedoring services are available 24 hours a day in three shifts. And there is 1 gate available around the clock.

(4) Landside Transportation

An access road with four lanes is 200 m from the trunk road, and available 24 hours a day. Trucks and trailers are used for the landside transportation. Railway is not applicable.

7. Singapore

7.1 Singapore Port

(1) Outline of the Port

(a) Location and Roles

Port of Singapore is the world number one container port handling about 30 million TEUs in 2008. The port plays a key role in container transshipment with services of around 200 shipping companies calling at Singapore. Besides container terminals, the port has industrial area where oil jetties and bulk wharves are located for the use of private industrial companies.

Port of Singapore consists of terminals of the PSA Singapore Corporation, Jurong Port and private facilities in the industrial area. Maritime and Port Authority (MPA) is the port authority for all port areas in Singapore. In a narrow sense, Port of Singapore means the terminals of PSA Singapore Corporation.

Figure 7.1-1 Location of Singapore Port

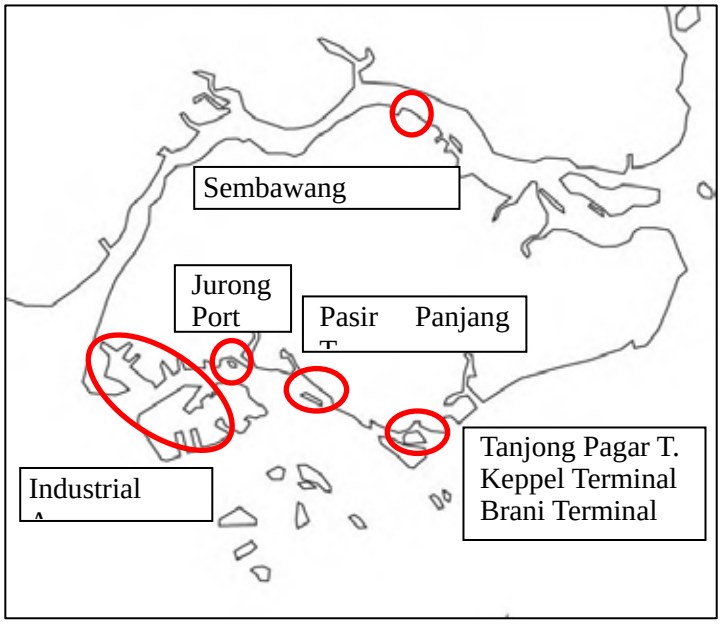


Figure 7.1-2 Location of Terminals in Port of Singapore

(b) Operation and Management

MPA is responsible for maritime administration in Singapore including ship entry to the port, navigation safety, order in port, port development planning, and port promotion. MPA was

established in 1996 succeeding National Maritime Board and some divisions of former Port of Singapore Authority.

Main four container terminals of Singapore Port are managed and operated by PSA Singapore Corporation and Jurong port is by Jurong Port Pte Ltd. Monthly report of the Containerisation International deals Jurong Port as another port from Singapore Port. Private port facilities are directly under the supervision of MPA.

(2) Use of the Port

(a) Cargo Throughput

Total cargo throughput of Singapore Port is 515 million tons in 2008, of which container cargo accounted for 308 million and liquid bulk cargo 167 million tons. Container throughput amounted to 29.9 million TEUs in 2008, of which PAS terminals handled 29 million TEUs and Jurong Port handled 0.9 million TEUs.

Table 7.1-1 Cargo throughput of Singapore Port (2008)

Cargo	Container		Break Bulk, General	Dry Bulk	Liquid Bulk	Total
Year	(1000 Tons)	(1000 TEUs)	(1000 Tons)	(1000 Tons)	(1000 Tons)	(1000 Tons)
2008	308,490	29,918	27,935	11,672	167,319	515,415
2007	289,094	27,936	25,823	11,316	157,382	483,616
2006	258,553	24,792	22,840	14,081	153,030	448,504
2005	241,973	23,192	20,292	23,176	137,826	423,268

Source: Questionnaire

(b) Ship Calls

Number of shipcalls at Port of Singapore was about 132,000 in 2008, of which container ships accounted for about 20,000, tankers 20,000, bulk carriers 9,000, and regional ferries 33,000. Total number of shipcalls is nearly the same during recent four years but number of container ships gradually increases.

Table 7.1-2 Shipcalls at Port of Singapore

Year	Container ships	Freight-ers	Bulk Carriers	Tankers	Passen-ger ships	Regional Ferries	Barges	Tugs	Coast-ers	Others	Total
2008	20,589	5,083	9,280	19,460	1,023	32,643	14,047	13,736	4,619	11,215	131,695
2007	19,946	4,873	8,653	19,312	731	36,530	11,600	11,772	4,991	10,160	128,568
2006	19,161	4,610	7,912	18,195	790	37,986	12,789	12,561	4,909	10,009	128,922
2005	18,415	4,594	6,636	17,315	472	43,030	12,904	11,853	5,228	9,871	130,318

Source: Questionnaire

(c) Port Procedures

Documentation for customs and other maritime/trade organizations is executed through TRADENET (Ministry of Trade and Industry 所管), PORTNET, CITOS (Computer Integrated Terminal Operation System), and Flow Through Gate System. All documents are digitalized and processed by means of electronic data exchange. Jurong Port introduced JP-Online and connected to PORTNET.

(3) Port Facilities

(a) Waterway

Port of Singapore is located at the east end of Malacca Strait. No long approach channel is therefore necessary. Channels managed by MPA are shown in Table 7.1-3. Pilotage is compulsory for foreign vessels over 300GT and domestic vessels over 2,000 GT.

Table 7.1-3 Approach Channels in Singapore Waters

Channels	Present Depth
East Keppel Fairway	13.4m/15.4m
Cruise Bay Approaches	10.1m
Jong Fairway	16.6m
Sinki Channel (Dredged Channel)	18.1m
Selat Pandan	15.1m
East Jurong channel	15.0m
West Jurong Channel	12.0m
Temasek Fairway	15.3m

(b) Terminals

PSA Singapore Corporation operates four main container terminals, namely Tanjong Pagar, Keppel, Brani and Pasir Panjang, and two multi-purpose terminals, i.e. Pasir Panjang and Sembawang. Jurong Port Pte operates a container terminal and multi-purpose terminals. Multi-purpose terminal in Pasir Panjang will be transformed to container terminal by 2013. Details of each terminal are summarized in Table 7.1-4 and Table 7.1-5.

Table 7.1-4 Container Terminals in Singapore Port

Terminals	No. of Berths	Berth Length	Depth	Area	Quay Gantry Cranes (Unit)	Yard Cranes (Unit)	No. of Ground Slots
Tanjong Pagar	8	2,320m	9.0-14.6m	84ha	29	58	16,532
Keppel	14	3,220m	10.0-15.5m	96ha	42	114	20,248
Brani	9	2,629m	15m	79ha	32	107	15,424
Pasir Panjang	23 Ro/Ro: 3	7,900m	16m	335ha	87	-	-
Jurong (Container)	5	1,400m	12.5-15.7m	29ha	14	-	5,070

Source: Questionnaire

Table 7.1-5 Multi-purpose Terminals in Singapore Port

Terminals	No. of Berths	Berth Length	Depth	Yard Area	Warehouses
Pasir Panjang	14	2,000m	11.0m	33.8ha	13.8ha
Jurong (Multi-Pupose)	19	3,220m	5.0-12.7m	124ha	-
Sembawang	4	655m	11.4m	25.5ha	5.9ha

Source: PSA and Jurong Port

Singapore Port managed their terminals as public facility and assign a berth available to an entering ship. However, PSA started to assign some terminals to sipping lines for their dedicated

use. After 2003, PSA started JV terminals with shipping lines. First JV terminal is COSCO Pacific PSA Terminal in Pasir Panjang in 2003 and then MSC and PSA opened JV terminal in 2006. Besides container terminals, JV of NYK, K-Line and PSA built Ro/Ro Terminal for car transshipment.

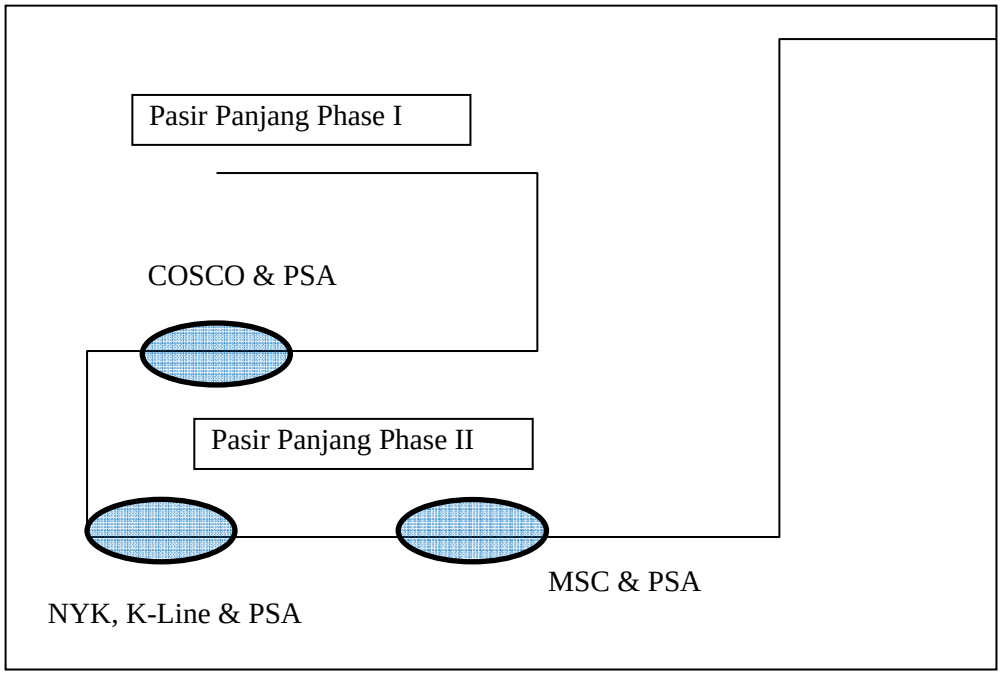


Figure 7.1-3 JV Terminals in Pasir Panjang

(4) Landside Transportation

More than 80% of container throughput is transshipment in Singapore Port, so the volume of transportation to/from hinterland is rather small compared with the volume of port throughput. Trucks are used for hinterland transportation. Railway is used for passengers and no container transported by railway. A highway connects Pasir Panjang Terminal and the old terminals, i.e. Tnajong Pagar, Keppel and Brani. It is used for container transportation between terminals.

(5) Future Plan

[Pasir Panjang Development]

The total capacity of present PSA terminals, which have 54 berths as a whole, is estimated at 35 million TEUs. Container terminal in Jurong has 5 berths and its capacity is estimated at 1.8 million TEUs. Since the container throughput of Singapore Port has reached nearly 30 million TEUs in 2008, developments of Pasir Panjang III and IV are on-going simultaneously. Land reclamation work for the Phase III and IV is expected to complete by 2013. Development plan of Phase III and IV will add 16 container berths with a capacity of 14 million TEUs. After completion of all Pasir Panjang terminals, the area of old three terminals will be redeveloped and change to a city area.

[Jurong Port Development]

Conventional terminals are shifted from PSA area to Jurong Port and Jurong Port will be developed for handling break bulk cargo, bulk cargo and conventional cargo imported to Singapore. Container terminals will also be developed as the complement to PSA terminals to cope with demand of shipping lines.

8. Thailand

8.1 Bangkok Port

(1) Outline of the Port

(a) Location and Roles

Bangkok Port is located on the left side of the Chao Phraya River between km +26.5 and km. +28.5 Klongtoey District, Bangkok.

The construction and dredging work began in 1938. The construction was interrupted during World War II and was completed after the war ended. In 1951, the government obtained a loan from the World Bank for dredging the sand bar, deeping the river course to Bangkok Port, and purchasing loading/ unloading equipment.

Bangkok Port is so close to downtown Bangkok that traffic congestion became a big problem as cargo throughput increased.

AS Bangkok Port was unable to accommodate large vessels, in 1982, the government accelerated the Port Authority of Thailand to design the construction of Laem Chabang Commercial Port to accommodate large container ships and agri-bulk ships.

Bangkok Port is second biggest port in Thailand next to Laem Chabang Port.

Figure 8.1-1 Location of Bangkok Port

(b) Operation and Management

Bangkok Port is under the management of PAT(Port Authority of Thailand). PAT is responsible for modernization of the cargo transportation system. PAT is also obliged to maintain the depth of the channel.

(2) Use of the Port

(a) Cargo Throughput

The annual cargo handling volume was around 17.77 million tons in 2008. As for container cargo, the international container cargo volume was about 15.59 million tons in 2008. Export container cargo was 670 thousand TEU, and import container cargo was 780 thousand TEU.

Table 8.1-1 Annual Cargo Handling in Bangkok Port (2008)

(Unit: tons)

	Container	Non-Container	Total	Container (TEU)
Export	7,991,962	177,192	8,169,154	700,539
Import	7,597,131	2,001,533	9,598,664	760,174
Total	15,589,093	2,178,725	17,767,818	1,460,713

Source: Port Authority of Thailand

(b) Ship Calls

Annual number of ship calls was 2200 container vessels; 571 conventional vessels, 15 vessels for passenger, 9 other vessels in 2008.

Table 8.1-2 Ship Calls in Bangkok Port (2008)

	Total	Container	Conventional	Passenger	Others
Total	2,795	2,200	571	15	9

Source: Port Authority of Thailand

(c) Port Procedures

EDI System is introduced. Two days are required for Port Entry Authorization

PAT has a policy on upgrading its service as an electronic Port (e-Port) by emphasizing on adjusting management system and services to be more modern, convenient, swift and to decrease time consumption, operating costs and manpower. e-Gate is setting up to increase the port's facilities and services is progressing well.

(3) Port Facilities

(a) Waterway

The access channel to the port is made through the bar channel, which is 18km long, 150m wide in the reaches and 250m wide in the bend. The channel is maintained to depth of -8.5m M.S.L.The depth of the river within the port area varies from 8.5m to 11m below M.S.L.

The Bangkok Port is accessible to vessels of 172 m LOA, 8.29m Draft, 12000 DWT.

PAT is also obliged to maintain the channel depth.

(b) Terminals

Bangkok Port has 4 container cargo terminals and 8 conventional terminals. Container terminal depth alongside is all 8.23m. It is possible to handle 1.5 million TEU container cargo annually.

Conventional terminals （22A, 22B-22H）are for metal, fertilizer, agri-products, chemical products and so on.

Facilities

Bangkok Port has 8 & 4 rail mounted gantry cranes for terminal 1 & 2 with the capacity of 32.5-40.0 tons. Bangkok Port also possesses a crane for terminal 22A, 22B-22H with the capacity of 50 tons.

Table 8.1-3 Terminals in Bangkok Port

Terminal	Operator	Type of Terminal	Berth Length	Ship calls	Total Cargo (1,000 tons)
Terminal1	PAT(Port Authority of Thailand)	Container	680.0m	1,104	9,185
Terminal 2			640.5m	889	6,123
22A, 22B-22H		Conventional	1,145.0m	571	2,655

Source: Port Authority of Thailand

Table 8.1-4 Container Terminals

Terminals	Yard (m2)	Ground Slots (TEUs)	Quay Gantry Cranes	Standard Capacity (TEUs)	Container (TEUs)
Terminal 1	98,600	2,764	8	800,000	851,996
Terminal 2	49,000	1,554	6	700,000	510,332

Source: Port Authority of Thailand

Figure 8.1-2 Layout of Terminals in Bangkok Port

(4) Landside Transportation

Truck, trailers, and rail are the transportation means to the terminals. Distance to Expressway is 1-1.5km, distance to railway marshalling yard is 500-700m.

Bangkok Port is so close to downtown Bangkok that traffic congestion became a big problem as cargo throughput increased. [Nevertheless Thailand government is planning to set upper limit of cargo handling with the 2006 level (1.34 million TEUs) to decrease congestion, cargo throughput is increasing.]

Modal shift to railway has been promoted continuously. Various incentive measures to attract port customers to increase container transport by railway have been taken in response to the government's policy on modal shift which was resulted in an overall energy savings. Waterway transport by coastal feeder also has been promoted instead of road transport.

(5) Future Plan

Management and re-zoning port areas were among the top priorities for PAT's new structure management. Under the new asset management strategy, land adjoining the fence will be divided into four development zones and reserved for port activities and related business from 2010.

8.2 Laem Chabang Port

(1) Outline of the Port

(a) Location and Roles

Port of Laem Chabang is located at 130km southeast of Bangkok and it takes about two hours from Bangkok owing to good expressway. The port was developed as a deep water gateway port to Thailand and inaugurated in 1991. At the early stage of development, the port played a role of complementary port to Bangkok Port. However, it became the main gateway port to Thailand handling more than 5 million TEUs in 2008 compared with 1.5 million TEUs in Bangkok Port.

Phase I area of Laem Chabang Port was developed for container cargos and conventional cargos. Wharf A was originally designed for conventional cargo, bulk cargo and passengers. Wharf B designed for container terminals. Some terminals of Wharf A were transformed to container terminal or Ro/Ro terminal.

Phase II development of Laem Chabang Port started following the Phase I, and first terminal C3 opened in 2004. Terminals C1 and C3 were inaugurated in 2008. Development of terminals D1-D3 is undertaken by Hutchison Port Holdings and D1 may be completed in the near future.

The nature of Laem Chabang Port is origin/destination port and therefore transshipment containers are very small, about 0.5% of the total container throughput.

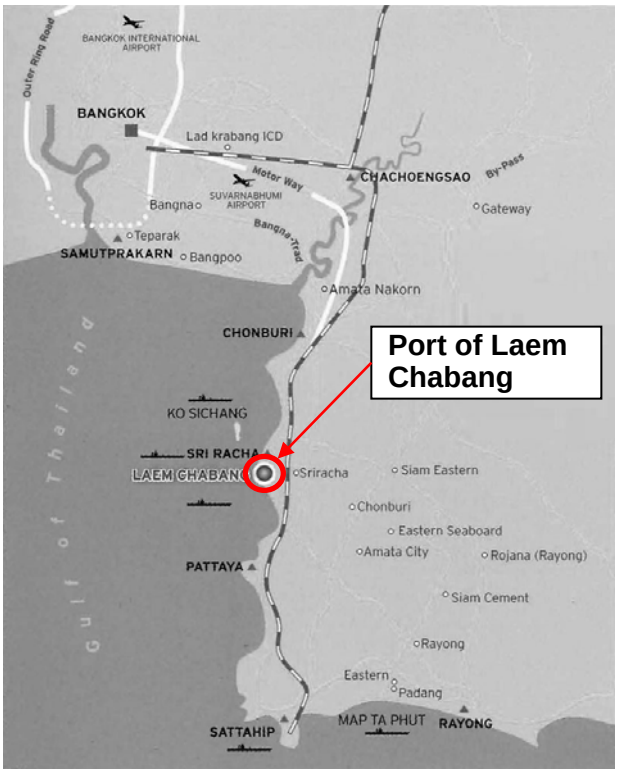


Figure 8.2-1 Location of Laem Chabang Port

(b) Operation and Management

Port Authority of Laem Chabang Port is PAT (Port Authority of Thailand). PAT manages the port as landlord and terminal operations are conceded to private terminal operators, who are listed in Table 8.2-4. Marine Department of Ministry of Transport is responsible for ship entry, navigation safety and other maritime services.

(2) Use of the Port

(a) Cargo Throughput

Total cargo throughput of Laem Chabang Port is 55 million tons in 2008, of which container cargo accounted for 52 million tons. Export of cars on Ro/Ro ships was not included in this statistics, which amounted to about 800,000 units. Container throughput reached 5.2 million TEUs in 2008. Container throughput of each terminal is listed in Table 8.2-5. Transshipped containers are about 20,000 TEUs, less that 5% of the total. Empty container ratio is about 10%-20 % of imported containers.

Table 8.2-1 Cargo Throughput of Laem Chabang Port (2008)

(tons)

	Container (tons)	Others (tons)	Total (tons)	Ro/Ro (units)
Export	32,150,003	2,261,244	34,411,247	799,264
Import	19,680,118	469,706	20,149,824	62,494
Transshipment	276,471	-	276,471	-
Total	52,106,592	2,730,950	54,837,542	861,758

Source: Questionnaire

Table 8.2-2 Container Throughput of Laem Chabang Port (2008)

(TEUs)

	2005	2006	2007	2008
Export	1,886,345	2,055,682	2,325,902	2,645,760
Import	1,859,115	2,054,256	2,292,646	2,573,303
Transshipment	20,506	13,184	23,364	21,012
Total	3,765,966	4,123,122	4,641,912	5,240,075

Source: Questionnaire

(b) Ship Calls

Number of shipcalls at Laem Chabang Port was about 8,000 in 2008, of which container ships accounted for about 6,000, conventional ships 270, bulk carriers 70, and Ro/Ro ships 670. Number of container ships accounted for 3/4 of the total shipcalls.

Table 8.2-3 Shipcalls at Laem Chabang Port (2008)

	Container	Conven-tional	Bulk Carriers	Passenger Ships	Ro/Ro	Others	Total
Foreign	5,975	267	70	26	674	1,106	8,118
Domestic	-	-	-	-	-	-	0
Total	5,975	267	70	26	674	1,106	8,118

Source: Questionnaire

(c) Port Procedures

Laem Chabang Port introduced “e-port” system which consisted of PAT, Customs, National Electronics and Computer Technology Center (NECTEC), and private terminal operators. Paperless port documentation is on progress at the port.

(3) Port Facilities

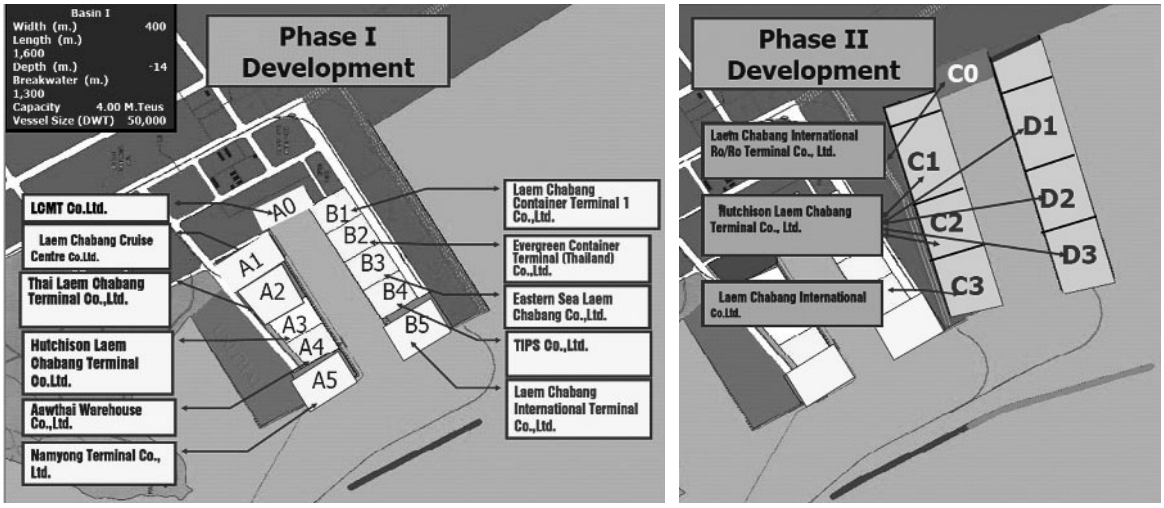
(a) Waterway

Approach channel to Laem Chabang Port has a length of 4.5km from Ko Nok. The channel

was dredged to minus 16m under mean sea level and has a width of 400m. The basin of Phase I was dredged to minus 14m and the basin of Phase II was to minus 16m. Pilotage is compulsory for foreign vessels over 165 feet in LOA and domestic vessels over 400 feet in LOA.

(b) Terminals

Terminals A0-A5 and B1-B5 were developed in Phase I of the project and C1-C3 were in Phase II of the project. Development of terminals D1-D3 is conceded to a private terminal operator, Hutchison, and construction work in ongoing. Location of each terminal is shown in Figure 8.2-2 and their facilities and cargo throughput are indicated in Tables 8.2-4 and 8.2-5.



Source: PAT

Figure 8.2-2 Location of Terminals in Laem Chabang Port

Table 8.2-4 Cargo Throughput and Shipcalls at each Terminal (2008)

Terminals	Operator	Type of Terminal	Berth Length	Shipcalls	Total Cargo (1,000 tons)
A-0	LCMT Co., Ltd.	Multi Purpose	590m	192	4,473
A-1	Laem Chabang Cruise Center Co.,Ltd.	Ro/Ro, Passenger	315m	262	367
A-2	Thai Laem Chabang Terminal Co.,Ltd.	Container	400m	885	5,664
A-3	Hutchison Laemchabang Terminal Co., Ltd.	Container	350m	250	2,923
A-4	Aawthai Warehouses Co.,Ltd.	Conventional	250m	258	873
A-5	Namyong Terminal Co.,Ltd.	Ro/Ro, Conventional	527m	573	1,231
B-1	LCB Container Terminal Co., Ltd.	Container	359m	696	6,082
B-2	Evergreen Container Terminal Co.,Ltd.	Container	300m	429	5,551
B-3	Eastern Sea Laem Chabang Co., Ltd.	Container	300m	1,203	6,124
B-4	TIPS Co., Ltd.	Container	300m	1,089	3,857
B-5	Laem Chabang International Terminal	Container	400m	943	3,898
C-0	Laem Chabang International Ro-Ro Terminal Co.,Ltd.	Ro/Ro, Conventional	500m	357	260
C-1	Hutchison Laem Chabang Terminal Co.,Ltd.	Container	700m	440	6,152
C-2		Container	500m		
C-3	Laem Chabang International Terminal	Container	500m	476	4,458

Source: Questionnaire

Table 8.2-5 Facilities of Container Terminal (2008)

Terminals	Yard (m2)	Ground Slots (TEUs)	Quay Gantry Cranes	Standard Capacity (TEUs)	Container (TEUs)
A-0	160,000	-	-	-	561,155
A-2	115,000	3,582	4	400,000	463,984
A-3	100,000	2,094	4	350,000	327,609
B-1	105,000	2,358	6	300,000	591,816
B-2	105,000	1,200	4	300,000	536,141
B-3	105,000	1,200	4	300,000	629,777
B-4	105,000	1,326	5	300,000	737,347
B-5	140,000	2,697	4	400,000	632,421
C-1-C2	540,000	9,576	5	1,200,000	670,298
C-3	225,000	3,552	4	600,000	424,680

Source: Questionnaire

(4) Landside Transportation

Cargos to/from Laem Chabang Port are mainly transported by road. Railway is used for

container transportation between the port and Lat Krabang ICD, for which container train services are provided 12 times per day. PAT launched a project to develop rail yard between Wharf B and Wharf C for container marshalling. Hinterland transportation ratio of road is about 90% and railway is 10% as shown in Table 8.2-6.

Table 8.2-6 Hinterland Transportation Ratio by Mode (2007)

Transportation mode	Imported containers & Exported containers	
	TEUs	%
by road	4,124,070	88.84%
by rail	441,533	9.51%
by vessels/barges	76,311	1.64%
Total	4,641,914	100.00%

Source: PAT

(5) Future Plan

Development of Wharf D

Terminals of Phase I, i.e. B1-B5 and A0, A2-3, are designed to have a capacity of 4 million TEUs and Terminals of Phase II, Wharves C and D, are designed with a total capacity of 6.8 million TEUs. Terminals of Phase III, Wharves E and F, are planned with a total capacity of 8 million TEUs. Laem Chabang Port will be developed in line with these phases and cope with future demand.

Present capacity of the port is estimated at about 7.4 million TEUs with terminals of Wharves A, B and C. Development concession of Wharf D, namely D1-D3, has already given to Hutchison Laem Chabang Terminal Co., Ltd. When these terminals completed, total capacity of Laem Chabang Port may reach 11 million TEUs. Terminal D1 is scheduled to open by 2011.

Development of Wharf E and F

PAT is recently studying the development of Wharves E and F and plans to increase the portion of private investments. Private portion of Phase III will be larger than the Phase II. Timing of the project depends on the development of demand.

Development of Rail Yard

PAT launched a rail yard development project between Wharves C and D. At present, terminal companies load/unload containers on/off wagons by themselves. If rail yard were developed by PAT, productivity and capacity of rail yard will be increased considerably. The project will make the railway track double lane from the port to Si Racha. Total cost is estimated at USD 50 million.

8.3 Songkhla Port

(1) Outline of the Port

(a) Location and Roles

Port of Songkhla is located on the coast of Gulf of Thailand and plays the role of gateway port to the south region. Distance from Bangkok is 950km by road or by railway. Distance to Hat Yai Airport is about 50km and Hat Yai railway station is about 30km. Major imports are general goods and frozen tuna, and exports are processed marine products and limestone. Terminal layout of the port is shown in Figure 8.3-2.

Figure 8.3-1 Location of Songkhla Port

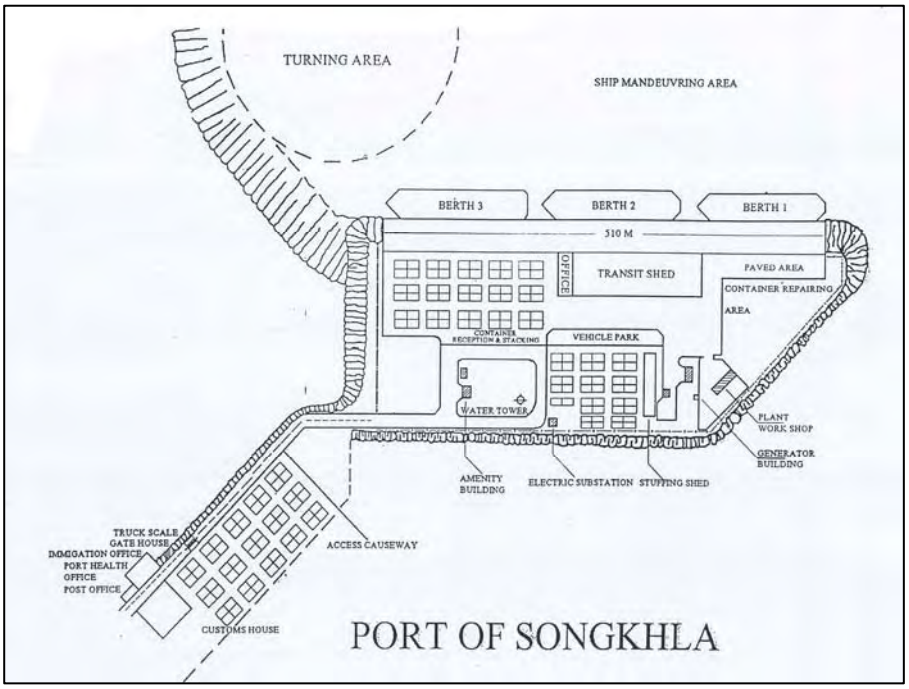


Figure 8.3-2 Terminal Layout of Port of Songkhla

(b) Operation and Management

Songkhla Port was developed by Ministry of Transport and is operated by Chaophaya Terminal International Co., Ltd. Port Authority of the port is Marine Department, MOT. The operating company was conceded, through bidding, the right of operation for 10 years from Treasury Department, Ministry of Finance, in 1989 and the right is renewed every five years. While ship crane and mobile crane are used for cargo loading and unloading operations, mobile crane is prepared by a shipping company.

(2) Use of the Port

(a) Cargo Throughput

Total cargo throughput of Songkhla Port is 1.8 million tons in 2007 and slightly reduced in 2008. Container cargo throughput amounted to 140,000 TEUs in 2008, of which exports accounted for 70,400 TEUs and imports 70,000 TEUs. Ratio of empty containers is 3% in total container exports but it is 77% in the total container imports. Empty containers are shifted from Laem Chabang Port and other regional ports.

Table 8.3-1 Cargo Throughput of Songkhla Port (2007)

(tons)

	Conventional	Bulk	Container	Total
Export	15,678	406,776	934,300	1,356,754
Import	268,918	0	204,709	473,627
Total	284,596	406,776	1,139,009	1,830,381

Source: Chaophaya Terminal International Co., Ltd.

Table 8.3-2 Container Throughput of Songkhla Port

(TEUs)

		2007		2008	
		Tons	TEUs	Tons	TEUs
Export		934,300	69,310	966,852	70,369
	Laden	―	66,516	―	68,239
	Empty	―	2,794	―	2,130
Import		204,709	69,526	216,051	69,987
	Laden	―	16,243	―	15,903
	Empty	―	53,283	―	54,084
Total		1,139,009	138,836	1,182,903	140,356

Source: Chaophaya Terminal International Co., Ltd

(b) Ship Calls

Number of shipcalls at Songkhla Port is 633 in 2008, of which container ships accounted for 297, bulk carriers 271, and conventional ships 95. No passenger ships called at the port in 2008. Shipcalls from 2004 to 2008 are 543, 478, 507, 700, 663 respectively, where gradual increases are not seen.

Table 8.3-3 Shipcalls at Songkhla Port (2008)

	Conventional	Container	Passenger	Bulk/Others	Total
Foreign Ship	93	230	0	11	334
Domestic Ship	2	67	0	260	329
Total	95	297	0	271	663

Source: Questionnaire

(3) Port Facilities

(a) Waterway

Approach channel to Songkhla Port is 4km in length and has a width of 120m and water depth of 9m. Taking into the tidal range of 0.6m-1.1m, maximum size of calling vessels is limited to 173m or less in length and 7.5m in ship draft, which is a container ship of approximately 20,000 DWT or less. Pilotage is compulsory for calling vessels.

(b) Terminals

Songkhla has a terminal with three berths of a total length of 510m, of which 360m is used as two container berths and 150m is used as a conventional berth. Total area of the terminal is about 10ha, in which container terminal is 5ha. Number of ground slots is 1,800 located in container yard. There is a warehouse of 6,700m2 in the port. No quay crane is installed in the port, and mobile crane is used for cargo loading and unloading.

Table 8.3-4 Terminal Facilities

Berth	Type	Berth Length	Water Depth	Yard Area (m^2)	Ground Slots	No. of Cranes
Beth 1	Conventional	150m	9m	(6,700)	-	0
Berth 2, 3	Container	360m	9m	50,000	1,800	0

Note: () is the area of warehouse
Source: Songkhla Port

(4) Landside Transportation

Two lane road connects the port and nearest highway interchange, distance of which is about 20km. Gate operation hours are from 700-2030 hours. No traffic congestion takes place on the access road.

(5) Future Plan

Extension of the present terminal was planned to increase the capacity of port, but it was suspended due to a strong objection by fishermen. There is a plan to develop a new Songkhla Port but the government places a priority to develop Pak Bara Port located in the west coast of Malay Peninsula.