Japan International Cooperation Agency

No.

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

Assistance for Public Ship Finance Scheme and Advanced Maritime Education Program

(STRAMINDO II)

FINAL REPORT

Summary

March 2005

ALMEC Corporation

Japan Marine Science Inc.

STRAMINDO II

SD

JR

05-022

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

STRAMINDO II

STUDY ON THE DEVELOPMENT OF DOMESTIC SEA TRANSPORTATION
AND MARITIME INDUSTRY IN THE REPUBLIC OF INDONESIA: ASSISTANCE FOR
PUBLIC SHIP FINANCE SCHEME AND ADVANCED MARITIME EDUCATION PROGRAM

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The exchange rate used in the report is:

J.Yen 105 = US$ 1 = Indonesian Rupiah 9,000

(average in October 2004)

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: Assistance for Public Ship Finance Scheme and Advanced Maritime Education Program” and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a team to Indonesia between August 2004 and March 2005, 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 policy dialogue, establishment of public ship finance scheme and introduction of advanced maritime education program, 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 2005

MATSUOKA Kazuhisa
Vice President
Japan International Cooperation Agency

March 2005

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: Assistance for Public Ship Finance Scheme and Advanced Maritime Education Program”.

This report compiles the result of the study which was undertaken both in Indonesia and Japan form August 2005 to March 2005 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 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 introduction of public ship finance scheme and implementation of advanced maritime education program which will promote 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

: Assistance for Public Ship Finance Scheme and Advanced Maritime Education Program

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ACRONYMS

A/C	Account
ADB	Asian Development Bank
AFI	Apex Financial Institution
AFTA	ASEAN Free Trade Agreement
AHTS	Anchor Handling Tug Supply Boat
ASEAN	Association of Southeast Asian Nations
BAPINDO	*Bank Pembangunan Indonesia* / Development Bank of Indonesia
BI	Bank of Indonesia
BIMCO	Baltic and International Maritime Council
CPO	Crude Palm Oil
DGMMEMI	*DGILMEA: Direktorat Genderal Industri Logam, Mesin, Elktronika, dan Aneka* / Directorate General of Metal, Machinery, Electronics and Multifarious Industry
DGOT	Directorate General of Tresury
DGSC	Directorate General of Sea Communication
EA	Executing Agency
EIRR	Economic Internal Rate of Return
ETA	Education and Training Agency
EV	Existing Vessel
F/S	Feasibility Study
GOI	Government of Indonesia
IMO	International Maritime Organization
INPRES	Presidential Instruction
INSA	Indonesian National Shipowners' Association
IP	Implementation Program
IPERINDO	*Ikatan Perusahaan Industri Kapal Nasional* Indonesia / Indonesian Shipbuilding Industries' Association
IRR	Internal Rate of Return
ISM	International Safety Management
ITS	*Institut Teknologi Surabaya* / Institute Technology of Surabaya
JBIC	Japan Bank of International Cooperation
JICA	Japan International Cooperation Agency
L/A	Loan Agreement
MOC	Ministry of Communications
MOE	Ministry of Education
MOF	Ministry of Finance
MOI	Ministry of Industry, Former Ministry of Industry and Trade
M/P	Master Plan
NK	Class NK
NPV	Net Present Value
ODA	Official Development Assistance
OJT	On the Job Training
PCC	Project Coordinating Committee
PFI	Participating Financial Institution

PMU	Project Management Unit
PS	*Pferde Staerke* / Horsepower
PSC	Port State Control
PT.PANN MF	PT.PANN Multi Finance
PV	Proposed Vessel
Ro-Ro	Roll on Roll off
SMC	Safety Management Certificate
SME	Small and Medium Enterprises
SMHC	Ship Management and Holding Company
SOE	State-owned Enterprise
SOLG	State-owned Enterprises Owned by Local Government
STIP	*Sekolah Tinggi Ilmu Pelayaran* / Maritime Academy
STMT	*Sekolah Tinggi Manajemen Transpor* / Maritime Higher Education and Training Institute
STRAMINDO	Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia
TEU	Twenty feet Equivalent Unit
TSL	Two Step Loan
URL	Uniform Resource Locator
WTO	World Trade Organization

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

ASSISTANCE FOR

PUBLIC SHIP FINANCE SCHEME AND ADVANCED MARITIME EDUCATION PROGRAM

(STRAMINDO II)

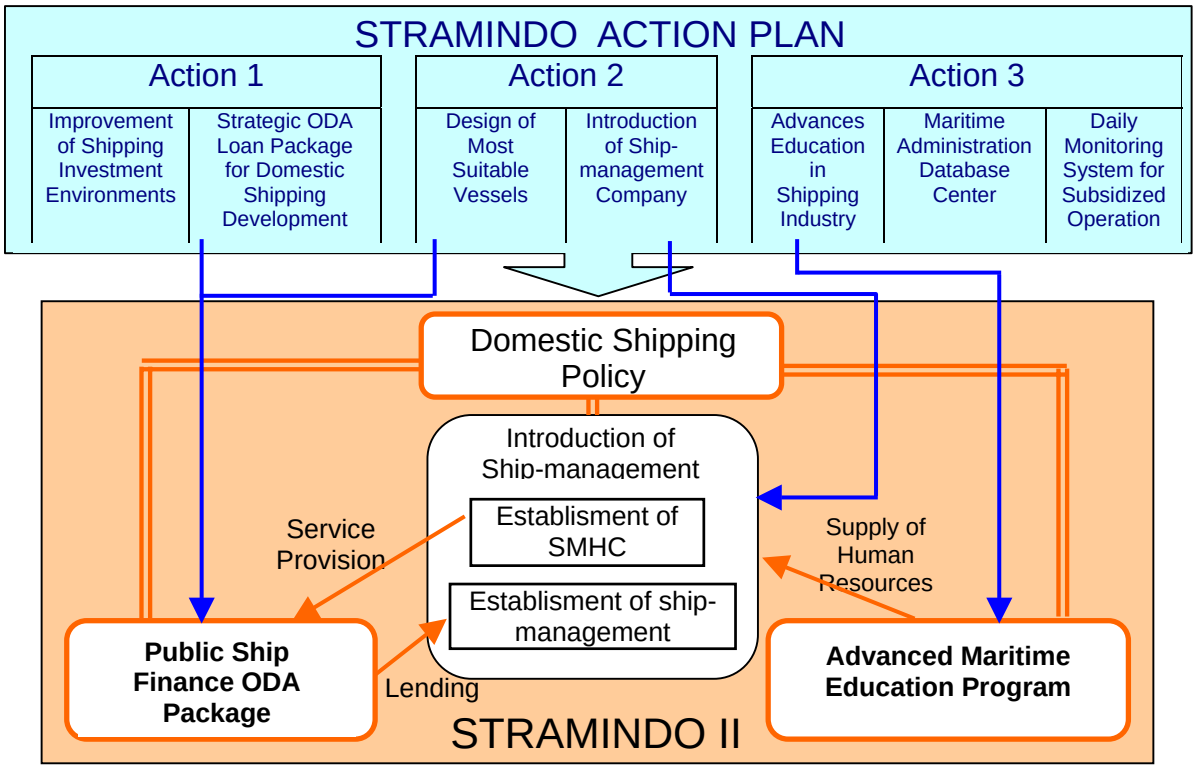
Study Period: August 2004 to March 2005
Counterpart Agency: Ministry of Communications and Ministry of Industry

The STRAMINDO M/P Study proposed the long-term domestic shipping development plan (target year 20024) as well as the short-term action plan consisting of seven priority projects. Both the governments of Japan and Indonesia agreed that a couple of priority projects need further technical assistance for swift and effective implementation. Under such situation, JICA has conducted the STRAMINDO II Study, with focus on the following:

(i) Policy advice on domestic shipping development;
(ii) Technical assistance in the implementation of a public ship finance scheme; and
(iii) Technical assistance in the implementation of an advanced education program.

The study stressed on ship-management as a technical catalyst for domestic shipping development. It envisions that sufficient ship-management services will enable to maintain competitive fleets avoiding unnecessary asset devaluation and, furthermore, develop conducive investment environment in domestic fleet modernization and expansion. Therefore, the study encourages ship-management in the shipping policy framework for the diffusion and institutionalization of ship-management services in Indonesia, in the advanced education program for training competent superintendents, and in the public ship finance scheme for preparing job opportunities to manage financed vessels as professional superintendents.

Figure 1 Relations between STRAMINDO Action Plan and STRAMINDO II



SHIPPING POLICY

A desirable shipping policy package for Indonesia's domestic shipping has been formulated based on STRAMINDO's work and discussions with stakeholders. As a whole, the package intends to increase national shipping capabilities, together with providing competitive shipping services and to address the increasing concerns on safety, security and the environment in shipping. The policy package will be concretized and implemented together with Presidential Instruction No 5/2005 on the Empowerment of the National Shipping Industry.

Policies in regard to shipping modernization and revitalization

- There is a need to restructure the shipping industry by way of reviewing the roles of state-owned shipping companies and privatizing the current competing roles in the shipping market, merging numerous small shipping companies into companies with substantial fleets to introduce modern business management, and establishing more local shipping companies in support of local government to meet indispensable shipping needs at remote coastal and island areas.
- The government efforts in human resource development shall expand its focus from seafarers to technical personnel such as superintendents and management personnel both on land and onboard.
- Shipping related industries such as shipyard, port operators, forwarders and marine insurers shall be fostered. In particular, ship-management companies shall be nurtured as a new shipping ancillary service industry.
- Partnership ventures between the owners of goods and national shipping companies on long-term contracts are encouraged in order to allow shipping investment from a medium to long-term viewpoint.

Policies in regard to the establishment of shipping company and registration

- The current entry policy, i.e., open foreign investment environment in shipping (up to 95% of the venture company) in combination with a closed ship register, should be operated effectively to achieve synergy effects.
- To change from unfavorable ship finance environment to favorable ones, there is a strong need to enact a Law on Mortgage of Ships and to ratify the international convention regarding arrest of ships.
- Substandard vessels should be phased out from the Indonesian waters by means of strict ship registration for national flagged vessels and PSC for foreign-flagged vessels.

Policies in regard to market access

- Cabotage regime in Indonesia shall be implemented in line with the strengthening of domestic shipping industry without any additional burden to shipping users in the form of tariff hike and reduce/suspended operation due to insufficient fleet volume.
- The maritime administration shall declare essential maritime traffic information such as vessel assignment and their frequency and occupancy on a certain route from time to time so as not to bring about monopolization or excessively competitive environment. Such information may enable shipping companies to appropriately judge ship assignment while the responsible administration may have dialogue with shipping companies when necessary.

- Policies are to encourage efforts in incentives in providing stable and indispensable shipping services on a regular basis to marine communities and isolated economies, including an exclusive route operation right to be granted by the responsible administration during a certain period such as five (5) years.

Policies in regard to beneficial fiscal regimes

- In order to facilitate replacement of old vessels and procurement of new vessels, relevant financial services shall be expanded at many channels and related tax incentives shall be given.
- PT. PANN MF, the most experienced state-owned financial institution in the shipping sector, shall be restructured to provide important shipping financial services such as ship procurement and lease, monitoring other ship loan contract, and so on.
- Public ship finance shall be introduced to modernize the domestic shipping fleets especially where development finance is prioritized.
- Tax incentives shall be also given to shipyards in order to facilitate investment in shipping and repair capacities.

DEVELOPMENT OF PUBLIC SHIP FINANCE SCHEME

A public ship finance scheme shall be introduced using ODA fund. Its primary objective is to develop Indonesia's domestic shipping by way of modernization and rationalization of shipping and repair, and shipping ancillary services.

Moreover, the scheme shall support development efforts such as improvement of inter-island liner services, convention of idle and unproductive domestic fleets, replacement of foreign-chartered vessels with Indonesian flagged, and modernization of shipyards and other related industries.

To justify ODA fund usage and differentiate it from other public funds such as export credit, the scheme shall respect internal development efforts. For instance, domestic shipyards shall be able to participate in any new shipbuilding projects including building medium to large vessels through a package deal method with advanced foreign shipyards such that technology transfer can transpire

The salient features of the proposed public ship finance project include:

- The scheme assumes to utilize JBIC two-step-loan with a loan period of 30 years with a 5-year grace period.
- A loan agreement shall be made between JBIC (lender) and MOF (borrower) with a special account for the project at BI.
- For the effective implementation of the project, the government shall organize a Project Coordinating Committee (PCC), an Executing Agency (EA) where a Project Management Unit (PMU) and Apex Financial Intermediary (AFI) undertake daily project management and financial operation, and a Ship Management and Holding Company (SMHC). Due to the ministerial regulation [1], only a state-owned commercial bank can act as the AFI. Concerning ship leasing to be provided by SMHC, PT. PANN MF has accumulated essential experiences.

[1] MOF Degree (KMK) No. 185/95

- Anticipated end-borrowers are shipping companies, shipyards, port service providers and ship-management companies. Financial services to be provided include sub-loans to domestic vessels and shipping related equipments and facilities and ship leasing to domestic shipping companies.
- The AFI and other Participating Financial Institutions (PFIs) shall appraise sub-loan proposals and implement sub-loan projects under the approval of the EA. The SMHC shall do for ship leasing projects. Thus, those direct lenders and lessor must bear business risk.
- Since the AFI takes exchange risk premium from any sub-loan/leasing projects, the AFI shall manage the risk within an absorptive capacity to be built by the paid premium.

Figure 2 Outline of the Public Ship Finance Project by JBIC TSL

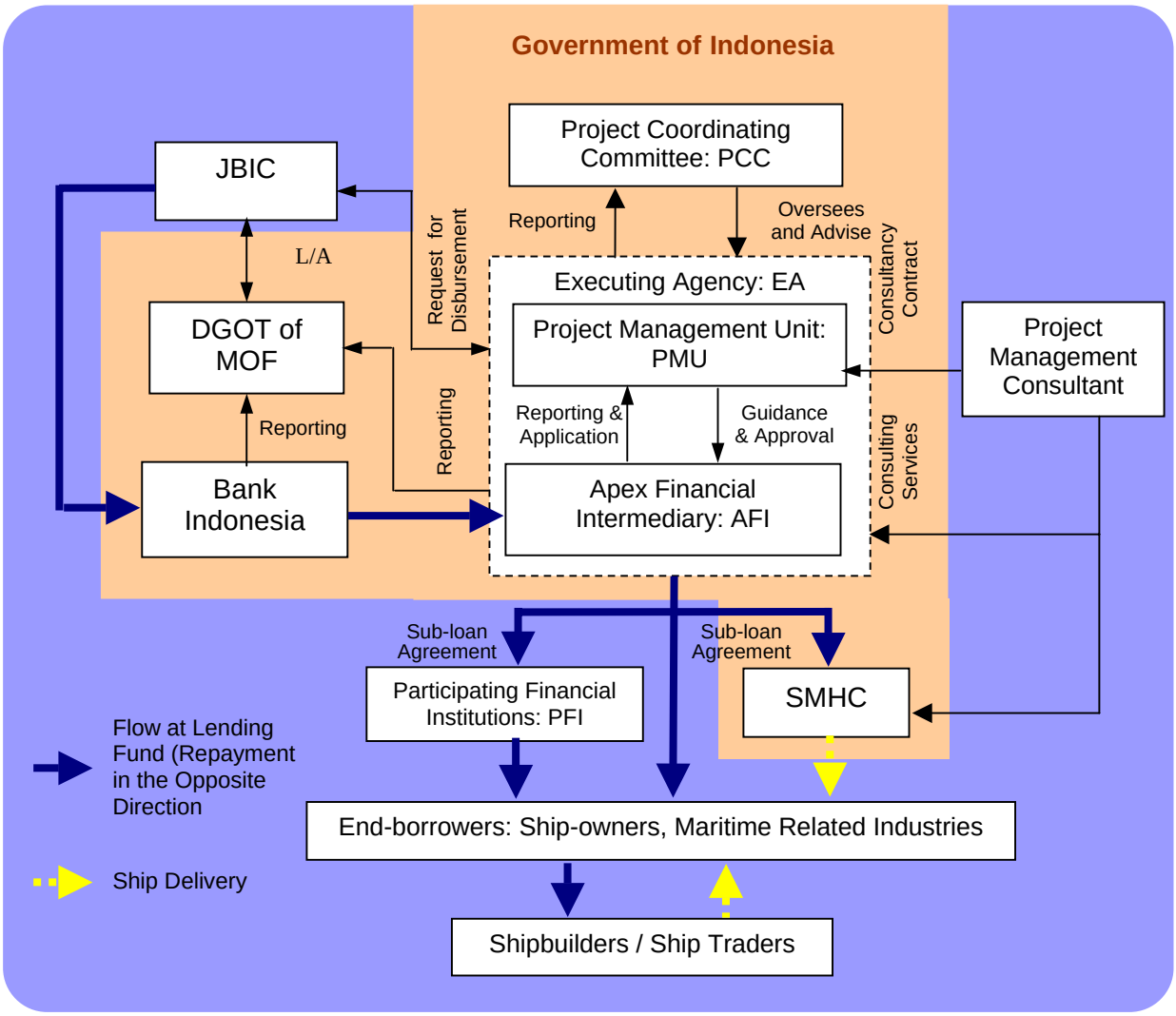


Table 1 Anticipated Roles among Relevant Agencies in the Scheme

Agencies	Anticipated Roles
DGOT, MOF	• Engagement of L/A with JBIC • Engagement of Sub-loan Agreement with AFI • Monitoring of Special A/C at BI
Bank Indonesia (BI)	• Opening and Operating Special A/C for JBIC Fund • Transferring on-lending procedures to AFI • Periodical credit notice to MOF
Project Coordinating Committee (PCC)	• Giving advice on project formulation including lending conditions and other important matters and supervising project implementation • Coordinating project related interests and issues among senior officials, e.g., director-level, among the relevant governmental agencies
Executing Agency (EA)	• Responsible for overall project formulation, preparation and implementation • Consists of PMU and AFI for daily operation and contracting Project Management Consultant for consulting services in financial and engineering aspects
Project Management Unit (PMU)	• Daily management of the scheme including supervision of AFI and Project Management Consultant • Preparation of periodical project progress reports and keeping communications with PCC, MOF and JBIC
Apex Financial Intermediary (AFI)	• Assessment on sub-loan application from PFIs, SMHC, and directly end-borrower candidates and endorsement of qualified sub-loan applications for the EA's approval • Application of fund disbursement to approved sub-loan projects through the EA to JBIC • Risk-taking within exchange risk premium to be collected since AFI borrows Japanese yen and lends Indonesian rupiah. • When directly lending sub-loans to eligible borrowers, AFI shall also take commercial lending risk.
Project Management Consultant	• (To PMU) Policy advice and needs identification for suitable financing projects in the scheme • (To AFI) Preparation of a financial audit manual and financial advice on sub-loan and ship lease applications • (To SMHC) Preparation of a ship-management manual and financial and technical advise on ship leasing and ship-management • (Others) Dissemination of the scheme's advantages among possible end-borrowers and assistance for reporting the project's progress and bilateral coordination between Indonesia and Japan
Participating Financial Institutions (PFI)	• Several commercial banks and non-bank financial institution can work as PFI under the EA's approval • Each PFI shall make sub-project appraisal on the applications to be submitted by end-borrower candidates. After appraisal and selection, PFI shall submit a disbursement request for eligible sub-project(s) to the EA • PFIs shall take commercial lending risk in their sub-projects
Ship Management and Holding Company (SMHC)	• A special purpose company for the project to be established by both public and private sectors in order to implement the project smoothly and effectively. • Provision of ship leasing service and ship-management service for financed vessels under the scheme • When any overdue payment happens, SMHC shall take over such a financed vessel in accordance with the agreement between SMHC and AFI/PFIs. • Provision of technical assistance such as ship-management techniques and modern shipping business management to the shipping companies that participated in the scheme

IMPLEMENTATION PLAN OF PUBLIC SHIP FINANCE SCHEME

- **Fund Demand**: According to STRAMINDO, the investment in domestic fleet up to the year 2024 was estimated at 130 trillion Rupiah or 1,739 billion yen (JPY = Rp. 7,500, average in 2003). The fleet development plan has some assumption, i.e., younger scrapping age from 35 years to 25 years and larger proportion of newly built vessels from 10% to 30% eventually. Inter-island liner shipping, that deserves high priority in the public ship financial scheme, accounts for more or less 20% in the overall fleet development plan.
- **Fund Scale**: The study has prepared two packages for JBIC's two-step-loan finance, i.e., 30 billion yen and 15 billion yen. The former intends to meet about 12% of the overall fleet development plan within an initial five years with counterpart domestic fund. The latter intends to form a more practical package taking into account the limited experience of handling JBIC two-step-loan and applications of many other ODA projects despite limited sources in Indonesia.
- **Domestic Fund**: The scheme does not request the government to prepare counterpart fund. In the scheme, end-borrowers must be eligible to make down payment in the case of sub-loan projects and deposit in the case of ship leasing projects.
- **Implementation Schedule**: The study has considered a two-year project preparation period as the most likely case up to L/A. At the same time, the shortest case, one-year preparation to make L/A, was also examined.
- **Assumed Interest Rate**: Interest rate will be decided depending on the loan negotiation between JBIC and GOI. For the study's assumption, the current standard rate is adopted, i.e., 1.3% p.a. in yen with 30 years loan period with a 5 year grace period. On the Indonesian side, commissions and risk premiums shall be added on the JBIC fund. Thus, it is assumed that an average interest rate on end-borrowers is 12% (fixed, 20 years at the maximum). However, actual end-borrower's loan conditions vary after taking their repayment capability and period into account.

Table 2 Assumed Fund Scale

(Billion Yen)

Financing Areas	Assumptions	Package A (Foreign/Local)	Package B (Foreign/Local)
(a) Reviewing and Conversion Idle Fleet	Repayment: Ave. 5 years, Revolving: 4 times, JPY 50,000 / dwt	10 / 2.5	6 / 1.5
(b) Assignment of Most Suitable Vessels on Inter-Island Liner Routes	Repayment: Ave. 15 years Revolving: 2 times JPY 200,000 / dwt by Package Deal Method	13 / 3.3	6 / 1.5
(c) Maintaining and Expanding Socially Indispensable Tertiary Shipping	Repayment: Ave. 10 years Revolving: 3 times JPY 150,000 / dwt by Local Construction	4.2 / 1.8	1.6 / 0.5
(d) Consulting Fee	7% of FC (a)+(b)+(c)	1.9 / 0	1.0 / 0
(e) Contingency	3% of FC (a)~(d)	0.9 / 0	0.4 / 0
Program Total		30 / 7.6	15 / 3.5

Note: Foreign Fund – JBIC TSL
Local Fund – End-borrower's own fund or another local loan

Figure 3 Implementation Schedule (Most Likely Case)

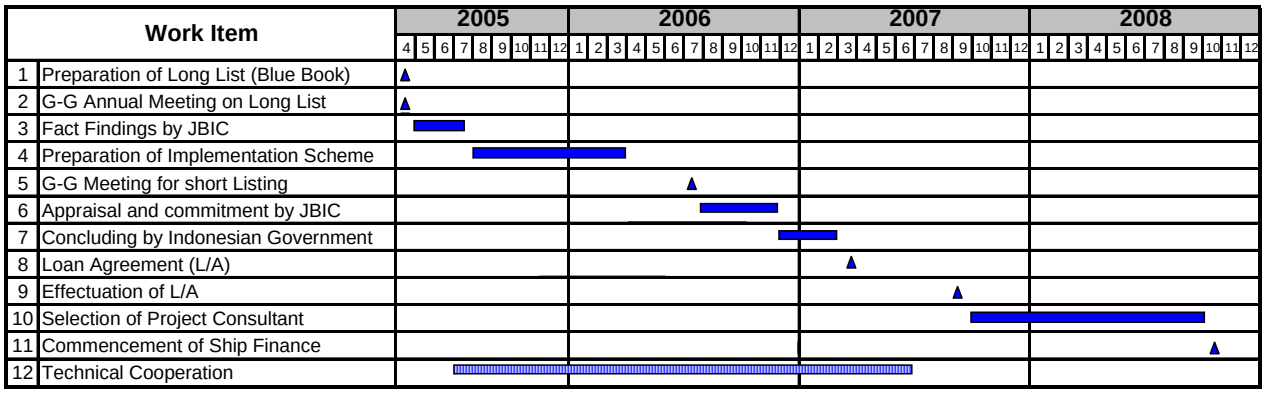


Table 3 Assumed Interest Rate

Financing Process		Currency	Interest Rate	
			%	Cumulative %
JBIC Loan		Yen	1.30	1.30
GOI / MOF (Sub-loan Commission)		Yen	0.50	1.80
Apex Financial Intermediary (AFI)	Commission	Rupiah	1.20	3.00
	Exchange Risk	Rupiah	5.50	8.50
Participating Financial Institution	Commission	Rupiah	2.00	10.50
	Business Risk	Rupiah	1.50	12.00
Interest on End User		Rupiah	12.00	

ECONOMIC AND FINANCIAL ANALYSIS

Economic Analysis

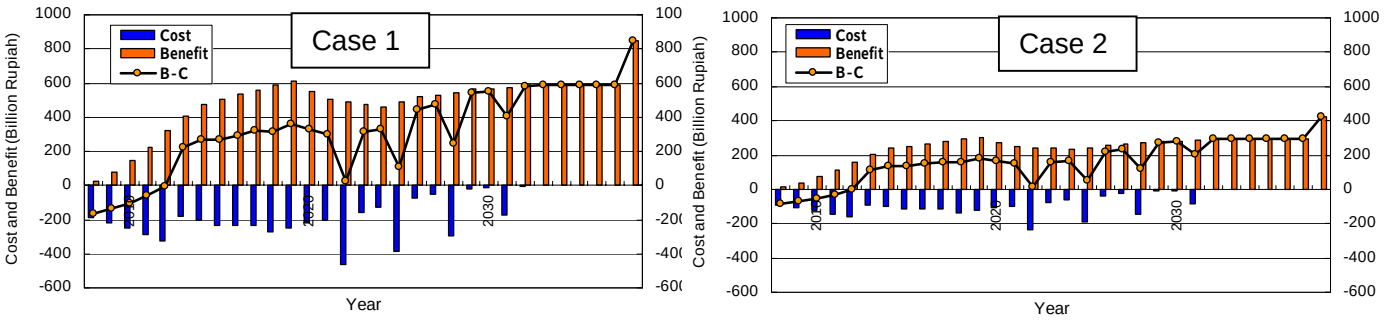
Provided that the scheme facilitates domestic fleet procurement and replacement as planned in the STRAMINDO M/P, economic benefits accruing for the country shall include reduction in the transport cost and travel time and enhancement of ship safety. Economic analysis shows high viability when the scheme is put into practice.

Table 4 Assumed Fleet Investment (including revolving fund)

Indicators	Case 1	Case 2
EIRR (%)	28.4	28.4
B/C	1.13	1.13
NPV (Billion Rp.)	262.2	129.9

Ship Type	Case 1	Case 2	%
Conventional	5438.9	2676.0	35.0
Container	3224.7	1586.6	20.8
Bulker	308.6	151.8	2.0
Barge	235.2	115.7	1.5
Tanker	4371.4	2150.7	28.1
Passenger Ship	1944.8	956.8	12.6
Total	15523.7	7637.9	100.0

Figure 4 Annual Changes in Economic Cost and Benefit



Financial Analysis for AFI

Exchange risk shall affect AFI's financial performance. AFI has an absorptive capacity within the designed exchange premium. When sharp rupiah depreciation occurs against yen, it is necessary for the government to take remedial measures.

AFI should be well experienced to hedge against foreign exchange risk.

Figure 5 AFI's Financial Performance against Rupiah Depreciation

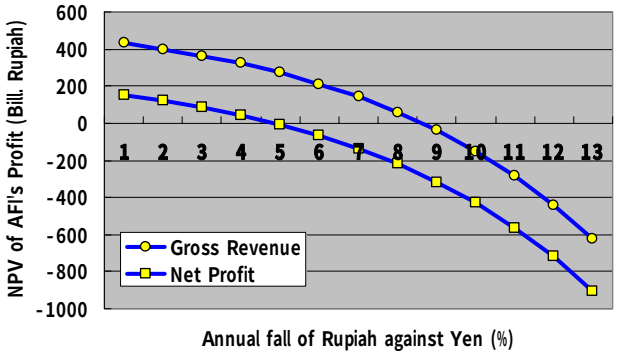
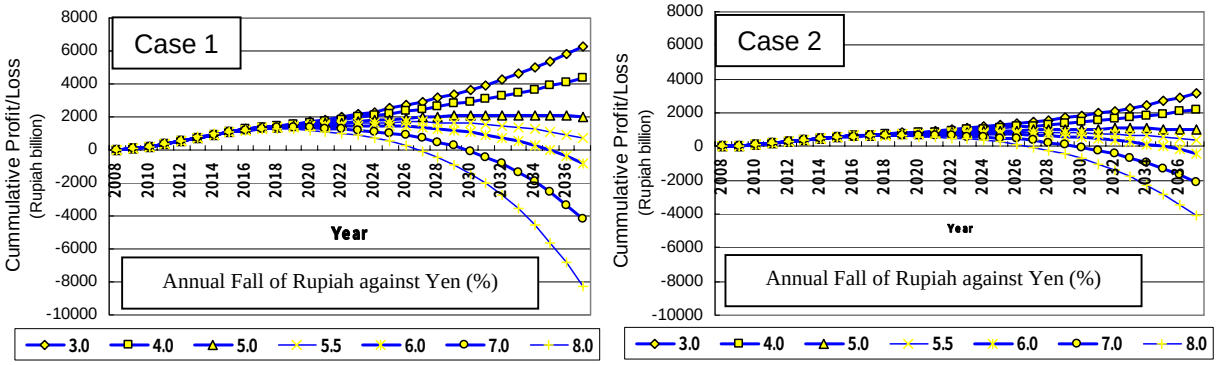


Figure 6 Estimated Cumulative Profits and Losses under Various Exchange Rates

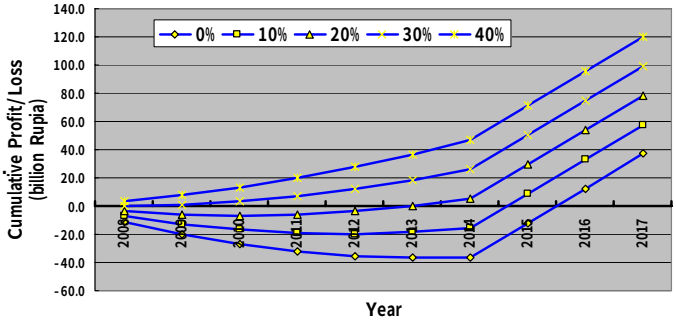


Financial Analysis for Ship Leasing

If a ship leasing company can get a loan for ship purchase from AFI at its wholesale loan rate of 8.5%, it can offer lower ship leasing rates by 10-30% due to interest spread compared with commercial loan, say, 16%.

In order to gain a profit on a stable business basis, at least 20% of own capital is needed.

Figure 7 Estimated Cumulative Profits and Losses under Various Own Capitals



Financial Analysis for Container Shipping Operators

Due to a long-term loan of fixed and low interest, container-shipping operators can expect high return on their vessel investment.

Considering the existing business environment such as shortage of second-hand vessels and increasing charter fees, investment in new container ships is more feasible than before.

< Financial Analysis by Route >

- Tg. Perak – Makassar (700 TEU Ship)
  IRR = 34.7% > Actual 26,5 %
- Tg. Perak – Banjarmasin (300 TEU)
  IRR=26.0% > Actual 18.3%
- Tg. Priok – Pontianak (300 TEU)
  IRR=23.7% > Actual 16.2%

ADVANCED MARITIME EDUCATION PROGRAM

Insufficient ship-management practices often leads to inefficient ship operation, and worse, accident and economic losses. It is thus necessary to re-educate active seafarers in onboard maintenance and educate superintendents responsible for ship-management services.

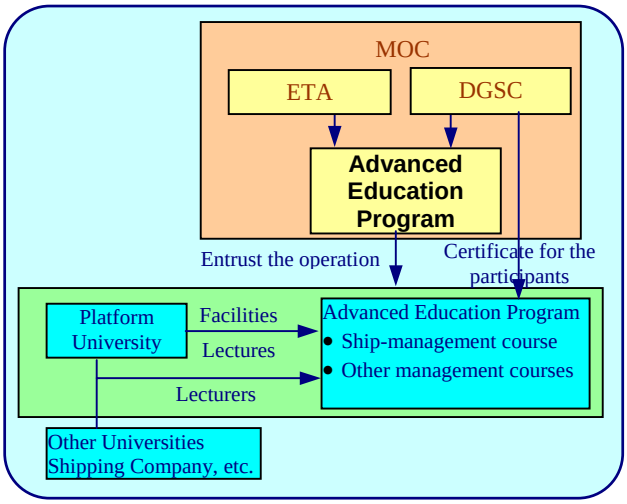
The advanced maritime education program shall start by opening two ship-management expert courses, half-year course and short-term course, in collaboration with three universities under the supervision of MOC.

Expectation from adequate ship-management

- Faster navigation speed while improving fuel consumption due to efficient ship operation
- Reduction in non-operational costs such as repair,maintenance and insurance due to less maritime accidents and minor troubles risks.
- Higher ship productivity by avoiding operation suspension.

Implementation Plan

Figure 8 Implementation Body

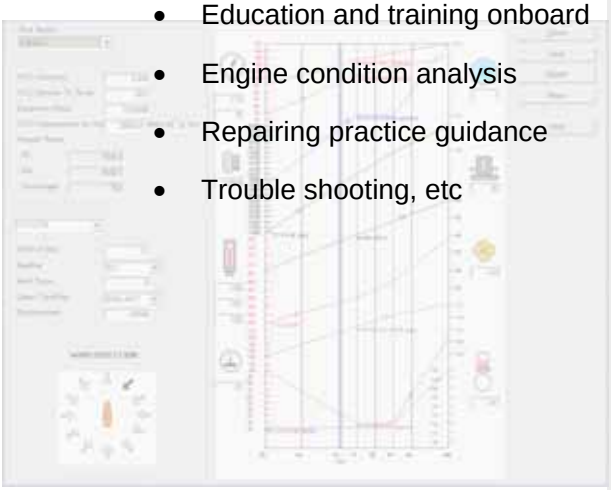


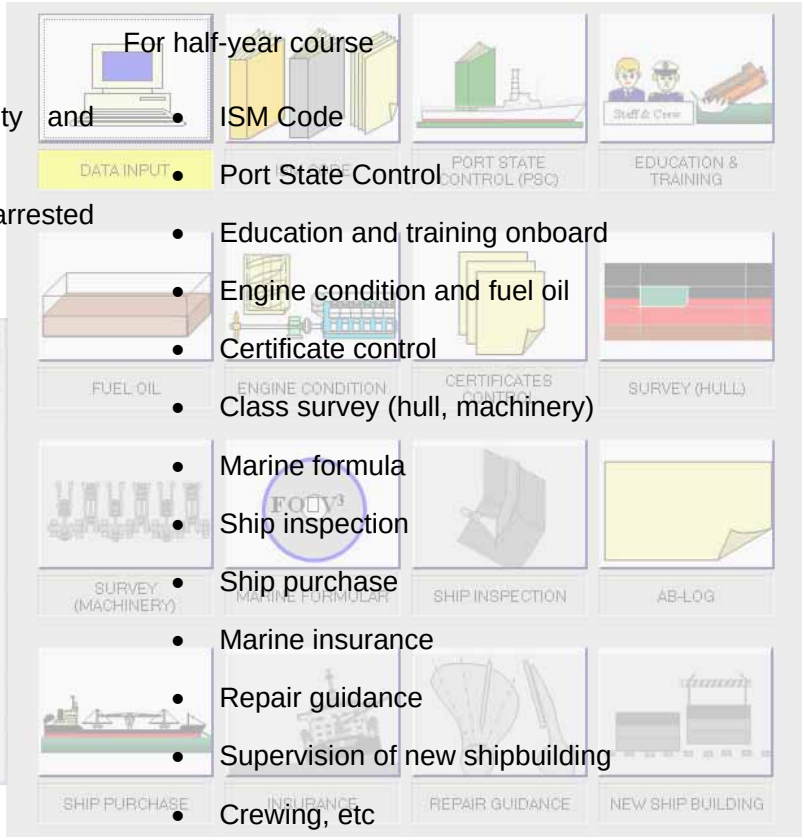
- Students: Active superintendents or applicants with at least one year experience working in shipping companies or related industries.
- Contents: A series of lectures will be provided based on ISM code featuring practical methods such as ship inspection, control of fuel oil and engine, and trouble shootings.
- Platform universities: STMT Trisakti (Jakarta, short-term course), STIP (Jakarta, half-year and short-term course) and ITS (Surabaya, half-year and short-term courses)
- Short-term course: It shall be held 2 or 3 times per year, ranging from 2 to 10 days per course. It shall focus on practical prevailing topics.
- Half-year course: For upgrading the fundamental capability of seafarers and shipyard engineers, the course shall develop their basic knowledge in ship-management.
- Teaching staff: It may consist of local and foreign experts of private companies or government officials or lecturers from universities.
- Accreditation: Certificates for the graduates shall be issued by DGSC.
- Credit system: Half-year course shall take credit system by week. If a participant fails to get some credits, he/she will be allowed to get them during the next half-year course.

Curriculum Samples

For short-term course

- Case study on non-conformity and corrective action
- Port State Control (PSC) and arrested cases
- Education and training onboard
- Engine condition analysis
- Repairing practice guidance
- Trouble shooting, etc





For half-year course

- ISM Code
- Port State Control
- Education and training onboard
- Engine condition and fuel oil
- Certificate control
- Class survey (hull, machinery)
- Marine formula
- Ship inspection
- Ship purchase
- Marine insurance
- Repair guidance
- Supervision of new shipbuilding
- Crewing, etc

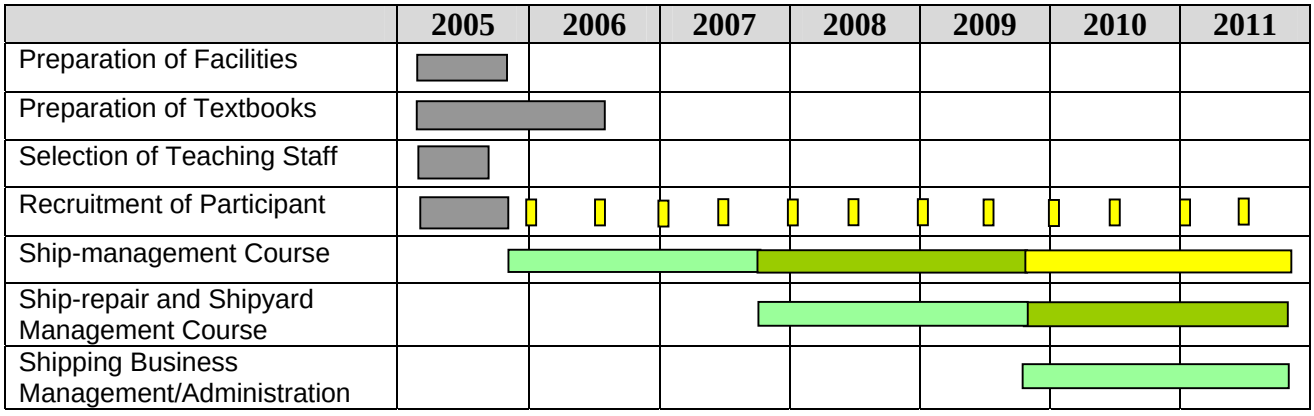
Course Implementation and Expansion Steps

For the initial two years, the program shall focus on ship-management course and it shall be expanded to ship-repair and shipyard management course and shipping business management and administration course.

Preparatory works include preparation of classrooms and textbooks, selection of teaching staffs and admission of students.

For instance, a half-year course has a cycle of admission of students (2 months), lectures (6 months), middle and final examination and accreditation for the graduates.

Figure 9 Milestones for Preparation and Implementation



UPDATE OF THE ACTION PLAN

One year has passed since the STRAMINDO Action Plan was proposed. After reviewing the relevant activities and implementation environment, the Action Plan is updated and revised. In 2004, major progress is observed as follows:

Action 1.1: Despite the political disturbance such as the presidential election year, the counterpart agencies made efforts to reflect the STRAMINDO proposals in government policies and regulations. Eventually INPRES on shipping was issued.

Action 1.2: STRAMINDO II has conducted a feasibility study, which was initially scheduled in 2004.

Action 2.1: STRAMINDO II has further studied container ships and barges in collaboration with INSA and IPERINDO.

Action 2.2: The Shipping Law 1992 is to be revised by the parliament.

Action 3.1: STRAMINDO II has undertaken some preparatory work with the designated platform universities in order to open the course in the late 2005.

Action 3.2: DGSC made efforts to increase computer units and better usage of database but no network with shipping company was built.

Action 3.3: It was done successfully by mobilizing state budget.

Table 10 STRAMINDO Action Plan (Updated)

Component	2004 (Actual)	2005	2006	2007～2009
1.1 Improvement of Shipping Investment Environments	• Preparation of Presidential Instruction • Drafting of Ship Mortgage Law	• Development of ship mortgage enforcement system, e.g., arrest of ship	• Further institutionalization such as ship-owner/ carrier's responsibility and liability	
1.2 Strategic ODA Loan Package for Domestic Shipping Development	• Prioritization of the ODA ship finance project in the 5-year Infrastructure Development Plan • Conduct of F/S by STRAMINDO II	• Application of the ODA ship finance project to JBIC • Organizational set-up of the EA consisting of PMU and AFI • Preparation of SMHC	• Establishment of SMHC and appointment of PFIs • Formulation of operation guidelines	• Operationalization of the ODA ship finance project
2.1 Most Suitable Vessels on Inter-Island Routes	• Continuation of ship design works for container ships and self-propelled barges	• Designing of other ship types • Preparation of ship detail design	• PR for the model ships • Continuation of detail design	• Construction of the model ships • Vessel construction by other sources
2.2 Introduction of Ship-management Company	• Preparation of revised Shipping Law where ship-management company is designated	• Preparation of company license, guidelines and superintendents' certificate		• Provision of ship-management service to support the ODA-financed and non-ODA financed vessels
3.1 Advanced Education in Shipping Industry	• Preparation of ship-management expert course by STRAMINDO II	• Opening of ship-management expert course (half-year, short-term)		• Enrichment and upgrading of Advanced Maritime Education Program
3.2 Maritime Administration Database Center	• Installation of more computers but no link with shipping companies	• Facilitation of electronic government at DGSC and expansion of network to shipping industry		• Phase 2: Network expansion with other agencies
3.3 Daily Monitoring System for Subsidized Operation	• Completion system installation on existing pioneer vessels	• Gradual system expansion		• System expansion and renewal to serve Tertiary Shipping Fleet

INTRODUCTION

STUDY BACKGROUND AND OBJECTIVES

1. Upon the request of the Government of Indonesia in June 2001 to the Government of Japan, regarding the development of domestic shipping and related industry, "The Study on the Development of Domestic Sea Transportation and Maritime Industry in the Republic of Indonesia (hereafter STRAMINDO)" was conducted to formulate a long-term master plan and short-term action plan in coordination with the Ministry of Communications and the Ministry of Industry and Trade (now reorganized as the Ministry of Industry). The final report was submitted in March 2004.

2. The Indonesian Government appreciated the overall study results and requested the extension of the study period to provide policy advices on the preparation of a Presidential Instruction on shipping development and other related documents as well as to provide technical assistance in the implementation of the action plan (public ship finance scheme and advanced education program). Taking into account the effectiveness of providing continuous technical assistance, JICA decided to conduct a follow-up study of STRAMINDO (so-called STRAMINDO II) since August 2004.

3. The study's objective is to provide policy advices and further technical assistance in the implementation of the Action Plan recommended by the STRAMINDO Study. More specifically, the study focuses on three areas:

a) Policy advice on domestic shipping development,

b) Technical assistance in the implementation of a public ship finance scheme, and

c) Technical assistance in the implementation of an advanced education program.

STUDY ORGANIZATION AND IMPLEMENTATION

4. The study has been conducted through the joint efforts of JICA with the Indonesian counterpart agencies. On the JICA side, the JICA Study Team was dispatched for study implementation and the JICA Advisory Committee was organized in Japan. On the Indonesian side, Steering Committee meetings were held among the related agencies periodically and the Counterpart Team was organized to coordinate and take part in day-to-day study activities. (Refer to the list of Study Organization at the last page of the summary report)

5. For effective implementation, the counterpart team organized a couple of working groups to undertake more specific matters such as ship finance, ship design and maritime education. The preparatory committee for the advanced maritime education program was also set up with counterparts and possible participating universities.

6. For dissemination of the study results, one (1) short-training course on ship-management, two (2) workshops and one (1) overall seminar were convened in the course of the study. Combined with the said regular meetings, 541 persons in total from both sides participated.

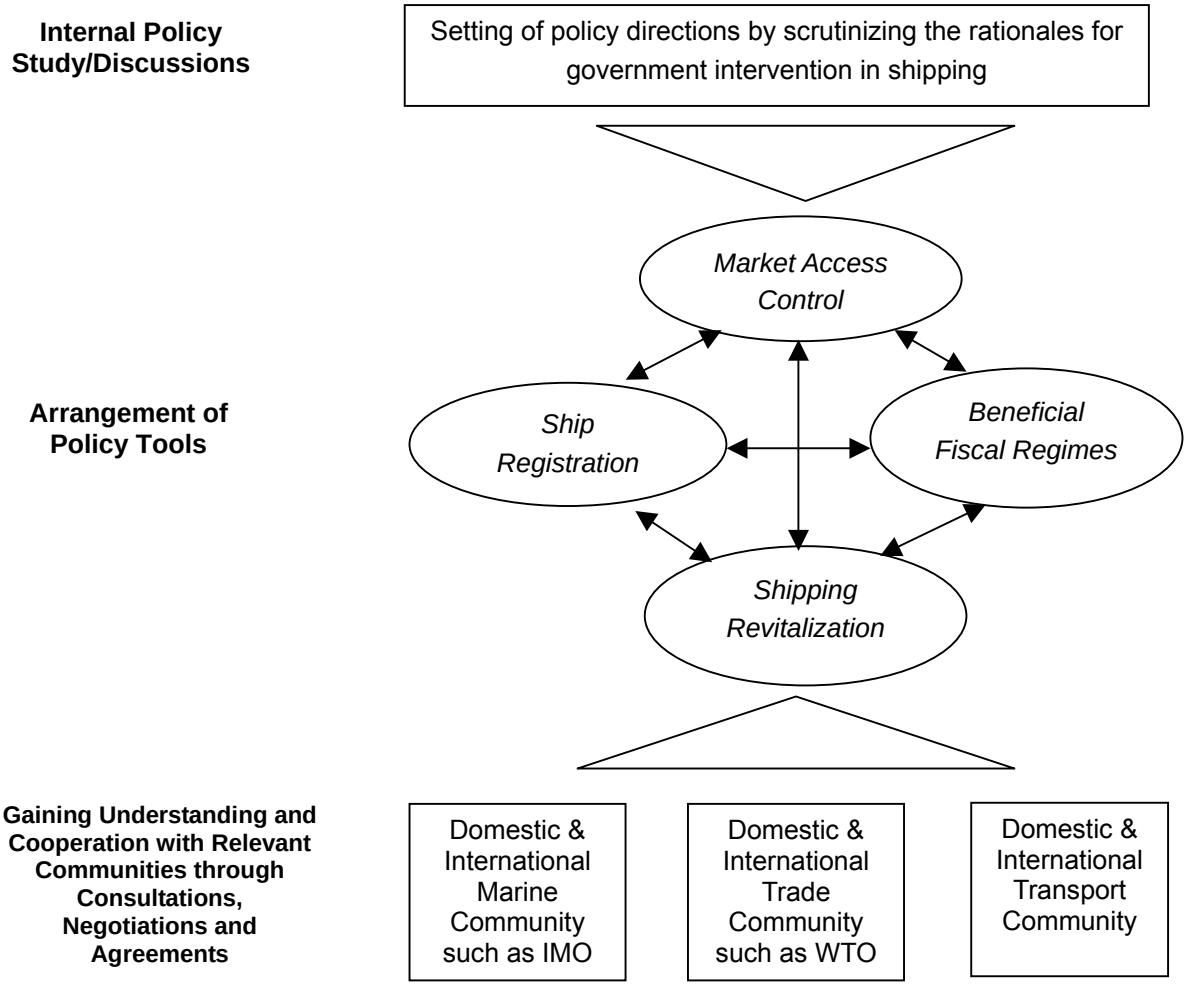
1 SHIPPING POLICY

AVAILABLE POLICY TOOLS

7. The development of national shipping policy is the prerogative of the government. Well-developed shipping policies reflect the circumstances under which they were made. These include the prevailing financial and economic situations, both within and outside the country, and the trading and industrialization strategy of the country concerned.

8. There is a strong need to conduct an internal policy study to explore rationales for national shipping development. Therefore, this study grouped available policy tools for developing national shipping capabilities into four, namely (i) market access control, (ii) ship registration, (iii) beneficial fiscal regimes, and (iv) shipping revitalization and modernization. A unilateral approach is not adequate to arrange these policy tools to best fit the country. It is necessary to take a participatory approach among shipping stakeholders such as other government agencies, traders and shippers, ship-owners and operators, ship agents, port operators, freight forwarders, and other uni-modal transport providers since lack of adequate consultation may also lead to misunderstanding of the policy framework resulting to lack of cooperation in the implementation of the policy.

Figure 1.1 Process of Shipping Policy Formulation



Source: JICA Study Team

A DESIRABLE POLICY PACKAGE

9. A desirable shipping policy package for Indonesia's domestic shipping has been formulated based on STRAMINDO's work and discussions with stakeholders. As a whole, the package intends to increase national shipping capabilities, together with providing competitive shipping services and addressing increasing concerns on safety, security and the environment.

Policies in regard to shipping modernization and revitalization

10. There is a need to restructure the shipping industry by way of reviewing the roles of state-owned shipping companies and privatizing the current competing roles in the shipping market, merging numerous small shipping companies into companies holding substantial fleets to introduce modern business management, and establishing more local shipping companies in support of local government to meet indispensable shipping needs at remote coastal and island areas.

11. The government efforts in human resource development shall expand its focus from seafarers to technical personnel such as superintendents and management personnel both at sea and land.

12. Shipping related industries such as shipyard, port operators, forwarders and marine insurers shall be fostered. In particular, ship-management companies shall be promoted as a new shipping ancillary service industry.

13. It is encouraged that partnerships by long-term contracts shall be ventured between the owners of goods and national shipping companies in order to allow shipping investment from a medium to long-term viewpoint.

Policies in regard to the establishment of shipping company and registration

14. The current entry policy, i.e., open foreign investment environments in shipping (up to 95% of the venture company) in combination with a closed ship register, should be operated effectively to achieve synergy effects.

15. To change from unfavorable ship finance environment to favorable ones, there is a strong need to enact a Law on Mortgage of Ships and to ratify the international convention regarding arrest of ships.

16. Substandard vessels should be removed from Indonesian waters by means of strict ship registration for national flagged vessels and Port State Control (PSC) for foreign-flagged vessels.

Policies in regard to market access

17. Cabotage regime in Indonesia shall be implemented in line with the strengthening of the domestic shipping industry without any additional burden to users in the form of tariff hike and reduce/suspended operation due to insufficient fleet volume.

18. Policies should not bring about monopolized or excessively competitive environment; and, the maritime administration should announce essential maritime traffic information such as assigned vessels and their frequency and occupancy on routes from time to time. Such information may enable shipping companies to appropriately judge ship assignment and help the responsible administration in its dialogue with shipping companies when necessary.

19. Policies are to encourage efforts in providing stable and indispensable shipping services on a regular basis to marine communities and isolated economies, through incentives such as an exclusive route operation right be granted by the responsible administration for a certain period (e.g. five years).

Policies in regard to beneficial fiscal regimes

20. In order to facilitate replacement of old vessels and procurement of new vessels, relevant financial services shall be expanded at many channels and related tax incentive shall be given.

21. PT. PANN MF, the most experienced state-owned financial institution in the shipping

sector, shall be restructured to provide important shipping financial services such as ship procurement and leasing, monitoring other ship loan contract, and so on.

22. Public ship finance shall be introduced to modernize the domestic shipping fleets especially in areas of developmental nature.

23. Tax incentives shall also be given to shipyards in order to facilitate investment in shipping and repair capacities.

POLICY JUSTIFICATION TO INTRODUCE A PUBLIC SHIP FINANCE SCHEME

24. Public fund is an alternative, as long as its mobilization in the domestic shipping sector can be justified economically and socially, and will not negatively affect privately financed shipping activities.

25. Indonesian domestic shipping industry once experienced ODA-based ship finance service in the late 1970s. At that time, PT. PANN purchased second-hand and new vessels built in domestic and foreign yards in order to renew the then existing fleet through ship financing, and owning and leasing. To enable PT. PANN to fund its programs, it got loans from the World Bank, and additionally from BAPINDO and foreign banks.

26. Today, domestic shipping circumstances have drastically changed from those days. However, significance of domestic shipping has remained the same under the national development context. Countries who intend to develop national shipping capability can resort to a sustainable public ship finance scheme such as Japan, USA, Philippines and Malaysia. Provided that Indonesia would utilize a JBIC two-step-loan (TSL) facility under limited domestic resources, it could meet several development needs while it could not accommodate others – the following elaborates on this point.

Justifiable Aspects

27. **Development and advancement of inter-island liner shipping network as prime infrastructure of the national transportation system**: Indonesia must maintain a strong inter-island liner shipping network. However, shippers and passengers' satisfaction may differ from time to time. Government needs to deliberately encourage the domestic shipping industry to further develop its inter-island liner shipping network in line with investing in modern fleets.

28. **Conversion of idle and unproductive domestic fleet to become more competitive**: Besides liner shipping, bulk shipping also needs more competitiveness. ASEAN shipping, intra-regional international shipping, associated with competitive ASEAN products is a new threat to Indonesian domestic shipping as well as domestic products under the new trade regime of AFTA. To address such new and open trade relation, the existing idle and unproductive bulk fleet needs to be converted or replaced.

29. **Increase in cabotage rate (national tonnage share)**: As a whole, ODA projects are often implemented to show a strong government will in national development. If fulfilling cabotage right is a truly national policy in Indonesia, then the policy will work effectively, particularly by extending financial support to national bulk tonnage since Indonesia substantially depends on foreign chartered vessels in some domestic shipping segments.

30. **Balanced development of both shipping and shipbuilding industries**: Shipping is an industry which needs wide supporting industries. Indonesia particularly needs to develop an effective ship life cycle, i.e., shipbuilding, repairing and breaking. A strategic ODA project is ideal to coordinate shipping and shipbuilding industries and improve local building capability by absorbing advanced foreign shipyard' technology and experience.

Non-justifiable Aspects

31. **Support to overseas shipping fleet**: Any ODA funds may not be tapped into overseas shipping fleet. The financing institutions have apprehension of such lending distorting the open shipping market.

32. **Provision of socially indispensable shipping services with government support**: Most of local people residing in remote areas

seriously require stable and affordable shipping services due to underdeveloped and agriculture dominated local economic conditions. However it is not appropriate to use a TSL facility if those services are less- or non-commercial even with long-term and low-interest loans. Careful considerations are necessary to draw a line between government subsidy and public soft loan.

33. **Support to state-owned shipping companies**: State-owned shipping companies are supposed to act as a government policy's implementation arm. And they sometimes receive financial support from the Government accordingly. On the other hand, a TSL facility is designed to provide stable and long-term fund to the private sector to encourage fleet expansion and modernization. It is not suitable for state-owned companies to receive it unless they are in a level playing field with private companies (e.g. after privatization).

NEW MOMENTUM TO STRENGTHEN NATIONAL SHIPPING CAPABILITIES

34. The shipping industry has recently requested the Government to change the shipping policy in line with change in recognition from "shipping is only a supporting business to trade" to "shipping industry in Indonesia should be sustained and developed". This policy shift has steadily gained support from other sectors and marine communities. It is deemed a new challenge for Indonesia to increase national shipping capabilities taking into account both influential external factors and internal development needs.

35. Presidential Instruction No. 5/2005 was newly issued under such circumstances. It aims at empowering the national shipping industry by formulating and implementing adequate policies. It consists of six elements such as trade, finance, shipping and ports, shipbuilding industry, fuel, and education and training in a comprehensive way. The new INPRES shows a clear policy direction towards strengthening of national shipping capabilities. (Refer to Box 1: Outline of INPRES No.5/2005)

36. The new shipping INPRES adopts many of the proposed policy initiatives from STRAMINDO. It is a natural result since both STRAMINDO and the INPRES preparation works were done among the same stakeholders at the same time. It seems that the rest of the proposed policy initiatives are rather difficult to establish consensus among the agencies and parties concerned in a short period. In principle, a series of INPRES showed the governments' political priority among appointed ministers to implement a specific policy package in a certain period. Therefore it is expected that the STRAMINDO policy package will be further discussed and concretized through the working group meetings and upper level meetings for the implementation of the new shipping INPRES.

Column Box1 **Outline of INPRES No.5 / 2005**
on the Empowerment of the National Shipping Industry

1. Trade
a. By virtue of this INPRES, domestic cargo shall be carried by Indonesia flag vessel and operated by the national shipping company as early as possible.
b. Import central/local governments' cargo by the national shipping company.
c. Encourage long-term carriage partnership between the shipper and the national shipping company.

2. Finance
a. Taxation
1) Re-arrange tax facility for the national shipping and shipyard industries.
2) Revise tax policy for supporting national shipping and shipyard industries and give incentives.
3) Apply penalty to national shipping and shipyard companies who partake of incentives but invest in other business
b. Financial Institution
1) Encourage national banks to actively finance the national shipping industry
2) Develop non-bank financial institutions involved in shipping.
3) Develop a financing scheme for national fleet development.
c. Insurance
1) The vessels under certain conditions shall be insured at least for hull & machinery.
2) Cargo and passengers carried by the national shipping company shall be insured.
3) Setting policy for national insurers to meet international shipping insurance standards

3. Transportation
a. Sea Transportation
1) Organize domestic shipping operation by Indonesian flagged vessels
2) Reorganize shipping network by giving incentives to liner routes
3) Reorganize re-flagging procedure
4) Accelerate ratification of the international convention on maritime liens and mortgage with domestic legislation.
5) Accelerate ratification of the international convention on arrest of ship with domestic legislation.
6) Provide supporting measures to traditional shipping
7) Establish an information forum for cargo and space in vessel (IMRK)
b. Port
1) Reorganize port management for effective and efficient services
2) Reorganize international and cross border ports
3) Develop port infrastructure and facility for offering the optimum services
4) Improve port management for enabling gradual separation of regulator and operator's roles and competition among terminals and ports
5) Exempt port charges if no service is provided
6) Reorganize procedures of ships, cargoes and passengers in ports

4. Industrialization
a. Encourage the growth and development of the shipping industry, by way of:
1) Develop centers for design, research and development
2) Improve standards and components of vessels
3) Foster ship chandlers and related industries
4) Give incentives to national shipping companies that build their vessels in domestic shipyards
b. Newly built ships by government budget must be constructed at domestic shipyard.
c. When tapping foreign fund in the abovementioned ships (b.), maximum use of local materials and transfer of technology are required in shipbuilding.
d. Maintenance and repairing by government budget must be done at domestic shipyards.

5. Energy and Mineral Resources
Provide guarantee in fueling for Indonesia flag vessels in domestic shipping.

6. Education and Training
a. Develop education and training centers for seafarers with IMO standards
b. Improve cooperation between the education and training centers and the seafaring service user.

2 PUBLIC SHIP FINANCE SCHEME

AVAILABLE ON-LENDING MECHANISM

37. In Indonesia there are a few on-going projects with on-lending mechanism financed by other foreign donors such as ADB's SME Export Development Project (Loan No. 1978-INO). There is no JBIC project with an on-lending mechanism or so-called two-step-loan (TSL) mechanism.

38. It can be partly explained by the prevailing government policy. Bank Indonesia Law No. 23/1999 forbids BI to provide credit to enterprises and even government. Meanwhile, the Ministry of Finance as a borrower is unwilling to take the foreign currency risk of donors' loan. MOF is just forwarding the donors' loan directly to state owned financial institutions.

39. MOF Decree (Keputusan Menteri Keuangan; KMK) No. 185/95 provides the following rules regarding on-lending:

(1) MOF will charge 0.5% to the Executing Agency by adding to the interest rate of the foreign loan;

(2) Sub-Loan can only be given to:

1) State-owned Enterprises (SOE);
2) Local Government; and
3) State-owned Enterprises Owned by Local Government (SOLG).

40. From a bilateral cooperation viewpoint, however, the government of Indonesia itself becomes the borrower of such JBIC projects against the government of Japan. Finally, the government of Indonesia must shoulder all the financial risks after the disbursement of funds in accordance with a corresponding loan agreement.

41. Therefore, it is of great importance to establish an effective implementation mechanism to avoid or minimize any adverse results in project implementation such as currency and business risks.

ESTABLISHMENT OF PUBLIC SHIP FINANCE SCHEME

42. A public ship finance scheme shall be introduced using ODA fund (assumption: JBIC two-step-loan). Its primary objective is to develop Indonesia's domestic shipping by way of modernization and rationalization of shipping, ship repair and shipping ancillary services.

43. Especially, the scheme shall support some development efforts such as improvement of inter-island liner services, conversion of idle and unproductive domestic fleets, replacement of foreign-chartered vessels with Indonesian flagged vessels, and modernization of shipyards and other related industries.

44. To justify ODA fund usage and differentiate it from other public funds such as export credit, the scheme shall respect internal development efforts. For instance, domestic shipyards shall be able to participate in any new shipbuilding projects even in building medium to large vessels through a package deal method with advanced foreign shipyards where technology transfer can occur.

45. Because of not having experienced implementing TSL projects in Indonesia and the current institutional rules and regulations where the government and BI do not take any risks and financial costs, there is only one scheme that can be appropriately applied to the STRAMINDO project and is described in Figure 2.1.

46. The salient features of the proposed public ship finance project include:

(1) The scheme assumes to utilize JBIC two-step-loan with a loan period of 30 years including 5-year grace period.

(2) A loan agreement shall be made between JBIC (lender) and MOF (borrower) with a special account for the project at BI.

(3) For effective implementation of the project, the government shall organize a Project Coordinating Committee (PCC), an Executing Agency (EA) where a Project Management Unit (PMU) and Apex Financial

Intermediary (AFI) undertake daily project management and financial operation, and a Ship Management and Holding Company (SMHC). Due to the ministerial regulation, only a state-owned commercial bank can act as the AFI. In regard to ship leasing to be provided by SMHC, PT. PANN MF has accumulated essential experiences.

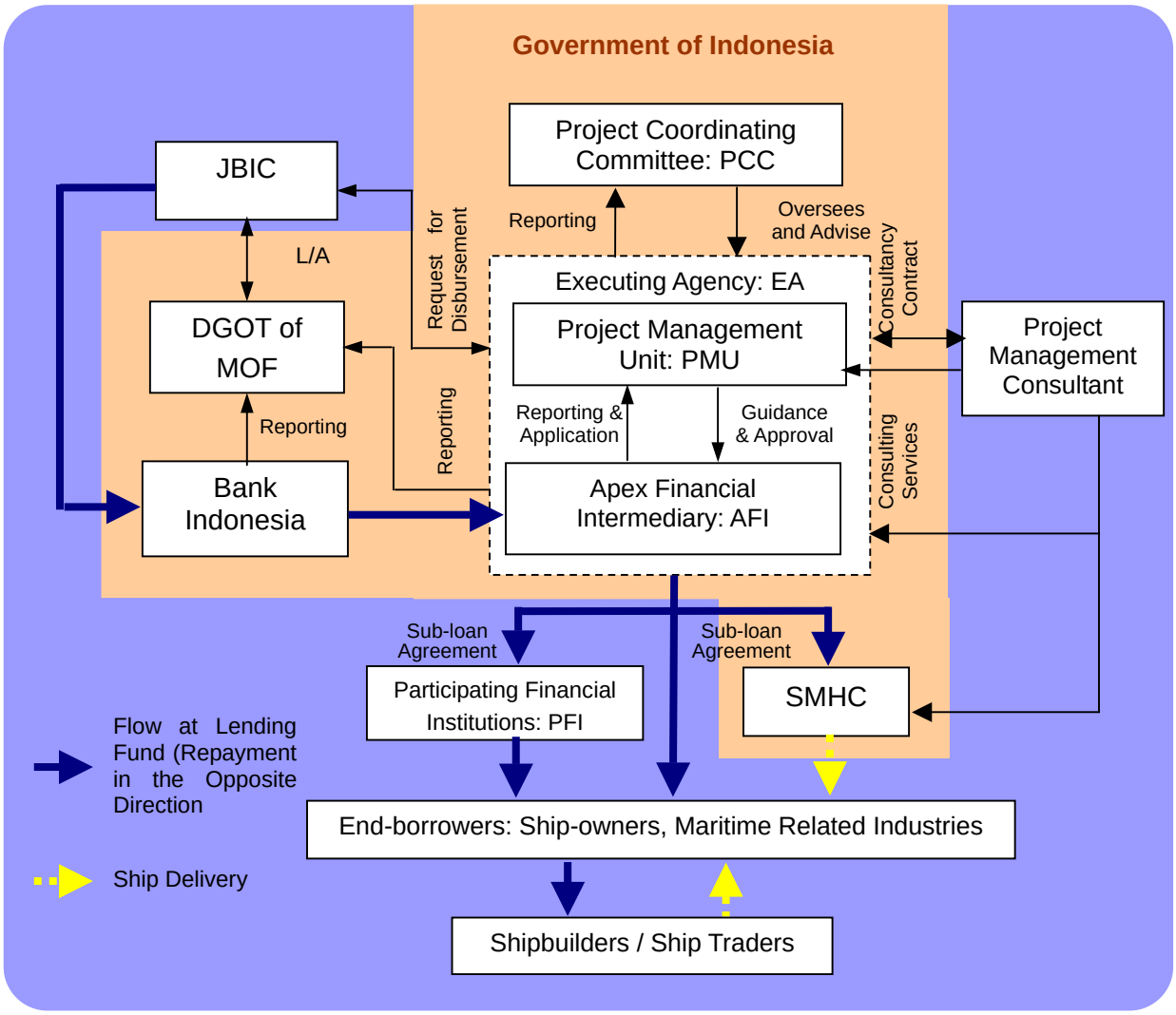
(4) Anticipated end-borrowers are shipping companies, shipyards, port service providers and ship-management companies. Financial services to be provided include sub-loans to domestic vessels and shipping related equipments and facilities and ship leasing to domestic shipping companies.

(5) The AFI and other Participating Financial Institutions (PFIs) shall appraise sub-loan proposals and implement sub-loan projects under the approval of the EA. The SMHC shall do for the ship leasing projects. Thus, those direct lenders and lessor must bear business risk.

(6) Since the AFI takes exchange risk premium from any sub-loan/leasing projects, the AFI shall manage the risk within an absorptive capacity to be built by the paid premium.

47. To delineate precisely the proposed scheme, Table 2.1 indicates anticipated roles among the relevant agencies and parties while Table 2.2 profiles a financial structure.

Figure 2.1 Outline of Public Ship Finance Project by JBIC TSL



Source: JICA Study Team

Table 2.1 Anticipated Roles among Relevant Agencies in the Scheme

Agencies	Anticipated Roles
DGOT, MOF	• Engagement of L/A with JBIC • Engagement of Sub-loan Agreement with AFI • Monitoring of Special A/C at BI
Bank Indonesia (BI)	• Opening and Operating Special A/C for JBIC Fund • Transferring on-lending procedures to AFI • Periodical credit notice to MOF
Project Coordinating Committee (PCC)	• Giving advice on project formulation including lending conditions and other important matters and supervising project implementation • Coordinating project related interests and issues among senior officials, e.g., director-level, among the relevant governmental agencies
Executing Agency (EA)	• Responsible for overall project formulation, preparation and implementation • Consist of PMU and AFI for daily operation and contracting Project Management Consultant for consulting services in financial and engineering aspects
Project Management Unit (PMU)	• Daily management of the scheme including supervision of AFI and Project Management Consultant • Preparation of periodical project progress reports and keeping communications with PCC, MOF and JBIC
AFI Financial Institutions (AFI)	• Assessment on sub-loan application from PFIs, SMHC, and end-borrower candidates and endorsement of qualified sub-loan applications for the EA's approval • Application of fund disbursement to approved sub-loan projects through the EA to JBIC • Risk-taking on currency exchange risk, since AFI borrows in Japanese yen and lends in Indonesian rupiah • When directly lending sub-loans to eligible borrowers, AFI shall also take commercial lending risk
Project Management Consultant (PMC)	• (To PMU) Policy advice and needs identification for suitable financing projects in the scheme • (To AFI) Preparation of a financial audit manual and financial advice on sub-loan and ship lease applications • (To SMHC) Preparation of a ship-management manual and financial and technical advise on ship leasing and ship-management • (Others) Dissemination of the scheme's advantages among possible end-borrowers and assistance in reporting the project's progress and bilateral coordination between Indonesia and Japan
Participating Financial Institutions (PFI)	• Several commercial banks and non-bank financial institution can work as PFI under the EA's approval • Each PFI shall make sub-project appraisal on the applications to be submitted by end-borrower candidates. After appraisal and selection, PFI shall submit a disbursement request for eligible sub-project(s) to the EA • PFIs shall take commercial lending risk in their sub-projects
Ship Management and Holding Company (SMHC)	• A special purpose company for the project to be established by both public and private sectors in order to implement the project smoothly and effectively • Provision of ship leasing service and ship-management service for financed vessels within the scheme • In case of overdue payment, SMHC shall take over the financed vessel in accordance with the agreement between SMHC and AFI/PFIs • Provision of technical assistance such as ship-management techniques and modern shipping business management to the shipping companies which are participating in the scheme

Source: JICA Study Team

Table 2.2 Financial Outline of the JBIC TSL Project by Component

Component	The Project
Target Sector	Domestic sea transportation and related maritime industry
Target End-Borrowers	Shipping companies; Shipyards; Port-service providers; and Ship Management Companies
Eligible Sub-projects	- To be eligible, sub-projects need to satisfy requirements of appraisal and get approved by the corresponding PFI; - Each PFI submits a request for JBIC Loan finance to the Executing Agency. - Eligible sub-projects include, among others, Acquisition of newly built and second-hand vessels Ship leasing Reconstruction and improvement of existing vessels Procurement of shipbuilding and repair facilities and equipment Procurement of port handling and other shipping related on-land equipments Establishment of ship-management company
Loan Amount	- Primary Loan (JBIC → MOF/BI): To be decided later as a result of loan negotiation between JBIC and GOI. As of the time of the Final Report of STRAMINDO II, the JBIC loan amount recommended by JICA Study Team for STRAMINDO II and total amount for investment are as follows: JBIC Loan: Yen 30.0 billion (80%) (equiv. to Rp. 2,571 billion) Own Fund: Yen 7.6 billion (20%) (equiv. to Rp. 651 billion) Total Investment: Yen 37.6 billion (100%)(equiv. to Rp. 3,222 billion) - Sub-Loan (MOF/BI → AFI → PFI → End-Borrowers): To be decided later based on value of ships/equipment to be procured.
Interest Rate	- Primary Loan (JBIC → MOF/BI): To be decided later as a result of loan negotiation between JBIC and GOI. For reference, standard rate of interest for Indonesia is 1.30%p.a. in Yen, with 30 years loan period and 5 years grace period.[1] - Sub-loans (including lease): JBIC will suggest MOF/Executing Agency that rates lower than market lending rate (lease charge in case of leasing) be applied to all sub-projects, so that concessional merits provided by JBIC ODA Loan are transferred to sub-loans.
Sub-Loan Period	- for lease contract: (Maximum) 20 years – Age of the ship at the time of the contract[2] - for loan: To be negotiated
Currency of Sub-loan	Indonesian Rupiah
Collateral	- for lease contract: 4 months of lease charge as deposit only - for loan: To be negotiated.

Source: JICA Study Team

[1] Current terms and conditions of JBIC Yen loans can be obtained through http://www.jbic.go.jp/english/standard/index.php

[2] PT. PANN MF's policy. Normal economically operation years is supposed at 25 years. Depending on the market situation, contract period might be adjusted.

ANALYSIS OF LIKELY PLAYERS IN THE SCHEME

48. There are four (4) state-owned commercial banks which are allowed to act as an AFI: Bank Mandiri, Bank Rakyat Indonesia, Bank Negara Indonesia and Bank Tabungan Negara. Taking consideration the total asset, number of branches and previous ship loan experience, the study has concluded that Bank Mandiri is the most suitable institution as an AFI.

49. In the scheme, some commercial banks will be designated as PFIs or retail banks of JBIC TSL fund. Those PFIs will be selected in consideration of their financing experience and current activities in this sector, good network, their willingness to join the JBIC-TSL Project as well as their financial scale and capabilities.

50. There are more than 100 multi-finance companies in Indonesia. However there is virtually only one leasing company engaged in ship leasing in Indonesia, which is PT. PANN MF, and is ranked number 15 in the order of revenue.

51. PT. PANN MF, the state-owned leasing company, started its business from ship leasing and, later on, expanded the scope to other leasing businesses. Since its establishment in 1974, the company has procured 152 units of vessels in various types and sizes and has gained valuable experiences in purchasing and leasing of diverse vessels over 30 years. The company is considered suitable as one of PFI in the JBIC ODA loan under on-lending scheme.

52. The company submitted their financial restructuring plan in 1999 to the Ministry of Finance, to which they are still awaiting the final answer and actual implementation of the restructuring plan. Objects for the company's leasing business were expanded during the 1990s under Caraka Jaya Program I, II and III, Mina Jaya Fishing Vessels Project and other projects. Caraka Jaya Program aimed primarily at the development of both sea transport and ship-building industries as well as expanding export and savings on freight cost. According to the company, losses have been caused by the Minajaya Fishing Vessel Project and Aircraft Project. If these two losing projects were excluded, the company's business performance would be profitable.

53. JICA Study Team carried out an additional interview survey regarding prospective public ship finance scheme. The number of respondents is 40. Major responses by the survey are as follows:

- 31 respondents plans to acquire new vessels and/or increase their business shipping capacity by repair and refurbishing of their existing vessels;
- 37 respondents have experience to be financed by either bank or leasing.
- 23 respondents have no staff for ship maintenance and 15 respondents have only 1 or 2 staff. Limited efforts are made for ship maintenance;
- In terms of government's priority areas, 23 responded with 'policy and planning' and 15 with 'financial issues'; and
- 27 respondents expect the government to provide financial incentives including subsidy (10), loan (23) and guarantee (18).

3 SHIPBUILDING, SHIP IMPROVEMENT AND SHIP-MANAGEMENT

SHIP DESIGN FOR NEW BUILDING

54. The Study has continued ship design works for domestic shipping. Since STRAMINDO Report contains the work outputs of modern ship designs for inter-island liner shipping, including shallow and wide container ship, Ro-Ro ship and multipurpose ship, the Study determined the following five (5) ship types subject to additional ship design works in collaboration with the Technical Working Group on Ship Design[3]:

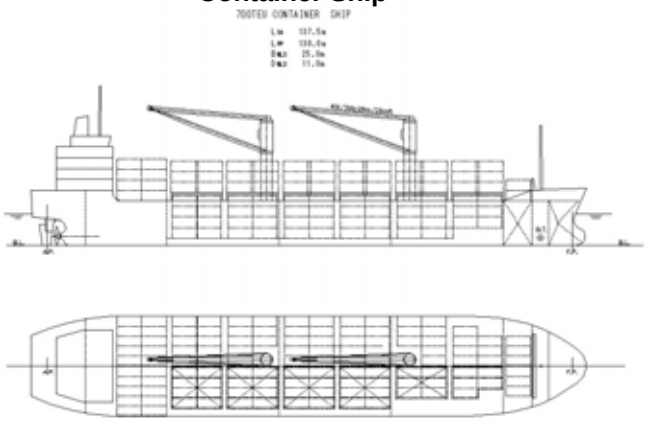
(1) Container ship (further analysis)
(2) CPO tanker
(3) Coal carrier
(4) Petroleum tanker
(5) Off-shore vessel

55. Domestic container traffic is rapidly increasing. However the container fleet is inadequate where most of vessels are aging with lower productivity. It is difficult to make container operators change their business attitude from dependence on second-hand vessels to investment in new vessels without government initiatives. In this sense, the Caraka Jaya project introduced a considerable fleet of new container vessels although there are many arguments in ship design and quality.

56. There are routes in Indonesia that have sufficiently high volume. Moreover, there are several primary ports in Indonesia that have sufficient depth and cargo handling capability. However, many of these routes are being served by small vessels, thereby leaving much room for improvement through the introduction of large-sized container vessels. A 700TEU container vessel is selected to serve for such medium and long distance routes

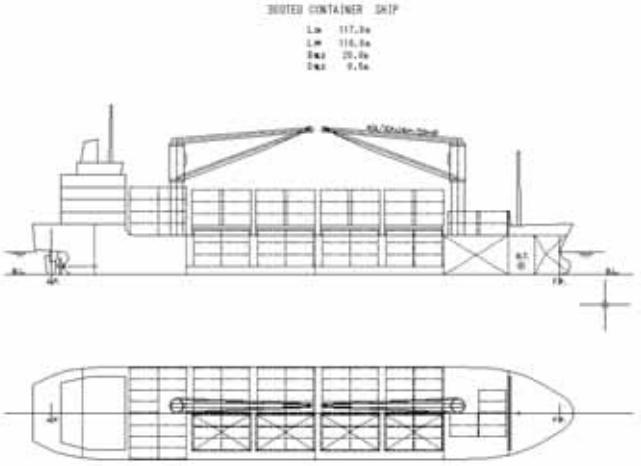
57. Meanwhile, there are several large volume routes, but unfortunately they have to contend with lower capacity vessels due to shallow depth of ports, especially river ports. Thereby it has been proposed to consider high capacity vessels with shallow drafts of only 5 meters. Thus, a 300TEU container vessel is selected for short distance route with shallow draft especially for river port operation.

Figure 3.1 General Arrangement of 700 TEU Container Ship



Source: Prepared by JICA Study Team

Figure 3.2 General Arrangement of 300 TEU Container Ship



Source: Prepared by JICA Study Team

58. **CPO tanker**: In most cases in Indonesia, CPO is carried by barge and tug or CPO tanker. The current barge and tug transportation system seemed to be inefficient because of very low speed, small loading capacity and weak maneuverability. The direction being investigated is the shift from the barge and tug-boat system to CPO tankers. Those CPO tankers need to meet some important design requirements such as shallow draft (3.5 meters at maximum), moderate sailing speed (7 knots), sizeable hull space (over 3,000 dwt) and

[3] Composition of Technical Working Group on Ship Design: DGSC, DGILMEA, INSA and IPERINDO

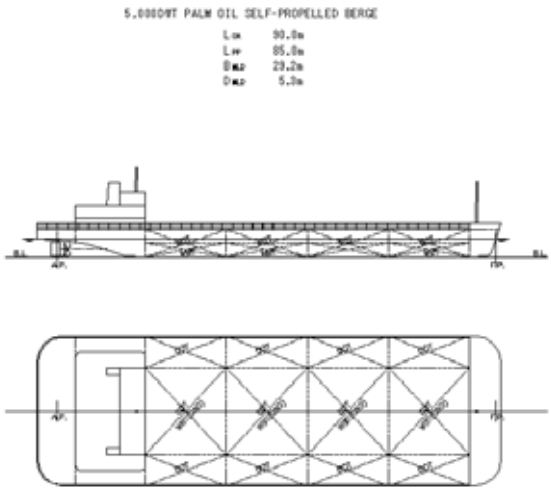
high maneuverability.

59. **Coal carrier**: Coal mining sites are located in Kalimantan and Sumatra Islands. Standard barge and tugboat transportation system using a package consisting of two (2) barges and one (1) tugboat has been established for coal transport. In terms of cost and efficiency, this system is deemed adequate at this moment. To meet the rapid and increasing demand of coal transportation, building of more barge and tugboats are urgently needed.

60. **Petroleum tanker**: Imported second hand tankers are not suitable for Indonesian waters due to draft constraints. Small and medium tanker operators face difficulty in acquiring new tankers as well as younger second hand tankers while Indonesian flagged vessels in the existing tanker fleet poses at a low rate. In terms of oil tanker design, the typical 3,500 dwt tanker by Pertamina is excellent to meet both local conditions and prevailing international requirements.

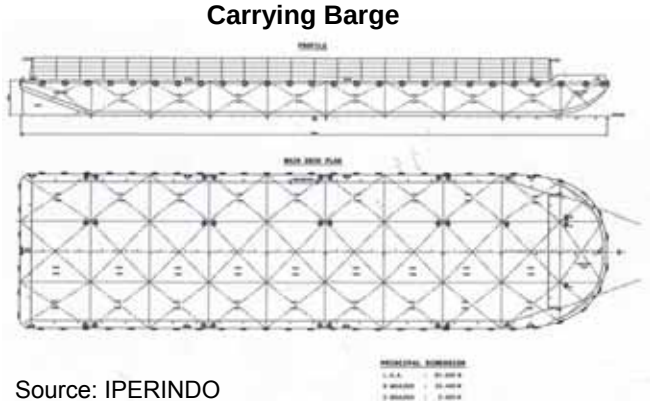
61. **Off-shore vessels**: Off-shore vessels are essential in support of the oil industry. However, almost all large-sized supply boats operating in Indonesia are foreign flagged. There is a need to develop domestic off-shore shipping companies with substantial off-shore vessels. Since there are many types, the Study examined an anchor handling tug supply boat (AHTS) as a sample. The most popular type in Indonesia has two main engines, ranging from 4,000PS to 8,000PS in total, with a length of 50-70 meters.

Figure 3.3 General Arrangement of CPO Tanker



Source: Prepared by JICA Study Team

Figure 3.4 General Arrangement of Coal Carrying Barge



Source: IPERINDO

Photo 3.1 Anchor Handling Tug Supply Boat

Source: Tidewater Publicity

VESSEL RECONSTRUCTION AND IMPROVEMENT

Reconstruction of Existing Idle Vessels

62. Due to the shortage of number of vessels against the demand in the market, the second hand vessel price as well as chartering rate also has been rising automatically. With many shipbuilding orders and higher steel material, shipbuilders nowadays offer high-level construction prices. This is because ship owners who have the willingness to build new vessels are undecided to order for a new construction while continuing the operation of the old vessels.

63. Under such the ship market environments, reconstruction of existing vessels is one effective method. Indonesian shipping companies and shipyards have some experiences in converting or reconstructing existing vessels to different types of vessels.

Upgrade of Young Second Hand Vessels

64. Procurement of younger second-hand vessels in the global markets will be still attractive for Indonesian shipowners particularly due to cost performance.

65. Young second-hand vessels should be adjusted to meet suitable international standards of safety and environments and be modified to usage by Indonesian seafarers before assigning them on Indonesian waters.

SHIPBUILDING INDUSTRY

Industry Development Policy

66. The Government prioritizes the development of shipbuilding industry with a favorable business climate. INPRES No.5/2005 addresses the importance of this sector. The Government policies and incentives are summarized as follows:

- Giving opportunity to national shipyards to build and repair vessels under the projects of the Government and SOEs:
- Encouraging incremental local contents though local subcontract:
- Upgrading design and engineering capability with establishment of a ship design center:
- Developing "Indonesia Incorporated" or cooperation efforts among shipyards to deliver competitive vessels on time; and
- Developing strategic partnership between national shipyards and foreign investors.

Package Deal

67. In many cases, Indonesian shipbuilders have no choice but use imported parts and equipment. It is also difficult to continuously obtain the latest technical and commercial information due to an underdeveloped and small-scale industry nature. They exacerbate the industry's weaknesses, i.e., low ship quality and delayed construction and delivery.

68. The package deal method under a cooperative construction scheme between a national shipyard and an advanced foreign shipyard is effective to improve the current state of Indonesian shipyards. To introduce this scheme, the following benefits are expected:

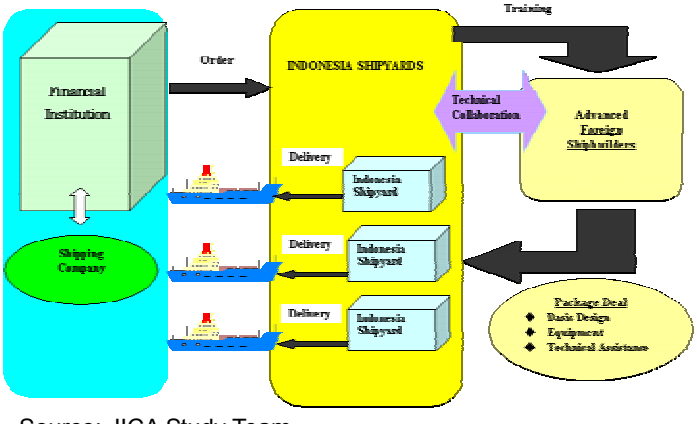
- Exact order and delivery based on accurate design and engineering by advanced foreign shipbuilder;
- Easy countermeasures for addition and change order using advanced foreign shipbuilder's business relationship and network;
- Reduction of cash flow problems and onerous task in terms of procurement contract; and
- Cost reduction for transportation and insurance by volume transportation.

69. Particularly, the package deal method can benefit the Indonesian shipbuilders when a contract includes technical assistance, basic drawings, and a raw materials list for smooth procurement.

Standardized Shipbuilding Works

70. A serial construction of sister ships with standardized design would benefit both shipowners and shipbuilders in terms of cost reduction and common ship operation and maintenance if both the sides could engage partnership.

Figure 3.5 Package Deal Model



Source: JICA Study Team

SHIP-MANAGEMENT COMPANY

71. There exist a necessity to introduce well-equipped and experienced ship-management company.

- To enable small-scale shipping companies to employ effective ship-management systems.
- To pursue scale merits by reducing insurance cost and other maintenance costs, integrating superintendents' control and coordinating with shipyards.
- For effective investments and to avoid investments risks.

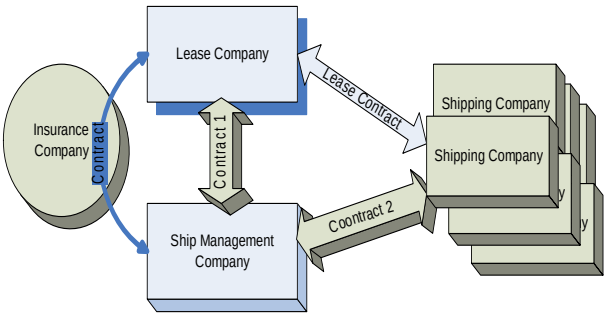
72. Anticipated beneficiaries of ship-management company include shipowners, shipyards and banks and lease companies.

- Shipowners, especially small scaled, can enjoy high standard ship-management, lower premium insurance rate and easy claim settlements.
- Shipyards can arrange efficient ship repair and maintenance works.
- Banks and lease companies can decrease investment and asset devaluation risks, and higher level of asset monitoring.

73. Functions of ship-management company for Indonesian domestic shipping are: 1) ship repair and maintenance, including docking and parts, 2) crew training and supervision particularly on onboard maintenance and 3) insurance.

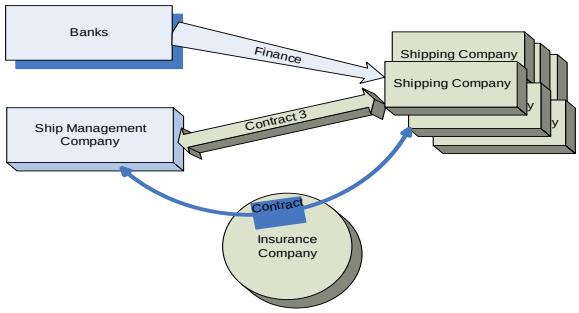
74. Manual as well as experienced superintendents are vital to provide professional services. Main clients (contractors) are either shipowners or financers.

Figure 3.6 Ship-management Contract Type – Lease Ship



Source: JICA Study Team

Figure 3.7 Ship-management Contract Type – Bank Financed Ship



Source: JICA Study Team

4 ECONOMIC AND FINANCIAL EVALUATION

IMPLEMENTATION SCHEDULE AND SCOPE

75. **Fund Demand**: According to STRAMINDO, the investment in domestic fleet up to the year 2024 was estimated at 130 trillion Rupiah or 1,739 billion yen (JPY 100 = Rp. 7,500, average in 2003). The fleet development plan has the assumption that scrapping age will be younger from 35 years to 25 years and a larger proportion of newly built vessels from 10% to 30% eventually. Inter-island shipping, that deserves high priority in the public ship financial scheme, accounts for more or less 20% in the overall fleet development plan.

76. **Fund Scale**: The study has prepared two packages for JBIC's two-step-loan finance, i.e., 30 billion yen and 15 billion yen. The former intends to meet about 12% of the overall fleet development plan within the initial five years in association with counterpart domestic fund. The latter intends to form a more practical case taking into account the limited experience of handling JBIC two-step-loan and applications of many other ODA projects despite limited sources in Indonesia and aims to avoid excessive risks as well as focusing on reliable projects.

77. **Domestic Fund**: The scheme does not request the government to prepare counterpart fund. In the scheme, end-borrowers must be eligible to make down payment in the case of sub-loan projects and deposit in the case of ship leasing projects.

78. **Implementation Schedule**: The study has considered a two-year project preparation period as the most likely case up to L/A. At the same time, the shortest case, one year preparation to make L/A, was also examined. Most likely, establishing the implementation scheme on the Indonesian side is assumed to need more than a half-year of preparation.

79. **Assumed Interest Rate**: It is to be decided as a result of loan negotiation between JBIC and GOI. For the study's assumption, the current standard rate is adopted, i.e., 1.3% p.a. in yen with 30 years loan period including 5 years grace period. On the Indonesian side, commissions and risk premiums shall be added on the JBIC fund. Thus, it is assumed that an average interest rate to end-borrowers is 12% (fixed, 20 years at the maximum). However, actual end-borrower's loan conditions will vary after taking into account their repayment period and capability.

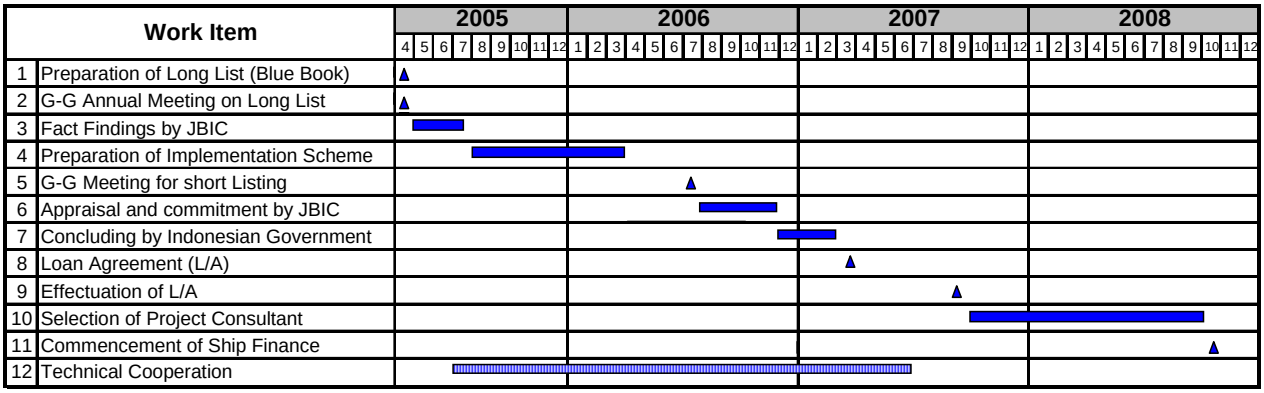
Table 4.1 Assumed Fund Scale

Financing Areas	Assumptions	Case 1 (Foreign/Local)	Case 2 (Foreign/Local)
(a) Reviewing and Conversion of Idle Fleet	Repayment: Ave. 5 years, Revolving: 4 times, JPY 50,000 / dwt	10 / 2.5	6 / 1.5
(b) Assignment of Most Suitable Vessels on Inter-Island Liner Routes	Repayment: Ave. 15 years Revolving: 2 times JPY 200,000 / dwt by Package Deal Method	13 / 3.3	6 / 1.5
(c) Maintaining and Expanding Socially Indispensable Tertiary Shipping	Repayment: Ave. 10 years Revolving: 3 times JPY 150,000 / dwt by Local Construction	4.2 / 1.8	1.6 / 0.5
(d) Consulting Fee	7% of Foreign Component (a)+(b)+(c)	1.9 / 0	1.0 / 0
(e) Contingency	3% of Foreign Component (a) ～ (d)	0.9 / 0	0.4 / 0
Program Total		30 / 7.6	15 / 3.5

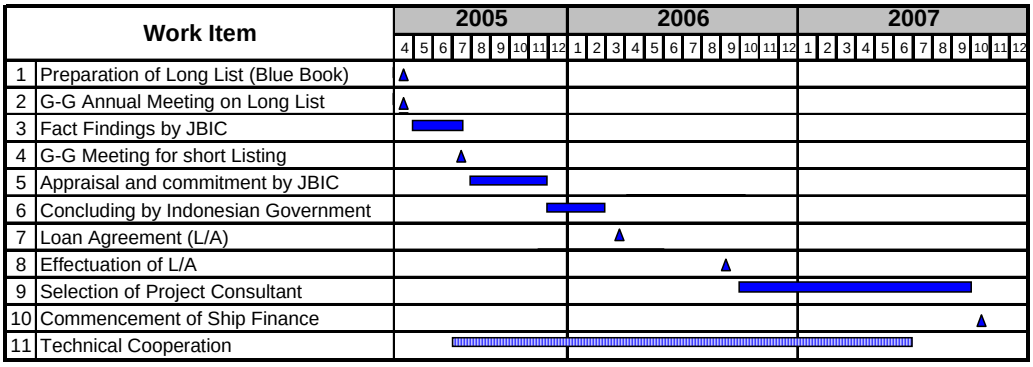
Note: Foreign Fund – JBIC TSL
Local Fund – End-borrower's own fund or another local loan
Source: Prepared by JICA Study Team

Table 4.2 Implementation Schedule

(1) Most Likely Case



(2) Shortest Case



Source: Prepared by JICA Study Team

80. Generally speaking, from project identification to the start of financing services to end-borrowers will take about two to three years:

(a) To apply the Public Ship Finance Scheme to JBIC loan scheme, it needs to be listed in the Blue Book and be agreed upon at the Japan – Indonesia Annual Meeting usually held in April or May.

(b) Then, JBIC will start fact-finding studies and the Indonesian government should prepare the implementation scheme and organization. Both countries will meet again for the selection of short-listed projects.

(c) Next, the Indonesian government will make a final selection of the JBIC loan projects of the year and both countries sign the loan agreement (L/A).

(d) After signing the L/A, the Indonesian government will organize an implementing body and start to select the project consultant. They will prepare operational guidelines and other implementation tools and modalities.

Table 4.3 Assumed Interest Rate

Financing Process		Currency	Interest Rate	
			%	Cumulative %
JBIC Loan		Yen	1.30	1.30
GOI / MOF (Sub-loan Commission)		Yen	0.50	1.80
Apex Financial Intermediary (AFI)	Commission	Rupiah	1.20	3.00
	Exchange Risk	Rupiah	5.50	8.50
Participating Financial Intermediary (PFI)	Commission	Rupiah	2.00	10.50
	Business Risk	Rupiah	1.50	12.00
Interest on End User		Rupiah	12.00	

Source: Prepared by JICA Study Team

ECONOMIC EVALUATION

Overall Economic Evaluation

81. Provided that the scheme facilitates domestic fleet procurement and replacement as planned in the STRAMINDO M/P, fleet investment would be more active compared to the present trend. From the national economy viewpoint, it would be additional costs.

82. On the other hand, such active and desirable investment would generate economic benefits to the country including reduction in the transport cost and travel time and enhancement of ship safety.

83. Unlike infrastructure projects, ship investment would continue throughout the project period. Figure 4.1 shows that the net benefit (B-C) is negative only in several starting years. Economic analysis indicates a high EIRR of 28.4%. It shows that the project is highly feasible when the scheme is put into practice.

84. The result of sensitivity analysis in Table 4.6 shows that even if the cost increases by 60% of the estimates, IRR is still feasible at the threshold level of 12% and if the benefit falls down by 30% from the estimate, IRR drops down to 15%. Thus, the feasibility of the project is very robust.

Table 4.4 Assumed Fleet Investment

(Billion Rp.)

Ship Type	Case 1	Case 2	%
Conventional	5438.9	2676.0	35.0
Container	3224.7	1586.6	20.8
Bulker	308.6	151.8	2.0
Barge	235.2	115.7	1.5
Tanker	4371.4	2150.7	28.1
Passenger Ship	1944.8	956.8	12.6
Total	15523.7	7637.9	100.0

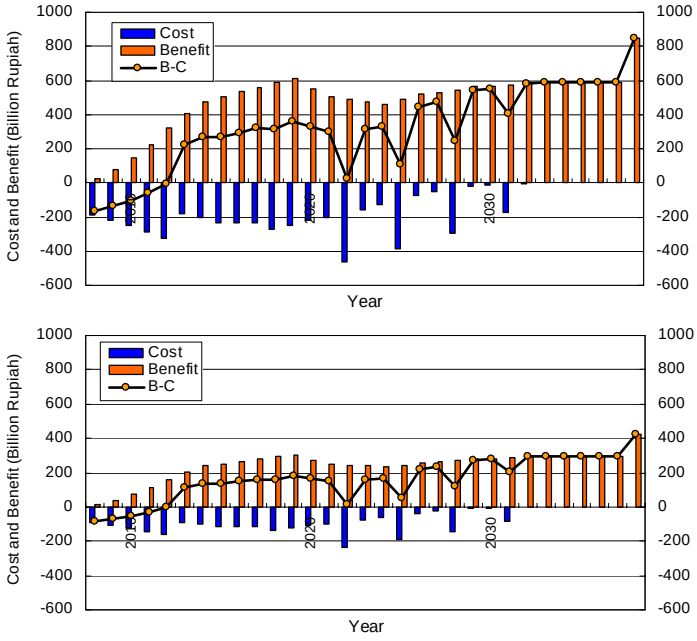
Source: JICA Study Team

Table 4.5 Evaluation Indicators

Indicators	Case 1	Case 2
EIRR (%)	28.4	28.4
B/C	1.13	1.13
NPV (Billion Rp.)	262.2	129.9

Source: JICA Study Team

Figure 4.1 Annual Change in Economic Cost and Benefit
(Above: Case 1, Below: Case 2)



Source: JICA Study Team

Table 4.6 Sensitivity Test

Case of cost up and benefit down		Cost up (%)			
		Base	20	40	60
Benefit down (%)	Base	28.4	20.9	15.7	12.0
	20	19.4	13.7	9.8	7.1
	30	15.1	10.3	7.1	4.9
	40	11.0	7.1	4.6	2.7

*Shaded figures of EIRR indicate the feasible area

Source: JICA Study Team

Economic Evaluation of Container Shipping

85. The economic effect of the proposed two (2) container vessels in Chapter 3 has been studied on the following assumption routes:

(a) Tg. Perak – Makassar (existing 320TEU / future 700 TEU)

(b) Tg. Priok – Pontianak (existing 200 TEU / future 300TEU

(c) Tg. Perak – Banjarmasin (existing 160 TEU / future 300 TEU)

86. The proposed vessels will benefit

container operators through faster sailing (particularly a 700 TEU type), shorter waiting time for tide (particularly a 300 TEU type) and carrying larger container units with efficient cargo handling.

87. On the other hand, the existing fleets are small and aging. Although it is more reasonable to procure these vessels at the second-hand market than to build anew the proposed vessels on an individual transaction, however, in the long run, much more vessels must be procured. The total investment amount may not be reasonable to manage the same container route in the end.

88. The study has compared two cases: Do-nothing Case where the existing type vessels are assigned for increasing demand and old vessel replacement, and STRAMINDO Case where the proposed vessels are gradually introduced. It is assumed that the service life of vessels is 30 years and a 5% scrap value.

89. In conclusion, STRAMINDO Case is very advantageous to reduce both capital and operation costs in all of the three routes, by 20% to 30%. The viability of the STRAMINDO plan is robust from a long-term route management viewpoint.

Table 4.7 Fleet Requirement and Operation Cost per TEU

Route	Year	Necessary Vessels under DO-NOTHING Case			Necessary Vessel under STRAMINDO Case			Operation Cost per TEU	
		EV	PV	Total	EV	PV	Total	EV	PV
Tg. Perak – Makassar	2002	5	0	5	5	0	5	0.48	-
	2014	13	0	13	4	4	8	0.49	0.38
	2024	22	0	22	0	9	9	0.49	0.38
Tg. Priok – Pontianak	2002	4	0	4	4	0	4	0.76	-
	2014	12	0	12	5	5	10	0.79	0.65
	2024	22	0	22	0	15	15	0.72	0.59
Tg. Perak – Banjarmasin	2002	5	0	5	5	0	5	0.54	-
	2014	11	0	11	4	4	9	0.55	0.46
	2024	16	0	16	0	11	11	0.54	0.45

Note: Introduction Rate of the Proposed Vessels: 50% in 2014, 100% in 2024
Operation cost per TEU – Million Rp in economic terms
EV: Existing Vessel, PV: Proposed Vessel
Source: JICA Study Team

Table 4.8 Net Present Value by Fleet Modernization

Route		Net Present Value of Total Cost			
		Do-Nothing	STRAMINDO	Savings	% improved
Tg. Perak – Makassar	Capital	737,705	453,647	284,058	38.5%
	Operation	1,222,934	993,141	229,793	18.8%
	Total	1,960,640	1,446,788	513,851	26.2%
Tg. Priok – Pontianak	Capital	647,244	496,596	150,648	23.3%
	Operation	957,730	822,577	135,153	14.1%
	Total	1,604,974	1,319,173	285,801	17.8%
Tg. Perak – Banjarmasin	Capital	325,478	193,253	132,225	40.6%
	Operation	897,984	704,756	193,228	21.5%
	Total	1,223,462	898,008	325,454	26.6%

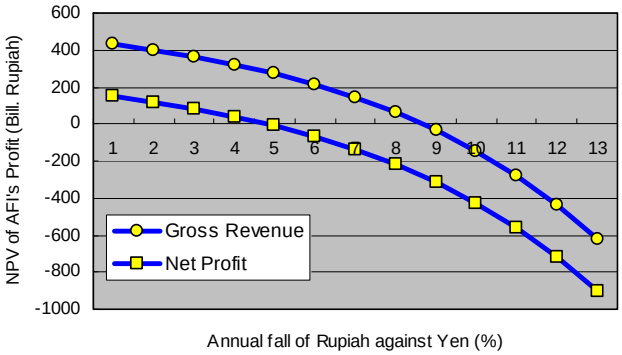
Note: Capital is equal to the vessel acquisition cost less the residual values of scrapped vessels
EV: Existing Vessel, PV: Proposed Vessel
Source: JICA Study Team

FINANCIAL ANALYSIS

Financial Analysis for AFI

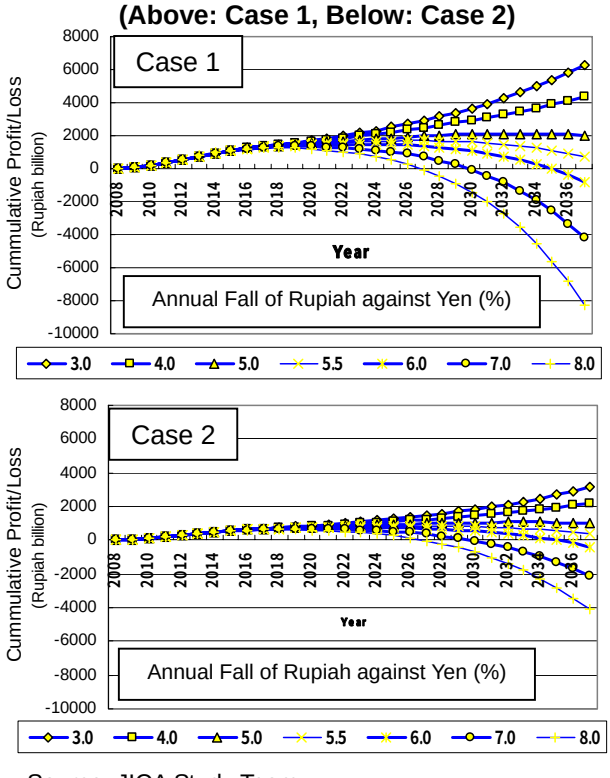
90. Exchange risk shall affect AFI's financial performance. AFI has an absorptive capacity within the designed exchange premium. When sharp rupiah depreciation occurs against yen, it is necessary for the government to take remedy measures. AFI should be a well-experienced institution engaged in broad financial businesses, which can hedge against foreign exchange risk.

Figure 4.2 AFI's NPV and Annual Fall Rate of Rupiah against Yen



Source: JICA Study Team

Figure 4.3 Trend of Cumulative Profit/Loss under Various Changes of Exchange Rate (Above: Case 1, Below: Case 2)



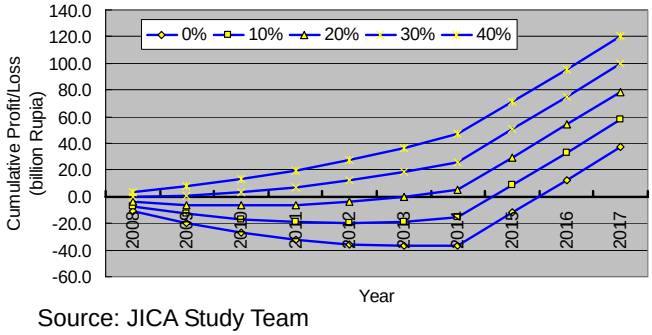
Source: JICA Study Team

Financial Analysis for Ship Leasing Business

91. If a ship leasing company can get a loan for ship purchase from AFI at its wholesale loan rate of 8.5%, it can offer lower ship leasing rates by 10-30% due to interest spread compared with commercial loan, say, 16%.

92. Since the financial risks are already incorporated at the lease charge setting, ship leasing business seems to be not so risky. However, there is a cash flow risk, which is caused by a difference of loan repayment contract and lease contract. As shown in Figure 4.4, in order to gain a profit on a stable business basis, at least 20% of own capital is needed.

Figure 4.4 Cumulative Profit/Loss of Ship Leasing Company



Source: JICA Study Team

Financial Analysis for Container Shipping Operators

93. Due to a long-term loan of fixed and low interest, container shipping operators can expect high return on their vessel investment.

94. Considering the existing business environment such as shortage of second-hand vessels and increasing charter fees, investment in new container ships is more feasible than before. Some calculation results are shown below:

- Tg. Perak – Makassar
  Expected IRR = 34.7% > Actual 26.5 %
- Tg. Perak – Banjarmasin
  Expected IRR = 26.0% > Actual 18.3%
- Tg. Priok – Pontianak
  Expected IRR = 23.7% > Actual 16.2%

5 NEED FOR MARITIME EDUCATION

CURRENT SHIPPING OPERATIONS AND PRACTICES

Shipping Company

95. The Study Team has conducted the interview survey of several major shipping companies. Several deficiencies identified in ship-management are as follows:

- The ISM Code is not applied appropriately by the shipping companies and resulted in a very cumbersome system.
- Several shipping companies share a structural problem where strong owner-managers and weak technical managers co-exist.
- Poor diagnosis capability and insufficient instruction among ship managers and operators.
- Propagation of technical knowledge is hindered and succession of know-how and technical experience is ineffective within a company.

Ship Operation on Board

96. As an expert judgment of the Study Team, about 70% of the defects identified during the on-board survey were cases that are solvable by on-board crews appropriate corrective actions alone, without special technical consultation.

97. On-board survey that is required in the ISM code is not conducted, and officers do not have a standard checklist/report or the completed ISM documents.

Recognition Gaps of Education Level

98. The education level of Indonesian seafarers is relatively lower than that of other countries. However, the responsible persons in the educational field does not fully recognize the gap between Indonesian seafarers' and international seafarers' level.

99. Much of the deficiency in Indonesian seafarer's education is the lack of technical proficiency to find and report the problems, and much less in the repair and/or dealing with the problems at hand. It is quite difficult for Indonesian seafarers to conduct an effective onboard survey.

INSTITUTIONAL DEVELOPMENT TO INTRODUCE SHIP-MANAGEMENT

100. Ship-management is becoming a *de facto* standard of the international shipping. However there is no mutually accepted definition like a form of international convention. As a regional shipping association's effort, BIMCO prepared a standardized agreement between ship owner and ship manager where both sides determines first ship management services subject to contract among possible service areas, including crew, technical and commercial management, insurance arrangements, accounting services, sale or purchase of the vessel, provisions and bunkering.

101. **Japan**: The maritime administration intends to institutionalize the ship management company serving domestic ship-owners while seafarers' rights are preserved. In regard to the ISM-Code, Japanese domestic shipping companies can voluntarily acquire a SMC through District Transport Bureau or NK.

102. **Philippines**: No institutional attention has been made so far to introduce ship management in domestic shipping. On the other hand, it is noteworthy that the maritime administration has taken in the essences of the ISM-Code into domestic shipping. It is the National Safety Management (NSM) Standard. It is simply designed for small-to-medium domestic operators to acquire and implement.

ASSESSMENT ON CURRENT MARITIME EDUCATION

Current Education System

103. There are 6 state seafarer educational institutions under the Maritime Education and Training Center of the Ministry of Communications. Among them, STIP Jakarta is the oldest and the most representative seafarer's educational institution in Indonesia. It offers 4-year full time course including 1-year onboard training program.

104. In regard to naval architecture, the number of educational institutions is not so many. ITS have started a bachelor course in naval architecture/shipbuilding since 1960. Shipbuilding is a pyramid type engineering wherein there are many fields of related engineering sectors. Therefore there must be many graduates of other engineering fields in the shipbuilding industry.

105. Shipping management course has been recently started at several universities. Among others, STMT Trisakti has provided sea transport management course for Diploma III and bachelor degree since 1991. The graduates are engaged in shipping companies, port terminals and freight forwarders or stevedore companies etc.

Course Contents with Ship-management

106. There are several universities where the Study Team visited and found out that many elements of ship management are included in the course contents. However, the lectures are carried out mostly in terms of theory or fundamental knowledge of the corresponding subjects. More practical courses seem to be insufficient in the current regular education system.

Available Education Programs outside the Country

107. The Study Team has analyzed various available education programs in regard to shipping management particularly ship management. It is confirmed that many education opportunities exist at many institutions such as the World Maritime University, the Singapore Maritime Academy and BIMCO's programs. It seems that advanced maritime education becomes popular as the shipping sector requires more sophisticated theories and skills.

DEVELOPMENT OF NEW EDUCATION PROGRAM

Introduction of a Simplified ISM Code as a Ship-management Tool

108. It is recommended that the application of proper ship-management be independent of the nature of service, i.e. international or domestic, but rather safe ship operation management should be performed in line with the system which the company developed based on the ISM code.

109. The contents of the ISM code consist of various matters such as policy, organization and authority, document management, safe operation, ship's equipment maintenance, emergency, deficiency and corrective action, internal audit, training and drill, etc.

110. Although ISM code is obligatory in international shipping, its philosophy and discipline is universal and is thereby applicable to domestic shipping as well. It is important to develop an Indonesian Safety Management which corresponds to ISM Code in essence. The Indonesian government should take the leadership and work with ship owners.

Development of Course Contents

111. It is necessary to establish a program for advanced maritime education. Aside from administration, legal matters, shipping business management and shipyard management, it is recommended to start from ship management since it covers many fields but contains basic matters.

112. Once the training course is established, the curriculum will play the most important role for success. The curriculum should suit the current and various needs of ship management. To develop the curriculum, it is necessary to hold a joint committee consisting of specialists who would take an active part in the different

fields, such as professors of local marine college, shipping company engineers and foreign lecturers.

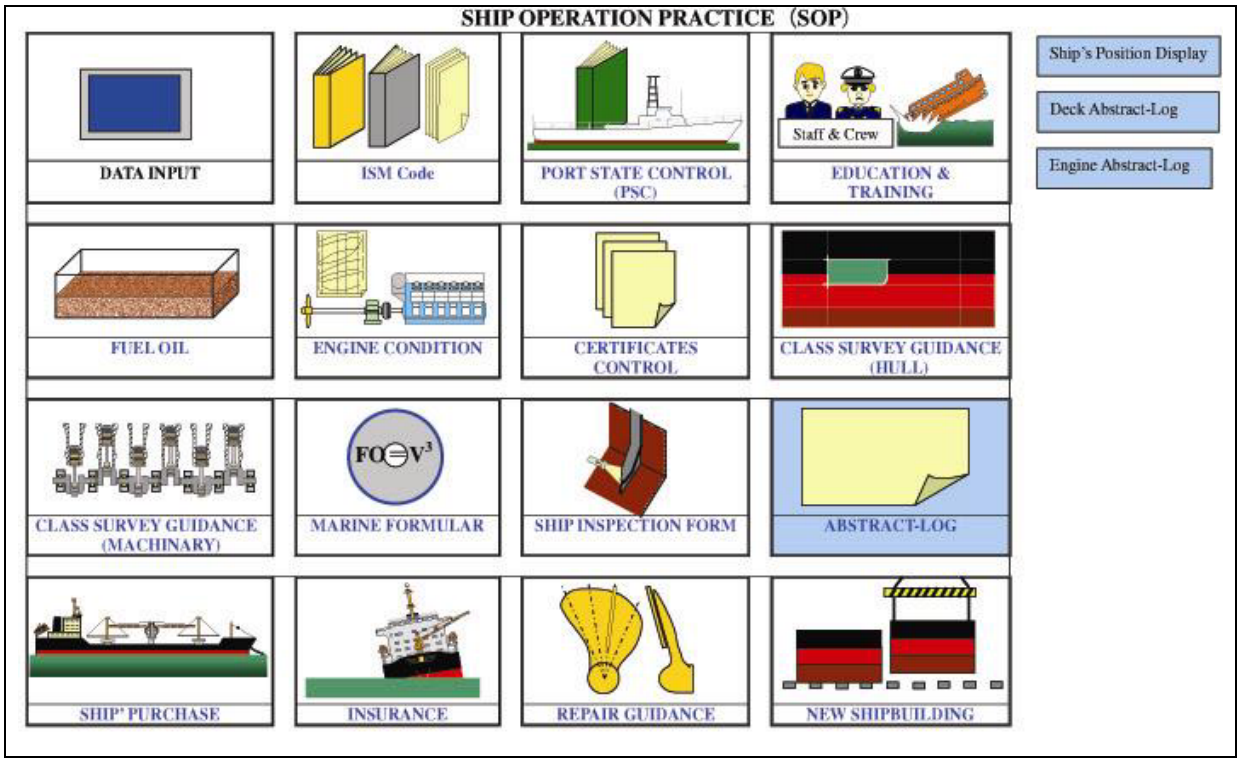
113. The lecturer of the training course is required to be well versed in ship management and have a broad knowledge of the subject. For example, superintendents of minor shipping companies mostly manage many fields and disciplines in a company and have a wide knowledge base. The lecturer should be selected without bias towards a specific shipping company or institution. Some qualification criteria includes:

- Has on-board experience of three years or more as an engineer,
- Has an experience of three years or more as a technical superintendent engineer,
- Has a management experience of three years or more as a foreign crew, and
- Has ship repair experience at any shipyard in Southeast Asia.

114. Training materials in the Indonesian language should be developed so that practical training can be carried out more efficiently and effectively. In this regard, the Study Team has developed a sample training material for computer operation of the study's short training course, including the following subjects either entirely or partly:

- Data Input
- ISM Code
- Port State Control (PSC)
- Education & Training
- Fuel Oil
- Engine Condition
- Certificates Control
- Class Survey Guidance (Hull)
- Class Survey Guidance (Machinery)
- Marine Formula
- Ship Inspection Form
- AB-Log
- Ship Purchase
- Insurance
- Repair Guidance
- New Ship Building

Figure 5.1 Top Page of the Text CD-Rom



Source: Text CD-Rom of Ship Operation Practice

6 ADVANCED MARITIME EDUCATION PROGRAM

DESIGNING OF THE PROPOSED PROGRAM

Background

115. As discussed in STRAMINDO I, the development of management-level human resources is one of the most important issues for modernizing the shipping business. Particularly the necessity of professional expertise in ship-management. Accordingly, the advanced education program with the priority on ship-management course was proposed.

116. Adequate ship-management brings faster navigation speed with fuel savings due to efficient ship operation; reduction in non-operational costs such as repair, maintenance and insurance; and, higher ship productivity by minimizing operation suspensions. Moreover, ship management is helpful in preventing marine accidents, reducing repair days and cost, and extending the service life of ships. In addition, it will satisfy the requirements of ship lending institutions.

117. If based on the assumption made by STRAMINDO, ship-management service industry with about 3,000 employees including 300 senior superintendents and 900 junior superintendents will be needed in the next two decades. Therefore the proposed education program must be workable to foster competent superintendents.

Implementation Body

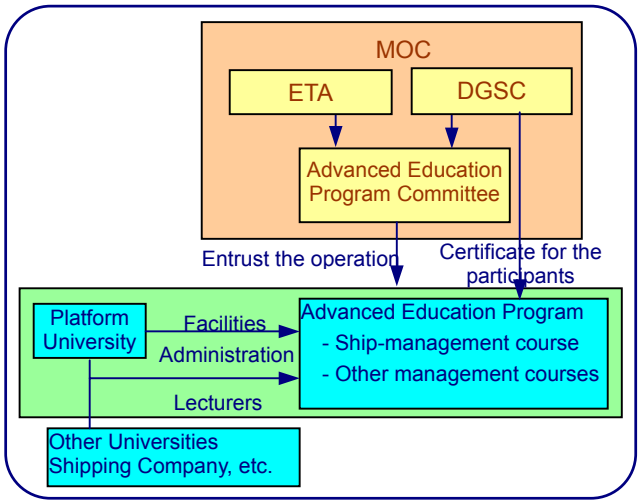
118. ETA of MOC is considered to be responsible for implementing the program. Hence, it is proposed that ETA and DGSC establish the Advanced Education Program Committee for the implementation of the education program for ship-management. The Committee will entrust the actual implementation and operation of the proposed education program to the platform university.

119. As to the platform university, the following three (3) universities have been selected based on the comparative analysis of the given conditions of candidate universities such as specialty, location advantages etc:

- STMT Trisakti (Jakarta): Short term course only
- STIP (Jakarta): Short term course and Half year course
- ITS (Surabaya): Short term course and Half year course

120. ETA will prepare the teaching materials where external resources from a donor agency may be available. The platform university will provide the facilities and administration services including preparation of course contents, recruitment of participants and preparation of teaching staffs under the supervision of ETA/DGSC.

Figure 6.1 Institutional Framework for Program Implementation



Source: JICA Study Team

Course Outline

121. **Students**: The students shall be required to have at least one year experience in a shipping company or related company. Mainly, the short-term course targets the management class and half year course targets the crews and superintendents.

122. **Teaching staff**: It may consist of local and foreign experts of private companies or government officials or lecturers from universities.

123. **Course setting**: Taking into account

the nature of the participants, the course period should be as short as possible. On the other hand, there is wide range of syllabi to cover ship management issues. In order to correspond to the actual needs, two courses are prepared: short-term course and a half-year course.

124. **Short-term course**: It shall be held 2 or 3 times per year, ranging from 2 to 10 days per course. It shall focus on practical prevailing topics. The lecture shall be undertaken on the basis of ISM code by practical approach such as:

- How to make a ship inspection
- Trouble shooting method (case study)
- Control of fuel oil and engine conditions etc.

125. **Half-year course**: To upgrade the fundamental capability of seafarers and shipyard engineers. The course shall develop their basic knowledge in ship management. Class is to be held during evening time (17:00～19:30 p.m.) so as to encourage the participation of company employees. The curriculum may include, but not limited to:

- ISM Code
- Port State Control
- Education and training onboard
- Engine condition and fuel oil
- Certificate control
- Class survey (hull, machinery)
- Marine formula
- Ship inspection
- Ship purchase
- Marine insurance
- Repair guidance
- Supervision of new shipbuilding
- Crewing, etc

126. **Equipment**: The education program does not need special training equipment and facilities, instead it requires well prepared teaching materials and experienced lecturers.

127. **Accreditation**: The accreditation of the course shall be made together by the ETA and DGSC, where the ETA shall issue a recommendation for the advanced program for ship-management institution to DGSC and DGSC shall issue a certificate of approval.

128. **Credit system**: Half-year course shall take credit system by week. If a participant fails to get some credits, he/she will be allowed to get them during the next half-year course.

COURSE PREPARATION, IMPLEMENTATION AND EXPANSION

129. As the first step, the program will start with ship-management course. Then, the program is expanded to cover the ship repair and shipyard management course and then shipping business management/ administration course.

130. A half-year course has a cycle of admission of students starting at April and October respectively, lectures (6 months), middle and final examination and accreditation of graduates.

131. Before starting the ship-management course, preparatory work has to be done: namely, preparation of classrooms, textbooks, selection of teaching staff and recruitment of participants for the course etc.

132. The half-year course shall require one professor, two visiting lecturers and two permanent staff for administration. In addition, the short-term course shall require three visiting lecturers additionally. As the half-year course shall be held in the evening time, the professors can work for the short-term course as well.

Table 6.1 Course preparation and Implementation

	2005	2006	2007	2008	2009	2010	2011
Preparation of Facilities							
Preparation of Textbooks							
Selection of Teaching Staff							
Recruitment of Participant							
Ship-management Course							
Ship-repair and Shipyard Management Course							
Shipping Business Management/Administration							

Source: JICA Study Team

FINANCIAL PLAN

133. An appropriate finance scheme has to be sought for the actual implementation and sustainability of the courses. For instance, the following cost sharing is proposed:

1) Facilities such as classrooms and offices may be provided by the platform university without charge.
2) The teaching materials shall be prepared in collaboration with a donor's technical assistance.
3) The operation cost including remuneration cost for the teaching staff shall be basically covered by the tuition fee from the participants.
4) However, it may be difficult to collect from the participants a fee which is sufficiently high to cover the remuneration cost of foreign lecturers. Accordingly, it is expected to receive foreign experts as teaching staff by using the ODA schemes etc. particularly during the initial phase (the first 2 years).
5) In order to encourage the participation of young technical staff, scholarship system should be adequately prepared by considering various financial resources including contribution from the shipping industries, public finance or operating profit.

Table 6.2 Estimated Expenditure and Revenue

	Year							
	1	2	3	4	5	6	7	8
Administration Cost	111	111	220	220	329	329	329	329
Salary	1,419	1,419	1,644	1,644	1,869	1,869	754	754
Tax payment	228	228	272	272	315	315	133	133
Total Expenditure	1,758	1,758	2,136	2,136	2,514	2,514	1,215	1,215
Total expenditure excl. Foreign expert	229	229	488	488	746	746	857	857
Revenue from tuition fee	380	380	760	760	1140	1140	1140	1140
Balance (Revenue-Expenditure)	-1,378	-1,378	-1,376	-1,376	-1,374	-1,374	-75	-75

Note: The expenditure does not include initial investments such as facilities/equipments, textbooks, etc.
Source: JICA Study Team

7 STUDY CONCLUSIONS AND UPDATE OF STRAMINDO ACTION PLAN

STUDY CONCLUSIONS

Shipping Policy Development

134. Shipping policy in Indonesia is now in the midst of a structural change. In this sense, the new shipping INPRES No.5/2005 is the epoch-making document. The study suggested that the policy of increasing national shipping capabilities which naturally support the supplier's side be implemented in accordance with other policy directions such as enjoying better shipping service from the user's side and increasing social awareness on safety, environment, and security.

135. It has introduced many practices in other countries and applicable policy tools under current shipping environment internationally and domestically. At the end, the study has proposed a desirable policy package to be implemented in Indonesia.

136. The recommendations in this regard are as follows:

- The new shipping INPRES is to be swiftly implemented as the government's prioritized efforts.
- Although the INPRES adopts many of the proposed policy initiatives from STRAMINDO, it seems that the rest of the proposed policy initiatives are rather difficult to have built consensus among the agencies and parties concerned in a short period. It is expected that the entire policy package will be further discussed and concretized through the working group meetings and upper level meetings for the implementation of the INPRES.
- As for beneficial fiscal regimes, the public ship finance which can give opportunities to domestic shipping companies, even medium or small, to access stable and long-term domestic fund should be prioritized.

Public Ship Finance Scheme

137. The study has concluded two things. First, there are widely spread needs to tap public ship finance among domestic shipping companies. The second is that a public ship finance scheme through JBIC's two-step-loan (TSL) is applicable in the country based on the existing institutional framework of public development finance and other donors' practices despite Indonesia's lack of experience in JBIC TSL scheme.

138. It is noted that consensus building has progressed and thus the public ship finance project is given top priority among candidate projects under DGSC in Infrastructure Development Program 2005-2009 compiled by MOC.

139. The recommendations on project implementation are as follows:

- Preparation of an implementation program to start the coordination with Bappenas, other governmental agencies and likely JBIC.
- Core organizations of the proposed implementation scheme such as PMU and AFI shall be established among key players.
- Domestic vessels shall be built by means of adequate method based on suitable ship design and the study output shall be considered for reference.
- An adequate system of ship management services for the project shall be provided to the financed vessels.

Advanced Maritime Education Program

140. Ship management services were not provided adequately and the number of competent superintendent is limited. There are significant needs for seafarer's re-education among domestic shipping companies especially on ship management.

141. A sample teaching material was prepared and a short training course was organized by the Study Team along with the implementation plan of the advanced maritime education program.

142. The recommendations on the program are as follows:

- Inviting experienced foreign lecturers to provide OJT for local teaching staff.
- Developing original teaching materials based on the output of the study.
- Utilizing the pamphlet and website prepared in the study for public relations.
- Fulfilling the role of the designated platform universities in association with external assistance.
- Taking a leading and supervising role by DGSC and ETA in terms of program quality, accreditation of the graduates and further job opportunities for them.

UPDATE OF STRAMINDO ACTION PLAN

High-level Documents

143. The STRAMINDO Master Plan proposed to produce the "New National Shipping Policy" and the "New RENSTRA for Sea Communication 2005-2009".

144. In 2004, the debate focused on the "Presidential Instruction on Shipping Industry Empowerment". Eventually it was issued on 28 March 2005 receiving number 5/2005.

145. In regard to a new 5-year plan, the former Megawati administration did not give any instruction to its preparation. However at present, DGSC has prepared the new infrastructure development plan for the period 2005-2009.

Action Plan Components

146. Implementation progress can be updated and further tasks can be identified in the matrix of each Action Plan component and time frame as follows: (refer to Table 7.1)

(1) **Improvement of Shipping Investment Environment**: Institutionalization of ship mortgage/hypothec and arrest of ship has been underway in 2004 and 2005. The Ship Mortgage Act was drafted in 2004. After the law enactment, implementation will be the next task.

(2) **Strategic ODA Loan Package for Indonesian Inter-island Shipping Development**: STRAMINDO II has conducted a feasibility study, which was initially scheduled in 2004. Preparation of the implementation program and the submission to BAPPENAS is the next task.

(3) **Most Suitable Vessels on Regular Inter-island Routes**: Preparation of detailed design has been planned for 2005. Some representative ship designs were made during this study in collaboration with INSA and IPERINDO. Further continuation with related organizations is the next task.

(4) **Introduction of Ship Management Company**: Inclusion of "ship management company" in the revised Shipping Law No. 21/1992 has been planned for 2004. But the Shipping Law has not been revised and there was no inclusion. After the revision of the law, "ship management company" should be disseminated.

(5) **Advanced Education in Shipping Industry**: Preparatory works has been planned for 2004. The study took over and prepared the implementation plan. The commencement of the program is the next step.

(6) **Maritime Administration Database Centre**: Networking with DGSC and shipping company and better usage of database has been planned for 2004-2005. DGSC increased its number of computer units but no network with shipping company has been built. Further development effort will be needed.

(7) **Daily Monitoring System for Subsidized Operation**: System development and installation on the existing pioneer fleet has been planned for 2004. This was done successfully by the state budget.

Table 7.1 STRAMINDO Action Plan (Updated)

Component	2004 (Actual)	2005	2006	2007～2009
(1) Improvement of Shipping Investment Environments	• Preparation of Presidential Instruction • Drafting of Ship Mortgage Law	• Development of ship mortgage enforcement system, e.g., arrest of ship	• Further institutionalization such as ship owner/ carrier's responsibility and liability	
(2) Strategic ODA Loan Package for Domestic Shipping Development	• Prioritization of the ODA ship finance project in the 5-year Infrastructure Development Plan • Conduct of F/S by STRAMINDO II	• Application of the ODA ship finance project to JBIC • Organizational set-up of the EA consisting of PMU and AFI • Preparation of SMHC	• Establishment of SMHC and appointment of PFIs • Ship finance operation guidelines	• Operationalization of the ODA ship finance project
(3) Most Suitable Vessels on Inter-Island Routes	• Continuation of ship design works for container ships and self-propelled barges	• Designing of other ship types • Preparation of ship detail design	• PR for the model ships • Continuation of detail design	• Construction of the model ships • Vessel construction by other sources
(4) Introduction of Ship-management Company	• Preparation of revised Shipping Law where ship-management company is designated	• Preparation of company license, guidelines and superintendents certificate		• Provision of ship-management service to support the ODA ship finance and non-ODA financed vessels
(5) Advanced Education in Shipping Industry	• Preparation of ship-management expert course by STRAMINDO II	• Opening of ship-management expert course (half-year, short-term)		• Enrichment and upgrade of Advanced Maritime Education Program
(6) Maritime Administration Database Center	• Installation of more computers but no link with shipping companies	• Facilitation of electronic government at DGSC and expansion of network to shipping industry		• Phase 2: Network expansion with other agencies
(7) Daily Monitoring System for Subsidized Operation	• Completed system installation on existing pioneer vessels	• Gradual system expansion		• System expansion and renewal to serve Tertiary Shipping Fleet

Source: JICA Study Team

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