Appendix for Chapter 5

Appendix 5.2 Clarification of the Function of Major Ports

(1) Tg. Priok Port

Tg. Priok port is located in 106° 52' East longitude 06° 06' South Latitude facing to Jakarta Bay at north side of D.K.I Jakarta.

Tg. Priok port is the largest port in Indonesia and not only supporting the West Jawa economies as the main connection point of sea and land transportation but also national gate to/from all over Indonesia from/to the world. A 25% of all export cargo from Indonesia and a 50% of all import cargo to Indonesia are loaded/unloaded at Tg.Priok in 1995 and more than 50% of all container cargo in Indonesia are handled at the container terminal.

The western Part of Jawa Island is the main production center of consuming goods in Indonesia and Tg.Priok is the distribution center of these products with sea transport.

Table A.5.2.1 Profile of Tg. Priok Port

Name of port	Tg.Priok		Name of Province	West Jawa
			Population of Hinterland	48,319,000person
Port Area	Port working area	Land side	575 Ha	
		Seaside	424 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	1,451,942 TEUs	13,808,297 Ton	
	General Cargo	Domestic	5,399,285 Ton	
		International	5,621,682 Ton	
	Dry Bulk	Domestic	1,091,985 Ton	
		International	4,364,642 Ton	
	Liquid Bulk	Domestic	7,130,914 Ton	
		International	1,453,935 Ton	
	Passenger	Foreign	186,652 persons	
		Domestic	820,005 Persons	
Shipping Service And Size of Calling Vessel	- Container PT S.I SINAR TIMUR 450 TEUs Twice a week (Sing-Jak-Pan) PT S.I KOTA MEWAH 1,152 TEUs 5days a week (Sing-Jak) PT S.I HUSUM 582 TEUs Twice a week (Sing-Jak-Sem) PT S.I LUMOSO EXP. 538 TEUs Twice a week (Jak-Sur) OOCL OOCL ABILITY 1,560 TEUs Weekly (Jap-kao-hong-Sing-Jak) Hanjin JITRA BHUM 1,498 TEUs Weekly (Jap-Busa-mani-Sing-Jak) Hanjin CONTI JORK 1,599 TEUs Weekly (Jap-Bus-Kee-hong-Jak-Sura) - Pelni 6 routes			
Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container	CT I (Basin Three)	900.0	11.0
		CT II (Basin Two)	510.0	8.6
		CT III	450.0	14.0

	General Cargo	NUSANTARA BASIN	650.0	5.0
		PERAHU BASIN	995.0	5.0 - 6.0
		Basin One (west out)	630.0	7.5
		Basin One (east in)	630.0	8.0
		Basin Two(west out)	490.0	9.0-11.0
		Basin Two(east)	1,015.0	10.0
		Between Two & Three	150.0	12.0
		Basin Three(weat)	1,030.0	12.0
	Dry Bulk	Basin One (east out)	460.0	7.5
	Liquid Bulk	Basin Two (south end)	145.0	4.0
	Ro-Ro	Basin Three	175.0	
	Passenger	Basin One (west out)	430.0	7.5
		Between One & Two	185.0	12.0

Special Wharf	Fuel and Oil (PERTAMINA) Berth for four Tankers in Pertamina's Petroleum Basin with 10.0m depth			
Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	25.0	General Cargo(T/G/h)	22.0
	Bagged Cargo(T/G/h)	36.0	Bagged Cargo(T/G/h)	33.0
	Unitized Cargo(T/G/h)	26.0	Unitized Cargo(T/G/h)	19.0
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	
	Dry Bulk (T/h)	37.0	Dry Bulk (T/h)	33.0
	Container		Container	
	CT (TEUs/Crane/h)	17.0	CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)	3.0	Conv (TEUs/Crane/h)	
Access Channel and Maintenance	The port is protected by breakwater and reached through a channel at the west end of the breakwater. The access channel is 3Km long and designed as an 11m deep by 175m wide. But the width is constricted at the breakwater heads where total fairway clearance is approx. 155m. The channel at the east end of the breakwater is not maintained and not used for normal port traffic. Dredging of the access channel was performed every two years and that of harbor was less frequently.			
Land Access To Port	The toll road, Jalan Yos Seodarso, leads directly to Container Terminal I , but still the port is facing heavy traffic jam during morning and evening. The port is served by railway branch connections to thr Tg.Priok Train Terminal . Container railway dry port at Jl. Pasoso is connected to/from Gedebage dry port in Bandung.			
Port Master Plan	The most recent Master Plan for Tg.Priok was completed in March 1993 by Indenesia port Corporation II . Master Plan Concept was prepared in 1996 including cargo and Passenger forecast and facilities development plan until 2020. The strategic port function is also shown as "national transhipment port" "industrial zone in port working area" and "supporting facilities such as access road, reception facilities, sanitation system and greenbelt"			

(2) Tg.Perak Port

Tg. Perak port is located in 112° 32' 22"East longitude 07° 11' 54"South Latitude facing to Madura Strait at north side of Surabaya Municipality in East Jawa province.

Tg. Perak port is the second largest port in Indonesia and has two important roles, one is to support the East Jawa economies especially for international industrial activities and the other is a distribution center for Eastern Indonesia. The cargo throughput from 1990 to 1995 increased 8.8% per year, while export- import increased 16.9% per year and 46% of all export-import cargo from/to East Jawa are through the port. The Port is located eastern end of Jawa Island which is very strategic position for the Eastern Indonesia as gate .

Table A.5.2.2 Profile of Tg.Perak Port

Name of port	Tg.Perak		Name of Province	East Jawa
			Population of Hinterland	36,761,000person
Port Area	Port working area	Landside	524.3 Ha	
		Seaside	1,634.03 Ha	
	Port Concerning area		1,634.03 Ha	
Volume of Cargo In 1,995	Container	563,102 TEUs	5,677,514 Ton	
	General Cargo	Domestic	6,954,883 Ton	
		International	3,810,751 Ton	
	Dry Bulk	Domestic	1,417,686 Ton	
		International	2,174,209 Ton	
	Liquid Bulk	Domestic	4,947,667 Ton	
		International	207,601 Ton	
	Passenger	Foreign	13,562 persons	
		Domestic	1,030,911 Persons	
Shipping Service And Size of Calling Vessel	- Container Advance KOTA SABAS 531 TEUs Weekly (Sinp-Sura) RCL GURU BHUM 550 TEUs 3Times a Week (Sinp-Sura) Hanjin CONTI JORK 1,599 TEUs Weekly(Jap-Bus-Kee-hong-Jak-Su) Wan Hai WAN HAI 202 1,100 TEUs Weekly(Jap-Kee-hong-Man-Jak-Su) Wan Hai HYUNDAI STRIDE 1,100 TEUs Weekly(kor-Kee-hong-Sin-Jak-Su) COSCO PEACE RIVER 1,266 TEUs Weekly(PRC-hong-Sin-Jak-Su) - Pelni 11 routes - Pioneer shipping (home por) 1 route			
Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container	TPK I (multipurpose)	690.0	10.5
		TPK II	500.0	10.5
	General Cargo	NORTH JAMRUD SOUTH JAMRUD MIRAH, NILAM ets.	5,045.0	4.0 – 9.5
	Dry Bulk		270.0	
	Liquid Bulk		185.0	
	Small Ship	KALIMAS	2,270.0	3.0
	Passenger	NORTH JAMRUD	400.0	9.0 – 10.0

<table>
<tr><td>Special wharf</td><td colspan="4">Fuel oil and gas (PERTAMINA) Jetty at northern end of Nilam pier
Grain and bran (PT.Bogasari) Dry bulk wharf at Nilam quay
Molasses (Molasses Berth) Liquid bulk berh at Nilam quay
Fertilizer (PT. Pupuk Pusri) Dry bulk berth at Nilam quay</td></tr>
<tr><td>Productivities</td><td colspan="2">Oceangoing
General Cargo(T/G/h) 27.0
Bagged Cargo(T/G/h) 0.0
Unitized Cargo(T/G/h) 0.0
Liquid Bulk (T/h) 95.0
Dry Bulk (T/h) 153.0
Container
CT (TEUs/Crane/h) 17.0
Conv (TEUs/Crane/h) 10.0</td><td colspan="2">Domestic
General Cargo(T/G/h) 25.0
Bagged Cargo(T/G/h) 30.0
Unitized Cargo(T/G/h) 0.0
Liquid Bulk (T/h) 81.0
Dry Bulk (T/h) 118.0
Container
CT (TEUs/Crane/h) 0.0
Conv (TEUs/Crane/h) 0.0</td></tr>
<tr><td>Access Channel And Maintenance</td><td colspan="4">Western Channel : Total length of the channel is 50Km. To maintain 9.5m depth and 100m width at the 16Km distance from the entrance of the channel, dredging had been carried out every two years. Remaining part of the channel has more than 13m depth and 200m width. Restriction for calling ship is maximum length 210m and maximum draft 9.5m. Sailing speed is limited up to 8 knots (in whole channel)
Eastern Channel : 45Km length, 100m width, 2.5m to 5.0m depth, only for small ships less than 100ton and no maintenance dredging had been carried out.</td></tr>
<tr><td>Land Access To Port</td><td colspan="4">Road : JL.Tg.Perak is 6 lane road from Jamrud quay port gate to south towards Surabaya City, but not connected directly Surabaya-Malang Toll Road.
Railway : From Nilam wharf, Kalimas wharf and International container terminal through railway marshaling yard to hinterland</td></tr>
<tr><td>Port Master Plan</td><td colspan="4">The most recent Master Plan for Tg.Perak was completed in Jun 1994 by ABD consulting service .
Master Plan Concept was prepared in 1996 including cargo forecast and facilities development plan until 2018. Due to the limited present port working area, new development location was selected considering (1)soil condition (2)land access including highway and railway (3)environmental impact (4)transportation network (5)development cost.
The development strategy is prepared considering following matters (1)Tg.Perak and Gresik port will be integrated (2)increase international ship calling (3)distribution center for Eastern Indonesia (4)reclaim the western channel area for new development area (5)development of business and industrial estate.</td></tr>
</table>

(3) Tg. Emas Port

Tg. Emas port is located in 110° 25' East longitude 06° 57'South Latitude almost middle of the northern coast line of Jawa island and lies between two gate ports namely Tg.Priok and Tg.Perak in Jawa Island. The port is situated at about 485 km west of DKI Jakarta and at about 387 Km east of Surabaya city.

The port is situated at north side of Semarang, the capital city of Central Jawa province, and the role of the port is a distribution center of its hinterland, Central Jawa and Special District of Yogyakarta connecting with Jawa coast, Sumatra, Kalimantan Sulawesi and oversea countries by sea transportation.

The port area is alluvial lowland and drained by Semarang river, a small stream running though the city of Semarang, and by the east and West Banjir canals, each about 2Km from the port, emptying into the sea outside the port.

Table A.5.2.3 Profile of Tg.Emas Port

Name of port	Tg.Emas		Name of Province	Central Jawa
			Population of Hinterland	29,653,000person
Port Area	Port working area	Land side	838 Ha	
		Seaside	17,800 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	103,846 TEUs	946,315 Ton	
	General Cargo	Domestic	1,234,636 Ton	
		International	1,792,202 Ton	
	Dry Bulk	Domestic	483,952 Ton	
		International	144,935 Ton	
	Liquid Bulk	Domestic	1,832,312 Ton	
		International	61,530 Ton	
	Passenger	Foreign	18,688 persons	
		Domestic	317,414 Persons	
Shipping Service And Size of Calling Vessel	- Container			
	Advance	SEA HOUSE	376 TEUs	Weekly (Sing-Sem)
	PT S.I	HUSUM	582 TEUs	Twice a week (Sing-Jak-Sem)
	Wan Hai	WAN HAI 202	1,100 TEUs	Weekly(Jap-Kee-hong-Man-Jak-Se)
	Uniglory	PERMAI 1	- TEUs	Weekly(Sing-Jak-Sem)
	RCL	HARI BHUM	540 TEUs	Weekly(Sing-Jak-Sem)
	- Pelni 5 route			

<table>
<tr><td rowspan="7">Port Facilities</td><td></td><td>Name of Berth</td><td>Length of Berth (m)</td><td>Water Depth (m)</td></tr>
<tr><td>Container</td><td>Container Wharf</td><td>345.0</td><td>10.0</td></tr>
<tr><td>General Cargo</td><td>Ocean Wharf
Domestic Wharf</td><td>605.0
170.0</td><td>9.0
4.5</td></tr>
<tr><td>Dry Bulk</td><td></td><td></td><td></td></tr>
<tr><td>Liquid Bulk</td><td></td><td></td><td></td></tr>
<tr><td>Small Ship</td><td>Godown 1-16</td><td>1,697.0</td><td>3.0</td></tr>
<tr><td>Passenger</td><td>Domestic Wharf</td><td>150.0</td><td>4.5</td></tr>
<tr><td>Special Wharf</td><td colspan="4">Fetilizer (PT.DWIMATAMA) L = 867.0 + 150.0 D = 6.0
Bunker Oil (PERTAMINA) 2 jetties
PLTU</td></tr>
<tr><td>Productivities</td><td colspan="4"><table>
<tr><td colspan="2">Oceangoing</td><td colspan="2">Domestic</td></tr>
<tr><td>General Cargo(T/G/h)</td><td>33.0</td><td>General Cargo(T/G/h)</td><td>19.0</td></tr>
<tr><td>Bagged Cargo(T/G/h)</td><td>34.0</td><td>Bagged Cargo(T/G/h)</td><td>6.0</td></tr>
<tr><td>Unitized Cargo(T/G/h)</td><td>0.0</td><td>Unitized Cargo(T/G/h)</td><td>0.0</td></tr>
<tr><td>Liquid Bulk (T/h)</td><td>0.0</td><td>Liquid Bulk (T/h)</td><td>71.0</td></tr>
<tr><td>Dry Bulk (T/h)</td><td>26.0</td><td>Dry Bulk (T/h)</td><td>129.0</td></tr>
<tr><td>Container</td><td></td><td>Container</td><td></td></tr>
<tr><td>CT (TEUs/Crane/h)</td><td>0.0</td><td>CT (TEUs/Crane/h)</td><td>0.0</td></tr>
<tr><td>Conv (TEUs/Crane/h)</td><td>10.0</td><td>Conv (TEUs/Crane/h)</td><td>0.0</td></tr>
</table></td></tr>
<tr><td>Access Channel And Maintenance</td><td colspan="4">The existing channel was completed in 1985 with width of 150m and depth of –9.0mLWL as planned. However the present depth has became shallow than that and now come to around –7.2～—8.0 in total average.</td></tr>
<tr><td>Land Access To Port</td><td colspan="4"></td></tr>
<tr><td>Port Master Plan</td><td colspan="4">The Master Plan for Tg.Emas port was prepared in 1982 by JICA consulting service and reviewed in 1991.
Master Plan Concept was prepared in 1996 including cargo forecast, port facilities development volume and implementation schedule until 2018.
The development strategy is as follows (1) improve port operation service such as productivity and efficiency (2)increase international ship calling as trunk port (3) facilitate all kinds of port function and marina (4) good relationship to industrial estate and boded zone in port area (5) port supporting activities.
Port land area includes Industrial estate(150Ha), Port facility estate (217.4Ha),Commercial and Business estate(15Ha), Maritime industrial estate(27Ha), Social facility estate(46Ha). These areas will be prepared by reclamation of port area.</td></tr>
</table>

(4) Belawan Port

Belawan port is located in 98° 41' East longitude 03° 47'South Latitude at the north of the eastern coast of Sumatra island and between Belawan river and Deli river. The port basin at the mouth of Belawan river is connecting to Malacca Strait, one of the most important straits for East Asia Countries, through 12Km access channel.

The port is situated 27Km east of Medan, the capital city of North Sumatra Province, and is playing a vital role as a sea transport center for all economies activities in its hinterland, North Sumatra and southern part of Ache, connected to Jawa , Sumatra, Kalimantan Sulawesi and oversea countries especially for Malaysia and Singapore.

The main products in its hinterland are agriculture and forestry such as palm oil, rubber and rattan so on, and Medan Industrial Estate (MIE) is located 15Km from the port.

Table A.5.2.4 Profile of Belawan Port

Name of port	Belawan		Name of Province	North Sumatra
			Population of Hinterland	11,115,000person
Port Area	Port working area	Landside	61,620 Ha	
		Seaside	10,643 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	191,058 TEUs	1,771,749 Ton	
	General Cargo	Domestic	1,913,863 Ton	
		International	3,185,227 Ton	
	Dry Bulk	Domestic	2,191,326 Ton	
		International	865,238 Ton	
	Liquid Bulk	Domestic	2,288,240 Ton	
		International	1,499,149 Ton	
	Passenger	Foreign	121,552 Persons	
		Domestic	141,786 Persons	
Shipping Service And Size of Calling Vessel	- Container Advance KOTA SURIA 589 TEUs Weekly (Sing-Bel) PT S.I SINAR MALAKA – TEUs Weekly (Sing-Bel-Penang) RCL THANA 320 TEUs Weekly (Sing-P.Kel-Bel) MEARSK Ocean Brilliancy 545 TEUs Weekly (P.Kel-Sin-Bel-Sin) MEARSK MCC Vavtage 486 TEUs Weekly (Sing-P.Kel-Bel) COSCO Tang He 1,152 TEUs Weekly (Hong-Sing-Bel-Penang) - Pelni 1 route			

<table>
<tr><td rowspan="7">Port Facilities</td><td></td><td>Name of Berth</td><td>Length of Berth (m)</td><td>Water Depth (m)</td></tr>
<tr><td>Container</td><td>GABION C.T.</td><td>500.0
(Semi) 350.0</td><td>10.0
10.0</td></tr>
<tr><td>General Cargo</td><td>Ujung Baru
CITRA BASE</td><td>1,255.0
625.0</td><td>7.0
7.0</td></tr>
<tr><td>Dry Bulk</td><td>CITRA BASE</td><td>150.0</td><td>6.0</td></tr>
<tr><td>Liquid Bulk</td><td>Ujung Baru</td><td>200.0</td><td>7.0</td></tr>
<tr><td>Small Ship</td><td>LAME BASE</td><td>1,554.0</td><td></td></tr>
<tr><td>Passenger</td><td>Ujung Baru</td><td>215.0</td><td>9.0</td></tr>
<tr><td rowspan="3">Special Wharf</td><td colspan="4">Cement (PT.SAE) Jetty</td></tr>
<tr><td colspan="4">Fuel (PERTAMINA) Jetty</td></tr>
<tr><td colspan="4">IKD Berth</td></tr>
<tr><td>Productivities</td><td colspan="4"><table>
<tr><td colspan="2">Oceangoing</td><td colspan="2">Domestic</td></tr>
<tr><td>General Cargo(T/G/h)</td><td>20.7</td><td>General Cargo(T/G/h)</td><td></td></tr>
<tr><td>Bagged Cargo(T/G/h)</td><td>25.7</td><td>Bagged Cargo(T/G/h)</td><td></td></tr>
<tr><td>Unitized Cargo(T/G/h)</td><td>39.3</td><td>Unitized Cargo(T/G/h)</td><td></td></tr>
<tr><td>Liquid Bulk (T/h)</td><td>93.9</td><td>Liquid Bulk (T/h)</td><td></td></tr>
<tr><td>Dry Bulk (T/h)</td><td>39.8</td><td>Dry Bulk (T/h)</td><td></td></tr>
<tr><td>Container</td><td></td><td>Container</td><td></td></tr>
<tr><td>CT (TEUs/Crane/h)</td><td>16.8</td><td>CT (TEUs/Crane/h)</td><td></td></tr>
<tr><td>Conv (TEUs/Crane/h)</td><td></td><td>Conv (TEUs/Crane/h)</td><td></td></tr>
</table></td></tr>
<tr><td>Access Channel And Maintenance</td><td colspan="4">The port is originally located in Labuhan Deli. But due to serious sedimentation of the Deli river, the port was relocated to present location. 12Km access channel is maintained to be 100m minimum width and 9.5mLWS with yearly maintenance dredging. The recent maintenance dredging volume is about 1,800,000 m^3.</td></tr>
<tr><td>Land Access To Port</td><td colspan="4">A highway is in operation to serve as the access to the port from Medan city with distance of 23Km.
The railway, mainly utilized for the liquid bulk transportation, is terminated at Ujung Baru Base, and extension to Gabion base is planning.</td></tr>
<tr><td>Port Mater Plan</td><td colspan="4">The Master Plan for Belawan port was prepared in 1983 by ADB consulting service and reviewed in 1996.
Master Plan Concept was prepared in 1996 including cargo forecast, port facilities development volume and implementation schedule until 2018.
The development strategy is (1) supporting the economics in North Sumatra Island (2) by the advantage of geographical location, facing MaLaka Strait, increasing international ship calling as trunk port (3) improving port operational efficiency (4) applying private investment.
Improving turning basin access channel and anchorage area in port.
Port supporting facilities such as road network, parking area, utilities facilities and environmental facilities.</td></tr>
</table>

(5) Banjarmasin Port

Banjarmasin port is located in 114° 34'48" East longitude 03° 20'18"South Latitude and along the riverside of Barito and Martapura at the southern part of South Kalimantan Province, about 20 mile from the sea.

The port is the main gate of sea transportation and playing a key role for economic activities of the province especially for transshipment of cargo. But as the port is located midstream of the river, the size of calling ship is restricted and waiting time is too long. The area of Banjarmasin city is composed of low and wet land. The most part of the urban area floods in the rainy season from Martapura river and other smaller rivers.

The public port consists of three terminals, Trisakti, Old and New Martapura and in the jurisdiction of the port there are many private industry jetties which are called as "out Ports" The private industry jetties, mostly producing plywood, are located along both banks of the Barito river. The coal handled in the port is mined in Klanis area in Central Kalimantan Province, about 280Km up to the Barito river and transported by barge into open sea where it is transshipped at anchorage.

To cope with this siltation problem, local governmnet planned to develop a new port at Batulicin located in Laut Straits about 270km southeast of Banjarmasin. Butulicin port is protected with Sebulu Island and Laut Island and there are 7m deep two channels from Makassar Strait.

Table A.5.2.5 Profile of Banjarmasin Port

Name of port	Banjarmasin		Name of Province	South Kalimantan
			Population of Hinterland	2,893,000 person
Port Area	Port working area	Land side	95 Ha	
		Seaside	115,000 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	59,939 TEUs	670,564 Ton	
	General Cargo	Domestic	3,130,275 Ton	
		International	1,474,432 Ton	
	Dry Bulk	Domestic	465,550 Ton	
		International	5,510,303 Ton	
	Liquid Bulk	Domestic	622,733 Ton	
		International	44,739 Ton	
	Passenger	Foreign	-	
		Domestic	283,092 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 1route			

<table>
<tr><td rowspan="7">Port Facilities</td><td></td><td>Name of Berth</td><td>Length of Berth (m)</td><td>Water Depth (m)</td></tr>
<tr><td>Container</td><td>New Trisakti</td><td>(Semi) 200.0</td><td>9.0</td></tr>
<tr><td rowspan="2">General Cargo</td><td>Old Trisakti</td><td>240.0</td><td>9.0</td></tr>
<tr><td>New Martapura</td><td>350.0</td><td>5.0</td></tr>
<tr><td>Dry Bulk</td><td>Trisakti (Cement)</td><td>40.0</td><td>7.0</td></tr>
<tr><td>Liquid Bulk</td><td></td><td></td><td></td></tr>
<tr><td>Small Ship</td><td>Old Martapura</td><td>428.0</td><td>4.0</td></tr>
<tr><td>Passenger</td><td>Trisakti</td><td>70.0</td><td>9.0</td></tr>
<tr><td>Special Wharf</td><td colspan="4">Out ports (many private industrial jetties)</td></tr>
<tr><td>Productivities</td><td colspan="2">Oceangoing
General Cargo(T/G/h) 24.0
Bagged Cargo(T/G/h) 20.0
Unitized Cargo(T/G/h) 25.0
Liquid Bulk (T/h)
Dry Bulk (T/h)
Container
CT (TEUs/Crane/h)
Conv (TEUs/Crane/h) 8.0</td><td colspan="2">Domestic
General Cargo(T/G/h)
Bagged Cargo(T/G/h)
Unitized Cargo(T/G/h)
Liquid Bulk (T/h)
Dry Bulk (T/h)
Container
CT (TEUs/Crane/h)
Conv (TEUs/Crane/h)</td></tr>
<tr><td>Access Channel and Maintenance</td><td colspan="4">The access channel to Banjarmasin port is 14km long 55m wide 5m deep and has to be dredged continuously, twice a year. The volume of annual dredging is 2,500,000 – 3,000,000 m3.</td></tr>
<tr><td>Land Access To Port</td><td colspan="4"></td></tr>
<tr><td>Port master plan</td><td colspan="4">The Master Plan for Belawan port was prepared in 1983 by ADB consulting service and reviewed in 1996.
Master Plan Concept was prepared in 1996 including cargo forecast, port facilities development volume and implementation schedule until 2018.
The development strategy is (1) supporting national and international container transport in South Kalimantan and southern part of Central Kalimantan (2) improve Passenger Terminal function for tourism and recreation (3) distribution center and transshipment (4) port supporting facilities (5) Batulicin port will be developed to support the function of Banjarmasin port</td></tr>
</table>

(6) Balikpapan Port

Balikpapan port is located on east coast of Kalimantan island about 115 km south of Samarinda, the capital city of East Kalimantan Province. The port is situated on the north coast of Balikpapan Bay. The bay is facing to Makassar Strait and has 5.4km wide at mouth of the bay and about 20km long.

Balikpapan is the largest city in East Kalimantan province and the main industries of the hinterland are crude oil, mining, forestry, agriculture and fishery.

New international class airport opened I 1994 and the municipality of the city intends to develop more industries in this region. Kariangau area was selected as the site for new industrial estate development. The area is located about 12km northwest from the city center and facing the Balikupapan Bay. The total area of industrial estate is planned to be 4,500Ha and necessary infrastructures such as road, seaport and so on will be developed. The port working land area in the estate is more/less 200 Ha.

Table A.5.2.6 Profile of Balikpapan Port

Name of port	Balikpapan		Name of Province	East kalimantan
			Population of Hinterland	2,314,000 person
Port Area	Port working area	Land side	8.5 Ha	
		Seaside	3,032 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	4,028 TEUs	37,441 Ton	
	General Cargo	Domestic	2,186,935 Ton	
		International	285,023 Ton	
	Dry Bulk	Domestic	725,186 Ton	
		International	888,630 Ton	
	Liquid Bulk	Domestic	16,998,679 Ton	
		International	20,939,156 Ton	
	Passenger	Foreign	-	
		Domestic	394,964 Persons	
Shipping Service And Size of Calling Vessel				

<table>
<tr><td rowspan="7">Port Facilities</td><td></td><td>Name of Berth</td><td>Length of Berth (m)</td><td>Water Depth (m)</td></tr>
<tr><td>Container</td><td></td><td></td><td></td></tr>
<tr><td>General Cargo</td><td>Semayang</td><td>329.0</td><td>7.0</td></tr>
<tr><td>Dry Bulk</td><td></td><td></td><td></td></tr>
<tr><td>Liquid Bulk</td><td></td><td></td><td></td></tr>
<tr><td>Small Ship</td><td>Kampung Baru</td><td>102.0</td><td>4.0</td></tr>
<tr><td>Passenger</td><td>Semayang</td><td>100.0</td><td>6.0</td></tr>
<tr><td>Special Wharf</td><td colspan="4">Crude Oil and products (Tanjung Batu)
Crude Oil and products (Penajam Terminal)
Crude Oil and products (Pertamina Terminal)
Coal (PT Dermaga Perkasa Pratama)
LNG (Bontang)
Plywoods (other private berths)</td></tr>
<tr><td>Productivities</td><td colspan="4"><table>
<tr><td>Occangoing</td><td></td><td>Domestic</td><td></td></tr>
<tr><td>General Cargo(T/G/h)</td><td>15.0</td><td>General Cargo(T/G/h)</td><td>14.3</td></tr>
<tr><td>Bagged Cargo(T/G/h)</td><td>25.0</td><td>Bagged Cargo(T/G/h)</td><td>24.6</td></tr>
<tr><td>Unitized Cargo(T/G/h)</td><td>24.3</td><td>Unitized Cargo(T/G/h)</td><td>25.4</td></tr>
<tr><td>Liquid Bulk (T/h)</td><td>121.7</td><td>Liquid Bulk (T/h)</td><td>0.0</td></tr>
<tr><td>Dry Bulk (T/h)</td><td>0.0</td><td>Dry Bulk (T/h)</td><td>0.0</td></tr>
<tr><td>Container</td><td></td><td>Container</td><td></td></tr>
<tr><td>CT (TEUs/Crane/h)</td><td>0.0</td><td>CT (TEUs/Crane/h)</td><td>0.0</td></tr>
<tr><td>Conv (TEUs/Crane/h)</td><td>0.0</td><td>Conv (TEUs/Crane/h)</td><td>0.0</td></tr>
</table></td></tr>
<tr><td>Access Channel And Maintenance</td><td colspan="4">Balikpapan, Riko, Wain and Sumber river run into the Balikpapan bay.These rivers are relatively small and the sediment discharge is estimated to be relatively low compare to other rivers in Kalimantan Island. The water depth of Balikpapan river and Riko river is 10m LWS at the mouth of river and Wain and Sumber river is 4m.
To the south of the entrance of Balikpapan Bay, there are extending shoals less than 5m deep but the 20 km long 13m or more depth access channel was developed and is maintained by Pertamina.</td></tr>
<tr><td>Land Access To Port</td><td colspan="4">The land area of port is very limited and access road to the port is seriously congested.</td></tr>
<tr><td>Port Mater Plan</td><td colspan="4">The first Master Plan for Balikpapan port was established by JICA in 1979 and reviewed in 1985 and 1996 by ADB technical service.
Master Plan Concept was prepared in 1997 including cargo and Passenger forecast and facilities development plan until 2018. The port development strategy is also shown as "Semayang only for passenger service because of limited land area and access road" "Kampung Baru only for traditional ship and tourism" and "new port development for general cargo and container in Kariangau Industrial Estate area"</td></tr>
</table>

(7) Makassar (Ujung Pandang) Port

Makassar port is located at west coast of Ujung Pandang, the capital city of North Sulawesi Province. The port is situated on the northwest end of Sulawesi Island facing to Makassar Strait that is, potentially, an alternative channel of Malaka Strait for international shipping route. Ujung Pandang is the largest city in Eastern Indonesia and Makassar port is the gateway port for this area.

The main industries of the hinterland are agriculture and forestry. And Makassar Industrial Estate (KIMA) development started with provincial government support and the highway is constructing from airport to seaport, the industrial area located in between.

All of New Hatta Quay construction project will finish soon and container handling facilities will be installed in near future.

Table A.5.2.7 Profile of Makassar Port

Name of port	Makassar		Name of Province	South Sulawesi
			Population of Hinterland	7,558,000 person
Port Area	Port working area	Land side	50.78 Ha	
		Seaside	1,467.2 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	111,542 TEUs	948,188 Ton	
	General Cargo	Domestic	1,013,809 Ton	
		International	308,558 Ton	
	Dry Bulk	Domestic	112,428 Ton	
		International	329,861 Ton	
	Liquid Bulk	Domestic	598,572 Ton	
		International	56,706 Ton	
	Passenger	Foreign	6,986 Persons	
		Domestic	813,829 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 11route - Pioneer shipping (home port) 2route			

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container	Hatta Quay	(semi) 490.0	10.0
	General Cargo	Seokarno	1,000.0	8.0
		Hatta	180.0	10.0
	Dry Bulk	Seokarno Quay	360.0	7.0
	Liquid Bulk			
	Small Ship	Paotere	520.0	3.0
	Passenger		180.0	8.0

Productivities	Occangoing		Domestic	
	General Cargo(T/G/h)	14.0	General Cargo(T/G/h)	14.0
	Bagged Cargo(T/G/h)	28.0	Bagged Cargo(T/G/h)	27.0
	Unitized Cargo(T/G/h)	26.0	Unitized Cargo(T/G/h)	26.0
	Liquid Bulk (T/h)	113.0	Liquid Bulk (T/h)	116.0
	Dry Bulk (T/h)	133.0	Dry Bulk (T/h)	156.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	10.0	Conv (TEUs/Crane/h)	0.0
Access Channel and Maintenance	At the present, the port is not affected by sedimentation hence no dredging work was carried out in these days. The main supply source of sedimentation of the port area is anticipated to be Jene Berang river and sand bar flushed out by river.			
Land Access To Port	The port entrance gate area was relocated with Hatta quay development and toll road to airport through industrial area is constructing. But it seems that there are some problems for container transportation in this area.			
Port Master Plan	The first Master Plan for Makassar port was established by IBRD in 1984 and reviewed in 1992 by OECF technical service. Master Plan Concept was prepared in 1997 including cargo and Passenger forecast and facilities development plan until 2018. The port development strategy is also shown as "limited land area for development" "unloading container volume is dominant" "review of passenger terminal location" and "rapid growth of container cargo volume" For future expansion of the port land area, Lae-Lae area Island which is located in front of the port, will be reclaimed 200Ha. The area will supply not only port working area but also industrial and tourism area. Access road from port to hinterland and electric power and water supply is important factor for future development. Coordination among related sector should be executed orderly.			

(8) Panjang Port

Panjang port is situated in the Lampung bay area in southern tip of Sumatara Island. It is about 8 km from Teluk Betung. The port is well protected by a submerged coral reef with enough depth for international shipping and is one of the largest port in Southern Sumatra serving much of the southern portion of the Island.

Table A.5.2.8 Profile of Panjang Port

Name of port	Panjang		Name of Province	Lampung
			Population of Hinterland	6,658,000 person
Port Area	Port working area	Landside	105 Ha	
		Seaside	Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	48,681 TEUs	426,827 Ton	
	General Cargo	Domestic	603,753 Ton	
		International	1,043,661Ton	
	Dry Bulk	Domestic	4,155,697Ton	
		International	944,073 Ton	
	Liquid Bulk	Domestic	807,263 Ton	
		International	79,375 Ton	
	Passenger	Foreign	-	
		Domestic	987 Persons	
Shipping Service And Size of Calling Vessel	PT S.I SINAR TIMUR 450 TEUs Twice a week (Sing-Jak-Panj) RCL DEJA BHUM 582 TEUs Weekly (Sing-Panj-Jak) - Pelni 1 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container	CT	298.0	12.0
	General Cargo	Wharf A	172.0	8.5
		Wharf B	210.0	5.5
		Wharf C	138.0	7.0
		Wharf D	487.0	10.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	21.7	General Cargo(T/G/h)	20.7
	Bagged Cargo(T/G/h)	24.6	Bagged Cargo(T/G/h)	23.4
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	117.8	Liquid Bulk (T/h)	74.3
	Dry Bulk (T/h)	26.5	Dry Bulk (T/h)	64.9
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	26.5	Conv (TEUs/Crane/h)	0.0
Access Channel	200m wide and 14m deep channel and 5-12m deep inside harbor			

(9) Palembang Port

Palembang port is situated in the South Sumatara Province on Musi River. It is about 100 km from the mouth of River. The port is important river port as regional distribution center of river transportation.

Table A.5.2.9 Profile of Palembang Port

Name of port	Palembang		Name of Province	South Sumatra
			Population of Hinterland	7,208,000 person
Port Area	Port working area	Landside	22,409 Ha	
		Seaside	1,120 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	15,610 TEUs	104,392 Ton	
	General Cargo	Domestic	2,001,115 Ton	
		International	771,651 Ton	
	Dry Bulk	Domestic	1,460,326 Ton	
		International	541,859 Ton	
	Liquid Bulk	Domestic	5,343,785 Ton	
		International	565,531 Ton	
	Passenger	Foreign	19,389 Persons	
		Domestic	98,867 Persons	
Shipping Service And Size of Calling Vessel	- Container PT S.I TIWADIKA - TEUs Twice a week (Sing-Pal)			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container	Boom Baru	265.0	9.2
	General Cargo	Boom Baru	475.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	Boom Baru	280.0	3.5
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	18.0	General Cargo(T/G/h)	17.3
	Bagged Cargo(T/G/h)	27.5	Bagged Cargo(T/G/h)	26.8
	Unitized Cargo(T/G/h)	98.6	Unitized Cargo(T/G/h)	81.2
	Liquid Bulk (T/h)	115.2	Liquid Bulk (T/h)	176.7
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	46.0
	Container		Container	
	CT (TEUs/Crane/h)	8.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	0.0

Access Channel And Maintenance	The main channel is 100km long 120m wide and run from the port to estuary with 8m design depth. From estuary, the channel continue seaward about 12 km to deep water. The outer channel is maintained with dredging twice a year, but vessel is often waiting high tide.

(10) Pontianak Port

Pontianak port is located at the west side of West Kalimantan Province and is river port on Kapuas River. The port is the biggest port in the province and the gate port from/to the area, mainly engaged in export. The new port facilities will be developed in western area from present position that means to reach to the estuary.

Table A.5.2.10 Profile of Pontianak Port

Name of port	Pontianak		Name of Province	West Kalimantan
			Population of Hinterland	3,636,000 person
Port Area	Port working area	Landside	17.32 Ha	
		Seaside	10,438 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	26,367 TEUs	266,142 Ton	
	General Cargo	Domestic	778,816 Ton	
		International	925,101 Ton	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	618,021 Ton	
		International	-	
	Passenger	Foreign	-	
		Domestic	356,102 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 2route - Pioneer shipping (home port) 2 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container	Wharf 07	(semi) 100.0	5.5
	General Cargo	Wharf 01 – 06	607.0	5.5
	Dry Bulk			
	Liquid Bulk	Nipah Kuning	140.0	5.5
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	41.0	General Cargo(T/G/h)	25.0
	Bagged Cargo(T/G/h)	19.0	Bagged Cargo(T/G/h)	30.0
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	9.0
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	
	Dry Bulk (T/h)		Dry Bulk (T/h)	
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

Access Channel and Maintenance	The length of entrance channel of Kapuas Kecil River to the port is 31km with 80m wide and 5.5m deep at the estuary. 12km length of channel needs dredging to maintain the depth.

(11) Lhok Seumawe Port

Lhok Seumawe port is located in east coast of the Special Teritory of Aceh and 20 km from Lhok Seumawe city, the regency of North Ache. The function of the port is import and export of raw materials for industrial activities, especially gas and oil industry. Beside there is rapid growth of palm oil and agricultural products.

Table A.5.2.11 Profile of Lhok Seumawe Port

Name of port	Lhok Seumawe		Name of Province	Aceh
			Population of Hinterland	3,848,000 person
Port Area	Port working area	Landside	41.6 Ha	
		Seaside	10,496 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	106,084 Ton	
		International	445,117 Ton	
	Dry Bulk	Domestic	336,421 Ton	
		International	415,798 Ton	
	Liquid Bulk	Domestic	384,734 Ton	
		International	30,165,065 Ton	
	Passenger	Foreign	-	
		Domestic	-	

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		567.0	9.5
	Dry Bulk		195.0	4.5
	Liquid Bulk			
	Small Ship			
	Passenger		288.0	

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	25.0	General Cargo(T/G/h)	27.0
	Bagged Cargo(T/G/h)	27.7	Bagged Cargo(T/G/h)	13.9
	Unitized Cargo(T/G/h)	37.2	Unitized Cargo(T/G/h)	25.6
	Liquid Bulk (T/h)	136.5	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	39.5	Dry Bulk (T/h)	28.0
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

Port master Plan	Master Plan for Lhok Seumawe port was prepared in 1985 by IBRD and reviewed in 1998 by IPC 1. Master Plan Concept was prepared in 1996 including cargo and passenger forecast and facilities development plan until 2018.

(12) Dumai Port

Dumai port is located on the eastern coast of Riau province at the central part of Sumatra Island along the Malaka Strait, one of the most important shipping lane in the world. The port is situated about 60km south through the Rupat Strait from the Malaka Strait and is well sheltered from open sea by Rupat Island with sufficient water depth.

The port has been developed to export crude and refined oil from Minas oil field. But now the port is also playing an important role as nucleus port to handle agricultural and industrial products and associated economic activities in Riau and North Sumatra.

Table A.5.2.12 Profile of Dumai Port

Name of port	Dumai		Name of Province	Riau
			Population of Hinterland	1,080,000 person
Port Area	Port working area	Land side	144.1 Ha	
		Seaside	6,800 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	480 TEUs	3,830 Ton	
	General Cargo	Domestic	293,251 Ton	
		International	267,019 Ton	
	Dry Bulk	Domestic	34,437 Ton	
		International	458,955 Ton	
	Liquid Bulk	Domestic	16,567,470 Ton	
		International	21,093,525 Ton	
	Passenger	Foreign	91,779 Persons	
		Domestic	247,741 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 1 route - Ferry from Malaysia			

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container			
	General Cargo		893.0	8.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger		36.0	3.5

Oceangoing		Domestic	
General Cargo(T/G/h)	18.6	General Cargo(T/G/h)	85.0
Bagged Cargo(T/G/h)		Bagged Cargo(T/G/h)	
Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	
Liquid Bulk (T/h)	137.5	Liquid Bulk (T/h)	
Dry Bulk (T/h)		Dry Bulk (T/h)	
Container		Container	
CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

Productivities

(13) Pekanbaru Port

Pekanbaru port is river port on Siak River about 160 km from the estuary and Pekanbaru is the capital city of Riau province. The role of the port is to support the regional economy of the city and industrial activities in the hinterland.

Due to the new bridge construction about 150m downstream of the port, new location, Perawang area will be developed for large vessel.

Table A.5.2.13 Profile of Pekanbaru Port

Name of port	Pekanbaru		Name of Province	Riau
			Population of Hinterland	2,821,000 person
Port Area	Port working area	Land side	66.5 Ha	
		Seaside	1,670 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	9,308 TEUs	0 Ton	
	General Cargo	Domestic	848,040 Ton	
		International	1,082,706 Ton	
	Dry Bulk	Domestic	43,265 Ton	
		International	-	
	Liquid Bulk	Domestic	80,454 Ton	
		International	3,851 Ton	
	Passenger	Foreign	-	
		Domestic	45,080 Persons	

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		346.0	5.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	14.7	General Cargo(T/G/h)	
	Bagged Cargo(T/G/h)		Bagged Cargo(T/G/h)	
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	
	Liquid Bulk (T/h)	31.4	Liquid Bulk (T/h)	
	Dry Bulk (T/h)		Dry Bulk (T/h)	
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

Access Channel and Maintenance	The access channel is more than 160 km long through Siak River. The port basin is about 60m.wide and 1.0-5.0m deep.

(14) Jambi Port

Jambi port is located on the batanghari River about 160 km upsteam of the river mouth port of Muara Sabak. The port is an important river port serving as a collection point for cargo by small river craft. Talang Duku is situated 15km downstream from the port and is expected to replace Jambi port as primary port for surrounding area.

Table A.5.2.14 Profile of Jambi Port

Name of port	Jambi			Name of Province	Jambi
				Population of Hinterland	2,370,000 person
Port Area	Port working area	Landside	Ha		
		Seaside	Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container	7,186 TEUs	54,195 Ton		
	General Cargo	Domestic	1,284,031 Ton		
		International	748,674 Ton		
	Dry Bulk	Domestic	74,744 Ton		
		International	54,151 Ton		
	Liquid Bulk	Domestic	433,596 Ton		
		International	3,934 Ton		
	Passenger	Foreign	-		
		Domestic	25,411 Persons		

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container			
	General Cargo		344.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	34.6	General Cargo(T/G/h)	26.0
	Bagged Cargo(T/G/h)	23.0	Bagged Cargo(T/G/h)	24.1
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	79.7
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	28.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	6.0	Conv (TEUs/Crane/h)	0.0

Access Channel and Maintenance	The navigation channel for Jambi port is composed two section : outer bar area about 20km long and river channel about 140km long. Dredging of outer bar area is carried out every two year with 4m deep.

(15) Teluk Bayur Port

Teluk Bayur port is located in west coast of Sumatra Island and 7 km south of Padang, the capital city of West Sumatra Province. The port serves as the harbor for Padang and is main port for ocean-going vessel on west coast of Sumatra.

Additional facilities are also provided at the nearby river port at Muara Padang.

Table A.5.2.15 Profile of Teluk Bayur Port

Name of port	Teluk Bayur		Name of Province	West Sumatra
			Population of Hinterland	4,323,000 person
Port Area	Port working area	Landside	12.4 Ha	
		Seaside	6,470 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	1,912 TEUs	13,049 Ton	
	General Cargo	Domestic	1,023,067 Ton	
		International	430,095 Ton	
	Dry Bulk	Domestic	954,279 Ton	
		International	2,359,537 Ton	
	Liquid Bulk	Domestic	2,057,941 Ton	
		International	17,036 Ton	
	Passenger	Foreign	1,975 Persons	
		Domestic	47,929 Persons	
Shipping Service and Size of Calling Vessel	- Pioneer shipping (home port) 2 route			

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container	New Cement Pier	150.0	9.5
	General Cargo	Cement Pier	98.5	9.5
		Concrete Pier	150.0	9.5
		Berths 1-6	705.0	9.5
	Dry Bulk	Coal Pier	248.0	9.5
	Liquid Bulk			
	Small Ship	Muara Padang	335.0	2.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	18.0	General Cargo(T/G/h)	16.0
	Bagged Cargo(T/G/h)	29.7	Bagged Cargo(T/G/h)	38.0
	Unitized Cargo(T/G/h)	32.8	Unitized Cargo(T/G/h)	31.0
	Liquid Bulk (T/h)	225.6	Liquid Bulk (T/h)	203.4
	Dry Bulk (T/h)	112.4	Dry Bulk (T/h)	30.1
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	6.4	Conv (TEUs/Crane/h)	6.0

(16) Bengkulu Port

Bengkulu port is located on the west coast of southern Sumatra facing Indian Ocean about 18 km southeast of Bengkulu, the capital city of Bengkulu Province. The main function of the port is coal loading for export.

Table A.5.2.16 Profile of Bengkulu Port

Name of port	Bengkulu			Name of Province	Bengkulu
				Population of Hinterland	1,409,000 person
Port Area	Port working area	Land side	1,200 Ha		
		Seaside	Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container		-		
	General Cargo	Domestic	80,665 Ton		
		International	82,470 Ton		
	Dry Bulk	Domestic	44,365 Ton		
		International	1,140,753 Ton		
	Liquid Bulk	Domestic	130,212 Ton		
		International	-		
	Passenger	Foreign	-		
		Domestic	3,214 Persons		
Shipping Service and Size of Calling Vessel	- Pioneer shipping (home port) 1 route				

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		150.0	9.0
	Dry Bulk		125.0	9.0
	Liquid Bulk			
	Small Ship		100.0	5.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	13.0	General Cargo(T/G/h)	4.0
	Bagged Cargo(T/G/h)	2.0	Bagged Cargo(T/G/h)	17.0
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	61.0
	Dry Bulk (T/h)	224.0	Dry Bulk (T/h)	129.0
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

Access Channel	The harbor area was former lagoon and converted to a harbor by cutting 1600m long and 90m wide channel through the spit. Maintenance dredging is carried out every year to keep the 12m depth of entrance channel.

(17) Pangkal Balam Port

Pangkal Balam port is located in Bangka Island in the eastern part of South Sumatra Province to support the economic activities in the region. There are other 4 small commercial port is located in the same Island.

Table A.5.2.17 Profile of Pangkal Balam Port

Name of port	Pangkal Balam		Name of Province	South Sumatra
			Population of Hinterland	
Port Area	Port working area	Landside	4,875 Ha	
		Seaside	Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	1,431,865 Ton	
		International	33,964 Ton	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	76,408 Ton	
		International	1,598 Ton	
	Passenger	Foreign	-	
		Domestic	24,350 Persons	
Shipping Service and Size of Calling Vessel				

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container			
	General Cargo		654.0	5.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	0.0	General Cargo(T/G/h)	18.0
	Bagged Cargo(T/G/h)	34.0	Bagged Cargo(T/G/h)	16.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	52.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	19.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(18) Cirebon Port

Cirebon port is located about 250 km east of Jakarta in eastern part of West Jawa Province and situated on the west side of a wide open bay, Teluk Cirebon.
The port is currently a regional port service in its immediate vicinity with commercial.

Table A.5.2.18 Profile of Cirebon Port

Name of port	Cirebon			Name of Province	West Jawa
				Population of Hinterland	5,030,000 person
Port Area	Port working area	Land side		31.2 Ha	
		Seaside		11.0 Ha	
	Port Concerning area			Ha	
Volume of Cargo In 1,995	Container		181 TEUs	879 Ton	
	General Cargo	Domestic		694,715 Ton	
		International		86,844 Ton	
	Dry Bulk	Domestic		625,098 Ton	
		International		-	
	Liquid Bulk	Domestic		201,964 Ton	
		International		15,648 Ton	
	Passenger	Foreign		-	
		Domestic		322,297 Persons	

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Muara Jati 1	275.0	7.0
		Muara Jati 2	248.0	5.5
		Muara Jati 3	80.0	7.0
		Pelita	111.0	4.0
	Dry Bulk			
	Liquid Bulk	Linggar Jati	131.0	5.0
	Small Ship		655.0	3.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	21.0	General Cargo(T/G/h)	16.0
	Bagged Cargo(T/G/h)	35.0	Bagged Cargo(T/G/h)	36.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	154.0	Liquid Bulk (T/h)	115.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	181.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Access Channel and Maintenance	The coastal area near the port is subject to accretion due to fine grained soils carried down by river. The Losari bar located about 25 km east of the port off the Losari River delta, is a critical constraint. The port can accept only up to 120m due to 75m wide and 7.0m deep channel. Maintenance dredging is carried out twice a year.

(19) Meneng Port

Meneng port is located eastern end of Jawa Island and facing to Bali Strait.

Table A.5.2.19 Profile of Meneng Port

Name of port	Meneng			Name of Province	East Jawa
				Population of Hinterland	4,839,000 person
Port Area	Port working area	Landside	Ha		
		Seaside	Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container		-		
	General Cargo	Domestic	223,492 Ton		
		International	266,493 Ton		
	Dry Bulk	Domestic	432,940 Ton		
		International	-		
	Liquid Bulk	Domestic	755,324 Ton		
		International	6,496 Ton		
	Passenger	Foreign	-		
		Domestic	-		
Shipping Service and Size of Calling Vessel					

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container			
	General Cargo		388.0	
	Dry Bulk			
	Liquid Bulk			
	Small Ship		573.0	3.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	18.0	General Cargo(T/G/h)	18.0
	Bagged Cargo(T/G/h)	22.0	Bagged Cargo(T/G/h)	22.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	60.0	Liquid Bulk (T/h)	200.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(20) Benoa Port

Benoa port is located in northern part of Bali Island and situated between Badung Peninsula, the most popular tourism area and Denpasar, the capital city of Bali province.

Table A.5.2.20 Profile of Benoa Port

Name of port	Benoa			Name of Province	Bali
				Population of Hinterland	2,896,000 person
Port Area	Port working area	Landside	19.7 Ha		
		Seaside	227.8 Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container		-		
	General Cargo	Domestic	137,982 Ton		
		International	38,983 Ton		
	Dry Bulk	Domestic	-		
		International	-		
	Liquid Bulk	Domestic	768,886 Ton		
		International	-		
	Passenger	Foreign	-		
		Domestic	254,653 Persons		
Shipping Service and Size of Calling Vessel	- Pelni 3 route				

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container			
	General Cargo		186.0	6.0
	Dry Bulk		30.0	5.0
	Liquid Bulk			
	Small Ship		150.0	3.0
	Passenger		290.0	9.0

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	17.0	General Cargo(T/G/h)	8.0
	Bagged Cargo(T/G/h)	0.0	Bagged Cargo(T/G/h)	19.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Port Master Plan	Master Plan for Benoa port was prepared in 1986 by DIP/IBRD and reviewed in 1991 by IPC 3. Master Plan Concept was prepared in 1996 including cargo and passenger forecast and facilities development plan until 2018. Strategy for port development is to improve the function for passenger and tourism, and container handling such as multipurpose, Ro-Ro and CFS.

(21) Lember Port

Lembar is located in the southwest of Lombok Island, and 25Km south of Mataran city, the capital city of West Nusa Tunggra Province. The port is situated on the north bank of a small bay which is a part of Labuan Tring Bay and has very calm sea condition.

There is a ferry terminal about 400m to the east from the main berth, and Ro/Ro type ferry is in service between Lembar and Padangbai in Bali Island.

Table A.5.2.21 Profile of Lembar Port

Name of port	Lembar		Name of Province	West Nusa Tunggara
			Population of Hinterland	2,284,000 person
Port Area	Port working area	Landside	156.5 Ha	
		Seaside	481 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	424,170 Ton	
		International	-	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	-	
		International	-	
	Passenger	Foreign	12,242 Persons	
		Domestic	171,040 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 2 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		218.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship		200.0	3.0
	Passenger		120.0	

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	9.0	General Cargo(T/G/h)	20.0
	Bagged Cargo(T/G/h)	19.0	Bagged Cargo(T/G/h)	30.0
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)		Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	0.0

(22) Bima Port

Bima port is located on the easthern end of Sumbawa Island in West Nusa Tunggara Province.

Table A.5.2.22 Profile of Bima Port

Name of port	Bima		Name of Province	West Nusa Tunggara
			Population of Hinterland	653,000 person
Port Area	Port working area	Landside	37.6 Ha	
		Seaside	4,529 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	154,488 Ton	
		International	-	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	-	
		International	-	
	Passenger	Foreign	-	
		Domestic	42,440 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 2 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		140.0	6.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship		100.0	4.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)		General Cargo(T/G/h)	11.0
	Bagged Cargo(T/G/h)		Bagged Cargo(T/G/h)	11.0
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	
	Dry Bulk (T/h)		Dry Bulk (T/h)	
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

(23) Kupang Port

Kupang port is situated near the west end of the Timor Island and at the south end of Eastern Indonesia Region. Kupang city is the economic and political center in East Nusa Tenggara Province and has initiated trade with the northern Australia.

The port faces Semau Strait and is generally well protected by Semau Island with deep sea access channel. The islands around Kupang regency are connected by several ferry services to support the local economic activities.

Table A.5.2.23 Profile of Kupang Port

Name of port	Kupang		Name of Province	East Nusa Tunggara
			Population of Hinterland	3,577,000 person
Port Area	Port working area	Landside	42.7 Ha	
		Seaside	32 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container (TEU)		-	
	General Cargo (t)	Domestic	280,557 Ton	
		International	30,635 Ton	
	Dry Bulk (t)	Domestic	50,680 Ton	
		International	16,547 Ton	
	Liquid Bulk (t)	Domestic	280,349 Ton	
		International	-	
	Passenger (t)	Foreign	778 Persons	
		Domestic	114,019 Persons	
Shipping Service	- Pelni 4 route - Pioneer shipping (home port) 4 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Interisland Wharf	223.0	8.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	Local Wharf	100.0	6.0
	Passenger			
Special Wharf	Fishery Jetty Fuel and Oil (PERTAMINA) Jetty			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	14.0	General Cargo(T/G/h)	13.0
	Bagged Cargo(T/G/h)	16.0	Bagged Cargo(T/G/h)	18.0
	Unitized Cargo(T/G/h)	45.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	38.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(24) Ende Port

Ende port is located on the southern coast of Flores Island. The location of the port is very important for relation between Nusa Tunggara islands with ferry networks.

Table A.5.2.24 Profile of Ende Port

Name of port	Ende		Name of Province	East Nusa Tunggara
			Population of Hinterland	1,498,000 person
Port Area	Port working area	Landside	7.2 Ha	
		Seaside	483 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	44,969 Ton	
		International	-	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	16,678 Ton	
		International	-	
	Passenger	Foreign	Persons	
		Domestic	79,192 Persons	
Shipping Service And Size of Calling Vessel				

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Conventional	175.0	6.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)		General Cargo(T/G/h)	48.0
	Bagged Cargo(T/G/h)		Bagged Cargo(T/G/h)	16.0
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	
	Dry Bulk (T/h)		Dry Bulk (T/h)	
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

(25) Dilli Port

Dilli port is located on the north coast of Timor Island and Dilli is the capital city of East Timor Province. The main function of the port is a provincial distribution center connecting the southeast end and the center of Indonesia.

The port is a natural port protected by rocky islands with very good sea condition. The port basin depth is 25m and around 13m at quayside.

Table A.5.2.25 Profile of Dilli Port

Name of port	Dilli			Name of Province	East Timor
				Population of Hinterland	
Port Area	Port working area	Landside	5.8 Ha		
		Seaside	20 Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container		-		
	General Cargo	Domestic	199,401 Ton		
		International	21,151 Ton		
	Dry Bulk	Domestic	-		
		International	-		
	Liquid Bulk	Domestic	55,822 Ton		
		International	-		
	Passenger	Foreign	-		
		Domestic	111,123 Persons		
Shipping Service And Size of Calling Vessel	- Pelni 3 route - Pioneer shipping 2 route				

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Conventional	240.0	6.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	1.0	General Cargo(T/G/h)	26.0
	Bagged Cargo(T/G/h)	1.0	Bagged Cargo(T/G/h)	27.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(26) Sampit Port

Sampit port is located on the middle of Central Kalimantan Province about 115km west of Palangkaraya, the capital city of the province. The port is river port on Mentaya River about 72km upstream from the mouth.

The forestry cargo is handled by private wharf, and public berth is used for consumer goods by local shipping and Rakyat.

Table A.5.2.26 Profile of Sampit Port

Name of port	Sampit		Name of Province	Central Kalimantan
			Population of Hinterland	1,627,000 person
Port Area	Port working area	Land side	5.6 Ha	
		Seaside	93,687 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	4,957 TEUs	39,510 Ton	
	General Cargo	Domestic	917,759 Ton	
		International	67,887 Ton	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	50,939 Ton	
		International	-	
	Passenger	Foreign	-	
		Domestic	136,828 Persons	
Shipping service	- Pelni 4 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		416.0	6.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)		General Cargo(T/G/h)	
	Bagged Cargo(T/G/h)		Bagged Cargo(T/G/h)	
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	
	Dry Bulk (T/h)		Dry Bulk (T/h)	
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	
Access Channel And Maintenance	River port in Central Kalimantan province. 72km long from mouth of the river.			

(27) Samarinda Port

Samarinda Municipality is located on the east coast of Kalimantan Island and 115km north of Balikpapan. The port is river port and situated on the bank of Mahakam river about 66 km from the Muara Pegah outer basin. The role of the port is a distribution center for hinterland with river transportation.

Table A.5.2.27 Profile of Samarinda Port

Name of port	Samarinda			Name of Province	East Kalimantan
				Population of Hinterland	Same Area as Balikpapan Port
Port Area	Port working area	Land side	4.4 Ha		
		Seaside	11,032 Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container		1,467 TEUs	13,077 Ton	
	General Cargo	Domestic	1,516,981 Ton		
		International	1,383,474 Ton		
	Dry Bulk	Domestic	457,449 Ton		
		International	2,909,845 Ton		
	Liquid Bulk	Domestic	89,418 Ton		
		International	3,621 Ton		
	Passenger	Foreign	-		
		Domestic	143,964 Persons		
Shipping Service And Size of Calling Vessel	- Pelni 2 route				

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Sungai Mahakan	827.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	Sungai Mahakan	50.0	6.0
	Passenger			

	Oceangoing		Domestic	
Productivities	General Cargo(T/G/h)	0.0	General Cargo(T/G/h)	0.0
	Bagged Cargo(T/G/h)	16.0	Bagged Cargo(T/G/h)	18.0
	Unitized Cargo(T/G/h)	19.0	Unitized Cargo(T/G/h)	19.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Access Channel And Maintenance	The siltation of the 59 km long access channel id serious problem and annual maintenance dredging has been carried out to secure the 5m water depth.

(28) Tarakan Port

Tarakan port is located in 117° 06'00" East longitude 03° 03'South Latitude on the northern part of East Kalimantan Province. The location of the port is very strategic for relation between Kalimantan and Malaysia, the northern part of Borneo Island.

Table A.5.2.28 Profile of Tarakan Port

Name of port	Tarakan			Name of Province	East Kalimantan
				Population of Hinterland	264,000 person
Port Area	Port working area		Landside	4.38 Ha	
			Seaside	11,032 Ha	
	Port Concerning area			Ha	
Volume of Cargo In 1,995	Container			-	
	General Cargo		Domestic	220,072 Ton	
			International	217,540 Ton	
	Dry Bulk		Domestic	3,042 Ton	
			International	63,726 Ton	
	Liquid Bulk		Domestic	195,755 Ton	
			International	7,098 Ton	
	Passenger		Foreign	-	
			Domestic	175,285 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 4 route				

		Name of Berth	Length of Berth (m)	Water Depth (m)
Port Facilities	Container			
	General Cargo		250.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	13.0	General Cargo(T/G/h)	13.0
	Bagged Cargo(T/G/h)	25.0	Bagged Cargo(T/G/h)	18.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	16.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(29) Kendari Port

Kendari port is located on the northern shore at mouth of Kendari Bay. Kendari is capital city of Southeast Sulawesi Province and the function of port is a distribution/collection center of the province. There are a lot of small islands in this province and the port is strategic position to support the life of these islands.

The port comprises two separate facilities, one is main port which is used for oceangoing and inter-island vessel and the other is wooden jetty for local ships. Kendari Bay is narrow bay opening to the east and the port is sheltered from the open sea.

Table A.5.2.29 Profile of Kendari Port

Name of port	Kendari		Name of Province	Southeast Sulawesi
			Population of Hinterland	1,587,000 person
Port Area	Port working area	Landside	22.1 Ha	
		Seaside	7,201 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	240,718 Ton	
		International	5,045 Ton	
	Dry Bulk	Domestic	-	
		International	-	
	Liquid Bulk	Domestic	63,028 Ton	
		International	-	
	Passenger	Foreign	-	
		Domestic	343,543 Persons	
Shipping Service	- Pelni 1 route - Pioneer shipping (home port) 1 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		331.0	6.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship		80.0	3.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	0.0	General Cargo(T/G/h)	11.1
	Bagged Cargo(T/G/h)	18.0	Bagged Cargo(T/G/h)	24.4
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(30) Pantoloan Port

Pantoloan port is located along the coast of Palu Bay in Central Sulawesi Province. The port is connected to Palu, the capital city, with 21km long road and the function of the port is a distribution/collection center of the province.

The port comprises public port facilities located at two separate place, Pantoloan and Donggala which located on the opposite side of Palu Bay. Main port at Pantoloan is mainly used for oceangoing and inter-island vessel and wooden T-shaped jetty for local ships.

Table A.5.2.30 Profile of Pantoloan Port

Name of port	Pantoloan		Name of Province	Central Sulawesi
			Population of Hinterland	664,000 person
Port Area	Port working area	Landside	11.1 Ha	
		Seaside	681.9 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	-		
	General Cargo	Domestic	364,283 Ton	
		International	72,478 Ton	
	Dry Bulk	Domestic	783,942 Ton	
		International	-	
	Liquid Bulk	Domestic	108,790 Ton	
		International	-	
	Passenger	Foreign	-	
		Domestic	167,402 Persons	
Shipping Service	- Pelni 3 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Pantoloan	250.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	Donggala	80.0	3.0
	Passenger			
Special Wharf	Fuel and Oil (PERTAMINA) Jetty Privately owned wharves			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	11.0	General Cargo(T/G/h)	12.0
	Bagged Cargo(T/G/h)	19.0	Bagged Cargo(T/G/h)	25.0
	Unitized Cargo(T/G/h)	24.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(31) Bitung Port

Bitung Port is located at the northern end of North Sulawesi Province and at the rim of Pacific region where economic activities have been more intensified. The port is not only the principal port of the province but also an important base of sea transportation linking the northern part of East Indonesia (Sulawesi, Maluku and West Irian Jaya).

Table A.5.2.31 Profile of Bitung Port

Name of port	Bitung			Name of Province	North Sulawesi
				Population of Hinterland	2,649,000 person
Port Area	Port working area	Land side	38.8 Ha		
		Seaside	3,217 Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container (TEU)	14,559 TEUs	163,839 Ton		
	General Cargo (t)	Domestic	718,407 Ton		
		International	166,535 Ton		
	Dry Bulk (t)	Domestic	1,609 Ton		
		International	59,113 Ton		
	Liquid Bulk (t)	Domestic	258,374 Ton		
		International	108,756 Ton		
	Passenger (t)	Foreign	1,578 Persons		
		Domestic	232,768 Persons		
Shipping Service	- Pelni 6 route		- Pioneer shipping (home port) 2 route		

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Sungai Mahakan	827.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	Sungai Mahakan	50.0	6.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	15.0	General Cargo(T/G/h)	14.0
	Bagged Cargo(T/G/h)	25.0	Bagged Cargo(T/G/h)	23.0
	Unitized Cargo(T/G/h)	27.0	Unitized Cargo(T/G/h)	25.0
	Liquid Bulk (T/h)	119.0	Liquid Bulk (T/h)	167.0
	Dry Bulk (T/h)	128.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Port Master Plan	The Master Plan for Bitung port was established by IBRD in 1984 and reviewed in 1994 by JICA technical service. Master Plan Concept was prepared in 1996 including cargo and Passenger forecast and facilities development plan until 2018. The port development strategy is also shown as "network center of national/ international transshipment" "industrial processing zone development in port area and supporting Manado-Bitung industrial area" "Passenger service for tourism and recreation" "improve Ro-Ro ship service"

(32) Ternate Port

Ternate port is located on eastern side of Ternate Island neighboring to eastern side of Halmahera Island. Ternate port is the main port as distribution/collection center of cargo in northern part of Maluku Province. The port also serves as a major transfer point of passengers with PELNI service and local ferry service.

The port comprises public port facilities located at two separate place, Ternate and Bastiong. Main port at Ternate is mainly used for oceangoing and inter-island vessel and wooden T-shaped jetty for sailing ships at Bastiong.

Table A.5.2.32 Profile of Ternate Port

Name of port	Ternate		Name of Province	Maluku
			Population of Hinterland	801,000 person
Port Area	Port working area	Landside	Ha	
		Seaside	Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container		-	
	General Cargo	Domestic	194,992 Ton	
		International	22,594 Ton	
	Dry Bulk	Domestic	-	
		International	5,750 Ton	
	Liquid Bulk	Domestic	10,097 Ton	
		International	6,178 Ton	
	Passenger	Foreign	-	
		Domestic	757,240 Persons	
Shipping Service	- Pelni 3 route - Pioneer shipping (home port) 3 route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Main Port	248.0	9.0
		Bastiong	30.0	8.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship		50.0	5.0
	Passenger			
Special Wharf	Fuel and Oil (PERTAMINA) Jetty at Jambula			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	13.0	General Cargo(T/G/h)	11.0
	Bagged Cargo(T/G/h)	14.0	Bagged Cargo(T/G/h)	22.0
	Unitized Cargo(T/G/h)		Unitized Cargo(T/G/h)	22.0
	Liquid Bulk (T/h)		Liquid Bulk (T/h)	
	Dry Bulk (T/h)		Dry Bulk (T/h)	
	Container		Container	
	CT (TEUs/Crane/h)		CT (TEUs/Crane/h)	
	Conv (TEUs/Crane/h)		Conv (TEUs/Crane/h)	

(33) Ambon Port

Ambon port is situated at the eastern side of Ambon Bay. Ambon is the capital city of Maluku Province. As about 90% of the province area are covered by sea, sea transport plays an essential role to support economic activities and livelihood in the province.

Table A.5.2.33 Profile of Ambon Port

Name of port	Ambon			Name of Province	Maluku
				Population of Hinterland	2,087,000 person
Port Area	Port working area	Land side	14.9 Ha		
		Seaside	239,040 Ha		
	Port Concerning area		Ha		
Volume of Cargo In 1,995	Container		3,734 TEUs	18,440 Ton	
	General Cargo	Domestic		197,140 Ton	
		International		31,029 Ton	
	Dry Bulk	Domestic		-	
		International		-	
	Liquid Bulk	Domestic		41,422 Ton	
		International		35 Ton	
	Passenger	Foreign		-	
		Domestic		337,827 Persons	
Shipping Service And Size of Calling Vessel	- Pelni 5 route - Pioneer shipping (home port) 4 route				

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo	Yos Soedarso	617.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	Slamet Riyadi	100.0	4.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	14.0	General Cargo(T/G/h)	18.0
	Bagged Cargo(T/G/h)	24.0	Bagged Cargo(T/G/h)	14.0
	Unitized Cargo(T/G/h)	24.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	128.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

(34) Sorong Port

Sorong port is the main deepwater port in western part of Irian Jaya Province and is located at the head of bird-shaped part of the main island. As the port is a good transfer point of cargo and passenger to the coast of Irian Jaya Province, the important role of the port is a distribution center for these area.

The port area is well protected by many islands located southwest from the port.

Table A.5.2.34 Profile of Sorong Port

Name of port	Sorong		Name of Province	Irian Jaya
			Population of Hinterland	625,000 person
Port Area	Port working area	Land side	20.3 Ha	
		Seaside	207,570 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	34 TEUs	676 Ton	
	General Cargo	Domestic	537,048 Ton	
		International	171,238 Ton	
	Dry Bulk	Domestic	13,004 Ton	
		International	6,938 Ton	
	Liquid Bulk	Domestic	131,822 Ton	
		International	64 Ton	
	Passenger	Foreign	-	
		Domestic	240,106 Persons	
Shipping Service	- Pelni 4 route		- Pioneer shipping (home port) 4 route	

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		280.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	13.40	General Cargo(T/G/h)	0.0
	Bagged Cargo(T/G/h)	28.90	Bagged Cargo(T/G/h)	26.1
	Unitized Cargo(T/G/h)	23.2	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Port Master Plan	Master Plan for Sorong port was established in 1985, not reviewed. Master Plan Concept was prepared in 1996 including cargo and Passenger forecast and facilities development plan until 2018. Main development strategy is (1) optimize limited working land area (2) improve the existing facilities for multipurpose use including container handling and passenger service.

(35) Biak Port

Biak port is located on the southern coast of the Biak Island at northern part of Irian Jaya Province. Biak region has been designated as one of the prioritized Integrated Economic Development Area (KAPET).

Table A.5.2.35 Profile of Biak Port

Name of port	Biak		Name of Province	Irian Jaya
			Population of Hinterland	584,000 person
Port Area	Port working area	Land side	12.7 Ha	
		Seaside	12,900 Ha	
	Port Concerning area		11,100 Ha	
Volume of Cargo In 1,995	Container	138 TEUs	1,059 Ton	
	General Cargo	Domestic	256,522 Ton	
		International	54,931 Ton	
	Dry Bulk	Domestic	1,322 Ton	
		International	516 Ton	
	Liquid Bulk	Domestic	114,348 Ton	
		International	-	
	Passenger	Foreign	-	
		Domestic	160,293 Persons	
Shipping Service	- Pelni 2 route - Pioneer shipping (home port) 2route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		267.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship			
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	18.0	General Cargo(T/G/h)	16.0
	Bagged Cargo(T/G/h)	0.0	Bagged Cargo(T/G/h)	15.0
	Unitized Cargo(T/G/h)	0.0	Unitized Cargo(T/G/h)	0.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Port master Plan	Master Plan for Biak port was established in 1986 and not reviewed. Master Plan Concept was prepared in 1996 including cargo and passenger forecast and facilities development plan until 2018. Main development strategy is (1) supporting the development of Irian Jaya province (2) not only port facilities but also business and commercial function such as bank, trade office and entertainment will be accommodated.

(36) Jayapura Port

Jayapura port is located on the northern coast of Irian Jaya and near the border of Papua New Guinea. The port is situated at the inner most corner of Jayapura Bay. The hinterland of the port is Jayapura, the capital city of Irian Jaya Province, and near area.

Land transportation development is very important factor for future port activities.

Table A.5.2.36 Profile of Jayapura Port

Name of port	Jayapura		Name of Province	Irian Jaya
			Population of Hinterland	732,000 person
Port Area	Port working area	Land side	4.7 Ha	
		Seaside	688 Ha	
	Port Concerning area		Ha	
Volume of Cargo In 1,995	Container	518 TEUs	1,986 Ton	
	General Cargo	Domestic	332,693 Ton	
		International	-	
	Dry Bulk	Domestic	4,000 Ton	
		International	-	
	Liquid Bulk	Domestic	77,367 Ton	
		International	-	
	Passenger	Foreign	1,761 Persons	
		Domestic	212,238 Persons	
Shipping Service and Size of Calling Vessel	- Pelni 4 route - Pioneer shipping (home port) 2route			

Port Facilities		Name of Berth	Length of Berth (m)	Water Depth (m)
	Container			
	General Cargo		270.0	7.0
	Dry Bulk			
	Liquid Bulk			
	Small Ship	APO	33.0	4.0
	Passenger			

Productivities	Oceangoing		Domestic	
	General Cargo(T/G/h)	11.0	General Cargo(T/G/h)	0.0
	Bagged Cargo(T/G/h)	19.0	Bagged Cargo(T/G/h)	21.0
	Unitized Cargo(T/G/h)	23.0	Unitized Cargo(T/G/h)	27.0
	Liquid Bulk (T/h)	0.0	Liquid Bulk (T/h)	0.0
	Dry Bulk (T/h)	0.0	Dry Bulk (T/h)	0.0
	Container		Container	
	CT (TEUs/Crane/h)	0.0	CT (TEUs/Crane/h)	0.0
	Conv (TEUs/Crane/h)	0.0	Conv (TEUs/Crane/h)	0.0

Appendix 5.3 Strategy for Port System

Appendix 5.3.1 Required Container Volume for International Container Service

1. Container Volume in Dominant Services

(1) The Volume of International Container from/to Indonesia

The origin and destination of container cargo are not given in the statistic data processed by IPC and DGSC. It is, therefore, impossible to distinguish between international and domestic container. In order to understand the significance of the dominant container service, the preliminary volume of international container from/to Indonesia could be estimated following assumption.

a) Export/Import containers are only handled in the international container ports where international line calls.
b) All loaded containers handled in Indonesian ports are exported/imported through international container ports.
c) The containers, handled in the domestic port where no international line calls, are regarded as domestic.
d) A domestic container for export is shipped at a domestic port to an international container port in Indonesia and is transshipped as an international container.
e) A container, imported at an international container port, is transshipped to a domestic port as a domestic container.
f) No container is transported from one domestic port to other domestic port.
g) No container is transported from one international container port to the other international container port.

The container ports called by international container service in Indonesia are Tg.Priok, Tg.Perak, Belawan, Tg.Emas, Panjang and Palembang. The total volume of container handled in these international container ports in 1995 was 988,196TEUs for export and 973,837TEUs for import. The total volume of container handled in the domestic ports was 74,484TEUs for loading and 95,001TEUs for unloading. The volume of domestic containers handled in international container ports is reduced from the volume handled in international container ports.

The assumed total volume of international container in 1995 is 893,195TEUs for export, 899,353TEUs for import, 1,792,548TEUs in total.

(2) Container Volume in Dominant Services.

Container trade between several countries in 1995 is shown in Table A.5.3.1.1.

Table A.5.3.1.1 Container Trade Volume in 1995

(Unit 1,000TEUs)

From \ To	Japan	Taiwan	Hong Kong	PHILI PPINE	Thai Land	SINGA PORE	MALA YSIA	Indone sia	Korea	VIET NAM	P.R. China	North America
Japan		204	264	60	162	156	109	96	181	17		728
Taiwan	174		528	68	56	60	55	57	56	15		599
Hong Kong	216	120		23	24	68	36	42	42	22		625
PHILI PPINES	42	12	14		4	7	3	3	6	1		90
Thai Land	168	55	54	12		44	12	10	12	4		227
SINGA PORE	78	48	66	30	54		52	54	10	13		83
MALAY SIA	103	51	77	5	8	660		13	18	6		164
INDO NESIA	126	36	42	15	10	16	17		43	3		158
Korea	234	68	244	30	31	47	192	64		15		300
Vietnam	18	13	12	0	2	24	2	3	7			10
P.R. China												1,025
North America	1,118	452	473	109	120	123	81	150	448	9	277	

Note : The value for Vietnam is in 1996

Source : International Transportation Handbook 1997; Ocean Commerce and Journal of Commerce

For Europe trade there is not any accurate data of the container volume. The volume between Indonesia and Europe is assumed based on following data.

a) The relationship between Indonesia and Europe in economy is very similar to that of between Indonesia and North America. But the former historical relation is deeper than the later.

b) The total weight and value of trade and distance by sea between Indonesia and those areas are as follows.

		Weight of Trade (Thousand Ton)	Value of Trade (Million US$)	distance by sea (Mile)
Europe	Export	9,233	7,201	8,600
	Import	7,194	9,323	
North America	Export	8,168	6,796	7,350
	Import	6,727	5,659	
Japan	Export	57,473	12,288	3,250
	Import	2,962	9,216	

c) Total volume of Transpacific service is 7,800,000TEUs and Europe/East-Asia service is 5,600,000TEUs in 1996, that is, Europe/East-Asia service is about 70% of Transpacific service. (See Table 3.5.1 in Main Report)

For export it seems that no significant difference between the trade to Europe and that to North America. For import, value per weight of trade from Europe is 1.5 times large than that of North America. These values imply that more valuable cargo is imported from European countries. But for Japan there is enormous difference between the ratios and it may be understood that raw materials are exported and industrial products are imported.

The volume and share of container cargo transported in Europe/East-Asia service at present is assumed to be about 70% of Transpacific service. (See Table A.5.3.1.2)

Table A.5.3.1.2 Assumed Container Volume in Dominant Service

(Unit TEUs)

	Export	Import	Total
Total volume of international container From / to Indonesia	900,000 (50%)	900,000 (50%)	1,800,000 (100%)
Transpacific	160,000 (8.9%)	150,000 (8.3%)	310,000 (17.3%)
Europe/East-Asia	115,000 (6.4%)	105,000 (5.8%)	220,000 (12.2%)
Intra-Asia (including Japan)	330,000 (18.3%)	300,000 (16.7%)	630,000 (35.0%)
Japan	120,000 (6.7%)	100,000 (5.6%)	220,000 (12.2%)
Others	295,000 (16.4%)	345,000 (19.2%)	640,000 (35.6%)

Source : Prepared by the Study Team

Considering the future prosperity of each area, the share of Inter Intra-Asia will gain and that of Transpacific and Europe will lose.

2. Required Container Volume for International Service

2.1 Shipping Cost and Delivery Time

(1) Transpacific Service (Mother Port Type)

1) Shipping Pattern

Required condition for direct call is made clear comparing the following two itineraries, in terms of cost and time.

Itinerary 1 (Weekly service, 35days voyage with 4 (6,000TEUs) mother vessels)

Feeder Service			Mother Vessel Route	
(2,000TEU)			(6,000TEU)	
Jakarta	-------	Singapore	⇔	Seattle
(1.0)	1.5day	(2.0days)	15.5days	(1.0days)

Itinerary 2 (Weekly service, 42days voyage with 6 (1,500TEUs) direct service

Jakarta	⇔	Seattle
(1.0day)	18days	(1.0days)

2) Shipping Cost

The summary of shipping cost, port due and terminal fee for these itineraries see Table A.5.3.1.3.

For this examination, it has been assumed that visiting container service operates at 80% of capacity and the cost of repositioning of empty containers and that of container boxes charge have not been considered, but these are very important factor to determine a market price. The feeder service system could collect the cargo and reposition empty containers more effectively than direct service, because it is easy for feeder service system to change the service pattern.

Itinerary 1	Seattle – Jakarta	(7,593miles)	
Itinerary 2-2	Seattle – Jakarta	(7,351miles)	537US$

3) Delivery Time

According to the itinerary the mother vessel calls once a week, but as described in 1.6.4 the container cargo is rather time-conscious. If there is any trouble with mother vessel, the cargo has to stay for a week in terminal. Therefore, at least mother vessel with similar itinerary should call twice a week or more. And under such condition the maximum difference of delivery time is two days compare to daily feeder service.

4) Required Container Volume

In accordance with above-mentioned two factors, cost and time, the minimum required volume of container to/from North America per year to receive transpacific direct service is at least 250,000TEUs in one port, that is 1,200TEUs/Service (80% of 1,500TEUs capacity container ship) and 104 Services/year (2 times a week)

The volume of Transpacific Service is 310,000TEUs at present and the volume will increase in future. The share of the service is 17% in 1995, and if the same share keeps in future, the port handling more than 1,500,000TEUs (=1,200TEUs × 2 (loading and unloading) × 104 / 0.17) of loaded international container could be the candidate for the Service.

(2) Europe / East-Asia Service (Mother Port Type)

1) Shipping Pattern

Required condition for direct call is made clear comparing the following two itineraries, in terms of cost and time.

Itinerary 3 (Weekly service, 35days trip with 5 (8,000TEUs) mother vessels)

Feeder (2,000TEU)		Mother Vessel Route (8,000TEU)		
Jakarta	------	Singapore	⇔	Rotterdam
(1.0day)	1.5day	(2days)	15.5days	(1.0days)

Itinerary 4 (Weekly service, 42days voyage with 7 (2,000TEUs) direct service

Jakarta	⇔	Rotterdam
(1.5day)	18days	(1.5days)

2) Shipping Cost

The summary of shipping cost, port due and terminal fee for these itineraries see Table A.5.3.1.4.

For this examination, it has been assumed that visiting container service operates at 80% of capacity and the cost of repositioning of empty containers and container boxes charge have not been considered, but these are very important factor to determine a market price. The feeder service system could collect the cargo and reposition empty containers more effectively than direct service, because it is easy for feeder service system to change the service pattern.

Itinerary 3	Rotterdam – Jakarta	(8,883miles)	
Itinerary 4	Rotterdam – Jakarta	(8,585miles)	524US$

3) Delivery Time

Please see same part of Transpacific Service.

4) Required Container Volume

In accordance with above-mentioned two factors, cost and time, the minimum required volume of container to/from Europe per year to receive Europe/East-Asia direct service is at least 326,000TEUs in one port, that is 1,600TEUs/Service (80% of 2,000TEUs capacity container ship) multiplies 104 Services/year (2 times a week)

The share of the Europe/East-Asia service is assumed to be 12% in 1995, and if the same share keeps in future, the port handling more than 3,000,000TEUs (=1,600TEUs × 2(loading and unloading) × 104 / 0.12) of loaded international container could be the candidate for the Service.

(3) Europe / East-Asia Service (Transshipment Port Type)

1) Shipping Pattern

Required condition for direct call to Bitung Port is, which is selected as a representative port in Eastern part of Indonesia estimated comparing the following two Transportation patter from Bitung and Sorong to Europe, in terms of cost and time. In this estimation Sorong Port is selected as an example of feeder ports to simplify the calculation of feeder service cost.

Itinerary 5-1 (Weekly service, 35days trip with 5 (6,000TEUs) mother vessels calling Jakarta)

Feeder (2,000 and 1,000TEU)		Mother Vessel Route (6,000TEU)		
Bitung	------	Jakarta	⇔	Rotterdam
(1.0day)	3.5days	(2.0days)	15.5days	(1.0day)
Sorong	------	Jakarta	⇔	Rotterdam
(1.0day)	4.0days	(2.0days)	15.5days	(1.0days)

Itinerary 5-2 (Weekly service, 42days voyage with 7 (3,000TEUs) direct service calling Bitung)

Bitung		⇔		Rotterdam
(1.5day)		18days		(1.5days)
Sorong	------	Bitung	⇔	Rotterdam
(1.0da)	1.5 days	(2.5days)	18days	(1.5days)

2) Shipping Cost

The summary of shipping cost, port due and terminal fee for these itineraries see Table A.5.3.1.5.

For this examination, it has been assumed that visiting container service operates at 80% of capacity and the cost of repositioning of empty containers and container boxes charge have not been considered, but these are very important factor to determine a market price. The feeder service system could collect the cargo and reposition empty containers more effectively than direct service, because it is easy for feeder service system to change the service pattern.

Itinerary 5-1	Rotterdam – Jakarta – Bitung	(10,160miles)	
Itinerary 5-2	Rotterdam – Jakarta – Sorong	(10,204miles)	580US$
Itinerary 5-3	Rotterdam – Bitung	(9,840miles)	
Itinerary 5-4	Rotterdam – Bitung – Sorong	(10,325miles)	627US$

It is assumed that the share of container cargo from/to Bitung Port is 40% in neighboring, the average cost of shipping from/to Bitung and Sorong (include other port under similar condition) through Jakarta is 573US$ and 576US$ through Bitung.

3) Delivery Time

Please see same part of Transpacific Service.

4) Required Container Volume

In accordance with above-mentioned two factors, cost and time, the minimum required volume of container to/from Europe per year to receive Europe/East-Asia direct service at Bitung is at least 500,000TEUs. That is 2,400TEUs/Service (80% of 3,000TEUs capacity container ship) multiplies 104 Services/year (2 times a week)

The share of the Europe/East-Asia service is assumed to be 12% in 1995, and if the same share keeps in future. The port, situating in Easter part of Indonesia, handling more than 4,200,000TEUs (=2,400TEUs × 2(loading and unloading) × 104 / 0.12) of loaded international container could be the candidate for the Service.

The container volume in Sabang Port, which is selected as representative port in the area facing Malacca Strait, is also estimated by similarly method. According to the result, the minimum required volume of container to/from Europe per year to receive Europe/East-Asia direct service calling is at least 420,000TEUs. That is 2,000TEUs/Service (80% of 2,500TEUs capacity container ship) multiplies 104 Services/year (2 times a week)

the port in the area facing Malacca Strait handling more than 3,500,000TEUs (=2,000TEUs×2(loading and unloading)×104 / 0.12) of loaded international container could be the candidate for the Service.

(4) Intra Intra-Asia Service

1) Shipping Pattern

The itineraries of typical Intra-Asia service (calling Japan and ASEAN countries) and assumed example of Singapore feeder service are as follows.

Itinerary 6-1 (Weekly service, 28days trip with 4 (1,500TEUs) Direct Call)

Japan--Keelung--Hongkong--Manila--Surabaya—Jakarta—Kaosiung—Hongkong—Japan

(Total length of the round is 8,473miles)

Itinerary 6-2 (Weekly service, 21days round with 3 (1,500TEUs) Direct Call)

Japan—Hongkong—Singapore—Port Kelang—Singapore—Japan

(Total length of the round is 6,539miles)

Itinerary 6-3 (Weekly service, 14days trip with 2 (3,000TEUs) mother vessels)

	Feeder		Mother vessel	
Jakarta	-------	Singapore	⇔	Tokyo
	1.5day	(1days)	5.5days	(1days)

2) Shipping Cost

For this examination, it has been assumed that visiting container service operates at 80% of capacity and the cost of repositioning of empty containers and container boxes charge have not been considered. The costs per TEU from Japan are as follows. (See Table A.5.3.1.6, A.5.3.1.7 and A.5.3.1.8) The service cost per TEU for each itinerary is calculated including ship charge, port dues and terminal charge.

Itinerary 6–1	Tokyo – Jakarta	(3,250miles)	269 US$ (1.00)
Itinerary 6–2	Tokyo – Port Kelang	(3,121miles)	202 US$ (0.75)
Itinerary 6–3	Tokyo – Jakarta	(3,250miles)	302 US$ (1.12)

The reasons for the cost difference between Itinerary 6-1 and 6-2 is round period (21days for Itinerary 6-1 and 28days for 6-2) and between Itinerary 6-2 and 6-3 is transshipment cost in Singapore.

If 3,000TEUs capacity container ships (vessel speed increase from 17.0knots of 1,000TEU ship to 23.0knots of 3,000TEU ship) would be put on Itinerary 6–1, 21days service could be realized. (See Table A.5.3.1.9 Itinerary 6-4) And if service route pass through Makassar Strait (distance between Manila and Surabaya through western side of Kalimantan Island is 1726 miles while Through Makassar Strait is 1537 miles), the port facing the Strait, for example Makassar Port and Balikppan Port, could be a candidate for direct call port (See Table A.5.3.1.10). If 2,000TEUs capacity container ships (vessel speed is 20 knots) would be put on Itinerary 6–2, the port facing Malacca Strait, for example Belawan port, could be a candidate of direct call port. (See Table A.5.3.1.11)

For feeder service, 6,000TEUs mother ships will be allocated. (See Table A.5.3.1.12)

Itinerary 6-4 (Weekly service, 21days trip with 3 (3,000TEUs) Direct Call)
Japan--Keelung--Hongkong--Manila--Surabaya—Jakarta—Kaosiung—Hongkong—Japan
(Total length of the round is 8,453miles)

Itinerary 6-5 (Weekly service, 21days round with 3 (2,000TEUs) Direct Call)
Japan—Hongkong—Singapore—Port Kelang—Belawan—Singapore—Japan
(Total length of the round is 6,846miles)

Itinerary 6-6 (Weekly service, 14days trip with 2 (6,000TEUs) mother vessels)

	Feeder		Mother vessel	
Jakarta	-------	Singapore	⇔	Tokyo
	1.5day	(1days)	5.5days	(1days)

The costs per TEU from Japan are as follows.

Itinerary 6–4	Tokyo – Jakarta	(3,250miles)	177 US$ (1.00)
Itinerary 6–5	Tokyo – Belawan	(3,290miles)	175 US$ (0.99)
Itinerary 5–6	Tokyo – Jakarta	(3,250miles)	252 US$ (1.42)

The container transportation in Indonesia will be competitive if direct service with more than 2,000TEUs capacity ships call the port in eastern part of Sumatra Island and more than 3,000TEUs capacity ships call the port in northern part of Jawa Island.

If the international sea-lane in Makassar Strait were prepared for container ship with more than 23knots speed, the port facing the Strait would be a candidate for direct call.

3) Delivery Time

Please see the same part of Transpacific Service.

4) Required Container Volume

For the port situated at northern side of Jawa Island or facing Makassar Strait, the required annual volume of container for receive Intra-Asia service is at least 156,000TEUs, which satisfy 50% of annual total slot of Intra-Asia direct call service with twice a week 3,000TEUs capacity ship (annual total slot is 312,00TEUs ; 3,000TEUs/ship and 104 services/year). The share of Intra-Asia is 35% at present and the share will gain in future. It is understood that if a port situated at northern side of Jawa Island or facing Makassar Strait will handle more than 450,000TEUs loaded international container per year, the port have a

potential to receive Intra-Asia service.

For the port situated at eastern side of Sumatra Island, the required annual volume of container for Intra-Asia service is at least 104,000TEUs, which satisfy 50% of annual total slot of Intra-Asia direct call service with twice a week 2,000TEUs capacity ship (annual total slot is 208,00TEUs ; 2,000TEUs/ship and 104 services/year). If a port situated at eastern side of Sumatra Island will handle more than 300,000TEUs loaded international container per year, the port have a potential to receive Intra-Asia service.

2.2 From The Viewpoint of Financial Condition of Container Terminal

The container terminal construction and operation should be profitable and financially viable. Several kinds of procedure, such as profit/loss table, a balance sheet, cash flow, financial internal of return (FIRR) and some indices (Rate of Return on Net Fixed Assets, Operating Ratio, Working Ratio) are used to examine financial condition and loan repayment of the project.

At this stage this condition is applied to clarify the candidate for development, therefore, a simple condition, that is annual expenditure is less than annual revenue at full operation year, is used to seek the required volume of container per year at the terminal.

The standard container terminal facilities and its installation cost and annual expenditure are shown Table 5.3.1.14 and 5.3.1.15, respectively. But the expenditure includes no income tax. The assumed revenue per 10,000TEUs is shown Table 5.3.1.16 as 1,162,100 US$, that is, average revenue per 1TEU is about 116US$.

a) Total Expenditure

Operation Expenditure	US$	2,452,000
Depreciation Cost	US$	1,244,000
Interest on Initial Investment	US$	3,660,000
Subtotal	US$	7,356,000
Income Tax	30% of Annual Revenue	

b) Operation Revenue

Average Revenue for Container US$116 per TEUs

The required condition is

(Operation Revenue per TEU) × Container Handling Volume > Total Expenditure.

Required container handling volume is about 100,000TEUs for Feeder container terminal with single berth.

3. Summary of Required Container Volume In International Container Port

Based on estimation in this Section, the required container volume in one port as candidate for dominant service is summarized as follows.

For Transpacific Service :

Loaded international container more than 1,500,000TEUs in Jawa Area

For Europe/East-Asia Service :

Mother Port Type in Jawa Area

Loaded international container more than 3,000,000TEUs

Transshipment Port Type in Facing Malacca Strait

Loaded international container more than 3,500,000TEUs

Transshipment Port Type in Easter part of Indonesia

Loaded international container more than 4,200,000TEUs

For Intra-Asia Service :

In Jawa and facing Makassar Strait area

Loaded international container more than 450,000TEUs

In eastern side of Sumatra

Loaded international container more than 300,000TEUs

And in case of Feeder Container Terminal in existing port area,

The required container volume handled in a terminal is 100,000TEUs.

Table A.5.3.1.3 Shipping Cost and Port Dues in Transpacific Service

Itinerary 1 TransPacific Service									
Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Seattle				30,000	2.0	37,000	104,000	21.7	120
↓	7,062	6,000	4,800		13.5	57,000	769,500	160.3	
Singapore				12,000	2.0	37,000	86,000	17.9	60
Singapore				8,000	1.0	20,000	28,000	17.5	60
↓	533	2,000	1,600		1.5	25,000	37,500	23.4	
Jakarta				4,300	1.0	20,000	24,300	15.2	62
Subtotal					21.0	196,000	1,049,300	256.0	302
Total								(US$/TEU)	558
Itinerary 2-1 TransPacific Service									
Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Seattle				18,000	1.5	20,000	48,000	30.0	120
↓	7,351	2,000	1,600		15.5	25,000	387,500	242.2	
Jakarta				4,300	1.5	20,000	34,300	21.4	62
Subtotal					18.5	65,000	469,800	293.6	182
Total								(US$/TEU)	476
Itinerary 2-2 TransPacific Service									
Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Seattle				15,000	1.5	16,000	39,000	32.5	120
↓	7,351	1,500	1,200		18.0	20,000	360,343	300.3	
Jakarta				3,000	1.5	16,000	27,000	22.5	62
Subtotal					21.0	52,000	426,343	355.3	182
Total								(US$/TEU)	537

Source : Prepared by the Study Team

Table A.5.3.1.4 Shipping Cost and Port Dues in Eorupe/East-Asia Service(Direct Call)

Itinerary 3 Europe/East-Asia Service (Direct call)									
Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				80,000	1.0	43,000	123,000	19.2	120
↓	8,350	8,000	6,400		15.5	70,000	1,085,000	169.5	
Singapore				14,000	1.0	43,000	57,000	8.9	60
Singapore				8,000	1.0	20,000	28,000	17.5	60
↓	533	2,000	1600		1.5	25,000	37,500	23.4	
Jakarta				4,300	1.0	20,000	24,300	15.2	62
Subtotal					21.0	221,000	1,354,800	253.8	302
Total								(US$/TEU)	556
Itinerary 4-1 Europe/East-Asia Service (Direct call)									
Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				33,000	1.5	20,000	63,000	39.4	120
↓	8,585	2,000	1,600		18.0	25,000	450,000	281.3	
Jakarta				4,300	1.5	20,000	34,300	21.4	62
Subtotal					21.0	65,000	547,300	342.1	182
Total								(US$/TEU)	524
Itinerary 4-1 Europe/East-Asia Service (Direct call)									
Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				25,000	1.0	16,000	41,000	34.2	120
↓	8,585	1,500	1,200		21.0	20,000	420,000	350.0	
Jakarta				3,000	1.0	16,000	19,000	15.8	62
Subtotal					23.0	52,000	480,000	400.0	182
Total								(US$/TEU)	582

Source : Prepared by the Study Team

Table A.5.3.1.5 Shipping Cost and Port Dues in Europe/East-Asia Service (Transshipment Type)

Itinerary 5-1 Europe/East-Asia Service (Transshipment)

Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				65,000	1.0	37,000	102,000	21.3	120
↓	8,585	6,000	4,800		15.5	57,000	883,500	184.1	
Jakarta				8,000	1.0	37,000	45,000	9.4	40
Jakarta				4,300	1.0	20,000	24,300	15.2	40
↓	1,575	2,000	1600		3.5	25,000	87,500	54.7	
Bitung				4,300	1.0	20,000	24,300	15.2	62
Subtotal					23.0	196,000	1,166,600	299.8	262
Total								(US$/TEU)	562

Itinerary 5-2 Europe/East-Asia Service (Transshipment)

Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				65,000	1.0	37,000	102,000	21.3	120
↓	8,585	6,000	4,800		15.5	57,000	883,500	184.1	
Jakarta				8,000	1.0	37,000	45,000	9.4	40
Jakarta				1,400	1.0	11,000	12,400	15.5	40
↓	1,619	1,000	800		4.0	14,500	58,000	72.5	
Sorong				1,400	1.0	11,000	12,400	15.5	62
Subtotal					23.5	167,500	1,113,300	318.2	262
Total								(US$/TEU)	580

Itinerary 5-3 Europe/East-Asia Service (Direct Call)

Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				45,000	1.5	27,000	85,500	35.6	120
↓	9,840	3,000	2,400		18.0	35,000	630,000	262.5	
Bitung				5,400	1.5	27,000	45,900	19.1	62
Subtotal					21.0	89,000	761,400	317.3	182
Total								(US$/TEU)	499

Itinerary 5-4 Europe/East-Asia Service (Transshipment)

Name of port	Distance (mile)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Rotterdam				20,000	1.5	27,000	60,500	25.2	120
↓	9,840	3,000	2,400		18.0	35,000	630,000	262.5	
Bitung				5,400	1.5	27,000	45,900	19.1	40
Bitung				1,400	1.0	11,000	12,400	15.5	40
↓	485	1,000	800		1.5	14,500	21,750	27.2	
Sorong				1,400	1.0	11,000	12,400	15.5	62
Subtotal					24.5	125,500	782,950	365.0	262
Total								(US$/TEU)	627

Source : Prepared by the Study Team

Table A.5.3.1.6 Shipping Cost and Port Dues in Intra Asia Service (1)

Itinerary 6-1								
Name of port	Distance (miles)	Size of Vessel (TEU)	Loaded Volume (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Ship Charge	
Tokyo				15,000	0.5	16,000	8000	
↓	20	1,500	1,200		0.05	20,000	1042	
Yokohama				15,000	0.5	16,000	8000	
↓	360				0.94	20,000	18750	
Osaka				15,000	0.5	16,000	8000	
↓	20				0.05	20,000	1042	
Kobe				15,000	0.5	16,000	8000	
↓	926				2.41	20,000	48229	
Keelung				8,000	0.5	16,000	8000	
↓	475				1.24	20,000	24740	
Hongkong				8,000	0.5	16,000	8000	
↓	633				1.65	20,000	32969	
Manila				8,000	0.5	16,000	8000	
↓	1726				4.49	20,000	89896	
Surabaya				8,000	0.5	16,000	8000	
↓	389				1.01	20,000	20260	
Jakarta				8,000	0.5	16,000	8000	
↓	1963				5.11	20,000	102240	
Kaohsiung				8,000	0.5	16,000	8000	
↓	342				0.89	20,000	17813	
Hongkong				8,000	0.5	16,000	8000	
↓	1619				4.22	20,000	84323	
Tokyo					0.5			
Total	8,473			116,000	27.57		529,302	645,302
Cost per TEU From Tokyo To Jakarta							(US$)	269

Source: Prepared by the Study Team

Table A.5.3.1.7 Shipping Cost and Port Dues in Intra Asia Service (2)

Itinerary 6-2								
Name of port	Distance (miles)	Size of Vessel (TEU)	Loaded Volume (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Ship Charge	
Tokyo				15,000	0.5	16,000	8,000	
↓	20	1,500	1,200		0.0	20,000	980	
Yokohama				15,000	0.5	16,000	8,000	
↓	360				0.9	20,000	17,647	
Osaka				15,000	0.5	16,000	8,000	
↓	20				0.0	20,000	980	
Kobe				15,000	0.5	16,000	8,000	
↓	1387				3.4	20,000	67,990	
Hongkong				8,000	0.5	16,000	8,000	
↓	1425				3.5	20,000	69,853	
Singapore				8,000	0.5	16,000	8,000	
↓	206				0.5	20,000	10,098	
Port				8,000	0.5	16,000	8,000	
↓	206				0.5	20,000	10,098	
Singapore				8,000	1.0	16,000	16,000	
↓	2915				7.1	20,000	142,892	
Tokyo					0.5			
Total	6,539			92,000	20.53		392,539	484,539
Cost per TEU From Tokyo To Port Kelang							(US$)	202

Source: Prepared by the Study Team

Table A.5.3.1.8 Shipping Cost and Port Dues in Intra Asia Service (3)

Itinerary 6-3(1)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				25,000	1.5	27,000	40,500	27.3	
↓	2,915	3,000	2,400		5.5	35,000	192,500	80.2	
Singapore				10,000	1.5	27,000	40,500	21.0	60
Singapore				7,000	0.5	16,000	8,000	12.5	60
↓	533	1,500	1,200		1.5	20,000	30,000	25.0	
Jakarta				3,000	1.0	16,000	16,000	15.8	
Subtotal								181.9	120
Cost per TEU From Tokyo To Jakarta								(US$)	302

Itinerary 6-3(2)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				25,000	1.5	27,000	40,500	27.3	
↓	2,915	3,000	2,400		5.5	35,000	192,500	80.2	
Singapore				10,000	1.5	27,000	40,500	21.0	60
Singapore				7,000	0.5	16,000	8,000	12.5	60
↓	375	1,500	1,200		1.0	20,000	20,000	16.7	
Belawan				3,000	1.0	16,000	16,000	15.8	
Subtotal								173.5	120
Cost per TEU From Tokyo To Belawan								(US$)	294

Itinerary 6-3(3)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				25,000	1.5	27,000	40,500	27.3	
↓	2,915	3,000	2,400		5.5	35,000	192,500	80.2	
Singapore				10,000	1.5	27,000	40,500	21.0	60
Singapore				7,000	0.5	16,000	8,000	12.5	60
↓	766	1,500	1,200		2.0	20,000	40,000	33.3	
Surabaya				3,000	1.0	16,000	16,000	15.8	
Subtotal								190.2	120
Cost per TEU From Tokyo To Surabaya								(US$)	310

Itinerary 6-3(4)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				25,000	1.5	27,000	40,500	27.3	
↓	2,915	3,000	2,400		5.5	35,000	192,500	80.2	
Singapore				10,000	1.5	27,000	40,500	21.0	60
Singapore				7,000	0.5	16,000	8,000	12.5	60
↓	1,050	1,500	1,200		3.0	20,000	60,000	50.0	
Makassar				3,000	1.0	16,000	16,000	15.8	
Subtotal								206.9	120
Cost per TEU From Tokyo To Makassar								(US$)	327

Source : Prepared by the Study Team

Table A.5.3.1.9 Shipping Cost and Port Dues in Intra Asia Service (4)

Itinerary 6-4								
Name of port	Distance (miles)	Size of Vessel (TEU)	Loaded Volume (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Ship Charge	
Tokyo				25,000	0.5	27,000	13,500	
↓	360	3,000	2,400		0.68	35,000	23,864	
Osaka				25,000	0.5	27,000	13,500	
↓	20				0.04	35,000	1,326	
Kobe				25,000	0.5	27,000	13,500	
↓	926				1.75	35,000	61,383	
Keelung				18,000	0.5	27,000	13,500	
↓	475				0.90	35,000	31,487	
Hongkong				10,000	0.5	27,000	13,500	
↓	633				1.20	35,000	41,960	
Manila				10,000	0.5	27,000	13,500	
↓	1726				3.27	35,000	114,413	
Surabaya				10,000	0.5	27,000	13,500	
↓	389				0.74	35,000	25,786	
Jakarta				10,000	0.5	27,000	13,500	
↓	1963				3.72	35,000	130,123	
Kaohsiung				10,000	0.5	27,000	13,500	
↓	342				0.65	35,000	22,670	
Hongkong				10,000	0.5	27,000	13,500	
↓	1619				3.07	35,000	107,320	
Tokyo					0.5			
Subtotal	8,453			153,000	21.01		695,331	848,331
				Cost per TEU From Tokyo To Jakarta			(US$)	177

Source: Prepared by the Study Team

Table A.5.3.1.10 Shipping Cost and Port Dues in Intra Asia Service (5)

Itinerary 6-4(Revise)								
Name of port	Distance (miles)	Size of Vessel (TEU)	Loaded Volume (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Ship Charge	
Tokyo				25,000	0.5	27,000	13,500	
↓	360	3,000	2,400		0.68	35,000	23,864	
Kobe				25,000	0.5	27,000	13,500	
↓	926				1.75	35,000	61,383	
Keelung				18,000	0.5	27,000	13,500	
↓	475				0.90	35,000	31,487	
Hongkong				10,000	0.5	27,000	13,500	
↓	633				1.20	35,000	41,960	
Manila				10,000	0.5	27,000	13,500	
↓	1,257				2.38	35,000	83,324	
Makassar				10,000	0.5	27,000	13,500	
↓	455				0.86	35,000	30,161	
Surabaya				10,000	0.5	27,000	13,500	
↓	389				0.74	35,000	25,786	
Jakarta				10,000	0.5	27,000	13,500	
↓	1963				3.72	35,000	130,123	
Kaohsiung				10,000	0.5	27,000	13,500	
↓	342				0.65	35,000	22,670	
Hongkong				10,000	0.5	27,000	13,500	
↓	1619				3.07	35,000	107,320	
Tokyo					0.5			
Subtotal	8,419			138,000	20.95		693,078	831,078
				Cost per TEU From Tokyo To Jakarta			(US$)	173

Source: Prepared by the Study Team

Table A.5.3.1.11 Shipping Cost and Port Dues in Intra Asia Service (6)

Itinerary 6-5								
Name of port	Distance (miles)	Size of Vessel (TEU)	Loaded Volume (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Ship Charge	
Tokyo				20,000	1.0	20,000	20000	
↓	360	2,000	1,600		0.75	25,000	18750	
Osaka				20,000	1.0	20,000	20000	
↓	1387				2.89	25,000	72240	
Hongkong				8,500	0.5	20,000	10000	
↓	1425				2.97	25,000	74219	
Singapore				8,500	1.0	20,000	20000	
↓	206				0.43	25,000	10729	
Port Kelang				8,500	0.5	20,000	10000	
↓	178				0.37	25,000	9271	
Belawan				8,500	0.5	20,000	10000	
↓	375				0.78	25,000	19531	
Singapore				8,500	1.5	20,000	30000	
↓	2915				6.07	25,000	151823	
Tokyo					1			
Subtotal	6,846			82,500	20.26		476,563	559,063
Cost per TEU From Tokyo To Jakarta							(US$)	175

Source: Prepared by the Study Team

Table A.5.3.1.13 Data for Shipping Cost Calculation

Size of Vessel (TEU)	Type of Vessel	DRT	Speed (Knots)	Charter Rate (US$)	Fuel Consumption (US$/Day)
500	Geared	8,000	15	8,500	2,000
1,000	Gearless	9,500	17	11,000	3,500
2,000	Gearless	32,000	20	20,000	5,000
3,000	Gearless	45,000	23	27,000	8,000
4,500	Gearless	55,000	23	31,000	15,000
6,000	Gearless	75,000	23	37,000	20,000

Size of Vessel (TEU)	Port Due and Others (US$)			Container Terminal Cost (US$)	
	Singapore	Indonesia	Seattle	Singapore	Indonesia
500	4,000	1,100	–	Loading/Unloading	
1,000	6,000	1,400	–	–	62
2,000	8,000	4,300	–		
3,000	10,000	5,400	20,000	Transshipment	
4,500	11,000	7,000	26,000	60	40
6,000	12,000	8,000	30,000		

Table A.5.3.1.12 Shipping Cost and Port Dues in Intra Asia Service (7)

Itinerary 6-6(1)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				30,000	1.0	35,000	35,000	13.5	
↓	2,915	6,000	4,800		5.5	55,000	303,646	63.3	
Singapore				12,000	1.0	35,000	35,000	9.8	60
Singapore				8,500	0.5	20,000	10,000	11.6	60
↓	533	2,000	1,600		1.2	25,000	30,845	19.3	
Jakarta				4,000	1.0	20,000	20,000	15.0	
Subtotal								132.4	120
Cost per TEU From Tokyo To Jakarta								(US$)	252

Itinerary 6-6(2)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				30,000	1.0	35,000	35,000	13.5	
↓	2,915	6,000	4,800		5.5	55,000	303,646	63.3	
Singapore				12,000	1.0	35,000	35,000	9.8	60
Singapore				8,500	0.5	20,000	10,000	11.6	60
↓	375	2000	1600		0.9	25,000	21,701	13.6	
Belawan				4,000	1.0	20,000	20,000	15.0	
Subtotal								126.7	120
Cost per TEU From Tokyo To Belawan								(US$)	247

Itinerary 6-6(3)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				30,000	1.0	35,000	35,000	13.5	
↓	2,915	6,000	4,800		5.5	55,000	303,646	63.3	
Singapore				12,000	1.0	35,000	35,000	9.8	60
Singapore				8,500	0.5	20,000	10,000	11.6	60
↓	766	2,000	1,600		1.8	25,000	44,329	27.7	
Surabaya				4,000	1.0	20,000	20,000	15.0	
Subtotal								140.9	120
Cost per TEU From Tokyo To Surabaya								(US$)	261

Itinerary 6-6(4)

Name of Calling port	Distance (miles)	Size of Vessel (TEU)	Volume of Container (TEU)	Port Due (US$)	Ship Operation Days	Ship Charge (per day)	Port Due + Ship Charge	Ship Charge (per TEU)	Container Handling Charge (per TEU)
Tokyo				30,000	1.0	35,000	35,000	13.5	
↓	2,915	6,000	4,800		5.5	55,000	303,646	63.3	
Singapore				12,000	1.0	35,000	35,000	9.8	60
Singapore				8,500	0.5	20,000	10,000	11.6	60
↓	1,050	2,000	1,600		2.4	25,000	60,764	38.0	
Makassar				4,000	1.0	20,000	20,000	15.0	
Subtotal								151.1	120
Cost per TEU From Tokyo To Makassar								(US$)	271

Source : Prepared by the Study Team

Table A.5.3.1.14 Installation Cost of Feeder Container Terminal

(Unit US$)

Facilities	Dimension	Unit Price	Installation Cost	Remarks
Berth Length Depth	280 m 12 m	$ 35,000	$ 9,800,000	
Slop Protection	10,000 m²	$ 50	$ 500,000	
Terminal Area				
Marshalling Yard	43,000 m²	$ 40	$ 1,720,000	
CFS	3,500 m²	$ 200	$ 700,000	
Dredging	500,000 m³	$ 3	$ 1,500,000	
Reclamation	65,000 m²	$ 50	$ 3,250,000	
Infrastructure Subtotal			$ 18,210,000	
Equipment				
Quay Crane	2 Units	$ 3,500,000	$ 7,000,000	
Transfer Crane	8 Units	$ 800,000	$ 6,400,000	
Side Lifter	2 Units	$ 450,000	$ 900,000	
Tractor Head	12 Units	$ 70,000	$ 840,000	
Chassis	24 Units	$ 20,000	$ 480,000	
Forklift	3 Units	$ 20,000	$ 60,000	
Equipment Subtotal			$ 15,680,000	
Management				
Office	500m²	$ 450	$ 225,000	
Gate	5 Units	$ 205,000	$ 1,025,000	
Computer System	L.S	$ 200,000	$ 200,000	
Utilities	L.S	$ 800,000	$ 800,000	
Management Subtotal			$ 2,250,000	
Related Facilities Access Road Electric Supply Water Supply Fuel Supply Pilotage			$ 460,000	
Grand Total			$ 36,600,000	

Source : Prepared by Study Team

Table A.5.3.1.15 Summary of Annual Expenditure

(Unit US$)

Items	Number	Unit Price	Expenditure	Remarks
Personnel Expense				
Executives	5 person	$ 10,000	$ 50,000	
Officials	50 person	$ 4,000	$ 200,000	
Workers	150 person	$ 2,000	$ 300,000	
Subtotal	205 person		$ 550,000	
Administration And Others	130% of Personnel Expense		$ 800,000	
Maintenance Cost	Infrastructure 1% of Construction Cost Superstructure 5% of Installation Cost		$ 182,000 $ 920,000	
Operation Expenditure Subtotal			$ 2,452,000	
Depreciation of Superstructure				
Quay Crane $ 7,000,000 15years 90%			$ 420,000	
Transfer Crane $ 6,400,000 12years 90%			$ 480,000	
Side Lifter $ 900,000 10years 90%			$ 81,000	
Tractor Head $ 840,000 10years 90%			$ 75,000	
Chassis $ 480,000 10years 90%			$ 43,000	
Forklift $ 60,000 10years 90%			$ 5,000	
Office $ 225,000 20years 90%			$ 10,000	
Gate $ 1,025,000 20years 90%			$ 46,000	
Utilities $ 800,000 15years 90%			$ 48,000	
Computer System $ 200,000 5years 90%			$ 36,000	
Depreciation Subtotal			$ 1,244,000	
Interest on Initial Investment	10%		$ 3,660,000	
Income Tax	30% of Revenue			
Grand Total			$ 7,356,000	

Source : Prepared by Study Team

Table A.5.3.1.16 Summary of Revenue Per 10,000TEUs

(Unit US$)

Container Charge and Box Share				
Loading / Unloading				
		20 Feet Container (70%)	40 Feet Container (30%)	
FCL Container	40%	$ 62	$ 93	
LCL Container	20%	$ 104	$ 156	
Transhipment	20%	$ 40	$ 60	
Empty Container	20%	$ 62	$ 93	
Stacking Charge				
		20 Feet Container (70%)	40 Feet Container (30%)	
Full Container	80%	$ 6	$ 12	
Empty Container	20%	$ 3	$ 6	
CFS Service (Export 50%, Import 50%)				
		20 Feet Container (70%)	40 Feet Container (30%)	
LCL Container	20%	$ 250	$ 400	
Revenue per 10,000TEUs				
Handling charge				Subtotal
FCL Container		$133,500	$ 85,800	
LCL Container		$112,000	$ 72,000	
Transhipment		$ 86,000	$ 55,400	
Empty Container		$ 66,800	$ 42,900	$654,400
Stacking Charge				
Full Container		$ 25,900	$ 22,100	
Empty Container		$ 3,200	$ 2,800	$ 54,000
CFS Service				
LCL Container		$ 269,200	$ 184,500	$453,700
		Grand Total		$1,162,100

Source : Prepared by Study Team