Chapter 9 PORT FACILITIES

9.1 Port Facilities

(1) Port System in Indonesia

The Sea Port in Indonesia are categorized into two kinds in accordance with shipping low No.21/1992. One is public port to support public service under MOC and the other is special port to support certain industrial purpose under a private company. The Public ports in Indonesia are classified into two categories, commercial ports managed by four state owned companies (IPC I~IV) and non-commercial ports directly managed by government local offices (KANPEL) or its working units. Besides these ports, there are ferry terminals under DGLT and state owned company (ASDP), and fishery ports under the Ministry of Agriculture Directorate General of Fisheries and Provincial Government.

Table 9.1 Number of Ports in each Province

Area	Province	Commercial Port		NonCom Port	Special	Ferry	Total
		Adm.	Number				
Sumatra	1. D.I Aceh	IPC I	6	10	25		
	2. North Sumatra	I	8	45	53		
	3. Riau	I	12	43	115		
	4. West Sumatra	IPCII	3	6	7		
	5. Jambi	II	3	8	45		
	6. South Sumatra	II	8	3	69		
	7. Bengkulu	II	1	3	2		
	8. Lampung	II	1	11	5	27	519
Jawa and Bali	9. West Jawa	IPC II	3	13	35		
	10.DKI. Jakarta	II	3	0	23		
	11.Central Jawa	IPCIII	3	10	56		
	12.Yogyakarta	III	0	0	1		
	13.East Jawa	III	8	18	35		
	14.Bali	III	3	7	18	19	255
Kalimantan	15.West Kalimantan	IPC II	7	4	196		
	16.Central Kalimantan	IPCIII	8	3	111		
	17.South Kalimantan	III	2	4	94		
	18.East Kalimantan	IPCIV	5	13	138	26	611
Sulawesi	19.South Sulawesi	IPCIV	4	37	7		
	20.Southeast Sulawesi	IV	1	33	9		
	21.Central Sulawesi	IV	2	22	42		
	22.North Sulawesi	IV	3	36	30	19	245
Other Island	23.West Nusa Tenggara	IPCIII	3	12	19		
	24.East Nusa Tenggara	III	5	30	19		
	25.East Timor	III	1	9	2		
	26.Maluku	IPCIV	3	56	25		
	27.Irian Jaya	IV	6	108	32	62	392
Total			112	544	*1,213	**153	2,022

Note : * Number of special ports in each province is based on data at 1994

** Number of ferry terminals is based on "the development study on nationwide ferry service route in Indonesia"

(2) Port Facilities Development During REPELITA I ～VI

During REPELITA I～V various kind of port facilities were developed based on a phased approach. In initial phase of port facilities development, it is focused on to provide adequate facilities at four major ports (Tg.priok, Tg.perak Belawan and Ujung Pandang). In second phase, the master plans and short-term development plans of main 43 ports designated in ISTS (Integrated Sea Transportation System) are prepared. In recent phase corresponding to rapid growth of container cargo, the development of container handling terminal started in REPELITA V at main port (Tg.priok, Tg.perak and Belawan).

From REPELITA I to REPELITA V, port facilities and equipment has been developed either through national budget or through foreign loan (IBRD, ADB, KFW, OECF, Dutch, etc.). But during REPELITA VI the activities of IPC/Private are very effective for development of port facilities and 65% of expenditure is supported by IPC/Private and the government budget allocated for construction and/or rehabilitation of non-commercial port, especially in remote area in eastern Indonesia.

(3) Existing Port Facilities

a) Major Ports

In order to understand the present situation of the port facilities in Indonesia, 88 ports are selected as a main port based on the national transportation system which designate classification of the each port and activities and location of commercial port. And some non-commercial ports are selected to supplement some region located far away from commercial port. The data for each port are summarized. (See Table C.9.1.7 in Appendix C)

Tg.Priok, Tg.Perak, Belawan and Makassar, which designated as four Gate Port in MSDP, are the major port in Indonesia at present.

b) Other ports

Other ports are mainly developed to support local economic activity and its facilities are very limited, in general, and about 50% of non-commercial port and some commercial ports have no berthing facilities.

c) Special port

Special ports were constructed only for private use and prohibited, in general, to use public purpose. Therefore, there are a lot of kind of port facilities including very large industrial port or rather small tourism pier. And some data indicate that larger volume of cargo is handled by special port compared to public port.

(4) Port Master Plan

At 43 main port, master plan has been prepared supported by IBRD, ADB, OECF, Dutch and K.F.W from end of 1970's to beginning of 1980's and several port master plans revised in these days. In 1996 Government Regulation 70/1996 is issued in which detail requirement for port affairs are defined. For 23 commercial ports, the master plan concepts are prepared to define the preliminary main function and development plan, in 1996.

9.2 Cost Estimation and Construction Cost

(1) Cost Estimation Procedure in DGSC

The annual budget for port development is estimated, in general, based on "ANCARAN-CAR HARGA SATUAN POKOK KEGIATAN PER DEPARTMENLEMBAGA" (Unit price Estimation for Activities of each Department/Institute) and some data collected from market price. Construction cost is adjusted considering regional difference.

Table 9.2 Adjustment Factor for Construction Cost in Each Region

Region Number	1	2	3	4	5
Area	Jawa	Sumatra,Bali	Kalimantan, Southeast, Sulawesi, Central Sulawesi, NTB	North Sulawesi, South Sulawesi, NTT	Maluku, Irian Jaya, East Timor
Factor	0.80	0.90	1.00	1.10	1.20

Labor cost is more expensive and material cost, mobilization cost and construction cost are cheaper in West Jawa than other area except in Irian Jaya. The reasons of cost difference are that some materials, experienced workers and equipment are only available in Jawa area and have to mobilize/demobilize to/from construction site with special service.

In order to make the investment effective, from the beginning of planning and designing stage, the port development program should be conducted to use local material and local equipment intensively, taking into consideration such as type of facilities, local character, maintenance cost and available volume of materials.

(2) Construction Cost

The construction works in Tg.Priok are rather cheap compared to the estimation cost applied in DGSC because the cost include the cost of revetment for container yard and development in Tg.Priok port is very effective for Indonesian economic activity.

The construction cost in local area is expensive compared to Jawa, Sumatra area. There are more than 200 non-commercial ports without berthing facilities. For an urgent port development in local area, therefore, it could be reasonable to use local low cost material and equipment available in neighboring area. The new technical guideline should be prepared for local port planning, designing and construction for urgent development.

Chapter 10 PORT ADMINISTRATION, MANAGEMENT AND OPERATION

10.1 Major Organizations of the Port Sector

Major organizations of the port sector are as follows;

1) Ministry of Communications(MOC) which issues administrative and manageable/ operational policies for all ports

2) Directorate General of Sea Communication(DGSC) which executes more detailed MOC policies.

3) Regional Office of Communications(KANWIL) and Port Administration Office(ADPEL) which execute actual tasks under DGSC supervision

4) Indonesian Port Corporation I - IV(IPC I - IV) which are port management bodies

5) State Minister of Empowerment of State Owned Enterprises which is to empower state owned Enterprises and to encourage privatization process including IPC management

Main tasks and functions of DGSC are as follows;

(1) Tasks

: to carry out a part of the main tasks of MOC in the sea transport sector in accordance with the policies determined by the Minister of Communications and based on related laws and regulations.

(2) Functions

: to formulate technical policies, provide guidance and standards for sea transportation and port activities, issue permits for ships and seamen and execute navigation aids, coast-guard and rescue.

(3) Organization

DGSC comprises of:

Secretariat of the Directorate General
Directorate of Sea Transport
Directorate of Port and Dredging
Directorate of Marine Safety
Directorate of Navigation
Directorate of Coast-guard

The main duty of KANWIL is to execute MOC policies of Planning Bureau, Directorates of Land, Sea and Air Communications in each provincial area as the vertical organization of

MOC.

ADPEL is positioned under and responsible to the Head of KANWIL.

ADPEL has duties to execute port activity services, to control and maintain the port basin/channel, sea transportation, harbor-master affairs, security of port and ship berthing as well as maritime service activities in the port.

10.2 Present Situation of Port Administration and Management/Operation

"Shipping Law", among others, is the fundamental law which support the port administration and management/operation in Indonesia issued in September 1992. This is made up of essential articles and provisions so that supplemental regulations and decrees are necessary for the actual implementation of port administration and management/operation works.

"PR No. 70 / 1996 Port Affairs" is to supplement above introduced "Shipping Law" for its actual implementation of port affairs, and is the newest one. It is stipulated that the Minister of Communications determines the port master plan after obtaining opinions from the local government and other relevant authorities, and also prepares the standards of port facilities etc. To cope with this stipulation, DGSC is now preparing "Draft KM Procedure of Port Master Plan Arrangement".

And for more detailed implementation procedures to be made clear, the "Draft KM National Port Affairs Arrangement" is now preparing in the fields of port planning, port use and port control affairs, by DGSC.

The try-out of One Roof Service Center for ships and loading/unloading in Tg. Priok Port was implemented by No. IM 4/AL 3014/PHB-1995. Then, by No. IM-7/AL-3011/PHB 1995, the try-out period was extended until the completion of the hardware and software structures.

10.3 Recommendations on Related Items Shown in Recent Study Reports

Appendix C.10.11 to C.10.14 show the recommendations in recent study reports.

10.4 Productivity of Container Handling

In the port of Tanjung Priok, there are three container terminals, CT I, CT II and CT III(KOJA). The CT I has four berths (total length: 900m, width: 27m, depth: 11m, with 8 gantry cranes), the CT II has 2 berths (total length: 450m, width: 16m, depth: 8.6m, with 5 gantry

cranes), and the CT III has 2 berths (total length: 510m, width: 40m, depth: 14.0m, with 5 gantry cranes). Computer system is employed each terminals for processing ship and yard planning, documentation and information. The terminals have EDI systems connected to shipping companies and customs.

(1) Productivity of loading and unloading in 1996

1) Container handling productivity (annual container throughput/total length of berths) is about 1,139.6 TEUs/m(=1,499,437TEUs/1,410m). It is more than that of Manila International Container Terminal(MICT)(936,Philippine) and the Port of Laem Chabang (Thailand, 455), is on a par with that of the Port of Hong Kong(1,017 at HIT, 1,115 at MTL), and is less than that of the Port of Singapore(1,919 at Tanjong Pagar Terminal, 1,770 at Keppel Terminal and 1,592 at Brani Terminal).

2) Quay crane operational productivity(annual container throughput/total number of quay cranes) is 88,202TEU/crane/Year(= 1,499,437TEUs/17 unit). It is more than that of Laem Chabang (60,719), is on a par with that of Hong Kong(88,888 at HIT, 106,937 at MTL) and MICT(93,607), and is less than that of Singapore(141,724 at Tanjong Pagar Terminal, 136,944 at Keppel Terminal, and 121,935 at Brani Terminal).

(2) Container turnover in storage in 1996

Container turnover in storage (annual container throughput/storage capacity) is 42.59Times/ Year (1,499,437TEUs /35,204TEUs). It is on a par with that of Hong Kong (47.09 at HIT, 39.76 at MTL) and MICT(44.34), and is less than that of Singapore(256.90 at Tanjong Pagar Terminal, 344.37 at Keppel Terminal and 252.00 at Brani Terminal). Singapore shows extremely high container turnover in storage.

Chapter 11 FINANCE OF THE PORT DEVELOPMENT AND MANAGEMENT

11.1 Financial Situation of the Government

11.1.1 Economic Situation of Indonesia

Indonesia has experienced great success in implementing its long term development plan in the last ten years. However, drastic Rupiah depreciation occurred in latter part of 1997 forced the government to reevaluate not only its projected economic growth rate but also inflation rate.

11.1.2 Financial Situation of Port Development and Operation

(1) Budget for Port Development in Transportation Sector

Budget used for the whole transportation sector in national budget accounts for 5% or so. Budget used for port development in FY 1997 is about Rp.288 billion, accounting for only 6% in whole transportation sector.

(2) Allocation of National Budget for Port Development

At present, the national budget for port development is allocated to commercial ports as well as non-commercial ports. The share of the budget for non-commercial ports increase from 30% in FY 1996 to 49% in FY 1997, while that for IPC ports decrease from 70% in FY 1996 to 51% in FY 1997.

(3) National Budget for the Development of IPC Ports

In principle, the national government is fully responsible for channel dredging, navigation safety and construction of wharves and yards (depends upon the financial situation of IPC). On the other hand, as a rule, IPCs are responsible for maintenance dredging in basin, construction of wharves, yards, warehouse and sheds, and purchase of cargo handling equipment such as gantry cranes and transtainers.

(4) Financial Sources for Port Development of IPC Ports

The budget for port development comprises three financial sources (own budget, national budget & foreign loan). Funds of IPC I ～IV in the first three years (1994-96) in REPELITA VI are referred to in the following Table 11.1.1.

Table 11.1.1 Financial Sources of IPC I ～IV for the Port Development in the First Three Years in REPELITA VI

(Unit : Rp.million)

No.	Port Corporation	Financial Sources			Total
		IPC Budget	National Budget	Foreign Loan	
1	IPC I	12,027 (21%)	22,758 (39%)	23,418 (40%)	58,203 (100%)
2	IPC II	340,408 (96%)	9,225 (3%)	3,008 (1%)	352,641 (100%)
3	IPC III	95,796 (31%)	97,751 (31%)	120,024 (38%)	313,571 (100%)
4	IPC IV	5,613 (3%)	67,089 (39%)	97,749 (58%)	170,451 (100%)
Total		453,844	196,823	244,199	894,866

Note : Percentage : proportion of budget by finance source in total budget of each corporation.

Source : DGSC

The Table reveals the following ;

1) Budget of IPC II and III is far larger than that of IPC I and IV.
2) While IPC II doesn't depend on national fund at all, other IPC fully depend on it.
3) In particular, IPC IV's own budget is very small, and 97% of its budget comes from national budget and foreign loan.

(5) National Budget for the Development of Non-commercial Ports

Non-commercial ports are directly managed and operated by the government. Generally, most of non-commercial ports can't cover the operational costs with the operational revenues.

11.2 Financial Situation of IPC I ～IV

The financial scale of each IPC in terms of budget, performance and property is different from each other. Generally speaking, IPC II has been enjoying a large profit while IPC I and IV have been earning small profits. Net income of IPC I ～IV in the last four years is summarized in Figure 11.2.1, and total assets of IPC I ～IV in the last four years is referred to Figure 11.2.2. Furthermore, operating revenues and expenses of IPC I ～IV is summarized in Figure 11.2.3.

Figure 11.2.1 Net Income of IPC I ~IV in the Last Four Years

(Unit : Million Rp.)

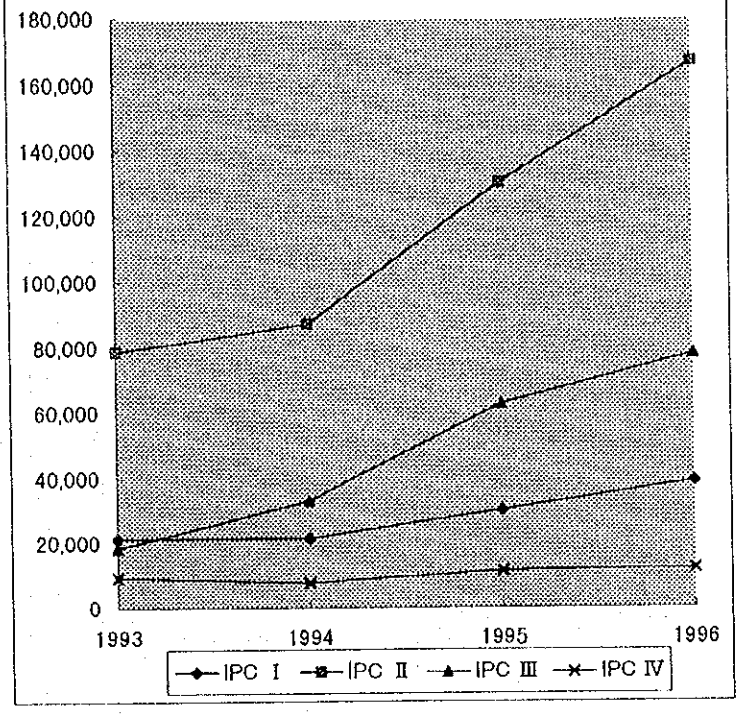


Figure 11.2.2 Total Assets of IPC I ~IV in the Last Four Years

(Unit : Million Rp.)

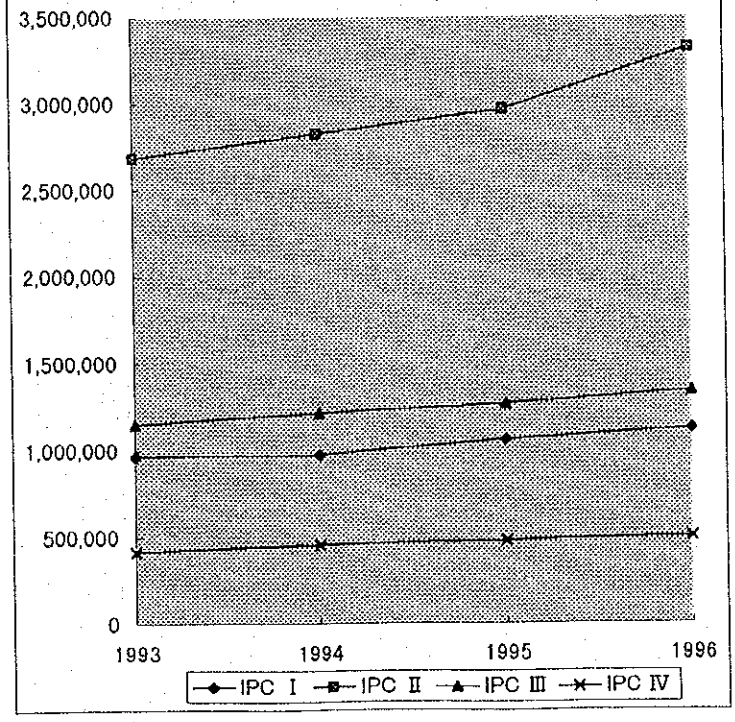
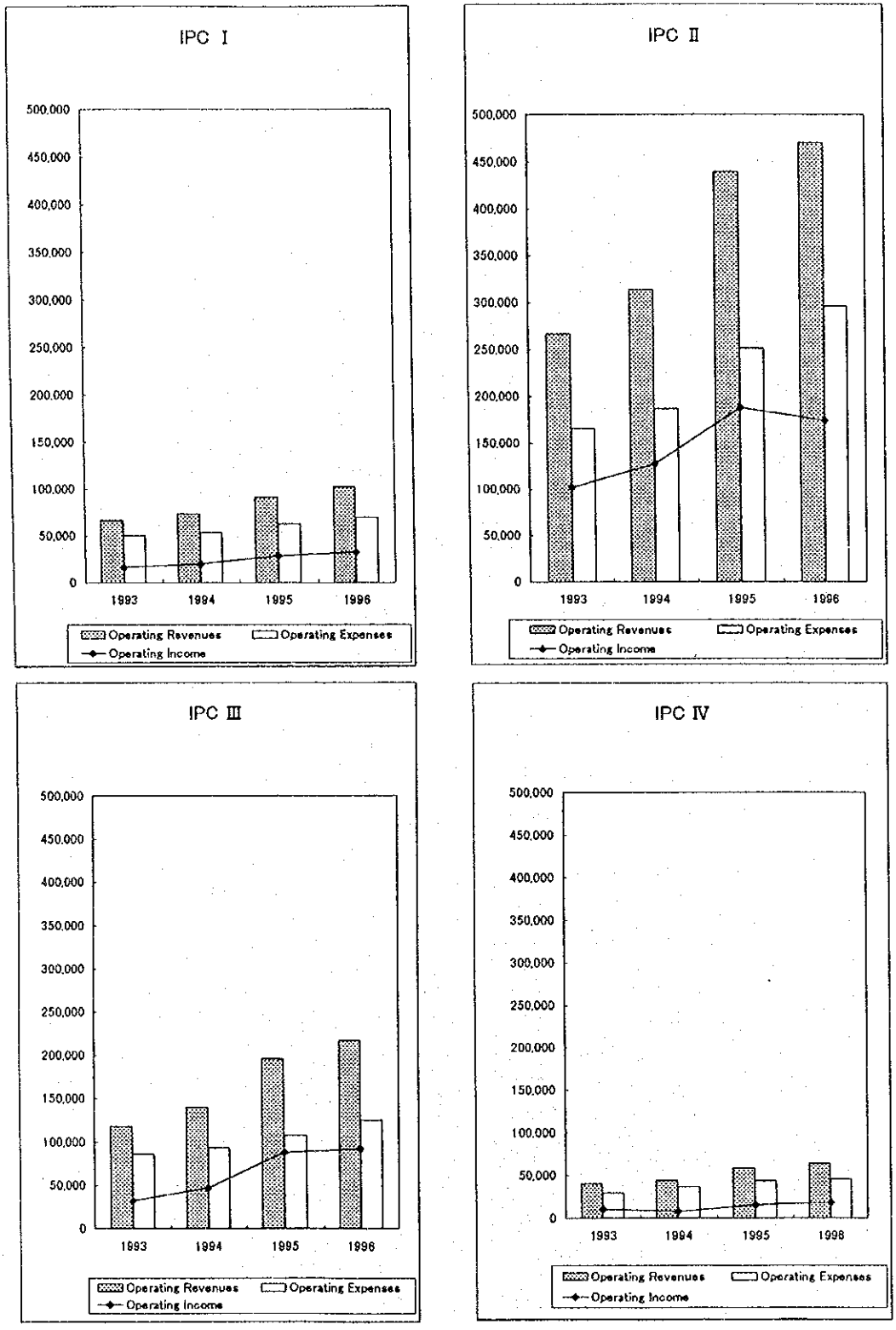


Figure 11.2.3 Operating Revenues and Expenses of IPC I ～IVin the last four years

(Unit : million Rp.)



11.2.1 Financial Situation of IPC I

Profit before tax of IPC I in 1996 amounts to about Rp.46,491 million. About 74% of the profit comes from the Port of "Belawan", and most of the other profits come from the Port of "Dumai" and "Lhok Seumawa". That is to say, total profit of the three ports covers the other deficit-stricken ports.

Although total scale of the assets in 1996 amounts to about Rp.1,120 billion, IPC I ranks third after IPC II and III. IPC I has been repaying principal and interest of long-term notes for development of "Belawan" and "Dumai". The total of principal and interest will reach about Rp.79 billion in 1998.

11.2.2 Financial Situation of IPC II

IPC II has been enjoying a surplus since 1987, and the profit before tax in 1996 has reached about Rp.210 billion. About 66% of the profit comes from the operation of container terminal in Port of "Tg. Priok", and aother 27% of the profit comes from the other terminal of "Tg. Priok".

The total investment expenditure amounted to Rp.173.43 billion in 1994 and Rp.231.89 billion in 1995. Total scale of the assets in 1996 amounts to about Rp.3,317 billion ranking top in all IPC.

IPC II has been repaying principal and interest of long-term notes for development of Port of "Tg.Priok" and other major ports. Total of principal and interest will reach about Rp.80 billion in 1998.

From 1994, IPC II started to issue bonds and MTN (Medium Term Note) used for development project for "Tg. Priok" and "Bojonegara". IPC II also plans to sell its stocks in the market in 1998, and waits for the permission from the Ministry of Finance. However, the details of the situation are not clear at present.

11.2.3 Financial Situation of IPC III

The financial situation has getting better and better since 1987, and the profit before tax in 1996 reached Rp.100 billion. About 82% of the profit (Rp.83 billion) is derived from "Tg. Perak", and about 50% of its profit comes from the operation of container terminals.

IPC III has been repaying principal and interest of long-term notes for development of Port of "Tg.Perak" and "Banjarmasin". It borrows these funds from international financial banks such as ADB, NIB and EXIM. The total of principal and interest will reach about Rp.37 billion in 1998.

11.2.4 Financial Situation of IPC IV

Profit before tax of IPC IV in 1996 amounts to Rp.15,594 million. About 65% of the profit comes from the Port of "Makasar", and most of the other profits come from the Port of "Balikpapan".

Although total scale of the assets in 1996 amounts to about Rp.498 billion, it ranks last in all Port Corporations. IPC IV has been repaying principal and interest of long-term notes for the development of "Balikapapan" and "Makasar". IPC IV borrows these funds from international financial banks such as ADB, EIJB and IDB. Total of the principal and interest will reach about Rp.18 billion in 1998.

11.3 Port Tariff System

11.3.1 General Explanation

(1) Purposes of Port Tariff

There are four objectives of establishing and collecting port tariff as follows ;

1) To provide a high level of port services for users
2) To maintain sound port operation
3) To invest funds for development of port facilities and purchasing of port equipment
4) To contribute to the government by providing tax, dividends and small business funds for entrepreneurs in Indonesia

(2) Legal Base

Present tariffs for commercial ports are stipulated by "KM65/1994" (inter-island ships / cargo) and "KM66/1994" (ocean going ships/cargo) and tariffs for non-commercial and special ports are prescribed by "KM28/1992". Tariffs for non-commercial and special ports are approximately 30% lower than those of commercial ports. Port tariff in Indonesia comprises seven types as follows ;

No.	Types	Law or regulation
①	Port tariff for services to domestic vessels	KM 65/1994
②	Port tariff for services to ocean going vessels	KM 66/1994
③	Port tariff for vessels at non-commercial port	KM 28/1992
④	Port tariff for machines and equipment	KM 63/1994
⑤	Port tariff for container cargo handling at container terminals in Belawan, Tanjung Priok and Tanjung Perak port	KM 67/1994
⑥	Port tariff for container cargo handling at conventional terminals	KM 62/1996
⑦	Port tariff at passenger terminals	KM 64/1994

Source : DGSC

(3) Tariff Review Process

At present, the procedures of tariff review are based on the government decree, "PP No.70 (1996)". Tariff review process in Indonesia is summarized as follows ;

1) Tariff is originally determined by MOC, but in practice all reviews have been initiated by IPC.
2) When IPC are required to review by MOC, they analyze the cost coming from port services and the revenues deriving from present tariffs against the proposed tariffs.
3) In this case, IPC must take external costs such as inflation rates, currency exchange rates and the port tariffs of any other countries nearby like Singapore.
4) After the review, IPC submits proposed tariffs to MOC, and MOC hands in the proposed tariffs to MOF.
5) After the check by MOF, the MOC decides the new tariff.

In the past, IPC can determine only port tariff rates regarding utility service and land lease. However, since the passing of "Shipping Law No.21/1992" and "Government Regulation No.70/ 1996", each IPC have the power to determine their own port tariff as follows ;

1) The Minister of MOC determines types, classification and structure of port tariff.
2) IPC can determine the actual tariff rate in ports managed by IPC within the standard that the minister determined after the adjustment with interests of users.

11.3.2 Existing Tariffs

(1) Structure of Port Tariff

The structure of the port tariff for port services ocean going and inter-islands vessels is as follows ;

No.	Port Tariff	Unit
①	Anchorage	Per GRT/10 days
②	Berth dues	Per GRT/24hours
③	Wharfage	Per Ton, M3,and Box/ 24 hours against cargoes
④	Pilot fees	Per GRT/type of vessel
⑤	Towage	Per GRT/hour
⑥	Stacking	Per ton (or m3) and day or per box and day
⑦	Container handling fees at container terminal	Per box
⑧	Other container handling fees	Per box
⑨	Container handling fees at conventional terminal	Per box
⑩	Mechanical equipment and others ・ Lease of mechanical equipment ・ Utility service (water, electricity, extension telephone)	-
⑪	Passenger terminal fees	-

Source : DGSC

(2) Kinds of Port Tariff

All data regarding kinds of port tariff are based on the information from DGSC.

1) Anchorage

Anchorage is charged on ships which enter into the port area. While anchorage fees in public ports managed by government are paid to government, those in public ports managed by IPC are paid to IPC. They are separately established between the main ports (Tg.Priok, Tg.Perak and Belawan) and other ports.

2) Berth Dues

Bert dues are charged on vessels which use the berth facility in the port. The rate changes according to the material of the quay such as concrete, buoy and border. Furthermore, the rates are determined according to the base period.

3) Wharfage

Wharfage is charged on the cargoes which are loaded or unloaded from ships as the following table. In addition, there are special wharfage rates for salt, fertilizer, bulogs (rice, sugar) and soybeans, and animal.

4) Pilot Fees

Pilot fees are independently established by each port. All vessels except for some ships are required to use pilot service when they enter and leave the port.

5) Towage

All ships greater than 70m in length are required to use the service provided by tug boats when they berth and deberth. The rates of towage are uniformly applied to all ports regardless of port classes.

6) Stacking

Stacking fees are charged on the cargoes stacked in the various kinds of facilities.

7) Container Handling Fees at Container Terminal in Main Ports

Container handling fees are charged on containers that are loaded and unloaded between ships and container yards.

8) Other Container Handling Fees

In addition to stacking fees, there are other charges for container handling at container yard in main ports.

① Shifting containers by using gantry cranes (without landing operation)
② Opening and converting hatch
③ Extra movement (without supporting devices)
④ Relocation
⑤ Lift on / off (loaded container)

9) Container Handling Fees at Conventional Terminal

Container handling fees at conventional terminal are charged on containers that are loaded and unloaded between ships and container yards.

10) Mechanical Equipment and Others

Furthermore, the users must pay for leasing mechanical equipment and utility services such as water, electricity and extension telephone.

11) Passenger Terminal Fees

Based on "KM 64/1994", passenger terminal fees are imposed on the passengers and accompanied persons according to class A~C, and vehicles according to terms of contract.

11.4 Financial Review of REPELITA

11.4.1 Financial Resources

From REPELITA I ~ II, the government had only one financial source (national fund). With the establishment of STATE ENTERPRIZE ("PERUMPEL") in 1983 which operated profitable commercial ports, the government started to use the fund earned by "PERUMPEL" from REPELITA III.

Furthermore, from REPELITA VI, the government is determined to introduce private funds in port development as it did with electric power, road and telecommunications

11.4.2 Situation of REPELITA VI (1994-98)

(1) General

The total investment or development budget required to construct and procure port facilities and equipment during the sixth FYDP is roughly estimate US$1.43 billion as shown in the following Table.

Items	Budget
Port facilities	US$1.08 billion
Port equipment	US$0.35 billion

Realizing that its development budget would be limited, the government devised a general scheme for financing the development during the sixth FYDP as follows ;

No.	Financing	Percentage
①	National budget	15%
②	Foreign loan/grant	20%
③	Private sector and state owned company participation	65%

The composition is a general and flexible indicative depending on the availability of financing resources. From the above composition of financing resource, it is shown that the biggest share of investment is expected to come from private participation which includes IPC and private sector (domestic and foreign). In the future, this trend will continue and private participation will become more and more important.

(2) The Gap between Planned Expenditures and Actual Expenditures

The gap between planned expenditures and actual expenditures in terms of finance resource is as below Table. At first in "REPELITAVI", while the government budget

including foreign loan accounting for about 65%, the private budget including IPC funds accounted for only 35%. But, in practice, while the former accounting for only 35%, the latter accounted for 65%. This is because that the government had no choice but to depend upon the money coming form the private sector including IPC owing to lack of government budget.

Table 11.4.1 Gap between Planned Expenditures and Actual Expenditures in Terms of Financial Sources in REPELITA VI

(Unit : Rp.billion)

Description	Planned Expenditures				* Actual Expenditures			
	Total Costs	National Funds	IPC Funds	Private Funds	Total Costs	National Funds	IPC Funds	Private Funds
REPLITAVI	3,149	2,046 (65%)	1,103 (35%)		3,126	1,079 (35%)	2,047 (65%)	

* Note : Actual expenditures is the figure at the end of 1997.

Source : DGSC

11.4.3 REPELITA VII

At present, REPELITA VII (1999-2003) had not been completed yet. Therefore, the details are now not clear. However, according to the document entitled "EVALUASI PELAKSANAAN REPELITA VI DAN INDIKASI REPELITA VII SUB SEKTOR TRANSPOTASI LAUT" issued by DGSC, the basic concepts with respect to finance of port development are summarized in the following three categories ;

(1) Policy of Sea Port Development

1) Port facilities managed by IPC shall be developed on their own.
2) Development of port facilities shall be limited for main facilities in IPC
3) Participation of the private sector in port development and operation shall be promoted through good competition and deregulation,

(2) Budget Policy for Sea Port Development

1) Optimization of budget for development of port facilities shall be taken priority.
2) Investment of government budget shall be limited for main facilities of ports managed by IPC.
3) Government budget shall be allocated to improvement of wooden shipping quays and development of "pioneer shipping" at isolated area.

4) Business area shall be expanded through simplification of license-issuing procedure and private sector participation such as KSO and BOT.
5) Private sector participation using money from the public shall be promoted through shale sales in the market.

(3) Establishment of Sea Transportation Industries

1) All kinds of laws regarding cooperation between government and the private sector shall be established.
2) Port tariff structure must be determined in accordance with the reward.
3) Government subsidy and involvement in development of port facilities managed by IPC shall be decreased.

Chapter 12 PRIVATE SECTOR PARTICIPATION

12.1 General Outline

12.1.1 History of Private Sector Participation in Indonesian Ports

Looking at the experience of port performance managed by government until the mid of 1980's and respectively transferred to the management of state-owned Indonesia port corporation (IPC) in the beginning of 1992, the Indonesian's port attempt to improve performances to a higher level of services required by the customers. Therefore, through such opportunities, private sectors are encouraged to involve in the area of port business.

Especially, the deregulation through "Shipping Law No.21 of 1992" and "Government Regulation No.20 of 1994" made it possible for the private sector including foreign investors to participate in the development and operation of the ports.

Reflecting the current situation, IPC have more and more PSP projects by degrees. In 1994, IPC Ⅱ made a contract with a private company to promote jointly the development and operation of container terminal Ⅲ of Tg. Priok port. Furthermore, in 1997, IPC Ⅲ made a contract with a private company to develop and operate container terminal of Tg. Perak port. Many other PSP projects in port development and operation are under consideration.

But, today's currency crisis and retreat of foreign capital from the country are forcing the government to reevaluate, delay or cancel most of these PSP projects.

Nevertheless, private sector participation (hereinafter referred to as "PSP") in the port development and operation is thought to be key to relieving the government's financial burden and promoting infrastructural development in the port sector.

12.1.2 Purposes of Private Sector Participation

The private sector can participate through cooperation with IPC, and development and operation of special ports (only for private used). There are four objectives of private sector participation as follows ;

1) To increase ports capacity
2) To relieve government from high investment burden
3) To introduce higher standards of efficiency through fair competition
4) To facilitate fast-track implementation

12.2 Basic Laws and Regulations Regarding PSP and Foreign Investment

12.2.1 General Information

There are no direct laws or regulations whose main purpose is to introduce private funds in port development. However, the basic laws and regulations for PSP in development projects including port development and foreign investment are ;

Name of Law or Regulation	Items regulated
(1) Shipping Law No.21 of 1992	Cooperation between IPC and private sector for the business of all port activities
(2) Government Regulation No.56,57,58 and 59 of 1991	Establishment of IPC Ⅰ, Ⅱ, Ⅲ and Ⅳ, delegation of power for the management of some public ports from the government to IPC.
(3) Law No.1 of 1967 on Foreign Investment	General regulation for foreign investment
(4) Government Regulation No. 20 of 1994 on Foreign Investments	New and supplemental regulation for foreign investment
(5) Government Regulation No.70 of 1996	Regulation towards Indonesian Legal Entity to manage public port
(6) Presidential Decree No.7 of 1998	New and general regulation for infrastructure development of many sectors (power, transportation, etc.)

Source : DGSC & BKPM

(1) Shipping Law No.21 of 1992

Article 26.2 ensures that the private sector is allowed to cooperate with IPC for the business of all port activities with exception of port basin and property of land and waters.

(2) Government Regulation No.56,57,58 and 59 of 1991

This regulation stipulates the establishment of IPC Ⅰ, Ⅱ, Ⅲ and Ⅳ, and management of some public ports is delegated by the government to IPC. Public port corporation whose 100% of the assets owned by the government changed into public corporation whose majority of the share owned by the government.

(3) Law No.1 of 1967 on Foreign Investment

Foreign investment is governed by this law. Until today, this law is still considered compatible with Indonesian current needs. This law establishes the general rules for foreign

investment such as legal form, domicile and area of an enterprise, fields of activity closed for foreign investment, right of the owner of foreign capital, manpower, concessions on taxes and other levies, duration of foreign investment, right of transfer and repatriation, nationalization and compensation and others.

(4) Government Regulation No. 20 of 1994 on Foreign Investments

The regulation stipulates the ownership in the company which is established for foreign investment. It also regulates approval of foreign investment, two forms of FDI (a joint venture company & a straight investment company), duration of business license, scope of works carried out by FDI company and others.

The new foreign investment regulation promotes deregulation for foreign investment as below ;

① Foreign investors and domestic investors (BHIs) establish an Indonesian Legal Entity (BHI) in the form of a foreign investment company (Joint Venture Companies = JVCs).

② The BHI establishes an agreement with IPC for the development and operation of certain port activities. It is compulsory to be in sharing-owning partnership with Indonesia investors.

③ It also allows agreements directly between IPC and foreign investors that have established BHI in association with Indonesian partners.

④ Foreign investors in foreign direct investment (FDI) may now also be "individuals" rather than an enterprise as previously required.

⑤ This regulation ensures the involvement of foreign investors on business activities which cover infrastructure development public services as public port, telecommunications, water supply and others. For such activities, foreign company could share up to 95% of total investment.

⑥ There is no requirement on the minimum amount of investment. The amount is up to the parties concerned to decide.

(5) Government Regulation No.70 of 1996

The regulation supplements Shipping Law No.21 of 1992 and regulates the relationship between a state-owned company and the private sector more concretely. It stipulates the definition of Indonesian Legal Entity, cooperation between port corporation and Indonesian Legal Entities and scope of works done by cooperation.

(6) Presidential Decree No.7 of 1998

In January of 1998, the government has developed the new cross-sectoral legal and regulatory framework for structuring and negotiating agreements for private sector participation. The Decree is composed of 15 articles and more detailed appendix (8 chapters). It mainly regulates the relationship between PSP-related government organizations and the private sector, the procedure of project implementation, bidding system and so on. The Decree is highly evaluated for upgrading the quality of the whole system and enhancing the transparency of the selecting procedure.

12.3 Working Fields and Possible Forms of PSP for Port Development and Operation

12.3.1 Roles of Government, IPC and the Private Sector regarding the Working Fields

The history of PSP in stevedoring operation can be briefly summarized as follows ;

1) Stevedoring operation in Indonesia has been done by private sector for many years. Private companies have provided both ship and shore break-bulk cargo handling services in Indonesian public ports.
2) Moreover, in 1993, port of Tg. Priok began experimenting with agreements in which private stevedoring companies are responsible for all operations within specified areas of the break-bulk sections of the port.

Roles of government, IPC and the private sector regarding the working fields are shown in the following Table 12.3.1.

Table 12.3.1 Roles of Government, IPC and the Private Sector regarding the Working Fields

Function		Port of Tg. Priok	Port of Tg. Emas
Control administration	Navigation safety	Central Government	Central Government
	Immigration	Central Government	Central Government
	Custom	Central Government	Central Government
	Quarantine	Central Government	Central Government
	Security	Central Government	Central Government
Establishment of port planning		Central Government / IPC	Central Government / IPC
Port management / operation	Management body	IPC	IPC
	Utility supply	IPC	IPC
	Pilot service	IPC	IPC
	Tug service	IPC / Private Sector	IPC
Wharf operation	Cargo handling at container terminal	IPC	Private sector (e.g. Top leader)
	Cargo handling at conventional terminal	IPC / Private sector	IPC / Private sector
	Stevedoring	IPC / Private sector	IPC / Private sector
	Warehouse / shed	IPC / Private sector	IPC / Private sector
	CFS	IPC	IPC
	Trucking	* IPC (from wharf to warehouse) * Private sector (from warehouse to factory)	*IPC (from wharf to warehouse) *Private sector (from warehouse to factory)

Source : IPC II & IPCIII

12.3.2 Possible Forms of PSP for Port Development and Operation

The scope of works operated by private sector in the public ports ranges quite widely. All port facilities or business activities are potentially open to private sectors with the next exceptions ;

1) Port basin for ship safety

2) Possession of land and waters in port area

There are no well-established rules for deciding which projects should be implemented by PSP. However, a booklet (INVESTMENT OPPORTUNITIES IN INDONESIAN PUBLIC PORTS) issued by DGSC shows the scope of works which should be done by the private sector.

12.3.3 Alternatives Forms of PSP

There are many types of private sector participation both in port improvement and in operation. PSP types of from (1) to (6) are very common in Indonesia. IPC Ⅱ and Ⅲ now also consider public or stock floatation.

(1) Management Contract
(2) Lease
(3) Concession
(4) Joint Operation
(5) BOT (Built-Operate-Transfer)
(6) Joint Venture
(7) Public or Stock Floatation

(1) Management Contract

IPC entrusts the management of business function or asset to a private sector for a certain period. This type of PSP is aimed to improve performance, efficiency and productivity by introducing ability and know-how of the private sector.

(2) Lease

Private sector has capital such as cargo handling equipment which is leased to IPC for its use. IPC must pay rent to the private sector. On the contrary, the private sector could lease some immovable property from the IPC. Therefore, IPC or the private sector assumes all responsibility for expenses related to the maintenance and the provision of services.

(3) Concession

All responsibility for construction, operation and maintenance is transferred to private sector for long period of time (15-30 years).

While ownership of the facilities is retained by IPC, the private sector can develop and operate those port facilities, and obtain revenues from the operation. On the other hand, the private sector must pay concession fees to IPC. Therefore, concession provides strong incentives to private sector to achieve greater efficiency.

(4) Joint Operation (Kerjasama Operasi = KSO)

IPC and private investor respectively invest capital and jointly manage one segment of port business for a certain time. The profit coming from joint operation is shared between IPC and the private company based on the same proportion of capital investment.

(5) BOT (Build operate transfer)

BOT is a form of business cooperation in which IPC grants a concession for a certain business segment to a private company, and the private company invests its capital and operates in the segment for a certain period of time.

The private company provides remuneration to IPC as payments, royalties, profit sharing, leases or other equivalent forms. After expiry of the contract, all assets are transferred to IPC.

(6) Joint Venture

IPC and private company jointly invest capital in an Indonesian legal entity formed independently in order to carry out certain business for an indefinite period of time.

There are two types of joint venture company.

1) A new independent joint venture company
2) A new subsidiary company, formed under a state-owned-enterprise

(7) Public or Stock Floatation

They are most advanced type of full privatization. At present, IPC Ⅱ and Ⅲ are interested in public or stock flotation.

"Public floatation" means a public offer of the sales of shares on the stock exchange. In this case, all responsibility for the provision of services is transferred to the private sector.

"Stock floatation" means the selling of all shares to the private sector. But, in many cases, the Government can retain a qualified majority of shares.

12.4 Procedures for Selection of Private Sector Partner

12.4.1 Criteria in Selecting Private Company

In selecting private company to cooperate with IPC, the following criteria must be considered ;

1) Foreign company together with local investor should form an Indonesia Legal Entity, in the status of foreign investment scheme.
2) The Indonesian Legal Entity should have a capability to share with a minimum equity of 30% as investment finances.

3) Private company is preferably to have experience in the field of related port business.

12.4.2 General Outline of the Procedure

In Indonesia, there are no general laws nor regulations to directly regulate the procedure for selecting private companies.

There are two kinds of procedures to be followed by private sector as follows ;

(1) Case 1 : Initiative comes from IPC

(2) Case 2 : Initiative comes from private sector (Unsolicited proposal)

Initiative tends to come from a private sector.

(1) Case 1 (Initiative comes from IPC)

1) IPC sets up port business activities and provides project prospective.
2) Business activities are offered to investors through public mass media (Invitation).
3) Investors submit pre-project proposal.
4) IPC evaluates the proposal and selects the responsive bids.
5) IPC and the investor prepare draft MOU and submit it to MOC for approval.
6) MOC evaluates and approves the draft MOU.
7) IPC and the investor sign MOU upon submission of bank guarantee.
8) The Investor carries out feasibility study and prepares project proposal to be submitted to IPC.
9) IPC evaluates project proposal and adjusts negotiation between IPC and the investor.
10) IPC and the investor prepare joint proposal and submit it to MOC.
11) MOC and MOF jointly evaluate and approve the joint proposal.
12) IPC and the investor jointly prepare draft agreement and submit it to MOF.
13)MOF approves the draft agreement.
14) IPC and the investor sign the agreement (contract).
15) IPC and the investor implement the agreement, and set up joint organization for procurement.

(2) Case 2 (Initiative comes from private sector)

1) Investor prepares pre-project proposal
2) IPC evaluates the proposal based upon responsive offer and select the responsive bids.
3) IPC and the investor prepare draft MOU and submit it to MOC for approval.
4) MOC evaluates and approves the draft MOU.
5) IPC and the investor sign MOU upon submission of bank guarantee.

6) The Investor carries out feasibility study and prepares project proposal to be submitted to IPC.
7) IPC evaluates project proposal and adjusts negotiation between IPC and the investor.
8) IPC and the investor prepare joint proposal and submit it to MOC.
9) MOC and MOF jointly evaluate and approve the joint proposal.
10) IPC and the investor jointly prepare draft agreement and submit it to MOF.
11) MOF approves the draft agreement.
12) IPC and the investor sign the agreement (contract).
13) IPC and the investor implement the agreement, and set up joint organization for procurement.

The reason why investor must get the approval from MOF as well as MOC (both ministries are also main share holders) is the fact that review from not only technical but also financial point of view is required.

12.4.3 Rights and Obligation of Private Sector

(1) Rights (Revenue) of the Private Sector

To compensate the expenditure of the operational and investment cost for the providing port business activities, the private investor can obtain the revenue from ;

1) Berthage
2) Whafage
3) Storage Fees
4) Cargo Handling Fees
5) Trucking Fees
6) Etc.

Percentage of share or amount of the above mentioned revenue will be based on " win-win concept " of negotiations between the private investor and IPCs.

(2) Obligation of the Private Sector

On the other hand, private investors have obligation to IPCs as follows ;

1) Lease of land and water of the port
2) Royalty and good will
3) Common used infrastructure cost
4) Others

12.4.4 Distribution of A Booklet for Promotion of PSP

In August 1994, DGSC issued and distributed a booklet for promotion of PSP titled "INVESTMENT OPPORTUNITIES IN INDONESIAN PUBLIC PORTS" in both Indonesian and English in order to invite and attract the domestic and foreign investors. The booklet includes the following items ;

1) Precedence
2) Intentions and evaluation procedures
3) Legal basis of private operations in ports
4) Scope of private operations
5) Structure of private investors in the port sector
6) Responsibilities of the public port company
7) Alternative forms of business cooperation
8) Summary of kinds of investments
9) Selection of contractors, bidding system, process of contract,
10) Settlement and monitoring.

12.4.5 Roles of the Investment Coordination Board

(1) The Indonesian Capital Investment Coordination Board (BKPM)

BKPM overseas all foreign investment issues other than those concerned with the financial and insurance sectors and the stock exchange. A foreign investor primarily deals with BKMP to obtain all necessary licenses, permits and approvals. BKPM is trying to provide a "one-stop" service to investors. The functions of BKMP are as follows ;

1) To provide information and guidance to prospective investors and process investment applications
2) To issue approvals, permits, and licenses
3) To monitor the implementation of investment projects
4) To advise the president whose approval is required for foreign direct investment in infrastructure on investment policies and on each foreign investment proposal.

(2) The Regional Investment Coordination Board (BKPMD) and Other Regional Bodies

In addition to the BKPM, other regional organizations including BKPMD are another body that foreign investors in infrastructure development must deal with at a regional level. Their roles are summarized as follows ;

1) BKPMD

To assist the investor to implement the project, provide additional permits, approvals and others.

2) The Provincial Land Affairs Office (BPN Dati Ⅰ)

To approve the project if it includes cultivation on land.

3) The Regency Land Affairs Office (BPN Dati Ⅱ)

To issue a location permit, building construction permit, Nuisance Act permit, and rights to land. These documents must then be presented to the BKPM. Investors should be prepared to work closely with relevant technical government departments, and regional and local agencies. According to the government officials, the whole licensing procedures should take between four to six weeks.

12.5 Present Situation of Private Sector Participation Projects

12.5.1 General Outline

Generally, there are two typical types of PSP projects in Indonesian ports, that is, construction of "container terminals in public ports" and "bulk terminals in special ports and whalves". In addition to them, there are a variety of projects in public ports such as development of coal or cement shipping facilities, land reclamation, conveyor system of dry bulk cargo, introduction of EDI and computer system, etc.

The list of major PSP projects in main public ports, which are being implemented and constructed or have already got final approval from MOF as the following Table 12.5.1.

Table 12.5.1 Current Situation of Major PSP Projects in Major Public Ports

No.	Project name (Day of contract)	IPC	Type	Total Investment	Current Situation
①	Development and operation of Container terminal Ⅲ at Port of Tanjung Priok (August 16, 1994)	Ⅱ	JO	US $ 498 million (=Rp.997 billion)	Soft opening in July 1996 grand opening in February 1998
②	Reclamation project of East Ancol (500 ha) at Port of Tanjung Priok (March 20,1995)	Ⅱ	BT	Rp.2,233 billion	In the process of reclamation. Completion at the beginning of 21 century
③	Establishment of joint venture corporation in EDI project (May 29, 1995)	Ⅱ	JV	Rp.100 billion	Already in operation
④	Development and management of clean water network at Port of Tanjung Priok (November 18,1996)	Ⅱ	BOT	Rp.17 billion	In the process of development of facilities and network
⑤	Development and operation of Bojonegara port at the Banten Bay (April 24, 1997)	Ⅱ	BOT	Rp.1,439 billion	The land clearance reaches approximately 395ha (at 30-11-1997)
⑥	Development and operation of Container terminal Ⅲ at Port of Tanjung Perak (April 22, 1997)	Ⅲ	JO	Rp.241 billion	Grand opening at the end of 1998
⑦	Development and operation of conveyor for dry bulk cargo at Port of Tanjung Perak (July 14, 1995)	Ⅲ	-	± Rp.4.8 billion	In stage of preparation for operation
⑧	Development and operation of coal-shipping port in Pulau Laut (November 10,1994)	Ⅲ	-	± Rp.226 billion	In stage of preparation for operation
⑨	Development and operation of terminal for loading and unloading service at Port of Gresik (August 14, 1997)	Ⅲ	BOT	Rp.46 billion	In stage of construction

* Note : The data is as of January 2, 1998 Source : DGSC & IPC

12.5.2 Typical Projects in PSP

We shall explain outline of the typical PSP projects in port development.

(1) Development of Container terminal Ⅲ at Port of Tg.Priok

(2) Development of Bulk Terminal at Kotabaru, P. Laut Kalimantan

(1) Development of Container terminal Ⅲ at Port of Tg.Priok

1) Outline

The form of PSP is joint operation between IPC Ⅱ and private sector. This project includes development of CT Ⅲ, which is located at east of CT Ⅰ. The contract is effective from August 1994 with the investment cost of project about US$498 million (Rp.997

The facility just opened in February 1998 after soft opening in July 1996.

Period time of contract is 20 years after commencement of the operation. The scope of works between IPC II and private sector is shown in the next table ;

Table 12.5.2 Scope of Works of Each Sector in Construction of CT III at Port of Tanjung Priok

Description	IPC II	Private Sector
Total construction cost	US$498 million (Rp.997 billion)	
Proportion of investment (%)	48%	52%
Scope of works	Wharf (450m) Container yard Basin dredging Roads Others	Gantry crane (3units) RTG (15units) Headtruck (40units) Offices Utilities
Percentage of distribution of profit after tax	48%	52%

2) Right and Obligation of Both Sectors

The joint operation gives the right and obligation to both sectors from the preparation and implementation of the project, and operation of the facilities . IPC II is responsible for providing the land equitation and infrastructural facilities according to the contract. On the other hand, private sector must pay a royalty and good will to IPC II .

(2) Development of Bulk Terminal at Kotabaru, P. Laut Kalimantan

(In case of IBT<Indonesia Bulk Terminal>, Arutmin, Andaru)

1) Outline

The form of PSP between IPC III and private sector is BOT. The project consists of development of wharf, storage, roads, electric power and purchase of cargo handling equipment of conveyor system. The project was initiated by the private sector and IPC III for public port to handle coal as special commodity. While IPC III provides only land and waters, private investors develop all infrastructures and equipment with the total investment cost US$113 million. Operation was scheduled to start at the end of 1996.

2) Right and Obligation of Both Sectors

IPCIII gets revenue from various kinds of port tariff such as anchorage, pilotage, towage, and berthing. The private sector is exclusively given the right to operate terminal facilities including wharves, yards and cargo handling facilities. The private sector also must pays royalty to IPCIII. After the expiry of contract, all facilities must be transferred to IPC III.

Chapter 13 ENVIRONMENTAL ASPECTS

13.1 General

Similar to many developing countries, Indonesia is facing various environmental issues concerning both loss of natural environment and pollution. Also, it is conceivable that various environmental problems will arise in the course of future development.

Indonesia is extremely complicated and diverse in terms of biology/geology. This extensive land has an abundance of forest resources and it is a treasury of precious fauna and flora. To achieve "Sustainable Development" in this country is important not only for the welfare of the nation but also for the world at large.

13.2 Environmental Circumstances

The conservation areas in Indonesia are established to preserve or conserve natural flora and fauna. These protected species and conservation areas are globally important and not merely properties of Indonesia. In case of developing or improving the ports close to these sites, prudent attitude is required. And, maximum effort should be made not to spoil the untouched natural resources by port development.

13.3 Environmental Pollution

The environmental destruction still continues, because the rate of pollution control is not proportionate to the rate of economic activities.

Regarding the water pollution, it is assumed to be mostly caused by untreated living and industrial discharge from inland areas. Furthermore, a part of rivers in Indonesia are even regarded as being identical with disposal sites. In the areas where such rivers run through, most of residents dispose wastes into the river bodies. The water and soil of these rivers are estimated to include organic substances and other noxious materials in large quantities. These polluted substances are flowing into the sea, which deteriorate the water and soil quality of ports. Since many ports close their water area by port facilities such as breakwater, pollutants tend to stay there and worsen the water quality.

13.4 National Environmental Policy and Basic Principles

In the Sixth Five-Year Development Plan (1994-1998), environmental conservation measures regarding national development are defined. The importance of "Sustainable Development" is given special emphasis.

13.5 Environmentally Related Institution

In 1997, the Act of the Management of the Living Environment (Act No.23 of 1997) was established anew in order to make the principle of environmental management clear and serve as a basic indicator for other related legislation. It consists of 52 articles concerned with principle, objective, right, obligation, society's role, authority, settlement, penalty and so on.

Countermeasures against water pollution are given the most priority in Indonesia, and actually, a water quality standard was first established in 1988. Indonesia still does not have a soil quality standard, and this should be established as soon as possible.

The Act stipulates that each plan of an activity or a work that may cause a large or important impact to the environment must have an environmental impact analysis. The said institution is generally called AMDAL.

In the procedure of AMDAL, a proponent for a proposed business or activity shall first prepare a terms of reference for the preparation of an environmental impact statement. The proponent shall submit the environmental impact statement, the environmental management plan and the environmental monitoring plan together at the same time to the authorized government agency. The Ministry of Communication has established the Technical Guidelines on the Environmental Impact Assessment for Harbor.

13.6 Review of EIA Reports

Several previous EIA reports were reviewed in this study. But, there is plenty of room for improvement. The results of review are shown as follows.

(1) Several EIA reports do not describe resettlement or public facility relocation, even though there are residents and public facilities in the proposed area.

(2) Water right and right of common use are not analyzed in many reports. If analyzed, the depth is insufficient.

(3) In some reports, inland transportation is not calculated or analyzed quantitatively. As for the sea transportation, many reports do not refer to conflict between fishery and vessels from/to the port.

(4) Issue of waste disposal is not mentioned sufficiently in almost all reports.

(5) Description of natural hazard is not clear.

(6) The spatial and land use plan is not always analyzed.

(7) Analysis of groundwater and hydrology is generally unsatisfactory.

(8) Analysis of soil erosion and seabed pollution is hardly conducted.

(9) Analysis of soil contamination, ground subsidence and offensive odor are lacking entirely.

PART 2

PORT DEVELOPMENT STRATEGY

Chapter 1 INTRODUCTION

See Chapter 1 in Part 1.

Chapter 2 BASIC POLICY OF THE STUDY AND APPLICATION OF THE PROPOSALS

2.1 Role and Function of the Study

Considering the agreements made by the governments of Indonesia and Japan, the basic role and function of the Study are identified as shown below.

(1) The Study should provide the Indonesian government (DGSC as the counterpart organization of the Study) with well analyzed information of port sector activities and proposals mainly on long and medium term port development strategy.

(2) It is imperative that the Study shall not simply propose a set of final port sector development strategies, but have positive function to encourage the Indonesian government in promoting its own port policy on the basis of suggestions and ideas to be included in the Study outputs.

(3) Technology transfer in the port planning field through the course of the Study is another important part of the Study function. The Study should therefore be well designed for easy and efficient transference of the technologies and know-how on basic port policy making, institutional arrangements, port administration system, privatization policy, physical port planning, port management and operation, port promotion strategies and so on.

2.2 Basic Policy of the Study

On the basis of the above concept, the main features of the Study can be summarized as follows;

(1) Proposals of the Study are arranged to show clearly the selected major policy categories so that the users of the report could easily identify the most important domain of the port policy of Indonesia.

(2) Overall level of target achievement of the port development and administrative performance are set strategically higher than would normally be practical, in the hope that the proposed plans could lead the government and private sectors concerned to attain better final achievement

(3) With the view to reserving wider future options of alternative strategies for port sector

development, the proposals of the Study include the consultants' original and independent suggestions which may not necessarily be fully acceptable to the Indonesian side at this moment.

(4) The Study proposes strategies of which realization may be difficult under the current administrative system, because overall or cross sectional cooperation and coordination among the government organizations are often required to improve basic port sector performance.

(5) Since the final target year of the Study is set far into the future (the year of 2018), the Study is designed to include information and suggestions which could make the proposed strategies as strong and flexible as possible against future contingencies.

(6) To promote public acceptance and a clear understanding on the port development policy direction, an official name of the new port development policy is proposed in the Study, namely "Port Network Policy in the Era of the Global Exchange".

2.3 Application of the Proposals of the Study

In order to ensure the successful application of the Study proposals to actual port administration and management, the followings items should carefully be considered.

(1) Although the Study proposals have been conceived from the long term perspective, it is essential to periodically review, and make necessary adjustments of each policy element for better application of the basic concept of the proposed strategies under any future changes in the socio-economic situation of Indonesia.

(2) Since the objective of the Study is to propose the overall direction and framework of long term port development and administration strategies, detailed studies on the individual port projects are not discussed in the report. It is therefore essential to conduct further studies on prioritized projects for effective implementation of the strategies.

(3) All proposed strategies are closely related to each other. Therefore, application of any single strategy to the actual port administration should always be checked against possible effects (positive or negative) on other parts of the policy. In this regard, a trial-and-error approach may sometimes be effective to keep consistent application of the strategy.

(4) The Study proposals include such kinds of strategies in which a long time is required for effects to materialize. Therefore, once a strategy is selected and applied, every effort should

be made to realize the effects of the selected strategy. Unstable policy application to the port development may often be harmful to sound promotion of the sector.

(5) While the Study suggests the intermediate stages towards the final targets of the port policy, detailed process and time schedule of each stage needs to be carefully examined and adjusted in accordance with the actual conditions of Indonesia. Therefore, in the Study, implementation process policy is proposed for the "Short term", "Middle term" and "Long term" respectively without mentioning detailed target years.

(6) For effective utilization of the Study, it is necessary to authorize at least the major parts of the proposed strategies in an appropriate way, so that consistent promotion of the port policy could be secured. In this regard, it is also important to open the selected policy to the public to promote acceptance and consensus of various parties concerned.

(7) Various data and reference materials shown in Appendix are essential for reviewing or adjusting the policies if necessary. Accordingly, constant updating of the relevant data and facts is also vital.

Chapter 3 ANALYSIS OF FUTURE TREND ON KEY FACTORS ON PORT SECTOR DEVELOPMENT

3.1 General

In order to formulate port development strategy, the following necessary analysis was conducted.

In Section 3.2, nationwide development scenario related to port development was examined.

At present, promotion of regional development of the Eastern Indonesia to eliminate the economic disparity is an important task for the Indonesian Government. One of the important means to support the regional development is, in general, to reinforce the economical transportation mode. In particular, port development in the Eastern Indonesia is an effective means to that end. Potential areas for development and classification of development and role of port were examined.

Based on the analysis of the above, nationwide development scenario of sectors and regions related to port development shall be examined. In addition Japanese experiences in regional development related to port development were also introduced.

In Section 3.3, trading condition between Indonesia and major trading partners was examined. In particular, future trend of main trading partners is valuable information for improvement of international competitiveness and regional development which utilize the international economic cooperation with neighboring countries.

In Section 3.4, future trend of container and main domestic shipping was examined.

Considering the importance of dealing with the rapid containerization of cargo transportation, an efficient container transportation system must be established. In addition rational cargo distribution system should be also established to support and activate various kinds of economic activities.

In this section, the future trend of shipping such as vessel size deployed on international container service shall be analyzed. Moreover the future trend of inter-island shipping, which is main domestic shipping was examined.

In Section 3.5, future trend of international competitiveness of container cargo transportation was examined.

Improvement of international competitiveness of container cargo handling is vital matter in Indonesia, because establishment of an efficient container transportation system is essential to

promote the activities of port users in Indonesia.

In this section, through analyzing the future trend of container transportation in the world, necessary conditions for improving international competitiveness of ports were examined from the viewpoints of cargo volume, geographical location and port services.

In Section 3.6, based on the above review and analysis, sea traffic demand were forecasted.

3.2 Nationwide Development Scenario related to Port Development

3.2.1 Classification of Development and Role of Port

There are various ways to classify national and regional development. In this report, development is classified into 5 types according to the purpose of development (See Table 3.2.1.1). And the necessary conditions for development and characteristics of each type are also shown in the table. Generally, development is composed of some combination of these types.

Table 3.2.1.1 Classification of National and Regional Development

Type of Development		Necessary Conditions for Development and Characteristics
Type A	Promoting Industrialization (mainly manufacturing industries, heavy industries, etc.) and Attracting Investors to Industrial Estate	① High labor potential based on accumulation of population ② Development of industrial estate which has well-developed infrastructure (access road, water supply, electric power, etc.) ③ Accumulation of various related industries (industrial complexes, etc.) ④ Close connection with consumption areas and market
Type B	Developing Natural Resource / Raw Material (energy, mining)	① High potential for natural resource/raw material ② Promoting development of related factories (cement plant, building material plant, etc.) in use of the resources ③ Access road and shipping port
Type C	Developing Strategic Distributive Position in Domestic and International Trade	① Advantageous location in domestic and international trade (economical advantage in cargo transportation) ② Sufficient and efficient port facilities for reshipment (feeder service)
Type D	Developing / Improving Regional Infrastructure (for example, expansion of airport, large scale irrigation by constructing dam, etc.)	① Reliable demand of use of the facility to be developed / improved ② Supply of materials and machines for construction of the facility
Type E	Supporting Local Industry and Community/Business Center (for example, primary industries (agri-business, marine products industry), tourism, cultural asset, etc.)	① Improvement of the productivity of agriculture, forestry and fisheries through development of unique products based on regional individuality ② Promoting the processing industry for agricultural, marine products, etc. ③ Attractive area for tourism and supporting facilities (hotel, marina, tourism port (terminal for sightseeing boat and cruiser), airport, etc.)

The role of port for each type of development is shown in Table 3.2.1.2.

Table 3.2.1.2 Role of Port for each Type of National and Regional Development

Type of Development	Role of Port
Type A	① Serving as the point of entry for the supply of raw materials and exit for shipment of manufactured products ② Providing large scale sites for industrial estate in port area (Especially in the case of heavy industries, transportation cost of heavy raw materials and heavy products will be reduced due to shortening the distance for transport.)
Type B	① Shipping of natural resource / raw material ② Providing sites for related factories (cement plant, building material plant, etc.)
Type C	① Core infrastructure for development (supply of facilities for reshipment (feeder service))
Type D	① Shipping of construction materials and machines ② Providing sites for construction material plant (cement factory, asphalt plant, etc.)
Type E	① Base of joint shipment for primary products ② Distributive base of feed and fertilizer products for primary industries ③ Providing mooring facilities and maintenance plant for large fishing boat ④ Providing sites for processing industries (canning, grinding, etc.) ⑤ Development of tourism port (terminal for sightseeing boat and cruiser) and providing sites for commercial zone (restaurant, souvenir shop, pocket park, etc.)

3.2.2 Development Scenario of Sectors

(1) Industries

1) Manufacturing

The national government places special emphasis on promoting export-oriented industry. Therefore, it can be considered that industrialization will advantageously progress centering around Jawa, where export-oriented industry together with the supporting industries are accumulated.

In this report, we tried to estimate GRDP of manufacturing industries in 2018 based on existing trends, and analyze the relation between GRDP/km2 and population/km2.

GRDP of manufacturing industries in 1996 is concentrated in Jawa, especially Jakarta, and secondly in Sumatra. And it is estimated that this trend will continue up to 2018.

Among other regions, South Kalimantan in Kalimantan, South and North Sulawesi in Sulawesi have relatively high GRDP levels. It can be considered that these provinces will also become candidates for development, by effectively utilizing the potential of closeness to Jawa, relatively high-concentrated population, and so on.

2) Agriculture

The national government is attempting to increase productivity and efficiency, promote mechanization of cultivation and heighten quality and added-value of products as part of promoting agri-business.

Jawa has a large production capacity not only for manufacturing but also for agriculture, especially farm food crops such as rice. But there has been a rapid decline in the rice field area because of the industrialization and urbanization in recent years. It can be considered that this trend will continue in future. Therefore, the national government is promoting a massive plan to develop a million ha of arable land in Central Kalimantan for the purpose of making up food shortages in Indonesia. Thus, some of the regions in the eastern part of Indonesia have a high potential for agriculture though this potential remains undeveloped. It can be considered that production capacity will increase gradually.

For reference, we estimated GRDP of farm food crops in 2018 according to recent trends, and analyzed the relation between GRDP/km2 and population/km2. Bali, North Sumatra, Lampung, South Sulawesi, West Nusa Tenggara have relatively high GRDP levels among other regions excluding Jawa.

3) Mining

In the mining sector, existing areas with large oil/gas production are mainly concentrated in Sumatra and Kalimantan. In these areas, products are mainly exported in their raw material form. However these areas have high potential not only for production of raw materials, but also for industrialization. Namely, advanced industries which utilize these raw materials are expected to be gradually developed in these areas.

Meanwhile, field surveys in other areas provide insufficient or still remain to be done, so the potential level in other areas is more or less unclear (for example, Irian Jaya, etc.).

4) Processing Industries for Primary Products

At present, various primary products in the field of agriculture, forestry and fishery are processed into secondary products in Jawa. Some of those primary products are transported from the production areas outside of Jawa, such as Kalimantan, Sulawesi, and so on because processing industries are not well developed in those areas yet.

However in the future, processing industries are expected to be gradually developed in those undeveloped areas. Especially in the eastern part of Indonesia, building up the processing industries close to the production areas will play an important role in stimulating regional development. Namely it will improve the regional economic situation by heightening added-value of products, increasing opportunities for employment, and so on.

(2) Transportation

1) Road Transportation

The number of motor vehicles in Indonesia is increasing rapidly; the average growth rate from 1993-1996 was 11.3%. However most are concentrated in Jawa; its share is around 65% of the total in 1996.

The government aims to increase road length to more than double the current length by 2018. Extensive road development in Jawa will continue to cope with the rapid increase of vehicles there, and in other regions major routes connecting important cities will be mainly developed based on priority.

2) Dependence Rate of Sea Transportation for Total Transportation

In 1996, MOC conducted the Cargo Traffic OD survey. By analyzing the results, we calculated the dependence rate of sea transportation for total transportation by ton base.

In total, the dependence rate of sea transportation is almost 27%. However, the rate varies widely among islands. In Kalimantan, Sulawesi and Others, the dependence rates are 97%, 90% and 79% respectively. On the other hand, the dependence rate of sea transportation in Jawa and Sumatra remains at a low level.

Based on the above analysis, we assume the character of transportation mode in Indonesia as follows.

(a) In Kalimantan, Sulawesi and Others, sea transportation plays the dominant role in cargo transportation among other transportation modes.
(b) In Jawa and some parts of Sumatra, land transportation plays the major role. Sea transportation will play a role in transporting large volumes of cargo over a great distance as one of the means for promoting modal shift.

3.2.3 Development Scenario of Regions

(1) Development Scenario of Regions and Nationwide Future Land Development Structure

As concerns the development scenario of regions, we examined firstly which type of development (TypeA-TypeE) is applicable to each province, and secondly we examined the development scenario by each region based on the potential for development of each region. The result is shown in Table 3.2.3.1.

Table 3.2.3.1 Development Scenario of Regions

Province	Type of Development					Development Scenario of Regions
	A	B	C	D	E	
Aceh	○	○		○	○	SUMATRA
North Sumatra	○	○		○	○	Economic network of 'Jawa-Sumatra' in the short term
West Sumatra	○	○		○	○	*Economic cooperation between Malaysia, Thailand and northern part of Sumatra [IMT-GT]
Riau	○	○	○	○	○	*Economic cooperation between Malaysia, Singapore and Riau (Batam, Bintan) [IMS-GT]
Jambi				○	○	*High potential of natural resources of oil, gas and coal, and its effective use
South Sumatra	○	○		○	○	(Ache, North Sumatra, West Sumatra, Riau, South Sumatra, Lampung)
Bengkulu				○	○	--- Promoting related industry (For example, petro-chemical industry)
Lampung	○	○		○	○	*High potential of development of natural gas (Natuna island)
						*High potential of production of estate crops (northern part of Sumatra)
						*Development of tourism in Riau (Batam & Bintan)
Jakarta	○		○	○	○	JAWA
West Jawa	○	○	○	○	○	Economic network of 'Jawa-Sumatra' in the short term
Central Jawa	○	○	○	○	○	*Expansion of industrial belt zone (①Western part and Eastern part→②Central part)
Yogyakarta					○	--- Concentration of various manufacturing industries
East Jawa	○	○	○	○	○	*High potential of production of farm food crops (but, gradually declining)
West Kalimantan	○	○		○	○	KALIMANTAN
						Economic network of 'Jawa-West Kalimantan' in the middle term
Central Kalimantan		○		○	○	Economic network of 'Jawa-South and East Kalimantan-North Sulawesi' in the middle term
						*Economic cooperation between Singapore, Malaysia and West Kalimantan [IMS-GT]
South Kalimantan	○	○		○	○	*Economic cooperation between Philippines, Malaysia and northern Kalimantan [BIMP-EAGA]
						*Formation of industrial belt zone in eastern part of Kalimantan
East Kalimantan	○	○		○	○	(Samalinda, Balikpapan, Batulicin and Banjarmasin)
						*High potential of natural resources of oil, gas and coal (West Kalimantan, South Kalimantan,
						East Kalimantan) and mineral (Central Kalimantan, South Kalimantan), and its effective use
						--- Promoting related industry (For example, petro-chemical industry)
						*High potential of production of estate crops (West Kalimantan, Central Kalimantan)
						*Large scale development of rice field (Central Kalimantan)
North Sulawesi	○		○	○	○	SULAWESI
Central Sulawesi				○	○	Economic network of 'Jawa-South Sulawesi' in the middle term
South Sulawesi	○		○	○	○	Economic network of 'Jawa-South and East Kalimantan-North Sulawesi' in the middle term
Southeast Sulawesi				○	○	*Economic cooperation between Philippines and North Sulawesi [BIMP-EAGA]
						*Promoting processing industry of primary products (North Sulawesi, South Sulawesi)
						*Development of tourism in North Sulawesi (Manado)
Bali			○	○	○	Others
West Nusa Tenggara		○		○	○	Economic network of 'Jawa-Bali-Lombok' in the middle term
						*Economic cooperation between Australia, East Nusa Tenggara and East Timor) [AIDA]
East Nusa Tenggara		○		○	○	*Enhancement of potential of local industries
						--- Promoting agri-business, marine industry, etc.
East Timor		○		○	○	*High potential of production of farm food crops in Bali
Maluku				○	○	*High potential of natural resources of mineral (West Nusa Tenggara)
Irian Jaya		○		○	○	*High potential of development of oil field (Timor Sea)
						*Development of tourism in Bali-Nusa Tenggara

In addition, we examined the nationwide future land development structure in Indonesia. At first, we defined Total of national budget, national policy, private sector investment, and so on as "Input of development resources", and secondly we examined the change of "Input" by term in consideration of regional industrial potential, governmental policy such as KAPET and so on.

a) Present Condition

To date, various kinds of economic activities have been well developed in Jawa and some parts of Sumatra. Namely it can be considered that "Input" has been intensively placed there.

b) Development Stage in the Short Term

In the short term, "Input" will still continue to grow mainly in Jawa and Sumatra, and according to governmental policy, will grow somewhat in the eastern part of Indonesia, such as South, East and West Kalimantan, North and South Sulawesi, Lombok, and so on.

c) Development Stage in the Middle Term

In the middle term, the growth of "Input" in Jawa and Sumatra will gradually slow down, on the other hand, the growth of "Input" in the eastern part of Indonesia will be accelerated and extended to underdeveloped areas.

d) Development Stage in the Long Term

In the long term, "Input" will be extended to whole Indonesia, as a result, regional disparity between the western and eastern part of Indonesia will be reduced.

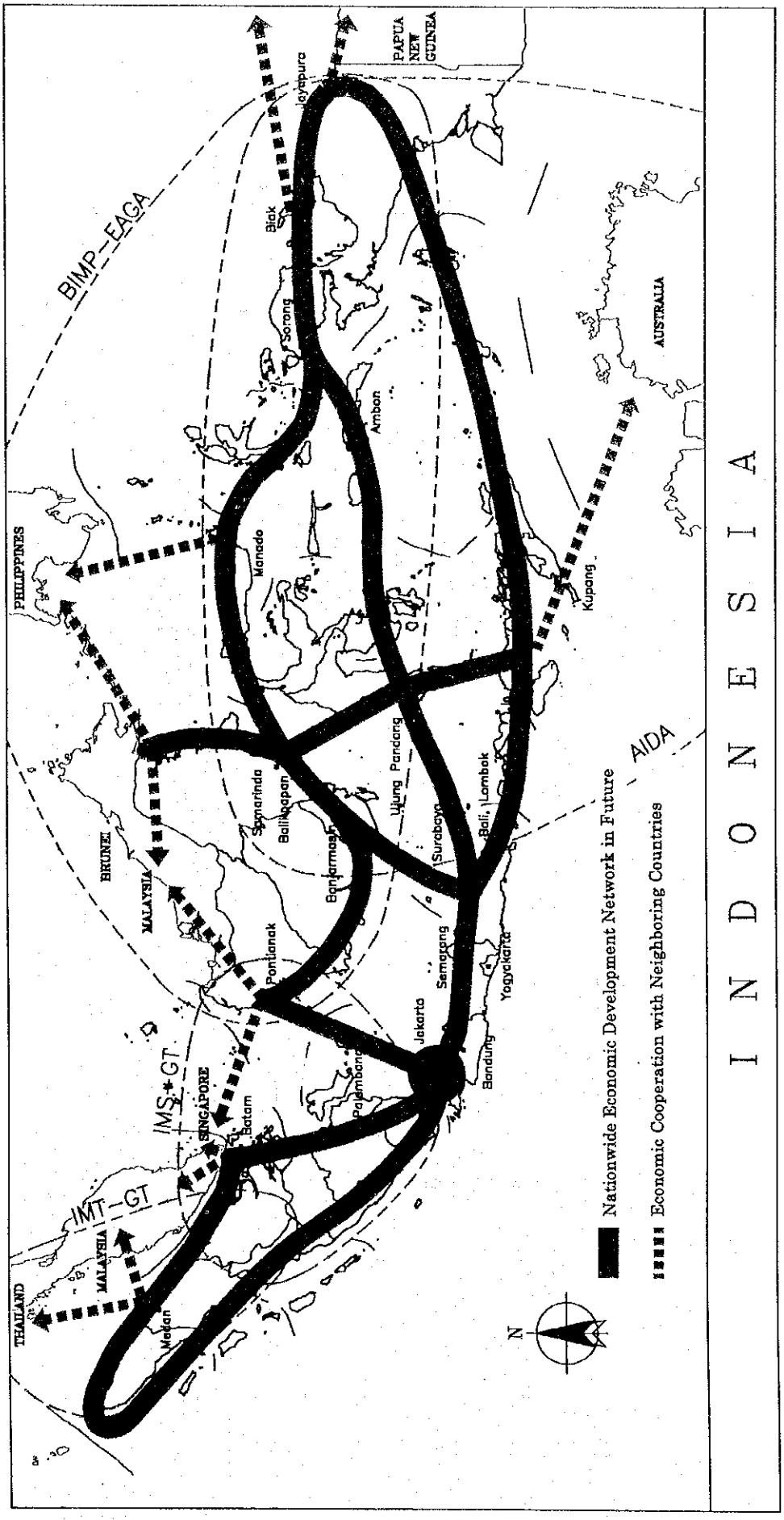
As concerns above nationwide future land development structure, we supposed that "Input" in the eastern part of Indonesia will gradually grow. Namely, in order to reduce regional disparity, national budget and policy will be gradually turned toward the eastern part of Indonesia according to the governmental policy, as a result, private sector investment will follow it.

(2) Nationwide Economic Development Network in Future

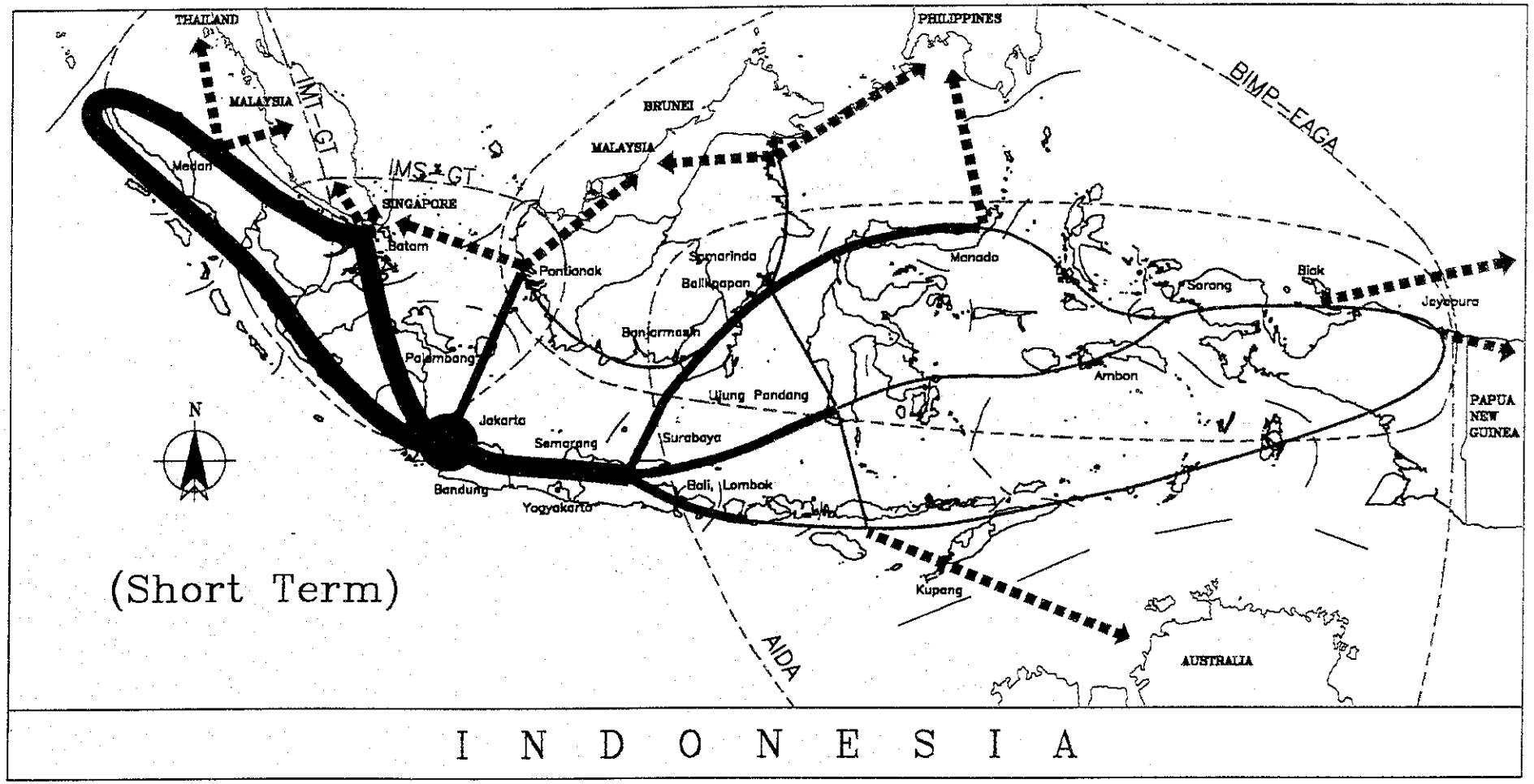
According to above-mentioned future land development structure, we assumed that nationwide economic development network will be shaped as shown in Figure 3.2.3.1.

As the basic concept of the nationwide economic development network, we consider that the network will progress and enlarge as a chain-reaction in proportion to the progress of land development. Namely, in the short term, the network will be mainly well shaped in "Jawa-Sumatra", and in the middle term, the well shaped network will be extended toward "Jawa-West Kalimantan", "Jawa-South and East Kalimantan-North Sulawesi", "Jawa-South Sulawesi", and "Jawa-Bali-Lombok". Finally in the long term, it will be extended toward the remaining regions.

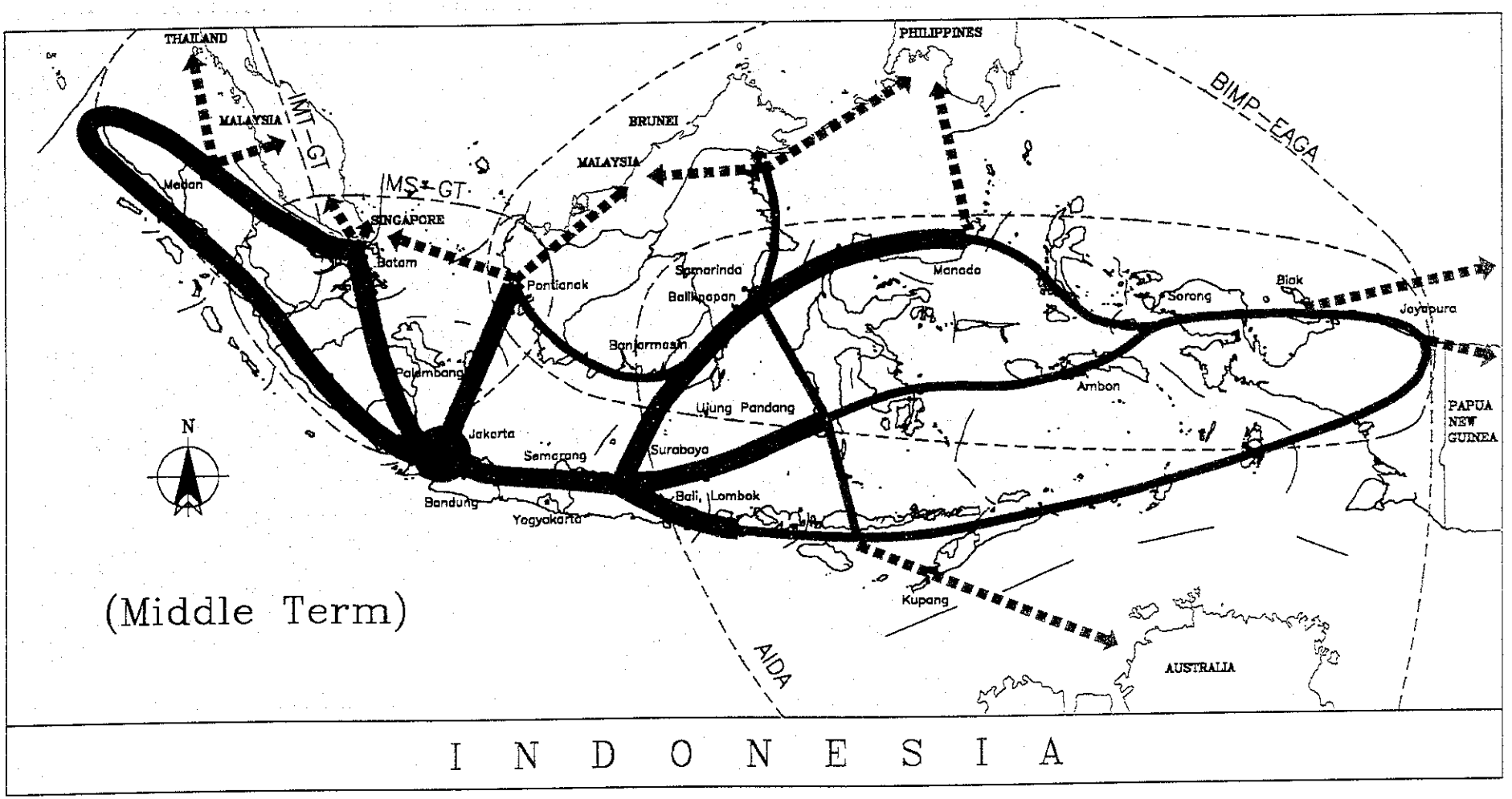
Figure 3.2.3.1 Nationwide Economic Development Network in Future

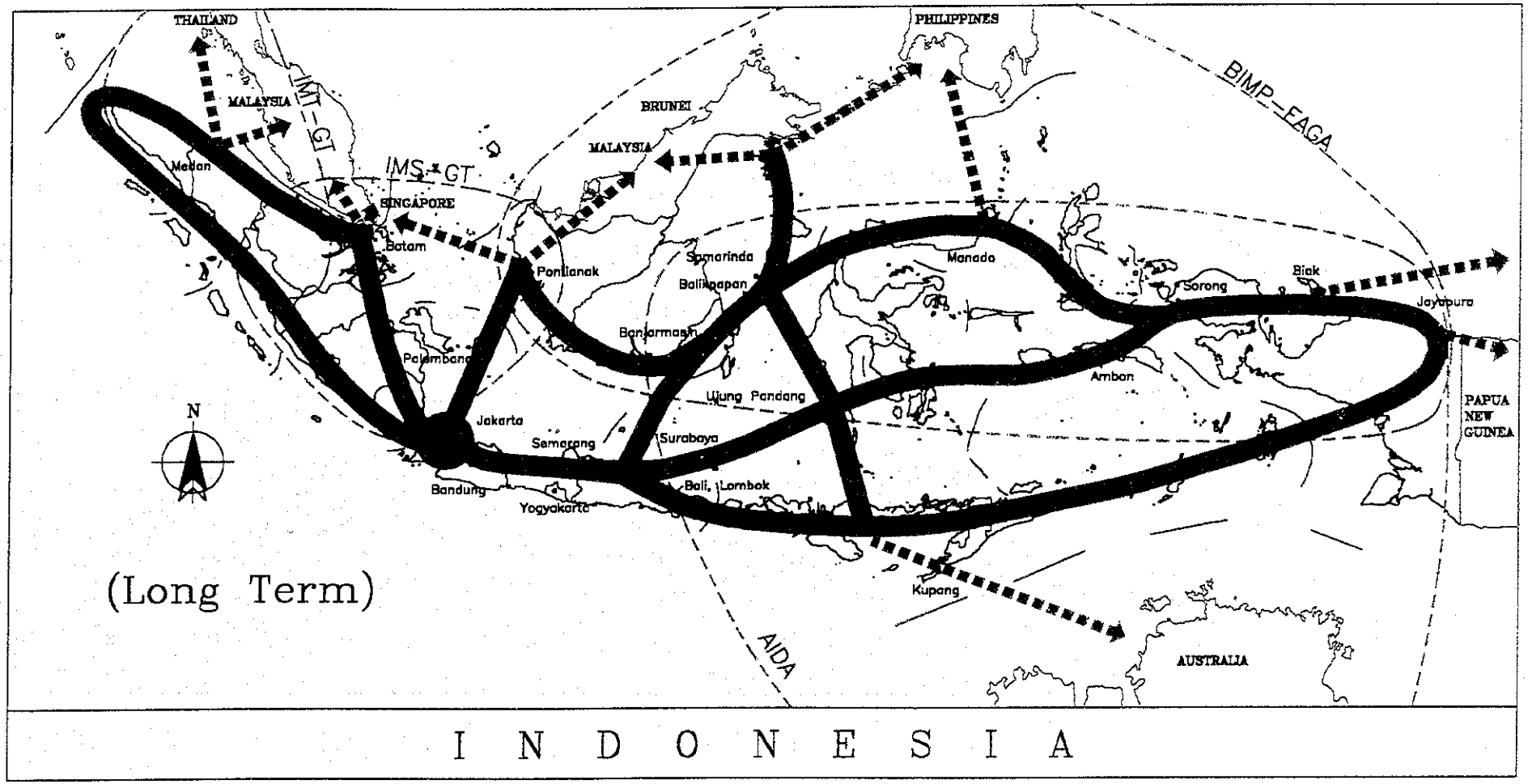


(Figure 3.2.3.1 continued)



(Figure 3.2.3.1 continued)




THAILAND
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Batam
Pontianak
BRUNEI
MALAYSIA
PHILIPPINES
BIMP-EAGA
Samarinda
Balikpapan
Manado
Sorong
Biak
Jayapura
Banjarmasin
Palembang
Ambon
PAPUA NEW GUINEA
Ujung Pandang
Jakarta
Semarang
Surabaya
Bali, Lombok
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3.3 Trading Condition between Indonesia and Major Trading Partners

3.3.1 Indonesian Trade by Area

The most important area in terms of international trade volume/value for Indonesia in 1995 was Asia with share of 89.9%/60.7% for export and 39.3%/49.3% for import. Europe is also a key area, in terms of trade value of 15.9% for export and 22.8% for import.

3.3.2 Major Trading Partners of Indonesia

Major trading partners of Indonesia in terms of export volume are Japan(23.4%), Republic of Korea(6.1%), Taiwan(4.9%), USA(3.2%) and China(3.2%), while for export value, Japan(27.1%), USA(13.9%), Republic of Korea(6.4%), Taiwan(3.9%) and China(3.8%) are the main partners. As for import volume, Australia(9.9%), Saudi Arabia(9.2%), USA(8.2%), China(5.9%) and Japan(5.4%) are the major countries, while Japan(22.7%), USA(11.7%), Germany(6.9%), Republic of Korea(6.0%) and Australia(5.0%) are the main countries in terms of value.

The volume and value for export and import in Singapore has a large share in Indonesian statistics, but it is assumed that the volume and value in Singapore include those of transshipment cargoes and thus Singapore is excluded here.

3.4 Container and Major Domestic Shipping

3.4.1 Trend of International Container Vessel

(1) Trans-Pacific and Europe/Asia container route (International Trunk Container Route) vessels.

In 1967, the first full container vessel entered into service on the trans-Pacific by Matson, a U.S. shipping company. The following year, the first Japanese full container vessel crossed the Pacific Ocean carrying 752TEU containers from Tokyo to Los Angeles.
Afterwards, full container vessels have developed remarkably and become much larger and faster in the world major trades. By 1970, the main container vessels were already larger than 2,000TEU load. The enlargement of container vessel size continued and in the 1980's, over Pana-Max vessels of 4,000TEU class came into service. In the 1990's, to serve long distance routes such as Far East/Europe and Far East/North America, the vessel size increased to 5,000TEU～6,000TEU load type.

In the world shipping circles, there are many theories about the future size of full container vessels especially the post Pana-Max types. Meanwhile, Maersk line has ordered seven 8,700 TEU container vessels, which will be delivered from the middle of 1998 to the end of 1999.

The study team estimated average load capacity of full container vessels in major trade routes, taking into consideration of the history of container ships. (See Table 3.4.1.1)

Table 3.4.1.1 Assumption of Average Load Capacity of Container Ship Unit: TEU

YEAR	ASIA/NORTH AMERICA (AVERAGE)	ASIA/EUROPE CONTINENT (AVERAGE)	INTRA-ASIA	
			AVERAGE	MAXIMUM
1995	2,740	5,350	3,133	4,950
2000	3,260	4,043	828	2,067
2003	3,618	4,711	935	2,334
2008	4,305	6,079	1,145	2,859
2013	4,864	7,273	1,320	3,297
2018	5,309	8,275	1,462	3,652

SOURCE: Data based on The Japan Shipping Exchange Inc. and estimated by the Study Team

(2) Estimation of future size of the international container vessel

The study team estimated future vessel sizes according to some fixed increase rates in major trades with Asia and Europe and North America. The largest vessel such as around

8000TEU load capacity or more will be in service at first between Asia and Europe Continent. Afterwards if these vessels become more competitive in this trade, they will probably be transferred to the Trans Pacific trade.

In Intra-Asia trades, we estimated that in the year of 2018, the average of full container vessels would be around 1,500TEU type. Maximum load of container will be about 3,500 TEU type. These figures listed in the table (Table 3.4.1.1) are calculated in accordance with the increase rate of vessel size in the history.

Therefore, having investigated these data and various conditions how to cope with cargo movement among shipping companies in international consortium and how to combine the large vessels with other types, we estimated the future size of vessels in the major trades as forecast in the following table. (See table Table 3.4.1.2)

Table 3.4.1.2 Average ship sizes employed in various sea routes

Sea Routes	Ship size in TEU		
	1998	2008	2018
Asia / N. America	3,000 – 4,000	3,500 – 4,500	4,500 – 6,500
Asia / Europe	3,500 – 5,500	4,000 – 6,000	6,000 – 8,500
Intra-Asia	1,000 – 2,500	1,500 – 3,000	1,500 – 3,500
Intra-Asia Feeder	300 – 1,000	300 – 1,200	500 – 1,500
Indonesia Inter- Islands	Under 100	300 – 500	700 – 1,000

Source: The Japan Shipping Exchange Inc.
Remark: Estimated by JICA Study Team

3.4.2 Trend of Major Domestic Cargo Vessel

It is rather hard to define which type or size of the vessel is appropriate to the domestic sea route. Cargo movement varies from port to port and also differs by cargo type and time of shipment.

From the analysis of the current Indonesian fleet, it can be generally said that vessels of 1,000DWT~3,000DWT would be most appropriate transport means in case of distance around from 300~500 miles. For routes with distance around 1,000 miles to 1,500 miles, 3,000DWT or 5,000DWT vessel would be more advantageous.

Inaddition, in order to improve the efficiency of current port operation both in conventional cargo and container, semi-container vessels would be recommendable as the intermediate step to domestic container transportation, considering that the number of full container vessels for domestic trades is very few and the conventional type of vessels such as Pioneer shipping and Rakyat shipping are still playing important roles in domestic transportation.

3.5 International Competitiveness of Container Cargo Transportation

3.5.1 Necessity of Effective Container Transportation System

(1) Supporting Social and Economical Activities in Indonesia

The globalization and regional cooperation of industrial activities, such as AFTA, EU, AFTA and so on, requires an optimal mass transportation system based on international standards. For the sea transportation sector, containerization is the most effective, economical and reliable procedure to satisfy such a requirement at present.

In Indonesia, recovery and development of export-oriented manufacturing and processing industries will necessitate improvement of the container transportation system. Appropriate port facilities and dynamic management can improve the competitiveness of the system.

(2) Securing Reliability of Sea Transportation

The majority of international container trade in Indonesia has been depending on the feeder service from Singapore these days. If international sea transportation would be adequately divided among the several kinds of service patterns, the reliability and competitiveness of this sector could be improved. It is essential that port facilities should be developed systematically as gateways, which could be called by several kinds of international container trunk services such as Transpacific service and Europe/East-Asia service.

(3) Promoting Attractive Transport System for Shipper

In a mature transportation system where delivery time is reliable, the volume of stored goods can be reduced and inventory control becomes much easier. As a result, the investment for storage facilities, materials and product is also reduced, especially in an archipelago country. In order to minimize the total production cost and improve competitiveness of the merchandise, it is important to reduce the transportation cost and delivery time, especially in areas located far away from international trunk service route.

3.5.2 Present Situation and Future Trend of Container Transportation in East Asia

(1) Present Situation of Container Service

Container shipping services connect several ports in one or more regions or sub-regions. Each service route with a liner or round trip itinerary is, in general, calling at fixed ports at fixed frequency. Even in the dominant global container service routes, visiting ports in one region may change frequently. The main ports on Transpacific Service, at which ships call more than ten times a week, are Tokyo/Yokohama, Nagoya, Kobe/Osaka, Busan, Keelung, Kaohsiung, H.K and Singapore. More than 90% of the service lines called some ports in Japan

in 1987, but less than 80% do so at present. The main ports on Europe/East-Asia Service are H.K. and Singapore. In 1987, 90% of vessels on this service route made calls Japanese ports, but that figure has dropped less than 60% at present.

(2) Major Container ports

Europe and Transpacific Service called all ports in which more than 500,000 TEUs/year containers were handled except Bangkok and Tg.Priok in East Asia. Vessels with a capacity greater than 1,000TEUs on Intra-Asia Service called the ports in which more than 200,000 TEUs/year were handled, and the ports handling less than 100,000TEUs were called by small capacity feeder vessels.

In order to remain competitive as an International Hub Port for Transpacific and Europe Service, it is essential to prepare for receiving large container ships known as Over-Panamax type, which can transport more than 5,000TEUs of container cargo. As of 1995, there were 12 container terminal berths with a depth of at least 15m to accommodate for such vessel in Japan, Hong Kong and Singapore. Construction of additional 41 berths with more 15m deep are planned in Japan, South Korea, Taiwan, Hong Kong and Singapore by the year 2000.

(3) Container Cargo Share by Shipping Line

The container vessel operators of Asian country flag, such as Japan, Taiwan, Korea and China, are ranked in the top four. A Singapore flag ship company (NOL) acquired with a US flag ship company (APL) in 1998 and now Singapore occupies the eighth position.

Intra-Asia Service is almost monopolized by the flag ships of Taiwan, Japan, Korea, Singapore and China, which have a collective share of 90% of the service market. Indonesia is ranked in the eighth position with PT Samudera Indonesia, but the capacity is less than 3% of the total capacity of top 20 in Intra Asia.

(4) Present Situation and Future Share of Container Volume

The shares of each country in Transpacific trade in 2008 and 2018 are roughly estimated by the Study Team. In 2018, Japan's share will decrease by more than 10%. Korea, Taiwan and H.K will maintain more or less their present shares, while China's share will increase by more than 10%. The total share of these five countries is 81% in 1996, 79% in 2008 and 77% in 2018. This shows that Northeast Asia will continue to be the main market of the Trade.

The Study Team also roughly estimates the shares of each country in Intra-Asia trade in 2008 and 2018. In 2018, Japan's share will drop by approximately 10%, while Taiwan and Hong Kong maintain more or less their present share through this period. But the growth rate of container might decline if economies of these countries would have been well matured. The values, therefore, might be smaller than forecast.

It is understood that Intra-Asia container trade will be generated all over the Asian countries

and the container cargo share will redistribute steadily. Preparing facilities and services to support such activities is essential for these countries to promote the competitiveness.

3.5.3 Example of International Hub Port

(1) Algeciras, Marsaxlokk and Gioia Tauro in Mediterranean Sea

Algeciras port, Marsaxlokk port and Gioia Tauro port are situated in Mediterranean Sea, in which there is a major sea-lane connecting Suez and Gibraltar. Recently these ports entered fierce competition to invite calling of large container vessels operated by big international consortium. HMM strengthened feeder service route from Marsaxlokk and MSC/Norasia moved the Hub port in Mediterranean See from Marsaxlokk to Piraeus. Evergreen selected Gioia Tauro as Hub port in Mediterranean See and Meask/Sea-Land group set up the trunk route to call their private terminal in Algeciras and priority berth in Gioia Tauro.

(2) Singapore and Hong Kong

Singapore situated near the major sea-lane, Malacca Strait, and role of the port was a supply base for long voyages to Europe, originally. The capacity of container ships has been rapidly increasing and the port facilities and services in Singapore have been developed to satisfy the requirement of ships and operators continuously. Neighboring countries have not been able to develop such facilities and services sufficiently.

Hong Kong situated at the southern end of China, a country which is experiencing high economic growth. The port has been connected over the country with road and railway as national gate port of import/export cargo. Several new port facilities are being developed in the northern part of China and the service area of the port will decrease gradually in future.

3.5.4 Selecting Direct Call Port

(1) Viewpoint of Ship Operator

Ship operator, in general, decides the itinerary by evaluating two factors, that is limitation of a round trip period and volume of.cargo. Ship operator will select a direct call port in a certain region where it is easy to obtain a sufficient volume of cargo without competition. If there were some candidate ports in an area with keen competition, a port with certain volume of cargo which is relatively less competitive would be selected by a ship operator as a direct call port which is located to satisfies limited round period.

(2) Viewpoint of Shipper

Shipper will select a port by evaluating two factors, that is cost and time. The door-to-door transport cost includes not only sea and land transportation but also storage and insurance. The

total transport time is estimated by taking account of delivery days, service frequency, customs clearance, operation and acceptance time in port and others facilities. Damage of cargo due to transshipment, lost and stolen cargo, cancellation and delay of the service and reliability of schedule are also factors in deciding the total cost and total time.

(3) Geographical Condition

A candidate of International Hub Port should be situated near a major international sea-lane and feeder service ports should be located at an appropriate distance from the sea-lane. There is fair possibility that a port will receive direct service, if the port has a sufficient volume of container from the hinterland and is situated around 500 mile or less from the international sea-lane. The service ship navigating 500miles is able to call the port within one day from the sea-lane. It is, therefore, reasonable for operator to reschedule the itinerary to call the port.

(4) Port Facilities and Container Volume

As an ordinary container terminal called by international service with more than 1,000 TEUs capacity ship, facilities of 12m deep 270m long berth with more than 2 quay-cranes and sufficient container terminal area with well organized operation system should be prepared.

The container volume handled at the port is one of the important factors to receive international direct service. Based on the experience in Japan, at least 30% of full capacity of a calling ship should be loaded and unloaded at one time. And the difference between the volume of loaded and unloaded is another important factor.

3.5.5 Port Service and Management

(1) Quality of service

International shipping lines operate on extremely tight schedules. Delays on the schedule cause a heavy burden to shipping lines. The terminal manager/operator must provide high quality services for customers. The port should provide customers with high safety, security and reliable services, smooth procedure of documentation and high productivity of cargo handling at low cost.

1) Highly skilled labor

Since high skilled labors are important for high quality management and operation, well designed labor training courses should be provided for port management and operation workers. In addition to staff training program, port sector should provide on the job training, job rotation within the sectors and with other organizations to provide staffs who has high skill and mindset to meet the rapidly changing needs of the port services.

2) Safety and Security

Ports should have good safety and security systems. Round the clock pilotage and towage at channels with buoys and signals, vessel monitor system with VHF radio and radar system ensures safe entry of vessels. Differential GPS signal broadcasting system, the electronic chart display and information system will further enhance safe navigation providing with real-time information.

3) Procedure and EDI system

If a port offers a single window service for documentation, users can eliminate the cumbersome procedure. Introduction of the EDI system makes the procedure at the port more reliable and easier without many kinds of papers. The EDI system linked with customers and relevant government agencies can minimize paper flow resulting elimination of errors in communications and faster response.

4) Productivity and Price

There are three basic elements, that is the rated productivity, the interruption and the manner, in cargo handling performance. Higher productivity of cargo handling will reduce time and cost of cargo transportation and consequently will realize to invite international direct calls.

5) Information system for users

Vessels and cargoes location should be traced, received, documented and forwarded to vessel operators. Real-time information should be provided to customers and agents through the Internet service etc. The information should include details of services, procedures, facilities, performance, schedule of vessels and cargoes, etc.

(2) Accessibility with railways and roads

A port should be connected to a large fleet of prime movers, trailers and trucks for a variety of services. A vehicular scheduling system for the optimum logistics of the fleet of prime movers should be installed. Door to door services, and urgent deliveries at short notice for customers should be realized. In addition to storage area in container terminal, warehouse space should be available within appropriate distance from the port with easy reach of railways and roads. A port area should have a function as distribution center, which caters to requests of manufacturers, traders and others. A port should have a forwarding network, which enables the shipping line to deliver the goods in the shortest possible time at competitive rates.

Reduction of road traffic congestion around the port area needs tight co-operation with other administrative organization related to road traffic.