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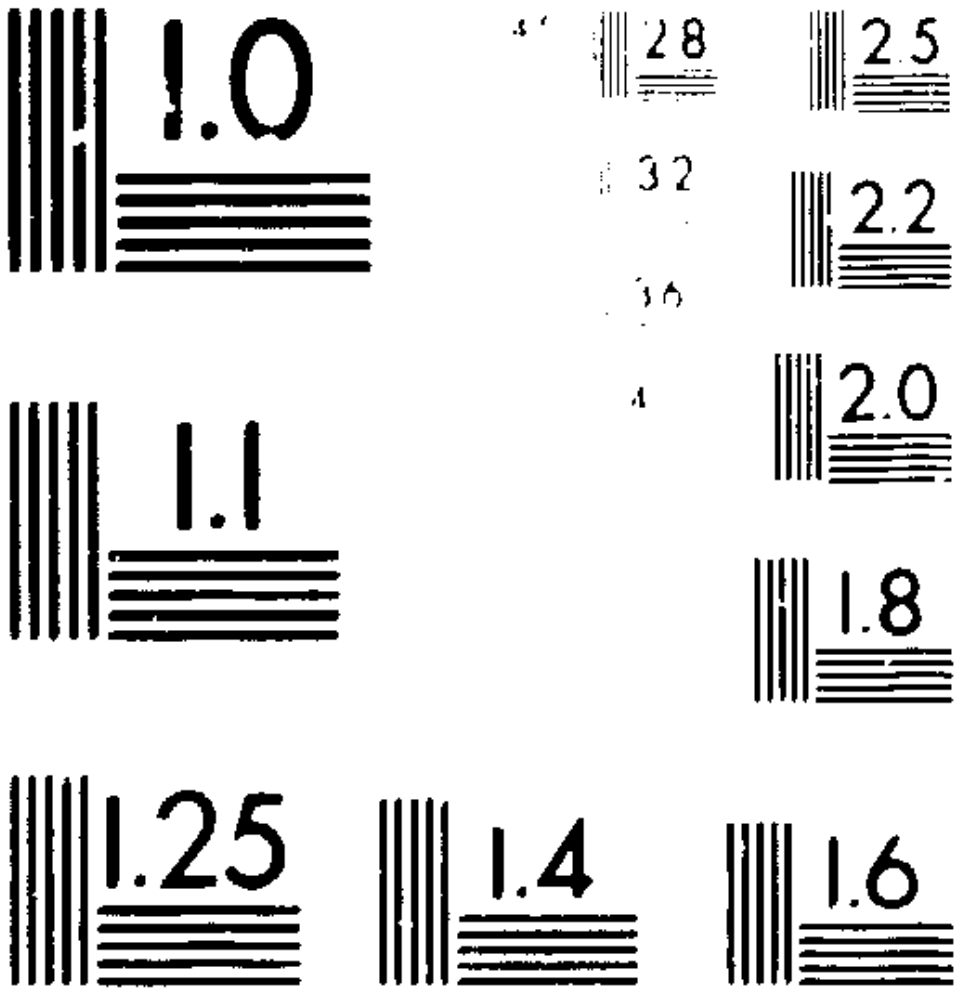

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THE INDONESIAN SHIPBUILDING AND SHIPREPAIR INDUSTRY - PRESENT POSITION, MAJOR TRENDS AND SPECIFIC PROBLEMS*

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THE INDONESIAN SHIPBUILDING & REPAIR INDUSTRY

Present Position, Major Trends & Specific Problems

1. INTRODUCTION

Indonesia, a country consisting of about 13.000 smal & large islands, spread along the equator and surrounded by a vast sea water area of approximately 3.500.000 km², has the legitimate right to be called as a big tropical archipelagic maritime country.

Situated between two oceans and two continents, Indonesia is strategically located at an important economic crossroad of trade and communication.

The Indonesians are calling their fatherland "tanah air", meaning "land (and) water", and indeed Indonesia consists of ± 67 % water area and ± 33 % land area.

As such, it is beyond question that sea transportation and communi - cation play a vital and decisive role to provide the essential basis for national progress and development.

In addition to being an indispensable part of the distribution system, shipping also serves as a unifying force to keep the nation together.

2. BRIEF HISTORICAL BACKGROUND

2.1. Wooden & Steel Shipyards

Like other maritime countries, Indonesia also had its beginning of Shipping and Shipbuilding Industry as early as history.

Before the arrival of European explorers to Asia at the end of

the 15th century, Indonesian seamen and traders, manning their own built sailing ships, were already travelling throughout South - East Asian waters and to neighbouring and far - away countries like China, India, Madagascar and Central Pacific - islands.

Even until today, hundreds of these wooden sailing ships still can be seen at Indonesian waters, sailing their traditional routes carrying cargo for the interisland trade in the midst of modern shipping business which uses steel ships.

Modern steel Shipbuilding & Ship Repairing Industry started operation in Indonesia in 1890, when a relatively large repair yard was established by the Dutch at Jakarta harbour, under the name of "Dock Priok".

It was followed later in 1912 by the establishment of a similar size repair yard at Surabaya harbour, which was named " Dok - Surabaya ".

But the Indonesians, who for centuries proudly built and operated traditional wooden sailing ships, started their modern steel Shipbuilding Industry some decades later, in the year 1951, when independence was internationally recognized.

In 1960, all foreign - owned shipyards & dockyards were nationalized by the Indonesian Government and became state - owned companies.

Thus since then, the management of the development of Indonesian Shipbuilding Industry had been in the hands of the Indonesians - themselves.

But during the sixties, prevailing political & economical situation in Indonesia were such that it was difficult to achieve a sound growth.

High rate of inflation, lack of experts in managerial & technical fields, shortage of foreign exchange for import of material & machineries, obsolete yards' equipment, combined with other disadvantegeous factors had contributed to the setback of the industry with almost no progress at all.

That was the general situation of the Indonesian Shipbuilding Industry before the Government launched its First Five Years Development Plan in 1969.

2.2. Five Years Development Plan

Since 1969, the Indonesian Government had launched and implemented two Five Years Development Plans (1969 - 1974 & 1974 - 1979) and is now at the final stage of implementation of the Third Five Years Development Plan (1979 - 1984).

The Development Plan put priorities on the development of the agricultural sector and its agrobased industries, the establishment of import-substitute industries and the construction of economic infra - structure such as roads, bridges, electric power etc.

In the shipping sector, new policies were issued and various encouragement measures and steps were taken to rehabilitate and

rationalize the Shipping Industry in order to be in a strong position and has the capability to support the economic development.

The shipping rehabilitation program was mainly directed to the interisland fleet.

The replacement and modernization program of the ocean — going fleet started in the Third Five Years Development Plant, which is now in progress.

In parallel with the implementation of rehabilitation and rationalisation of the Shipping Industry during First, Second , and Third Five Years Development Plants, the Government also carried rehabilitation, rationalization and modernization programs for the Shipbuilding Industry, to strengthen its capability and competitiveness.

Although progress had been achieved in the total yearly tonnage of ships docked at domestic yards, production of new ships is still very low in comparison with available installed capacity (± 30 %).

This situation still remains the weak points to the shipbuilding development in Indonesia,particularly when observing the fact that many Indonesian ships were still obliged to be imported from foreign countries due to requirements of credits extended to Indonesia.

3. PRESENT POSITION, MAJOR TRENDS & SPECIFIC PROBLEMS OF SHIPBUILDING AND RELATED FIELD

3.1. Number of Establishment

Due to its geographical condition, Indonesia has more than 100 shipyards and dockyards located at many places throughout the country.

Most of the yards are small - scale ship repair yards, small wooden shipyards and small steel shipyards producing barges and small boats.

There are 4 shipyards having new building capacity of up to 8.000 DWT, 5 shipyards of 3.000 DWT and about 10 shipyards of 500 - 1.000 DWT building capacity.

In the repairing activities, the biggest dock in operation is a floating dock of 30.000 DWT capacity, while the biggest graving dock is a 20.000 DWT dock. Slipways of up to 2.000 DWT capacity are located at various small & big harbours.

3.2. New building

Total newbuilding installed capacity of Indonesian shipyards are estimated at about 60.000 DWT/year, but average total production record of new ships is approximately 30.000 DWT/year.

This low production figure is attributed to various factors, - among others :

- limitation of state budget for new ship construction as priority

is still directed to other development sectors.

- credit financing from banks is not yat attractive to shipping companies, consequently shipping companies prefer to purchase second - hand tonnage.
- long period of building time due to heavy dependance on import of material, machineries & equipment and the subsequent difficulties in import procedures, custom clearing etc.

Unfortunately, many new Indonesian ships still must be built at foreign yards due to credit conditions which must be complied by Indonesia.

However, in 1980 & 1981, the Indonesian Government issued Decree No. 10/1980, No. 14/1980 and No. 18/1981, which regulated Government procurement to be executed by purchase by domestically produced goods & services : as far as is possible.

An interdepartmental coordicating body was established to supervise Government purchase orders in accordance with above policy.

Since 1983, a Junior Minister was appointed to promote domestic products.

In the shipbuilding sector, this policy has led to the biggest single Government newbuilding order, ever awarded to the domestic shipyards, e.g. an order of 101 ships by the Ministry of Communication (1980) with total value of about Rp. 27 billions (± $42,8 - million), an amount almost 3 times the average annual newbuilding

revenue before.

Since 1982, Indonesian shipyards have received new building orders for bigger size ships, which had not been built before e.g. :

- 1 Offshore Tin Dredger 4.000 DWT (about 12.000 displacement)
- 5 Product Oil Tankers of 3.500 DWT.
- 6 Product Oil Tankers of 1.500 DWT.
- 2 Trailing Suction Split Hopper Dredger of 1.600 DWT.
- 1 Floating Dock 6.000 Tlc (± 10.000 DWT).

Preparations are now underway for tender and new construction of the following ships.

- 3.000 DWT Cargo Passenger Ships.
- 3.500 DWT LPG Carriers
- 3.000 HP/6.000 HP Supply Boats
- 3.500 DWT Liquid Asphalt Carriers
- 6.500 DWT Product Oil Tankers.

The Directorate General of Sea Communication which supervise shipping, harbour and marine safety is also planning another new ship construction project of about 140 ships, consisting of cargo & passenger ships, tugboats, barges and other work boats.

In the private sector, the Government also strongly encouraged foreign or joint-venture companies to order their ship's need

to local shipyards.

Recent building contracts included barges, tugboats, oil rig platforms, oil rig accomodation modules etc.

The new policy of the Government clearly indicated the " political will " of the Government to put more emphasis to the development of the domestic Shipbuilding Industry.

This is in line with the overall national planning policy to change the priority of development to the industrial sector starting from The Fourth Five Years Development Plan in 1984.

A new development occurred on the construction of ships which is financed by foreign governments loan and export credit.

More and more ships are now being built at domestic shipyards under such financial arrangements.

These include the building of ;

- 3.500 DWT Tankers
- 6.000 Tlc Floating Dock
- 0,25 m^3 Grab Dredgers
- 800 HP Tugboats
- 1.600 DWT Trailing Suction Split Hopper Dredgers

This means that foreign aid in the form of soft loan or export credit, under negotiated arrangement, can be used to finance the construction of new ships at the donor-receiving countries' shipyards.

Another significant point to be mentioned concerning new building at Indonesian shipyards is the development of patrol boat construction.

A former naval yard had been trensformed to become a government-owned limited company. The yard is now engaged in the building of shipsticated high-technology fast patrol boats for the Customs, Marine Police and the Navy. Under technical assistance agreement with foreign yards, 25 fast patrol boats of various types are now under construction.

The yard is designed to become a leading shipyard for the construction of high speed crafts and vessels.

Although some encouraging development has been observed in the new ship construction field, the biggest problem which confront the Shipbuilding Industry is still the continuity of newbuilding orders.

Unless there is a continuous flow of orders, the Shipbuilding Industry is in a difficult position to meet the shipowners' demand for quality, reasonable price and quick delivery.

This matter, combined with credit financing arrangement are heavily dependent upon Government policy.

During the next 4th Five Year Development Plan, a total of about 1.370.000 DWT ships are planned to be scrapped.

To meet the expected newbuilding demand, new yard building facilities must be constructed.

3.3. Repair/Docking

Due to restrictive regulatory measures taken by the Government, Indonesian national fleet is directed to undergo their docking at domestic dockyards.

Consequently, Indonesian docks and slipways are mostly occupied during the whole year.

The installed capacity of docking facilities in Indonesia, at present totals about 158.000 DWT, consisting of floating docks, graving docks, slipways & repair basins.

Ships docked in Indonesia during the last two years, averaged 1.200.000 DWT annually, which mean an average docking days of about 16 days/ship.

This figure is of course still " high " compared to international practice and are due to various factors a.o. :

- Many Indonesian ships are already old-age
- Material, machineries, equipment, spare-parts and components of ships are still to be imported.
- Shipyards'/dockyards' machineries and equipment and its level of technology are still " old-fashioned"
- Not-yet-so-smooth coordination and cooperation between technical staff members of parties involved in docking operation (yards, shipping copanies, classification bureaus, Government ships safety agencies, stockist, agents, shipchandlers etc).

Comparing the annual docking production of ± 1.200.000 DWT with the National Fleet strength of about 3.800.000 DWT, it can be observed that only about 30 % of National Fleet can be maintained domestically.

To meet the ever-expanding fleet, expansion plan are being undertaken to existing docks, new docking facilities are being constructed and new docks are planned to be constructed.

At the end of the 4th Five Year Development Plan (1989), docking capacity is planned to reach approximately 3.000.000 DWT/ year, which is about 70 % of the estimated national fleet strength

3.4. Supply of Ships's Material, Machineries & Equipment

Forbuilding new ships and repairing ships in Inonesia, at present almost 60% to 70% of needed material, machineries and equipment are still to be imported. Although the Government lowered the tariff of import duty and import sales tax to 0%, still the supply of ships's material, machineries and equipment requires time and efforts until they reach the yards.

In some cases they unfavourably delay the delivery time and consequently will affect the reputation of the shipyard concerned.

The development of the shipbuilding-related industry has now reached a certain stage, that a new regulation had been issued by the Government whereby import duty is imposed on certain ship's material, machineries, equipment and components which are already

manufactured in Indonesia.

3.5. Manpower

With the increase of facilities of existing yards and the planned establishment of new shipyards, beside the execution of shipyards and dockyards rehabilitation and modernization program and the construction of bigger size of ships, the manpower problem becomes very important.

It concerns the planning and execution of education, training, upgrading etc.

All of these manpower development activities depend very much upon the revenue of the shipyards.

At the present state, it is still difficult for the Indonesian shipyards to execute their own manpower planning & development program. In this field, Government assistance is very much needed at least until a certain period of time.

For the purpose, a Shipyard Training Centre is under study and if it can be materialized, it will greatly assist the development of the Shipbuilding Industry.

The total number of Indonesian shipyards'/dockyards manpower at present is estimated about 16.000 persons, consisting of managers, staff personnel, engineers, technicians, foremen and workers. Their present capability and skill can be measured to the ships built and docked/repaired in Indonesia (building various types of ships up to 3.500 DWT and docking ships up to 30.000 DWT).

Training and upgrading of skill and capability for workers, foremen, technician, engineers and management levels are continuously performed in Indonesia as well as abroad with the assistance of the Government.

For the building of the 3.500 DWT tanker (now under construction), the Indonesian Shipyards involved are cooperating with foreign shipyards through a technical assistance agreement.

This arragement is intended to upgrade skill and capability of Indonesian yard manpower to a level equivalent to international standard for building bigger size of ships.

To meet the increasing demand for quality, the Indonesian Classification Bureau (Klasifikasi Indonesia) has issued regulations requiring all ship yard's welders to be certified.

In the field of welding the Government has inaugurated a modern Welding Training Centre at Jakarta where trainees can be trained to become shipyard welders. A total of about 150 trainees were trained in fiscal year 1980/1981 & 1981/1982 under a grant provided by the Norwegian Government.

According to result of study, there is a lack in the number and skill of shipyard workers in the mechanical and electrical field.

The study also revealed the need to improve the quality of first line and middle managers (chief of group, chief of section, foremen, supervisors, instructors).

With regard to shipbuilding technicians and engineers, graduates

are already produced by Indonesian educational institutions. Since 1960, more than 250 university graduates in shipbuilding and ship's engineering have strengthened the shipping & shipbuilding activities in Indonesia.

Management training for top managers of shipyards is regularly arranged in Indonesia as well as in foreign countries, mostly in France and Japan which had regular courses for Indonesian participants.

3.6. Ship Machinery & Equipment Industry

The development of the Ship Machinery & Equipment Industry in Indonesia is still at its very early stage.

This is due to the low production of new ships at Indonesian shipyards.

Although there is a considerable demand for new ships in Indonesia because of its archipelagic geographical condition, lack of capital had forced Indonesia to receive loans from foreign countries with conditions unfavorable for the development of the domestic shipyards. This situation is disadvantageous for generating investment in the ship machinery and equipment industry.

At present, a very limited number of foreign brand marine diesel engines are assembled in Indonesia (100 to 500 HP).

For the smaller HP range of engines (less than 50 HP), a considerable number of engines are assembled annually to meet

the demand of small fishing boats, small river boats, proas, wooden boats, etc.

PT. Krakatau Steel, the Government-owned giant steel company, recently success fully produced its first ship steel plates product and received the prestigious Lloyd's Classification stamp approval.

Other marine machinery equipment and basic materials which are already produced or assembled in Indonesia include :

- Hand steering gears
- Hand anchor winches
- Electric and hydraulic winches, windlasses, capstans, mechanical ventilators (assembling).
- Anchors (small)
- Bronze side scuttles
- Steel hatch covers
- Alluminium windows
- FRP life boats
- Main switch boards (assembling)
- Marine radio transmitters/receivers (assembling)
- Mooring equipment
- Room & accomodation equipment
- Fire fighting equipment (portable CO2 bottles etc)
- Marine paint
- Welding electrodes

- Steel angles (small)
- Round bar
- Pipes
- Tarpaulin
- Manila ropes
- Steel wire ropes

The development of certain products of the Ship Machinery & Equipment Industry has now reached a stage which requires attention. To promote the use of these products, the Government has revised its policy of no-duty on import of ships' material, machineries, equipment & components. Certain commodities which are manufactured domestically, are now dutiable when imported.

3.7. Development of Shipbuilding Technology

Development of Shipbuilding technology by Indonesian shipyards at the present stage is implemented through the execution of building bigger size vessels, new type of vessels or special type ships which had not yet been built before.
During the past two years, this included the building of hydraulically operated motorized hopper splitbarges, oil product carriers, modern shrimp trawlers, clamshell dredgers, offshore tin bucket dredgers, trailing suction split dredgers, offshore oil rig platform jackets, offshore oil rig accomodation modules.

At present and for the next coming years, development of technology of shipbuilding in Indonesia will be in the construction of fast patrol boats, offshore supply vessels, LPG-tankers, medium size interisland cargo-passanger boats, fertilizer bulk carriers, ammoniac carriers etc.

As to the research and development in shipbuilding, the activities will be conductad by the Faculty of Naval Architecture of Surabaya Institute of Technology, the Marine Department of the Agency for Research and Application of Technology and the Indonesian Ship's Classification Society. They have already acquired testing and research laboratories. The Agency for Research and Application of Technology has finished its necessary preparation to build a Ship Experimental Tank Laboratory in Surabaya, which is expected to be operational in 1986/1987.

The Surabaya-based PAL shipyard which is supervised by the Agency for Research and Application of Technology is now constructing a computeraided design center to serve the shipbuilding industry of Indonesia.

3.8. Productivity Inprovement in Shipyard

Productivity improvement at Indonesian Shipyard had been carried out continuously with the aim of producing ships and executing ship repair jobs :

- with quality according to international shipbuilding standard
- at prices competitive to international market prices
- with speedier delivery time

Measures taken to improve productivity in the Shipbuilding Industry include among others :

- continuous training and upgrading in technical as well as managerial skill and capability of managers,engineers, technicians and workers.
- inviting foreign experts and or advisory teams to train and upgrade shipyards workers and staff personnel.
- mandatory classification of Indonesian ships to Indonesian Classification Bureau.
- rehabilitation/replacement of outdated shipyard machineries and equipment especially testing equipment, welding/cutting machineries, lifting machineries.
- application of computer technology for financial,administrative and design operations.
- continuous efforts to improve import procedures in order to make the supply of material, machineries and equipment on time to meet newbuilding or repair schedule.

3.9. Available Financing for Shipbuilding

Indonesian is at present, financially not yet in a position to provide ship's financing to foreign buyers.

Allocation of funds for shipbuilding and ship's financing is directed towards domestic owners, which include government departements, private shipping companies, state-owned companies and some private joint venture companies.

As priority of national development is still directed to the agricultural sector, funds allocated for ship's financing is still very limited.

In 1975, the Government incorporated the Maritime Departement of the Indonesian Development Bank with the objective to channel bank loans to the maritime sector. A Fleet Development Corporation was also established to provide financial services to shipowners under a favorable scheme of lower interest rate (± 10%) and a longer repayment period (± 5 years and 3 years grace period).

Financing for shipbuilding through state budget is aimed for :

- purchase of Government owned non-merchant ships such as research ships, patrol boats, survey boats, tugboats, rescue boats etc.
- purchase of Government-owned merchant ships for subsidized shipping operation to remote areas such as cargo-passenger ships, passenger-cargocar ferry boats etc. (it is known as "pioneer shipping" in Indonesia).
- rehabilitation, modernization and expansion of state-owned shipyards.

Ship's & Shipbuilding financing for the private & government-owned shipping companies and shipyards is managed by the Government Banks and the Fleet Development Corporation. Supervision & control are executed by the Central Bank.
Loans allocated were used for :

- purchase of new ships, built domestically as well as in foreign yards.
- purchase of second-hand tonnage from abroad
- rehabilitation, modernization and expansion of government-owned and private-owned shipyards & dockyards.

Since its inauguration in 1974, the state-owned Fleet Development Corporation has delivered, on a hire-purchase payment arrangement about 70 ships (new and second-hand) to private shipping companies and also to state-owned Pelni Lines.
From statistical record of Indonesian Development Bank(BAPINDO), it can be observed that investment loans allocated to the maritime sector amounted :

- Rp. 35,5 billion in 1979 (± US$ 56,8 million)
- Rp. 56,8 billion in 1980 (± US$ 90,9 million)
- Rp. 78,9 billion in 1981 (± US$123,3 million)
- Rp. billion in 1982 (± US$ million)

State budget allocation in 1981 for building of new ships and shipyards expansion & modernization projects is estimated at

Rp. 20 billion (± US $ 31,2 million).

In 1981, the government also allocated an extra budget amounting ± Rp. 27 billion (± US$ 42,8 million) for the building of 101 ships at 19 state and private-owned shipyards.

To lessen the dependence of national economy to the export of oil, in 1982, the Government proclaimed new policies and issued various decrees with the aim of boosting export of non-oil commodities and products, where-by attractive export credit arrangement is offered.

Although the arrangement may be used for the ships & shipbuild - ing financing sector, still there is not yet any development in this field.

3.10. Current National Policy and Government Incentives/Subsidies to Local Shipbuilding Industry

The Government policy for the development of the national Shipbuilding Industry can be outlined as follows :

a. developing the capability and capacity of the ship repairing sector to be in a position to dock and repair the national fleet (including the defence fleet) to a maximum extent (the national fleet is now estimated having a total tonnage of about 3.800.000 DWT, excluding the defence fleet).

b. developing the capability and capacity of newbuilding sector in order to be capable of building new ships to meet the

scrapping and the development demand of national fleet; first by building small & medium size coastal and interisland ships in line with the existing capability and capacity of the industry and then increasing the sizes and types of ships to be built in accordance with experience and skill gained and the development of the industry.

To implement the above mentioned policy and to guarantee continuous jobs for the Shipbuilding Industry, the Government had issued and adopted various courses of actions in the form of decrees, regulations, instructions etc., the implementation of which could be regarded as Government direct subsidy, indirect support or creation of favorable climate for sound development of the industry.

Such Government measures include :

- abolishment of ship repair and newbuilding domestic sales tax
- restriction of docking at foreign yards
- restriction of newbuilding of ships below 3.500 DWT size in foreign countries (this figure will be increased to about 8.000 DWT).
- exemption of import duty and import sales tax for import of ship's material, machineries, components and spare-parts.
- lowering of land lease tariff for shipbuilding use
- attractive investment incentives for joint ventures in the field of new shipyard projects

- direct subsidy to state-owned shipyards & dockyards for rehabilitation, modernization and expansion .
- indirect aid in the form of ship's financing to shipowners.
- direct subsidy in the form of training and upgrading of shipyards workers, staff and management personnel.
- subsidy of foreign technical assistance fee, by incorporating the fee into the ship's price (for certain type and size of ships which are built for the first time in Indonesia).
- control of Government procurement in order that Government departments and state-Owned companies buy domestic products and services to a maximum extent.
- allocation of extra/additional state budget for ship's construction at domestic shipyards.

4. CONCLUSION

4.1. Since the government launched its 5-year national development plans in 1969, the Indonesian Shipbuilding Industry has been able to lay a relatively firm foundation which can be used as a sound basis for further development.

4.2. Although progress had been achieved, the Indonesian Shipbuilding Industry is still not yet capable of fully supporting the national fleet in the field of maintenance and newbuilding . In the mean time, the Industry has entered the high technology offshore construction market.

4.3. In the next national development plans, priorities will be given to the development of the industrial sector, which include the Shipbuilding Industry and it is expected that the industry will record a rapid growth.