CHAPTER 3: OVERVIEW OF MARITIME TRANSPORT SYSTEM IN INDONESIA

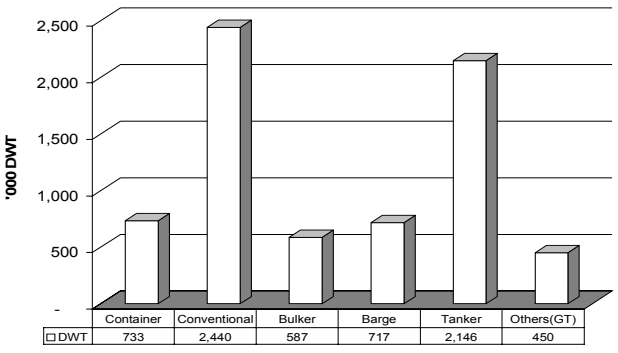
FLEET

- There are two depository organizations for registered Indonesian flagged vessels. These are the DGSC registry and the BKI registry. A ship over 7GT will be registered with the DGSC or its local ADPEL or KANPEL offices. Indonesian government regulation stipulates that a vessel over 100GT, or over 20m long, be registered with the BKI or its offices.

• DGSC	22,382 vessels	(9.24 million GT)
• BKI	7,167 vessels	(7.09 million GT)
• Lloyd's	1,019 vessels	(4.2 million DWT)

- The operational fleet is determined from DGSC sources with corresponding adjustments. The current fleet is estimated to be 6,653 thousand DWT for freight fleet and 450 thousand GT for passenger fleet. In terms of ship type, the domestic fleet is comprised of mainly conventional vessels and tankers. In regard to vessel flag, 3,576 thousand DWT is registered with Indonesian flags while 3,047 thousand DWT are registered as non-Indonesian flags. All passenger ships fly an Indonesian flag.

Figure 3.1 Domestic Fleet by Type

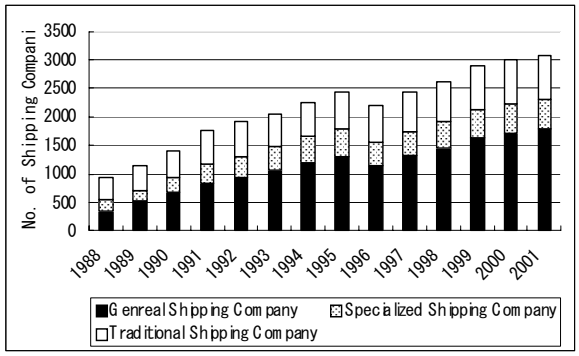


- The Indonesian domestic shipping industry has always suffered from fleet shortage. But its dependence on foreign fleet varies from time to time. In 1986 after the scrapping policy, the foreign fleet share was 8.4% or 0.8 million tons, while the share jumped to 18.4% or 2.8 million tons in 1990 after the implementation of Pak Nov 21/88. Thereafter, until today, Indonesia has recorded high dependency rates around 50%.
- According to the UNCTAD Secretariat report, 98 vessels (1.3 million DWT) are registed as flagged-out vessels which accounts for 16% or 29% in terms of number of units and dead weight tonnage respectively. Many flagged-out vessels are actually assigned in domestic shipping.
- According to the Lloyd's Register, Indonesian vessels have been imported from many countries. Japan made vessels are the majority at 56%, Indonesian-made vessels at 19% and EU-made vessels at 15%.

SHIPPING COMPANIES

- Number of Indonesian shipping company is 3,078 in 2001 which represents an increase of 3.3 times since 1998, due to the deregulation of shipping companies in 1988. Number of owned vessels however increased by only 1.3 times during the same term.
- The number of INSA members is 914. Companies with less than three vessels accounted for 82% of INSA members, while those with 10 or more ships accounted for a mere 4%. The INSA Members account for 70% of the DGSC registered vessel tonnage. The shares of owned and chartered vessels among INSA members were 80% and 20%, respectively. Leasing arrangements were not popular.

Figure 3.2 Number of Shipping Companies in Indonesia



INTERVIEW SURVEY OF SHIPPING COMPANY

- To better understand the activities of Indonesian domestic shipping companies, an interview survey was carried out by visiting selected companies and asking questions concerning both the company and its vessels. The survey covered 80 shipping companies and 323 vessels, which is roughly half of the target samples (see Table 3.1).
- From the analysis of shipping companies and their business experiences, companies can be grouped into dynamic and static companies. The former has a growth strategy while in terms of increasing employees and expanding services while the latter sticks to their optimal size of operation regardless of history.

- The intention to increase fleet size is stronger among general cargo shipping companies followed by container shipping companies and passenger shipping activities.
- Shipping companies considered "Revenue Increase", "Cost Cutting" and "Marketing" as priority management issues. Safety in operation, organizational strength and human resource development are rated highly as well. Fleet expansion, financial resources, environment and new technology are rated as the least priority issues.
- Shipping companies considered "Regulation and its Implementation", "Old Age of Vessels" and "Lack of Fund" and "Poor Port Operations" and the "High Rate of Invisible Cost" are rated as the primary concerns that impede the improvement and modernization of their company. Many shipping companies ranked "Old Age of Ships" and "Lack of Fund" as the most difficult impediments which implies that many companies are not satisfied with their ships.

Table 3.1 Rate of Response in Interview Survey

	Number of companies	
	Answered	Answer Rate
Bulk	11	48%
Container	16	32%
General Cargo	28	104%
Tanker	13	33%
Passenger	12	43%
Total	80	48%

Table 3.2 Priority Issues and Impediments

Priority Issues	Number of cases	Impediments	Number of Cases
Revenue increase	46	Regulation & its implementation	44
Cost cutting	46	Old age of ships	43
Marketing	45	Lack of fund	35
Safety in operation	31	Poor port operations	32
Organizational strength	29	Invisible cost (High rate)	32
Human resource development	26	Lack of skills of seafarers	28
Fleet expansion	20	Shortage of vessel	18
Financial resources	15	Lack of manpower	14
Environment al consideration	10	Lack of information technology	14
New technology introduction	4	Others	1

INFRASTRUCTURE

- There are around 2,100 ports in Indonesia. 111 ports are managed and operated by PELINDO. 141 ports are international ports (i.e. open to foreign trade).
- JICA study team visited 14 of the 25 strategic ports. Problems in port facilities and management have been surveyed and discussed with port administrators.
- The case of anchorage at Tg. Priok was chosen as a case Study. Analysis of satellite photograph, visual observations form survey boat, and interview survey of 20 ships at anchorage was conducted to clarify the problems of ships at anchorage.
- According to the satellite photograph, ships at anchorage were confined to a very narrow area of water and such condition is considered very dangerous from a safety point of view. During the time the satellite image was taken there were 76 ships at anchorage and 72 ships are engaged in domestic shipping.
- According to the result of interview survey of 20 ships at anchorage, 10 (50%) ships were waiting for berth, 6 (30%) ships were waiting for cargo and 3 (15%) ships were waiting for repair.

Figure 3.3. Type of Ships at Anchorage

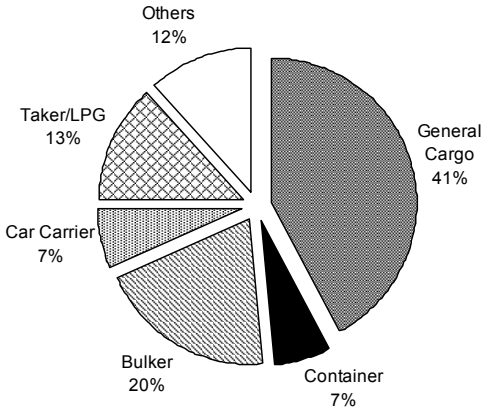


Figure 3.4. Size of Ships at Anchorage

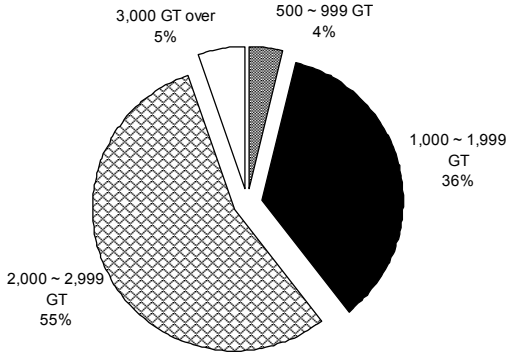


Figure 3.5. Waiting Vessels at Tg. Priok Port

CHAPTER 4: EXISTING SHIPPING SERVICES

CLASSIFICATION

- In this study, Indonesian domestic shipping is categorized by shipping business licenses and shipping service characteristics into 5 groups as follows; (1) Inter-island freight shipping, (2) Inter-island passenger shipping, (3) Special Shipping, (4) Pioneer Shipping, (5) Traditional Shipping.
- Overseas shipping by Indonesian operators is included in this study as well, due to its close ties to domestic shipping.

INTER-ISLAND FREIGHT SHIPPING

- According to DGSC and INSA database, 34 shipping companies ships are currently engaged in domestic container trade. About half of container haulage is done by liner services.
- Volume of general cargo is still high. There are many small-scale shipping companies that own 2 general cargo ships.
- Almost all dry bulk traffic is transported by barge, and so the number of bulk carrier is small.
- Pertamina Shipping, a special shipping company, with owned vessels as well as chartered vessels from foreign and national shipping lines. Thus, Indonesian operators must compete with foreign carriers even in domestic fuel trade.

Figure 4.1. Container Shipping Routes

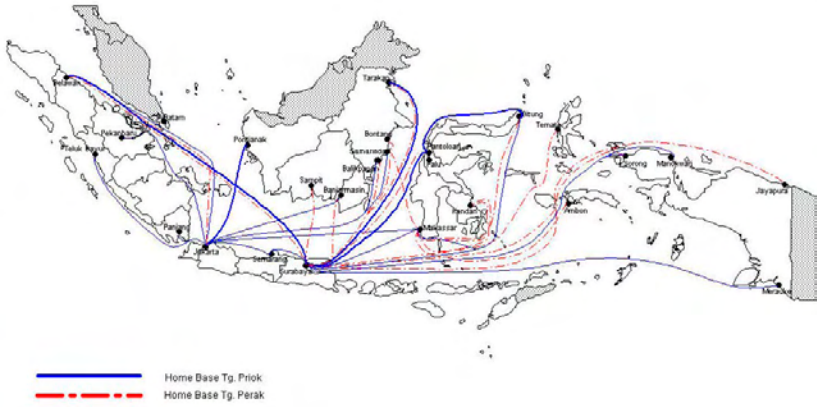


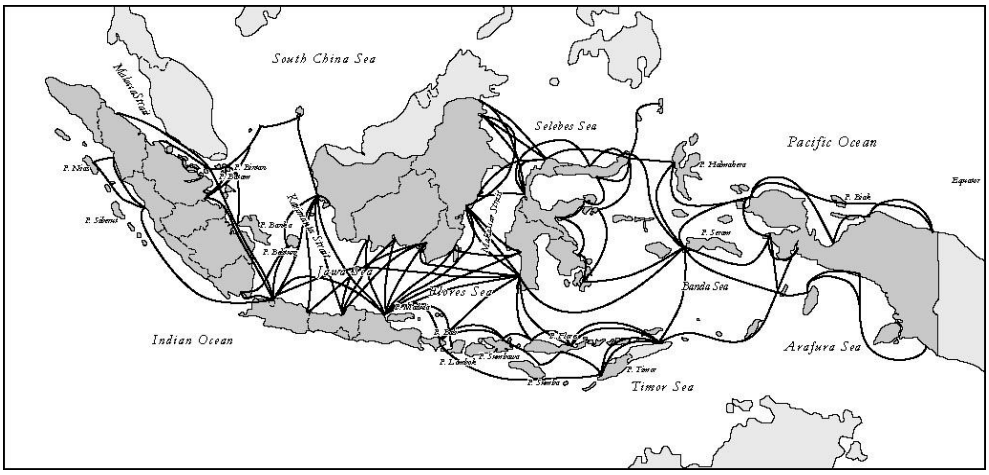
Table 4.1. Analysis of Ship Type

	DWT	Draft	Speed	Handling Equipment
Bulk Carrier	There are two distinct vessel groups (under 2,000 DWT and over 11,000 DWT)	Draft of bulk carrier vessels have 6 ~ 8m drafts.	Speed of vessel is between 9 to 12 knots	Bulk career vessels at least 20 years old have their own gear for cargo handling. But new vessels don't have.
Container Carrier	There are many small vessels under 7,000 DWT. Size of newly introduced vessels are 3,000 ~ 5,000 DWT.	Draft of container vessels are only 4 to 8 m, and all new vessels have almost less than 6 m draft.	Speed of vessel is between 9 to 12 knots	Most container vessels have their own gear for container handling.
General Cargo Carrier	Most vessels are 5,000 ~ 15,000 DWT and 20 ~ 30 years old.	Draft of vessels are only 6 to 8 m, and all new vessels have almost less than 6 m draft.	Speed of vessels at least 20 years old is more than 10 knots. But speed of new vessels is diverse knots.	Most vessels have their own gear for cargo handling. Half of new vessels have their own gear.
Tanker	Most vessels are 5,000 ~ 15,000 DWT and 20 ~ 30 years old.	Drafts of tankers vessels are only 4 to 6 m	Speed of vessel is more than 12 knots.	Vessels have pumps.

INTER-ISLAND PASSENGER SHIPPING

- Inter-island passenger shipping companies can be categorized into 3 types; (1) the state-owned PT. PELNI with passenger service network covering extensively all over Indonesia, (2) mid-size shipping companies offering trunk line passenger service by Ro/Ro passenger ship and speedboat, (3) local small-size shipping companies offering passenger service by small speedboat.
- PT. PELNI services a total of 91 ports and has established 1,300 routes in Indonesia. In this study, analysis of financial statement and consideration of subsidies system has not been done. Also, issues regarding pricing and routing in consideration with competition against airline services needs to be considered
- PT. PELNI has purchased 22 passenger vessels from Germany since 1983, and during this past ten years, PT PELNI imported and operated 8 big passenger vessels with 2,000 passenger capacities. It is necessary to review the needs of such large passenger ships and their services in route hierarchy.
- PT. Prima Vista and PT. Dharma Lautan Utama, mid-size shipping company, has operated 6 Ro/Ro vessels each (1~2,500 passengers, 50~150 vehicles) and operated between Jawa Island and other islands. This is noteworthy in considering a future role of passenger shipping in Indonesia, particularly in market sharing with air services.
- Speedboat under 500 GT and offering short distance trip services have become a fixture in passenger shipping services. PT. ASDP operates mid-distance trip passenger service by mid-size vessels. But it is not the right time to judge such services to be viable and thus business feasibility will have to be examined carefully.

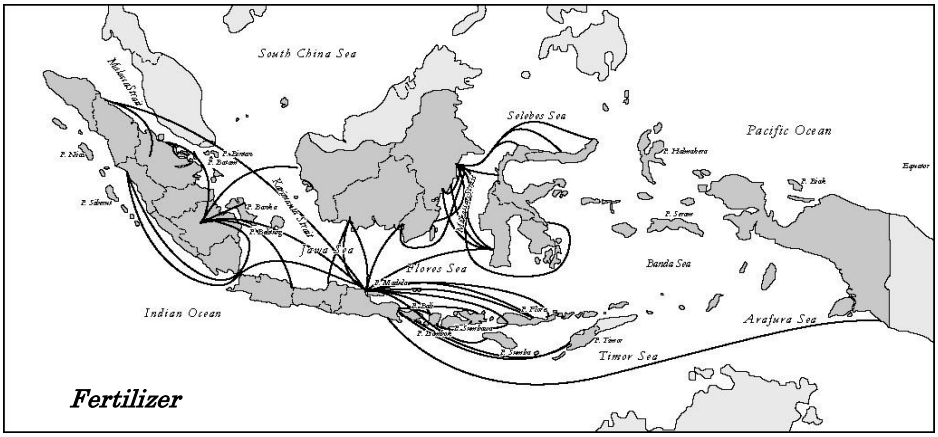
Figure 4.2. Passenger Ship Route Map



SPECIAL SHIPPING

- Special shipping company needs not to obtain special shipping licenses to operate ships to support their own non-shipping business activities. For examples companies involved in manufacturing, forestry, tourism, mining, fishing, salvage and underwater work dredging sectors, can operate their own ships under the special shipping category.
- Currently there are 524 special shipping companies. Special shipping companies acts as cargo owner as well as carrier. Sometimes special shipping company uses charter vessels from general shipping company or foreign vessels. Pertamina, special shipping company of fuel oil, controls about 90% of liquid cargo in domestic shipping.
- Special shipping handles a very significant share of domestic tonnage, especially for certain commodities such as fuel oil, cement and fertilizer.
- Rice, cement and fertilizer are the three strategic commodities in Indonesia. So DGSC, INSA and their suppliers have designated 17 embarkation ports and have put in place special measures to ensure smooth transport of these key commodities.
- Special shipping ensures synergy between cargo owner and carrier which is especially effective when the cargo owner monopolizes the market for the commodity. These privileged services of special shipping promote stable supply but could potentially lead to inefficiencies in terms of national economy.

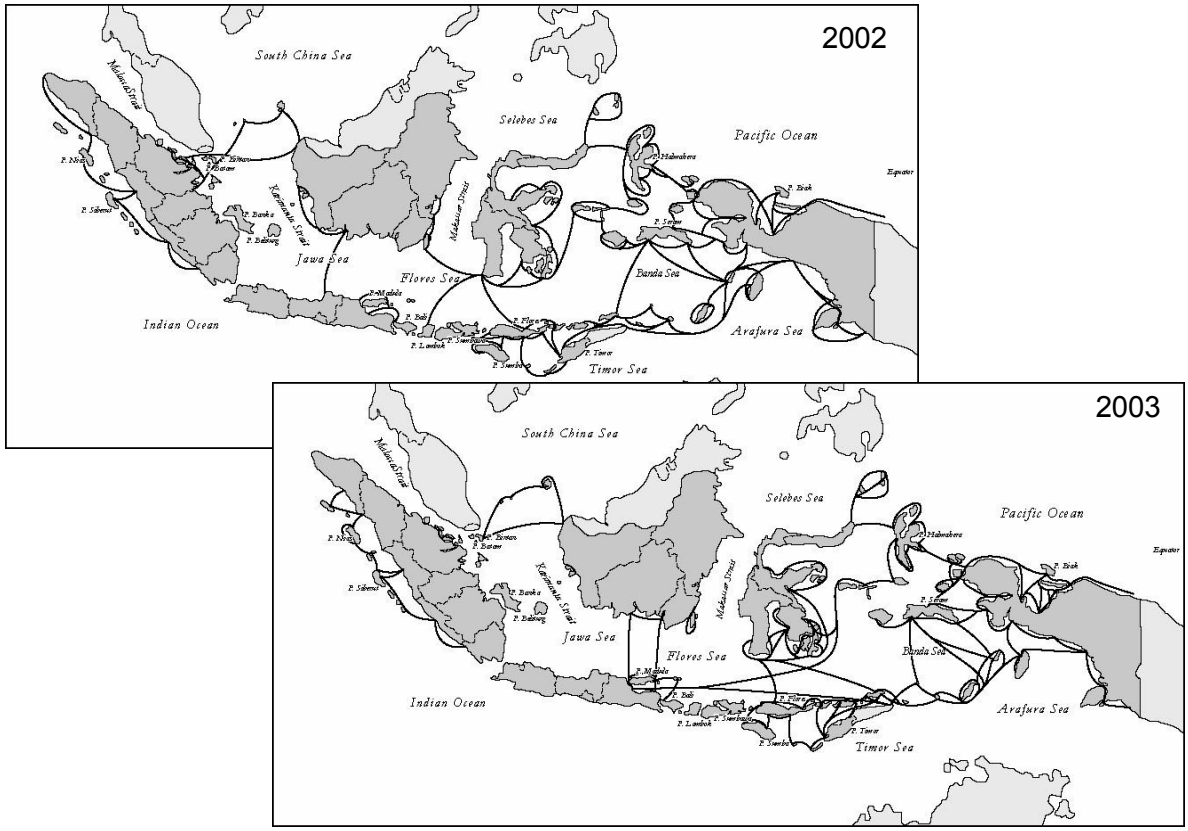
Figure 4.3. Major Fertilizer Shipping Network, 2001



PIONEER SHIPPING

- Pioneer shipping has been in operation since 1974 with the main objective of providing access to remote regions. This type of operation is subsidized by the central government. Now 49 pioneer vessels are operating around East Indonesia increasing from 35 in 1994.
- DGSC has the responsibility to decide on and manage pioneer service routes. DGSC decides on the improvement or introduction of a pioneer service route based on the following factors; (1) capacity of government budget, (2) necessity for the regional economy, (3) necessity for national defense and security, (4) integration of the national transport network system with land and air transport. Total amount of subsidy is the difference between gross income and total expenses including profits (10% of total expenses).
- Pioneer shipping handles about 250,000 passengers and 120,000 tons of freight per year. Number of passengers carried by pioneer shipping accounts for only 2% of all domestic shipping passengers and only 0.1% of domestic freight. Loading factor is quite low at 20~30% for passengers and 5~10% for freight. Volume of passenger and cargo has flattened in recent years.
- Problems of pioneer shipping system are as follows; (1) it is difficult to create incentives to reduce costs and improve services for pioneer shipping companies, owing to the presence of subsidies; (2) DGSC could not adequately monitor pioneer shipping movements; (3) pioneer vessels are generally old resulting to ships experiencing maintenance problems; (4) passenger transport market is bigger than cargo transportation but pioneer vessels are freight vessels with minimal facilities for passengers; (5) inadequate port facilities and navigation means at various ports of call have resulted in impediments to operations.

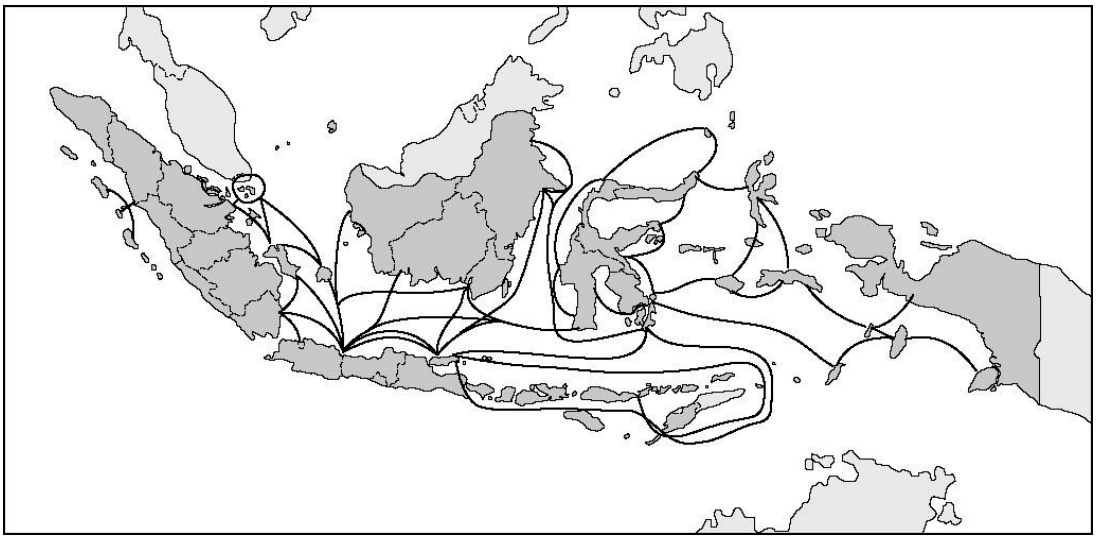
Figure 4.4. Pioneer Shipping Routes in 2002 and 2003



TRADITIONAL SHIPPING

- Traditional shipping companies have different license from general shipping companies. Tariff of traditional shipping is normally referred to as "all in" tariff and cheaper than other shipping tariff.
- The number of traditional shipping companies is 760 in 2001. The number of shipping companies has risen in recent years. But number of vessels and cargo volume has remained roughly constant. Traditional shipping transports around 7 million tons per year which is about 4-5% of total domestic tonnage.
- Traditional shipping has remained steadfast in maintaining the traditional wooden hulled vessel design. Due to restrictions in wood production, materials for ship building have been scarce and thus more expensive, making it difficult for traditional shipping companies.
- No insurance companies are willing to give insurance to crews and vessels of traditional ships since these wooden vessels are high risk and vulnerable to fire. Some companies offer insurance for cargo but insurance premium is very high.
- There are an estimated 678 number of traditional companies employing around 70,000 ~ 80,000 persons comprising of entrepreneurs/ businessmen, owners, ship crew, personnel, labor, and handicraft workers. There is no vocational school for seafarers and training chance in the traditional shipping industries, so these industries have a shortage of qualified personnel.

Figure 4.5. Service Routes of Traditional Shipping (Major Routes only)



OVERSEAS SHIPPING BY INDONESIAN COMPANIES

- Since shipping deregulation policy in 1985, Indonesian shipping industry only registered single digit market share in overseas shipping.
- Since the 1960s, amazingly, the number of Indonesian liner operators has not increased and remains limited to six operators. Since 1985, these six liner operators have either reduced their fleet or assigned some vessels in tramper services. In particular, PT. Djakarta Lloyd, a state-owned company, was forced to reduce its operation scale in line with the decreasing government subsidy. PT. Sumadra Indonesia has moved their base to Singapore since 1993 and overseas and only 2 vessels remains registered at INSA.
- In addition to the six Indonesian liner operators, six other operators are providing tramper services. Unlike the liner operators, tramper operators show a tendency to increase their fleets, average vessel size, and flag-out vessels to compete with foreign operators. PT. Berlian Laju Tanker (BLT) has expanded its fleet recently, to provide larger oil tanker and chemical tanker services.
- The key reasons why some Indonesian operators like the Samudera Group have an increasing shipping business dependency with Singapore are as follows; (1) huge cargo volume in Singapore (2) superior port facilities in Singapore, (3) superior settlement and financial system in Singapore, (4) preferential taxation system in Singapore, (5) superior IT system and good acknowledgment in Singapore, (6) objectionable government regulations in Indonesia.

CHAPTER 5: MARITIME-RELATED INDUSTRIES

SHIPBUILDING INDUSTRY

- Indonesia is seafaring country and has a long history of shipbuilding. Current industry structure was established in 1950s, and shipbuilding industries developed in the 1960s and 1970s. But since PT. PAL, the biggest shipbuilding yard in Indonesia, started to operate in 1980, the government has not provided any investment to shipbuilding industries, except in Batam area.
- According to the official list of the Indonesian government, number of companies registered in MOIT is 240, number of new building berth is 153, maximum capacity of new shipbuilding berth is 50,000 DWT, annual capacity of new shipbuilding berth is 180,000 DWT, number of dock is 208, maximum capacity of dock is 65,000 DWT and annual capacity of dock is 3,600,000 GT.

SHIPYARDS ANALYSIS

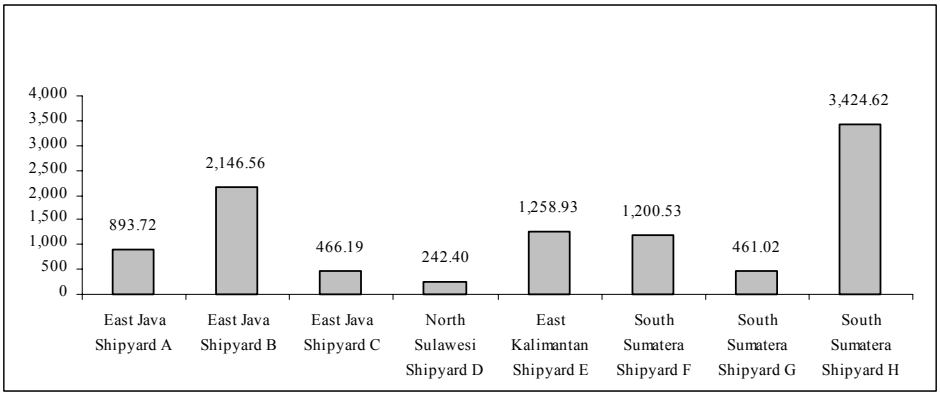
- JICA study team surveyed 25 shipyards nationwide. Surveyed shipyards consists of 12 state-owned and 13 privately owned shipyards. Their qualifications of IPERINDO vary from B1 to M for shipbuilding and from B1 to K1 for ship repairing.
- JICA study team analyzed in detail the current situation of shipbuilding and repairing of 8 shipyards.
- Shipyards have different client groups depending on its location. In fact, they offer competitive prices per GT to those client groups and their owned vessels vessel types.
- The average repair period by ship type was calculated from results of the survey. The results of the survey indicate that local shipyards typically require more than 20 days to complete repairs.
- Manpower productivities of shipyard vary across shipyards from as low as 242 GT/worker to 3,424 GT/worker (see Figure 5.1).

Table 5.1. Average Repair Days by Ship Type and Shipyard

Ship Type	A Yard	B Yard	C Yard	D Yard	E Yard	F Yard	G Yard	H Yard
Cargo	25.5	18.5	26.3	31.6	n.a.	55.6	22.1	5.5
Tanker	40.8	18.9	n.a.	18.5	n.a.	39.4	n.a.	31.7
Container	29.4	19.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a
Bulk Carrier	n.a.	20.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Passenger	13.4	9.6	n.a.	40.8	n.a.	21.0	12.3	n.a.
Ferry/RORO	23.7	17.9	26.0	23.9	16.0	68.0	n.a.	27.3
Tug Boat	33.6	19.6	34.1	27.1	13.5	18.0	20.3	26.3
LCT	17.0	17.7	282.0	32.3	17.6	n.a.	n.a.	n.a.
Barge	121.0	14.5	50.6	31.7	23.6	24.5	27.1	1.8

Note: A Yard, B Yard and C Yard: East Java
D Yard: East Sulawesi
E Yard: East Kalimantan
F Yard, G Yard and H Yard: South Sumatera

Figure 5.1. Total Repaired GT/ No. of Workers



- Generally, Indonesian shipyards need a long repair time, thus, they have lost international competitiveness despite a lower rates. This issue has to be resolved by a comprehensive improvement program as follows;
  1. Improvement of Contract Statements. Spare parts requested from shipowners need to be specified in the contract.
  2. Improvement of Regulation on Customs Clearances for Spare Parts
  3. Improvement of Working Environment (holiday and weekend working)
  4. Improvement of management system between Procurement Division and Dockyards.
- Other key problems are the shallow water depth at shipyard entrance, and lack of marine engineers with quality management skill.

OTHER MARITIME-RELATED INDUSTRIES

- Forwarder: In Indonesia, there are 3,027 forwarders in 2002. Large foreign/national shipping lines and foreign forwarders have entered the forwarding business through joint ventures in late years. These forwarder services increased work efficiency of not only shipping but also all other aspects of logistics.
- IWT (inland water transport) Operator: IWT plays important role in Kalimantan and Sumatra. IWT is under the control of LLASDP in DGLT. Due to its personal business nature, DGLT cannot supervise the entire industry.
- Ship Breaking Yard: There are 11 ship-breaking yards in Indonesia and these yards are dispersed widely across Indonesia except Papua.
- Bunkering Service: Cost of fuel oil in Jakarta almost equals cost in Singapore. However, the cost of lubricants in Indonesia is higher by 30% than cost in Singapore, Hong Kong and Bangkok.
- Shipping Insurance: Shipping insurance products (hull, cargo, P&I) are considered unprofitable and high risk for Indonesian insurance companies. Important issues are that there is no insurance examiner of shipping and many small-scale shipping companies cannot obtain insurance.

Note: IWT: Inland Water Transport
LLASDP: Lalulintas Angkutan Sungai Danau Dan
DGLT: The Directorate General of Land Transportation
P&I: Protection and indemnity

CHAPTER 6: INSTITUTIONAL DEVELOPMENT IN THE MARITIME TRANSPORT SECTOR

LEGAL FRAMEWORK

- Commercial Code: Carriage of goods is regulated by the Commercial Code. However most of the provisions are outdated. In practice, the Hague or Visby rules could support foreign trade even Indonesia has not yet acceded to if specifically so provided in a bill of lading.
- Another issue in the Commercial Code is the difficulty in executing mortgage and arrest of ships. This issue is a growing concern among relevant officers of Indonesia's maritime transport. Thus, ratification of international conventions may require Indonesia's urgent consideration.
- Economic Regulation: Indonesia's maritime sector laws and regulations have been in effect and unchanged since the Dutch administration. Law No. 21/1992 has laid the basis for the review of the previous legal structure. Under this Shipping Law, five separate Governmental Regulations have been issued, including inspection of ship accident, water transportation, maritime affairs, navigation affairs and harbor affairs between 1998 and 2001.
- International Regimes: Generally speaking, Indonesia has already ratified most of the essential international conventions on ships, seamen and navigation accompanied by relevant internal regulations. However it must be noted that Indonesia has not ratified any of the conventions related to commercial operations such as carriage of goods by sea, limitation of liability and responsibility of ship owners or ship operations and procedures in enforcing debtor's fulfillment of liabilities through mortgages and liens.

SHIP REGISTRATION AND SHIP INSPECTION

- In accordance with Indonesian laws and regulations, ships over 7 GT (20 M^3) or bigger owned by shipowners who reside in Indonesia are subject to ship registration.
- New Shipping Regulations No. 51/2002 have taken over the old Dutch regulation in 1935. For implementation, Ministerial Degrees concerning Shipping Safety are being processed, contents of which are SOLAS, LL, TMS and STCW '95. Upon completion, the Government is ready to ratify the latest ship safety-related international convention codes.
- As for ship inspection, DGSC Marine Inspectors carry out inspections with regard to ship safety and protection of marine environments while BKI and other international ship classification societies do classification surveys, LL and ISM related surveys.

GOVERNMENT INTERVENTIONS

- After independence, Indonesia is the first country to hold a state-owned shipping company among ASEAN members. Until the mid-1980s, Indonesia took a protectionist policy in the shipping sector.
- In 1985, Presidential Instruction No.4/1985 was issued to boost export activities other than oil and gas and to reduce shipping and port costs. With increased open ports from only four to 127, Indonesian carriers were exposed to competitors such as feeder operators which attracted cargoes at competitive freight-rates.
- Furthermore, in 1988, the Government dropped its tight control in the domestic market. In establishing new shipping companies, possession of national flagged ship was not anymore an absolute requirement. Shipping licenses were streamlined from five to only two. Shipping companies received greater flexibility of shipping routes, ship assignment and even using a foreign flagged ship in domestic trade.
- The Shipping Law 1992, described earlier, has one more aspect to recognize foreign shipping companies participating in Indonesia's cabotage trade de facto by institutionalizing a joint venture form.
- By Government Regulation No. 82/1999, the Government has revised previous laissez faire attitude, attempting a new industrial policy as follows:
  1. An Indonesian shipping company must at least have 175 GT vessel capacity.
  2. Foreign flagged ships may be allowed in domestic trade for a certain period (currently 3 months).
  3. A general agent for a foreign shipping company must own at least 5,000 GT of vessel capacity.
  4. A joint venture shipping company must at least have one Indonesian flagged ship of minimum 5,000 GT. (Under the 1988 regulation, this requirement was for 2,500 DWT.)

5. In terms of domestic liner service, the concept of route network consisting of "main route", "feeder route" and "pioneer route" was newly introduced. Relevant operating license is issued separately on each of the passengers, general cargo and container services, and also per each route pattern. While placement of ships can be made by the relevant shipping company, this company must file a report on its transportation and operational activities to the government every 6 months.

- However, in view of the strong protest from companies currently acting as the general agents, application of the 5,000 GT requirement has been postponed up to the autumn of 2003.
- The following are the main mid-term institutional issues being attended by DGSC:
  1. Taxation: Reduction and/or exemption of corporate revenue tax, crew's income tax, and shipowners' activities of using Indonesian flagged vessels.
  2. Finance: Long-term soft-loan to the industry, a special financial facility to ship finance, and investment credit for foreign currency earning industry
  3. Terms of Trade: Export- C&F/CIF, Import- FOB
  4. Ratification of International Convention Mortgage Law
  5. Long-term contract between shipowners and shippers
  6. Dissemination of strategic importance of the shipping industry
  7. Reviewing of open port policy (currently 141)
  8. Improvement of port facilities and services

COMPARATIVE STUDY ON ASEAN SHIPPING

- A comparative study on ASEAN shipping policies was done in terms of ship registration, fiscal supports to promote fleet development, taxes and duties, and cabotage policies. As a result, the following two aspects are worth considering for Indonesia's institutional development:
  1. Ship registration system : It is remarkable that Philippines and Singapore extend their ship registration schemes to bare-boat charter ship with purchase option.
  2. Ship Finance: The Philippines has introduced a two-step loan system since 1995 in cooperation with JBIC and Malaysia manages "Shipping Fund" for both promoting strategically important fleet and lowering average fleet age.




CHAPTER 7: SECTOR DEVELOPMENT VISION

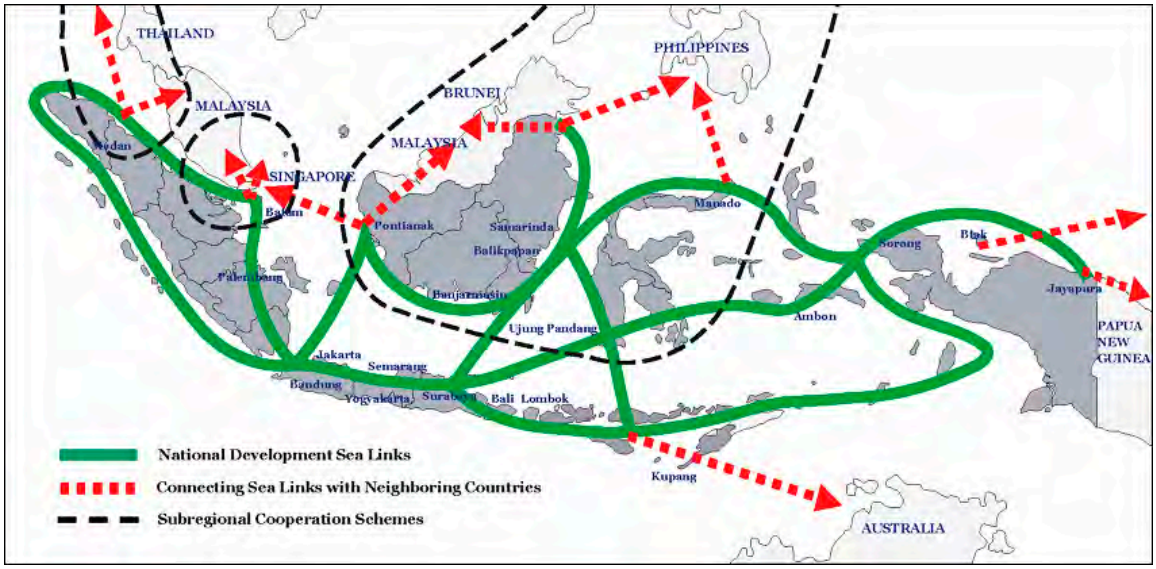
BASIC RECOGNITION IN FORMULATING THE MASTER PLAN

- The Master Plan (M/P) for domestic sea transportation and maritime industry has been formulated with the recognition that an important and indispensable task is commissioned to this mode in Indonesia under several development contexts covering national economic development, globalization and regional integration process, technology advancement towards competitive shipping, discreet government interventions in providing commercial and non-commercial shipping services, and national tonnage development.
- **National Economic Development**: The State Guidelines of Indonesia has put forth two primary directions. The first is to heighten Indonesia's stance in the global market. In this regard, maritime transport is evidently vital to enhance the competitiveness of Indonesia in international trade. The second is to promote a balanced development. Underdeveloped communities would invariably require a means to access markets and be able to receive basic services. As many of these underdeveloped are without any land connection, maritime transport is not only strategic but the only viable means of access.
- **Globalization and Liberalization of Maritime Transport Services**: Domestic shipping is essentially acting as feeders of the global shipping networks. To promote international trade services, the WTO decided to launch a new round of negotiation in 2001 which covers maritime transport (Doha Development Agenda). The negotiations cover international transport, maritime auxiliary services and port services. Cabotage policies are not within its scope. However, liberalized services in transport may affect domestic shipping in the long run.
- **Regional Integration and Subregional Cooperation**: The new regional trade regime, the ASEAN Free Trade Agreement (AFTA), started in 2002, thus eliminating intra-regional tariff towards the year 2008. Under the AFTA regime, costly domestic products may be substituted by cheaper imports. Indonesia will be especially vulnerable due to its extensive coastline and numerous sea accesses to other ASEAN countries. These developments shift the focus from protecting cabotage right to providing competitive shipping service.
- **Technology Advancement towards Competitive Shipping Services**: The direction of the future maritime transport system is summarized into four key innovations: unitization, specialization, speed-up and scale-up. Unitization involves the promotion of containerization and Ro-Ro operation. Specialization is key in upgrading bulk shipping. Scale-up and speed-up will entail investments in ships. Additionally investment for developing deeper ports, efficient cargo handling facilities, and secondary transport systems are indispensable. Java Sea is relatively calm and is viable for large barge haulage or vessels with shallow and wide structured vessels. Since much domestic traffic is transported across the Java Sea, such advantages present opportunities for improvement.
- **Discreet Government Intervention to Commercial and Non-commercial Shipping Services**: There are two types of shipping service in Indonesia: commercial and non-commercial shipping. Both are indispensable and at the same present different policy needs:

  Policy for Commercial Shipping
  - Enhancing ship investment environment
  - Monitoring activities and curb over-competition
  - Enhance maritime safety, security, and marine environment protection.

  Policy for Non-Commercial Shipping
  - Provision of minimum services
  - Direct intervention in fleet preparation
  - Consultation with local governments and stakeholders
- **National Tonnage Development**: This policy can be justified by various national development needs such as stable carriage of cargo and passenger over the country, preservation of the marine environment, national security and defense support, balance of payment, and accumulation of wide maritime related industries.

Figure 7.1 National Economic Development with Sea Transport Network



GOALS AND STRATEGIES

- The primary objective of this Study is to increase the share of Indonesian flagged vessels in domestic shipping and to provide improved shipping services to shippers and passengers on all domestic shipping routes. These objectives will be incorporated in a Master Plan towards the year 2024. The following two goals are set:
  - To develop a sufficient and competitive domestic shipping system in order to support socio-economic development; and
  - To strengthen the domestic shipping industry and its related maritime industries through establishing a new partnership between public and private sectors

Table 7.1 Target Share of Indonesian Flagged Vessels in Transporting Domestic Cargo

Year 2001	Year 2014	Year 2024
60%[1/]	86%	100%

Note: 1/ DGSC figure

- In order to identify development paths to the established goals, STRAMINDO sets the following six strategies:
  1) Realization of a desirable modal share of domestic shipping in the national transport system
  2) Provision of sustainable shipping services to support the local economy and society
  3) Development of maritime transport system with due consideration to safety and the environment
  4) Establishment of conducive investment environments with clear domestic shipping development vision
  5) Introduction of modern management
  6) Human resource oriented industry development

CHAPTER 8: TRAFFIC DEMAND FORECAST

SOCIO-ECONOMIC FRAMEWORK

- Indonesian population will exceed 270 million in 2025, 1.3 times of the population in 2000, based on projection of historical trends and in reference with authoritative literature.
- GDP estimates of the current National Development Plan (PROPENAS) 1999-2004 were adopted. Beyond year 2005, STRAMINDO prepared two simple scenarios of high and low economic growth as the assumptions for demand forecast. Future economic growth was assumed at 4.0% p.a. for the low growth case and 7.0% p.a. for the high growth case. Thereby, GDP will increase from US$ 745 (2000) to US$ 2,701 (2025) in the high growth case and to USD 1,487 in the low case. In regard to GRDP, regional disparities between west and east Indonesia will only be marginally improved.

Figure 8.1 Population Distribution

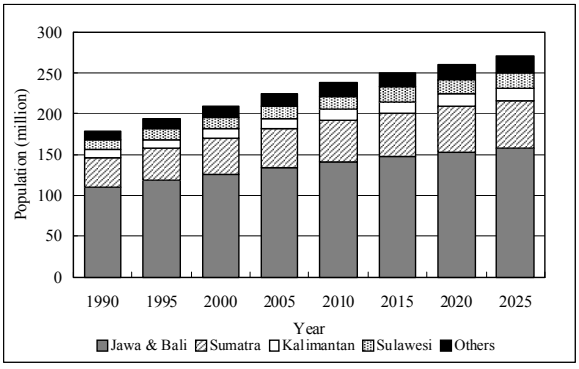
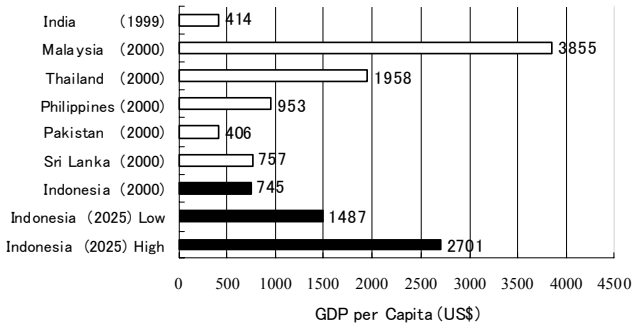


Figure 8.2 Comparison of GNP per Capita among Asian Countries (US$/person)



FORECAST OF SEA CARGO TRANSPORT DEMAND

- Figure 8.3 illustrates the forecasted domestic sea traffic. It is estimated that dry cargo will increase by 2.8 times during the M/P period while liquid cargo will increase by 1.4 times during the same period. Overall, domestic sea traffic will double in the next 20 years.
- Dry cargo follows closely economic growth and is not constrained by resource availability. Thus, dry cargo will continue its increasing trend in line with the projected growth of the economy. In particular, container cargo will rapidly increase by 5.2 times, from presently 11 million tons to 59 million tons in 2024.
- On the other hand, based on government estimates, the current rate of oil production will not be sustained after 2006. Thus, while consumption of petroleum will increase, the production side will not be able to cope up. This means that the structure of petroleum logistics will shift towards oil importation, thus domestic sea transport of oil, which comprises the bulk of liquid cargo, will stall.

Figure 8.3. Domestic Sea Traffic Forecast

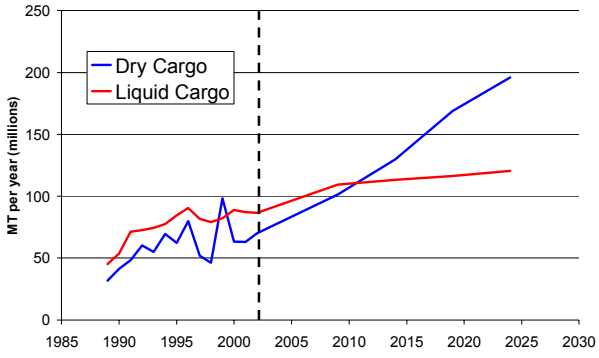
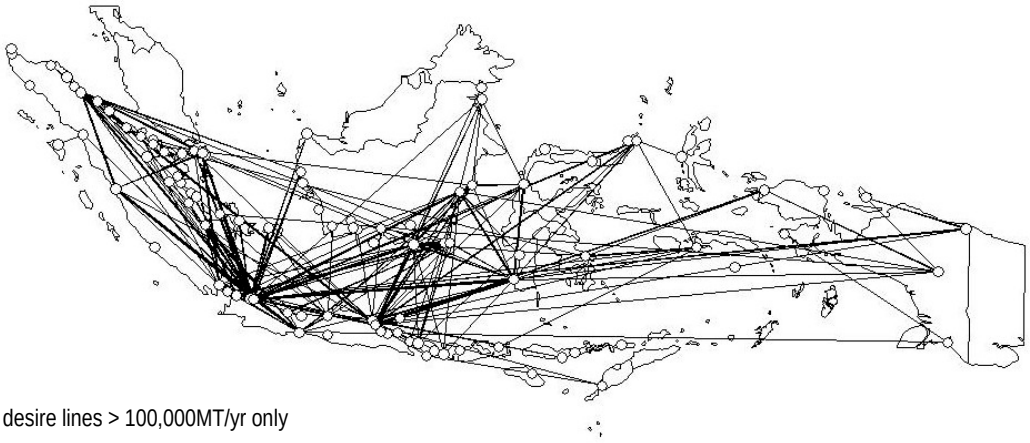
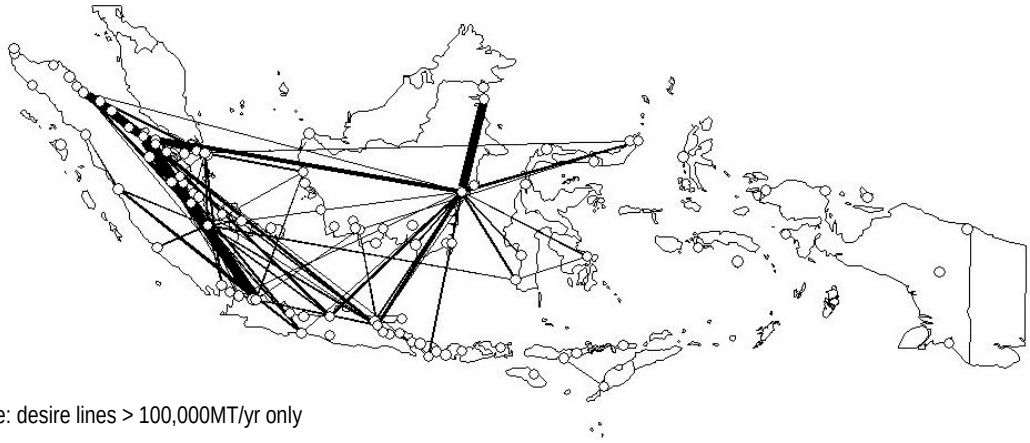


Figure 8.4 Dry Cargo O-D Pairs, 2024



Note: desire lines > 100,000MT/yr only

Figure 8.5 Liquid Cargo O-D Pairs, 2024

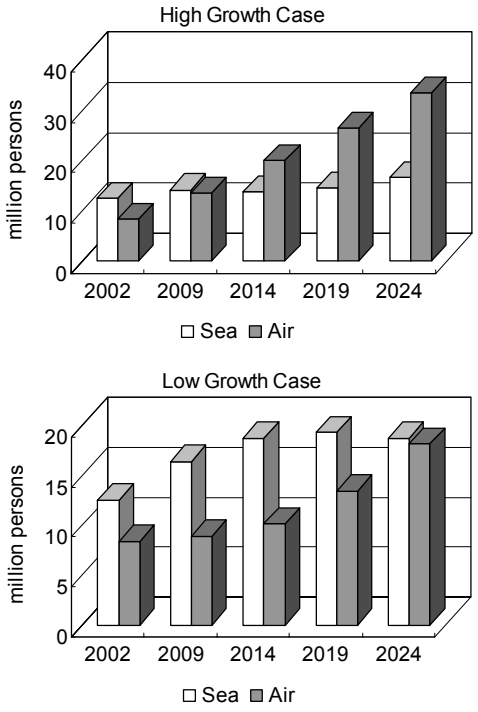


Note: desire lines > 100,000MT/yr only

DEMAND FOR PASSENGER TRANSPORT

- Figure 8.6 shows the forecast results for both the high economic growth case and the low economic growth case. In the high growth case, air and sea passenger demand will increase by 2.4 times. However, it is projected that rising GDP per capita will shift the preference of passengers from sea-based modes to air-based modes – driving the modal share of sea-based modes from 60% at present to 33% by 2024. This will effectively dampen the growth of sea based passengers which is projected to increase by only 1.3 times by 2024. In the low growth case, overall passenger demand will increase by only 1.7 times, but modal shift will not be as strong as sea based modal share will only decrease to 51% by 2024, leading to a higher growth of sea passengers (1.5 times by 2024).

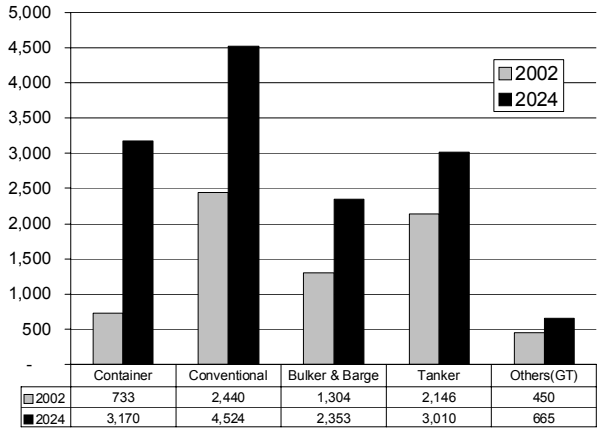
Figure 8.6. Forecast of Middle and Long Trips



REQUIRED FLEET EXPANSION

- Provided that gradual modernization of fleet and shipping management based on the existing infrastructure conditions, a future domestic fleet of 13.1 million DWT and 0.7 million GT will be required for cargo and passenger service, respectively, in 2024.
- The Study predicts bigger container vessels to be assigned on major liner routes ranging from 10,000 DWT to 20,000 DWT while conventional vessels will be assigned on rather minor routes where small vessels are practical. Thus, the net effect is that the average ship size will not increase.
- It is expected that fleet productivity for dry cargo vessels will improve due to further containerization, faster sailing speed by younger fleet composition, and longer commissionable days through better ship-management. However, an expected fleet productivity in 2024, of around 10,000 ton-miles /DWT is still far behind the Japanese dry cargo fleet, i.e., 19,230 ton-miles/DWT.
- A key issue being explored in this Study is the tightening of cabotage polices. The Indonesian government intends to restrict the carriage of selective 7 commodities (oil, CPO, coal, fertilizer, wood, rice and rubber) to national vessels in the short-term. The intermediate target of 86% share of national fleet in domestic carriage in 2014 will be achieved when a 2.8 million DWT fleet will be additionally procured for transporting selective 7 commodities in addition to maintaining cabotage rate for other commodities and replacement of obsolete existing vessels.
- By 2024, it is envisioned that full cabotage will be implemented. For this purpose, during the second half of the Master Plan period, a 5.1 million DWT fleet will be procured besides fleet replacement need.

Figure 8.7 Projection of Domestic Fleet Expansion by Type during Master Plan Period



	Container	Conventional	Bulker & Barge	Tanker	Others(GT)
2002	733	2,440	1,304	2,146	450
2024	3,170	4,524	2,353	3,010	665

Table 8.1 Average Ship Size of Future Fleet

Type	Average DWT			Change Rate
	2002	2014	2024	
Container	7,522	10,253	11,369	1.51
Conventional	2,020	1,891	1,785	0.88
Bulker	6,985	7,829	8,278	1.19
Tanker	4,942	4,942	4,942	1.00
Cargo Fleet	3,438	3,517	3,326	0.97

Table 8.2 Productivity Improvement of Future Fleet

(ton-miles/DWT)

Vessel Type	2002	2014	2024
Container	9,804	11,461	12,011
Conventional	7,047	8,544	9,125
Bulker/Barge	7,565	7,721	8,446

Table 8.3 Required Indonesia Fleet in 2014 under Partial Cabotage Program

Cargo Type	Present Share	Partial Cabotage	Shortage
Conventional	1.8	2.0	0.2
Container	1.5	1.5	0
Dry Bulk	0.8	1.7	0.9
Liquid Bulk	1.1	2.8	1.7
ALL	5.2	8.0	2.8

Note: Indonesian flagged tonnage (million DWT)

CHAPTER 9: INSTITUTIONAL DEVELOPMENT PROGRAMS

PROMOTION OF INVESTMENT IN NATIONAL TONNAGE

- Book II of the Indonesian Commercial Code contains the provisions for the rights and obligations of shipping. The provisions are dated back to 1848 and are identical to that of the Dutch Commercial Code of 1838. Except for the changes that took place in 1934 following the change of its Dutch counterpart, the provisions have remained unaltered until today.
- It can therefore be safely said that the legislative framework governing shipping has not been able to keep up with recent developments.
- Without a responsive legal framework, the promotion of investment in national tonnage will not materialize. Critical items that needs to be reviewed and improved are as follows:

Convention on Maritime Liens and Mortgages

- Banks and non-bank finance are reluctant to extend loans to Indonesian shipping companies, because of the Indonesian law on hypothec does not sufficiently protect creditors in case of default. For example, the provisions that only Indonesian registered vessels can be the subject of hypothec creates unwarranted regulatory risks for creditors, as it does not clarify rights in case the vessel is withdrawn from the Indonesian registry in case it is in default.

Arrest of Ships

- The arrest of ships is critical in the enforcement of the provisions of liens and mortgages in case of default.
- In Indonesia, there is no special provision dealing with the special case of forfeiture of vessels, rather, it is treated as ordinary property forfeiture. Because vessels are movable assets, the current applicable laws for the arrest of ships is unsatisfactory – as the arrest of ships can only be realized after lengthy court procedures and thereby introduces risks in the regulation of mortgages.
- Therefore, to entice investors, particularly foreign investors, in domestic shipping, special provisions must be in place to expedite the arrest of ships.

Carrier's Responsibility and Liability

- The clear understanding on the carrier's responsibilities and liabilities are paramount in defining the relationship of the consignee and consignor. Clarity on responsibilities helps mitigate costly litigations as well as protection of each party's interest.
- Indonesia has not ratified any of the international conventions in this regard and is still governed by the Indonesian Commercial Code which was drafted during the time when Indonesia was still under Dutch administration. Thus, the provisions are already obsolete and require updating. For example, the code provides a package liability of only 600Rp.
- It is appropriate for the Government to progress further investigation in terms of the ratification of the two international conventions listed under and to bring domestic legislation in line with their provisions.
    - Hague or Hague Visby Rules (International Convention for the Unification of Certain Rules Relating to Bills of Lading, 1924, and 1968 Protocol to Amend the same)
    - 1976 London Convention (International Convention on Limitation of Liability for Maritime Claims, 1976)

POLICY PROGRAM FOR INTER-ISLAND SHIPPING DEVELOPMENT

Cabotage Policy in Indonesia

- Cabotage regime is clearly upheld by Law No.21/1992, but however, opens for exemptions in case of certain conditions such as shortage of vessels. Currently, half of the domestic sea traffic is being handled by foreign flagged vessels in Indonesia, thus the exception has somehow become the rule.
- Cabotage regime must therefore be reviewed if the national fleet is to be promoted. For example cases of back-to-back charters are in essence long-term chartering arrangements, but the law is mum in this regard.
- In the short term the Government intends to carry out cabotage right for several commodities, i.e. coal, oil, CPO, Fertilizer, wood, rice and rubber. For implementation, it would be important to coordinate freight volume and ship space (IMRK) for stable carriage without foreign chartered vessels.

Dialogue between Cargo Owners and Ship Owners

- Due to over competition, tariff rates have not been increasing in line with the increase in cost of operations or have sometimes even decreased. In this regard, groups of ship-owners have started to dialogue to have a consensus on tariff rates as well as sailing schedules.

- To win wide consensus however, cargo owners have to be included in the discussions as well. However, cargo-owners represent varied and numerous stakeholders that at present they are not as organized as ship owners.
- This therefore, requires initiative on the part of the government; i.e., Ministry of Industry and Trade and the Ministry of Communications, to be able to bring to the negotiation table a well-represented group of stakeholders. Possible dialogue topics are, among others, (1) mid-to-long term fleet requirements, (2) structural improvement of inter-island shipping, (3) long term shipment agreement, and (4) possible exemption of shipping from the anti-monopoly regime.

Clarifying the Application of the Anti-Monopoly

- The Indonesian Anti-Monopoly Law does not stipulate any special provisions for shipping. Thus, shipping is regulated by the Anti-Monopoly Law unlike international practices to exempt shipping; e.g. Japan and USA.
- It may therefore be a policy goal of Indonesia to define the guidelines under which coordinated actions of ship owners be allowed under the current Anti-Monopoly Law.

Monitoring and Evaluation System

- Based on government regulations, administrators are tasked to monitor and control fleet capacity through monitoring and evaluation.
- Though the guidelines are clear, the actual mechanism to implement cargo space monitoring is not clear and whether the issuance of exemptions to cabotage is tied to the results of monitoring and evaluation.
- Poor reporting systems and data handling capabilities are primary hurdles in this regard. It is therefore important for DGSC to develop a consistent administrative and financial reporting system.

Structural Reforms in Domestic Shipping

- As a long-term target, there is necessity to improve the market structure through such means as rationalization of the number of companies in shipping business, promotion of concentration and merger and strengthening the management base. For now, the review of business permission requisites may be recommended as the initial step towards the above direction, to the effect that meaningful financial data and proof of operational capability are included as part of business license requisite.

National Port Systems

- There are some that are in the opinion that the number of ports open for international trade should be reduced. However, it should be pointed out that closure of international ports, though may be of interest to domestic shipping operators, may be detrimental to the overall economy as it curtails foreign trade.
- Comparison with the current international ports of 141 is comparable to similar archipelagic countries of Japan (128) and Philippines (125).
- An international port should be determined one by one in terms of location, hinterland demand, position to neighboring countries and in the national port system rather than the total number of open ports. Ship Safety and Environmental Protection

ISM and ISPS

- On July 2002, the International Safety Management (ISM) Code came into effect. The Government and the BKI have completed auditing of companies and their ships with regards to Ship Management System.
- The International Ship and Port Facility Security Code (ISPS) will become effective from July 2004. Unlike the introduction of ISM Code, the Indonesian shipping industry is lagging in the preparation for the eventual implementation of the ISPS. Efforts therefore need to step up.

Oil Spill Protection

- Indonesia has ratified MARPOL 73/78 and has also issued various legislations regarding the prevention of oil contamination.
- Efforts of the government at the moment are concentrated in limitation of the improper discharge of oil and the improvement of response in case of oil spills.
- Despite a strong regulatory stance, the improper discharge of oil waste is consistently practiced. It is opined by IMO that the improper discharge of oil wastes may be more detrimental than a potential oil spill. Thus, efficient procedures as well as the necessary infrastructure need to be established.

Proposed Development Directions for Ship Safety

- It is proposed that regulatory and institutional improvement of safety and environmental protection of the domestic maritime shipping should cover the following:

  Swift domestic legislation and accession to IMO conventions – development of domestic

legal frameworks in line with international conventions

Enhancement of maritime safety – strengthening enforcement capability and strict enforcement

Cleaner marine environment – more efficient procedures and facilities for waste oil reception at ports and oil spill preparedness

Curbing piracy and armed robbery – proactive and reactive measures should be in place, moreover, a national coordinating body would be helpful to ensure an integrated approach

Competent administrators – Lack of well-trained Port State Control officers require human resource development programs

CHAPTER 10: DOMESTIC SHIPPING DEVELOPMENT PROGRAMS

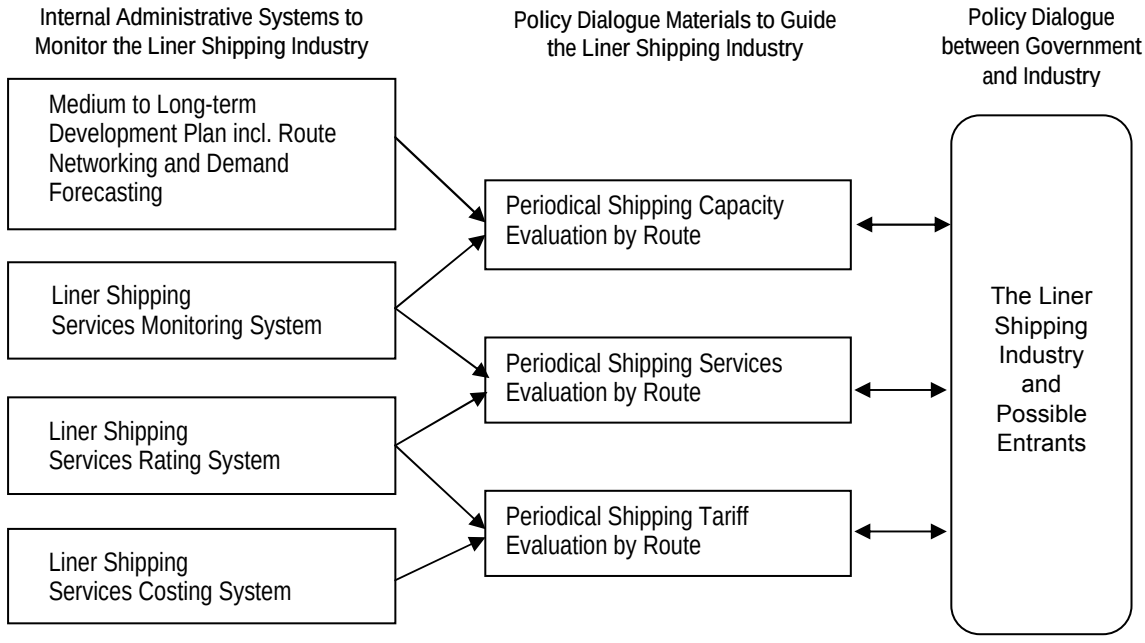
FREIGHT LINER SHIPPING

- According to the demand forecast results, Indonesian liner freight shipping will take a bigger role with accelerating container traffic. Container fleet will sharply expand by 4.3 times during the M/P period. Major development issues which have been intensively analyzed in the Study as follows:
  - Fostering of competitive common carriers through adequate government intervention
  - Assignment of container fleet on a wider network
  - Improvement of logistics chain management through containerization

New Partnership

- In compliance with Government Regulation No. 82/1999, administrators will intervene in access to liner routes. In order to create healthy and competitive business environments, the administrators are not only required to monitor access but also to rationalize services and tariff setting through policy dialogue with the industry.
- The proposed structure of the dialogue mechanism is illustrated in Figure 10.1. Essentially, the dialogue aims to monitor three aspects of liner service: capacity, efficiency, and pricing.
- To guide administrators and equip them with sufficient information while in negotiation, four internal databases and analysis are proposed, covering master plan, service monitoring, service rating and cost monitoring. More information will give administrators practical understanding of the current situation thereby ensuring that the dialogue will be based on a common understanding of the issues involved.

Figure 10.1 Proposed Dialogue Mechanism for Liner Shipping Development



Liner Fleet and Network

- Shipping operators will be able to assign larger container vessels on heavy demand routes as long as ports facilities allow. Average ship size will enlarge 1.5 times. Meanwhile, conventional fleet will be forced to serve minor routes. Thus, the average vessel size will shrink somewhat.
- It is envisioned that further containerization will bring about not only container fleet enlargement but also more container routes. The current container network involves 30 OD pairs and 17 ports. In addition, new routes serving 31 OD pairs are proposed.

Logistics Management Improvement

- In tandem with the increase of containerization, logistic management needs to be addressed and improved. There are four aspects to logistic management that is of particular concern: (1) port facilities; (2) container stuffing; (3) fast shipping; and, (4) multimodal transport.
- Indonesian ports receive many less than container loads (LCL). Thus, considerable works needs to be done at ports or that many containers are sub-optimally loaded. To support container operations therefore, investment on container freight stations (CFS) and other equipment is essential.
- Container service will be greatly enhanced with the introduction of faster services. This can be achieved through selective application of Ro-Ro vessels and introduction of new generation fast container vessels.

Figure 10.2 Existing Container Liner Routes, 2002

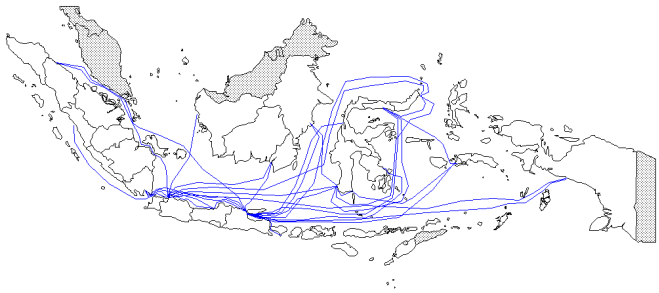


Figure 10.3 Candidate New Liner Routes, 2024

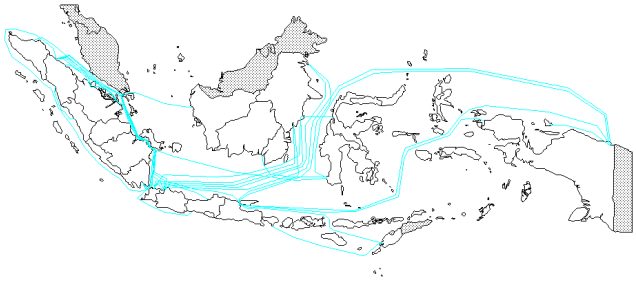


Figure 10.4 Fleet Size at Candidate Liner Routes and Existing Liner Routes

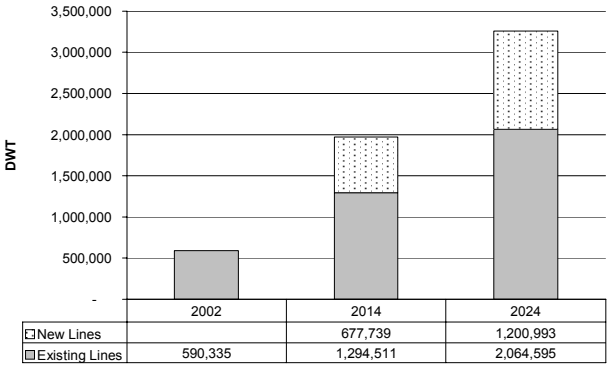


Table 10.1 Estimated Freight Liner Fleet during the M/P Period

	Container Vessel		Conventional Vessels	
	No. of Units	Ave. DWT	No. of Units	Ave. DWT
2002	42 1/ 97 2/	5,236 7,557	45 1/	4,716
2014	180	10,233	61	4,575
2024	279	11,362	95	4,292

Note: 1/ Registered figures in DGSC
2/ Estimated figures by STRAMINDO

BULK SHIPPING

Redefining special shipping

- Faced with liberalized trade regimes, competitive foreign imports will be able to challenge the monopolistic position of several industries that are reliant in special shipping. Efficiency could not be expected from a monopolistic market structure. Therefore, an adequate shipping policy is necessary to realize the potential of general shipping companies to become effective industrial carriers under competitive environments while the coverage of special shipping should be restricted to non-commercial shipping.

Promotion of specific purpose vessels

- Conventional vessels carrying packaged cargo is considered inefficient as compared to if the cargo

is carried by special purpose vessels.

- The issue however, is not only confined to the promotion of specific purpose vessels, but also on the promotion of national tonnage development. Bulk shipping carries vital commodities of coal, cement and fertilizer to name a few. Thus, it is advantageous for Indonesia to have national vessels carry these essential commodities.
- The following policy package is recommended:
  - Long-term contracts – specific purpose vessels are designed to be used for a specific commodity only, thus it is essential that business is guaranteed to mitigate the risk of obsolescence.
  - Re-flagging – to entice vessels to be registered as Indonesian vessels, incentives should be provided.
  - Equity sharing with public sector – designed to lower the financial burden of investors. The role of the government may not be limited to as an investor, but, it could also cover the preparation of investment and business plans and even having a say in daily operations, being a co-owner.

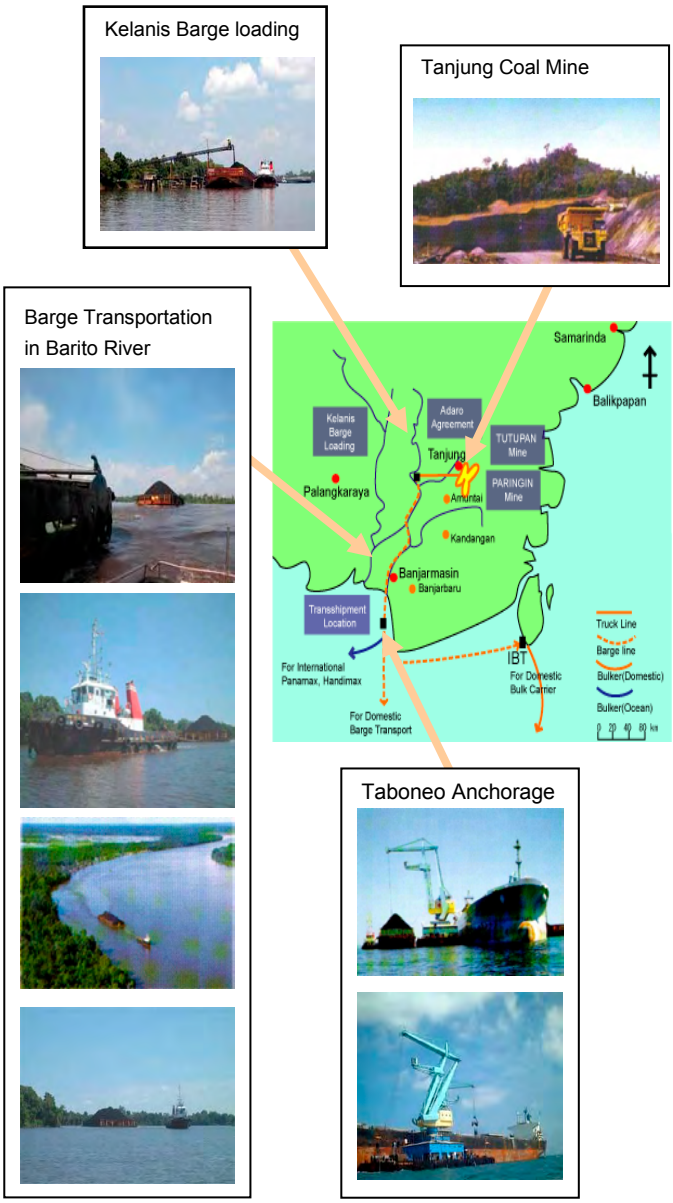
More environmental concerns

- Today, greater importance is accorded to vessel conditions and environmental factors. For dry bulk operation, loading plans must be developed and adhered to. Loading plans will ensure the most appropriate loading of cargo, thereby preventing compromising hull structure. For instance, the introduction of cargo hold inspection for old and larger vessels in 1997 has greatly enhanced safety.
- For tanker operation, double hull structure has been recognized as standard to minimize the danger of oil leaks which would be disastrous for Indonesia. There is however, a strong need for the government to come up with a practical and clear cut schedule for its introduction. Otherwise, apprehensions to the schedules would disrupt and discourage tanker investment.

Coal transportation case study

- Indonesia has vast resources of coal, particularly in Kalimantan and Sumatra. The demand for coal has been increasing and is expected to continue to grow fast at least for the next five years. 75% of the coal mined in Indonesia is exported, while the rest is consumed domestically, particularly at coal-fired power plants.
- Figure 10.5 illustrates the typical case of transport of coal. Coal is mined inland, and the mined coal and is either barged to an off-shore site for transshipment or barged directly to the user.
- The transport of coal along shallow channels is dangerous – as evident from the many reports of collisions and groundings.
- Navigation safety programs are therefore very beneficial for coal transport. For instance the introduction of the more-controllable pusher barges and the introduction of modern navigation equipments including advanced information and positioning technologies could significantly improve coal transportation.

Figure 10.5 Transport System of Coal from Kalimantan (Case Study)

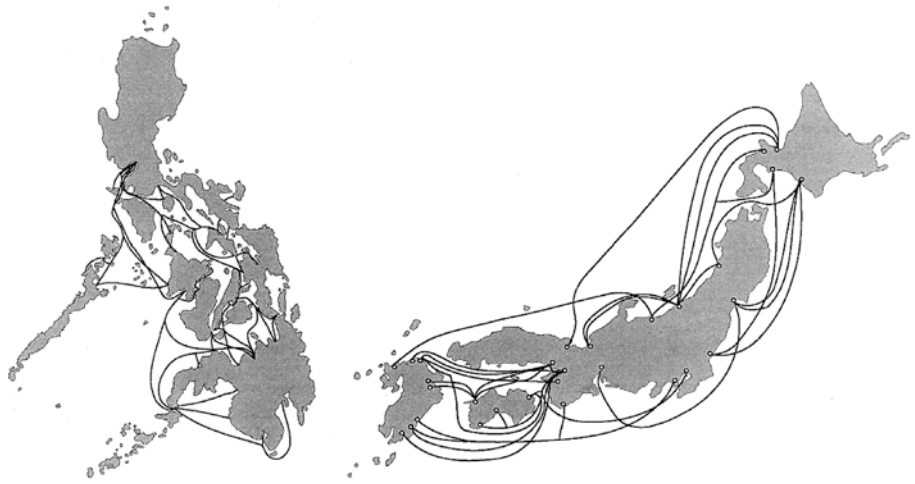


PASSENGER SHIPPING

Prospects of Inter-island Shipping

- Due to the government's deregulation of the domestic airline industry, many new airlines entered the market and stiff competition in the industry became prevalent. The effects of the competition not only manifested with the industry but it also exerted a very strong effect on the maritime passenger industry.
- The airline price war may not continue for long, and eventually it will stabilize at still higher prices than sea fare. However, increasing incomes will result in the further shift to air travel, as the needs and means of the society increases.
- Even with the expansion of the air travel, maritime passenger shipping will still hold a very important role in Indonesia, considering the vastness of the Indonesian archipelago. The Study observed weakness of the current system:
  - Assignment of large ships to routes with small demand
  - Too many pure passenger ships – more competitive Ro-Ro vessels and fast crafts could provide more profitable and improved service like Japan and Philippines.
  - Poor terminal facilities as well as poor inter-modal connectivity

Figure 10.6 Long-distance Ferry Network in the Philippines and Japan



Reorganization plan

- From the viewpoint of administration it is useful to classify the routes by commercial feasibility and number of operators serving the route. The following table defines three classifications based on the two considerations. Nature of appropriate regulation of each route class is as follows: (1) Primary – ensure healthy competition; (2) Secondary – prevent abuse of monopolistic position of operator; and, (3) Tertiary – operational subsidies and strict accounting and monitoring.

Table 10.2 Route Classification Matrix

	Passenger Routes	
	Single Assignment	Double Tracking
Commercially Feasible	Secondary Routes	Primary Routes
Not Commercially Feasible	Tertiary Routes	

Increasing cargo carriage of passenger vessels

- In selecting the appropriate vessel the following criteria is used:
  a. Passenger Vessels for trunk routes i.e. routes serving high passenger demand and calling at many ports serving
  b. Passenger cum Ro-Ro Vessels for routes serving high passenger demand that have potential for Ro-Ro operation at mid-distance of 500 to 700 n. miles.
  c. Passenger cum Cargo Vessels – all other vessels, cargo capacity will vary depending on demand.
- As a result of the introduction of cargo carriage in some routes, the overall profitability of the passenger shipping network will improve from a system fare box ratio of 1.05 to 1.21.
-

Figure 10.7 Route Classification (2014 and Beyond)

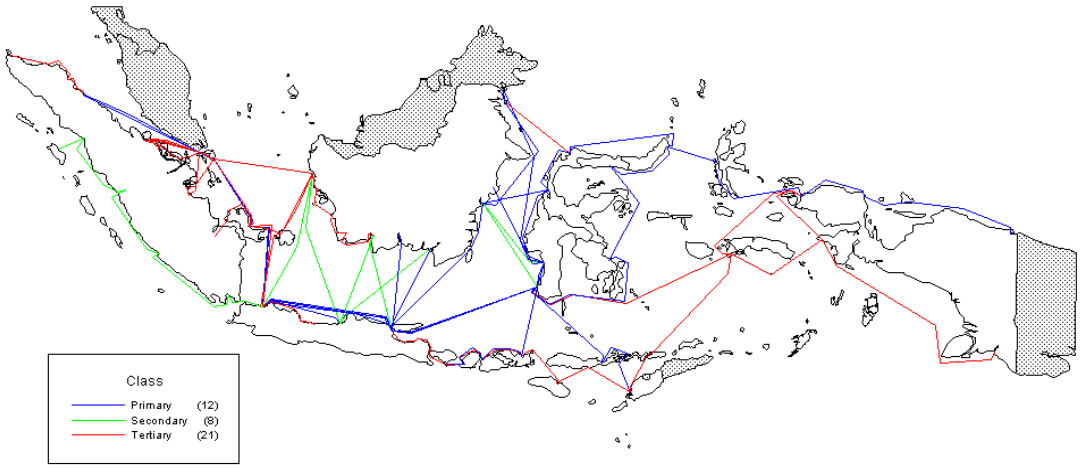
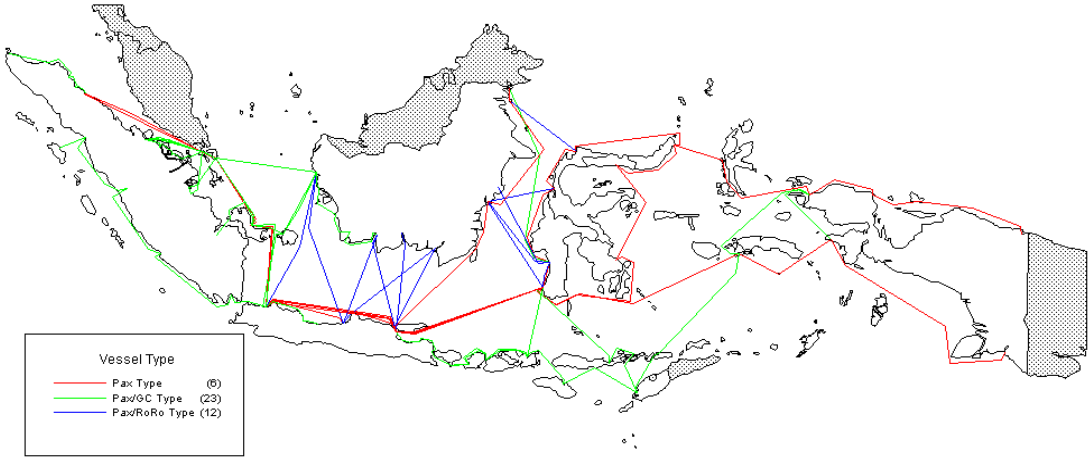


Figure 10.8 Vessel Type per Route



TERTIARY SHIPPING

A common basket system

- It has been proposed to re-organize the current passenger network into a hierarchical network. Routes are then classified into primary, secondary and tertiary routes. Primary and secondary routes are commercially feasible routes and are thus better left to the private sector. However, tertiary routes are not financial sustainable but are nonetheless essential.
- It is estimated that the tertiary network will serve 11.3 million passengers in 2014, but the demand will be sparsely scattered across the archipelago. To be able to effectively manage the dispersed tertiary system, it is proposed to bundle all tertiary services into one common basket. The central government would then be responsible for the establishment and management of the system.

Necessary service and require fleet

- Indonesia is sub-divided into five regions. Of the five regions, it is determined that Sumatra will require the most for tertiary service followed by the combined region of Java and Nusa Tenggara. The region of Maluku and Papua will also require substantial tertiary shipping service.
- Due to tertiary shipping's non-commercial nature, large vessels with capacities over 1,000 passengers are not practical. In fact it was determined that the most practical vessel size is about 400 to 500 passenger capacity type in most cases, however, in the case of Sumatra where short distance coastal travel is prevalent, smaller vessels of less than 400 passenger capacity will be more practical.

New organization

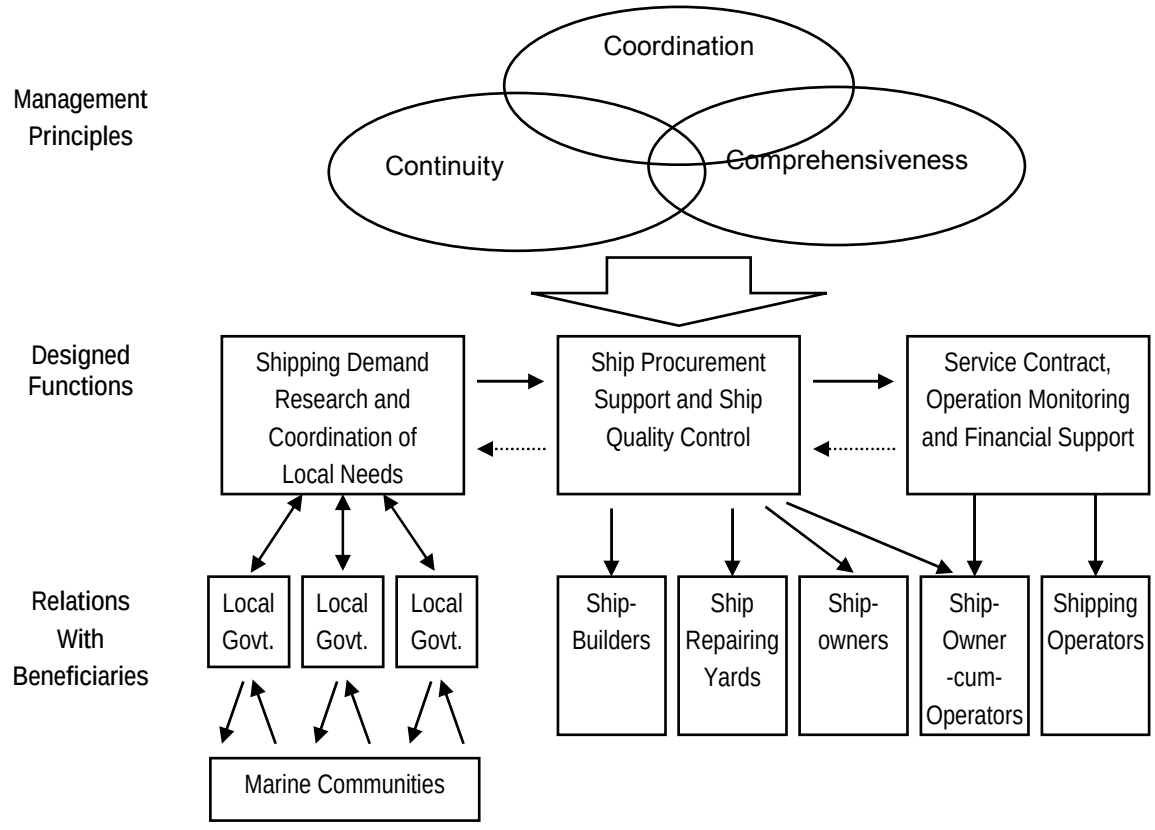
- Management of the one basket system will require substantial know how and experience. Thus, it is important that a capable management body will handle such a very difficult management task. The management will be governed by the following three principles:
  - Coordination – the body must be able to responsibly assign tertiary service in areas where such service is needed. It would involve consultations of all stakeholders.

- Continuity – the body must be able to appreciate that tertiary service is essential and that service continuity is critical in ensuring that minimum service is provided to remote areas.
- Comprehensiveness – for the tertiary shipping to achieve its goal; i.e., promote equitable development and national integration, tertiary services must be provided in a comprehensive manner. This is critical as tertiary services are to be supported by public funds.

Table 10.3 Fleet Requirement by Area in 2014 and Beyond

Traffic & Fleet \ Area		Sumatra	Kaliman-tan	Sulawesi	Java & NT	Maluku and Papua	Total
Passenger Traffic	Pax ('000)	3,805	314	453	2,587	849	8,008
	Pax.Mile (mill.)	393	88	269	793	377	1,920
Cargo Traffic ('000 MT)	2014	11,553	4,092	1,169	5,313	681	23,257
	2024	19,758	6,079	2,763	8,737	1,263	38,600
Require Fleet Tonnage (GT)		19,533	5,258	13,861	46,559	25,462	110,672
Fleet Composition	> 1,000 GT	13,295	-	13,482	32,988	24,638	84,403
	< 1,000 GT	19,533	5,258	379	13,571	823	26,269

Figure 10.9 Organizational Set-up for Tertiary Shipping Development



TRADITIONAL SHIPPING

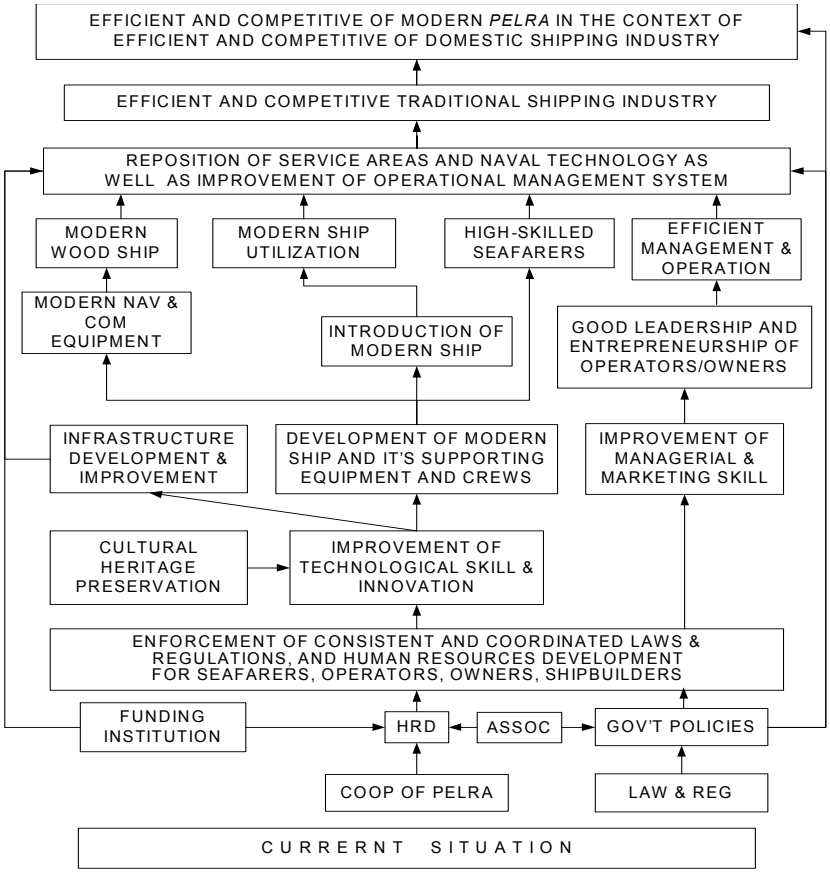
Results of SWOT Analysis

- To understand the appropriate strategy for Traditional Shipping (or Pelra) a SWOT analysis is conducted.
- The strengths of Pelra are as follows: (1) shallow drafts allows it to access shallow ports; (2) low requirement for docking facilities; (3) independent and historically financially sustainable; (4) fair and just contract system; and, (5) strong associations among operators.

- The weaknesses of Pelra are as follows: (1) poor human resources; (2) lack of cargo capacity and unattractive vessel conditions; (3) poor cargo handling and storage properties; and, (4) lack of funds.
- The opportunities for Pelra are the following: (1) it is the only type of service that is able to serve underdeveloped areas; and, (2) it is accorded with privileges in terms of simple procedures and lower administration fees.
- The threats against Pelra are as follows: (1) growing competition against modern vessels; (2) over-competition and subsequent over-tonnage; (3) weak and inflexible supporting ship building industry; (4) improvement in ports will negate Pelra's advantages; and, lack of marketing opportunities.
- Based on analysis of the current trends and discussions with relevant stakeholders, it became clear that the threats to the environment will far outweigh any opportunities for Pelra. Thus, in order to survive, Pelra needs to take a defensive strategy – thus will require the significant support from the government.
- The following four modernization policies are recommended:

1. Human resource development – The first step in the modernization of Pelra is the development of its human resources. To achieve this, Pelra will require the help of funding institutions, the government and the Pelra association. It should cover all aspects of operation from seafarers to managers.
2. Port infrastructure development – Infrastructure will be an essential component to provide the necessary environment for which Pelra can modernize.
3. Application of standards and technology – The development of a modernized Pelra will involve: (1) modern ships and its supporting equipment; (2) non-timber hull vessel design; and (3) skills to take full advantage of modern ships.
4. Supporting policies – Conducive business environments for business can be achieved through the enactment and implementation of consistent and non-contradictory policies and strategies. To ensure that the concerns of Pelra are taken into consideration during regulation and policy debates, Pelra should be consulted at all levels of discussions.

Figure 10.10 Roadmap to Traditional Shipping Modernization



STRATEGIC 25 PORTS SYSTEM

Assessment of Existing Conditions

- The strategic 25 ports have been analyzed from a domestic shipping user's viewpoint. Major problems and issues are stated below:

  Port Congestion: Presently, several ports such as Banjarmasin records a high berth occupancy rate (BOR) of over 80%. Long waiting time for berth occurs at 14 ports.

  Cargo Handling Efficiency: Many ports exhibit lower efficiency than the standards set by DGSC.

  River ports: Eight (8) of the 25 strategic ports are river ports and they have inherent problems such as shallow access channels and time-consuming waiting time for tidal change.

  Poor Port Facilities: Congested and no warehouses are reported at many ports.

- Maintenance of existing port facilities is also problematic at some ports which sometimes cause port entry and cargo handling problems. Some examples are indicated as follows:
  a. Tanjung Emas Port, Semarang, is facing a serious land subsidence problem which leads to the lowering of breakwater and inundated quay, causing problems for domestic shipping.
  b. At Samarinda and Balikpapan ports, their quay structure is too weak to install quay crane. Thus floating crane is used instead.
  c. At Biak Port, quay structure for general cargo was damaged some time ago and remains unrepaired.
- Tg. Priok is notorious for its poor access road.
- There are some institutional problems such as an unclear responsibility sharing on port safety between ADPEL and PELINDO, and PELINDO's berth allocation policy.

Requirement to Future Port Capacity

- Future domestic shipping traffic and existing berth capacity are compared. In 2002, many congested ports force vessels to wait at anchorage. 2014, some ports will not be able to accommodate traffic even just considering domestic vessels only. So berth length extension or conversion of conventional berths to container use will be necessary.
- It is required that the port administration incorporate the following into development policy of the 25 strategic ports:
  a. According to the port development plan, the 25 strategic ports are grouped into three, i.e., 8 full container terminals, 7 semi-container/multipurpose terminals, 10 conventional terminals. Since further containerization is anticipated, all the ports should be able to comply.
  b. Comparison of efficiency in berth utilization per vessel type indicates a ratio of 1:3:10 for conventional vessel, container vessel and Ro-Ro vessel, respectively. Unitized shipping such as container and Ro-Ro will become more popular and thus conversion of conventional berth should be made in order to support unitization and avoid unproductive berth space.
  c. Quayside container crane is more productive than ship-gear by 30%. The difference is further doubled when a large container vessel is berthed since two quayside cranes can work together. The port which will accommodate container vessels of over 10,000 DWT should be equipped with quay cranes.

Table 10.4 Assessment of 25 Strategic Ports for Domestic Dry Cargo

Port	Berth Length (m)	Berth Depth (m)	2002	2014	2024
1. Batam	1,847	-9 ~ -10	Acceptable (under expansion)	Partial conversion of conventional to container required	Berth extension required
2. Lhokseumawe	1,050	-4.5 ~ -9.5	Acceptable	Acceptable	Acceptable
3. Belawan	4,880	-7 ~ -9	Acceptable	Short	Berth extension required
4. Tanjung Pinang	540	n.a.	Acceptable	Berth extension (540m to 800m) required	Further extension to 1,200m required
5. Dumai	929	-3.5 ~ -8	Acceptable	Acceptable	Acceptable with container cranes
6. Pekanbaru	210	-5	Acceptable	Acceptable	Acceptable
7. Teluk Bayur	1,686	-2 ~ -9.5	Acceptable	Barely acceptable	Extension of 500m and cranes required
8. Palembang	1,020	-3.5 ~ -9.2	Acceptable	Acceptable	Short
9. Panjang	1,716	-10 ~ -12	Acceptable	Cranes and joint use of international berth required	Extension of 350m required
10. Tanjung Priok	2,338	-5 ~ -14	Acceptable	Conversion of conventional berth (1,400m) to container with cranes required	Further conversion of conventional berth required
11. Bojonegara/Banten	476	-7 ~ -10	Acceptable	Acceptable	Acceptable
12. Pontianak	847	-5.5	Barely acceptable	Extension of 500m and cranes required	Further extension of 750m required
13. Tanjung Emas	5,181	-3 ~ -10	Acceptable	Acceptable	Extension of 500m container berth required
14. Tanjung Perak	11,779	-2 ~ -10.5	Acceptable	Conversion of conventional to container (450m) and cranes required	Further extension of container and conventional berth required
15. Benoa	646	-3 ~ -9	Acceptable	Acceptable	Acceptable
16. Tenau/Kupang	373	-5 ~ -8	Acceptable	Acceptable with new multipurpose terminal	Acceptable
17. Banjarmasin	1,330	-4 ~ -9	Totally congested	Urgent measures required	Various measures required
18. Samarinda	837	-6 ~ -7	Almost saturated	Berth extension (837m to 2,100m) required	Further extension to 3,100m required
19. Balikpapan	589	-3 ~ -7	Acceptable	Shortage of container berth length	Extension of container berth (590m to 750m) with cranes required
20. Bitung	1,371	-1 ~ -9	Acceptable	Acceptable	Acceptable
21. Makassar	2,930	-3 ~ -12	Acceptable when Hatta terminal can be used	Berth extension (2,420m to3,500m) required	Further extension to 5,300m required
22. Ambon	649	-4 ~ -10	Acceptable	Acceptable	Acceptable
23. Jayapura	303	-11	Acceptable	Berth extension (303m to 530m) required	Further extension to 890m required
24. Biak	262	-7 ~ -10	Acceptable	Acceptable	Berth extension of 100m required
25. Sorong	280	-9	Acceptable	Berth extension (280m to 500m) required	Further extension to 800m required

Note) Exclusive of international shipping and traditional shipping in calculating port capacity

CHAPTER 11: SHIPPING BUSINESS MANAGEMENT PROGRAMS

KEY MANAGEMENT ISSUES

- Indonesian domestic shipping is often characterized by aging fleet with many small shipping companies. After the deregulation in the late 1980s, this trend has become outstanding vis-à-vis prior to deregulation. Such a mass of small operators (82% of INSA members owning only one or two vessels) is not conducive for effective management and maintenance of fleet. Therefore, four key issues are addressed in shipping business management:
  1. Strengthening of cooperative and consolidated efforts among small shipping companies to increase management capability such as fleet procurement and marketing;
  2. Contracting out of ship-management services to professional ship-management company in order to enhance ship safety, availability and ship lifetime while reducing in accidents and repairing time and cost;
  3. Providing opportunities for advanced management education particularly to shipping managers, government administrators and experts; and
  4. Conforming to international cooperation initiatives to modernize the domestic shipping industry such as quality management accredited by ISO, safety and security of shipping management advocated by IMO and others.
- All are important instruments for national shipping lines to put modern shipping into practice although they require long-term undertakings. Except the last issue which may be resorted to institutional arrangement, other three issues have been concretized in this chapter.

COMPANY MODERNIZATION WAYS

- Consolidation of companies to a reasonable size is highly recommended. The merit is to achieve quick preparation of funds for vessel renewal and better management of fleet, so that each special functions such as marketing, maintenance, operation planning, financial management, personnel management will be handled by a group of staff members specially trained for each task. An additional merit is the flexibility to respond to fluctuating demand by sharing vessel capacity. In the simulation, it is assumed that consolidation will improve load factor and rationalize shipping movement. As a result, variable cost was reduced by approximately 15%. Cost items such as crew wages, food expenses and administration cost become 30% less. In total, it is expected that the profit after tax will significantly increase by three times from 4.8% to 14.4%. Moreover, quality of service will be up-graded.
- Inter-modal integration for customer-oriented services is a growing concern. Shipping is a line haul of this logistics chain. To enable it, linkage with forwarding companies and an integrated information system including relevant players and ports will be prerequisite.

Table 11.1 Simulation Result of Company Consolidation

(Mil Rp)

	General Cargo-Company-1	General Cargo-Company-2	Bulk Carrier Company-1	Simple Total	Consolidation with chemistry
Number of Vessel	5	5	5	15	15
Fixed Cost Total	19,850	49,500	27,500	96,850	94,827
Variable Cost	24,827	55,218	69,567	149,611	126,456
Total Cost	44,677	104,718	97,067	246,461	221,282
Net Profit after tax	1,562	-978	12,107	12,691	37,870
Profit / Gross Sales	3%	-1%	11%	4.8%	14.4%

CONTRACTING-OUT OF SHIP-MANAGEMENT

- Separation of management from ownership is an idea to optimize condition of the vessel and to achieve utmost workability. Based on the ship-management agreement, an expert, called superintendent, will take care of the vessel in all aspects of mechanical maintenance, crew procurement and training, and procurement of navigation items. Due to scale of economy and aggregated experiences, effective management of maintenance and manning will be achieved by ship-management company.
- In Indonesia, most of companies are operating vessels as owner-operator. Although daily

maintenance of vessels is dependent on the skill of crew, small shipping companies could not manage effectively. There business relation of the cargo owner and consignee is such that the shipowner has a weak negotiation position. As a result, its weak position sometimes damages the quality management of vessel if without professional advice.

- Ship-management is a revolutionary system which can provide modern management to shipping companies while transforming shipping industry structure. The future of the Indonesian shipping industry will, to great a extent, depend on the successful implementation of ship-management according to the Study Team's expert judgment.

Figure 11.1 Relationship of Current Indonesian Shipping Operators

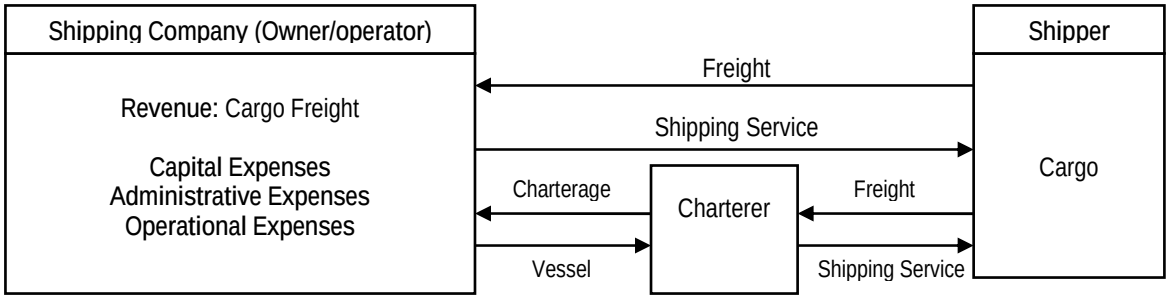
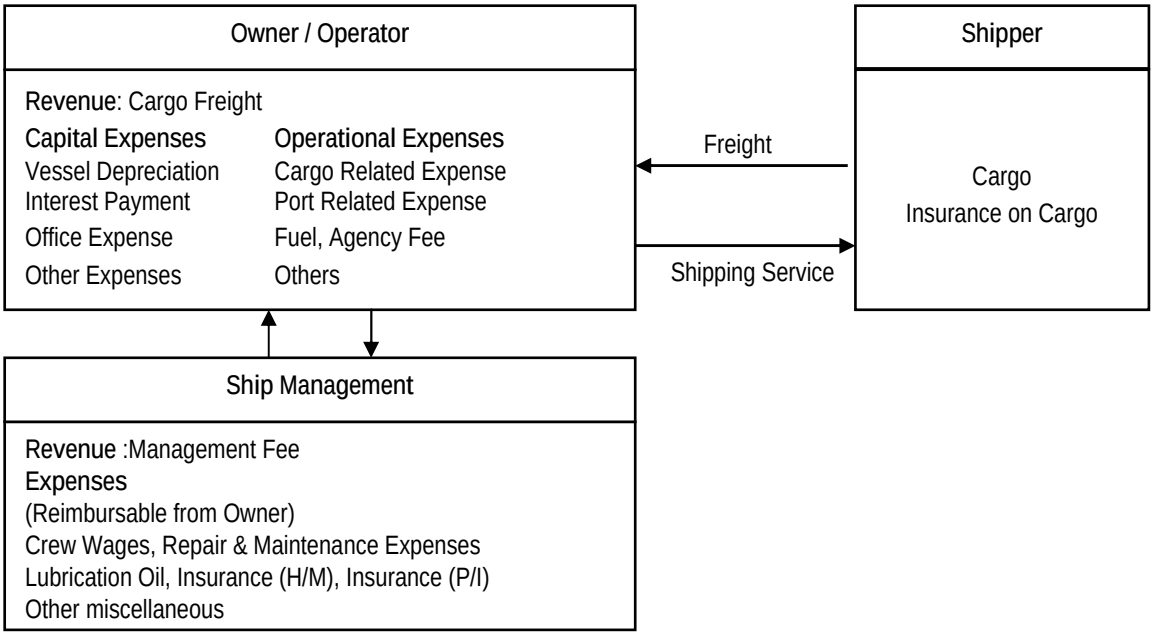


Figure 11.2 Future Proposal for Indonesia Shipping Operators



ADVANCED MANAGEMENT EDUCATION

- Presently in Indonesia, training programs are all targeted to seafarers and on technical issues in ship operation. Since modern shipping management is a key to strengthen the shipping industry, an advanced management education program is proposed.
- The Study estimates around 270,000 people engaged in the maritime transport sector. 1,200 of which or 0.5% are target beneficiaries of the proposed program; including, shipping and shipyard managers, supervisors and engineers, and government administrators.
- The program structure, offers several specialization subjects for each sub-program. However, as a requisite, total quality management and process management should be taken by all participants. Participants are recommended to take major classes (marked A in the table) and some elective classes (marked B) as detailed in Table 11.2.

Table 11.2 Course Menu for the Proposed Program

		Manager		Expert			
		Business Manager	Operation Manager	Superintendent +	Shipyard Repair Engineer	Administrator	Visiting Specialist
	Mandatory Courses for all Participants						
M-1	Total Quality Management & ISO 9002	A	A	A	A	A	B
M-2	Process Management & Project Coordination	A	A	A	A	A	B
	Shipping Business Management						
A-1	Business Management and Marketing	A	B				B
A-2	Logistic system and Transportation Economics	A	A				B
A-3	Voyage Estimating, Cost accounting, Chartering	B	A				
A-4	Finance and Risk Management	A	A				
	Ship-Management						
B-1	Technical Management of On-Board maintenance			A			B
B-2	Inspection, Certification and performance control			A		A	B
B-3	Cost Accounting, Budgeting and Reporting		B	A			
B-4	Organization, Human resource management		B	A			
	Shipyard Management & Supervision						
C-1	Ship Building Supervision				A		B
C-2	Procurement Management				A		
C-3	Human factors for safety and productivity				A		B
C-4	Innovation Management				A		B
	Administration and Government Mandate						
D-1	Legal issues and Maritime Administration	B	B			A	
D-2	Insurance (concept and practice)			B	B	A	
D-3	Environmental Issues in Maritime Industry	B	B			A	
D-4	Port Management and Development Planning		B			A	
	Interdisciplinary Approach						
E-1	Case Studies of Business Development	A	A	B	B	A	B
E-2	International Trend and Land Transportation	A	A	B		A	A
E-3	Field Work and OJT					B	A
E-4	Conventions and Symposium	C	C	C	C	C	A

CHAPTER 12: SHIP FINANCE PROGRAMS

MECHANISM OF DEVELOPMENT FINANCE IN INDONESIA

- There are two significantly different development finances by the government. The one is for public sector finance, including those for SOEs. The other is for private sector through government banks, which is called TSL or DLBS. For the private sector development, basically private bank should finance should be exploited. However, due to various constraints, this is often insufficient and TSL through government banks is provided instead.

Mechanism of ship finance

- There are two categories of government owned ships. The first one is the in-house ships owned by the SOE or by the subsidiaries of SOE that transport products of the SOE. The second is the ships owned by public transport SOE (like Pelni) and work for public transportation. The former is buying foreign made ships by getting foreign bank loans through the guarantee of the SOE itself. The latter is also buying foreign made ships by getting foreign export credit through the guarantee of the government. There are some ships financed by ODA.
- There are also two categories of private owned ships. The first one is large scale international or domestic trunk line ships. The other is small scale domestic local (feeder) line ships including a certain number of traditional ships. The shipping companies which are operating on international or domestic trunk lines are large and are mostly eligible for both foreign and domestic bank loans. However, these loans are insufficient for these companies to strengthen their fleet substantially so far. The shipping companies which are operating local line shipping are all small and not eligible to borrow bank loans even from domestic banks.

Present situation of ship finance

a. Finance for publicly owned ships for public transport: Foreign export credit and ODA.
b. Finance for ships publicly owned and exclusively used by SOEs: Mostly foreign private bank loans.
c. Finance for privately owned ships used for trunk line transport: Except for some vessels financed by foreign bank, they are purchased by their own fund.
d. Finance for privately owned ships used for feeder line transport including traditional ship operation: Mostly vessels are purchased by their own fund with some exception of borrowing short-term loan (max 6 months).
e. Finance for shipyard and shipbuilding: Financing is almost suspended so far.

Problems of ship finance

- Resource mobilization is limited in scope and scale as follows:
  - ODA is being concentrated to public investment for various development sectors. Shipping sector is not included, so far.
  - OOF; only export credit by KFW is being realized. Export credit from Japan is being suspended due to rescheduling arrangement.
  - FDI; so far none
  - Government budget; not allocated for shipbuilding or procurement except for those used by pioneer shipping.
  - Foreign private bank loan; provided for credit worthy internationally operating shipping companies.
  - Domestic private bank loan; only very small amount is being provided for ships. (In case of BMI approximately 0.25% of total lending portfolio)
- Interest rate of domestic loan is 15-17% per annum for 5 years loan. Prime rate tends to go down recently and the longer term loan may also go down in near future.
- In regard to amortization period, 5-year term is prevailing in the case of ship finance.
- At present, shipping companies cannot make the procured vessel as collateral. Therefore, shipping companies have to guarantee bank loans making their non-ship asset as collateral.
- There is no scheme to provide fund to feeder shipping including traditional shipping except for limited amount of short-term loan from the domestic banks. Low interest institutional loan used to be provided for traditional shipping. However, this program is about to be terminated.
- Previous schemes to finance shipyard and shipbuilding have been finished. There is no more schemes provided.
- Firm funding policy is not established. In fact, the government refrains from guaranteeing loans not only for private sector but also for SOEs.
- Funding procedures are not streamlined, including appraisal, disbursement and repayment.

MEASURES TO STRENGTHEN SHIP FINANCE

- ODA loan may be provided to the following schemes and areas:
  a. For the procurement of high quality vessels which will eventually be standard type vessel.
  b. For the manufacturing of high quality vessels (same as (a)) at local shipyard.
  c. For TSL through the development bank (BMI) to shipping company to purchase new vessels, to renew or improve existing vessels or to purchase equipment.
  d. For TSL through the rural development bank (BRI) to feeder line shipping company or traditional ship owners to purchase new vessels or to renew or to improve existing ships.
  e. For the support of pioneer shipping, by providing fund for related programs, i.e., rural infrastructure construction, micro finance for rural livelihood creation or comprehensive rural development plan at the place where pioneer shipping is being operated.
- Provision of OOF, non-ODA institutional loan, i.e., buyers or suppliers credit will be available after rescheduling. The scheme should fully be resumed at the earliest opportunity.
- Improvement of access to foreign bank loan: At present, shipping companies are allowed to borrow loan from foreign capital market. However, for domestic shipping companies, the income is totally rupiah denominated and therefore the borrowing of foreign currency is basically too risky.
- Utilization of more local bank loan: For this purpose, reduction of extremely high interest rate is necessary. Ship mortgage law is prerequisite.
- Establishment of funding policy: In order to make funding efficient, transparent and more useful, funding policy should be established.
- Streamlining of funding procedures: Commitment and disbursement should be expedited. Delay in repayment and insolvency should be minimized.
- Provision of technical assistance fund for related studies: Studies are necessary on how to link rural development and tertiary shipping operation effectively.




CHAPTER 13: MARITIME RELATED INDUSTRIES DEVELOPMENT PROGRAMS

MEASURES TO SHORTEN SHIP REPAIRING PERIOD

- The study has identified that Indonesian shipyards have long repair times, thus, they have lost international competitiveness despite lower rates. Worse, this issue is adversely affecting domestic shipping business viability.

Cause Analysis

- The shipyard side embraces several weaknesses which allow poor performance and resultantly lengthy repairing time. They are lack of technical skills, workers' poor motivation, obsolete and deteriorated machine and equipment, poor working schedule, problems behind docking contract agreements, and shortage of working capital.
- Factors concerning shipowners also contribute to the problems. Representative ones are insufficient preparation for docking and dominance of owner-operator system. Most Indonesian shipping companies are not well aware of the repair needs of their ships before docking due to poor ship-management. The ship's condition is not fully known until after docking and only then are work orders prepared. If the operator is separated from shipowner, shipowners prepare for docking including arranging necessary parts and equipment, in advance in order to ensure the timeliness of docking in order to avoid "off-hire" (exemption of times the vessel is inoperable due to the fault of the shipowners from the specified charter period).

Possible Measures

- The shipyard side suffers from some chronic problems such as fund shortage, sometimes affecting material procurement, technical backwardness and poor management. Provision of training opportunities is essential for upgrading technology. In this regard, expatriate engineers may offset limited local resources as trainers. As for management improvement, local shipyards need to engage well defined and rational contracts with shipowners. It is advisable that IPERINDO prepares and disseminates a model contract among its member shipyards.
- The shipowners often ignore ship maintenance programs, resulting in longer repair periods, large expenditures on repairs and spare parts, and lost opportunities during the repair period. Shipowners should understand the value of preventive maintenance. When they cannot undertake by themselves, such ship-management works should be contracted out to a professional ship-management company.

DISTRIBUTION PLAN OF SHIP REPAIR FACILITIES

- IPERINDO estimates the total annual ship repair capacity of 3,545,000 GT among 120 shipyards nationwide. The 120 shipyards are all capable of repairing steel-hull vessels of over 300 GT. For this Study, 25 shipyards were surveyed. The selected 25 shipyards have a combined repair capacity of 2,515,500 and accounts for 71% of the national capacity, with a docking capacity ranging from 35 GT to 27,500 GT.
- Dock space requirement for accommodating increasing domestic fleet has been calculated in terms of regional capacity distribution and capacity by ship size. As results, Kalimantan shows a serious dock capacity deficit even in 2014. In regard to ship size, Indonesian shipyards will need an additional capacity of 241,760 GT for large vessels over 10,000 GT by the year 2014. And this deficit will further expand to 626,700 GT in 2024.
- Kalimantan is the most desirable location for investments for new dock for small and middle size vessels since it is the region with the highest deficit in dock capacity. Such new investment will benefit many shipowners in and around Kalimantan, and will reduce access time to shipyards. And for larger size ships, increase in the capacity of selected shipyards in Java (Surabaya, Semarang, Jakarta) or Sulawesi (Makassar) would be desirable.

Table 13.1 Balance of Dock Space by Region

Region	Existing Available Capacity	2014		2024	
		Required Capacity	Balance	Required Capacity	Balance
Sumatra	1,123	980	+143	1,300	-177
Java	2,149	893	+1,256	1,189	+960
Bali and Nusa Tenggara	0	52	-52	74	-74
Kalimantan	95	646	-551	788	-693
Sulawesi	127	221	-94	324	-197
Maluku	42	40	+2	51	-9
Papua	9	81	-72	129	-120
Indonesia	3,545	2,913	+632	3,835	-310

Unit: 1,000 GT Source: STRAMINDO

Table 13.2 Balance of Dock space by size of the ships

Ship Size	Small		Middle		Large	
National Installed Capacity [GT/Y] */	1,430,000		1,300,000		870,000	
Year	2014	2024	2014	2024	2014	2024
Fleet Expansion **/	2,121,250	2,627,600	2,456,900	3,266,250	2,779,400	3,741,800
Dock Space Required	848,500	1,051,090	982,760	1,306,500	1,111,760	1,496,720
Balance	581,500	378,910	317,240	(6,500)	(241,760)	(626,700)

Source: * MOIT, ** STRAMINDO

STRENGTHENING OF SHIPBUILDING CAPABILITY

- The annual capacity of Indonesian shipbuilding industries is 170,750 GT, among 71 steel shipbuilders with annual capacity of over 300 GT. All kinds, types and sizes of ships up to 50,000 DWT could be built. However, building capacity is quite moderate compared with other Asian countries.
- The Study has identified some local shipbuilding needs such as barges, small cargo/passenger vessels for tertiary shipping and the vessels which are suitable for domestic use are difficult to find in the second-hand markets abroad. The domestic shipping industry will need the shipbuilding industry to firmly support an entire ship life: building, repairing and breaking during the Master Plan period. A balanced development between shipping and shipbuilding should be pursued.

Table 13.3 Comparison of Shipbuilding Industries among Selected Countries

	Indonesia	Philippines	Thailand	China	Japan	Korea
Shipbuilding Actual Completion ('000 gt in 2002)	(103)	231	3	2,207	11,732	12,967
Ship-repairing Actual Completion ('000 gt in 2002)	2,118	3,658	1,620	n.a.	n.a.	n.a.
Employment ('000)	25-30	15-20	n.a.	243	78	65
National Fleet Tonnage ('000 gt)	3.6	6.0	1.8	16.7	14.6	6.4

Source: APSEM 2003, Lloyd's Register of Shipping 2002
Note: ( ) Order books estimated by STRAMINDO