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Indonesia Sea Transportation Network Based on Blue Economy

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Abstract — Project Sea Transportation are characterized by large investment volumes, high complexity and ambitious goals of their promoters with respect to technological, economic or aesthetic performance. There are a number of cases which show massive failures with planning, procurement, construction and operation of megaprojects in the transport sector. But there are also positive cases which underline that it is not a natural law that projects fail rather than in the first instance a missing accountability of the planning and decision processes. In this context the criteria for success or failure have to be defined appropriately, because the widely used time and cost overruns are only rough indicators. Furthermore, the methods of evaluation have to be extended to allow for an integrated assessment of all sustainability aspects. Long planning and construction times imply that coping with uncertainty is a crucial issue such that risk and change management, stable legal, financial and political framework, and wide acceptance by stakeholders are essential requirements for a successful planning and implementation process.

Keywords - Blue Economy, Sea Transportation, National Shipping

I. INTRODUCTION

The islands in Indonesia can only be connected through the seas between the islands. The sea is not a separator, but unifying various islands, regions and regions of Indonesia. Only through the inter-island, inter-coast, Indonesian unity can be realized. The voyage that connects the islands, is the lifeblood of life as well as unifying the nation and the State of Indonesia. The history of the greatness of Sriwijaya or Majapahit is a tangible proof that the triumph of a country in the archipelago can only be achieved through the excellence of the Sea. Therefore, the development of the national shipping industry as a strategic sector needs to be prioritized in order to improve Indonesia's competitiveness in the global market. Because almost all commodities for international trade are transported by using sea transportation facilities and infrastructure, and balancing the development of the region (between eastern Indonesia and the west) for the sake of Indonesia's unity, because remote and less developed regions (the majority are in eastern Indonesia that is rich in natural resources) requires access to markets and services, which often can only be done by Sea transportation.

Shipping is everything related to transportation in the fields, ports, and safety and safety. Broadly speaking, shipping is divided into two, namely commercial shipping (related to commercial activities) and Non Niaga shipping (which is related to non-commercial activities such as government and defense of the State).Transportation in the water (in this paper in accordance with Sea transportation) is the activity of transporting passengers, and or goods, and or animals, through a water area (sea, river and lake crossing) and certain territories (domestic or foreign), using ship, for special and general services. The territorial waters are divided into:

1. Marine waters: marine waters.
2. River and lake waters: inland waters, namely: rivers, lakes, reservoirs, swamps, floods, canals and canals.
3. Crossing waters: territorial waters that decide road networks or railroad lines. Crossing transportation serves as a driving bridge, connecting lanes.

The Teoriti Cruise is divided into:

1. Domestic: for domestic transportation, from one port to another port in the territory of Indonesia.
2. Overseas: for international transportation (export / import), from Indonesian ports (which are open to foreign trade) to foreign ports, and vice versa.

Domestic Transport is organized by Indonesian-flagged vessels, in the form of:

1. Special Transportation, which is held only to serve its own interests as a support for the main business and does not serve the public interest, in the territorial waters of the sea, and the lake, by companies that obtain operating permits for this matter.
2. Public Transportation, which is organized to serve the public interest, through: public shipping, by individuals or legal entities established specifically for shipping businesses, and having at least one traditional Indonesian-flagged vessel (sailing ship, or traditional motorized sailing boat or motorboat measuring at least 7GT), operating in the territorial waters of the sea, and rivers and lakes in the country.

National Shipping, by a legal entity established specifically for shipping businesses, and which has at least one non-traditional Indonesian-flagged vessel, operates in all types of waters (sea, river and lake, crossings) and territories (domestic and foreign). Pioneer shipping organized by the government in all domestic waters (seas, rivers and lakes, crossings) to serve remote areas (which have not been serviced by

shipping services that operate regularly and regularly or where other modes of transportation are inadequate) or undeveloped areas (very low income level, or which is not commercially profitable for sea transportation.Foreign transport is carried out by Indonesian and foreign-flagged vessels, by: national shipping companies that have at least one Indonesian-flagged vessel, measuring 175GT; joint shipping companies, between foreign companies and national companies owning at least one Indonesian flag vessel, 5,000GT; and foreign shipping companies, which must be represented by national companies with a minimum ownership of one Indonesian-flagged vessel, 5,000GT for international shipping or at least one Indonesian-flagged vessel, measuring 175GT for cross-border shipping.

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II. LITERATURE REVIEW

A. Indonesian Sea Transportation

Indonesia is an island nation that has more than 1800 islands. The islands are separated by the sea and the strait, so that to connect between islands with one another, adequate means of transportation are needed. Ships are an important means in the activities of relations between people from one island to another, this also causes the Indonesian nation to be called a sailor nation, because they have been accustomed to navigating the seas in the archipelago. Evidence that shows that the Indonesian people have used ships as an important means in sea transportation, as illustrated in the reliefs of Borobudur Temple in the form of shaded boats that have been able to sail to the island of Madagascar (Africa). Also the manufacture of Pinisi boats which was carried out by the Makassar people in South Sulawesi. Shipbuilding technology in Indonesia has experienced a very rapid development after receiving foreign influence. It was from foreign sailors that the Indonesian nation gained additional knowledge of navigation and shipping technology, so that eventually Indonesia had a modern ship industry.

The shipping industry originated from a repair shop where ships were repaired. Then the workshop developed into an industry that designed and built ships as a means of sea transportation, and operated by PT. Indonesian National Marine Shipping (PT. PELNI). Indonesia's ship industry is driven by PT. PAL Indonesia. This company is a BUMN. The founder of this ship company has been pioneered since 1823, during the reign of the Dutch East Indies. The idea of establishing a ship repair shop was raised by the Dutch Governor General of East Indies V.D. Capellen. The name of the company is NV. Nederlandsch Indische Industrie.

In 1849, the means of repair and maintenance of ships began to materialize in the Ujung area, Surabaya. but in 193 the Dutch East Indies government changed its name to Marine Establishment (ME). ME serves as a plant for maintenance and repair of ships. During the Japanese occupation, ME did not change function and remained a repair shop and repair of Japanese army naval vessels under Kaigun's supervision. But during the war of independence, ME was again controlled by the Dutch and was only handed over to Indonesia on December 27, 1949. Since then the name of the ship's company was changed to Naval Upgrading (PAL).
In 1978, the status of PT. PAL is converted into a public company (Perum) PAL. 3 years later, namely in 1981 the form of the Perum PAL business entity was changed to the company with the leadership of Prof. Dr. Ing. B.J. Habibie (at that time he was the Minister of Research and Technology). PT. PAL produces various types of ships, ranging from fishing boats, commercial ships, warships, tugboats, tankers, passenger ships and research ships. Research ships made by PT. PAL is LIPI's Baruna Jaya VIII ship.
Meanwhile the efforts carried out by the government in the field of sea transportation include rehabilitating and increasing the capacity of existing infrastructure, such as the procurement of ferries and cargo carriers, repair of sea ports, container terminals and docks. it aims to further facilitate inter-island traffic, increase Indonesia's domestic and international trade.

The development of sea transportation today is inseparable from these technological advances that have made the Indonesian nation can produce passenger transport vessels, namely Palindo Jaya 500. The ship was first launched in August 1995. The vessel was made to support faster and safer sea transportation facilities. Thus, sea transportation activities will have an impact on community life, nation and state. In 1985 a Presidential Instruction number 4 was issued which aimed to increase non-oil and gas exports to reduce shipping and port costs. Ports that serve foreign trade have increased drastically, from only 4 to 127. For the first time Indonesian shipping entrepreneurs have to deal with competitors such as feeder operators who are able to lease lower costs. Liberation continued in 1988 when the government released domestic market protection. Since then, the establishment of shipping companies is no longer required to have Indonesian-flagged vessels. The type of shipping permit was cut, from five to only two. Shipping companies have greater flexibility in shipping and ship use routes (even if foreign-flagged vessels are used for domestic shipping). De facto, the cabotage principle is no longer enforced.
This year also has the obligation to scrap old ships and procure vessels from domestic shipyards. The shipping

law number 21 of 1992 further strengthened the easing of such protection. Under Law 21/92 foreign companies can conduct joint ventures with national shipping companies for domestic shipping. Through Government Regulation No. 82 of 1999, the government tried to change policies that were too loose, by setting the following policies:

1. Indonesian national shipping companies must have at least one Indonesian flag vessel, measuring 175 GT.

2. Foreign-flagged vessels are allowed to operate on domestic shipping in a limited period (3 months).

3. The agent of a foreign shipping company must have one Indonesian-flagged vessel, measuring 5,000 GT.

4. Within a joint venture, a national company must have at least one Indonesian-flagged vessel, measuring 5,000 GT (doubling from the 1988 deregulation requirement of 2,500). Entrepreneurs of foreign ship agents protested strongly, so the enactment of this provision was postponed until October 2003.

5. Domestic shipping networks are divided into 3 types of routes, namely main route, feeder route and pioneer route. The type of shipping operation permit is divided according to the type of route and type of cargo (passenger, general cargo and container).

The series of regulations and deregulation mentioned above is one factor in the conditions and problems faced by the Indonesian Sea transportation sector, from time to time.

B. Blue Economy

Since the 1990s the issue of sustainable development is defined as a development process that optimizes sea transportation. The Blue Economy can be a framework for sustainable development. Blue Economy is a paradigm of economic development based on trade principles. The Blue Economy conceptualizes transportation as a "Development Room" where spatial planning integrates services, sustainable use of sea transportation. Economically, the port serves as one of the wheels of the economy because it is a facility that facilitates the distribution of production results while socially, the port becomes a public facility where interaction between users (community) includes interactions that occur due to economic activities. More broadly, the port is the central node of a support area (hinterland) and the link with the area outside it.

In general, ports have functions as links, interfaces, and gateways.

• Link (link) which is the port is one of the links of the transportation process from the place of origin of the goods to the destination.

• Interface (meeting point) is the port as a meeting place for two modes of transportation, for example sea transportation and land transportation.

• Gateway (gateway) is the port as the gateway of a country, where each ship that visits must comply with the rules and procedures that apply in the area where the port is located.

C. Sea Transportation Problems in Indonesia

Within a period of 5 years (1996-2000) the number of shipping companies in Indonesia increased, from 1,156 to 1,724, or increased by the company (an average increase of 10.5% pa). While the strength of the national shipping fleet grew, from 6156 to 9195 units (an average increase of 11.3% pa). But in terms of transportation capacity, only slightly increased, from 6,654,753 to 7,715,438 DWT. This means that the average capacity of national shipping companies is decreasing. During this period, the volume of sea trade grew by 3% pa Volume of Transportation increased from 379,776,945 tons (1996) to 417,287,411 tons (2000), or increased by 51,653,131 tons in five years, but not all growth that can be met by capacity of national shipping companies (Indonesian-flagged vessels), even for domestic shipping of Inonesia ports. In 2000, the number of foreign vessels reached 1,777 units with a capacity of 5,122,307 DWT, with a domestic load of 17 million tons or around 31%. As a result, the shipping industry in Indonesia is currently very bad. National shipping companies are not able to compete in national and international shipping markets, due to weaknesses in all aspects, such as size, age, technology and ship speed. In the field of international cargo (export / import) shares of national shipping companies are only around 3% to 5%, with a downward trend. This proportion is very unbalanced and unhealthy for the growth of the strength of the national shipping fleet. 2002 data shows that Indonesia's national fleet shipments are getting worse in the domestic cargo market. Share ownership decreased by 19% to only 50% (2000: 69%). While for international cargo remains at around 5%. On the financial side, Indonesia lost the opportunity to earn foreign exchange amounting to US $ 10.4 billion, only from sea transportation to export cargo / imports only.

Instead of benefiting from the application of the cabotage principle (which is not strict) the Indonesian shipping industry relies heavily on foreign rental vessels. National shipping fleets in Indonesia face many problems, such as: many ships, especially conventional types, are unemployed Due to prolonged cargo waiting times; there is excess capacity, which sometimes triggers an unhealthy price war; there are enough ships, but few are able to provide satisfying services; The level

of dry cargo fleet productivity is very low, only 7,649 tons-miles / DWT or around 39.7% compared to the same fleet in Japan with 19,230 tons-miles / DWT.

The shipping situation is very complicated, because dependence on foreign rental vessels occurs together with the excess capacity of the domestic fleet. This endless circle situation is caused by a non-conducive shipping investment environment. Many shipping companies want to rejuvenate their fleet, but it is difficult to get loans on the domestic money market. And on the other hand it is easier to get loans from foreign sources. Some large companies tend to register their vessels abroad (marked-out). But small and medium-sized companies cannot do it, so there is no alternative except to use cheap, but old and fighting boats. As a result there is a greater dependence on foreign rental vessels and pollution of fleet productivity.

III. RESULT AND DISCUSSION

3.1 Regional Development Strategies

The development of Indonesia's eastern region through the existing port in Surabaya has great potential as a center of growth in the Indonesian region and the ASEAN sub-region. The Surabaya region has great potential with the right location as a liaison with eastern Indonesia.

The Sulawesi Island region has a strategic position both in the national, regional and global corridors. In the national context is the center of production and processing of agricultural, plantation, fishery, oil and gas, and national mining products. Besides rice, the main commodity produced from the plantation sub-sector is cocoa. Other potentials in this region are fisheries and nickel mining sub-sectors. Globally, Sulawesi Island Region is the second largest cocoa producer in the world. In addition, it is also the third largest rice producer in the world and is one of the fisheries exporters. The Sulawesi Island region is also the fourth largest nickel producer in the world.

The Nusa Tenggara Island region is a potential area for extensive salt production in Eastern Indonesia. In the case of tourism for the nationality is based on the potential of natural conditions, especially marine. The Nusa Tenggara Island region is expected to be a storefront of ecological, adventure, cultural and marine tourism and tourism. In the global context, the potential of natural resources possessed is Indonesia's largest fishery exporter. The Nusa Tenggara Island region is also expected to become a global tourism destination. The tourism destination that will be seeded is Sail Komodo which is planned as an international tourist destination. Therefore, the Nusa Tenggara Island Region is an area that has a low movement of goods in Indonesia.

The Maluku Island region has a strategic position both in the national, regional and global corridors. In the national context, Maluku Island is a national fish barn in Indonesia. The role of the Maluku Island Region in terms of national natural resources is based on the potential of fisheries resources, especially capture fisheries and marine fisheries.

Fisheries potential The Maluku Island region is also one of the largest seafood producers in Southeast Asia. In a global context, based on its natural resource potential, it is known as a large-scale producer of fisheries and mining commodities in Indonesia. In the case of tuna fisheries, the Maluku Island Region makes Indonesia the third world ranked tuna producer. Maluku Island is also the largest nickel resource in Indonesia and the world.

The Papua region has a strategic position both in the national, regional ASEAN and global corridors. The Papua region is a food and energy barn based on the potential of mining reserves, especially copper, mostly copper exploration and processing in Timika (Mimika Regency). In terms of food, it is based on the potential of oil palm, namely that the palm oil industry in Papua Island becomes the country's largest foreign exchange, and the potential of sugarcane land for the largest sugarcane production outside Java. The Papua region is also a major palm oil producer in Asia. Then in the global context, based on the potential of natural resources owned, the Papua Region can become a producer of several plantation and mining commodities in Indonesia (especially the Papua Region) and even have a 45% copper reserves. Then in terms of mining, the island of Papua contributes the largest gold resources in Indonesia and the world.

3.2 Port Infrastructure Development

The development of UPP ports can be commercially managed through 3 stages, namely stage I is the ports of UPP are classified into Public Service Agency Ports (BLU) to improve the performance of each port from the technical aspects of providing port operational facilities, improving services such as services Port, browser services and shipping services, Phase II is to conduct port operator collaboration with investors in financing port infrastructure such as landing services, land leases, docks, fields, and gudan and Phase III is the development of port development carried out between the government and the private sector in accordance with applicable regulations such as regulations on Public and Private Cooperation (KPS) and other general regulations governing business activities in Indonesia. The following is an overview of the port combined with the presence of an international scale airport.

III. CONCLUSION

The parties concerned and carried out by fixing various aspects of sea transportation in Indonesia. among others are:

1. Policy Aspects

The government has made many good policies related to the development of better sea transportation. One of them is by creating a National Port Master Plan (NRMP) which is valid until 2030 and integrated with the MP3EI program. In addition there is a pendulum archipelago program initiated by a national BUMN, namely Pelindo, which seeks to integrate all ports in Indonesia. This program will later make several major ports in Sumatra, Java, Sulawesi, and Papua as the main transit ports to then go to the surrounding ports. This program is expected to facilitate the flow of national sea transportation.

However, in addition to policies for managing ports, the government must also make policies related to the national shipping industry. So far, the national shipping industry has not been able to develop properly due to the absence of adequate policy support from the government. Problems such as the high cost of capital and the high composition of imported components should be solved by making good policies.

The government is expected to appeal to banks to provide more rational capital costs to the national ship industry. In addition, to reduce ship components that are imported, the government should be able to provide more incentives (such as tax holidays, as well as other tax breaks) for overseas call component companies that have the technology needed and want to transfer technology.

2. Management Aspect

To improve the professionalism of port managers, the role of the private sector in Indonesian ports should be increased. So that the emergence of healthy competition in the port will improve the overall quality of port services.

In addition, the quality of the shipping fleet must also be improved, both in terms of service and security. The management of shipping management must prioritize customer satisfaction, not just complete the obligations mandated by the state.

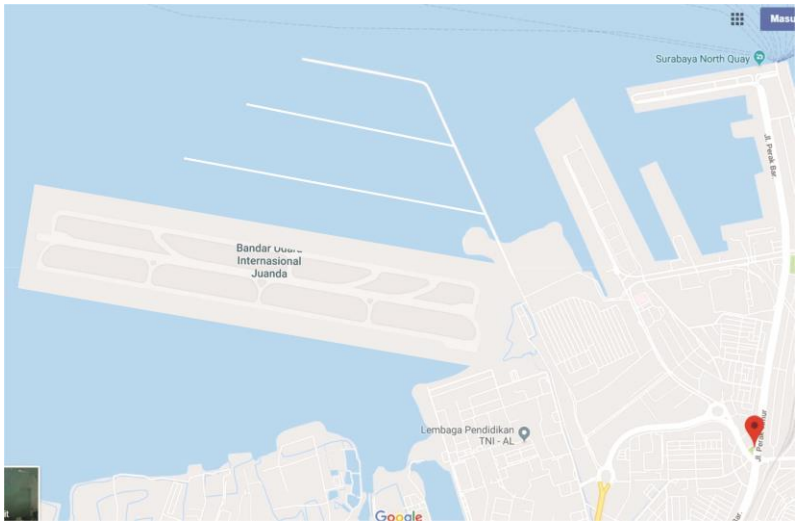
3. Infrastructure aspects

Many problems with sea transportation are caused by lack of support for existing infrastructure. Like the lack of depth from the ports and the existing sea lanes. This will prevent large vessels from leaning especially on Panama-sized vessels. The result is higher logistics costs and constrained development. Likewise, the problems that arise in the national shipping industry. The capacity of Indonesian shipyards has not yet been able to make vessels with capacities above 60,000 DWT. This will be a potential loss to Indonesia where demand for ships of this size is increasing as the volume of world trade increases.

Therefore the government should give serious attention to the development of sea transportation infrastructure in Indonesia. Such attention can be done in several ways, including by increasing the existing port capacity, improving marine navigation technology in Indonesia, and increasing the presence of marine security fleets in Indonesian sea lanes.

Sea transportation projects provide many challenges for planners, constructers, managers and policymakers to bring more transparency to the decision area that major players are often unwilling to provide complete information about all the details. But the important conclusions to be followed from this type of analysis should not be misinterpreted as a warning against such sea transportation projects. Failure with sea transportation projects does not occur with natural law.

First of all, there are not only negative cases but also a number of large transportation projects that have been planned, implemented and operated successfully. Secondly, innovative projects, which have demonstrated substantial cost overruns during construction, can develop successfully at a later stage and are characterized as success in historical views. Third, criteria are mainly selected for time and cost. Furthermore, changes in performance measures for transportation services require the courage to invest in sea transportation projects and to overcome problems related to uncertainty. It can be expected that the industrial revolution-4, namely the upcoming cycle of digitalization in production and human life, will provide major changes in the transportation sector.



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