2.7.5 Rambipuji Dry Port and Connecting Railway

(1) Activity

- 305. East Java State comprising the eastern area of Java Island and Madura Island is the first level administrative district with area of 47,922 km² and the population of 30.33 million. The state has eight cities and 29 prefectures as 2nd level administrative districts. Surabaya, the state capital, has the population of 2.5 million and is the second largest city in Indonesia.
- 306. Surabaya and its adjacent area with radius of 20 km in the south and west have the industrial complexes with electronic parts assembly factories, furniture factories, etc. Industrial complex construction works are underway in the area within 50 km from Surabaya.
- 307. Rambipuji Dry Port is situated in 194 km (in railway distance) away to the southwest of Surabaya. It is located in the inland area and connected with Tanjung Perak (Tg. Perak) Port of Surabaya. The port was set up on September 8, 1989. The transportation route between Rambipuji and Tanjung Perak International Container Terminal (Perak ICT) is shown in Figure 2.71, 2.72.
- 308. Jember district where Rambipuji Dry Port is located, is in primary industrial zone such as agriculture and stone material processing, as the main industries. The population of this area including Jember City is about 2 million. The major containerized commodities shipped from Rambipuji Dry Port are tobacco and stone materials (Teppei stone) used for construction. They said that coffee and cocoa were shipped occasionally, but the transportation records since the opening of the port in September 1989 show that neither coffee nor cocoa has been shipped. **Table 2.45** shows the marine containers handled at Rambipuji Dry Port. In 1993, the volume of outgoing containers was 1,258 TEUS and that of arriving containers was 1,258 TEUs, making the total to 2,516 TEUs. They accounted for less than 1% of containers handled at Tg. Perak Port. All of the arriving containers were empty. In other words, no loaded container arrived at Rambipuji Dry Port.

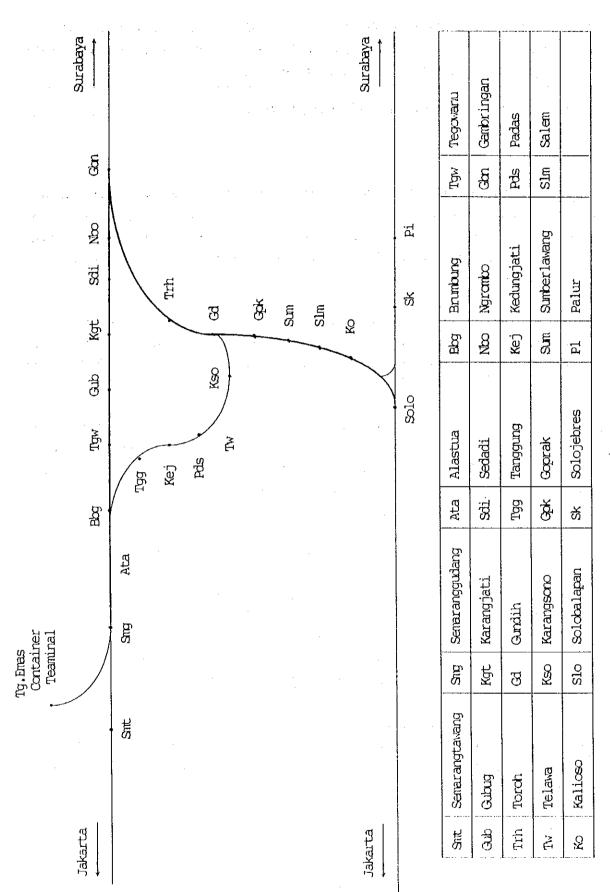


Fig. 2.64 Solo Jebres - Semarang Port Railway Connection

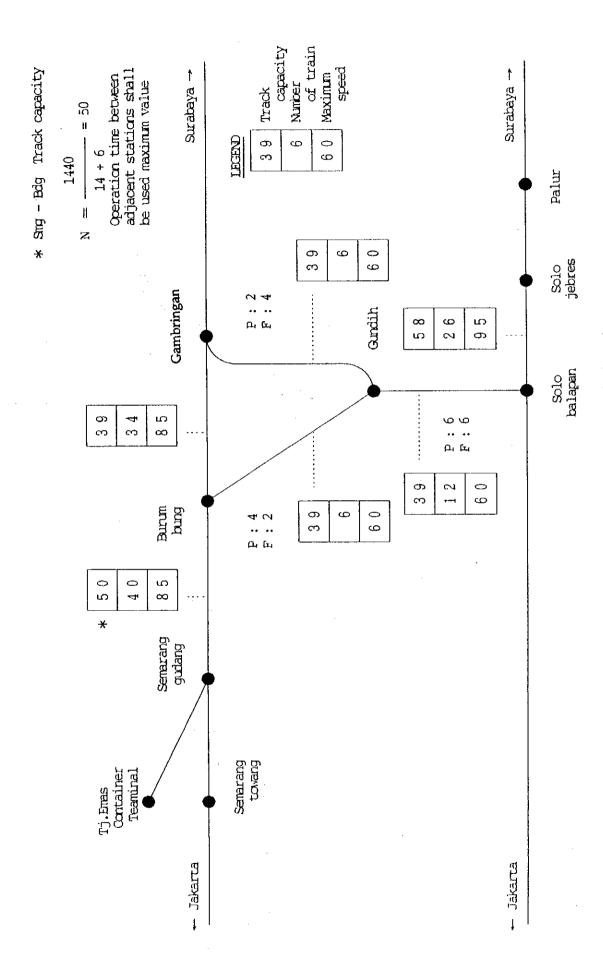


Fig. 2.65 Solo Jebres - Semarang Track Capacity

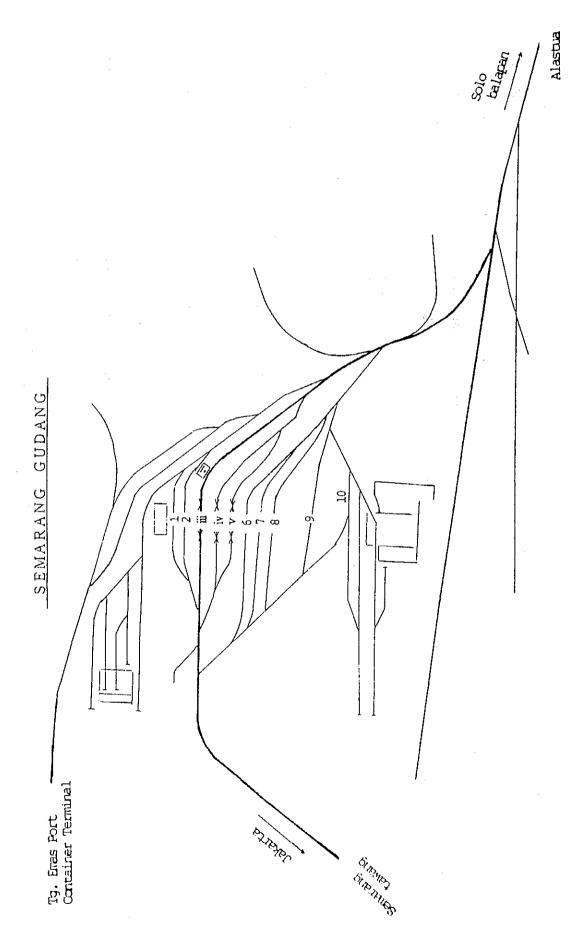


Fig. 2.66 Semarang gudang St. Track Layout

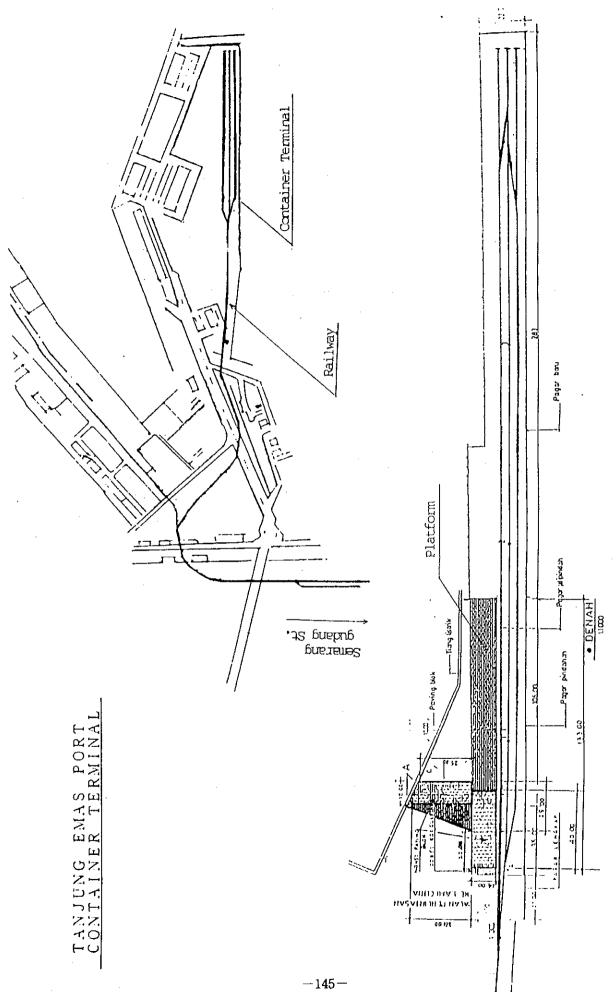


Fig. 2.67 Tg. Emas Port Container Terminal Track Layout

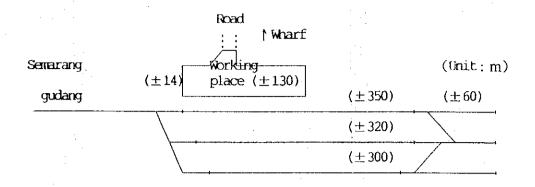


Fig. 2.68 Tg. Emas Port Container Terminal Track Layout Sketch

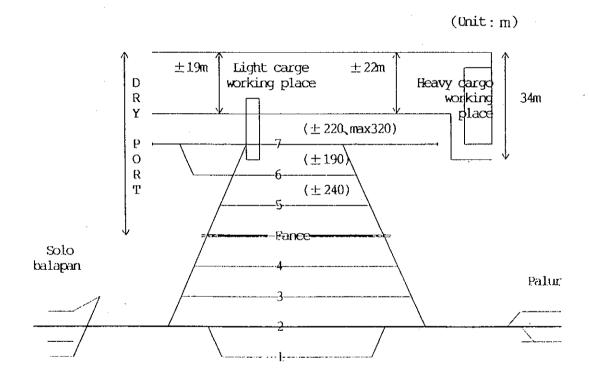


Fig. 2.69 Solo Jebres Dry Port Track Layout Sketch

Fig. 2.70 Solo Jebres St. Track Layout

Table 2.45 Marine Container Handled at Rambipuji Dry Port

Year	Outgoing (Loaded) TEU	Arriving (Empty) TEU	Total TEU	Index	Freight Revenue
1990	324	324	648	100	38,676
. 1991	353	353	706	109	42,324
1992	518	518	1,036	160	64,053
1993	1,258	1,258	2,516	388	169,193

309. Table 2.46 shows the container cargo shipment data at each station during 1990 and 1993.

Although the cargo volumes are small, they have been increasing nearly 4 times during the last 3 years. The cause seems that PERUMKA offered convenience for shippers by occasionally operating a non regular train and all the customs clearance procedures could be completed at Rambipuji Dry Port, so that container cargo shipped from the following 6 stations could increase via Rambipuji.

Kalisat and Klakah since September 1992 Kotok since October 1992 Banyuwangi since December 1992 Sukowano since October 1993 Arjoso since March 1994

310. The Minister of Transport and Communications issued an ordinance prohibiting road transportation of 20 ft or larger containers since July 1993. Since the ordinance becomes effective in May 1994 in this area, container cargo shippers will use the railway service instead of road transportation, the increase in railway freight traffic is expected.

Table 2.46 Container Cargo Shipping Stations and Commodities (1990 - 1993)

	Committee C.	- Bo omphing of				
Year	Station	Commodities	20ft	40ft	TEUS	Ton
1990	Rambipuji	Tobacco	60	132	324	2,982
1991	Rambipuji	Tobacco	69	142	353	3,287
1992	Rambipuji	Tobacco	95	155	405	3,602
	Kalisat	Tobacco	6	31	68	650
	Klakah	Tobacco	-	13	26	235
	Kotok	Tobacco	17		17	127
	Banyuwangi	Sepatu Kain	-	1	2	7
1992	Total	of Jan Dec.	118	200	518	4,621
1993	Rambipuji	Tobacco	115	215	545	4,991
	Kalisat	Tobacco	89	238	565	5,513
	Kalisat	Teppei Stone	13	-	13	264
	Sukowono	Tobacco	-	11	22	227
	Sukowono	Black stone	46	-	46	966
	Klakah	Tobacco	6	~	6	55
	Kotok	Teppei stone	52	-	52	93
-	Banyuwangi	Handicraft	1	4	9	3
1993	Total	of Jan Dec.	322	468	1,258	12,98

311. The Chief of Rambipuji Dry Port estimates that the total transportation demand for tobacco, which is the major cargo shipped from this district, is about 14,000 tons (1,560 TEUs).

In 1992, tobacco carried by the railway totalled about 4,600 tons, accounting for 33% of the total tobacco transportation demand. In 1993, it sharply increased to about 10,800 tons, increasing the railway share to 77%. However, the transportation records during

the first 4 months, January through April, of 1994 show that the volume of tobacco decreased, but that of the stone material increased greatly because additional handling stations were specified.

Table 2.47 Container Cargo Shipping Stations and Commodities (January - April 1993 and January - April 1994)

Year	Station	Commodities	20ft	40ft	TEUS	Ton
1993	Rambipuji	Tobacco	16	62	140	1,279
	Kalisat	Tobacco	16	147	310	3,097
	Total(tobace	co)of Jan Apr.	32	209	450	4,376
	Kotok	Teppei Stone	13	-	13	234
1993	Total(tobacc	co)of Jan Apr.	45	58	463	7,610
1994	Rambipuji	Tobacco	29	56	145	1,284
	Kalisat	Tobacco	22	114	134	1,292
	Total(tobacc	o)of Jan Apr.	51	-	279	2,576
	Kalisat	Teppei Stone	15	-	15	310
	Kotok	Teppei Stone	30	<u>-</u>	27	549
	Arzoso	Teppei Stone	1	ŧ	1	20
	Sukowono	black Stone	41	-	41	861
	Total(stone	e)of Jan Apr.	87	-	87	1,245
	Total of	Jan Apr.	138	114	366	4,316

Source: Rambipuji Dry Port

(2) Facilities

- 312. The transportation route from Rambipuji Dry Port to Perak ICT of Perak Port is Rambipuji Surbayagubeng Sidotopo Kalimas Perak ICT. The section between Surabaya and Wonokromo, which is located between Surabaya and Banyuwangi, is a double track section. The line branches at Wonokromo to the southern trunk line that leads to Kertosono and Solo. A single track section starts at Wonokromo. The line branches toward Blitar at Bangil and toward Sukowono at Kalisat. (Refer to Figure 2.71)
- 313. The section between Surabaya and Bangil is a flat section where the standard grade is less than 5/1000. The section between Bangil and Rambipuji and that between Rambipuji and Banyuwangi have sharp grades of 15/1000 and 18/1000, respectively. The allowable axle load is 15 tons in all the sections. The allowable maximum running speed is 60 km/h between Surabaya and Bangil and 70 km/h between Bangil and Banyuwangi.
- 314. Model BB-301 diesel locomotives operated in this section have haulage capacity of 450 tons. One locomotive can haul 10 container cars. Up to 16 cars can be hauled by multiple locomotives.

The tokenless block system is used in all the sections including the double track section.

Surabayagubeng and Wonokromo Stations are equipped with relay interlocking devices and 3-aspect color light signals. Since no intermediate block signal is installed, the section between two stations constitutes one block section.

The other stations are equipped with 2-aspect semaphore signals and operated by mechanical interlocking lever frames.

Since intermediate stations have no safety siding, more than one train cannot enter the station simultaneously.

315. The stations have enough capacity for a container train with 16 cars hauled by multiple locomotives, because the effective length of the main track is 280 to 300 m. Since multiple locomotive trains are possible, the transport capacity can increase without multiplication of train numbers.

The current track capacity is 41 trains, but only 26 trains are realized. Therefore, the tracks have sufficient capacity for future train increase. (Refer to Fig. 2.73)

316. The improvement works for the small section tunnel between Jember and Banyuwangi has been completed. The restriction on 40 ft containers in this section was dismissed in December 1992. Five 40 ft containers (10 TEUs) were carried from Banyuwangi to Tg. Perak Port since the dismissing in December 1992 until April 1994.

(3) Train routes and container transportation

317. The train routes between Surabaya and Banyuwangi is as follows. A daytime express direct train and a rapid service direct train each make one round trip, and a night express train makes one round trip, totaling to 3 round trips daily. A rapid service train makes one round trip daily between Probolinggo and Banyuwangi. Therefore, the total service available is 4 round trips daily. Mixture trains consisting of passenger cars and freight cars are operated in some section.

318. Freight trains are operated by a complicated system. A direct train between Surabayagubeng and Banyuwangi makes only one round trip. At intermediate terminals, cars are relayed among conventional local trains each other. 12 to 19 trains (including non-regular trains) are scheduled per section. (Refer to Figure 2.74, 2.76)

Table 2.48 Number of Trains Scheduled by Section between Surabayagubeng and Banyuwangi

	Sgu	Wr	Bg	Pb 1	Rbp	Jr Klt	Bw	
Passenger	22	6	8	8	8	8	8	
Freight	18	14	12	3	13	19	15	
Total	40	20	20	1	21	26	23	

Note: Station name abbreviations

Sgu: Surabayagubeng Pb: Probolinggo Klt: Kalisat

Wr : Waru Rbp: Rabmipuji Bw : Banyuwangi

Bg : Bangil Jr : Jember

319. One round trip of a non-regular container freight train is scheduled between Rambipuji and Kalimas. However, container cars are connected with a conventional rapid

service freight train because Jember district had very small demand for container transportation, e.g., 3.4 TEUs (2 cars) daily on an average in 1993.

320. Container cars destined for Surabaya from the six stations (Klakah, Kotok, Kalisat, Sukowono, and Banyuwangi) in Jember district are gathered toward Rambipuji by conventional trains or temporary forward trains. At Rambipuji, they are connected with a container designated train. A container designated train consisting of both container cars and conventional freight cars is classified again at Sidotopo and Kalimas. Then, container cars are relayed to Perak ICT.

(4) Rambipuji Dry Port

a. Facilities

321. Figure 2.77 shows the facility layout at Rambipuji Dry Port.

The marine container handling facilities and their specifications are summarized below.

Container yard:

6,600 m²

Container handling platform:

High floor type, concrete pavement

Loading/unloading track:

220 m

Storage and engine run-round track: 280 m

Cargo handling machine:

None installed

Warehouse:

None

(A private tobacco warehouse exists next to the station.)

Dry port function:

Rambipuji does not have all of the customs clearance and other functions, but all the importand export formalities can be completed

at the related organizations in Jember.

b. Operation

322. The container handling platform with elevated floor was constructed for handling full containers by using a heavy cargo handling machine.

Containers are handled by the following procedure. Cars loading empty containers are led into the loading/unloading track and containers are stuffed by man power. They say that cargo handling workers will be increased whenever the cargo volume increases.

At Arjoso, Kotok, Kalisat, and Sukowono Stations, containers are handled by the same method as Rambipuji Station. These stations have no cargo handling machine, either,

c. Organization and management

323. The chief official of dry port belonging to PERUMKA is posted at Rambipuji St. The offices with various functions necessary for export and import procedures such as customs, export and import examination, medical inspection and foreign exchange banks, etc. are not concentrated at Rambipuji St.

However, customers can finish export and import procedures at the relevant offices scattered in Jember City without going to the port authority office. (Fig 2.78)

(5) Kalimas Station

- 324. Kalimas Station is a freight station located next to Tg. Perak Port. It has the branched lines radiated to Surabayapasarturi Station, the terminal of the northern trunk line, Sidotopo Freight Station, and the industrial railway track of Perak ICT of Tg. Perak Port. (Refer to Fig. 2.71)
- 325. **Figure 2.75** shows how container cars are shunted between Rambipuji and Perak ICT. It shows that cars are marshalled twice at Sidotopo and Kalimas Stations. They are carried on a basis of the shunting system between Kalimas and Perak ICT. The railway service between Kalimas and Perak ICT has not been officially started. Containers are carried experimentally with the shunting system. During experimental

Containers are carried experimentally with the shunting system. During experimental container transportation, several PERUMKA station workers board the train and control the traffic at level crossings with heavy traffic. They unlock the door installed at the boundary between PERUMKA and the port authority. (PERUMKA's Kalimas Station staff have the key.)

326. When container cars arrive at the platform of ICT, a toplifter for cargo handling and chassis are sent from the container yard of Perak ICT. The number of chassis depends on the number of arriving containers. Containers are unloaded immediately and carried to the container yard of Perak Port. Container handling operation on the industrial railway track of Perak ICT is very quick.

After cargo handling, the empty cars are immediately returned to Kalimas Station.

(6) Existing issues

a. Container cargo shipped via Rambipuji Dry Port consists mainly of tobacco and

stone materials used for building produced for export in the Jember district. Since both of them are products of the primary industry, mass production and mass shipment cannot be expected. Furthermore, they are shipped by a small number of specified customers.

Since the area from Rambipuji is a farming region, it is doubtful whether a large increase in container cargo can be expected in future.

b. The industrial zone where is expected to comprise the main origins and destinations of import and export cargo is located in the 20 km zone in the south and west of central Surabaya.

Construction works to expand the industrial zone to the 50 km area are underway. This distance is most advantageous for trailers that are suitable for door-to-door transportation service.

c. The container platform at Rambipuji Dry Port is long enough for one container train (20 TEUs). It will be long enough even for a longer train (32 TEUS) operated by multiple locomotives. However, the current cargo volume is too small to install heavy machines for 40 ft containers and to operate them efficiently.

Cargo handling by man power is inevitable from the viewpoint of transportation cost until sufficient container demand can be predicted.

d. The land bridge with 10.5 m width and 2km length connects between the container berth of Perak port and the container yard. Here, containers are carried by trailers belonging to Perak ICT.

It is said someone has the idea to extend the railway between Kalimas Station and below the gantry crane at the container berth of Perak ICT. Since the railway has the very small share of the containers handled at the container yard of Perak ICT, no need is found to make equipment investment anew to replace trailers by container wagons.

e. The approximately 3 km long port track between Kalimas Station and Perak ICT runs along the roads with considerably heavy traffic and has level crossings with heavy traffic. There is a possibility to cause some difficulty on the transportation during daytime when traffic congestion on the roads would occur in future.

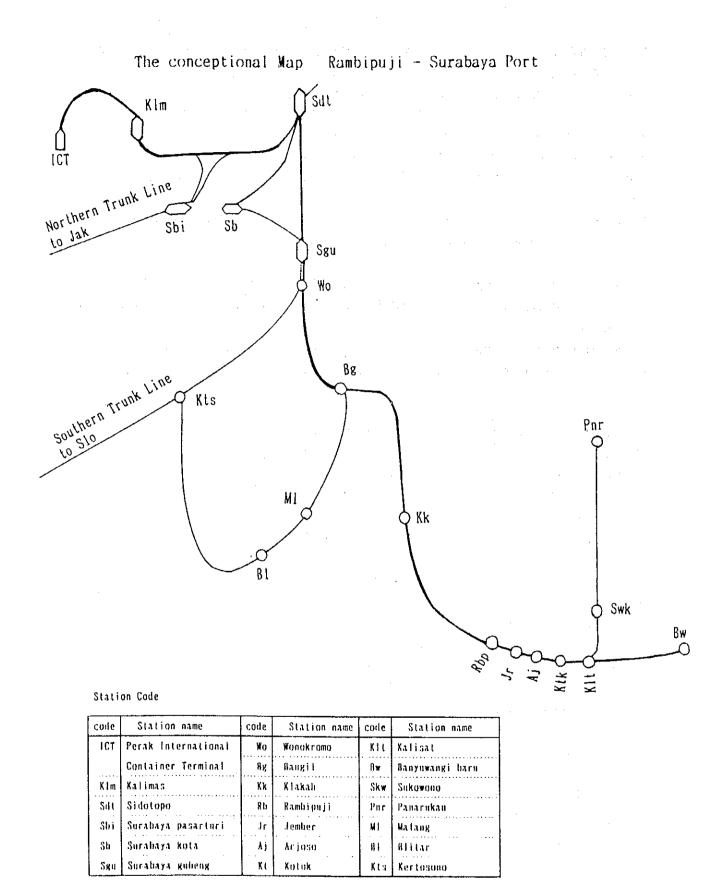


Fig. 2.71 The conceptional Map Rambipuji and Surabaya Port

CONVENTIONAL PORT INTERNATIONAL CONTINUER FERMINAL BERTH PLANNING DESELOPMENT Comtainer Berth loder gate ICT exclusive line Kalimas station Container yard .

Tanjung Perak International Container Perminal

Fig. 2.72 The Tanjung Perak International Container Terminal

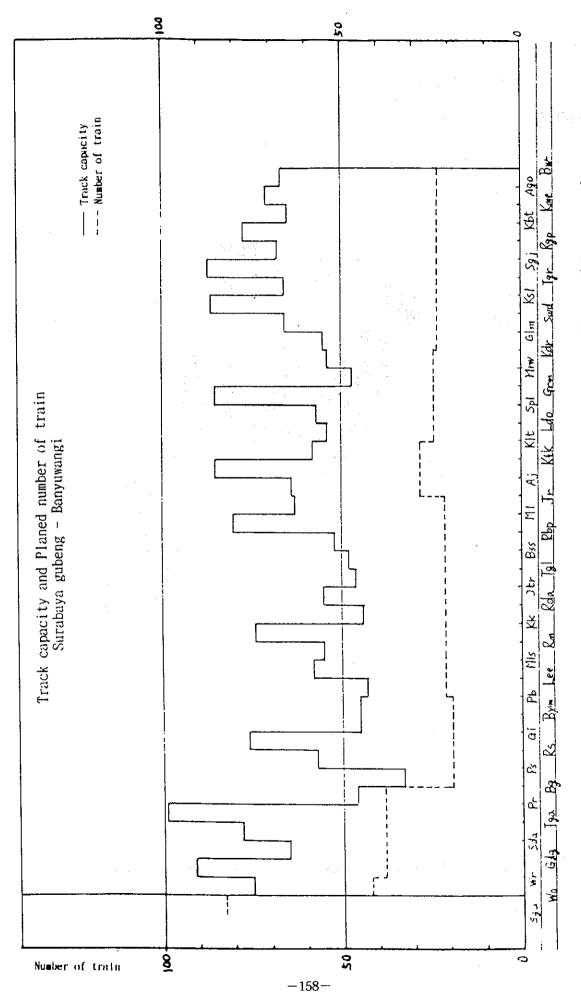


Fig. 2.73 Track capacity and planned number of train between Surabaya and Banyuwangi

Train Routes between Surabaya and Banyuwangi 1. Passenger train Jr Klt Kbr ₿₩ Sbi Klm Sdt Sb Wr Вк Рb Κk Rbp 2 (2) Express 1 (I) Rapid (I) 1 Rapid (Blital) Express 1 ① (Malang) **①** Express F (Malang. Blital. Kwrtosono) 6 Rapid 3 4 4 4 4 4 4 11 number of train 11 3 11 11 2. Fright train Kbr Bw Klt Sbi Klm Sdt Sbg Ψr Bg Рb Κĸ Rbp J٢ ∇ 1 Container F 1 Container F ∇ ∇ 1 Rapid 1 ∇ Rapid 2 2 Local 1 ∇ Rapid 1 1 Rapid 1 3 Rap + Loca (5) 4 Rap + Loca 1 1 Local 1 ① Local F ∇ 1 Local **(** ∇ Local F 1 ∇ Local F 1 ∇ Local 1) ∇ Local (2) Local 2 Local (1) Rap · Loca ∇ (2) Local (2) ∇ Local (D (Pakisali) **①** Rapid ② (Malang) Local 8 6 7 7 7 10 8 number of train 10 8 7 8 10 8 G 6 6 6 10 2342 38 18 21 21 2124 Total number of train

Eig 274 Train soutes Surabaya - Ranyuwa

notes F; non regular

Fig. 2.74 Train routes Surabaya - Banyuwangi

(D); number of train

Container Transportation between Rambipui and Perak ICT

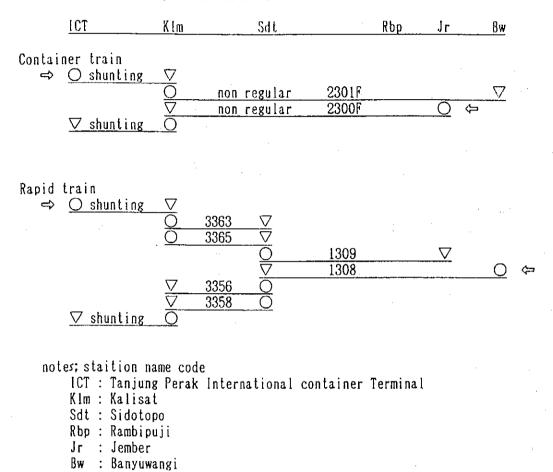


Fig. 2.75 Container Transportation between Rambipuji and Perak ICT

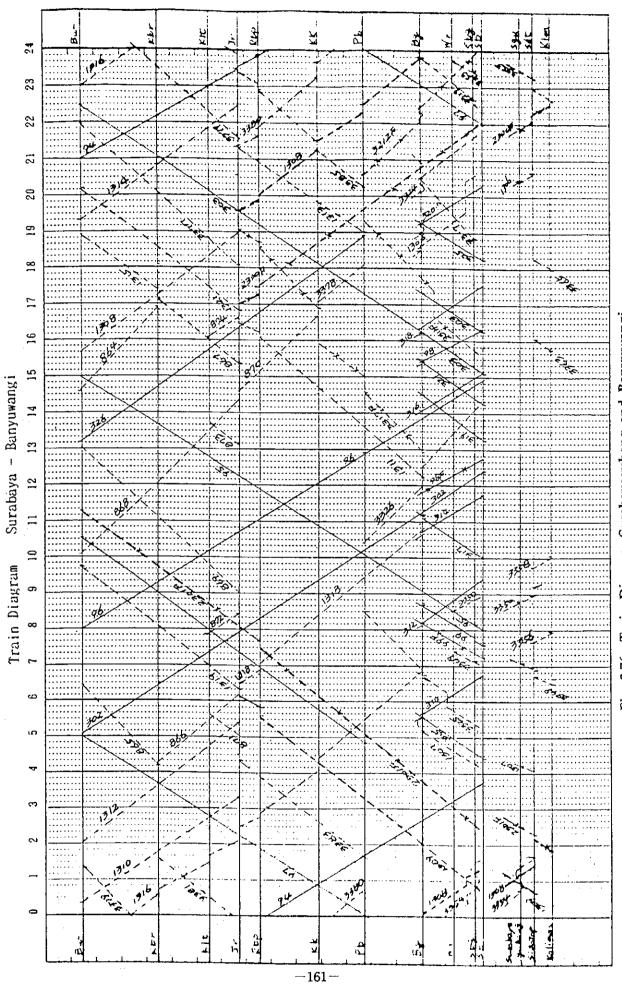


Fig. 2.76 Train Diagram Surabayagubeng and Banyuwangi

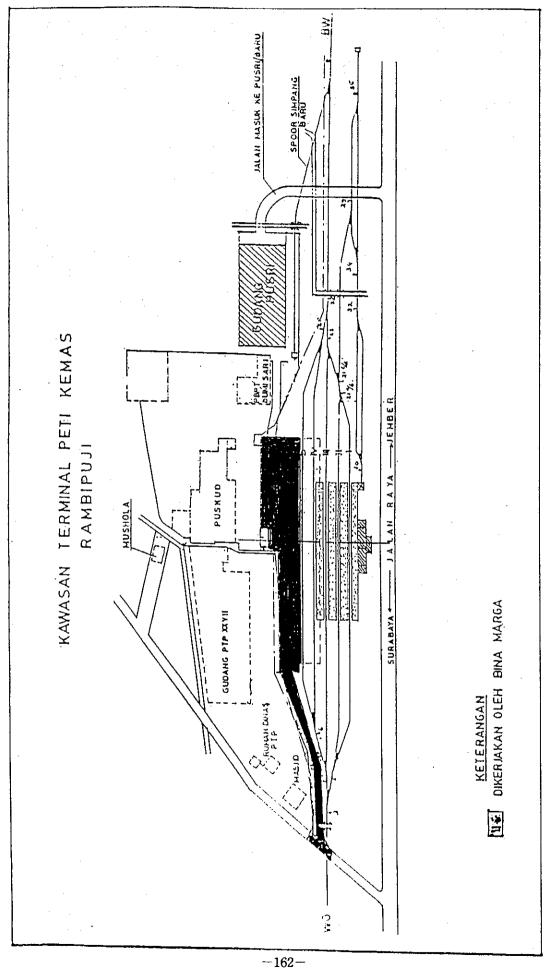


Fig. 2.77 Rambipuji Dry Port: Track layout

Secretary Organization Division KAUR KEAMANAN DAN KETERTIBAN Evaluation and Development KAUR EVALUASI DAN PENGEMBANGAN (Rambipuji Dry Ports material) Sub Section KASUBSI PEMASARAN Chief Marketing KAUR PERSONALIA DAN UMUM General Affair Division Finance Division KAUR KEUANGAN KASUBSI ANGKUTAN EKSPOR Chief of Commercial Organization chart of Rambipuji Dry Port(LAMPIRAN SG No.5/12/1989) Chief Export Sub Section KASI NIAGA Chief Administration Division KASUBAG TATA USAHA KASUBSI ANGKUTAN IMPOR Chief Import Sub Section Chief of Jawa Branch Office KAWIIU JAWA SEWARANG Chief of Rambipuji Dry Port KTPKJ RAMBIPUJI Sub Section KASUBSI PERAWATAN Chief Maintenance KASI JASA TERMINAL Chief of Terminal Chief Operation KASUBSI OPERASI Sub Section

Fig. 2.78 Organization chart of Rambipuji Dry Port

THE STUDY ON THE MASTER PLAN OF CONTAINER CARGO HANDLING PORTS, DRY PORTS AND CONNECTING RAILWAYS IN THE REPUBLIC OF INDONESIA Vol.2, 3. MACRO FORECAST OF CONTAINER CARGO TRAFFIC IN 2010

3. MACRO FORCAST OF CONTAINER CARGO TRAFFIC IN 2010

3.1 SOCIOECONOMIC FRAMEWORK IN THE YEAR 2010

3.1.1 Population

- 1. There are two forecasts of population in Indonesia. One population projection up to the year 2018 is presented in the 25 Year Long Term Development Plan II (hereinafter called PJP II). The other population projection (by provinces) up to the year 2020 was presented a cooperative venture between The DEMOGRAPHIC INSTITUTE, Faculty of Economics, University of Indonesia and the NATIONAL DEVELOPMENT PLANNING BOARD (hereinafter called Case-2).
- 2. The two forecasts are summarized in Table 3.1.

Table 3.1 Forecast Populatian in Indonesia

(Unit : 1,000 persons)

	2003	2010	2018
PJP II	219,400	238,677	258,100
Case-2	224,555	246,796	270,898

3.1.2 Economic framework

- 3. Three scenarios are set for the economic framework through 2018.
- (1) Scenario 1
- 4. In this scenario, the GDP and each sectoral growth rates forecast in PJP II are adopted. Based on these figures, the GDP is calculated up to the year 2018.
- (2) Scenario 2
- 5. A GDP growth model is constructed in accordance with the following procedure.

THE STUDY ON THE MASTER PLAN OF CONTAINER CARGO HANDLING PORTS, DRY PORTS AND CONNECTING RAILWAYS IN THE REPUBLIC OF INDONESIA Vol.2, 3, MACRO FORECAST OF CONTAINER CARGO TRAFFIC IN 2010

- 1) A per capita GDP growth model is designed based on the growth curves of Indonesia, Malaysia, Thailand, Korea and Singapore over the last 20 years. (Fig.3.1,.2,.3 and .4)
- 2) The per capita GDP growth rate is calculated based on the above model.
- 3) The GDP growth rate is then calculated by multiplying the population growth rate by the above figure. (The population growth rate is adopted from PJP II).
- 4) Finally, the GDP is forecast up to the year 2018 based on this projected growth rate.
- (3) Scenario 3
- 6. This scenario sets 6% as the average annual GDP growth rate up to the year 2018. This is the same as the average growth rate over the last 10 years (1984-1993).

Table 3.2 Annual GDP growth rate under each scenario

Unit: %

	1994-1998	1999-2003	2004-2008	2009-2013	2014-2018
Scenario 1	6.2	6.6	7.1	7.8	8.7
Scenario 2	9.2	8.9	8.6	8.2	7.8
Scenario 3	6.0	6.0	6.0	6.0	6.0

7. The projected GDP under each scenario is presented in Fig.3.5 and summarized below in constant 1983 prices.

THE STUDY ON THE MASTER PLAN OF CONTAINER CARGO HANDLING PORTS, DRY PORTS AND CONNECTING RAILWAYS IN THE REPUBLIC OF INDONESIA Vol.2, 3. MACRO FORECAST OF CONTAINER CARGO TRAFFIC IN 2010

Table 3.3 Projected GDP

(Unit: Trillion rupiahs)

	2003	2010	2018
Scenario 1	261.877	427.499	816.788
Scenario 2	323.948	574.003	1,056.930
Scenario 3	250.601	376.811	600.579

8. The per capita GDP under each scenario is presented below in constant 1983 market prices.

Table 3.4 Per Capita GDP

(Unit: Million rupiahs)

	2003	2010	2018
Scenario 1	1.194	1.791	3.165
Scenario 2	1,477	2.405	4.095
Scenario 3	1.142	1.579	2.327

9. According to Scenario 1, the GDP will reach 427.5 trillion rupiah in 2010 and the per capita GDP will be 1.79 million rupiah in constant 1983 prices. This is equivalent to 2.84 million rupiah in constant 1989 market prices. (The conversion factor is 1.588).

Remarks: US\$1 = 1,203 rupiah (in constant 1983 prices)

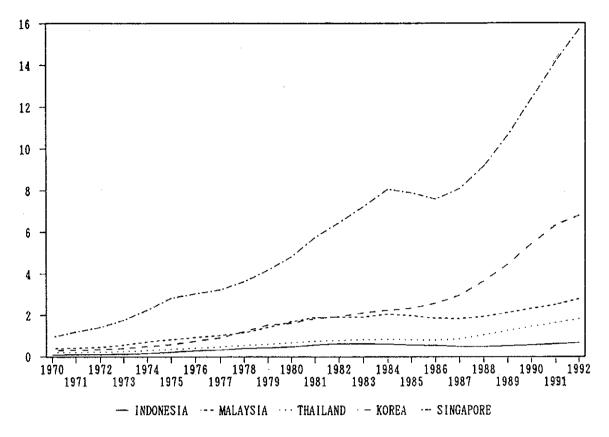


Fig. 3.1 Growth of Per Capita GDP (Unit: US\$ 1,000)

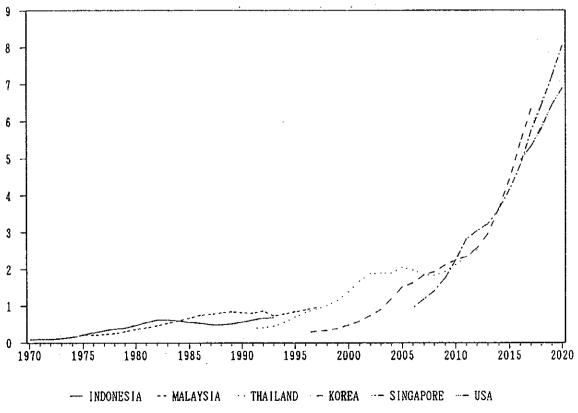


Fig. 3.2 GDP Estimation Model 1 (Unit: US\$ 1,000)

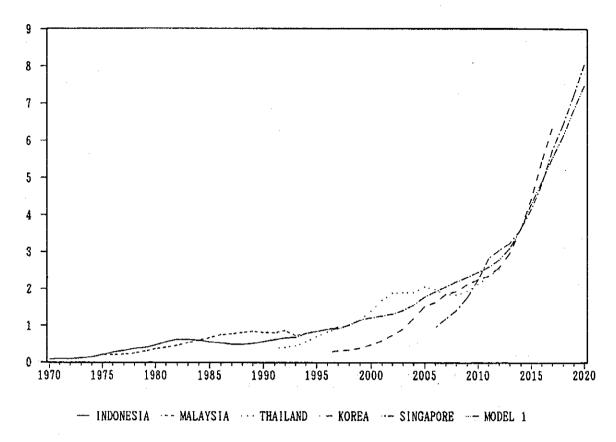


Fig. 3.3 GDP Estimation Model 2 (Unit: US\$ 1,000)

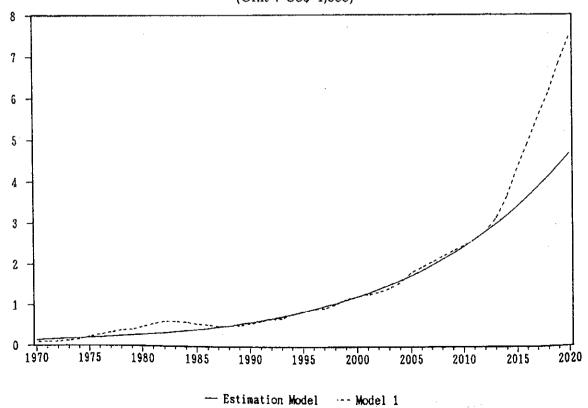


Fig. 3.4 GDP Estimation Model 3 (Unit: US\$ 1,000)

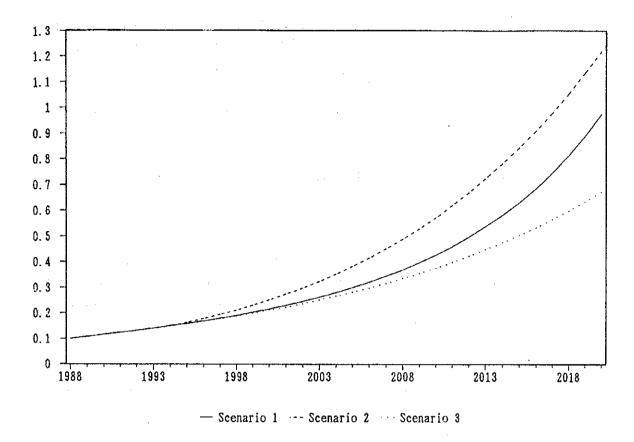


Fig. 3.5 GDP Forecast by Three Scenaris (Unit: US\$ 1,000 Trillion Rp.)

THE STUDY ON THE MASTER PLAN OF CONTAINER CARGO HANDLING PORTS, DRY PORTS AND CONNECTING RAILWAYS IN THE REPUBLIC OF INDONESIA Vol.2, 3. MACRO FORECAST OF CONTAINER CARGO TRAFFIC IN 2010

- 3.2 MACRO FORECAST OF TOTAL CONTAINER CARGO TRAFFIC OF THE PORT SECTOR IN 2010
- 3.2.1 Macro forecast of international container cargo traffic in 2010
- (1) Export container cargo
- 10. Based on the statistics of export, export cargo is classified into ten commodities: foodstuffs, beverages & tobacco, raw materials, mineral fuels, non mineral oils & fats, chemicals, manufactured goods, machinery & transportation equipment, miscellaneous manufactured articles, and others.
- 11. The future cargo volume for each commodity is projected for all three scenarios based on the elasticity between the historical growth rates for each commodity and for overall GDP.
- 12. The potential container cargo volume is estimated based on the assumed final containerized ratio for each commodity.
- 13. The increase in containerized ratio is estimated from the correlation between the past trend and the logistic curve, which is shown in Fig.3.6.
- 14. The container cargo volume in the target year is forecast by multiplying potential container cargo volume by the containerized ratio.
- (2) Import container cargo
- 15. Import container cargo is forecasted adopting the same methodology used to forecast export container cargo volume.
- 16. The forecast international container cargo volume is presented in Table 3.6, .7, .8, .9, .10, .11 and Fig.3.7 and summarized below.

THE STUDY ON THE MASTER PLAN OF CONTAINER CARGO HANDLING PORTS, DRY PORTS AND CONNECTING RAILWAYS IN THE REPUBLIC OF INDONESIA Vol.2. 3. MACRO FORECAST OF CONTAINER CARGO TRAFFIC IN 2010

Table 3.5 Forecast International Container Cargo Volume

(Unit: 1,000 TEU)

Scenario		Export			Import		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	2,195	286	2,481	1,937	544	2,481	4,962
2010	3,558	416	3,973	3,221	752	3,973	7, 94 6
2018	6,632	684	7,316	6,151	1,165	7,316	14,632
Scenario		Export			Import		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	,
2003	2,725	355	3,081	2,402	678	3,081	6,162
2010	4,807	562	5,369	4,343	1,026	5,369	10,738
2018	8,641	892	9,533	7,989	1,544	9,533	19,066
Scenario		Export			Import		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	2,099	273	2,372	1,852	520	2,372	4,7 4 4
2010	3,128	366	3,493	2,834	659	3,493	6, 98 6
. 2018	4,839	499	5,338	4,503	835	5,338	10, 6 76

3.2.2 Macro forecast of container cargo traffic by major origin and destination in 2010

17. The above estimated total container cargoes is the broken down by major origin and destination. Table 3.12 shows the results of the forecast on the basis of the histrical cargo flow which is shown in detail in Table 3.13 and .14

Table 3.6 Estimation for Container Volume of Exports by site Groups (Scenario 1)

-	à	Total Saf	١.	Severand and	and Solutor	3	Spieriels	a Mineral	, a	Luha	Son Minera	1 011	besite is	Ī	Mectured	Continue	Incry 4 Tr	nesjelace.	Japenia	had come.	11160 13	[railfota]	Carpo Yolk	mar Poten	11347	3	Iner Grass		Costalner	
<u>ٿ</u>	١.	Shaptle T.	ļ ,—,	0.94 Eleatic T.	_	Tollestic P	, A	0. 96 Elastic	-		Stlc V	0. 33 214	agaic T	0. 99 Elas	36 1	1. fto E las	1 2	. 30 Elast	1 2	. 31 214.51	2		5	Contain	Ainer Caray	Tolum	5	Lowrled Con	E=17 C3	101
			!_		2	8	-	1.016	Щ	800		20.		55.		55.	-	£	-	8		-	-	\$:	:	:		:	:
	:	1	1.060		. 090	8		8	Ë	980		980		1.080		990	-	980	-	8			<u> </u> 	1		;	÷			
		200	9	Sat S	<u>-</u>	ا ق	l u	Š	s,	S.C.	4	S	ر د د	SOS Cont.	, S.	MON CORL	v.	TOX Cont.	S	Cont.	5. 10	lon ten	Ĭ	, E	3	-	al la	P	F	1
1	Γ		l		•	Ĭ	ē	=	훒	-	252				1,332		-					5	ğ	-1			- F			,
ž		2 078	8	1	R	, Z	123: 69	3	2	4	88	£2.		2.023	_	X.	2.5	Ş		2	11 8.	8	20	 5	٠.	z	6.90%			
280		•	2 23	-	24 21 6	77	765 10	គ្គ	Ş	£2.	449	T. 673	400 38	201.728	2, 138 108	108, 313	3-53	53. 705	28 34 22	ø		호	2	, A	4.50	Ġ.	7.583	:	. :	
ž	9	2.65	25.30	Ì	20 - 15. 293	2	955 -6	S	35	S	3.48	2.52		K12 '2	_	10 m	5 116	5		Š.	22 -49.	Ę	3	ŝ		£	2 2		:	:
Ý	2.463	1			21 1.90	ន	709 145	B	;≒	-11.823	=	Ē.		3.083	4, 351 H	S	12	78%		ž,	4-62.23	;	8	123	615 4.8	<u></u>	.	44, 322	101,101	12, 153
1	10	78.7			1	5	2	2	ģ	14. 85x	92	2 52	1,877	, Z3	5, 778 32	.763	2	ž.	# -	5	11.0	₹.			¥3 300		Ξ.			F
	- 6	1	1 205	-	, -	3	Y	ļ	Ş	-2 66X	58	S. 761		20 CS		51. Ids	25 153	£.		Ē	0		249 -1 351	≓	r Š	TSN 1.927	22. HE 528		:	2
•	F	1		•	2	!	151-43	48	8	5	1.286	25.2	35.	4 364		23. 98%	₽	888		273	6	115	361 - 14.0	22	10.	Z, 125	25, 21, 115	!	į	1
į		ŀ	19.463			\$	15-105-11	-31, 119 71.	83	6.213	1, 283	25.0		38.873	_	. Q.		ū	242 69.	528	0	102,	261 -11.3	4	C. 842	3,590		:		Ī
Î	7.26	1	,		F	1	120		ž	5	1.514	8	2,081	1		-13.160		£		5	•	6	25.	2	7 18	į		,		₫
·	ğ		3		1	Į		e X	3	363	8	8	2,400	25.23		×		, T		5		155	₽	_[<u>=</u>	·	_ :		1	14, 00T
2			10.35		H	Z Z		i	K	202	- 58	3.42	1,958	. ÷3x	11,502	1023		200	635 23.01%	S.O.	9	š	130 S17 21 183	Ĭ	8	_}	T0 53. 215	,		
	Ş	1	7		-	ì_		2 2	ŧ	39%	1, 662	8.074	2,069	5.00	12,224	1. 25x		263		1.67	-	ξ	033 2.2	7	MB 10.4	30'6	98 . 61. 123	12,719	1	J
Š	4.48	l	4, 758		÷	36		l	17.8	1. 26x	1, 301	5.07		S. 503	12,975	20	_1	ă	**	4		₹	2 2	4	90	10 T 10 E	Ξ.	ž	XT.12	
1985	7				÷	<u>_</u>		Ą		4	E	S. 75	2,300	5.3	12.75	¥ 63	!	213	*	5	-	₹.	2.0	= 1	5		£ 4	1,097.	25. 25.	- -
188	202	!		*	ď	i i			2	Į.	3	5.62	_	ē.	_,	4		£	-	31			151 192 1.9	<u> </u>	619 11 619	210 21 7	5 50 .ZI	1.23, 155	290 62	1,414,157
Î		- F13			1	<u>L</u>		=	ž	8	201.2	5.65		5,303	15, 430	5	}	\$	**	5	 	<u>∞</u>	9 2 94	=	5	THE .C	47 13.25	1.24.83	18,81	-
ě	, a		1	1		:	-	ě	3	5	1.22	S. 75		5.40	16.39	8	اـــا	75%	4	S.	_	37	11	5	19, 715 12 47	14.978	TS 27. 9T.	1, 497, 792	211,042	1, 766, 074
į	1	\$ 0.55	î			<u>i</u>	~	g	- 2	25.	25	5.5		20	11,362	- E		St.	3	4		=	5.1	ž S	22 :1	=	12: 1E 12!	1, 531, 210	128,328	1, 854
	2.5	202.5		:		١.	524	!	3	13	257.2	Š	_	2	15, 431	6 27	•		-	ē	-	5	E	22	7	7,5	24. PT . TS.	1,164,197	₹	
·	5	3	Ľ				2			, 38 18	2. FL2	6.07	 061	5.60	18, 595	102	-		315	£		<u>\$</u>	2 4	ជ <u>ទ</u>		<u> </u>	CCS 11.06N	. 30.63	7	:
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:		2	l			ì	72			1. 58x	7, 977	6. 203	3,52	,	22, 183	£3	لــــــــــــــــــــــــــــــــــــــ		555	B	-	ž.	2	25	7	£ 12	. 348 BZ 803	2 34,67	21 987	_:
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ŝ	8	9,786	•		1.10	! 1	38, 826 2.	2.573 107,1		£.	Ę	5			025	107	_ !	200		<u>s</u>	1	#	1		di T	4	#	2,517,114	23,017	• 4,
100	2	1,15	_				7	- :		5	35.00	20.00	!	100	803 12	2	4	2.22		ğ	- - †	3	۱,	5	= 6		₹.	2 2 3 3 3	8	**
ā	2	₹	_		٠		7	ģ	112, 207 2.	7.00×	7.52	3	_	1	27.150	5	-4	j	•	2	+	ន	<u> </u>	ર્સ €			3	7. 3.		3 23, 150
2002	7.37	7, 970	2.0		**		~	3		Z 12	- CBO	£.13	_Ł		3	S.	E	Ĺ	•		-	ā	<u>-</u>	đ Ç	576	g 	5	-	7	<u>`</u>
	7.51%	4	5.78	-	*		"	Ś		2.300	유	£.93	3,076	ا ک	를 등	8	2			2.03	1	=	215, 470, 3.4	ź.	4	1	2			10.1
	-1	Į			1	_	4 88 4	ş	몵	2.4GE	E .	- S	1	20	¥ /	5	35		의	5	-	B		-				188		٠,٠
<u> </u>	8	1	•		ı	. [r i	2	2		S	2		2		<u>.</u>	8	9	4	5	-	1	5			1		3		•
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	2		4.42	1	282 5. 873	\$	2			2.17	× 75		8	£.	2.2	2	1, 42	2	e E	7	!	đ		22		¥,	1			•
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2015	£ 53	12, 143	1.78		77.1	ξį	10	'n		SIZ T		2	1, 650	1	21,080	#	=, 2 .	5	= ¥	<u> </u>		E	- -	= 5	2 2 3	<u>.</u>	중 로 조	X 22	28,28	'n
=======================================	5	13, 62	- 22	1	314	435	₹	8	Ξ	į	1.286	5	77	7	5	5	= 1	283	≓. ¥	ē	-	Ē		ź		5	22. 44.958	5, 815, 942	20.16	W 1117 M
<u> </u>	=	12	7.16		900	2	5	ž.	=	3.57x	1 870	6	, 30.	7.13	10.03	5	# 11 T	2	= =	ş	-	8		-		를 -	E 22 12	6.097, 124	2	R 78
102	£	*	_		25. B. 72	_	7	£	ž	3.76	1,537	4.48	1,028	5	96, 140	1.78	1 421	2	100	S.	 	R.	5.5	± ₹	7 7 7	ਨੂੰ ਵ	KS 71 22	6, 632, 201	#	-
5102	22.	=	.53		•	*	:		2	3.958	5, 273	2	1.43	5	72,004	1.98 1.08	2, 119 32	S	22 99	줐		\$		¥ .	Z 50	27.	2 2 2	1,23.43	로 조	*
12	5	1			Ľ		512	200	5		10, 103	#	11, 312	77.	75.67	25	3,054	* C	12	5	~	3	1	2 2	22.22	<u>2</u>	8 1	7.6%	2	4, 460, 552
					-	\dashv	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4		4	-			-

Table 3.7 Estimation for Container Volume of Imports by site Groups (Scenario 1)

3	ž.	Frankline		Revera	heverage and Toloned	In	Miterial	. F	Materials Mineral Fuel,	Ξ	n Miners	101	heaterla	\$	tul actured	Coats Mach	Incry 4 7	Transplise	Scotlancous!	MARIE CAMERY	IIIes & T	ratfolal C	Carrey Youte	_	- E	Castainer Cargo	S. Cres		Centalner	•
Increase	<u>=</u>	Clastic T.	6. 58	8 Elastic Y.		3	2	1.04 8143	Elastic 7.	8.	Elastic Y.	ш.:	iestic T	14)	ast to Y.	1.01 Elast	2	0. 98 Elest	v	1.01 Elastic	-	99	Increas	5.00	Per Gras	Tolland	Containing	Ambel Con Sen	Samply Con	Total
		-	- 038	_		1.042	}	1.10		1.022	_	_ !	-	93		1.9	-	1.042		500	5	\$. :				:	:
			090		!		i	98		000		1.060	1	7.060		0.000		000			-	080				:			i_	-
2	Pale		50	5			·	SON	. 55	OY Cont.	1. 5.	<u>క</u>	- S.	500	Cont. S.	Š	٠.	ON Cont	s;	100 Cm1	3	- {	S.C.	٤		Ę	0 14	125	130	
18	H	3, 147		_		7	918	1	5.8M		Ş		2, 785	_ <u> </u> 	3, 787	1	001		- 1		e			:	NS: 41-14%		45.5	٠.		
1942		3,075	-2, 29M	_	2	×	300	46x	10, 519 81.	243	7	70, 35%	2,822	1.32	3,986,5			14.48x	2	-0.4×	7 12-C		53	ì			11.923			
_			17.081	_	22 32		N,	ŝ	12, 592 19	É	12	2 321	3,158	11.83%	3,034	-8 60x		3.53		0.95%	5.22		22	ಷ್ :			\$ =			:
**	6.98%		72.74	-	17 -24.668		4.012 54	ž	10, 140 - 19.	455	€.	S .02	3,586	13.573	Z- KS 2	3,88%	-:	4.31x		-4.81%	3 63	1	Ġ.	~";)		2	8	-		1
	4	7.	1, 904 - 17. 672	-	2	G	932	Š	112			¥.38	2,857	Ŕ	1,980 -2	332	613 -3	0.73x	52 -8.	-6. 60x	3 - 12. \$	ŧ	20 20	•				132,400	8, 782	3 *2.11
_	5	2.574	29.119	-			4, 824 20.	20. E3x	6, 192 1T.	37.8		38. 81x	2, 768	4. E	2, 047	3.39%		6. 63x	7. 34	ŝ	4 62 5	<u>6</u>	ŝ	-				165,071	12.24	111,315
!	\$00 x	119.2	11.553		13	8.35%	4, 497	:		. 46.		12. 13.	3,359	23.348	628	-5.79%		9. 2.7x	58 -17,028	Š	6 3). 8	ដ	C6 18 190	7,4	460 32 328	2,200		131,404	24.346	261, 192
_	2	2.685 -6.	-8. 74X			7	35	į	-			1 23	3,328	1 ×26	2,218 1	15.654		\$ 50	50 - 13	15	4 -31.6		21,508 -5.80%					213, 795,	45, 696	285, 692 245, 69
		8	19, 30%	-	. K		g	35.00	iz			20.0	3,719	11.74%			Ž	30, 283	148	93.65%	- - 2			أ	027 34. Bly	:		276, 676	585 5	362,286
	:	:		!	23	-	33	ļ	8	ŝ	17	28. 28.	4,205	E C	3.381			\$ 00x	휴	\$25	3.00	30	260 10.09x	11, 148				394, 178	91, 126	55.39
	Š		\$ (1X	;	35 12.78%	1	589 10	ĺ	ş	S.	2	73, 55×	7.04	×06 ť,	:	-) 80x	1, 455	3 78%	100	10. 40x	39.1	13%	34, 215 13, 00x	7	072 35.28%			474, 475	27.72	594,240
	8.293	4.970			32 -8 508	308	8.862 9.	į	ŝ	Š	103	\$5.07X	4, 708	10.513		-1.36x	1, 228 -1	5.503		9.82N	4.37.5	1	35, 494 3.74x	ᅼ		0, 342	٠,	556, 836	3	121, 232
6	9.60%	2		1	3	: !	1	_	2	Ž.	Ę	6.943	- F	¥60.7	١	\$ 00 ×	212.	£ 50.		6. 36%	5 6.5		1911 4.78	10.4			Se. 66%	376, 416	226, 917	11,32
	465	. S	-		35 4.673	ļ	9,878 B.		12, 772 2.	28	5	\$ £	5,091	138 t	3, 617	7. 93M	1,047	4. 66x		1.368	5.0		38, 932 4. 665	₹	209 36. SOK	1		871, E31	241,078	12, 106
	33	5	i	; }	<u>: </u>				<u>L</u> .	203	98	. 60×	5.28	£ 5	L	45	Ļ.,	¥ 53		23	5.0.2	2/15 40,	*	Σ.	024: 36. 90x	9. 769	85. 023	976.852	284, 758	1, 251, 110
	70%	2	: .			ŧ		ļ.	41.7	Ę	530	523	5.478	3.673	£6.430	7. 600	! —	\$	-	Š	-0		42,544 4.49	5.6	868 37.30x	200	88. Z7x	. 083, 339	326, 776	1, 410, 157
	٠.	2		· <u>;</u>	40	1	11.938 8	22	E	2.503	565	509.	280.2	£ 1.0	4, 772	7,748	3,536	4.483		Ē	6 0.133	1 7	501 4.60	10.7	717 37. 70%	≓	71.15	, 192, 978	367, 042	1, 580, 038
		A 707	`	:	42 4 50%	1	724		! 	25	508	6.65	2.900	132	5.165	7. 123	1,600	4. S6x	<u> </u>	52.	6.0	ş	48, 598 4.71	1,77	755 38. 109	13.05	73.55	, 305, 752	403, 122	736,834
		155			4	1	ž	į	1		**	1	8	90.0	5,552	Š	1.08	2.2	_	1.39	7 6.34x	*	4.83	18.3	306 34 50h	Ξ		. 422, 057	135,480	157,537
	!	1	į			:		ļ	1.	74.	688	6.853	6.373	3.133	98	7 384	. 766	ğ	1	<u></u>	7 6 40	3	261 4.943	€.	944 38 913	×		, \$42, 457	164, 896	2, 001, 353
	1	1.17	•	<u>-</u> -	·	ĺ	Ť	<u> </u>	<u>L</u> .	2	5	6.94x	6,632	4. 00st	<u>. </u>	8. 00x	1.844	4. 80x	205	7.50%	6	51x 53,	855 5.06x	2,	169 39.318	=		. 887. 687	192, 210	2, 159, 897
1		:	1_		<u> </u>			ļ	15, 743 2.	716	2	7.043	106.3	4 153	7,007	8, 18M	<u>. </u>	4.893	_	5	. S.	503	5. 193	tt.		17,989	78, 281	. 108, 866	518, 230	2.317, IM
	•	1.55	_		<u>. </u>	1_	17, 735	•	<u>. </u>	8	3	-	1,200	4.25x	<u> </u>	8.20%	2,03	£. 33	1	. 1g	5		5.33	ដ		19,370	8C. 94x	937, 050	543, 889	2, 480, 939
,	65	10	53	<u>:</u>	<u> </u>	_		- A	L.	8	50	7. 254	1,513	* Sec. 4	\$ 221	100	2	5.03%	L	7. 838	9 8.805		926 5	8	492 40 533	20	83.73	2, 083, 40H	569, 607	2, 453, 011
ì	100	9	7	-		5.135	8	1	11.253	200	21.6	7. 36x	1,87	4.4	718.8	43	2,245	20		55	10 6.90%		Š	7	184: 40.933	22	82 37 x	2, 239, 197	595, 386	27 929 123
:	7.13	7	4	-	\$!	8	1	<u>1</u> _	3.30%	1,044	7. 46N	£.204	4. 5dx	<u> </u>	\$. STX	!!	5.29%	1	8. GON	1.5	700	5	<u>ئة</u>	024 41.313	7.	82. 85 k	2, 405, 731	627, 369	3, 023, 166
	,	9.317	!				ž.	1.52	18, 400	£	2	7.613	6,587	4.683	10, 524	8. 7.3x		S, 13	_	£. 143		2	412	ភ			11. 31x	, NC+ 'S\$\$ '2	852,415	3, 231, 850
		132			à	1		1	<u>:_</u>	3.554	1, 211	25.75	8,6	- FE		3		263.5		263	12	73,	937 8.08%	ដ	24 P2		12.85	2, 773, 901	AEC. 354	3, 463, 266
	7.51%	0.38				5. 703. 27.			19, 794	1.889.C	1, 307	. 50E	9,445	4.95%	12, 485	. 591	2,780	5.082	_!	£.43	2	ជ គ	9	8	~	_ 1	25.00	2, 991, 175	7.16, 520	70,65
	1.05%	10, 628	5.283	*			23, 488 T.	T. 95%	20, 553 3.	S	1, 412	8. 05x	9,926	5.03	13, 626	9.13	2, 942	5. 83K		2	7	i	ø	g	ęļ	è	£ 2	221.431	752, 40	3, 973, 576
	7. 30%	11, 415	5.42		62 5.		31, 875 8.	8. JOK	21.370	3.978	1, 527	6. 203	10,445	5.23%	14, 890	9. 263	3, 13	5.983	48	2	15. 7. 4	į	-	Ŧ	:	- :	<u>ج</u>	3, 473, 105	2 .	4, 283, 586
2012	7.973	12.052	5, 594	200	12		34, \$15.	\$.2E	72,25	1	1.655	9. 36x	11,008	× 13×	16, 238	9. 40%	3,310	5.	8	4	7.7		Ž.	₹.	4		1. 65 1. 65	3, 749, 740	53, 953	CS9 1195 Y
	4. 15a	12 747	5.785	-	93 6.324				C12 C2	4,315	1,757	2. S.3	11, 021	5.573	17, 806	9.63	3,515	6. 32x	202	8	18 6.4	8	7	8	920 ++ 028	40.54		97.60	874, 875	5.4
	_	56	S	,					24 253	4.483	1, 955	\$ 76x	12, 286	S. 74x	19, 623	9. 829	3,74	8 508		2.08	19 3.2	_;	7.0	5.5	178 44.44		8	38,34	ű Z	5, 316, 336
	_	ĭ	2	3	•	98X	44, 271	8. 6.lx	25, 383	4. 60x	2, 130	155	13,016	5.928	21 585 1	0.00	3, 934	÷ 55	838	, (3x		χį,	174 7.48	2.05	27; 44.62	ξ.	2	. 764, 309	978, 307	5, 742, 610
	5	15, 23	5. 30x	-	12	87.x	272	_ :	219 92	į	2. 324	9.15%	13,811	5. J.X	23, 760	10, 193	4, 272	6. 503	1	ō	:	8.588 135,	7.7	5	12 42 130	_	84.78%	178, 160	.035, S24	6, 213, BH
	. 83.	16, 219	6. (9)	1	23	55	₽	¥1.2.	21,949		2,542	9.354	14, 880	1. 29x	78, 251	0.391	4.573	1,053	_	9. 8.1%	25 [.]	t. 798	561 7.95	4.68.4	14: 45.539		K29 1/2	124 '909 '	. 057, 612	6, 136, 038
	160 5	17, 303	0.68%	*	L_	2	2	15 15 15 15 15 15 15 15 15 15 15 15 15 1	29, 407	22	2, 765	9. 56x	15,802	48	29, 636	O. 59x	4,904	7.2.0	\$42 10	210	۳	125	174 8.11	12.4	193 45.953	_	24. 363.	, 151, 404	, 185, C30	1, 316, 415
	52	18, 492	5. 85x	*	۲-	5		65y	30, 998 5	418	3,056	EL 6	6, 576	6. G\$4	32, 170	X61.0	5, 209	7.143	928 10	.21%	-	121	8.4	19, 7	18, 46, 32	67.243	84. 89%	724,332	. 278, 797	7, 962, 628
2020	.61	19, 10	7.057	*	~	85x 89.	.518: 9.	\$6x	32, 736	5.61%	3,362	9.98%	17, 824	6. 38pt	35, 701	. 663	5, 072	7. 643	1,024	423	32	303	823		46, 46.689	73, 658	2. 9.X	, 305, 554	. 317, 995	8, 060, 552
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Table 3.8 Estimation for Container Volume of Exports by site Groups (Scenario 2)

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2.18 2.18 2.18 2.18 2.18 2.18 2.18 2.18	1. 143	2	-	1.016			3	1. 450	-	057	1.375	1.3	2								
1 1 1 1 1 1 1 1 1 1	1. 515	÷	<u>. </u>				.00	1, 146	-	2	3. 440	1.0				-					
2.511 2.511	ACA Cont. S	<u> </u>	Cent. S.	St Cent. S.	2	Cont S. i	109 Cont. S.	584.0	nt. 5.	JUN CONE S.	704 C.	PL 5 100	M Cont. S.	ž	ton Pate	5	Slare	ter last	TI.	161	۽
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1,000 1,00	-4.70x 20	-22 ST	25. 23. 51	1.34% 64,323	23 -11.848	363 44	44 21 8 8	32 028	1.424 8.	#. 43#	-22.804	21 27 113		1	1	ļ	2.93	•	ž.	-	
2.00	21, 33% 24	21.613	27, 785 14, 52%	<u>L</u>	53 1. C.N.		Ì	~		06.314 3	-S. 79		121	_	M. 654 1.291	*		7	5 at		***************************************
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1.00 (110	Ļ.,	35.218			1.17	526 1.702	1 19	14, 728 8.	3.10%	<u>.</u>	1, 652 2, 84	#		*	2	212 12 5/08	14,415 73	2511 1,448,54	211, 636	1, 172, 47
1.19 (1.20) 1.10 (┶	31. 221	1	i_	2,478 8.	478 2.885	_	12, 122 B.	75x 427	1). 78K	1,17	Į.	_	7,754	2	411 12 dis	11, 172 75.	67% I. 667, 24	234,163	1.942,21
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1.55 1.	-		200 00	<u> </u>	1	1	2 63 63	7	12 248 1		11, 242	2.546 1.3			516 4	-	2	32, 315, 13,	721 2.231.51	40, 217	3.136.13
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1 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					5 3.00	1,274	1.27	7.314	17, 022 1.	531	10.75	4.805 19.8	5	-1	00, 852 4.4	56.7	43 18.878	48, 075, 14	721 4,117,48	541,113	5, 366, 37
1.00 (ŀ	62, 48 € 3	3.734 165, 827		4,75) 7.	T. 81	1.234	51, 378 1.	107 1 702	10.65%	4 770 19 7	8		799 4.3	-	178 10 50K	51, 277, 84	317,0	1 561.934	S, 7K, 13
1.15 1.205 1.15 1.205 1.10 1.20 1.15 1.206 1.15 1.206 1.15 1.306 1.15 1.306	į	ă .	14, 147, 3			7,259 7.	534	357 7.154	55, 383	101	ž	5,279 18.4	5	-	327, 388 4.3	\$ S	17 20 13%	55, 721 44	154 S. S. S. 138	13,11	1,221,538
7.17.7 15.205 7.24 1.27.1 7.14 1.73.1 7.15 1.1.305 7.16 1.1.305 7.18 21.53	L	i	17,003			7, 109 7.	458	E	59,659	72 7.173	18.448	5, 837 38.5	E	-	541,464 4.3	78.9	74 28 74%	11,248 84	351, 1, 424, 77	111,171	1,114,71
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7, 411 11, 287 1, 738 14, 387 7, 638 18, 381 7, 538 21, 519		L		i	2: 12	A, 985 7.	298 18.2	16 1.321	£6, 873; 7.	561 2.527	16.23	7, 117, 18, 3	£		371,127 4.2	82.	14 22 134	19, 741 81	974,71	154.14	7. 724, 43
7. 758 19. 380 7. 588 19. 380 7. 588 20. 519		ļ	74, 212 3	3.354 149, 407	107 2.5-BE	1.122	21% 10, 5,	1. 2.0	74.242 J.	48% 2, 783	16. 13%	7,847 10.2		-	388, 73/1 4.2	2 98 2	40 22 82%	74, 944 84	951 7.494,31	797, 247	1.2M, 24
7. 68 11.300 7.588 21.519		<u></u> .	74, 642	<u>t </u>			E	13 1.70	7,74	411, 3,842	1.03	1,645 10.1	-	1	402.912 4.1	7.7	59 23 524	28,513	971 1,151,34	5 440,153	# X X
7.535 21.519		i		1		<u>.</u>	063 12 45	- 12	15, 545 7	336, 3,367	£.	1,514 10.8	=	7	18, (5) 4.1	3	14 24 23%	11,415 14	471 1.141.4	3 491.523	9, 5.72, 100
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Table 3.9 Estimation for Container Volume of Imports by site Groups (Scenario 2)

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1	¥	3 %	17-12	ET 21-	1- 84	483	10, 519' 81, 24%	241	Ļ	35t 2,822	22 32	3,44	5.281	1.124	14 494	3	, 9/3	3 -21	ដ	443 25	7,811	·i	11. 123	Z.	-	
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	ļ	1		31.558	6.	22.6	Ξ	5	18-81.8	7.7	1.285 13 878	3,381	47. 148	1,512	5. E	10- 1E	. 02	7	36,	288 14. 195	1, 14	35.1	4,716 42.3	17, 72	=	\$ \$
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-		5	Ξ	13.50	22,116	1.141	21, 551		- 45. - 7.	55.	987 6.20	ಸ ಪ	31.23%	2.513	2		9-71X	==	ZŽ	7.5	2	=	24.001.20.5	2. 2.	-	2
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Table 3.10 Estimation for Container Volume of Exports by site Groups

(Scenario 3)

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	3		#44.				***************************************	2.2	, Z	72.	26,319	3.8,2	5		7.07	152,59	1,307,0	1,252,1	1,386,8	1.54,11	1,121,4	1,421,1	1,154,3	2.18.	1, 22, 12	1.377,27	2, 515, 125	2,112,24	2.114.5	2,173,1	3, 124, 587	3,311,65	3,413,28	3	3, LM, E	4.131,13	4,318,4	4.53,4	4,105,2	5, 112, 13	5.33	5.123.5	5,114,1
All Clark	3	1	181						12. 81		57, 101		146,571	124, 121	14,14	1. K	2	16,01	HC,T	10, 105	207, 217	221, 380	236, 337	241,317	261,050	273, 548	211.17	28,65		324, 394	117,717	F+ 135	365,557	366,171	306,314	1	427, 321	4-M. 205	401, 275	48, 19	43, 24	519, 641	539, 127
3,4	3	-							17.70		284, 355		347, TAE	48.61	¥.	12, 111	\$50, 524	121, 757	219, 507	34, 185	474, 625	598, 27	12, 151	141,411	175,176	160,41	224.02	343.543	510,29	648, 641	111,745		27,72	363, 623	100,517	#5, IS	131.53	¥.	274 BCE	512.422	1 K	= = =	397, 245
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01.	2	3	3		44 215	22.178	13.53	E. 73	-22.52	25. TUS	34.500	2. S.M	7. 96%	21. 791	12.438	1.1	5.418	¥ 7.4	## ## ## ## ## ## ## ## ## ## ## ## ##	\$ 4 PR	5.418	5.4 14	5.418	2.4	\$.41	5.41%	5.418	3	5.4 18	5.4 M	5.418	5.438	5.4 IX	S. 4 IX	2.43	5.43	5.438	5.41%	S. 478	\$ 41\$		\$ 4	7
Sort Market	2	-			2	ŧ	348	175	786	828	1.284	1,293	1.514	 33:	1,547	1. \$12	1.773	1.18	1,97	7,17	1, IM	2,307	1.63	2,544	2.102	2, 548	3,400	3.165	3, 334	3.517	3, 187	3.11	617	4.341	4.574	1.13	5.085	5.310	5, 158	5.955	1,277		£.37
b), Libr Kor breeral	3	3	20.1		11, 14	5	3.53	1.12	4 151	IIX	- S	#. 2 III	4	£ 38	12.20	8 60	1. 121	1.121	13	53	127	13	1.121	5	121	1.424	1.424	5	1.12	. £3	£.	2	1.53	1.23	2	2	1, 121	2	Ť.	£3.	*	1 .	2
Service First	7	-	in the state of th		19 77 1-11 LO	78, 453		00, 117 - 17, 429	42, 927 4 45%	36, 482	11.31	71. 653	73, 564		96, 752	12, 111	\$2. 773 i	13, 531	94, 365	45. RE.	95, 845	16.652	17.447	12, 248	19 (6	99. 471	14. 14.	101, 521	102.354	3	154, 047	15. 15.	65.765	191, 635	107,513	te. 297	39.2M	110.137	11,69	1.2, 960	12,929	133,454	7 7
Ly Katerials diamal Fue	2	5		5	27.00	t 52%	125 1-	55 55	4 E	2 d 3 s	17.17	_		F. 13	A.B. 523	<u>5</u>	111	- 0x			ĕ	¥.	!	*	ž	1.03	1. C3X	5	1.0%	1. 61%	1.61%	. 63	1 63%	1. 61X	1. 61%	¥19 -	X 1	. 61		_	1.654		
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			١,	ויי		24 21. 118	28 -15. 294	12	24 15.31%	23: -4 98%	29: 27: 870	54 71.43%		7.	100	2	3	112		121	121	!	135	<u></u>	Ļ.	ļ	<u>!</u>	Ĺ	<u> </u>	l_				360	211		L	<u> </u>	ļ	١		<u>. </u>	
Acya	9. 38 2 Last . C Y.	2		100 T	***	21.23	5.3	17. 383	-S	9.78	¥7.7	19.443		-7. MA	355	4.15	15,7	4.2%	4.2%	5.7	¥.7	4.29	55	4.78	5.7	4.29	27	4.29	428	4.2%	4.29	₩2.7	£2.	# 7.5 *	4 25	¥.79	7.7	4 298	4.29	57.7	4.29	474	4.29
1 :	Paste Y	-				2.519 21	2.654	5,115	2.92	<u>-</u>	i	•		: *		153.			4 371 4	l.	1	i	1	ŧ	.i	İ	Ĺ	l.,	<u> </u>	Ĺ	L.		1	<u>L.</u>		1.121	1	.		<u>.</u>	!	<u>!</u>	
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Table 3.11 Estimation for Container Volume of Imports by site Groups

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1.15 2.25 2.35 2.	5		SON COOL		Cont. S.	SPE CENT S	*	5.	Cont. S.	Cont	ļ		ICE CUIL S.		S. 110%	•	ale 1re	n Share	ton Palio	77.1	TEN	131
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The control The control			107 74) I S P	1		i z	1.123			4C) - 1E. S		-13.85	4 -01.13	21,	1. 80%	496 34 85%	2, 651 35	213,	ŧ	243, 691
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4.5. (1) 1.5. (1)		1	-1 5/1		. 73	ŧ	94 11 484	2	_	3.07%	331 47 42	1,512 75		3	2 71 928	á	23.	146 36 818	4,716 42	31K 394,77		48, 3H
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4.18 6.21 6.21 6.21 6.21 6.22 6.21 6.22 <th< th=""><th>ø</th><th>4,971</th><th></th><th>۳</th><th>3,462</th><th></th><th>ç</th><th>38.</th><th>7</th><th>3. SIN 3.</th><th>273 -1. 36X</th><th>11</th><th></th><th>1.834</th><th>4 37 503</th><th>` 1</th><th>3. TON 12</th><th>172 35 704</th><th>1.142 52</th><th>414 554 434</th><th>3.3</th><th>721, 272</th></th<>	ø	4,971		۳	3,462		ç	38.	7	3. SIN 3.	273 -1. 36X	11		1.834	4 37 503	` 1	3. TON 12	172 35 704	1.142 52	414 554 434	3.3	721, 272
3.18 3.28 4.27 1.22 4.64 1.20 <th< th=""><th>E</th><th>5,141</th><th></th><th></th><th>1.251</th><th></th><th>*</th><th>407 1.94</th><th>4.899</th><th>e,</th><th>537 1.00</th><th>-</th><th>111</th><th>100</th><th>\$ 6.51%</th><th>37,</th><th>121</th><th>425 34 184</th><th><u></u> </th><th>ŧ</th><th>_</th><th>107, 322</th></th<>	E	5,141			1.251		*	407 1.94	4.899	e,	537 1.00	-	111	100	\$ 6.51%	37,	121	425 34 184	<u></u>	ŧ	_	107, 322
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3.10 4.21 1.00 <th< th=""><th>g</th><th>5,517</th><th></th><th></th><th>18,446</th><th>~</th><th></th><th>484 6.33</th><th>5.245</th><th>4.47</th><th>7.45</th><th>_</th><th></th><th>1. 395</th><th>5.511</th><th>40,410</th><th>4.234</th><th>910 35 914</th><th>•</th><th>23</th><th>222,591</th><th>1.252, 071</th></th<>	g	5,517			18,446	~		484 6.33	5.245	4.47	7.45	_		1. 395	5.511	40,410	4.234	910 35 914	•	23	222,591	1.252, 071
3.46 46 4.27 11.78 4.28 13.81 2.78 1.38 2.78 1.38 2.78 1.38 2.78 1.38 2.78 1.38 2.78 1.39 4.28 1.38 2.78 1.39 2.78 1.38 2.31 2.41 1.31 2.78 1.38 2.31 <th< th=""><th>ø</th><th>5, 773</th><th>3.18</th><th>8</th><th>11,087</th><th></th><th>12: 2.2m</th><th>525 1.33</th><th>5, 427</th><th>2.474 A.</th><th>355 7.450</th><th></th><th>-</th><th>-</th><th>5, 913</th><th>42, 43</th><th>\$1 S. 7</th><th>719 37. 308</th><th>18, 732, 41</th><th>274 1, 075, 15</th><th>22.</th><th>1,390,514</th></th<>	ø	5, 773	3.18	8	11,087		12: 2.2m	525 1.33	5, 427	2.474 A.	355 7.450		-	-	5, 913	42, 43	\$1 S. 7	719 37. 308	18, 732, 41	274 1, 075, 15	22.	1,390,514
3.66 42 4.27 1.3.83 2.78 1.3.84 2.78 2.51 2.51 2.51 4.20 <	8	5,922	1	ş	11, 789		48 2.24k	33	5, 135	47	715 7. 400	1,518 4.		3	1 5.914		1.32	575 31.789	11, 286	11.8	1	5
3.16 65 4.21 1.38 4.22 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.26 1.420 2.270	Æ	4, 263			12 523	23	\$3 2.74E	SEA 1.31	5, 818	3 474 5.	11. 7.4m	1.522 4.		3	5.918	\$	5.3	31 15	_	Š	1	1, 12, 12
3.16 6. 4.21 1.4.21 2.26 1.4.21 2.41 6.41 4.21 1.4.21 2.41 6.41 4.21 1.4.21 2.42 5.41 1.4.21 2.42 1.4.21 2.42 4.21 1.4.21 2.41 6.42 4.21 1.4.21 2.41 6.43 4.21 2.42 4.21 2.42 2.	z	1,421		43 4.211	Ξ		2.24	101 1:31	1.0.1	3.474 5.	1.45	, 64g 4.	1	£ .	7 5.91%	4	200	41 34 504	13, 2 2, 75	<u> </u>	2	1.123
3.6 47 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 4.2 1.5 1.5 1.5 2.5 4.2 1.5	S.	3.		45 4.21K	14, 133	236	2.24	į	1, 220	ş	121 7.48	1.718 4.1	21% 188	4.68	7. 5. 914		2 5	454 34 904	15.34	341		3
3 (4) 4) 4 (2) 4	£	Ē		47 4 218	15. 414		2.24		107	3.47	217 1.4m		-	f. 13	¥18.5	52	449	51.33	14, 176, 71	300 111.70	1	2, 15, 14
3.16 5.1 1.6 at 1.2 in 1.5 at 1.2 at 1.5 at 1.2 at	£	8		49 4.21%	15,956]	2.74	754 6.31	459	3.47	751 T. 400	!	***************************************	45. S.	4 S. 91x	ž	4.59	2.2	17, 205 75	5	ŧ.	2.22.12.
3.16 5.9 4.20 1.20	ø	7,42		51 4.218	16,84	Ī	2.24	101 (-31	, (390	3.474	2th 7.4th	, 944 4.	2 IN 22.0	6:39K	8 S. 418	51, 171	4. 534	. 289 41 1X	14, 525, 48	Set. 1, 852, 545	2	2.377,27
3.46 5.9 4.27 1.6.1 4.29 2.90 4.29 <th< th=""><th>8</th><th>7, 833</th><th>!</th><th>53 4.21%</th><th>12, 24</th><th>į</th><th>2.24</th><th>457 4.31</th><th>1 129</th><th>3.471</th><th>7.10</th><th>2,125</th><th>213 240</th><th>¥.2.7</th><th>416.S. 913</th><th>58, (71</th><th>* 2 LX</th><th>173 46.514</th><th>13.75</th><th>138</th><th>20,53</th><th>2.515.12</th></th<>	8	7, 833	!	53 4.21%	12, 24	į	2.24	457 4.31	1 129	3.471	7.10	2,125	213 240	¥.2.7	416.S. 913	58, (71	* 2 LX	173 46.514	13.75	138	20,53	2.515.12
3.66 3.6 4.2 3.7 1.8 3.1 3.6 3.7 1.6 3.7 1.6 2.7 <th>4</th> <th>7,975</th> <th></th> <th>56 4.219</th> <th>19, 122</th> <th></th> <th>Cri</th> <th>111 4.31</th> <th>7,377</th> <th>3.47 L</th> <th>300 7.48</th> <th>2,111</th> <th></th> <th>£ .</th> <th>5.914</th> <th></th> <th>25</th> <th>2</th> <th>21.03 42</th> <th>2,160,25</th> <th>3 3</th> <th>2, 10, 24 1,</th>	4	7,975		56 4.219	19, 122		Cri	111 4.31	7,377	3.47 L	300 7.48	2,111		£ .	5.914		25	2	21.03 42	2,160,25	3 3	2, 10, 24 1,
3.16 10. 4.21 2.78 4.23	ă.	L, 246	!	ì	26,314	_	**	144 4.31	1, 120	-	7	2,199 4.	terd afte bedee	1	14 5.914		4.100	176 41 203	_1.		27.	Z, 14, 5E
3.16 14.27 2.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 1.24 1.27 2.24 1.27 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 1.24 <t< th=""><th>8</th><th>5.58</th><th>i.</th><th>Ì</th><th>21 530</th><th>╛</th><th>۱ 👣</th><th>1,629</th><th>7,82</th><th>-</th><th>2</th><th>2,282</th><th>-</th><th>1</th><th>11 5.913</th><th>30.30</th><th>2.</th><th>4</th><th>Č,</th><th>2.2</th><th>247,457</th><th>2.5</th></t<>	8	5.58	i.	Ì	21 530	╛	۱ 👣	1,629	7,82	-	2	2,282	-	1	11 5.913	30.30	2.	4	Č,	2.2	247,457	2.5
3.16 4.21 2.24 11.12 2.24 1.13 2.24 1.11 2.24 1.11 2.24 1.11 2.24 1.21 1.24 1.21 1.24 1.21 1.24 1.24 1.25 1.24 1.25 1.24 1.25 1.24 1.25 1.24 1.25 1.24 1.25 1.24 1.25 <t< th=""><th></th><th>. 12</th><th>į.</th><th>. i.</th><th>22, 825</th><th>İ</th><th>7. 2. 2.0</th><th>Z</th><th>22.7</th><th>3.474</th><th>7. 45</th><th>2,304</th><th>*********</th><th>i.</th><th>A C</th><th>11.017</th><th></th><th>10 CO 10 P.</th><th>20.00</th><th>35 12 6</th><th></th><th>: :</th></t<>		. 12	į.	. i.	22, 825	İ	7. 2. 2.0	Z	22.7	3.474	7. 45	2,304	*********	i.	A C	11.017		10 CO 10 P.	20.00	35 12 6		: :
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3.16 1.2 2.1 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 1.2 2.2 2.2 1.2 2.2 <th>i e</th> <th></th> <th>.i</th> <th>ļ</th> <th>97 444</th> <th>L</th> <th>9.75</th> <th>1315</th> <th>9, 852</th> <th>-</th> <th>7.46</th> <th>2.703 4.</th> <th>215 334</th> <th>L</th> <th>X10 S C1</th> <th></th> <th>4. 8 lk 3S</th> <th>£03</th> <th>30, 542 24</th> <th>31.104,15</th> <th>173.140</th> <th>3.54.69</th>	i e		.i	ļ	97 444	L	9.75	1315	9, 852	-	7.46	2.703 4.	215 334	L	X10 S C1		4. 8 lk 3S	£03	30, 542 24	31.104,15	173.140	3.54.69
3.68 1.1 4.20 3.1 4.20 1.25 2.70 1.20 1.20 2.70 1.20 2.70 4.20 4.20 4.20 2.70 4.20 4.20 4.20 2.70 4.20 2.70 4.20 2.70 4.20 2.70 2.70 4.20 2.70 4.20 2.70 4.20 2.70 4.20 2.70 4.20 2.70 4.20 2.70 4.20 2.70 4.20 2.70 4		10.255	١	ļ.,,	24, 194	Ĺ	~	1,398 6.3	x 8.307		813 7.453	2.116 4.	214 415	L	14 S.914		4. 85x 37	\$	37, 233, 44	454 3,140,34	3 11,42	3, 154, 12
3.66 13.54 4.27 2.24 1.53 4.37 3.40 1.60 7.42 3.40 4.21 3.60 4.23 2.34 1.53 4.37 3.40 3.40 1.23 2.34 1.53 4.37 3.40 1.20 7.42 3.51 4.23 3.57 1.48 1.1 5.37 8.51 8.51 8.51 4.51 8.51 <th< td=""><th>8</th><td>5</td><td>i</td><td>,</td><td>31, 111</td><td>1</td><td>7</td><td>1,441 1.3</td><td>5, 852</td><td>3.474 14.</td><td>102 J 455</td><td>2,135 4.</td><td>234 440</td><td>_</td><td>15: 5.91%</td><td>90, 555</td><td>4. 8.0% 35</td><td>. 44 654</td><td>33, 728 44</td><td>544 3,372,79</td><td>123,31</td><td>4. IN. 175</td></th<>	8	5	i	,	31, 111	1	7	1,441 1.3	5, 852	3.474 14.	102 J 455	2,135 4.	234 440	_	15: 5.91%	90, 555	4. 8.0% 35	. 44 654	33, 728 44	544 3,372,79	123,31	4. IN. 175
3.68 1.6 4.21 3.24 4.27 3.24 4.27 4.21 5.24 4.28 1.7 5.34 1.20 3.24 4.21 4	. 6	11.015	ļ	<u>. </u>	32, 848	_		1,530 (.3)	10, 124	1.4%	7. 155	3,458 4.1	213 474	-	16 5 91	95,010	4.134 42	.214: 44 438	35, 733, 84	£54 3.573.31	76,515	4,318,47
3.48 17 4.21 3.14 6.75 2.48 2.26 1.78 4.30 1.76 3.40 2.48 3.41 3.47 1.86 2.48 3.41 3.47 1.88 2.30 1.76 3.47 1.76 3.41 4.27 2.78 2.78 2.78 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.47 1.86 2.49 2.59 2.78 2		11.422	Ì	<u>L</u>	35, 003	2,	t	1,479 4.31	19.374	3.474	207 7.485	3, 187 4.	238 597	-	17 5.933	99, 714	4. 95% 44	. 431 44 81%	37, 257	1.72% 3.745.71	767. 950	4.555.00
3.46	8	2	l	į	37, 184	35	١	1,785 4.3	10,73e	3.474 18.	450 7.46K	3,321 4.	211 542	3	18, 5.91%	3	4.99K	.312 45 198	49, 119, 84	78% 4.910,83	791.430	4.401.311
3.165 55 4.219 11,184 4.239 21,425 2.156 2.316 4.219 11,639 3.439 22,435 7.456 3,101 4.219 4.19 4.19 21 21,43 2.156 1.219 11,639 3.439 22,437 7,439 2.156 4.219 4.19 4.19 4.19 21,439 2.156 2.15	. 5	12.274	3.6	2	39, 502	5		1.654: 1.3	x 11, 109	3.474 19.	3C8 7.45K	3,441 4.	21% 579	-3	11 5.93	25.25	5.024	, 142 45. 57x	42.437	178 4.249,71	112,194	5, 14, 12
100 3.100 550 4.210 44.559 4.230 2.240 2.240 4.310 11.653 3.470 22.692 7.450 3.170 4.210 4.210 4.210 4.210 11.653 3.470 22.651 7.450 3.110 4.210 170 4.		12, 723	Ę	S	71.5	ສ		2,018 4.33	£	3.478 21	25 ds	3,101	21% 619	62	24 5.91%	115.511	5.00	. 068 45 9/3	45, 632 84	417015 Turi	125,227	5, 134, 411
67] 3488 103 4.218 47.358 6.238 22.801 2.288 6.318 12.304 3.478 24.651 7.488 3.118 4.218 107 6.	S	3		89 4.234	F. 578	ຊ		2,145 1.31	11.693	3.474 22	942 7.45%	3,758 4.	214 462	1689	21 5 914	121.383	5. 15.	220 46 313	41, 723, 84	472.38	157.756	2.120.51
	£	5,5	i	4	47 384	32.	~	2,283 6.31	12, 356	3.478 24	(S) 7.48K	3,116 4.	23% 707	0. 0.0E	22 5.913	127, 616	5.13	571 46 663	58, 582, 14	911 5.854.15	3 878, 438	5, \$34, 997
				I						_	_									Ţ		

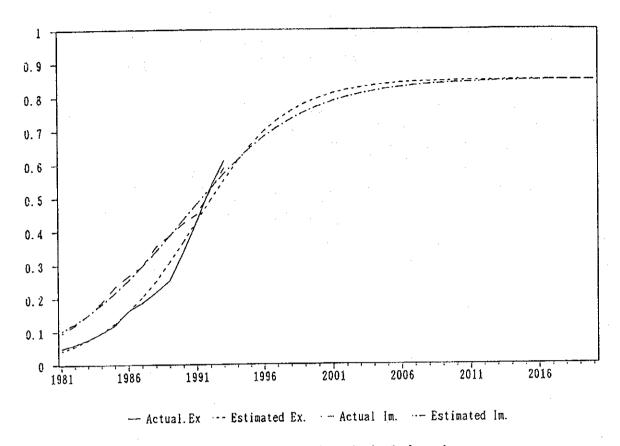


Fig. 3.6 Containeriezd Ratio in Indonesia

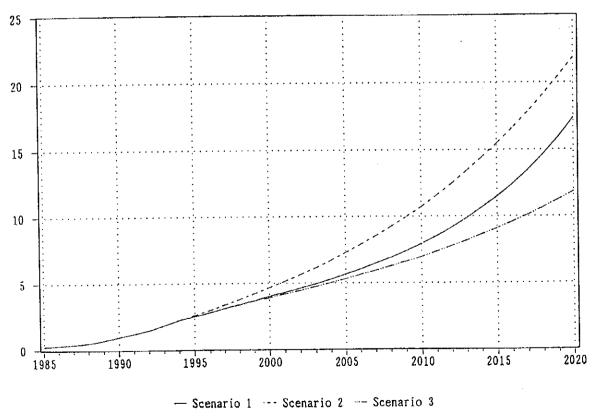


Fig. 3.7 Forecast of International Container Traffic (Unit: Million TEU)

Table 3.12 Forecast on the Basis of the Histrical Cargo Flow

Scenario		Export			Import		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
ASEAN	1,067	125	1,192	806	188	994	2,186
Asia	1,245	146	1,391	1,128	263	1,391	2,782
Africa	178	21	199	161	38	199	398
USA	356	42	398	322	76	398	796
Oceania	178	21	199	322	76	398	597
EC & oth	534	62	596	483	113	596	1,192
Total	3,563	416	. 3,979	3,222	757	3,979	7,958
Scenario		Export			Import		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
ASEAN	1,442	169	1,611	1,086	257	1,343	2,954
Asia	1,682	197	1,879	1,520	359	1,879	3,758
Africa	240	28	268	217	51	268	536
USA	481	56	537	434	103	537	1,074
Oceania	240	28	268	434	103	537	805
EC & oth	721	84	805	651	154	805	1,610
Total	4,807	562	5,369	4,343	1,026	5,369	10,738
Scenario		Export		<u> </u>	Import		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
ASEAN	938	110	1,048	709	165	874	1,922
Asia	1,095	128	1,223	992	231	1,223	2,446
Africa	156	19	175	142	33	175	350
USA	313	37	350	283	67	350	700
Oceania	156	19	175	283	67	350	525
EC & oth	469	55	524	425	99	524	1,048
Total	3,132	366	3,493	2,835	663	3,493	6,986

Table 3.13 OD Table for Inter-island Cargo in 1992 (Without Oil & Coal)

																(Unit:	1,000 tc	ton)
											l. Sumatels.	. Sumato	alimantS	ulawesi	Nusa N	Maluku 👪		
															Cenggaral	enggaralrian Jab	thers	
	Selawan F	Palemban	alembanPanjang	Tj PriokT	[j. Emas D	llacap	j. Peraku	j. Padan	ontiana	3itung ∵)umai J		3anjarmaPare−Par		cmbar	Ternale		
										_	eluk Bal	Jengku lu	la likpap	antoloak	(upang M	Ищроп		
							-					V 1	amarind	(endari		Sorong		
					-										1	Biak		
																Jayapura		Total
Belawan		19.0	8.5	639.9	1.0	0.0	270.5	0.0	5.3	7.1	28.3	2.9	₽.9	0.5	10.8	0.2	-0.0	1,001.8
Palembang	98.8		19.5	214.0	45.3		842.5	69. 2	23.6	0	51.0	33.	24. 5	0	40.4	0.0	0	1, 584. 1
Panjang	0.0	0.0	0.0	ار دی	0.0	0.0	5.1	0.0	0.0	0	0.0	<u>-</u>	0.0	0.0	0.1	0.0	0.0	14.4
Ti. Priok	379.6	160.	77.4	50.7	5.4	0.1	36.1	34. 2	195.7	31.1	224.0	212.3	198.3	22. 5	89.0	47.2	0.0	1,813.6
Ti. Emas	4.9	ις	2.1	0.0	ري ب	0.0		0.0	50.	0	24.9	12.9	41.0		0.	rt. e.s	0.0	177.3
Cilacap	0.0	26.9	0.0	0.5	0.0	т т	20.8	0.0	1. 2	÷.	25. 2	0.0	0.6	т. Сл		3.0	0.0	99. 1
rj. Perak	4 6 6	112.	35.0	55.5	0.0		80.9	212.9	17.2	68	139.6	53.8	581.8	148.6	534. 2	182. 1	0.0	2, 698. 3
Uj. Padang	14.4	o	1.5	17.1	0.0	0.0	9 74	0.1		29. 1	0.0	0.3	101.8	62.2	38. 1	55.0	0 0	
Pontianak	-	0	c	140.3	65.3		c.s	0	25.6	0	 	0	108.9	0	က	0	0.0	348.8
Bitung	2		0	36.8	0.1	0	44	2. 4		5.1	0.5	0.	0.2	31.1	O.	2.9	0.0	125.9
N. Sumatera	_	41.	18.2	294.0	4.2	0.0	45.5	9.5		0	675.0	65.9	30. 2	0.5	٠, ه	0.2	0.0	1676.9
S. Sumatera		κ'n		305.2	20. 4	0.0	37. 4	0.8		0	20.7	39.4	9	0.0	0.0		0.0	436.7
Kalimantan	<u>:</u>	80.8		124. 2	370.2	0.0	727.8	30.8	19.9	0	292.8	2.0	438.2	,1 ('	86. 3	دب ج	0.0	2, 248. 1
Sulawesi	32. 5	35.	0.0	. 99		10.6	209.0	42.4		47.2	34. 2	42.3	401. 1	159.1	94. 3	46.5	0.0	1, 252, 1
Tenggara	12.0	0	0.1	ഹ	0.0	0.1	208.5	2.1	1.2		0.3	0.0	9.0		79.8	8.0	0.0	336.0
Irian Jaya	1.0	0	0.0	5.0	0.2	0.0	139. 1	7.1	14.8	0.9	3.6	0.0	37.9	11.8	8.5	62. 4	0.0	292. 3
Others	0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	0 0-	0.0	-0.0	-0.0	0.0-	-0.0
Total	~	497.	168.7	1, 959.6	527. 4		2, 565.9	412.1	467.4		1, 581. 7	470.3	1, 980.8	455.6	1,002.0	417.9	- - -	4, 481. 3
Source : DGSC	SC																	

Table 3.14 OD Table for Inter-island Container Cargo in 2010

	. ;		•	An tainer	TEU		104, 137	43, 932	66, 011	171,959	77, 328	7, 112	258, 764	134, 336	40, 699	16, 735	101, 340	30, 161	194,084	54,048	55, 134	23, 669	1, 379, 450			
	Total		Empty	Container Container Container	TEU		49, 669	17, 279	65, 267	15, 633	63, 726	578	23, 524	112, 538	16, 421	9, 194	9,213	2, 742	17,644	4, 913	34, 038	5,316	447, 695			
	22		Loaded	Container	TEU		54, 468	26, 653	744	156, 327	13, 602	6, 534	235, 240	21, 798	24, 278	7, 541	92, 127	27, 419	176, 440	49, 135	21, 097	18, 353	931, 754	931, 754	447, 695	1, 379, 450
Valuku	Tenggar Irian Jaya	Terna te	Ambon		Biok	Jayapura	10	0	0	2, 385	;	152	9, 200	2, 779	0	147	11	!		1,825	205	3,918	į	21,569	2, 100	23, 669
Nusa	Tenggar	Lembar	Kupang	Dili			546	408	S	4,497	10	530	26, 989	1,940	192	20	264	0	6, 773	3, 720	5,010	534		51, 439		55, 134
Sulawes		Ban jarm Parc-Pa Lembar	Balikpa Pantolo	SamarineKendari			22	0	0	1, 137	15	227	-	3, 143		1,602	II	0	557	6, 243	446	741		21,655	32, 394	54, 048
N. Sumat S. Sumat Kaliman Sulawes		Ասո յուու	Balikpa	Samarine			323	248	0	10,019	2, 071	30	23	i	••••		1,659	57	34,	15, 740	565	نہ	and the second	107, 533	86, 551	194, 084
S. Sumat		Jambi	Bengkulı				147	343		10, 726	652		2, 718	15	0		ന	2, 474	-	ij	0			22, 752 1	!	30, 161
N. Sumat		Duna i	Teluk B				1,430	515	0	11, 317	1, 258		10,084		i de la companya de l		37, 0	1,300	22, 980	1, 342				88, 934	-+	101,340
		ն ևող		•			650	0	0	2,846	0	375	6, 223	72	0	467	0	0	0	1,852	82			15, 213		16, 735
		Uj. Padar Pontian					485	432	0	17,908	6, 744		1.574		2,	0	2	157	ω,	824	75	G:			2	40, 699
		Uj. Pada					0	5, 109	i	12,626			78, 599	37	Ö	880			2,417	1,664	170	446		102, 526	3	134, 336
		Tj. Pera					15, 423	7,327	291	4, 909	63	1, 186	4 613	2,543	171	2, 509	2,500		57, 121	∞	13, 091	8, 734		131,030	127, 735	258, 764
		Cilacap					0	5,869		o	0	165	0	0	0	0	0	0	0	416	9	0		6,465	647	7,112
		Tj. Emos		:			144	1, 305	i	778		0	0	0	9,408	14	162	1,281	29, 055	381	0	13		43, 417	33, 911	77, 328
		Tj. Prio	1				29, 947	2,003		2, 373			27	800	6, 566	1,722		19, 163		2, 594	364	314		94, 577	77, 382	171,959
		Pan jang					3, 495			31, 827	864		14, 392		0	0	1,000	113	361	0	9	0		54, 278	3,048 11,733	66,011
		Belawan Patentan Panjang Tj. Prio Tj. Emas Cilacop					1,739	20	0		485				0		2,258	370	6,342	1,397	9	0		40,884		- 1
		Belawan					104	1,472	0	28, 329	366	0	31, 091	1,075	0,	149	26, 585	0	0	1,275	753	63		91, 262	12, 875	104, 137
		,					Всівмин	Palembang	Pan jang	Tj. Priok	Tj. Emas	Cilacap	Tj. Porak	Uj. Padang	Pontianak	Bi tung	N. Sumatera	S. Sumatera	Kalimantan	Sulawesi	Tenggara	irian Jaya		Londerd	Emply	Total

3.2.3 Macro forecast of inter-island container cargo traffic in 2010

18. The inter-island container cargo traffic in 2010 is estimated by adopting the 1992 OD table of inter-island cargo shown in **Table 3.16** (Oil and coal shipment are not included in these figures). The input data are the inter-island container cargo volume of the six major ports estimated in Chapter 3.3, calculated in **Table 3.17** and summarized below.

Table 3.15 Inter-island Container Cargo Volume

		Loading			Unloading		Total
	Loaded	Empty	Total	Loaded	Empty	Total	
2010	932	448	1,380	932	448	1,380	2,760

Table 3.16 OD Table for Inter-island Cargo in 1992 (Without Oil & Coal)

Parameter Para																			
Selawar Sela												N. Sumate	S. Sumate		Sulawesi	_:	haluku &		
Secondary Particular Part																त्र	irian Ja	thers.	
The color of the		3e lawan		Panjang	:=		Cilacap I	Fj. Peraku	j Padan	ontiana	Jitung		3	Banjarma	Pare-Par	;	Fernate		
1.4 19.0 8.5 638 9 1.0 0.0 270.5 0.0 5.3 7.1 28.3 2.9 6.4 0.5 10.1 20 10 10 10 10 10 10 1													_	Balikpap	Pantoloa	:	\mbon		
1. 1. 1. 1. 1. 1. 1.														Samarind	Kendari	. :	Sorong		
14 19, 0 8, 5 639 9 1, 0 0, 0 270, 5 6, 0 0, 0 5, 3 7, 1 28, 3 2, 9 6, 4 0, 5 10, 8 0, 0 0,																	Biak		
14 190 8.5 689.9 1 0 0 0 270.5 6.0 6.3 7.1 28.3 2.9 6.4 0.5 10.8 0.0 9.8 1.1 19.5 214.0 45.3 320.7 64.2 63.5 63.6 6.0 6.1 0.0 40.4 0.0 9.0 0.0 0.0 4.5 3.0 0.0 0.0 4.1 22.4 0.0 4.1 0.0 0.0 4.0 0.0 0.0 4.1 0.0 0.0 4.1 0.0 0.0 4.1 0.0 0.0 4.1 0.0 0.0 0.0 1.2 4.1 0.0 0.0 0.0 1.2 1.2 4.1 22.4 0.0 0.0 0.0 1.2 1.2 4.1 22.5 0.0 0.0 0.0 1.2 4.1 25.2 0.0 0.0 0.0 1.2 4.1 25.2 0.0 0.0 0.0 1.1 2.2 3.1 1.2		: : : : :															Jayapura		Total
98 6 1.1 19.5 21.4 45.3 320.7 642.5 69.2 23.6 0 51.0 33.7 24.5 0.0 60.0 60.0 4.7 0.0 4.7 0.0 0.0 0.0 0.0 4.7 0.0 0.0 0.0 0.0 4.7 0.0 0.0 0.0 0.0 0.0 4.7 0.0	Belawan	1.4	19.0	• .		1.0	0.0	270.5	0.0	5.3	7.1	28.3	2.9	1 9	0.5	10.8	0.2		1,001
0.0 0.0 <td>Palembang</td> <td>98.6</td> <td></td> <td>19.5</td> <td>214.</td> <td>45.3</td> <td>320.7</td> <td>642.5</td> <td>69. 2</td> <td>23.6</td> <td>0</td> <td>51.0</td> <td>33.7</td> <td>24. 5</td> <td>0.0</td> <td>40.4</td> <td>0.0</td> <td></td> <td>1,584</td>	Palembang	98.6		19.5	214.	45.3	320.7	642.5	69. 2	23.6	0	51.0	33.7	24. 5	0.0	40.4	0.0		1,584
379.6 160.0 77.4 50.7 5.4 6.1 86.1 34.2 195.7 31.1 224.0 212.3 196.3 22.5 89.0 47.2 4.0 5.3 2.1 0.0 5.6 0.0 1.1 0.0 73.7 0.0 24.9 12.5 41.0 0.3 0.0 0.2 5.3 4.1 5.5 0.0 0.0 1.8 20.8 0.0 1.2 4.1 25.5 0.0 0.0 1.2 4.1 25.5 0.0 0.0 6.0 1.2 4.1 25.5 0.0 0.0 1.2 4.1 25.5 0.0 0.0 1.2 1.2 4.1 25.5 0.0 0.0 1.0 4.6 0.1 1.5 20.1 0.0 0.0 0.0 4.6 0.1 1.5 20.1 0.0 0.0 0.0 4.1 2.5 0.0 0.0 0.0 4.1 2.5 0.0 0.0 0.0 4.1	Panjang	Ö	0.0	0.0		0.0	0.0	5.1	0.0	0.0	0	0.0	-4	0.0	0.0	0.1	0.0		14
4.9 5.3 2.1 0.0 5.6 0.0 1.1 0.0 73.7 0 24.9 12.9 41.0 0.0 6.4 5.3 0.0 0.0 4.1 25.2 0.0 0.0 6.4 5.0 0.0 4.5 10.5 3.0 10.5 10.0 1.8 20.8 0.0 1.2 4.1 25.2 0.0 0.0 6.0 1.2 4.1 25.2 0.0 0.0 6.0 1.2 4.1 25.2 0.0 0.0 6.0 1.2 4.1 25.2 0.0 0.0 6.0 1.2 4.1 25.2 0.0 0.0 6.0 1.2 1.2 4.1 25.2 1.8 1.0 5.0 1.0 1.0 1.0 0.0 44.6 0.1 1.5 20.1 0.0 0.0 44.6 0.1 1.5 20.1 0.0 0.0 44.6 0.1 1.2 20.1 0.0 0.0 0.0 44.6 0.1 1.2	Ti. Prick	379.	160.0	77.4	<u>: </u>		0.1	86.1	34.2	195.7	53	224 0	212.3	198.3	22. 5	89.0	47.2		1,813
0.0 26, 9 0.0 0.5 0.0 1.8 20, 8 0.0 1.2 4.1 25, 2 0.0 0.6 4, 5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.6 10.5 10.5 10.6 10.5 10.5 10.6 </td <td>Ti. Emas</td> <td>~</td> <td>5.3</td> <td>2.1</td> <td><u>:</u></td> <td>6</td> <td>0.0</td> <td>1.1</td> <td>0.0</td> <td>73.7</td> <td>0</td> <td>24.9</td> <td>12.9</td> <td>41.0</td> <td>0</td> <td>0.2</td> <td>ru.</td> <td></td> <td>177</td>	Ti. Emas	~	5.3	2.1	<u>:</u>	6	0.0	1.1	0.0	73.7	0	24.9	12.9	41.0	0	0.2	ru.		177
416.6 112.1 35.0 55.5 0.0 0.0 80.9 212.9 17.2 68 199.6 53.8 581.8 148.6 534.2 182.1 14.4 9.9 1.5 17.1 0.0 0.0 44.6 0.1 1.5 29.1 0.0 0.3 101.8 62.2 38.4 55.0 0 0 0 140.3 65.3 0 4 6 0.1 0.0 0.0 108.9 0 38.7 0 38.7 0 38.7 0 38.0 0 48.9 0 <t< td=""><td>Cilacap</td><td>0</td><td>26.9</td><td>0.0</td><td><u> </u></td><td>0.0</td><td>~∵</td><td></td><td>0.0</td><td>1.2</td><td>4.1</td><td>25. 2</td><td>0.0</td><td>0.6</td><td>-d-</td><td>10.5</td><td>3.0</td><td></td><td>တိ</td></t<>	Cilacap	0	26.9	0.0	<u> </u>	0.0	~∵		0.0	1.2	4.1	25. 2	0.0	0.6	-d-	10.5	3.0		တိ
14, 4 9.9 1.5 17, 1 0.0 0.4, 6 0.1 1.5 29, 1 0.0 0.0 10.4 9.9 1.5 10.1 0.0 0.0 10.8 9.0 0.0 38.4 55.0 2 0 0 0.0 140.3 65.3 0 44 2.4 0 5.0 1.0 0.0 1.0 3.8 0 1.0 3.8 0 1.0 1.0 0 1.0 0 1.0 0 1.0 0 1.0 0 1.0 0 1.0 0 1.0 0 0 1.0 0 1.0 0 0 1.0 0	fi. Perak	<u> </u>	112.1	35.0		0.0			212.9	17.2	99	199.6	53.8	581.8	148.6	534. 2	182. 1		~
0 0 140.3 65.3 0 44 2.6 0 1.9 0 108.9 0 3.8 0 25.6 0 1.9 0 108.9 0 3.8 0 2 0 1.0 0 1 0 0 2 0 1 0 0 2 0 <	Uj. Padang		හ හ	 		0.0		44.6	0.1		29.1	0.0		101.8	62. 2	38. 4	55.0		
2 0 36.8 0.1 0 44 2.4 0 5.1 0.2 0.1 0.2 31.7 0.4 2.9 483.9 41.1 18.2 294.0 4.2 0.0 45.5 9.5 4.2 0 65.9 30.2 0.2 4.8 0.2 0.0 5.9 1.8 30.5 2.0 4 6.5 9.5 4.2 0 65.9 30.2 0.0 0	Pontianak		0	0		65.3	0	ന	0		0	6 ⊷i	0	108.9	0	 	0	0.0	
a 483.9 41.1 18.2 294.0 4.2 0.0 4.5 9.5 4.2 0.0 675.0 65.9 30.2 0.0 4.8 0.2 a 0.0 5.9 1.8 305.2 20.4 0.0 37.4 0.8 2.5 0 20.7 39.4 0.9 0.0 0.0 0.0 1.7 an 0.0 80.8 4.6 124.2 370.2 0.0 727.8 30.8 73.9 0 292.8 2.0 438.2 7.1 86.3 3.4 12.0 60.1 6.1 9.7 10.6 20.9 42.4 21.0 47.2 34.2 42.3 40.1 159.1 94.8 46.5 12.0 0.1 0.1 0.1 1.2 1.2 1.3 0.3 0.0 9.0 1.3 1.4 1.4 0.3 0.0 9.0 1.1 1.4 1.4 0.0 0.0 0.0 0.0 0.0	Bitung		0	0		0.1	0	44				0.2	0.1	0.2	31.7	0.4	2.9	0	125.
a 0.0 5.9 1.8 305.2 20.4 0.0 727.8 30.8 79.9 0 20.7 39.4 0.9 0.0 0.0 1.7 186.3 3.4 1	N. Sumatera	483.9	41.1	18.2	294.0	4.2	0.0	45.5	တ တ	:	0	675.0	65.9	30. 2	0.2	4.8	0.2	٠ ا	
n 0.0 80.8 4.6 124.2 370.2 0.0 727.8 30.8 79.9 0 292.8 2.0 438.2 7.1 86.3 3.4 32.5 35.6 0.0 66.1 9.7 10.6 209.0 42.4 21.0 47.2 34.2 42.3 401.1 159.1 94.8 46.5 12.0 0.1 6.1 208.5 2.7 1.2 1.3 0.3 0.0 9.0 7.1 79.8 8.0 12.0 0.0 0.0 5.0 0.0 0.1 139.1 7.1 14.8 0.9 3.6 0.0 7.1 79.8 8.0 1.446.9 497.8 168.7 1,989.6 527.4 333.3 2,565.9 412.1 467.4 193.9 1,581.7 470.3 1,980.8 455.6 1,002.0 417.9	S. Sumatera	<u>:</u>	on ur	i.	305.2	20.4	0 0	37.4	0.8	:	0	:	39.4	6 0		0.0	1.7	0.0	
32. 5 35. 6 0.0 66.1 9.7 10.6 209.0 42.4 21.0 47.2 34.2 42.3 401.1 159.1 94.8 46.5 7a 12.0 0.1 0.1 208.5 2.7 1.2 1.3 0.3 0.0 9.0 7.1 79.8 8.0 7a 1.0 0.0 0.0 5.0 0.1 139.1 7.1 14.8 0.9 3.6 0.0 37.9 11.8 8.5 62.4 3rs 0.0 <td>Kalimantan</td> <td>Ö</td> <td>80,8</td> <td>4.6</td> <td>124.2</td> <td>370.2</td> <td>0.0</td> <td>727.8</td> <td>30.8</td> <td></td> <td>0</td> <td>:</td> <td>2.0</td> <td>438.2</td> <td></td> <td></td> <td>3.4</td> <td>0 0</td> <td>6-1</td>	Kalimantan	Ö	80,8	4.6	124.2	370.2	0.0	727.8	30.8		0	:	2.0	438.2			3.4	0 0	6-1
12.0 0.1 0.1 5.8 0.0 0.1 208.5 2.7 1.2 1.3 0.3 0.0 9.0 7.1 7.1 14.8 0.9 3.6 0.0 7.1 7.1 14.8 0.9 3.6 0.0 7.1 1.8 8.0 9.0 7.1 1.8 8.0 9.0 7.1 1.8 8.0 9.0 7.1 1.8 8.0 9.0 7.1 1.8 8.0 9.0 7.1 1.8 8.0 9.0 7.1 1.8 8.0 9.0 7.1 1.8 8.2 8.2 8.2 9.0 9.	Sulawesi		35.8	0.0	56.1		10.6	209.0	42.4		47.2		42.3	401.1		94.8	46.5	0 0	1
1.0 0.0 0.0 5.0 0.2 0.0 139.1 7.1 14.8 0.9 3.6 0.0 37.9 11.8 8.5 62.4 rs 0.0<	Fenggara			0.1	5.8	0.0	0.1	208.5	2.7	-		:	0.0	9.0	7.1	79.8	0	0.0	
lers 0.0 0.0 -0.0 -0.0 -0.0 0.0 0.0 0.0 0.0	Irian Jaya			0.0	n, O	0.2	0.0	139.1		14.8	0.9	3.6	0.0				62. 4	0.0	292
1.446. 9 497. 8 168.7 1, 959. 6 527.4 333.3 2, 565. 9 412.1 467.4 193. 9 1, 581.7 470.3 1, 980.8 455.6 1, 002. 0 417. 9	Others	္	0.0	0.0-	-0.0	-0.0	0.0	0.0	0.0		0.0	0.0	-0.0	-0.0	0.0	-0.0	0 0-	-0.0	<u>-</u>
	Total	1,446.	497.8		1, 959. 6	527.4	cr,		412.1	467.4		1, 581. 7	470.3	1,980.8	455.6	1,002.0	417.9	٠ <u>0</u>	14, 483

Table 3.17 OD Table for Inter-island Container Cargo in 2010

				Container	TEU		104, 137	43, 932	66, 011	171, 959	77, 328	7, 112	258, 764	134,330	40, 699	16, 735	101, 340	30, 181	194,084	54.048	55, 134	23, 669	1, 379, 450				
	Total		Empty	iner	TEU		49, 669	17, 279	65, 267	15, 633	63, 726	578	23, 524	112, 538	16, 421	9, 194	9, 213	2, 742	17,644	4,913	34, 038	5,316	447, 695				
	ya		Londed	Container	TEU		54, 468	26, 653	744	156, 327	13, 602	6, 534	235, 240	21, 798	24, 278	7,541	92, 127	27, 419	176, 440	49, 135	21, 097	18, 353	931, 754	931, 754	447, 695		
Maluku	Irian Jaya	Ternate	Ambon			Jayapur		0	0	2,385	268	152	9, 200	2, 779	0	147	11	107	267	1,825	202	3, 918		21	2, 100	23	Les
Nusa	-	Lembar		Di 1 i			546	408	S.	4,497	10	530	26,	1,940			7	0	6, 773	3, 720	5,010	534		51, 439	3,695	n,	
Sumat S. Sumat (Kaliman Sulawes		Ban jarm Parc-Pa	Bengkuli Balikpa Pantolo Kupang	п Кепдагі			3 25		0	9 1,137	15		7	3, 143		1,602	9 11		2 557	0 6, 243	5 446	741		3 21,655	32, 394	54,048	
t(Kalima		Bunjar	II Balikp	Samarin			7 323	1 248		6 10,019	2 2,071	30	29	15 5, 143	0 5,502	5 10	0 1,659	4 57	7 34, 392	0 15,740	0 565	0 2, 380		2 107, 533	9 86, 551		
t S. Suma		Jambi	B Bengku				0 147	5 341	0 237	7 10, 726	8 652		4 2, 718	0			3,620	0 2, 474	0 157	2 1,660	19			4 22, 752	5 7,409	0 30, 161	
N. Sumo		Dumai	Teluk				1,430	0 515	0	6 11, 317	0 1,258	1	3 10, 084		0		0 37,084	0 1,300	0 22, 980	2 1,342	82 1	57 226		3 88, 934	1 12, 405	5 101, 340	
		Tj. Pera Uj. Pada Pontian Bitung					35 650		0	18 2,846	14	0 375	4 6, 223	2, 663		0 467		2.1	.1	1,852				15, 213	9 1, 521	9 16, 735	_
		lar Pontic					0 485	432	0	17, 908	0 6,744	0 110	9 1,574	37 137	0 2,343	92	231		7 6,271	4 824		626 929		38, 220	0 2,479	16 40,699	
		ral Uj. Pac					423	5, 109	7.	909 12, 626	63	36	3 78, 599			988 66	10 522		2, 417	1,664	170	14 446		30 102, 526	31,810	764 134, 336	
							0 15, 45	7, 327	0 291	9 4,90	0	1, 186	0 4,613	0 2,543	0 171	0 2,509	0 2,500	0 2,348	0 57, 121	416 8, 202	6 13, 091	0 8, 734		5 131, 030	7 127, 735	258,	
		as Cilacap					144	5, 869	0	778	807	0 10	0	0	.8(ħ	31	120	35		0	13		17 6, 465	11 647	28 7,112	
		io Tj. Em				_		33 1,305				23	37	800	36 9, 408	22	52 231	33 1, 281	18 29, 055	594 381	364	314		77 43, 417		59 77, 328	
		ng Tj. Pr					95 29, 94 <i>T</i>	2, 003		ς,		0	2,	617 8	0 6,566	0 1,722	30 16, 152	113 19, 163	31 9, 748	0 2,5	6. 31	0 3		78 94, 577	33 77, 382	11 171, 959	
		bai Pan ja					39 3, 495	20 1,604		41 31,827	485 864	32	58 14, 392	906	0	0	58 1,000	370 11	42 361	37	9	0		84 54, 278	48 11, 733		_
_	-	Belawan Palemba Panjang Tj. Prio Tj. Emas					104 1,739			29 14, 641	366 48	0 2,462					35. 2, 258	0 37	0 6,342	75 1, 397	53	63		32 40, 88	75 3,048	37 43, 932	
		Belawa	\ \ \ \				I	1,472	<u> </u>	28, 329	35		31,091	1,075		149	a 26, 585	_	F	1,275	753			91, 26	12, 875	104, 137	_
	1		and the second s			-	Belawan	Palembang	Pan jang	Tj. Priok	Tj. Emas	Ci lacap	Tj. Perak	Uj. Padang	Pontianak	Bitung	N. Sumatera	S. Sumatera	Kaliman tan	Sulawesi	Tenggara	Irian Jaya		Londed	Emp ty	Total	

3.3 MACRO FORECAST OF CONTAINER CARGO TRAFFIC FOR THE SIX MAJOR PORTS IN 2010

3.3.1 Port of Belawan

- (1) Socioeconomic framework of the hinterland
- 19. The hinterland of Belawan port is North Sumatera province, whose population will reach 13 million in 2010. According to the forecasted growth rate of GDP, the GRDP growth rate of the hinterland is estimated by applying the correlation between the GDP growth rate of Indonesia and the GRDP growth rate of North Sumatera province from 1984 to 1992.
- 20. The GRDP growth rate under each scenario is presented below.

Table 3.18 GRDP Growth

(Unit: %)

	1994-1998	199-2003	2004-2008	2009-2013	2014-2018
Scenario 1	8.4	8.6	9.0	9.6	10.3
Scenario 2	10.7	10.5	10.2	9.9	9.6
Scenario 3	8.1	8.1	8.1	8.1	8.1

- (2) International container cargo traffic in 2010
- 21. Based on the statistics, international cargo is classified into export and import cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. Elasticity between the increase rate of each cargo type and the GRDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The final containerized ratio for each cargo type is assumed as follows: 10 % of liquid bulk cargo will be containerized, dry bulk cargo will not be containerized, almost of general cargo will be containerized, 50 % of bagged cargo will be containerized and rest will change to dry bulk cargo. The growth of the

containerized ratio is estimated from the correlation between the past trend and the logistic curve, and final containerized ratio is assumed 85 %, which is shown in Fig.3.8. The container cargo volume in the target year is forecast by multiplying the potential container cargo volume by the containerized ratio. The results are presented in Table 3.22 and .23 and summarized below.

Table 3.19 International Potential Container Cargo Volume

Scenario		Export	·		Import		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	192	6	198	91	107	198	396
2010	324	10	334	187	147	334	668
2018	630	19	649	416	293	649	1,298
Scenario		Export			Import		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2003	254	8	262	109	153	262	524
2010	465	14	479	240	239	479	958
2018	854	26	880	487	393	880	1,760
Scenario		Export			Import		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	166	5.	171	88	83	171	342
2010	245	7	252	171	81	252	504
2018	380	11	391	310	81	391	782

- (3) Inter-island container cargo traffic in 2010
- 22. Based on the statistic, the inter-island cargo is classified into loading and unloading cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. The elasticity

between the increase rate of each cargo type and the GRDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of the containerized ratio is estimated by the correlation between the past trend and the logistic curve. However, since inter-island container cargo has not yet been handled at the port of Belawan, the containerized ratio is estimated based on the actual ratio at Tanjung Priok, Tanjung Perak and Ujung Pandan (see Fig.3.9). The container cargo volume in the target year is forecast by multiplying the potential container cargo volume by the containerized ratio. The results are presented in The Table 3.24 and .25 and suumarized the following Tables.

Table 3.20 Inter-island Potential Container Cargo Volume

Scenario	:	Loading			Unloading		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	12	10	22	21	1	22	44
2010	54	50	104	102	2	104	208
2018	87	73	160	156	4	160	320
Scenario		Loading			Unloading		Total
2.	Loaded	Empty	Total	Loaded	Empty	Total	
2003	14	12	26	25	1	26	52
2010	68	63	131	128	3	131	262
2018	106	89	195	191	4	195	390
Scenario		Loading			Unloading		Tota1
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	11	10	21	20	1	21	4 2
2010	49	45	94	92	2	94	188
2018	68	58	126	123	. 3	126	252

23. The inter-island container cargo traffic in 2010 is further estimated by adopting the 1992 OD table of inter-island cargo shown in **Table 3.16** [Oil and coal shipment are not included in these figures]. The inter-island container cargo volume through Belawan port is estimated in Table 3.17 and summarized below.

Table 3.21 Domestic Container Cargo Volume

(Unit: 1,000 TEU)

		Loading			Unloading		Total
	Loaded	Empty	Total	Loaded	Empty	Total	
2010	54	50	104	91	13	104	208

3.3.2 Port of Panjang

- (1) Socioeconomic framework of the hinterland
- 24. The hinterland of Panjang port is Lampung province, whose population will reach 16 million in 2010. The GRDP growth rate of the hinterland is estimated by applying the correlation between the GDP growth rate of Indonesia and the GRDP growth rate of Lampung province from 1984 to 1992.
- 25. The GRDP growth rate under each scenario is presented below.

Table 3.26 GRDP Grouth

(Unit: %)

	1994-1998	199-2003	2004-2008	2009-2013	2014-2018
Scenario 1	7.5	8.1	8.1	8.1	8.2
Scenario 2	11.1	10.9	9.8	8.5	7.3
Scenario 3	7.2	7.3	6.8	6.4	5.6

Table 3.22 Forecast of Export Container Traffic Through The Port of Belawan

105 555 Transport Tran		CKDI.		0.972	0.972 Perroleum		Liquid	Accordin	Dry Rulk	According	General		Patential	Container		. ن:	Container	•	
Ray Table T		Increase	cico	108.00%		Ξ.		Agri.	Cargo	Agri	Corgo		Container	Cargo	Shure	Logded	Empt y	Total	Average
1.000 1.00	1	3,00		105, 57%	Ę		Ton		Ton.		Tim		Tog	<u>.</u>		13.6	TEL.	13.1	tom/TRill
8 273	1185	4.04%												52, 904	3.1%	5,817	1.616	7,427	
9. CHANGARY 1. CHANGARY	1986	6.33%					. :							171,581	10.0%	13, 770	479	14, 249	
9. 10.00 2. 10.00 1. 10.00	1987	8.71%				:	:			2				186, 166	10.8%	12,119	1, 220	13, 345	
8 CHIN 2 (A.7) 000 1 (A. S. S. GARDON C. 179, SCT 1 (A. S. S. CALLER) 1 (A. S. CALLER) 2 (A	RSG1	11. 29x	2, 437, 077				594, 471	:	178, 201	-	1, 664, 405		1, 723, 852	288, 280	16. 7%		1, 689	19, 626	
8 528 8 194 122 4 90	1989	9, 60%	2, 474, 090	. 5%		1	654, 514	10.1%	196, 199	10. 1%	1, 623, 376	-2.5%	1, 688, 828	449, 718	26.6%		1, 626	29, 974	
7 C AS A S A OL S COR S C	1990	8.328	2, 857, 870	15.5%	95, 000		739, 897	13.0%	279, 924	42.7%	1, 743, 049	7. 4×	1,817,039	533, 538	29. 4%	37, 409	2, 099	40, 168	
8 5.64 3.611.200 13.04 C 8 6.04 3.04 3.04 3.04 3.04 3.04 3.04 3.04 3	1881	7. 62X	3, 046, 532	90.0		-	, 359, 590	83.8X	306, 889	80 S	1, 380, 053	-20.8%	1,510,012	763, 768	50. 4%		1, 448	52, 709	
8. 948 3. 10.1 1. 10.2 <th< td=""><th>1992</th><td>8. 52%</td><td>3, 196, 192</td><td>4.9%</td><td>w</td><td></td><td>, 256, 679</td><td>-7. (%</td><td>643, 674</td><td>109.7%</td><td>1, 295, 839</td><td>-0.1%</td><td>1, 421, 507</td><td>960, 711</td><td>68.0%</td><td>60, 299</td><td>7.85</td><td>U7, 281</td><td></td></th<>	1992	8. 52%	3, 196, 192	4.9%	w		, 256, 679	-7. (%	643, 674	109.7%	1, 295, 839	-0.1%	1, 421, 507	960, 711	68.0%	60, 299	7.85	U7, 281	
8. 70% 3. 80 May 26 5.7 1.755, 101 4. 80 0.155, 100 7. 80, 100, 100, 100, 100, 100, 100, 100,	1993	8.94%	3, 611, 290	13.0%			, 673, 737	33.2%	589, 154	-8.5%	1, 348, 399	4.1%	1,515,773	1, 039, 805		75, 203	1,848	77, 111	13.810
8. 538. 4. 72.0. 2.0. 2.0. 3.0. 3.0. 3.0. 3.0. 3.0.	1994*	8. 76%	3, 818, 067	5.7%			, 755, 161	4. 9%	017,815	4.9%	1, 445, 091	7. ? X	1, 620, 608	1, 132, 486	09. 9%	83, 888	2,517	86, 405	13.5
8 618 4 728 618 7 8 8 18 18 18 18 18 18 18 18 18 18 18 18	1995	8. 58x	4, 029, 981	5.6%		-	1, 838, 785	4. 88	647, 251	4.8%	1, 543, 945	6.8%	1, 727, 824	1, 308, 962	75.8%	90, 960	2, 909	99,869	
8. 518 4. 478, 499 5.68 2. 0.15, 521 4. 78 1. 754, 509 6. 37 1. 556, 601 1. 0.00, 574 81, 384 1. 4. 520, 601 1. 0.00, 574 81, 384 91, 385, 300 4. 485 8. 498 4. 788, 310 5. 58 2. 2.11, 529 4. 38 1. 187, 310 6. 38 2. 2.13, 272 1. 283, 304 8. 4. 188 4. 187 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	1936	8. 40%	4, 246, 726	5.48			1, 924, 580	7.3%	677, 453	A. 7%	1, 644, 687		1, 837, 146			108, 228	3, 247	111, 474	
8 6 10 4, 729, 670 5 GA 2,111, 651 4, 88 1, 874, 720 6 GB 2, 085, 515 1, 734, 77 1, 873, 470 1, 874, 870 1, 874, 870 1, 874, 870 1, 874, 870 1, 874, 870 1, 874, 870 1, 874, 870 1, 874, 870 1, 177	1997	8.51%	4, 479, 492	5.5%			2, 015, 521	4. 7x	709, 462	4.7%	1, 754, 509		1, 956, 061	_		118, 501	3, 557	122, 118	
8. 548 4. 98 811 5.58 - 2.211, 534 4. 778, 458 4. 778, 418 6. 68 2.213, 243, 418 6. 68 2.213, 243, 418 6. 78, 2. 233, 448 1. 998, 119 6. 78 2. 213, 213, 213 6. 78 2. 213, 213, 213 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 2. 213, 418 6. 78 6. 78 2. 213, 418 6. 78 7. 78 6. 78 2. 213, 418 7. 78	1998	8.61%	4, 729, 670	5.6%		574	. 111, 951	A. 8%	743, 405	4. BX	1, 874, 320	5. 8X	2, 085, 515			128, 500	3,855	132, 355	
8. 628. 8. 5.263, 846 5. 5.58 2. 316, 618 4. 588 6. 2131, 731 6. 78 2. 303, 440 1, 995, 905 84. 478 147.782 4. 7739 4. 7739 4. 7739 4. 7739 4. 7739 4. 7739 4. 7739 4. 7739 4. 7739 8. 2736, 127 6. 28 2. 568, 248 8. 54, 78 8. 27, 73 6. 28 2. 5687, 158 2. 247, 158 4. 7739 8. 60 9. 60	1999	×6. ∞	4, 988, 111	25.55			2, 211, 534	4.7%	778, 458	4. 7%	1, 998, 118	G. 63	2, 219, 272	_	84.0%		4, 141	142, 171	
8. 178. 5. 68. 2. 67.0. 19.9 4. 88 8. 67.0. 19.9 6. 68. 2. 518.8 54 2. 15.8 54 2. 15.8 54 2. 15.8 54 4. 73.9 68 4. 73.9 6.0 4. 73.0 6.0 2. 20.0 17.0 1.0 2. 518.7 1.0 2. 21.0 2.0 2. 2. 405.0 407 6. 38 2. 20.0 17.0 1.0 2. 2. 689.7 1.0 2. 2. 689.7 1.0 2. 2. 689.7 1.0 2. 2. 2. 2. 405.0 407 8. 2. 402.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 2. 2. 20.0 407 6. 38 3. 2. 20.0 407 6. 38 6. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38 7. 38	2000	8.55%	5, 263, 848	5.5%		3	316,619	₹ 86	815, 448	4.8%	2, 131, 781		2, 363, 443		84. 4%	147, 782	4, 433	152, 215	
8.70x 5.873.119 5.7x 6.527.0 cm 2.544.859 4.8x 895.788 2.432.077 6.9x 2.697.159 2.7x9.0 cm 84.7x8 1.0x8.0 cm 2.544.859 4.8x 895.729 7.2x8 2.697.207 2.475.804 84.8x 188.418 5.000 8. 8. 8x 6. 557.2 cm 2. 8x8 2. 8x8 1. 0x8.477 4. 5x8 2. 435.807 2. 435.80	2001	8. 62%	5, 558, 227			7	2, 427, 552	4.8%	854, 490	 8%	2, 276, 179		2, 518, 934		84. 7%		4. 739	102, 720	
8. 138 6. 2.10, 62.9 5. 88 2. 106.8 3. 60.2 3. 5. 40.3 7. 18 3. 0.00, 62.2 2. 405. 804 8. 1. 38 1. 1. 18 3. 0.00, 62.2 2. 4.05, 807 8. 1. 38 1. 1. 18 3. 0.00, 62.2 2. 4.05, 807 8. 1. 38 1. 1. 18 3. 0.00, 62.2 2. 2. 60.4 8. 1. 1. 18 3. 0.00, 62.2 2. 2. 60.4 8. 1. 1. 18 3. 0.00, 62.2 2. 2. 1. 10.4 8. 1. 10.4 1. 1. 10.4 1. 1. 10.4 2. 2. 6.0 1. 1. 11.4 1. 1. 11.4 2. 2. 6.0 1. 1. 11.4 2. 2. 6.0 1. 1. 11.4 2. 2. 6.0 1. 11.4 2. 2. 6.0 1. 1. 11.4 2. 2. 6.0 1. 1. 11.4 2. 2. 6.0 1. 1. 11.4 2. 2. 6.0 1. 1. 11.4 2. 2. 6.0 2. 2. 6.0 2. 2. 7. 7. 2. 2. 6.0 2. 2. 7. 3. 2. 2. 0.4 1. 11.4 2. 2. 2. 3. 2. 2	2002	8. 70%	5, 873, 319	:			2, 544, 858	4. 8%	895, 788	4.8%	2, 432, 073		2, 687, 159		84.8%	168, 818	5,005	173, 883	
8. 80% 6, 572, 624 5. 88 2, 800, 315 4, 59 2, 780, 001 7, 18 3, 066, 632 2, 064, 807 84, 98 182, 949 5, 788 8. 948 6, 990, 745 5, 38 4, 32 5, 08 1, 024, 671 5, 08 1, 024, 671 5, 08 2, 289, 413 5, 08 2, 289, 413 5, 18 2, 280, 413 5, 18 2, 280, 413 3, 240, 410 85, 08 2, 280, 413 5, 18 2, 280, 413 5, 18 2, 280, 413 3, 240, 410 85, 08 2, 280, 413 5, 18 3, 240, 410 7, 38 3, 260, 810 8, 280, 713 3, 240, 810 85, 08 2, 280, 718 7, 38 3, 240, 810 85, 08 2, 280, 718 7, 38 3, 240, 810 8, 280, 718 7, 34 3, 240, 810 85, 08 2, 280, 718 7, 34 3, 240, 810 85, 08 2, 280, 718 7, 34 3, 240, 810 85, 08 2, 240, 810 8, 280, 810 3, 240, 810 8, 280, 810 3, 240, 810 8, 280, 810 3, 240, 810 8, 280, 820 3, 240, 810 8, 280, 820 3, 240, 810 8, 280,	2003	8. 78X	6, 210, 829				7, 668, 966	₹ 85	939, 472	4.9%	2, 602, 397		2, 869, 293		84.98	180, 434	5,413	185, 847	
8. 948 6. 950, 745 5. 98 9. 054, 7. 477 5. 98 9. 054, 7. 477 9. 050, 7. 477 9. 050, 7. 477 9. 050, 7. 477 9. 050, 7. 477 9. 050, 7. 477 9. 050, 7. 477 9. 050, 7. 777 9. 0	2004	8. 80x	6, 572, 624	_		-	2, 800, 315	4.9%	985, 709	× 0%	2, 786, 601	7.]%	3, 066, 632		84.9%	192, 949	5, 788	198, 737	
9 038 7, 377, 420 6 08 3, 086, 782 5, 08 1, 086, 544 5, 08 1, 086, 544 5, 08 1, 086, 544 5, 08 1, 086, 544 5, 08 1, 086, 544 5, 18 3, 401, 792 7, 48 3, 709, 133 3, 200, 810 85, 08 237, 107 7, 113 9, 138 7, 88 6, 18 3, 408, 391 5, 18 1, 141, 678 5, 18 3, 401, 133 3, 200, 810 85, 08 237, 107 7, 113 9, 258 8, 208 6, 18 3, 402, 304 5, 18 1, 202, 718 5, 18 1, 143, 406 3, 995, 072 86, 08 29, 417 1, 143, 406 3, 997, 107 86, 08 29, 53 1, 140, 118 8, 200, 810 3, 977, 207 86, 08 29, 53 1, 140, 20, 207 7, 140, 20, 207 86, 08 29, 207 86, 208 29, 53 1, 400, 81, 81 7, 78 4, 140, 20, 207 86, 08 29, 173 86, 08 29, 207 86, 08 29, 207 86, 08 29, 207 86, 08 29, 207 86, 08 29, 207 20, 207 20, 207	2005	8.94%	6, 960, 745	:	-	1	2, 939, 413	5.0%	1,034,671	5.0%	2, 980, 001	7.2%	3, 280, 602			200, 475	6, 194	212, 669	
9.138 7.826.889 6.18 3.243.411 5.18 1.141,678 5.18 3.41,792 7.48 3.700,133 3.200,810 85.08 254.533 7.113 9.258 8.312,180 6.28 3.408,991 5.18 1.200,314 5.18 3.701,875 7.08 4.442,874 3.430,199 85.08 254.533 7.030 9.508 8.806,733 6.28 3.712,812 5.28 1.262,718 5.28 3.901,874 3.435,496 3.630,488 85.08 277.589 8.200 80.00 3.750,478 8.200 80.00 3.750,478 8.200 80.00 80	2006	9.038	7, 377, 426		1		3, 086, 782	5.0%	1, 080, 544	5.0%		7.3%	3, 512, 778	1		221, 126	6, 034	227, 759	
9. 25% 8. 312, 180 6. 23 3, 499, 991 5. 18 1, 200, 314 5. 18 3. 701, 875 7. 78 4, 345, 406 3, 430, 199 85. 08 254, 533 7. 592 9. 308 8. 836, 731 6. 38 4, 345, 406 3, 693, 498 85. 08 273, 592 8, 208 9. 508 8. 836, 731 6. 48 4, 345, 406 3, 693, 498 85. 08 274, 592 8, 208 9. 508 8. 61, 404, 307 6. 48 3, 671, 286 5. 4 4, 299, 613 7. 84 4, 676, 601 3, 975, 072 8, 204 8, 833 9. 538 10, 687, 606 6. 58 4, 422, 252 5. 84, 106, 601 8, 38 5, 436, 743 8, 548 6, 376, 502 8, 274, 81 10, 273 10, 27	2007	9. 13%	7, 826, 880	6. 1%		-	3, 243, 411	5. 1%	1, 141, 678	5. 3%	3, 441, 792	7. 4%	3, 768, 133			237, 097	7, 113	244, 210	:
9. 30% 8. 836, 731 6. 3% 1. 262, 718 5. 28 1, 262, 718 5. 28 1, 262, 718 5. 28 1, 262, 718 5. 28 1, 262, 718 7. 84 4, 345, 406 3. 693, 498 85. 08 273, 592 8. 208 9. 478 5. 404, 307 6. 48 3. 776, 077 5. 38 1, 329, 176 5. 38 1, 329, 176 5. 38 1, 400, 001 5. 38 1, 400, 001 5. 38 1, 400, 001 5. 38 1, 400, 001 5. 38 1, 400, 001 5. 38 1, 400, 001 6. 38 18 18 18 18 18 18 18	2008	9. 25 x	8, 312, 180	8			3, 409, 991	5. 38	-	5. 1%		7.6%	4,042,874		85.0%		7, 630	202, 169	
9. 47% 5. 404, 307 6. 48 3. 776, 077 5. 38 1.329, 170 5. 38 4. 299, 053 7. 88 4. 676, 601 3. 975, 072 85. 084, 450 8. 429, 053 7. 606, 601 3. 977, 209 5. 38 4. 611, 811 8. 08 4. 676, 601 3. 975, 073 4. 613, 170 9. 519	2003	9, 36%	8, 836, 73)	ი კ			3, 587, 275	5.2%	_	5.2%	3, 986, 738	7. 7%	4, 345, 466	:	85.0%		8, 208	281,800	
9. 5584 16, 019, 037 6, 58 6, 019, 037 6, 58 1, 400, 001 5, 38 1, 401, 811 8 08 5, 039, 539 4, 283, 554 85, 08 317, 300 9, 519 9, 519 9, 738 10, 038 10, 018, 087 6, 78 1, 475, 685 5, 48, 51, 61, 81 8, 48, 61, 81 6, 432, 053 85, 08 85, 08 9, 519 <	2010	9. 13	9, 404, 307	. 4×		1	3, 776, 077	, 38	1, 329, 176	23%	4, 299, 053	7.8%	4, 676, 601) <u>:</u>		294, 450	8, 833	303, 283	
9. 73x 10. 687, 606 6. 7x 4, 192, 297 5. 4x 1, 475, 685 5. 436, 779 8. 3x 5, 438, 914 4, 623, 043 86. 0x 372, 448 10, 273 9. 73x 11, 415, 61 6. 8x 4, 422, 252 5. 5x 1, 556, 629 5. 5x 5, 436, 774 8. 5x 5, 493, 134 85. 0x 400, 732 11, 105 10. 02x 12, 209, 415 7. 0x 4, 422, 252 5. 5x 1, 643, 273 5. 897, 741 8. 5x 6, 304, 581 85. 0x 400, 732 12, 022 10. 02x 10. 02x 12, 209, 415 7. x 4, 658, 401 5. 6x 1, 736, 696 8. 6x 6, 304, 581 8. 6x 6, 304, 382 8. 6x 7, 404, 485 8. 30, 370, 308 8. 5x 7, 41, 150 10, 775 11, 105 10, 732 12, 022 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 10, 102 <td< td=""><th>2011</th><td>9. 59%</td><td>16, 019, 097</td><td>.5 5</td><td></td><td>-</td><td>3, 977, 285</td><td>.5 %</td><td></td><td>38</td><td>4, 041, 811</td><td>8.0%</td><td>5, 039, 539</td><td>1</td><td></td><td>317, 300</td><td>9.519</td><td>320, 819</td><td></td></td<>	2011	9. 59%	16, 019, 097	.5 5		-	3, 977, 285	.5 %		38	4, 041, 811	8.0%	5, 039, 539	1		317, 300	9.519	320, 819	
9 87% 11, 415, 61 6,8% 4, 422, 252 5.5% 1, 556, 629 5.5% 5, 436, 779 8.3% 5, 879, 134 85.0% 4, 997, 134 85.0% 400, 732 11, 105 10, 02% 12, 209, 415 7.0% 7.0% 1, 698, 401 5.6% 1, 643, 273 5.877, 741 8.5% 6.364, 581 5.409, 882 85.0% 400, 732 12, 022 10, 17% 13, 076, 038 7.1% 6.901, 037 5.865, 874 85.0% 400, 732 12, 022 10, 43% 15, 056, 879 7.4% 6.917, 874 8.6 6.901, 037 5.865, 874 85.0% 471, 875 14, 150 10, 43% 15, 060, 879 7.4% 6.927, 334 8.8 7, 600, 017 9.0% 8.156, 876 8.156, 876 8.156, 876 8.156, 876 8.156, 876 8.156, 876 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901, 023 9.901,	2012	9. 73%	10, 687, 666	*			1, 192, 297	5.4%	1, 475, 685	5. 4%	5, 019, 684	æ. ™	5, 438, 914			342, 448	10, 273	352, 721	
10.02% 12.209.415 7.08 7.18 6.43.273 5.687,741 8.54 6.364.581 5.409.882 85.08 400.722 12.022 10.178 13.076.038 7.18 4.532.113 5.68 1,739.639 5.08 6.407.820 8.68 6.304.581 85.08 434.509 13,035 10.328 13.076.038 7.28 1.835.038 5.08 1,835.038 5.08 1,835.038 5.08 1,404.485 8.88 7,494.485 6.370,308 85.08 471.875 14,150 10.376 10.438 15.305 13,035 13,035 13,035 13,035 13,035 13,035 13,035 13,035 14,150 10.375 14,150 10.375 14,150 10.375 14,150 10.375 10.905 15,138.735 10.905 10.000 10.140 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485 10.404.485	2013	9.87%	11, 415, 661	86.0		7	4, 422, 252	5.5%	1, 558, 629	5.5%	5, 436, 779	80 38	5, 879, 005	4, 997, 134		370, 158	11, 105	381, 203	
10.178 13.076, 038 7.1% 1.4 (532, 113) 5.6% 1,739, 039 5.0% 6.407, 820 8.6% 6.901, 037 5.865, 874 85.0% 434, 509 13, 035 10.32% 14.023, 525 7.2% 2.214, 852 5.7% 1,835, 038 5.7% 6.972, 996 8.8% 7,494, 485 6.370, 308 85.0% 471, 875 14,156 10.43% 15.060, 879 7.48 7.494, 485 6.929, 075 8.15, 87 8.290, 975 8.15, 87 8.290, 97 8.15, 87 9.292, 075 8.53 14,156 17,548, 873 8.50 8.591, 76 10,775 10,775 10,775 18,305 10,007 9.007, 602 8.290, 905 9.003, 9	7014	10.02%	12, 209, 415	 		-	4, 658, 401	5.0%	1, 643, 273	5.0%	5, 897, 741	8.5%	6, 364, 581	5, 409, 882		400, 732	12, 022	412, 754	
10. 32% 14, 023. 525 7. 2% 5. 214, 892 5. 7% 1, 835, 036 8. 8% 7. 494, 485 6, 370, 308 85. 0% 471, 875 14, 150 10. 48% 15, 060, 879 7. 48 15, 518, 332 5. 81, 1942, 469 5. 88 7, 600, 017 8. 08 8. 151, 857 6, 929, 075 85. 07 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 8. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 857 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 9. 151, 851 <t< td=""><th>2015</th><td>10.17%</td><td>13, 076, 038</td><td>7.1%</td><td></td><td></td><td>4, 932, 113</td><td>5.6%</td><td>1, 739, 099</td><td>5.6%</td><td></td><td></td><td>6, 901, 037</td><td>[</td><td></td><td>434, 509</td><td>13, 035</td><td>447, 544</td><td></td></t<>	2015	10.17%	13, 076, 038	7.1%			4, 932, 113	5.6%	1, 739, 099	5.6%			6, 901, 037	[434, 509	13, 035	447, 544	
10. 438 15. 660, 879 7. 48 5.518, 352 5.84, 430 5. 87, 246 5. 84, 246 5. 84, 246 5. 84, 246 9. 24, 246 9. 24 8. 151, 857 6. 929, 075 85. 078 5. 38 15. 398 15. 398 15. 398 15. 398 16. 398, 375 16. 388, 029 7. 548, 873 85. 08 559, 176 10, 775 10, 775 10, 808 17. 447, 110 7. 78 9. 180, 638 9. 071, 464 9. 38 9. 934, 642 9. 559, 180, 638 9. 934, 642 9. 58 10, 591, 875 9. 003, 093 85. 08 9. 000, 007 20, 003, 093 85. 08 9. 000, 007	2010		14, 023, 525	7.2%		-	5, 214, 892	5.7%	1, 835, 038	5. 7%	6, 972, 996		7, 494, 485			471,875	14, 156	486, 031	
10. 64x 16. 198. 251 7. 6x 5. 844, 430 5. 9x 8, 296, 586 9. 2x 8, 881, 029 7, 548, 873 85. 0x 559, 176 10, 775 10. 80x 17. 447, 110 7. 7x 0. 195, 008 0. 0x 2. 180, 638 0. 0x 9, 071, 464 9. 3x 9, 690, 905 8, 237, 319 85. 0x 010, 172 18, 305 10. 96x 18. 820, 430 7. 9x 6, 572, 332 6. 1x 2, 313, 455 6. 1x 9, 934, 642 9, 5x 10, 591, 875 9, 003, 093 85. 0x 666, 896 20, 003	2017	10. 48%		7.4%			5, 518, 392	5.8%	1, 942, 469		7, 600, 017		8, 151, 857	6, 929, 075		513, 205	15, 398	528, 663	:
10. 96 x 17, 447, 110 7. 7 x 6, 195, 008 6, 0 x 2, 180, 638 6, 0 x 9, 071, 464 9, 3 x 9, 690, 965 8, 237, 319 85, 0 x 910, 172 18, 305 10, 96 x 18, 820, 430 7. 9 x 18, 820, 430 7. 9 x 18, 820, 430 7. 9 x 10, 591, 875 9, 003, 093 85, 0 x 666, 896 20, 007	2018	10.64%		7.6%			5, 844, 430	5.9%	2, 057, 234		8, 296, 586	9, 2%	8, 881, 029		85.0%		10, 775	575, 951	
10. 90x 18. 820. 430 7. 9x 6. 572. 332 6. 1x 2. 313. 455 6. 1x 9, 934. 642 9. 5x 10. 591. 875 9, 003, 093 85. 0x 666. 896 20, 007	2019	10.	17,447,110	7.7%			9, 195, 008	6.0%	2, 180, 638	0.0%	9, 071, 464	9.3%	9, 690, 965		85.0%		18, 305	628, 477	
	2020	10,	870				6, 572, 332	6. 1%	2, 313, 455	6. 1%		9.5%	10, 591, 875	i	85.0%	968 999	20,007	080, 903	
				_													-		

Table 3.23 Forecast of Export Container Traffic Through The Port of Belawan

Harcrease Rate 1. 1938 8. 1738	108 107 107 108 108 108 108 108 108 108 108 108 108	175.0 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0	10.1 K Carge 107 Tran 108 Tran 108 10, 326 17, 975 19, 534 3, 965 4, 867 217 35, 965 4, 843 46, 935 50, 294 50, 294 57, 654 60, 1786	158 100 100 118 118 118 118 118 118 118 11	Ton 10 10 10 10 10 10 10 10 10 10 10 10 10	70% 60% 74% 74% 74% 75% 70% 70% 70% 70% 70% 70% 70% 70% 70% 70	Corgo 107 Ton 107 Ton 107 Ton 107 To	102. 31% C 108. (00% A 45. 75% 8. 85% 8. 85% 13. 80% 21. 37% 21. 37% 21. 37% 21. 37% 21. 30% 7. 30%	Container Ten 65.4.001 95.2.601 1,030,832 756,089 864,521 1,045,123 1,109,727 1,109,72	Curgo Ton 76, 284 95, 126 104, 334 140, 707 226, 504 230, 575 231, 619 231, 619 308, 563 308, 346 423, 198 443, 316 572, 273 660, 641		1730 2, 308 4, 182 7, 210 9, 331	Finpty 1131 968 2, 685 4, 838 8, 248 17, 422 966 966 966 966 966 966 966 966 966 9		Average ton/TEI
8 2.23 1 2.33 1 2.33 1 2.33 2 2 2 2 2 2 2 2 2	2 2 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	75.n 46 63, 830 85, 968 37, 035 50, 000 50, 000 50, 000 50, 000 50, 000 50, 000		110x 111x 120x 120x 120x 120x 120x 120x		8. 50 K	10 10 10 10 10 10 10 10 10 10	5. 75x 8. 85x 1. 37x 1. 37x 1. 30x 7. 30x 7. 30x	Ton 654.001 952.601 1, 036, 832 756, 989 864, 521 1, 045, 123 1, 109, 727 1, 199, 727 1, 199, 727 1, 186, 736	76, 284 95, 126 104, 334 140, 707 256, 504 220, 743 220, 743 231, 619 308, 563 306, 346 423, 198 423, 198 572, 273	11. 7% 14. 5% 16. 6% 21. 5% 22. 8% 30. 6%	2, 308 4, 182 7, 210 9, 331	1131 968 2, 685 4, 838 8, 248 17, 422	360	15 July 1
8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9			10, 320 17, 975 17, 975 18, 534 20, 082 35, 605 40, 995 40, 995 40, 995 50, 294 50, 294 50, 294 50, 294 50, 294 50, 294 51, 654	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		3. 67% 9. 67% 9. 67% 9. 67% 9. 75% 8. 54% 8. 55% 8.	7 7 7	5. 75x 8. 85x 7. 14x 3. 80x 11. 37x 6. 18x 7. 30x	654.001 952.001 1, 030, 832 756, 089 864, 521 1, 109, 727 1, 199, 727 1, 190, 727 1, 180, 722 1, 180, 727 1, 180, 727 1, 180, 727	76, 284 95, 126 104, 334 140, 707 256, 504 230, 575 231, 619 231, 619 308, 563 308, 340 423, 198 443, 310 572, 273 560, 641	2. 1. 2% 2. 1. 5% 2. 1. 5% 2. 2. 5% 3. 5% 5% 3. 5% 5%	2, 398 4, 182 7, 216 9, 331	968 2, 085 4, 838 8, 248 17, 422	3, 366	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20		16, 320 17, 975 18, 534 18, 534 20, 082 35, 665 43, 843 40, 995 40, 995 40, 995 40, 995 50, 294 50, 294 50, 294 51, 654	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0. 3. 6.7% 0. 74% 0. 74% 0. 74% 0. 75% 0. 75		5. 75x 8. 85x 7. 14x 3. 80x 11. 37x 6. 18x 7. 30x	65.4. 001 95.2. 601 1, 030, 832 756, 089 864, 521 1, 045, 123 1, 109, 727 1, 190, 727 1, 190, 722 1, 275, 131 1, 360, 578	95, 120 104, 334 140, 707 256, 504 230, 575 220, 743 231, 619 308, 503 360, 340 423, 198 423, 198 572, 273 560, 641	14. 5% 16. 6% 21. 5% 22. 5% 30. 6%	4, 182 7, 210 9, 331	2, D85 4, 838 8, 248 17, 422	6, 867	
8 503	20		16, 320 17, 975 18, 534 20, 082 35, 665 40, 995 40, 995 40, 995 40, 995 50, 294 50, 294 50, 294 51, 654	1 100 1 100		3. 67% 9. 67% 9. 67% 9. 67% 9. 75% 9. 75% 9. 51% 9.		3. 85.X 7. 14.X 3. 80.X 11. 37.X 11. 37.X 7. 30.X	65.4. 001 95.2. 601 1, 030, 832 756, 089 864, 523 1, 045, 123 1, 109, 727 1, 190, 722 1, 275, 131 1, 300, 578 1, 465, 736	104, 334 146, 707 256, 564 236, 575 220, 743 231, 619 308, 563 369, 346 423, 198 483, 316 572, 273 560, 641	21. 5x 21. 5x 26. 9x 30. 0x	7, 210	4, 838 8, 248 17, 422		
8. 50% 1, 1, 29% 1, 1, 29% 1, 1, 29% 1, 1, 29% 1, 1, 29% 1, 1, 20% 1, 1, 20% 1,	22 23 23 25 25 25 25 25 25 25 25 25 25 25 25 25		16, 326 17, 975 18, 534 20, 082 35, 665 40, 995 40, 995 40, 995 40, 995 50, 294 50, 294 50, 294 50, 294 50, 294 50, 294 60, 136 60, 13	108 108 108 108 108 108 108 108 108 108		3. 67% 0. 74% 0. 74% 9. 67% 8. 56% 8. 56% 8. 56% 8. 56% 8. 56% 8. 56% 8. 56% 8. 61%	7 7 7	5. 75x 8. 85x 7. 14x 3. 80x 6. 18x 7. 30x 7. 30x	65.4.001 95.2.001 1.030, 832 756, 989 864, 521 1.045, 123 1.199, 727 1.190, 722 1.190, 722 1.190, 722 1.190, 722 1.190, 722 1.190, 722 1.190, 722 1.190, 722	256, 504 236, 575 236, 575 221, 619 308, 503 309, 340 423, 198 423, 198 572, 273 560, 641	21. 5% 26. 9% 22. 8% 30. 0%	9,331	8, 248	12,048	
8 9 4 4 5 5 5 5 5 5 6 6 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	22.5 22.5 23.7 24.7 25.7 25.7 25.7 25.7 25.7 25.7 25.7 25		17, 975 1 18, 534 1 20, 082 2 35, 665 2 38, 209 2 40, 995 4 40, 995 294 2 50, 294 2 50, 294 2 50, 294 2 51, 654 2 61, 786 2	103 1118 153 153 17 13 17	0. 74% 9. 57. 54% 9. 58% 9. 58% 9. 58% 9. 58% 9. 58% 9. 58%	7 7 7	5. 75x 8. 85x 7. 14x 3. 80x 6. 18x 7. 30x	952, 601 1, 030, 832 756, 089 864, 521 1, 045, 123 1, 190, 727 1, 190, 722 1, 275, 131 1, 300, 578 1, 465, 736	256, 564 236, 575 221, 619 308, 503 309, 340 423, 198 493, 318 572, 273 560, 641	26. 9 X 22. 8X 30. 0 X		17, 422	17,579		
8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	22.22.83.32.11.11.12.12.12.12.12.12.12.12.12.12.12		18, 534 20, 082 35, 665 23, 665 40, 995 40, 995 40, 995 50, 294 50, 294 50, 294 51, 654	. 1135 . 155 .		2. 97X 8. 67X 7. 554X 8. 75X 8. 75X 8. 58X 8. 51X 8. 613X	7 7	8. 85× 7. 14× 1. 37× 6. 18× 7. 30× 7. 30×	1, 030, 832 756, 089 864, 521 1, 045, 123 1, 109, 727 1, 190, 722 1, 275, 131 1, 300, 578 1, 465, 736	236, 575 220, 743 231, 619 308, 503 369, 340 423, 198 493, 316 572, 273 560, 641	22. 8% 30. 0%	12, 018	063 044	29, 440	
8 50 50 50 50 50 50 50 50 50 50 50 50 50	25 25 33 33 33 33 34 35 34 34 35 34		20, 082 35, 665 38, 209 38, 209 40, 995 40, 995 50, 294 50, 294 50, 294 51, 654			8. 513X 8. 513X 8. 513X 8. 513X 8. 513X 8. 613X		3. 80% 6. 18% 7. 30%	756, 089 804, 521 1, 045, 123 1, 109, 727 1, 190, 722 1, 275, 131 1, 275, 131 1, 300, 578	220, 743 231, 619 308, 503 369, 346 423, 198 493, 316 572, 273 560, 641	30.0%	16, 082	010.77	38, 600	
8 50 50 50 50 50 50 50 50 50 50 50 50 50	22		38, 209 209 209 209 209 209 209 209 209 209			8. 6. 15. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5			804, 521 1, 045, 123 1, 109, 727 1, 190, 722 1, 275, 131 1, 300, 578 1, 465, 730	231, 619 308, 563 369, 340 423, 193 493, 316 572, 273 660, 641		15, 043	34, 145	49, 788	
8 9484 8 7(8) 8 8 7(8) 8 8 15 8 8 15 8 8 15 8 8 15 8 8 15 8 8 15 8 8 15	1		35, 605 -4 38, 209 40, 995 40, 935 50, 294 53, 832 57, 654	2. 7. 15% 8. 1. 15. 15. 15. 15. 15. 15. 15. 15. 15.		8. 51 28 8 8 9. 51 28 8 8 9. 51 28 8 8 9. 51 28 8 8 51 28 8 9. 51 28 8 51 28 8 9. 51 28 9. 51 28 8 9. 51 28 8 9. 51 28 8 9. 51 28 8 9. 51 28 8 9. 51 28	~		1, 045, 123 1, 109, 727 1, 190, 722 1, 275, 131 1, 300, 578 1, 465, 730	306, 549 300, 349 423, 193 423, 310 572, 273 560, 541	20.8%	17,011	49, 109	06, 120	
88 7(8%) 8 8 7(8%) 8 8 7(8%) 8 8 7(8%) 8 8 7(8%) 8 8 7(8%) 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		38.209 40.995 43.843 46.935 50.294 57.654 01.786	* * * * * * * * * * * * * * * * * * *		8. 40% 8. 50% 8. 50% 8. 51% 8. 51%			1, 109, 727 1, 190, 722 1, 275, 131 1, 360, 578 1, 465, 736	360, 346 423, 193 483, 316 572, 273 660, 641 757, 296		22, 795	52, 608	75, 403	13.534
8	3 2 3 3 3 3 3 3 3 4 3 5 3 5 3 5 3 5 5 5 5 5		40, 995 43, 843 46, 935 50, 294 57, 654 01, 786	× × × × × ×					1, 190, 722 1, 275, 131 1, 360, 578 1, 465, 736	423, 193 493, 316 572, 273 660, 641 757, 296		20, 032	59, 712	80, 405	13.5
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8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	22 23 23 22 23 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25		50, 294 50, 294 53, 832 57, 654 01, 786	* %		8.51% 8.61%	<u> </u>		1, 366, 578 1, 465, 736	572, 273 660, 641 757, 296	8	36.542	74. 932	111.474	
8 708 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	32 22 22 22 22 22 22 22 22 22 22 22 22 2		50, 294 53, 832 57, 654 01, 780	% × 8 %		8.01%		7. 17x	1, 465, 736	660, 641 757, 296		42, 391	79, 727	122, 118	
8 70% 8 70% 9 70%	8 2 8 7 8 8		53 832 57, 654 01, 786	% × 8		Monthson and the last		7. 25x		757, 296	¥(.5)	48, 936	83, 419	132, 355	
2	3 5 8 2 8 8	<u> </u>	57, 654 01, 786	× ×	L	Š	<u> </u>	7.11%	5.89, 875		XX 84	56.093	80,075	149, 171	
8 70% 8 70% 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	8 2 2 8		01, 786	36		8.55%	ļ	7.15x	1, 682, 105	803, 637	51.38	63, 973	88, 242		
8 705.7 8 705.8 8 705.8 8 705.8 9 9 005.8 1 105.8 1 10	188	1	A		<u>_</u>		_	7. 19X	1, 803, 124	980, 608	54.4%	72, 593	127	102, 720	
8 78% 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	22	_	00, 263	1	<u>L</u>		<u>.</u>	7. 25x	1, 933, 901	1, 106, 806	57.2X	81, 830	91,883	173,883	
8. 866 x 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.		<u> </u>	71,112	7. 3X	881, 845	8. 78%		7.31%	2, 075, 324	1, 244, 630	CO. 0%	92, 195	93, 053	185,847	
8. 9.43x 3, 3, 9. 13% 4,		;	70, 376		959, 974			7. 37x	2, 228, 305	1, 393, 708	02. SX	103, 242	95, 495	198, 737	
9. 03% 3,		!	82, 030	7.5% 1,	1, 045, 814	8.94%	2, 385, 889	7. 44X	2, 394, 098	1, 554, 832	O. 98	115, 173	97, 490	212, 639	
9.13%		50, 000	88, 301	7. 6% 1,		.03%	2, 504, 874	7. 50x	2, 573, 704	1, 728, 475	67. 2%	128, 035	53, 724	227, 759	
	! !		95, 075	7.7% 1,		9.13%	2, 759, 616	7. 59%	2, 769, 123	1, 915, 921	69. 2%	141,920	102, 290	244, 210	
2008 9. 25% 4, 483, 587	587 8. 1%	50,000	102, 475	7. 8% J,	1, 359, 402		2, 971, 711	7. 69%	2, 981, 958	2, 118, 248	71.0%	150, 907	105, 262	202, 169	:
9.36%	-		110, 564	85	1, 480, 629	9.36%	3, 202, 939	7. 78%	3, 213, 995	2, 330, 732	72. 7X	173, 091	108, 709	281, 800	
	<u> </u>	50, 000	119, 418	8. 9.	1, 627, 480	9. 47x	3, 455, 280	7.88%	3, 407, 228	2, 572, 858	74.2%	190, 582	112, 701	303, 283	
2011 9.59% 5.093,680		50, 000	129, 120	8. 1%	, 783, 592	9.59%	3, 730, 368	7. 98%	3, 743, 880	2, 828, 350	75. 5%	209, 507	117, 312	320, 819	
	145 8.5%	50, 000	139, 788	85	1, 957, 167	9. 73%	4, 033, 190	8. 10%	4, 047, 168	3, 105, 751	76. 7%	230, 058	122, 005	352, 721	
2013 9.87% 0.716,888	888 8.7%	50, 000	151, 534	8. 4% 2.	2, 150, 424	3. 87%	4, 364, 930	8. 23%	4, 380, 084	3, 407, 512	77.8X	252, 408	128, 854	381, 263	
2014 10.02% 7,309,930	_	50, 000	164, 484	8.5% 2,	2, 365, 898	0.02%	4, 729, 548	8 35%	4, 745, 996	3, 730, 437	78. 7X	270, 773	135, 981	412, 754	
2015 10.17% 7, 966, 10	101 9.0%	50, 000	178, 783	X	2, 600, 485	10, 17%	5, 130, 832	8. 48×	5, 148, 711	4, 095, 724	79. 5x	303, 387	144, 157	447, 544	
2016 10.32x 8,693,169	169 9.1%	50,000	194, 594	88 88 2,	2, 875, 507	10. 32%	5, 573, 068	8. 62%	5, 592, 528	4, 489, 012	80.3x	332, 519	153, 511	480, 031	
2017 10. 48% 9, 499, 970			212, 102	Š	3, 176, 768	10. 48%	6, 061, 100	8. 70x	6, 082, 317	4, 920, 440	80.9%	364, 477	164, 188	528, 803	:
2018 10.64% 10, 396, 600		50,000	231, 517	9. 2x	3, 514, 644	10.64%	6, 600, 445	8.90%	6, 623, 597	5, 394, 713	81. 4X	399, 008	176, 343	575, 951	:
2019 10.80% 11, 394, 578		50,000	253, 081	9.3%	3, 894, 168	10. 80%	7, 197, 328	9. 04X	7, 222, 637	5, 917, 182	83. 5x	438, 310	190, 167	0.28, 477	
2020 10.96x 12,507,070			277, 069	9.5% 4.	4, 321, 145	10. 96%	7, 858, 857	9.19%	7, 880, 564	6, 493, 936	82. 3x	481, 032	205, 870	080, 903	
										-					

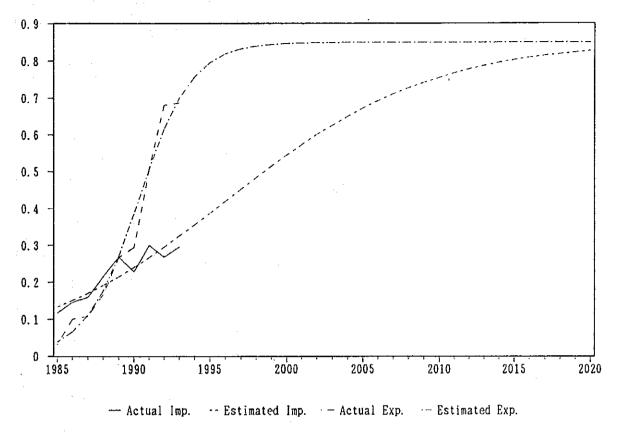


Fig. 3.8 Estimation of Export & Import Container Ratio (Unit %)

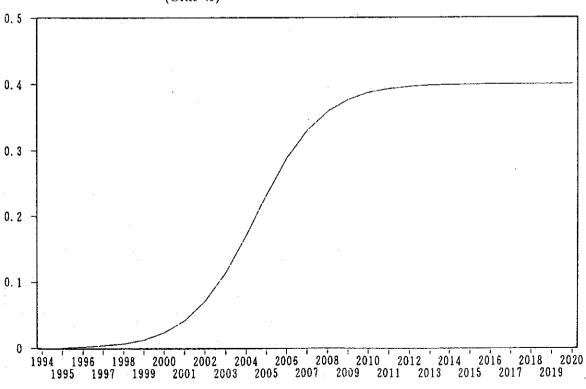


Fig. 3.9 Estimation for Container Ratio (Unit: %)

-- Estimation Curve

Table 3.24 Forecast of Inter-island Container Cargo Traffic at Port of Belawan

Type of Trad
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Table 3.25 Forecast of Inter-island Container Cargo Traffic at Port of Belawan

Total			279 279 546	2, 050 3, 902 7, 264	22, 095 22, 095 34, 626 49, 435	94, 538 77, 528 88, 417 97, 338 104, 931	111, 771 118, 290 124, 760 131, 348	138, 160 145, 264 152, 706 160, 518	177, 336
Container Empty Container TEU			119°.	923 1, 781 3, 353	6, 076 10, 386 16, 391 23, 535	30, 704 37, 191 42, 499 46, 825 50, 457	53, 661 56, 630 59, 481 62, 279	65, 057 67, 825 70, 580 73, 305	78, 560
Collegated Container Co			308 308 308	2, 127 2, 121 3, 911	6, 958 11, 709 18, 235 25, 901	55, 572 40, 337 45, 918 50, 513	58, 110 61, 661 65, 279 69, 069	73, 103 77, 439 82, 127 87, 212	92, 745 98, 776
Katio			0. 11% 0. 21% 0. 38%	2. 35% 4. 17%	7. 11% 11. 47% 17. 12% 23. 27%	33. 12% 35. 98% 37. 73%	39. 32% 39. 63% 39. 80%	39. 04% 39. 08% 39. 08%	40.00% 40.00%
Container Container Cargo Ton			830 1, 599 3, 080	21, 215 21, 215 39, 111	69, 582 117, 085 182, 347 259, 006	555, 719 403, 372 459, 181 505, 135	581, 100 616, 608 652, 793 696, 690	731, 033 774, 393 821, 267 872, 125	927, 450
Potential C Container Ton		549, 019 860, 282 733, 562 717, 752 683, 502	712, 205 740, 952 769, 675 800, 364	806, 402 801, 578 901, 578 938, 830	978, 406 1, 020, 474 1, 065, 220 1, 112, 846	1, 217, 902 1, 276, 152 1, 338, 658	1, 477, 962 1, 555, 903 1, 640, 169	1, 830, 232 1, 937, 492 2, 054, 027 2, 180, 803	2, 318, 907 2, 469, 556
Total General Cargo Ton	0.961 103.86% 108.09%	521, 408 830, 414 649, 618 650, 755 629, 987	658, 323 686, 790 715, 322 745, 765	811, 262 810, 164 846, 164 883, 107	922, 330 964, 003 1, 008, 309 1, 055, 447	1, 105, 635 1, 159, 368 1, 278, 723 1, 278, 723	1, 416, 333 1, 493, 295 1, 576, 484	1, 764, 074 1, 869, 923 1, 984, 919 2, 110, 020	2, 246, 301 2, 394, 969
General Cargo Ton		521, 408 6430, 414 648, 119 650, 755 629, 987							
ory Bulk Cargo Tou	1.038 112.19% 108.09%	41, 069 45, 218 78, 879 55, 441 113, 372	120, 467 130, 101 140, 292 151, 419	163, 577 176, 527 190, 607 205, 928	222, 632 240, 857 260, 755 282, 497	306, 271 332, 358 361, 012 392, 518	465, 406 507, 640 554, 381	663, 658 727, 530 798, 605 877, 808	966, 196 1, 064, 980
Form of Cargo Liquid Bul Dr Cargo Ton	0. 926 100. 07% 108. 09%	276, 109 303, 396 596, 639 639, 435 639, 969	538, 820 541, 613 543, 533 545, 982	545, 004 551, 399 554, 140 557, 235	560, 753 564, 707 569, 113 573, 986	579, 344 585, 338 591, 996 599, 351	616, 297 626, 081 636, 847	661, 579 675, 692 691, 079 707, 835	726, 061 745, 874
Forroleum L Cargo Ton	0.000 0.00% 108.09%	81, 772 90, 031 71, 897 10, 953	0000	0000		9999	0000	0000	00
Beliawan P. Ton		920, 359 1, 269, 659 1, 280, 948 1, 280, 948 1, 280, 948	1, 317, 609 1, 358, 504 1, 399, 147 1, 443, 176	1, 490, 853 1, 539, 188 1, 590, 910 1, 646, 270	1, 705, 715 1, 769, 567 1, 838, 177 1, 911, 931	1, 991, 250 2, 077, 064 2, 169, 961 2, 270, 592	627, 627, 767,	3, 274, 331 3, 273, 146 3, 474, 604 3, 695, 662	3, 938, 557 4, 205, 823
CDP Increase Rate		7. 52% 11. 29% 8. 7. 52% 11. 29% 8. 7. 50% 8. 7. 50% 8. 7. 50% 8. 7. 50% 8. 7. 50%	888888	00 00 00 00 00 00 00 00 00 00 00 00 00	8. 70% 8. 78% 8. 94%	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	10. 32% 10. 48% 10. 64%	10.80% 10.96%
Port		1984 1985 1986 1987 1988 1990 1990	1994 1995 1996 1997	1998 1999 2000 2001	2002 2003 2004 2005	2006 2007 2008 2009	2011 2012 2013 2013	2015 2015 2017 2017 2018	2019 2020

(2) International container cargo traffic in 2010

26. International cargo is classified into export and import cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. Elasticity between the increase rate of each cargo type and the GRDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of the containerized ratio is estimated from the correlation between the past trend and the logistic curve, which is shown in Fig.3.8. The container cargo volume in the target year is forecast by multiplying the potential container cargo volume by the containerized ratio. The results are presented in the Table 3.30 and .31 and summarized below.

Table 3.27 International Potential Container Cargo Volume

Scenario		Export			Import		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	·
2003	58	4	62	13	49	62	124
2010	99	7	106	17	89	106	212
2018	185	15	200	25	175	200	400
Scenario		Export			Import		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2003	76	5	81	19	62	81	162
2010	122	7	129	29	100	129	258
2018	180	9	189	40	149	189	378
Scenario		Export			Import		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	56	4	60	14	46	60	120
2010	75	4	79	18	61	79	158
2018	96	5	101	22	79	101	202

(3) Inter-island container cargo traffic in 2010

27. The inter-island cargo is classified into loading and unloading cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. The elasticity between the increase rate of each cargo type and the GRDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of the containerized ratio is estimated by the correlation between the past trend and the logistic curve. However, since inter-island container cargo has not yet been handled at the port of Belawan, the containerized ratio is estimated based on the actual ratio at Tanjung Priok, Tanjung Perak and Ujung Pandan (see Fig.3.9. The container cargo volume in the target year is forecast by multiplying the potential container cargo volume by the containerized ratio. The results are presented in The Table 3.32 and .33 and suumarized in the following Tables.

Table 3.28 Inter-island Potential Container Cargo Volume

Scenario		Loading			Unloading		Total
. 1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	9	3	12	11	1	12	24
2010	47	19	66	. 63	3	66	132
2018	80	40	120	116	4	120	240
Scenario		Loading			Unloading		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2	Loaded		1			1	
2003	12	4	16	15	1	16	32
	_			15 90	1 5	16 95	32 190

Scenario		Loading			Unloading	,	Total
. 3	Loaded	Empty	Total	Loaded	Empty	Total :	
2003	9	3	12	11	1	12	24
2010	41	. 17	58	55	3	58	116
2018	58	30	88	85	3	88	176

28. The inter-island container cargo traffic in 2010 is further estimated by adopting the 1992 OD table of inter-island cargo shown in **Table 3.16** [Oil and coal shipment are not included in these figures]. The inter-island container cargo volume through Panjang port is estimated in **Table 3.17** and summarized below.

Table 3.29 Domestic Container Cargo Volume

		Loading			Unloading		Total
	Loaded	Empty	Total	Loaded	Empty	Total	
2010	1	65	66	54	12	66	132

Table 3.30 Forecast of International Container cargo Traffic al Port of Panjang

Type of Trade Export

al H		7, 222 1, 516 10, 082 12, 847	2. 271 5. 528 7. 841	293 5, 293 1, 972 1, 312	3, 949 3, 973 3, 566	9, 197 3, 987 7, 957 2, 123	5, 303 5, 970 1, 091	2, 138 8, 219 4, 578	3, 817 3, 817
Tota Ten			សសត	₹888	∓ చ్తత	######################################		2223	2046
On Cainer Emply Cortainer TEH		262 626 860 1. 147	1, 531	2, 129 2, 337 2, 562 2, 801	3, 057 3, 335 3, 822 3, 977	4, 135 4, 298 4, 465 4, 637	5, 310 5, 394 5, 394	5, 819 6, 045 6, 280	6, 525 6, 781 7, 047 7, 325
Container Ce TEU		6, 1160 8, 830 3, 222 11, 700	20, 740 23, 797 26, 913	30, 170 33, 615 37, 410 41, 511	45, 992 50, 934 59, 251 62, 589	66, 062 69, 690 73, 492 77, 485	81, 686 86, 111 90, 776 95, 697	106, 378 106, 378 112, 174 118, 207	124, 769 131, 611 138, 844 146, 492
1.6	508 508 508 508 508 808 808	ennen	 	***	% X X X	X X X X	XXXX	: Ratatatat	****
datio	2020年457年 第四回第20年22年	225.32 22.33 22.33 25.33	58. 72. 8. 8.	20.28 20.28 20.44	88.58 8.48 8.48 8.48 8.48	22 22 22 22 22 22 22 22 22 22 22 22 22	2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	క్షామ్మమ్ గ్రామం	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	. ,	528 301 145 154	2008	880 80 840 840	70 70 13	17 19 53	22855	2882	93 36 19
Containe Containe Conso		189, 5 156, 13 195, 11	311.1 345.0 376.7	407, 2 436, 9 467, 6 498, 1	528, 9 560, 2 592, 5 625, 8	660, 6 696, 8 774, 9	815 8 861 1 907 7 956 9	063, 7 063, 7 121, 7	247, 6 316, 1 388, 4 464, 9
		579 903 884 400	798	413 345 183	048 550 325 248	639 219 120 477	450	850 1, 946 1,	017 1. 467 1. 535 1. 496 1.
Potentia) Container		297. [304. (244. 4 297.		520 545 645	636, 704, 742,	781. (823. 2 867. J	. 258 258 256 256 256 256 256 256 256 256 256 256	33.95	, 468 , 548 , 633 , 723
		528 301 145 154	788	289 994 619	270 270 513 888	617 897 919 853	758 758 973	784	0.00 0.00 0.00 0.00 0.00 0.00
Contained Cargo Ten	. *	164. 156. 156.	345,	436. 198. 198.	528 560 592 625		861. 967.	1, 121, 1, 121, 1, 182,	1, 247, 1, 316, 1, 464,
_ 3	981 33%	296 545 729	634 627 648	273 273 273	452 032 413 698	997 427 119 206	282 282 448	3885	416 636 416
Genera Cargo Ton	105.	193, 2 195, 8 191, 8	288.44 88.85 89.80 89.80	451 475 502 530	560 625 660 660	737 737 823	919 919 971 1,026	1, 146 1, 211 1, 211	1, 354 1, 431 1, 513 1, 600
merui Arxo Ton		27, 621 83, 768 51, 504 35, 400 42, 375							
Genera Caryo Ton			,						
oquid Bu Cargo Ton	0, 928 89, 68% 07, 33%	62, 414 78, 515 76, 810 50, 588 56, 882	2, 618 3, 755 4, 817	5, 955 7, 173 8, 655 0, 172	1, 724 3, 313 4, 940 6, 606	8, 311 0, 056 1, 845 3, 677	7, 477 1, 469 1, 469	3, 341 7, 844 0, 078	12, 370 14, 722 17, 134 19, 610
Liqu Ca						:			
of C Bulk Irgo	0. 957 102. 70% 107. 33%	584, 201 716, 833 873, 498 760, 665	9, 147 10, 67 12, 081	5, 451 1, 285 3, 373	3, 260 3, 029 30, 764	32, 481 36, 648 32, 165	13, 67 77, 90(14, 92′	24.23 23.23 36.23 36.23	13, 93, 04, 67, 99, 47, 98, 50,
한편 고요.				: ' -		أسأسأسا			-2222 2000 -2222
Basard Cargo Ton	0, 927 99, 49% 107, 33%	116, 742 193, 063 201, 034 96, 560 108, 364	16, 441 18, 992 21, 419	24, 005 26, 759 30, 032	36.84 40,39 44,03 47,77	151, 623 155, 574 159, 634 163, 808	168, 698 172, 510 177, 045 181, 710	186, 509 191, 447 196, 527 201, 754	207, 13 212, 67 218, 37 224, 23
	-		1777						· · · · ·
Convention Cargo Ton	•	790, 978 072, 179 202, 846 943, 213 071, 723	185, 73 107, 28 131, 17	159, 93 193, 40 234, 65	327, 376 378, 498 432, 641 489, 745	549, 795 612, 807 678, 843 747, 975	820, 294 895, 909 974, 945 057, 555	234, 1 234, 1 328, 1 426, 9	529, 90 637, 63 750, 1 867, 8
485 Cor 27% 01%	28 28 28 28 28 28 28 28 28 28 28 28 28 2				45% 46% 46%	أجأجا	<u></u>	<u>પંબંબંબં</u>	<u>જેજજંજં</u>
0%4			- 0 0 - 0 0 - 0 0		****	4455	4.4.4.4.	4 4 4 4	रं चं चं चं
3.1 3.1	188 104 119 173 173	253	963.0	7, 226 7, 273 7, 273	283 768 154	3, 704 3, 762 3, 762 2, 828	637, 158 757, 021 882, 703 014, 527	152, 814 297, 903 450, 151 609, 935	7, 655 3, 731 8, 611 2, 763
Fan jang Total Tou					22	<u> </u>	<u> </u>	က်က်က်က	ಶಿಶ್ವ
GDP Increase Rate	1.87x 7.35x	9. 928 8. 2088 8. 2088 7. 3488 7. 6188	7. 82X 7. 66X 7. 56X	7. 59% 7. 69% 8. 07%	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	8. 09% 8. 10% 8. 10% 8. 11%	8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.		8. 15% 8. 17% 8. 17% 8. 18%
<u> </u>									
Port	1980 1980 1981 1982 1983 1984	1986 1987 1989 1991 1992	1995	1998 1998 1999	2001 2002 2003	2005 2006 2007 2007 2008	2003 2010 2011 2011 2012	2013 2014 2015 2015	2017 2018 2018 2020
						-			

Table 3.31 Forecast of International Container cargo Traffic al Port of Panjang

Total	4			4 900	9,875	10, 375	9, 987	2, 27 i	5, 528	2, 230	5, 952	4. 312	9, 049	4, 269	5.50	0, 197	7, 957	2, 123	6, 503	5, 970	1, 091	6, 495	27.0	27.5 4.5 7.5 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7	1, 295	18, 331	5,891	719 5
Container Emply To Container		••••• •			493	914	138	588	420	577	26, 656 3	- I-	07.9	25	147	315	202	538	050	355	774	122	41.00	200	112	342	900	
Coltainer Co			· · · · · · · · · · · · · · · · · · ·		1,382	1,461	1,849	2, 684	4, 108	7, 622	9, 296	10, 733	12, 969	13,847	15, 419	16, 182	17, 755	18, 585	19, 452	21, 315	22, 318	23, 373	24, 484	26, 885	28, 182	29, 549	30, 990	01C 'ZE
ka 1 i o				0.00%	14. 08%	18.84%				56. 14%	65.85%	77 77×	80. 75%	82. 54%	84. 20%	84. 54%			84. 95%				82. CO.			85.00%	85.00%	85. UUX
Container Container Cargo		2 m 2 m 3 m	:	C C	12, 661	14, 427	17, 267	25, 494	39, 023	72, 407	88,314	113 633	123, 210	131, 542	146, 478	153, 728	168 674	176, 557	184, 794	202, 491	212, 019	222, 043	232, 593	255 103	267, 730	280, 719	294, 409	308,841
Potential C Container				84,	- 68 - 68	76, 573	10.	Į:	. :)	1 !	- 3	; !			1		1 1	; ;		1 1		1	- !	•	330, 259	346	363, 343
Container			***	6	2, 532	14, 427	17, 267	25, 494	1	1	; ;	à	î	ì	146, 478	153, 728	168, 089	176, 557	184, 794	202, 491	212, 019	222, 043	232, 593	243, 103 966 403	267, 730	280, 719	294, 409	308, 841
General Cargo	0. 977 104. 90% 107. 33%		1	25,	8 6	39, 218	9	64,		i	79, 447	1			T.	116, 610	-	137, 527	145, 316	153, 554	171, 482	181, 232	191, 548	202, 404	226, 239	239, 178	252, 873	267, 371
General Cargo		. :		25, 367	24, 345	24, 791	44, 345	39, 432	29, 294	56, 564	45, 791	39 / 85	29, 367	27, 817	27, 489	28, 102	23.03	31, 359	32, 731	35, 776	37, 440	39, 199	41,055	45, 012	47 248	49, 540	51,955	54, 502
Fgo Liquid Bul Cargo	0.946 101.51% 107.33%		:	57, 321	37, 169	35, 428	47, 884	48,827	49, 713	51, 429	52, 378	54, 717	55, 927	57, 166	50,450	61, 063	62, 424	05, 247	66, 711	69, 211	71, 323	72, 939	74, 595	70, 234	79, 824	81,657	83, 538	85, 469
3 <u>*</u> .	0. 964 103. 49% 107. 33%	i_		6,000	5.430	3, 779		7, 404	7, 685	8, 264	8, 580	0, 241	9, 708		10, 243			12, 967		14, 030	15, 313	15, 965	16, 646	10, 338	18, 876	19, 686	20, 533	21, 417
20	0.949 101.88% 107.33%		<u></u>	107, 215	97, 283	67,623	88, 717	90, 796	92, 784	96, 694	98, 841	200	106, 707	109, 472	112, 313	118, 229	121, 309	127, 730	131, 075	138 051	141, 689	145, 431	149, 281	153, 242	161.513	165, 831	170, 275	174, 850
Convention Cargo	501		:	195, 904	211,800	131, 621	188,068			-				the state of the s			-		And the second s		:					us - carrie andre delle abre products a sancture		
561 27%	4. 64% 39. 19% 45. 44%	-50, 70% 133, 59% -17, 99% -18, 59%		178. 93%	-21.60%	<u> </u>	-21 05%	Ξ	က္	3.07%	3. 18%	000	3 62%		20 00	3. 72%	95 - 15% 15%	. 80 . 60 . 60	38	30 S	3.91%	3.94%	3.97×	4. 00%	4. USA	4 09×	4. 12%	4. 15%
Panjang Totai	63, 125 87, 863 127, 790			38	166 187	133, 082	189 917	211,952	218, 499	231, 868	239, 246	247, 784	265, 973	275, 662	285, 774	307, 353	318, 866	343, 471	356, 619	370,369	399, 807	415, 567	432, 071	449, 357	466,470	506, 352	527, 219	549, 107
GDP Increase	Ka l G	200	7. 35% 9. 92%	. 59 %	8. 21% 7. 21%	A. 77%	7.61%	7.82%	7.00%	7.59%	7. 69%	0.07%	80.8		8. 08% 0.00		× 0.0	1.7	8 1 1 X	200	38	8. 13%	,	٦.	x 10x	8 17X	_	8. 18%
		1981 1982 1983	1986	1987	1989	1991	2661	1994	1995	1936	1998	1999	2007	2002	2003	2002	2006	2008	2009	2010	2012	2013	2014	2015	2016	2018	2019	2020

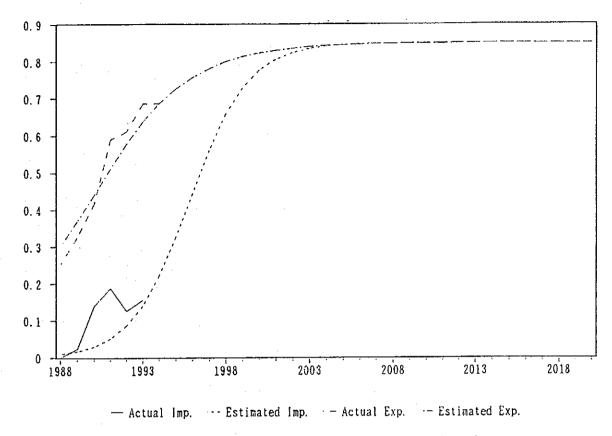


Fig. 3.10 Forecast of Container Rate at Port of Panjang (Unit: %)

Table 3.32 Forecast of Inter-Island Container Cargo Traffic at Port of Panjang

Leading

Type of Trade

- I	2	~~							70	220	534	047	027	024	137	5 5	562	227	855	730	300	011	33	214	200	200	30.	932	3
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y y ner	F					٠.	• •			٠ د د د	12	. 823	458	691	010		66	37	ගැ	2 5	200	33	56	3 5			80	# F	
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Londed Container TEI							:		- !	2	♥	œ	ري و`بي	ing ing	66.7	20,4	27, 40	33.45	33.65	47, 07	50,80	54, 49	28.2	66. 48	70.7	75, 409	80, 42	85, 78 91, 53	?
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Container Container Cargo Ton	1		•		:		:	710	1.38	2, 70'	5.27	10, 23,	36, 8 2]	6,662	4, 096 n 655	0, 75,	3, 283	8, 625	2000 2000 2000 2000	3, 400	3, 112	, 224	2,6	039	, 993	, 609	, 271	, 230 , 218	
				;				-				7	س ب	3	114, (3	8	4.5	ć č	<u> </u>	E	388	32	829.	883,	942,	, 905	1, 144	: :
ıtiul iincr			; ;	275	841	453	985	488 186	7, 474	574	742, 522	786, 654	850	346	984, 422	326	786	955	818	482	334	949	3.5	603	706	509	745	730	
Potential Container Ton				158,	483	428	569,	601, 4 633, 4	667,	703,	742,	85 25 25 25 25 25 25 25 25 25 25 25 25 25	က် ဆို ဆို	937,	934	120,	189,	9.2	427,	518,	6 5 5	2 2 2 3 5	348 348	33	211,	357,	513,	860,	
	995 73% 28%			399	338	283 283	356	20.0	84	22	54	200	7	20	- 2000 2000 2000 2000 2000 2000 2000 20	86	35	204 485	980	12	ريب 19	 		22 2,	348 2,	49	23.0	365	- - -
General Curgo Ton	0. 186. 107.		•	47,	156,	201,5	270,	310,6	332, 1	355.	380	408,0	173, 5	509, 1	598.7 598.7	33, 0	380,8	787. 4	846, 9	111,0		134 008	20:0	312, 622	12, 3	9	25, 00,00	3 25	The C+11.51
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rgo Liquid Bu Cargo Ton	1. 0 107. 88 107. 28		: .	07, 105 35, 288	232, 709	244, 252 270, 189	291, 931	9, 6,	4, 69	2, 53	× 1.	2, 13 4, 13	534, 443	7,86	675,629	730, 58	790, 04	024, 50 023, 99	999, 33	0,86	6 6 8	9.0	9.95	1, 152	2, 38(49	200	5, 627	
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rm of C ry Bulk Cargo Ton	0. 947 1. 61% 7. 28%			. 503	, 399	, 032 , 485	598	947, 869	484	980	720	3 2	211	702	806, 007	117	037, 108	218	514	093	700	652	520	237, 248	929	8/2	265	207	- 1
Form of Ga Dry Bulk Cargo Ton	0. 101. 107.			I, 002, I, 782,	3, 646,	, 104,	2,7	947	, 019	082	27.	37.0	. 480	586	808	, 920,	037	280.	406,	536,	200	96	083	237	388	204	869	038	
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Bagged Carrgo Ton	0. 103. 107.			200,	509,	514,	240,	578,	597,	017,	550	200	713.7	768. 9	798, 0	328,3	n N N N N N	26, 6	055, 0	280	7,00	8	61,0	5	ည်း	- L	70	57.8	L.
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<u> </u>							1			-		ಸ	ನನ	72	2	7 5	38	20	2,5	35	38	20	200	3 5	3 5	22	20	20	Source

Table 3.33 Forecast of Inter-Island Container Cargo Traffic at Port of Panjang

Unloading

Type of Trade

3.3.3 Port of Tanjung Priok

- (1) Socioeconomic framework of the hinterland
- 29. The hinterland of Tanjung Priok port is West Jawa province and the Special Capital District of Jakarta whose population will reach 63 million in 2010. The GRDP growth rate of the hinterland is estimated by applying the correlation between the GDP growth rate of Indonesia and the GRDP growth rate of hinterland from 1984 to 1992.
- 30. The GRDP growth rate under each scenario is listed below.

199-2003 2004-2008 2009-2013 2014-2018 1994-1998 Scenario 1 7.9% 8.4% 8.9% 10.6% 8.1% Scenario 2 9.7% 11.1% 10.8% 10.5% 8.5% Scenario 3 7.7% 7.6% 7.6% 7.4% 7.3%

Table 3.34 GRDP Growth

- (2) International container cargo traffic in 2010
- 31. International cargo is classified into export and import cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. The elasticity between the increase rate of each cargo type and the GDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of the containerized ratio is estimated from the correlation between the past trend and the logistic curve, which is shown in Fig.3.11. Container cargo volume in the target year is forecast by multiplying potential container cargo volume by the containerized ratio. The results are shown in Table 3.38 and .39 summarized below.

Table 3.35 International Potential Container Cargo Volume

(Unit: 1,000 TEU)

	T			······································			
Scenario		Export			Import		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	1,028	248	1,276	1,182	93	1,276	2,552
2010	1,881	94	1,975	1,841	134	1,975	3, 95 0
2018	4,085	136	4,221	3,330	891	4,221	8 ,44 2
Scenario		Export			Import		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2003	1,272	306	1,578	1,463	115	1,578	3,156
2010	2,525	126	2,651	2,471	180	2,651	5, 30 2
2018	5,281	176	5,457	4,305	1,152	5,457	10,914
Scenario		Export			Import		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	984	237	1,221	1,132	89	1,221	2,442
2010	1,658	83	1,741	1,623	118	1,741	3,482
2018	3,004	100	3,104	2,448	656	3,104	6,208

(3) Inter-island container cargo traffic in 2010

32. The inter-island cargo is classified into loading and unloading cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. The elastic value between the increase rate of each cargo type and the GRDP is calculated, and by adopting this value, future cargo volume of each cargo type is estimated for the three scenarios. The potential of container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of containerized ratio is estimated from the correlation between the past trend and the logistic curve which is shown in see Fig.3.12. Container cargo volume in the target year is forecast by multiplying the potential container cargo volume

by the containerized ratio. The results are presented in Table 3.40 and .41 and summarized below.

Table 3.36 Inter-island Potential Container Cargo Volume

(Unit: 1,000 TEU)

Scenario		Loading			Unloading		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	56	7	63	30	33	63	126
2010	141	13	154	84	70	154	308
2018	328	18	341	209	132	341	682
Scenario		Loading			Unloading		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2003	. 69	10	79	38	41	. 79	158
2010	192	17	209	114	95	209	418
2018	421	24	445	272	173	445	890
Scenario		Loading			Unloading		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	53	7	60	29	31	60	120
2010	122	11	133	72	61	133	266
2018	224	13	237	144	93	237	474

33. The inter-island container cargo traffic in 2010 is further estimated by adopting the 1992 OD table of inter-island cargo shown in **Table 3.16** [Oil and coal shipment are not included in these figures]. The inter-island container cargo volume through Tanjung Priok port is estimated in **Table 3.17** and summarized below.

Table 3.37 Domestic Container Cargo Volume

		Loading			Unloading	·	Total
	Loaded	Empty	Total	Loaded	Empty	Total	
2010	156	16	172	95	77	172	344

Table 3.38 Forecast of Caontainer cargo Traffic at Port of Tanjung Priok

Type of Espect

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8	6. 30K				. 460, 63		L	390, 780	147, 680	132, 160	579, BAI		3, 199, 229		80 - X		74, 269	0,340	7 355	27,456	19, 191	316.636
305	6. 29K	•						768 737	797, 518	85, 327	892, B45		4, 70 . 042		7. 4.K		£.	8, 160	6, 522	946, 230 200, 230	13, 720	429, 950
1993	6. GOX	4, 160, 925	5 1.999, 106	6, 160, 031	1, 999, 106	378 324		1	682, 673	130, 231	812, 904	_	5, 181, 443	_	82. 82x	417, 826	83, 216	B, 489	5, 5,	426, 315	BB, 761	515,076
8	6. 45x	1				393, 100	186, 303	622, 278				5, 786, 805	5, 608, 885	4, 797, 755	85. 54X					479, 775	107, 606	587, 382
1995	6. 33K	1	,		٠	407,942						_	6, 063, 736	5, 286, 549	87. IBX					528, 655	182, 400	711,061
1996	6. 2UX					422, 824		817,810				_	6, 547, 162		88. 23x						218, MI	756, 322
1997	·					438, 57 1						7, 274, 262	7, 074, 048	8, 268, 666	88. 30x						236, 019	MG4, 8488
1908	¥36. €					455, 243		613, 977				7, 857, 114	7, 648, 729		89.31x			-		680, 138	2/8, 530	931, 669
1999	6. 44x			•		472, 903	•	•				_	6, 276, 016	: 	35. 57x				:		258, 406	097, 720
	5.52x					461,623		612,005				_	8, 961, 247	<u>L.</u>	89. 74X			:		<u>.</u>	259, 977 1,	. 159 119
902	6. 60x					511, 477		8		-		9, 946, 262	9, 710, 353		89. 84X						259, 554 1,	131, 093
2002	5. 70X		-			532, 618	L.					10, 777, 502	10, 531, 319	:	89.90%			:		946, 74B	255, 405 1,	202, 153
2003	٠.					555, 144		6				11, 689, 125	11, 431, 876	i	30. 94x			•	_ _	028, 148	247, 656 1,	275, 805
	6. 90x					579, 160	ţ	614, 262				12, 689, 057	12, 420, 678	i	89. 96x	:	:			117,378	236, 321 1.	253, 897
						604, 799	<u>. </u>	616, 208				13, 788, 904	13, 507, 411		89. 98K		 - :	:		. 215, 340	_=	H36, 835
2000						632, 176						14, 997, 789	14, 702, 936		130.99x					323, 0.14		1, 525, 422
2007	7. 23x					661, 622						16, 333, 187	16, 023, 971	14, 420, 080	. NO. 99X					1, 442, 003	179, 296 1,	1, 621, 305
200X	7. 37x					693, 32H		626, 495				17.810,271	17, 485, 597	15, 736, 031	89. 99K				=	, 573, 600		1, 725, 232
2003	7.51%					727, 500	224, 214	631, 566				19, 446, 247	19, 104, 91B	17, 193, 746	30. OOK		3			1, 719, 375	118, 757	1, 838, 132
2030	7. 65%	-				764, 368	228,914	637, 523				21, 260, 660	20, 901, 36B	18, 810, 769	90.00x				=	1,881,077	2.02	1, 975, 131
20 7					:	804, 183		644, 404				23, 275, 742	22, 897, 050		30. COX				S.	2, 060, 103		2, 158, 607
2012		:			:	2,438	_:	Ì				25, 522, 522	25, 122, 76H		30 00x			4	<u> </u>	2, 261, 028	102, 072 2,	2, 363, 100
2013	8, 15x		:			894, 465	245, 785	3			*	28, 031, 808	27, 509, 155		30 GK		:	:	<u>.4</u>	2, 484, 909	106, 588 2,	2, 591, 391
8	8. 33x	-				945, 674		671,990				30, 839, 017	30, 391, 431	27, 352, 189	90.00%				<u> </u>	2, 735, 219	111, 487 2,	2, 8.16, 705
8		100	1			3, 601, 512	1	8				33, 984, 941	33, 510, 171	30, 159, 086	50,00k				ਨ	3, 015, 909	118, 808 3,	3, 132, 714
2016	B. 70x	2				1, 062, 485	267, 879	696, 880	-	- I make the state of the state		37, 516, 653	37, 012, 199	33, 310, 932	90.00x				c	3, 331, 033	122, 5.88 3,	453, 683
2017	B. 89x				The state of the same	1, 129, 161	276, 638	711, 538				41, 488, 570	40, 951, 653	36, 856, 456	90. 90K				ਲ	3, 685, 646	128, 881 3,	14, 527
2018	9.09%	**				1. 202, 186	3 286, 199	727, 815				45, 963, 723	45, 391, 250	40, 852, 103	90.00 x				5	4, 085, 210	135, 739 4,	220, 850
2019	9, 29%			***************************************	- The second sec	1, 282, 287	_					51, 015, 259	50, 403, 779	Ą					₹	4, 536, 339	143, 223 4,	679, 561
2020	9.49%	***************************************		-		1, 370, 292	308, 029	-				58, 728, 236	56, 073, 893	50, 466, 494	90.00 x				<u>v</u>	5, 048, 649	151, 399 5,	38, 045
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Table 3.39 Forecast of Caontainer cargo Traffic at Port of Tanjung Priok

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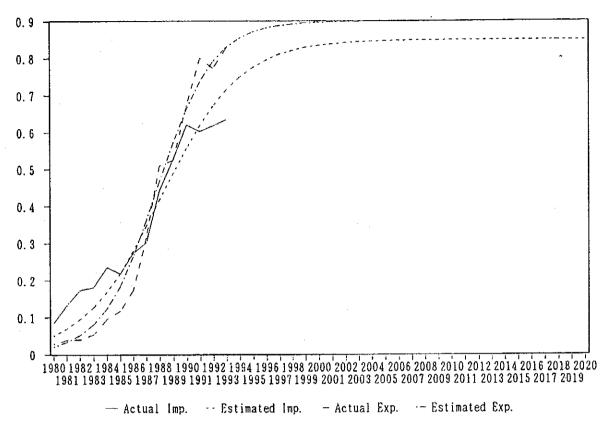


Fig. 3.11 Estimation of Container Rate at Port of Tanjung Priok (Unit %)

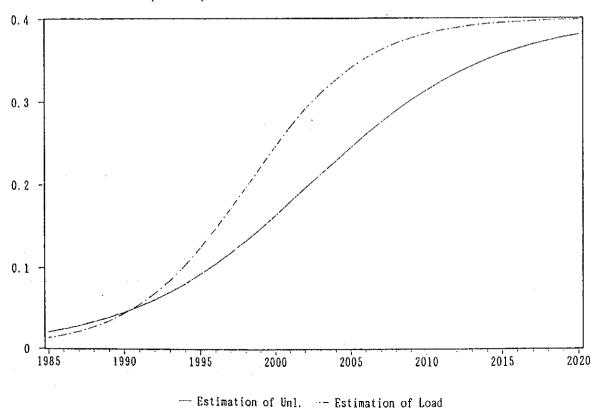


Fig. 3.12 Forecast of Container RAte of Inter-island (Unit %)

Table 3.40 Forecast of Inter-island Container cargo Traffic at Port of Tanjung Priok

Loading

Type of Trade

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Table 3.41 Forecast of Inter-island Container cargo Traffic at Port of Tanjung Priok

Type of Trade Unicading

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3.3.4 Port of Tanjung Emas

(1) Socioeconomic framework of the hinterland

34. The hinterland of Tanjung Emas port is Central Jawa province whose population will reach 30 million in 2010. The GRDP growth rate of the hinterland is estimated by applying the correlation between the GDP growth rate of Indonesia and the GRDP growth rate of hinterland from 1984 to 1992.

The GRDP growth rate under each scenario is listed below.

Table 3.42 GRDP Growth

(Unit: %)

	1994-1998	199-2003	2004-2008	2009-2013	2014-2018
Scenario 1	6.5	7.1	7.2	7.2	7.2
Scenario 2	9.6	9.7	8.7	7.5	6.5
Scenario 3	6.3	6.5	6.0	5.5	5.0

(2) International container cargo traffic in 2010

35. International cargo is classified into export and import cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. The elasticity between the increase rate of each cargo type and the GRDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of the containerized ratio is estimated from the correlation between the past trend and the logistic curve, which is shown in Fig.3.13. Container cargo volume in the target year is forecast by multiplying potential container cargo volume by the containerized ratio. The results are shown in Table 3.46 and .47 and summarized below.

Table 3.43 International Potential Container Cargo Volume

(Unit: 1,000 TEU)

Scenario		Export			Import		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	96	9	105	96	9	105	210
2010	147	27	174	164	10	174	348
2018	235	71	305	295	10	305	610
Scenario		Export			Import		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2003	. 120	12	132	121	11	132	264
2010	200	36	236	223	13	236	47 2
2018	309	94	403	389	14	403	806
Scenario		Export			Import		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	92	9	101	92	9	101	202
2010	129	24	153	144	9	153	306
2018	176	54	230	222	8	230	46

(3) Inter-island container cargo traffic in 2010

36. The inter-island cargo is classified into loading and unloading cargo, and further divided by cargo type such as liquid bulk cargo, dry bulk cargo, general cargo, bagged cargo, united cargo and container cargo. The elasticity between the increase rate of each cargo type and the GRDP growth rate is calculated, and by adopting this value, the future cargo volume of each cargo type is estimated for the three scenarios. The potential container cargo volume is estimated by assuming the final containerized ratio for each cargo type. The growth of the containerized ratio is estimated by the correlation between the past trend and the logistic curve. However, since inter-island container cargo has not yet been handled at the port of Tanjung Emas, the containerized

ratio is estimated based on the actual ratio at Tanjung Priok, Tanjung Perak and Ujung Pandan (see Fig.3.9). The container cargo volume in the target year is forecast by multiplying the potential container cargo volume by the containerized ratio. The results are presented in The Table 3.48 and .49 and suumarized following Tables.

Table 3.44 Inter-island Potential Container Cargo Volume

(Unit: 1,000 TEU)

Scenario		Loading			Unloading		Total
1	Loaded	Empty	Total	Loaded	Empty	Total	
2003	4	23	27	24	3	27	54
2010	15	62	<i>.</i> 77	71	6	77	154
2018	26	75	101	95	6	101	202
Scenario		Loading			Unloading		Total
2	Loaded	Empty	Total	Loaded	Empty	Total	
2003	5	30	35	31	4	35	70
2010	20	86	106	97	9	106	212
2018	34	100	134	127	7	134	268
Scenario		Loading			Unloading		Total
3	Loaded	Empty	Total	Loaded	Empty	Total	
2003	4	23	27	23	4	27	54
2010	14	55	69	63	6	69	138
2018	20	57	77	73	4	77	15

37. The inter-island container cargo traffic in 2010 is further estimated by adopting the 1992 OD table of inter-island cargo shown in **Table 3.16** [Oil and coal shipment are not included in these figures]. The inter-island container cargo volume through Tanjung Emas port is estimated in **Table 3.17** and summarized below.

Table 3.45 Domestic Container Cargo Volume

		Loading			Unloadin	g		Total
	Loaded	Empty	Total	Loaded	Empt	у	Total	1 -
2010	14	63	77	43		34	77	154

Table 3.46 Forecast of Container Cargo Traffic at Port of Tanjung Emas

(Scenario 1)

Expos L.

Type of Trade

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fith Con General Cargo Ton	.0. 105. 106.	159,	<u> </u>	525	23	200	2.6	÷ 2	ž	920	1,043	10	7,5	35	1.39	1, 47	 	77.	1,85	36	56	77.	2.5		2, 79	2	28. 28.	
1 n	·	288	202	325	303	112	158	20.5	726	923 030	564	404	050	27.7	239	730	759	469	058	7.75	27.6	2 2	412	020	100	812	233	٦
Genera Carsio Ton		123,																										
	022 90% 55%	247	8 33 1	45		S 5	ا ن	20 C	286	æ 2	25.2	33	200	3 20	36.	29	48) (-	, . E			 2 G 2 G		502	<u>ب</u>	2	22.22	-
iquid Bul Curgo Ton	- 58 9 9 9 9	480	- ၃) ဗို	% % %	27,5	42 25 25 25 25 25 25	5000	4.5 7.5 0.6	51,2	55 - 35	. 00 . 00 . 00	73,3	8 0 0 0 0	95	05,4	15,4	2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	51.6	66.1	S :	77.	95		287, 2	314, 7	344,0	414,2	
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ı, 	0. 989 05. 40% 06. 55%	38, 825 26, 410																										F
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n of Car y Bulk Cargo Ton		873 499																										
Form of Dry 1 Can		24 6		당도	32	200	101	92	133	132	12	162	77	8	213	227	243	277	296	316		22.5	410	43.	197	5	200	į
i 9	956 84% 55%	952	250	329	429	347) 33 5	25	844	715	920	965	85.5 85.5 85.5	675	941	239	570	333	779	256	2.0	200	212	20.7	005	33	505	
Rugged Curgo Ton	101. 106.	8,83 0 0 0	- - - - - - - - - - - - - - - - - - -	199	35	6.1	2	5 4	4	455	ĝ.	49	Ç 1	- G	53	52	ည်	, 50	60	25	3 H	6 5	ŝ	6	72	2	€.	
		534 546	S S .	72	77	5 3	<u> </u>						:	<u>:</u> -	•	: :	•							-				
nvent Cargo Ton		198		ა. დ. ლ	14,50	2 2 2 2 3 2 3 2 3 2	!			٠			:	i	:													
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Cargo Cargo Cargo Cargo Ton Ton		9, 706 36, 621	- x.	4, 23. 52.53.	30	% 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									;	· :												
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St. E		240	2 to	034 2034	381	553							1												-		•	
Tj. Emus Ton		208 186	57.	25,52	739	22.5								,	:	: :												
·	328	34%	200	200	8	ά ά ά ά	X X	X0.	×.	368	ŠŠ	က်		4.4 7.4	5%	200	ŝ	9	17%	ž	ž	200	36	* ! ! ! !	22%	22.	% % % %	
GDP Increase Rate	6.9	တင်း သင်း	က် တိ	٠. د.		တ် အ	, မာ မြောင် 	. ය ර ග්	, 	ಘ. -		2	<u>.</u> .		7	<u> </u>	٠-'د		<u>r</u>	r- (~ r	<u>.</u> .		-		۱ ۱	٠.	į
		ကြသေး	- ×:	ာ့ င		<u>ა</u> ::	<u> </u>	ې د	Ŀ	<u>∞</u> c	. 0	=	çı e		מו	و	<u>-</u> 2	Q 🖅	0		N :	უ -	ric	رد	-	x :	25	
		25.25	S S	38	3	25	5	38	3	<u> </u>	38	200	200	35	200	200	25	38	8	50	25	35	3 =	0	\circ	2	2019	

Table 3.47 Forecast of Container Cargo Traffic at Port of Tanjung Emas

Import.

Type of Trade

r Fotal			70 G, 820 35 12, 148	<u> </u>	i≋: 	37.	<u>,</u> 5.	.	S.		*	S 8	105	6	122,	E :		101	173,	æ 5		22.5	2.16	204	284	302	327.	325	
Confainc Empty Confaise				ಪ್ ಪ	ร์สรัน	12.		7	<u> </u>	11.	10,	<u>ක්</u>	တ်င	်	တ်	 	ನ್ <i>ಕ</i> 		ත්	<u>್</u> -	ei e	nî eri		က် •	10,	≘.	2;		
Container Tigu		භි	7, 753	====	125	25.		45,	325	66.	74,	81, 20,	ž E	104	112,	225	121	152,	163,		183 183 183	212	22.2	254	274,	205	317,		
Katio		4. 12% 12. 64%	17. 03% 22. 87%																										
Container Cargo Ton		9,091 37,073	58, 587 92, 514	138, 433	209, 953	289, 318	348, 850	501, 679	579, 217	735, 436	814,626	894, 625	976, 377 060, 869	149,033	1, 241, 795	340,001	1, 444, 481	1, 675, 420	1, 803, 454	5	2, 088, 719	- X	9	30	015,	245,	493	761,	
totential Container Ton			343, 102 404, 596													8	200		126,	286	459	240	003	296	547	818	110,	4, 425, 307	
General Carso Ton	1.004 107.02% 106.55%	198, 828 268, 781	302, 574 383, 239	401, 353	469, 780	614, 289	658, 804 705, 620	754, 793	808, 013	931, 413	005	8	1, 160, 402 1	343	446,	556, 342	200,000	940, 536	088, 832	248, 576	420, 081	805,161	021, 281	253, 359	503, 499	773, 132	063, 801	377,	-
General Carso			243, 987 290, 725				:									described and upday describe											•	-	
iquid Bul Cargo Ton	0. 984 104. 90% 106. 55%	1, 706	1, 474	15, 613	18,283	39, 892	41, 935	46, 159	48, 434	53, 639	56, 571	59, 665	62, 930 68, 376	70,014	73,853	77, 906	82, 185	91, 474	96, 513,	101,834	107, 455	110, 535	120, 297	133, 302	140, 705	148, 530	150, 801	165, 544	
c ry Bulk L Ragged Ton	1, 006 107, 16% 106, 55%		93, 093 69, 621																										City La Toron
Tal of Carry Carry Atk III Carry +		3,443	12, 332 28, 385	21, 290	60,510	103, 996	114, 623	137, 835	150, 757	180, 739	197, 667	216, 124	238, 057	280, 829	305, 930	333, 032	362, 297	428 020	464, 805	504, 048	547,609	204, 003	698 212	750, 648	819, 700	887, 927	961, 556 1	, 041, 088 1	10. 71.0
Kargod P Cargo Ton	0. 945 100. 72% 106. 55%	43,096	80, 760 41, 236	70, 966	50, 024	51, 752 45, 639	46, 064	46, 742	47, 091	48,077	48, 683	49, 299	49, 925	51,204	51,859	52, 525	53, 201	54, 587	55, 298	50,022	56, 757	26, 300	59,000	59, 837	60, 043	01,463	62, 299	63, 151 1	100 1000 100
		237, 982	338, 554	370, 788	334, 644	420, 993 514, 497							!				:												
Container Convention Cargo Cargo Ton Ton		9,091	58, 587	138, 433	269, 953	305, 999 289, 318		•							1						- 1-					•			
Total C		247, 073	397, 141	509, 221	650, 331 604, 597	726, 992 803, 815					•			:							:				•				
(DP Increase Rate	6. 55%	8. 34% 17%	2 0 0 0 0 0 0 0 0 0	6.46%	7. 00%	3600 1000 1000 1000 1000 1000 1000 1000	6.78%	7 00 00 00 00 00 00	6.58%	0.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00	7. 13%	7.13%	7 13%	7. 14%	7. 15%	7, 15%	7.15%	7.16%	7.17%	7. 18%	7, 18%	7. 19%	7. 20%	7. 200	7.22%	7, 22%	7, 23%	7.24%	7
Porrt Unit		1985 1986	1987	1980	1990	1992	56.	200	1997	868	2000	2001	2002	2003	2005	2006	2007	2008	2010	2011	2012	2013	2014	2013	2012	2018	2019	2020	

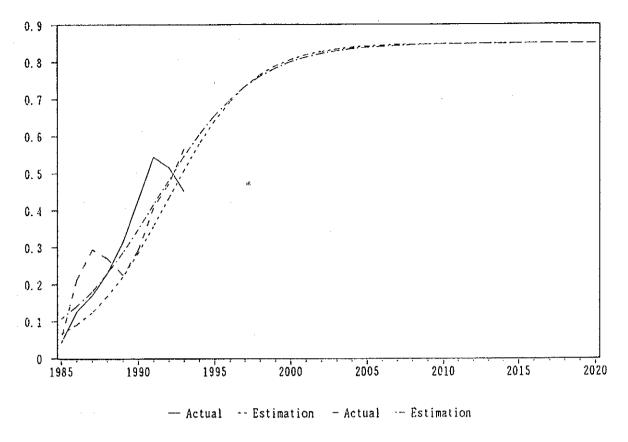


Fig. 3.13 Estimation of Container Ratio (Unit: %)

Table 3.48 Forecast of Container Cargo Traffic at Port of Tanjung Emas

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	Total			2882		3, 45	10, 99 18, 19	38, 93	19, 50 58, 54	65, 42 70, 60	74, 64 78, 00	81, 01	86, 68	92, 45	95, 98, 97, 10, 10,	101,88	108, 84	
	Container Empty Container TEU			30 54 96	304	535	1,530 2,402		5, 563 6, 214	G. 570 G. 706	6, 703 6, 621	6, 497 6, 354	G, 202	2 60 cm	5, 598	5,456	5, 183	
	Loaded Container TEU			120 229 436	828 1, 562	လြိုက်	တ် ကို	24, 390 34, 321			67, 942 71, 388	74,	& &	8	ဘီ ၏ တ	96, 431		
)	Ratio			0. 11% 0. 21% 0. 38%		2.35%		17. 12% 23. 27%			38. 75% 39. 32%	39.63% 39.80%	39.89% 39.03%	39. 97%	39.08%			
	Container Container Caryo Ton			1, 497 2, 861 5, 448	10, 345		118, 272	304, 877 429, 010		735, 644		931, 500 968, 952			. 121, 6/3 . 162, 749		, 295, 790	-
	Potential C Container Ton	1. 026 109. 58% 106. 75%	623, 805 776, 949 1, 006, 842 1, 408, 289 1, 224, 212 1, 183, 196 1, 379, 617	1, 336, 979 1, 376, 780 1, 415, 984					907, 974,	044, 116,		350, 434,	2, 521, 893 1 2, 612, 711 1	707	2, 805, 358 2, 907, 528 1	013,		study Team
(Scenario 1)	General Cargo Ton	0. 965 102. 79% 106. 55%	559, 735 702, 723 863, 423 1, 311, 914 1, 073, 027 1, 063, 848 1, 240, 264 1, 27, 844	1, 233, 833 1, 269, 240 1, 303, 987	1, 340, 714 1, 379, 546	1, 425, 625 1, 473, 284	1, 522, 581 1, 573, 580	1, 626, 344 1, 680, 936	1, 737, 422 1, 795, 872	375	983, 854 050, 992	120, 510 192, 517	267, 109 344, 386	424, 454	593, 402	682, 516	2, 870, 645	by The stud
s)	ngo Liquid Bul Cargo Ton	1. 154 122. 93% 106. 55%	5, 032 1, 1413 3, 359 63, 359 61, 569 97, 308 150, 328 147, 048	158, 538 170, 677 183, 475	212, 585	230, 058 248, 975	269, 457 291, 635	341, 657			944		310	120	961, 118		1, 222, 304	stinuted
	Form of Cargo Dry Bulk Lic Cargo C Ton	0. 977 104. 06% 106. 55%	10, 158 2, 852 43, 641 125, 089 175, 454 353, 992 383, 403 383, 403 383, 383		450, 685	491, 163 513, 864		588, 570 615, 855			772, 938 808, 985	846, 756 886, 344	927, 841		1, 064, 763 1, 114, 903	1, 167, 484	1, 280, 475	Even and Estimated by The
Unloading	Bugged Cargo Ton	0. 972 103. 56% 106. 55%	127, 134 148, 169 285, 795 186, 079 282, 384 266, 245 248, 641 168, 226	174, 584 180, 946 187, 299	194, 023 201, 145	209, 428 218, 059	227, 051 236, 422	246, 189 256, 368	266, 977 278, 035	289, 565 301, 588	314, 125 327, 200	340, 837 355, 063	369, 906	401, 555	418, 423	454, 405	45, 530	of Tanjung
i	Ton			936, 1037,	182, 262,	356. 454.	556, 664,	776, 894 ,	018, 148,	285, 428,	578, 737,	903, 078,	263,	662,	105,	345	5, 867, 043	of Port
Type of Trade	CRDP Increase Rate		12, 77% 8, 34% 6, 07% 5, 88% 6, 58% 7, 06% 7, 16% 6, 59% 6, 59%				7. 13%					7, 18%	7. 19%		7.21%	7. 22%	7.24%	: Statistics
	Port		200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1994 1995	1997	1999	2002	2003	2005 2006	2007	2009	2011	2013	2015	2016	2018	2020	Source

Table 3.49 Forecast of Container Cargo Traffic at Port of Tanjung Emas

Loading

Type of Trade

Total TBII		· · · · · · · · · · · · · · · · · · ·	282 532	999 1, 866	3, 459 6, 278	0, 992 8, 198	7,870	5, 601	5, 542	0, 604	8, 000	3, 870	G 085	2, 233	5, 478	8, 618	7,887	8,846	
			250 468															· ·	
Container Empty Container TEU				1	ស៊ីហ៍	တ်ည်	233	2	ტ წ	5,5	හි		67,	35	72,	7,		79,	
Loaded Container TEU			333	125 242	464 872	1, 582 2, 713	4, 303	8, 209	10, 029	12, 953	15, 313	16, 445	18,800	21, 405	22, 831	24, 351	25, 972	29, 551	
Ratio	- <u> </u>	1	0.00	0.71%	2.35%	7.11%	17, 12%	28.85%	33, 12%	37, 73%	39.32%	39.80%	39.89%	200 CC	39. 98%	39, 99%	40.00%	40.00%	II
Container Container Cargo Ton			411	1, 560 3, 020	5, 799 10, 902	19, 773 33, 907	53, 791	102, 612	125, 366 144, 993	161, 915	191, 411	219, 990	235, 005	250, 814	285, 390	304, 385	324, 651	309, 380	-
Potential C Container Ton	0. 920 98. 23% 106. 75%	205, 477 214, 227 252, 117 262, 014 255, 212 182, 200 273, 912 212, 284 178, 092	197, 705 197, 790 208, 349	219, 798 232, 203	246, 441 261, 697	278, 035 295, 523	314, 234	355, 644	378, 517 402, 964	429, 090	486, 832	552, 733	589, 097	669, 443	713, 774	761, 133	811, 726	923, 525	ly Team
General F Carxo (0. 924 98. 59% 106. 75%	184, 372 193, 701 216, 205 244, 083 223, 694 156, 430 241, 477 190, 842	1/4, 816 185, 531 196, 668	208, 622 221, 462	236, 033 251, 570	268, 136 285, 802	304, 642	346, 164	369, 020 393, 402	419, 413	476, 775	542, 089	578, 078	657, 498	701, 274	/748, 012	797, 916	908, 112	by The study
go Jiquid Bul Cargo Ton	1. 040 111. 04% 106. 75%	1, 657 1, 300 6, 200 13, 283 22, 094 23, 130 23, 130	21, 619 23, 112 24, 674	26, 364 28, 191	30, 281 32, 526	34, 938 37, 531	40,318	46, 532	49, 992 53, 713	57, 713	66, 640	71, 614	82, 719	95, 571	102, 738	110, 451	118, 751	137, 298	Earna and Estimated by
Form of Cargo Dry Bulk Liquid Bul Cargo Cargo Ton Ton	1.098 117.18% 106.75%	3, 346 10, 928 23, 831 18, 114 27, 018 80, 374 55, 995 56, 995	56, 565 60, 686 65, 016	69, 713	80, 664 86, 975	93, 782 101, 126	109,050	126, 822	136, 775 147, 516	159, 110	185, 131	215, 458	232, 459	220, 820	292, 068	315, 204	340, 199	396, 383	
Bagged Cargo Ton	0.870 92.84% 106.75%		21, 455 19, 896 18, 427	יישיטו	75	12, 810 11, 935	22	ر جو د	28 8 383 383	∞	3 to 0	∞	4	3, 122	4, 452		യ⊂	3, 367	of Tanjung
j. Eners Ton	0. 951 101. 50% 106. 75%	231, 253 235, 791 300, 003 308, 741 315, 470 267, 211 404, 395 311, 226 260, 470	274, 456 289, 225 304, 785	321, 778	361, 737 384, 820	409, 667	465, 130	529, 173	564, 783	644, 048	735, 331	786, 021	898, 751	1 028 494	1, 100, 533	.00	1, 260, 736	1, 445, 160	cs of Port
GRDP Increase Rate		***************************************		6. 58% 6. 66%			-		7. 15%	-		<u> </u>	(20% 20%				7. 24%	Statisti
Port Unit		1984 1985 1985 1986 1989 1989 1991 1992	1994 1995	1997	1999	2001	2003	2002	2006	2008	2010	2011	2013	2014	2016	2017	2018	2020	Source