

Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia (STRAMINDO)

FINAL REPORT

March 2004

ALMEC Corporation Japan Marine Science Inc.

ALKEN PRIMA

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

STRAMINDO

STUDY ON THE DEVELOPMENT OF DOMESTIC SEA TRANSPORTATION AND MARITIME INDUSTRY IN THE REPUBLIC OF INDONESIA

FINAL REPORT

SUMMARY

March 2004

ALMEC CORPORATION JAPAN MARINE SCIENCE INC.

COMPOSITION OF STRAMINDO REPORTS

Summary

(English, Japanese and Indonesian)

Main Text Volume 1: Sector Achievements and Issues Volume 2: Integrated Master Plan and Action Plan

Technical Report No. 1: Maritime Traffic Database Development and Demand Forecast Technical Report No. 2: Social Environmental Survey on Traditional Shipping Modernization Technical Report No. 3: Participatory Approach in the Development of STRAMINDO Plan

> The exchange rate used in the report is: J. Yen 115 = US\$ 1 = Indonesian Rupiah 8,600 (average in 2003)

PREFACE

In response to the request from the Government of the Republic of Indonesia, the Government of Japan decided to conduct the Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a team to Indonesia between December 2002 and March 2004, which was headed by Mr. KUMAZAWA Ken of ALMEC Corporation (ALMEC) and was comprised of ALMEC and Japan Marine Science Inc (JMS).

The team conducted the study in collaboration with the Indonesian counterpart team including nationwide field surveys, traffic demand forecast, industrial analysis and planning works, and then held a series of discussions with the officials concerned of the Government of Indonesia. Upon returning to Japan, the team duly finalized the study and delivered this report.

I hope that this report will contribute to the development of domestic shipping and its maritime industry in Indonesia and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Indonesia for their close cooperation extended to the team.

March 2004

MATSUOKA Kazuhisa Vice President Japan International Cooperation Agency

March 2004

MATSUOKA Kazuhisa

Vice President Japan International Cooperation Agency Tokyo

LETTER OF TRANSMITTAL

Dear Sir,

We are pleased to formally submit herewith the final report of the "Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia".

This report compiles the result of the study which was undertaken both in Indonesia and Japan form December 2002 to March 2004 by the Team, jointly organized by ALMEC Corporation and Japan Marine Science Inc.

We owe a lot to many people for the accomplishment of this report. First, we would like to express our sincere appreciation and deep gratitude to all those who extended their extensive assistance and cooperation to the Team, in particular the Ministry of Communications as well as the Ministry of Industry and Trade both in Indonesia.

We also acknowledge the officials of your agency, the JICA Advisory Committee and the Embassy of Japan in Indonesia for their support and valuable advice in the course of the Study.

We wish the report would contribute to the promotion and sustainable development of domestic sea transportation and maritime industries in Indonesia.

Very truly yours,

KUMAZAWA Ken

Team Leader The Team for the Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia

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ACRONYMS

ABS	American Bureau of Shipping
ADB	Asian Development Bank
ADPEL	Administrator Pelabuhan / Port Administration Office
AFTA	ASEAN Free Trade Agreement
AGR	Annual Growth Rate
AIS	Automatic Identification System
APBN	Anggaran Pendapatan Belanja Negara / National Government Budget
APCIS	Asia-Pacific Computerized Information System
APSEM	Asia-Pacific Shipbuilding Experts Meeting
ASEAN	Association of Southeast Asian Nations
BAPINDO	Bank Pembangunan Indonesia / Development Bank of Indonesia (now
	BMI)
BEMAC	Beam Metrical Alternative Creation, the brand name of Uzushio Electric
	Group
BIDA	Batam Industrial Development Authority
BKI	Biro Klasifikasi Indonesia / Indonesian Classification Bureau
BLT	Berlian Laju Tanker/ An Indonesian Shipping Company
BMI	Bank Mandiri Indonesia
BOR	Berth Occupancy Ratio
BPS	Biro Pusat Statistik / Central Bureau of Statistics
BRI	Bank Rakyat Indonesia
BTN	Bank Tabungan Negara / National Saving Bank

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BUMN	Badan Usaha Milik Negara / State-owned Enterprises
BV	Bureau Veritas
CGI	Consultative Group for Indonesia
CIF	Cost, Insurance and Freight
COLREG	Convention on the International Regulations for Preventing Collisions at Sea, 1972
CPI	Consumer Price Index
СРО	Crude Palm Oil
DBP	Development Bank of The Philippines
DGLC	Directorate General for Land Communication
DGMMEMI	Directorate General of Metal, Machinery, Electronic and Multifarious
	Industries
DGSC	Directorate General of Sea Communication
DKI Jakarta	Daerah Khusus Ibukota Jakarta / Special Capital City of Jakarta
DLKP	Daerah Lingkungan Kepentingan Pelabuhan / Important Port
	Environment Area
DLKR	Daerah Lingkungan Kerja / Work Environment Area
DLBS	Development Loan through Banking System
DNV	Det Norske Veritas
DOC	Document of Compliance
DPC	Dewan Pimpinan Cabang / Branch Heads Council
DPD	Dewan Pimpinan Daerah / Regional Heads Council
DPP	Dewan Pimpinan Pusat / Central Heads Council
DWT	Dead Weight Ton
DSMP	Domestic Shipping Modernization Program
ECDIS	Electronic Chart Display And Information System
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ETA	Education and Training Agency
EXIM	Export and Import
FDI	Foreign Direct Investment
FIRR	Financial Internal Rate of Return
FOB	Free on Board
GAFEKSI	Gabungan Forwarders dan Ekspedisi Indonesia or INFA
GBHN	Garis Besar Haluan Negara / National Guidelines
GDP	Gross Domestic Product
GL	Germanischer Lloyd
GNP	Gross National Product
GOI	The Government of Indonesia
GOJ	The Government of Japan
GPS	Global Positioning System
GRDP	Gross Regional Domestic Product
GRT	Gross Registered Tonnage
GT	Gross Tonnage
HP	Horse-Power
HSC	High Speed Craft
IACS	The International Association Classification Societies
IBRA	Indonesia Bank Restructuring Agency
IDHS	Indonesian Demographic and Health Survey
IFCT	Industrial Finance Corporation of Thailand
ILLC	International Load Line Certificate
IMB	International Maritime Bureau

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IMCO	Inter-Governmental Maritime Consultative Organization
IMO	International Maritime Organization
IMR	Infant Mortality Rate
INFA	Indonesian Forwarders' Association
INSA	Indonesian Shipowners' Association
IPERINDO	Ikatan Perusahan Industri Kapal Nasional Indonesia / Indonesian
	Shipbuiling Industries Association
ISM-SMS	International Safety Management - Safety Management System
ISO	International Organization for Standardization
ISPS CODE	International Ship and Port Facility Security Code
IWT	Inland Waterway Transportation
ITP	Indocement Tunggal Perkasa / An Indonesian Cement Company
IBIC	Japan Bank For International Cooperation
IICA	Japan International Cooperation Agency
IMS	Japan Marine Science Inc
KANPFL	Kantor Pelahuhan / Port Office
KFC	Kanal Feri Cenat / High Sneed Ferry
KM	Kapal Motor / Motor Ship
KM	Kenutusan Monteri / Minister Degree
KPI	Kesatuan Pelaut Indonesia / Indonesian Seamen's Association
I/F	Load Factor
	Landing Craft Tank
	Lahulintas Angkutan Sungai Dangu dan Penyeberangan / River, Lake and
LLASDI	Earry Transportation
LIMC	Limitation Of Liability For Maritime Claims
I P	Lloyd's Register
	Maritima Industry Authority of the Dhilippings
	International Convention for the Provention of Marine Pollution from Shin
MARFOL	Malaysia International Shipping Corporation
MOC	Ministry of Communications
MOE	Ministry of Communications
мот	Ministry of Finance
MOL	Ministry of Transportation
MOU	Maritima Safaty Committee
MSC	Maritime Safety Commutee
MSUE	Ministry of State-owned Enterprises
M1 MOIT	Metric Ion
MOII	Nimstry of industry and frade
	Nippon Kalji Kyokal
	Nuppon Koukan Kabusnikigaisna / A Japanese steel corporation
INIVI NICI	Nautical Mile
NSL	Navigation and Signal Lighting Module
NOL	Neptune Orient Line / A Singapore snipping company
OD A	Origin-Destination
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OECF	Overseas Economic Cooperation Fund (now JBIC)
OOF	Other Official Finance
P/F	Passenger Factor
PDCA	Plan-Do-Check-Action
PELINDO	PT (Persero) Pelabuhan Indonesia / Public Port Corporation
PELNI	Pelayaran Nasional Indonesia / A state-owned shipping company

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PERTAMINA	Perusahan Pertambangan Minyak dan Gas Bumi Negara / Indonesia State
	Oil and Gas Mining Company
Persero	Perseroan Terbatas / Publicly listed corporation
PISA	Philippine Inter-Island Shipping Association
РКТ	Pupuk Kalimantan Timur / An Indonesian fertilizer company
PLTA	Pembangkit Listrik Tenaga Air / Hydraulic Power Plant
PLTG	Pembangkit Listrik Tenaga Gas / Thermal Power Plant
PROPENAS	Program Pembangunan Nasional / National 5 year Development Program
РМА	Penanaman Modal Asing / Foreign Capital Investment
PMDN	Penanaman Modal Dalam Negeri / Domestic Capital Investment
P&I	Protection and Indemnity
PSC	Port State Control
PT ASDP	PT Angkutan Sungai Danau dan Penyeberangan / Inland Waterways and
1 111021	Ferry Transportation Corporation
PT Petroges	PT Punuk Petrokimia Gresik / An Indonesian fertilizer company
PT PIM	PT Pupuk Iskandar Muda / An Indonesian fertilizer company
PT PKT	PT Pupuk Kalimantan Timur / An Indonesian fertilizer company
PUSRI	Punuk Sriwidiaia / An Indonesian fertilizer company
	Quality Assurance
RINA	Registro Italiano Navale
RIS	Regular Liner Service
RMS	Repairs Maintenance and Supply
RO	Recognized Organizations
Ro Ro	Recognized Organizations Roll on Roll off
SMC	Safety Management Certificate
SMIC	Ship Management and Holding Company
SMILE	State owned Enterprise
SOLAS	International Convention of the Safety Of Life At Sea
SULAS	International Convention of the Standard Of Training Cartification And
SICW	Watchkeeping for Seafarers
STRAMINDO	The Study on the Development of Domestic Sea Transportation and
	Maritime Industry in the Republic of Indonesia
SUA	Suppression of Unlawful Acts against the Safety of Maritime Navigation
SIUP	Surat Izin Usaha Perusahaan / Business Permit
SIUPAL	Surat Izin Usaha Perusaan Angkutan Laut / Shipping Business License
SWL	Safe Working Load
SV	Senior Volunteer
TEU	Twenty Footer Equivalent Units
TFR	Total Fertility Rate
TLC	Ton Lifting Canacity
TOR	Terms of Reference
TOC	Total Quality Control
TSI	Two Sten Loan
IIN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
VDR	Vovage Data Recorder
WB	The World Bank

EXECUTIVE SUMMARY

GENERAL

- Domestic shipping in Indonesia is not new. The industry as well as the government has endeavored to fulfill its mission in providing reliable and competitive maritime transport services as the prime artery of life and integration of the archipelago. However until today this mission has not been satisfactorily achieved. After the Economic Crisis, the inter-island shipping system has been modernized to some extent, e.g., assigning more container vessels on major routes. In regard to passenger shipping, due to severe competition with air, it is forced to reorganize the coverage and nature of its service.
- Today, Indonesian domestic shipping transports 152 million tons of cargo and 12 million passengers excluding IWT and short-distance ferry services, through a fleet of seven million tons calling at over two thousand ports. In terms of fleet volume and service coverage, it is regarded as the biggest domestic shipping system in the world. However a significant part of the fleet, around three million tons, is registered under foreign flags. Indonesia supposedly holds cabotage right in shipping (right to carry domestic cargo and passenger by national vessels and crew). In practice, the industry depends on foreign chartered vessels substantially.
- The Study's observation reveals that many vessels, particularly conventional vessels, are likely to wait at anchorage due to overly extended cargo waiting. Over-capacity sometimes triggers unhealthy dumping of freight rates. In reality, there are plenty of vessels but the vessels which can provide satisfactory services are insufficient in the market. The estimated productivity of the dry cargo fleet is low at only 7,649 ton-miles per DWT or only 37% of the Japanese case. Therefore, there must be a complicated situation wherein there is a high dependency on foreign chartered vessels while concurrently there is over-capacity of the domestic fleet.
- There is a strong need to foster a wide range of related maritime industries for sustainable shipping development. In particular, shipbuilding and ship repairing services are essential to support ship's lifecycle. The domestic shipping industry in Indonesia can import vessels unlike USA and therefore the low capacity of Indonesia's shipbuilding industry is disadvantageous but not a determinant in fleet development. The Study has revealed 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.

ISSUES RELATED TO NATIONAL TONNAGE DEVELOPMENT

• The primary study objective is to increase the share of Indonesian flagged vessels in domestic shipping. Cabotage right in domestic shipping is mutually recognized among maritime countries internationally. In addition, Indonesia has inherent and keen interest to achieve full cabotage, including stable carriage of cargo and passenger throughout the country, preservation of the

marine environment, contribution to national security and defense, improved balance of payment with reduction in outflow of freight revenue and chartering fee, and accumulation of wide maritime related industries.

• Increase in national tonnage share is a profound and complicated issue in Indonesia. Therefore a progressive and comprehensive approach is required associated with shipping industry empowerment. Adversely, a rough-and-ready method might pose disbenefit to not only shippers and passengers but also to the national economy as a whole as a result of disorderly services and additional burdens. Recognizant of geographical conditions, historical backgrounds and global economic environments, the issues related to national tonnage development can be addressed as follows:

Port system and trade policy: Domestic shipping used to form a closed network until 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 the resultant increase in the number of open ports from only four to 127, Indonesian carriers were exposed to competitors such as foreign feeder operators which attracted cargoes at competitive freight-rates.

Deregulation policy: Furthermore, in 1988, the Government dropped its tight control in the domestic market in establishing new shipping companies, wherein ownership of a national flagged ship was not anymore an absolute requirement. Shipping licenses were streamlined from five to only two. Shipping companies received greater flexibility in shipping routes, ship assignment and even in using foreign flagged ships in domestic trade. Due to uncertain business environments, the share of Indonesian flagged vessels has declined while the number of shipping companies has been mushrooming since 1988.¹

Poor fleet competitiveness in bulk shipping: According to DGSC, non-regular bulk shipping heavily relies on foreign flagged vessels unlike scheduled liner shipping. Indonesia has a particular special shipping system where a producer can establish a special shipping company which carries its raw materials and products exclusively. A general shipping company can become a subcontractor at best. Due to limited opportunities to make direct contracts with cargo owners and limited practices to build special purpose vessels based on long-term shipping contracts, it is difficult for general shipping companies to develop competitive fleet in bulk shipping.

Insufficient domestic ship finance: Many shipping companies have indicated their intention in procuring additional vessels. However, shipping companies find it difficult to arrange for

¹ The number of Indonesian shipping companies is 3,078 in 2001 which represents an increase of 3.3 times since 1988. Adversely, the share of Indonesian flagged vessels in domestic shipping decreased from 92% in 1988 to 60% in 2001.

ship loans in the domestic financial markets. On the other hand, ship loans could be more easily arranged through foreign sources. Some large shipping companies tend to procure vessels abroad as flagged-out vessels. Such arrangements are beyond the capacity of small-to-medium companies and they will have no other alternative but to invest in low cost but old and scrappy vessels. The net effect is a continually increasing dependency on foreign chartered vessels and lowering fleet productivity. This is the vicious circle as a result of insufficient ship finance.

• There is a strong need for the domestic shipping industry to depart from the vicious cycle and to shift to a new paradigm of developing a competitive national fleet where national shipping lines can access adequate financial sources to procure competitive vessels as shippers require; enjoy stable business profits; avoid degrading of vessel asset in the medium to long-term; and, be able to re-invest in a more competitive fleet.

MASTER PLAN

• Under the recognition that national tonnage development should be achieved in the process of developing a sufficient and competitive domestic shipping system, the Master Plan towards the year 2024 has been formulated. In 2024, the domestic fleet will almost double or increase to 14 million tons with considerable modernization efforts. The Master Plan is composed of a future domestic shipping system guided by traffic demand, policy setting of shipping and ship safety, institutionalization of ship finance, modernization of shipping business management, and fostering of related maritime industries. Those can be summarized as follows:

Freight liner shipping: It is envisioned that further containerization will bring about not only container fleet enlargement but also more container routes. Shipping operators will be able to assign larger container vessels on heavy demand routes as ports facilities allow. In order to create healthy and competitive business environments, administrators are not only required to monitor access but also to rationalize services and tariff setting through policy dialogue with the industry. Advanced logistics environments such as multimodal transport and Ro-Ro operation will be developed.

Bulk shipping: For developing a competitive and productive fleet, special shipping should be redefined so that special purpose vessels can be promoted under long-term contract between shipper and general shipping company. Due to its non-scheduled nature, administrators will not need to monitor its operation seriously like liner shipping. However more safety and environment concerns should be necessarily and keenly considered.

Passenger shipping: With the expansion of air travel, existing shipping routes and fleets will have to be reorganized to consolidate services to allow for stable and competitive services in Indonesia. It is useful to classify the routes by commercial feasibility and number of operators

serving the route, i.e., Primary (i.e. viable with more than one operator) – ensure healthy competition, Secondary (i.e. viable but only one operator) – prevent abuse of monopolistic position of operator, and Tertiary (i.e. unviable) – subsidize necessary operation with strict accounting and monitoring.

Tertiary shipping: Tertiary routes are not financially sustainable but are nonetheless essential. 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. It is important that a capable management body will handle demand research and coordination of local needs; fleet procurement support and quality control; and, service contract and operation monitoring.

Traditional shipping: Although it still meets certain local needs, traditional shipping is being phased out at many routes and areas. It becomes clear that the threats to the business environments far outweigh any opportunities. Thus, in order to survive, the traditional shipping industry needs to take a modernization strategy including human resource development, port infrastructure development, application of standards and technology, and enforcement of supporting policies.

Shipping business management: Indonesian domestic shipping is often characterized by ageing fleet with many small shipping companies (82% of INSA members own one or two vessels). Such a mass of small operators 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, (2) contracting out of ship-management services to professional ship-management company, (3) providing opportunities for advanced management education, and (4) conforming to international cooperation initiatives to modernize the domestic shipping industry such as ISO and IMO.

Structural reforms in domestic shipping industry: Shipping policy should also focus on strengthening of the domestic shipping industry through a rather long-term structural reform. Some government measures are conducive to industrial change such as review of business license requisite, facilitated dialogue between cargo owners and ship owners, periodical coordination of ship space and freight volume, and others.

Ship safety: There are many important issues for ship safety in Indonesia. They are, among others, adequate operation of ISM-Code, introduction of ISPS-Code at international ports, strict enforcement of oil spill protection, and curbing piracy and armed robbery incidents. In response to those issues, upgrading of administrators' capability is of great importance.

Investment environments: 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. The Study has identified the necessity of three legal regimes such as ship mortgage, arrest of ships and carrier's responsibility and liability. It is recommendable to accede to relevant international conventions associated with necessary domestic legal systems.

Ship finance: Resource mobilization for ship finance is so far limited in scope and scale in Indonesia. Since shipping services and fleet types are diversified in domestic shipping, a variety of ship finance schemes will be necessary including utilization of more domestic bank loan, improvement of access to foreign bank loan, expansion of OOF or non-ODA institutional loan such as suppliers or buyers credit, and strategic arrangement of ODA loan package.

Related maritime industries: Ship repairing capability will be improved to shorten repairing period. Firstly, capability improvement will be done through improved efficiency. Secondly, ship repairing capacity such as docking capacity will be expanded particularly in the second half of the Master Plan period (2015-2024). In regard to shipbuilding capability, the Study has identified some local shipbuilding needs such as barges, small vessels and the vessels which are suitable for domestic use are difficult to find in the second-hand markets abroad. A balanced development between shipping and shipbuilding should be pursued.

- The fleet procurement plan shows that the number of vessels to be procured is 4,617 during the Master Plan period. The proportion of new vessels will increase from 10% to eventually 30% of the total vessels procured, taking account of current practice and future affordability. In the case of second-hand vessels, they are assumed as 10 years old when coming into the domestic shipping market. The cost of the procurement plan is estimated to be Rp 130 trillion which is equivalent to 8% of the Indonesian GDP in 2002. The average fleet age will decrease from presently 22.5 years to 14.4 years in 2024. Such a younger fleet composition is similar to case between Malaysia (16 years in 2000) and Singapore (11 years in 2000).
- The economic benefits of domestic shipping development are significant as indicated by the estimated EIRR of 37% covering directly measurable benefits alone such as cost reduction, time saving and safety enhancement. Indirect benefits may extend to the associated development of maritime related industries, promotion of socioeconomic development beyond Java and reduction in regional disparity accordingly, and stimulation of related industry development. In conclusion, the Master Plan is highly feasible for developing the national economy.
- If the domestic shipping industry cannot afford the proposed fleet procurement plan, the Master Plan must need substantial public fund for implementation. Therefore, affordability of the Industry is a key to measure actual implementability. For freight shipping, the required fleet

procurement of Rp 114 trillion seems affordable since total fleet depreciation costs and a plausible profit of 7.5% against turnover is estimated to be Rp 121 trillion during the same period. On the other hand, passenger shipping may not be sustained without public support even in the future. The fare-box ratio of the nationwide network at present and in future is calculated to be less than 1.0. However, primary and secondary routes will expect operational profits in the future and its profits will be further expanded when Ro-Ro passenger vessels are assigned. Therefore public support may concentrate on tertiary shipping because of its less and non-commercial nature.

	2002	2014	2024
Traffic Demand			
Dry Cargo (MT, million)	70.1	129.7	196.1
Liquid Cargo (MT, million)	86.7	113.1	120.4
Passenger (pax, million)	12.5	18.7	18.8
Fleet Tonnage			
For Dry Cargo (DWT, million)	4.5	7.1	10.2
For Liquid Cargo (DWT, million)	2.1	2.9	3.0
For Passenger (GT, million) ^{1/}	0.4	0.5	0.5
Total (DWT/GT, million)	7.1	10.5	13.7
Fleet Procurement			
For Dry Cargo (Rp, trillion)	27.2		49.6
For Liquid Cargo (Rp, trillion)	17.0		19.6
For Passenger (Rp, trillion)	10.3		6.1
Total (Rp, trillion)	54.5		75.3
Cabotage Rate (%)	60 ^{2/}	86	100
Average Ship Age (Years)	22.5	18.1	14.4
Productivity of Dry Cargo Fleet	7,649	8,451	9,112
(ton-miles/DWT)	, 	,	,
Containerization Rate (%) ^{3/}	23	37	40

 Table 1 Summary of Domestic Shipping Development during the Master Plan Period

Note: 1/ Inclusive of passenger ships, Ro-Ro passenger ships and passenger-cum-cargo ships

2/ DGSC figure in 2001

3/ Containerizable cargo is assumed to include all dry cargo except coal and mining products

• As long as investment in vessels can be procured as national tonnage, it is possible for the government to enforce full cabotage regime by the year 2024. A share of national tonnage in an intermediate year of 2014 is estimated at 86% which is achieved when selected seven commodities, i.e., coal, oil, CPO, fertilizer, rice, rubber and wood, is mandated to be transported by the national fleet only while present haulage patterns of non-selected commodities remain.

ACTION PLAN

- Although the STRAMINDO Master Plan is highly feasible from a national economy viewpoint, its implementation must face critical issues such as raising finance for procuring Rp 27.6 trillion worth of fleet until the year 2009. Effective domestic shipping development addressing such a key representative issue is only possible if a number of interrelated individual projects are properly coordinated and implemented in an integral manner. In order to implement part of the Master Plan in the short-term, the Study also formulates an Action Plan, with paying attention on three priority areas:
 - (1) expanding shipping investment channels towards Indonesian flagged vessels,
 - (2) developing competitive domestic fleet through increasing investment and preventing the fleet from unfavorable asset devaluation, and
 - (3) starting capacity building undertakings.
- The first priority area consists of two components: improvement of shipping investment environments to smoothen domestic fleet procurement on a commercial basis and preparation of a public ship finance scheme.
 - (A) Shipping investment environments: If capable shipping companies cannot access to favorable financial services, there might be some institutional barriers and shortcomings between shipping companies and financial markets and such negative elements should be removed. As a first step, the Government needs to accede to the International Convention on Maritime Liens and Mortgages of 1993 and enact a corresponding domestic law. Soon after the legislation of ship mortgage regime, the Government will need to ratify the International Convention Relating to the Arrest of Sea-Going Ships of 1952 or the International Convention on Arrest of Ships of 1999, and to create a new law for civil procedures which provides a quick and reliable procedure in executing ship mortgages.
 - (B) Strategic ODA loan package for inter-island shipping fleet: The Study suggests the Government to establish an ODA-based inter-island shipping development program which will meet 10% of domestic fleet investment during the period 2005-09 or Rp 2.8 trillion with focusing on three priority areas: (1) renewing and conversion of existing idle fleet, (2) assignment of most suitable vessels on inter-island liner routes, and (3) maintaining and expanding socially indispensable tertiary shipping. Regarding finance method, two-step-loan of ODA fund will be provided for shipping companies. Within the scheme, a Ship Management and Holding Company (SMHC) will hold government-owned vessels and provide ship-management services to all the financed vessels. In building newly designed vessels, it is recommendable to employ a package-deal method where an Indonesian shipbuilder and foreign shipbuilder will work together to deliver vessels that

are effective and efficient technically and economically.

- The second priority area has two components: designing of model ships to promote unitized liner shipping and introduction of ship-management company.
 - (C) **Designing of model ships:** The inter-island liner shipping actually forms the primary infrastructure of the national transport system. For its modernization, the Study selected the following three model ships beside ordinary container ships: (i) shallow and wide container ship, (ii) Ro-Ro ship, and (iii) multipurpose ship. Each ship has different characteristics and thus optimized assignment patterns also vary in terms of route length, demand (especially container and vehicle), and water depth of ports and seaways. When those ships are assigned in an optimal way, they will greatly contribute to the modernization of inter-island liner shipping with satisfactory business performance.
 - (D) Introduction of ship-management company: Ship-management service is a new concept in Indonesia. DGSC has informed that the revised Shipping Law No. 21/1992, currently under preparation, may stipulate ship-management service as one of the recognized auxiliary shipping services. The responsible authority must pave the way to the successful introduction of ship-management service in Indonesia by means of issuance of business license and "superintendent (SI)" certificate. The Study conceptually sets up a Model Ship-management Company to check business viability. The results show that a company of 40 staffs including five senior SI taking care of 30 vessels could be financially sustainable with an adequate management fee of US\$ 4-5 thousand monthly. Younger and larger vessels will benefit from the system through increased commissionable days and longer ship life.
- The third priority area consists of the following three capacity building components to cover both the public and private sectors:
 - (E) Advanced education in shipping industry: Existing education is mostly towards seafarers, with limited attention to shipping management. Thus, an advanced education program is proposed to focus on ship-management, business management of shipping company and shipyard, and maritime law and administration. The program can be divided into expert course and master course depending on study period and coverage. ETA will be designated as an implementation body covering, among others, syllabi preparation, appointment of a platform institution, and accreditation. ETA may appoint a platform institution either from among maritime training institutions under ETA or an outside university.
 - (F) **Maritime administration database center:** Regulation and its enforcement as well policy setting and investment are the primary tools used by the government to guide and help the

maritime transport industry. To be able to regulate, enforce and plan for beneficial policies and investment effectively, the knowledge of conditions and operations of the maritime transport industry is vital. However, at the current state the level of information of DGSC, the primary governing body, is very poor. All the necessary data should be stored in electronic files, reported and utilized with an effective network. It is desirable to involve all stakeholders (DGSC, Shipping Co., PELINDO, BKI, etc.) at the onset. However, it may take some time to build a consensus on the system. Thus a phased implementation program may be adopted, developing database linkages with DGSC and shipping companies in Phase 1 and expanding linkages with other agencies in the Phase 2.

(G) **Daily monitoring system for subsidized operation:** For a long time, government had difficulty in controlling and monitoring subsidized operations at mostly remote areas. The Study points out some key issues including high operation subsidy rate (nearby 90%) and poor shipping monitoring at remote areas in real time. With the state of the art technology such as satellite communication and internet, real time monitoring and performance analysis can be done at a reasonable cost. The project consists of four components: (1) hardware procurement for each ship, (2) hardware procurement for head office, (3) network installation (installation) of tracking system software, and (4) training for operators. The system will be initially installed to cover about 50 pioneer ships and it will expand service coverage gradually.

CONCLUSION

• While Indonesian domestic shipping is indispensable and there is a large development potential, there are a number of conditions to be met to realize the benefits of domestic shipping development proposed in the Study. They include, among others, the following:

National shipping policy and strategic development plan on sea communication: As a first step to advocate a national shipping policy that is formulated and implemented for the benefit of all, it would be necessary to involve shippers and cargo owners. It is desirable for the Ministry of Communications to draft a comprehensive domestic shipping development framework based on the Study's output and proposals and incorporate it into the national development policy. In line with this, it is also important to prepare the next "Strategic Development Plan (*RENSTRA*) on Sea Communication 2005-09" including the Action Plan components proposed in the Study.

Improvement of shipping investment environments: The advent of free trade regime in the region will create more challenge and potential to domestic shipping. Therefore, Indonesia needs to develop an advantageous or at least a comparable investment environment relative to its neighboring countries by way of good coordination of private and public financing schemes.

Modernization of shipping business management: Most of Indonesian shipping companies are small entities operating one or two vessels. To enhance business competitiveness, their activities should be rationalized through mergers and acquisitions, concentration on specialized services, and contracting-out of ship management services. To introduce such rational measures, human resource development, specifically training of management personnel is considered top priority.

Development of shipping supporting infrastructure and facilities: Shipping infrastructure such as ports, waterways and aids to navigation as well as supporting facilities such as shipbuilding, repairing, and breaking need to be adequately developed to meet the specific requirements of domestic shipping as planned in the Study. In practice, shipping development is a matter of achieving synergy between shipping and supporting infrastructure and facilities.

Enhancement of ship safety and preservation of marine environment: Safety and the environment are two of the serious concerns why Indonesia needs to improve its domestic shipping system. All aspects of ship safety and the environmental protection should be enhanced in the process of fleet development, business modernization of shipping company and shipyard, and improved shipping services.

Establishment of a new partnership between public and private sectors: The drastic deregulation policy in the late 1980s made the relationship between the administration and the industry loose. However, one key item to realize a favorable domestic shipping system, as proposed in the Master Plan, is to establish a new partnership between public and private sectors because their coordinated efforts are necessary.

• It is also recommended that post-evaluation of the Master Plan be done every five years using standard performance indicators such as domestic fleet productivity (ton-mile per DWT), share of Indonesian flagged vessels in transporting domestic cargo, and containerization rate.

1	Figure	1 Detailed Implemen	ntation Schedu	le for the Action	ı Plan		
		2004	2005	2006	2007	2008	2009
		Formulation of "New National Shipping					Formulation of the 3 rd RENSTRA for Sea
STKAMINDO MASTEK FLAN		Policy" and "New RENSTRA for Sea Communication 2005-09"	(Implementa	ion including the	Action Plan Com	iponents)	Communication 2010-14"
ACTION PLAN							
(A) Improvement of Shipping Investment Environments		Institutionalization of S Hypothec and Arrest of S	hip Mortgage / Ship		Further i shipowner/car	nstitutionaliza rier's respons	tion such as ibility and liability
(B) Strategic ODA Loan Package for Indonesian Inter-island Shipping Development		Resumption and expansion of OOF relating Vessel and Its	Conduct of F/S on ODA Loan Package	Request of ODA Arrangement and Preparation of	Disburs (1) Renewi	sement of OD.	A Loan Package version of Existing
		Equipment)	Implementation Body, e.g., SMHC and Package Deal	Fleet (2) Assigni Regula (3) Mainta Indispe	ment of Most r Inter-island ining and H ensable Tertiar	Suitable Vessels on Routes Expanding Socially y Shipping
(C) Most Suitable Vessels on Regular			Preparation of		Vessel Consti	ruction on a	Commercial Basis (if
Inter-island Routes			Defail Design		any creditor a	vailable)	
(D) Introduction of Ship-management Company		Inclusion of "Ship-management Company" in the Revised Shipping Law	Preparation of L and Superinter	icense, Guidelines ident Certificate	Provision SMHC Support Companie	of Ship-mana of Establish es over the Co	igement Service within ng Ship-management untry
(E) Advanced Education in Shipping Industry		Preparatory Works	Opening of Ship Expert Course	-management	Enrichment ar Degree	nd Upgrade of	Courses as Master
(F) Maritime Administration Database Center		Phase 1 • Networking within I Shipping Company • Better Usage of Data	DGSC and abase		Phase 2 • Network	Expansion wi	th Other Agencies
(G) Daily Monitoring System for Subsidized Operation		System Development and Installation on	Gradual Sys	tem Expansion	Expansion and to Serve Tertia	d Renewal of a ary Shipping I	he Monitoring System
	k	Existing Pioneer Fleet				· · ·	

Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia (STRAMINDO)

Final Report Summary

SMHC = Ship Management and Holding Company

FINAL REPORT

Summary

CHAPTER 1: INTRODUCTION

STUDY BACKGROUND

- Indonesia is the largest archipelagic country in the world and maritime transport is a key basic infrastructure. However, the shipping industry has remained underdeveloped due to insufficient industrial effort and inadequate government support. Deficiencies in Indonesia's maritime sector are manifested in a low share of Indonesian flagged vessels in the domestic shipping market.
- A concerted effort is therefore necessary under a clear long-term perspective. Under this premise, the Government of Indonesia in June 2001 requested the Government of Japan to conduct a master plan study on Indonesian maritime shipping and industry.

STUDY OBJECTIVES

The overall study objective is to increase the share of Indonesian flagged vessels in domestic shipping by providing improved shipping services to shippers and passengers on all domestic shipping routes. To realize this overall objective, the Study has three specific objectives: (1) to formulate a Master Plan (up to the year 2024), (2) to prepare an Action Plan to implement priority projects, and (3) to facilitate technology transfer

STUDY IMPLEMENTATION

- JICA organized Study Team as well as Advisory Committee for this task and started to dispatch them in December 2002.
- For smooth conduct of the study and effective technology transfer, the Indonesian counterpart agencies, Ministry of Communications, and Ministry of Trade and Industry, organized a counterpart team.
- Major activities covered under the Study are illustrated in Figure 1.1. The activities can be grouped into "study mobilization and sector issue findings", "demand forecasting and Master Plan formulation" and "Action Plan preparation and study finalization".

- To actively involve domestic shipping and maritime industry into the study, a participatory approach was taken, including industry interview surveys, convening of several workshops on different issues and entire seminars.
- For technology transfer, original database developed during the study and planning and evaluation methods including software were transferred to the counterpart team associated with intensive learning sessions.



Figure 1.1 Overall Study Work Flow

CHAPTER 2: APPRECIATION OF THE STUDY AREA

SOCIO-ECONOMIC

- According to the census data, population of Indonesia was 206 million in 2000. Population growth rate has been slowing down from 2.35% p.a. from 1972 to 1980 to 1.44% from 1990 to 2000. Growth rate in Jawa Island is lesser than that of regions outside of Jawa.
- The Indonesian Government implemented an intensive transmigration program, encouraging people in over-populated Jawa Island to migrate to other islands. But in 2000, the ratio of population and GDP in Jawa Island still account for 60% in Indonesia.
- After the economic crisis in 1997-1998, Indonesian economy has sustained stable growth, but GDP has not yet recovered to the level before the economic crisis. In ASEAN countries, only Indonesia has not yet recovered to its pre-crisis GDP level.
- IMF (International Monetary Fund) has assisted in the recovery of the economy since the economic crisis. Indonesian export has recovered to the level before the economic crisis, because of the competitiveness of rupiah-denominated goods. On the other hand, Indonesian import is currently at about 75% of the monetary value of imports prior to the crisis.

Figure 2.1 GDP Curves after the Economic Crisis





Figure 2.2. Past Trend of International Trade



DOMESTIC SEA FREIGHT

- The total domestic seaborne cargo volume is 150 million tons in 2001. The growth of domestic tonnage has not been as strong as international cargo (see Figure 2.3). Notwithstanding the 1997 crisis, domestic tonnage increased by only 13% since 1993, whereas in the same period GDP increased by 27%.
- The current domestic tonnage is comprised of 55% liquid bulk cargo, 20.7% break bulk cargo, 16.6% dry bulk cargo and 7.6% container cargo. The top three seaborne commodities in terms of tonnage are petroleum, coal and general cargo.
- Containerized cargo has increased to 7.6% of total tonnage in 2001 from under 1% in 1996. If it is assumed that all break bulk tonnage is containerizable, containerization ratio will be 25% very similar to containerization rate of international traffic.
- About half of international sea freight tonnage is liquid bulk (i.e. petroleum). Dry bulk cargo has been increasing remarkably to its current level of 30%. Both break bulk and container traffic has been experiencing declining shares, but are starting to stabilize.
- As a result of the opening of a number of ports for international freight, Singapore and Indonesia are currently exchanging containers at more than 20 ports.



Figure 2.3. GDP and Domestic Shipping Freight



Figure 2.7. Container Shipping, 2002



DOMESTIC SEA PASSENGER

- Domestic sea passenger transport competes with domestic air passenger transport. After the economic crisis, number of domestic sea passenger increased while number of domestic air passenger decreased, and number of domestic sea passenger surpassed number of domestic air passenger (see Figure 2.8). But owing to participation of the private sector and competition for cheap tickets that emerged with deregulation of the air transport sector in recent years as well as the economic recovery, the airline industry is posing to recover its market share. In totality the number of air and sea passengers has decreased significantly right after the financial crisis of 1997. Though the demand for sea and air travel has again started to increase, the current demand level has not yet recovered to its pre-crisis level.
- For trip distances within 500 nautical miles, sea based modes are dominant relative to air based modes catering to as much as double that of air in shorter distance trips. For trips greater than 500 NM, airlines and sea vessels are catering to almost the same number of passengers.
- Interview survey of around 1,100 sea

passengers was conducted for this study. Average passenger from the result of survey is male (67%), 21-30 years old (43%) and his income is 0.5-1.0 million rupiah (28%) which is above minimum wage. And he uses economy class (82%) for private purposes (i.e. non-tourist/business) (72%) and travels by sea around 1-3 times per month (43%). He uses bus transport (38%) for going to and going from the port.

 Sea Passengers evaluate living conditions aboard ships as the most important aspect of maritime passenger service but rate its level of quality as the poorest among other aspects sea passenger service. Other aspects of passenger sea transport service brought to attention by passengers are fare levels, security aboard ships, scheduling and reliability.

Figure 2.8. Trend in Air and Maritime Travel



Figure 2.9. Maritime Passenger Share per OD Line



Figure 2.10. Air Passenger Share per OD Line



Blue line (share < 30%); green line (share = $30\% \sim 49\%$); yellow line (share = $50\% \sim 79\%$); red line (share $\ge 80\%$)



Figure 2.11. Assessment of Various Aspects of Maritime Passenger services

MARITIME SAFETY AND MARINE ENVIRONMENT

- Indonesia is often reported as a maritime accident prone country. Although it is generally true, some mishaps by internally displaced people (IDP) must be segregated from ordinary accidents (see Table 2.1)
- Human error is one of the primary causes of accidents accounting for about 40% of all cases. In the case of small ships of less than 500 GT, natural conditions are another major contributory cause of accidents besides human error.
- The number of piracy incidents is 119 in 2000 and 91 in 2001. Figure 2.12 (source: DGSC) maps territorial waters of Indonesia classifying areas into three levels of piracy threat levels, with Level I as the most risky.

- The Indonesian Government has ratified MARPOL Annex I&II in 1986. And in 1990, government had implemented the national regulations on control of discharge from all ships machinery room and oil tanker loading room for non-convention ships, but in practice proper discharge of oil bilge from ships are not practiced mainly because of lack of shore reception facilities
- An extremely high detention rate was reported to Indonesian flagged vessels which received PSC inspection at other port countries. This may be attributed to the lack of fire fighting and other safety related equipment among others.

Table	21	Number	of Sea	Accident
Iable	4	Number	UI OCA	Accident

	1998	1999	2000	2001	2002
Number of	93	102	68	48	66
Accident					
Human Error	35	40	26	17	34
Ship related	35	24	14	14	16
Death	150	843	657	58	46

 Table 2.2. Inspections and Detentions of PSC by Flag

Flag	No	Average Detention		
	2000	2001	2002	
Indonesia	47/123	47/148	31/144	30.12
Malaysia	46/302	36/419	35/364	10.78
Philippines	22/418	12/423	15/373	4.04
Singapore	34/693	19/763	30/807	3.67



Figure 2.12. Mapping of High Risk Area in Indonesian Waters