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EXPLORATION OF THE DEVELOPING MARITIMETRANSPORTATION REGIONS OF INDONESIA

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ABSTRAK

The islands in Indonesia can only be connected by sea routes between islands. Sea is not dividing, but uniting the various islands, areas and regions of Indonesia. Only through a nexus between the islands, between the beach, the unity of Indonesia can be realized. The cruise that connects the islands, was once the lifeblood of unifying the nation and the State of Indonesia. Cargo distribution is one of the biggest problems that slows down economic development in several regions, especially in eastern Indonesia. This creates a price differential between the two regions, with prices in the east being higher than in the west. In order to tackle this phenomenon, Indonesia government has launched several policies that are expected to force out economic equality for all regions especially and trigger the growth in peripheral area. The imbalance progress of regional development makes the sufficient infrastructure facility only available in western region especially in Java region. The propose of this articel is to identify government programs that are appropriate for the conditions of service gap in the sea transportation regions of Indonesia. The developing from peripheral regions, improving human quality life, and economic self-reliant becomes the foundation for the government to implement the Public Service Obligation project by issued the Sea-Toll Road program for reducing the economic disparity, inequality, and trigger the economic growth which characterized as a maritime country. However, in the implementation process, sea tollway programs face various challenges. Shipping of Short Sea Shipping (Coastal Shipping) as a backbone of national goods transportation has not realized.

Keywords: *Sea Transportation, Developing Regions of Indonesia, Government Programs*

Introduction

Indonesia is an archipelagic country, rich in natural resources, strategically located between the Indian and Pacific Oceans, and about two-thirds of its land area is ocean. Indonesia is currently facing a number of major problems in burden sharing related to the availability of infrastructure, shipping patterns, supply and demand for sea transportation, including port connectivity, which requires an advanced and reliable sea transportation system.

Therefore, the development of national shipping industry as a strategic sector, should be prioritized in order to improve Indonesia's competitiveness in the global market. Because almost all commodities for international trade is transported by infrastructure maritime transport, and balancing regional development (between eastern Indonesia and western) for the sake of the unity of Indonesia, because the area is remote and less developed (the majority located area of eastern Indonesia is rich in natural resources) requires access to the market and got the service, which often can only be done with maritime transport.

In addition, Indonesia also has an unequal economic situation between the western and eastern regions as reflected in the GDP share. More than 80 percent of GDP is generated by the western region, while the eastern region contributes less than 20 percent (Indonesian Bureau Statistic, 2018)

Cargo distribution is one of the biggest problems that slows down economic development in several regions, especially in eastern Indonesia.

This creates a price differential between the two regions, with prices in the east being higher than in the west. Marine transportation is Important role in the island regions for inter-island travel needs using marine freight transportation (Rumaji and Adiliya, 2019)

Even though Indonesia has great maritime economic and industrial potential, the concentration of population and industry is unequal, even though 60 percent of the population and 89.12 percent of industry are on the island of Java (Fahmiasari, H. & Parikesit, D, 2017). This situation is exacerbated by the condition of Indonesian ports and shipping which are considered inefficient and imprecise, resulting in high logistics costs and economic inequality in Indonesia. For instance, the shipment to the Western remote island and the Eastern part of the country frequently experience empty or not full cargo and this situation is aggravated by extremely poor port infrastructure and facility.

Moreover, according to World Bank 2023 Logistic Performance Index (LPI), Indonesia is ranked 61 th in the world, where the total score is 3 on a scale 1 to 5. Compared to ASEAN's closest neighbor, Singapore, ranked 1st in the world with a score of 4.3, Vietnam ranked 46th in the world with a score of 3.3, and Malaysia ranked 26st in the world with a score of 3.6 (World Bank, 2023). In fact, this condition creates a very large disparity in logistics costs and causes a large economic disparity between remote, rural, outermost areas and the borders of Java and Indonesia.

Indonesia's geographical location as an archipelagic country makes sea transportation important in creating inter-island connections for the transportation of goods. In contrast, the 2018 Global Competitiveness Report (GCR) data shows the efficiency of Indonesia's port services ranks 63 out of 173 countries. This rank is far below with other ASEAN countries such as Singapore which settled in the first position while Malaysian in 17th. Moreover, the quality of sea transportation's infrastructure in Indonesia is miserable comparing with other modes quality like a road (ranked 64th), air transport (ranked 51st) and railroad (ranked 30th).

In particular, this condition is not surprisingly as the utilisation of maritime transportation both for passenger and freight are very low. Based on Indoensian transport share in 2018 that the movement of freight almost covered by road vehicle about 91,25 percent while sea transportation only distributes a goods around 7,07 percent.

The propose of this articel is to identify government programs that are appropriate for the conditions of service gap in the sea transportation regions of Indonesia.

Method

The method used is based on relevance information collected in documents as well as in analysis of relevant data collected by the authors.

Results and Discussion

1 Maritime Problems in Indonesia

As the country with largest territory it is undoubtedly that equitable infrastructure distribution is a big challenge for government. However, one of the biggest reason high logistic cost in Indonesia is due to insufficient maritime infrastructure. The poor facilities such as shallow waters and short jetty lengths are common in most ports in Indonesia. Moreover, other modes infrastructure such as road, railway, pipeline are also far from enough to operate a minimal port level. For instance, in the case of Muntok port in Bangka Belitung Province.The port condition is extreme due to heavy sedimentation and there is no serious action to solve this situation such as dredging the port or planning a new port development. Therefore, this situation makes a bottle neck for distributing of goods. As a consequence, the inflation in Muntok, have reached about 7,78 percent in 2016 (Indonesian Bureau Statistic, 2018).

However, poor port management does not occur in non-commercial ports, although the largest ports such as Tanjung Priok and Tanjung Perak are facing serious problems. For example, Tanjung Priok has a problem with heavy traffic jam where this condition will delay the goods movement. On the other hand, in Tanjung Perak case, the port has a serious problem about water depth. In some cases, a large vessel needs to wait until the tide sufficient to anchor the ship.

The imbalance progress of regional development makes the sufficient infrastructure facility only available in western region especially in Java region. It proofs by two largest port like Tanjung Priok and Tanjung Perak are settled in Java. In addition, shipping companies are reluctant to serve remote areas due to various conditions such as poor port facilities and extreme load factors which they often face when returning to

their point of origin with empty cargo.

This condition causes a very large price difference between Java Island and Eastern Indonesia. For example, in the Papua region before the Sea Highway program, the price of a cement package could go up to almost $140. However, this condition also occurs in western suburbs such as Natuna and Anambas Island.

Besides that, in Indonesia maritime accidents can be caused by unpredictable factors (such as weather and natural disaster) and internal factors (technical and human). The geographic nature of Indonesia as an archipelagic country as well as the extensive usage of maritime transportations across the islands are accidents are difficult to be completely prevented. Various types of maritime accidents frequently occurred ranging from fire, sinking, and collision. According to KNKT 2017, had the highest number of maritime accidents in Indonesia, occurringat least once in a month. From the total 78 cases recorded between 2014 - 2018, fire incidents werethe most common with more than 35 percent of the total numbers, closely followed by ship sinking andgrounding with 33 percent. Interestingly, the majority of these accidents did not take place in the seas, but happened instead in straits, lakes, rivers, or other enclosed bodies of water. Despite experiencing a slight decrease in 2018, when compared to other countries, Indonesia has not improved its maritime safety. *Baird Maritime*, a notable website on maritime safety issues, still puts Indonesia as the world's worst record during that year based on fatal accidents in Indonesia by itself alone contributed to more than 35 percent of the 2018 global total.

Among the most fatal incidents in Indonesia are: the MV Senopati Nusantara 2006 with 46 people died and 347 others not found — caused by a combination of bad weather human error from the ship captain in addressing the situation 77; MV Sinar Bangun 2018 with more than 165 people died and lost and; MV Arista 2018 with more than 10 people died. 79 With two fatal accidents in 2018, the number of victims that year was high.

2 Government Development Programs

In order to tackle this phenomenon, Indonesia government has launched several policies that are expected to force out economic equality for all regions especially and trigger the growth in peripheral area. To further detail of those policies we will explain it more broadly in sub-chapter.

1. Nawa Cita

Nawa Cita is the nine priorities agendas that were translated into the Indonesian National Midterm Plan or RPJM Plan or RPJMN (Rencana Pembangunan Jangka Menengah). Through its principles every aspect of Indonesian national developing should be based on nine principles of Nawa Cita. This agenda consists:

1. State Existence to protect and provide safety for the citizen
2. Government existence in developing clean, effective, democratic and trusted governance
3. Develop country from the frontier and strengthening regions and village in Indonesiaunity
4. Strong state role in reforming into a free corruption, dignity and trusted of system and law enforcement
5. Improving better human quality of life
6. Increasing people's productivity and competitiveness in international market
7. Self-reliant in economy by mobilizing strategic sector on domestic economy
8. Nation character building
9. Strengthening unity in diversity and social restoration.

Furthermore, those principles that stated the developing from peripheral regions, improving human quality life, and economic self-reliant becomes the foundation for the government to implement the Public Service Obligation (PSO) project by issued the Sea-Toll Road program for reducing the economic disparity, inequality, and trigger the economic growth whichcharacterized as a maritime country.

2. National Logistic Systems

In term to develop well integrated logistics and network connectivity in Indonesia. The government in Yudhoyono's cabinet was launched the Presidential Decree Number 26 in 2012. This decree can be seen as a government attempt to provide a guidance for both government and private sector in building an effective and efficient national transportation system.

The aim of the maritime transportation under this policy is to be coordinate and to synchronize the inter-islands transportation and then continue to the hub ports in the Western andEastern regions in Indonesia [5].

In addition, Indonesia has a goal in the

regulation to implement a logistics system that is locally integrated and globally interconnected for the benefit of national competitiveness and people's welfare. Locally integrated means that by 2025 Indonesia aims to have already achieved the integration of logistics activities from rural areas to the cities. With this vision in mind, Indonesiais moving in the right direction to experience a state of advancement for all the Indonesians in the framework of prominent maritime state. Moreover, the globally connected target is to achieve thenational logistics systems by using the Indonesian National Single Window systems whereas with this program the government can realize a competitive and productive business environment within the country, so that Indonesian products are able to compete in the global market.

The national logistics systems based on the blueprint developing of national logistics systems. The system shows the connectivity of each part of Indonesia to city inter-island, to the hub port to shipping around the world.

3. Pendulum Nusantara Network Model

According to Lun & Browne (2009), the pendulum network pervades a regular itinerary between sequences of ports that serviced by geographical proximity. Several ports are serviced along one coastal area and this process is repeated on a regular basis. Pendulum model are frequently used to connect east and west trading routes, the Pandulum model is often used to connect eastern and western trade routes. The shuttle service is based at a central port which acts as a turning point between two different merchant shipping services and is serviced by post-Panamax vessels.. In high-volume global trade routes such as the US West Coast-Far East-Europe trade, the design of this type of liner service has become common. As a result, a fresh generation of charging centres along the shipping routes east-west has been created over the past decade.

These sites are strongly dependent on the traffic stream produced by the interaction of locations that are commonly segregated and stimulated by port place Notteboom (2004).

Furthermore, Chen & Zeng (2010) the operational feature of Pendulum network in the container shipping routes can be identified as two types relating on their operation necessity.

The pandulum shuttle service includes a regular schedule between gates which are frequently serviced due to geographical proximity. Several ports along one coastal area are serviced and this process is repeated regularly (Lun & Browne, 2009). Chen & Zeng (2010) argued that container shipping networks can be distinguished into two types depending on their operating characteristics.

As that Pendulum network are commonly built to connect between East and West Routes. In Susilo Bambang Yudhoyono’s administration, Indonesian government has applied to settle down the maritime route between the western areas and eastern areas by built the Pendulum Nusantara network based on the Precedential Decree Number 26 in 2012 about the national logistic systems. Indonesian Port Company (Pelindo II) as the stated-owned company tried to develop themodel with its visionary plan, they launched Pendulum Nusantara, the five-hub port network of container shipping backbone (Fahmiasari & Parikesit, 2017).

Based on the Pendulum Nusantara model will swing the containermovement through the five hub-ports such as Belawan, Tanjung Priok, Tanjung Perak, Makassarand Sorong. Those main sea-corridors will be connected with several sub corridors which expected span remote areas.

4. Sea Toll Road Program

As the largest archipelagic country in the world, Indonesia is unbalanced with 60 percent of the population and 89.12 percent of industry located on main islands such as Java. This condition has caused a high disparity between Java Island and the peripheral area. To overcome this phenomenon, the Indonesian government launched the Sea Highway program in 2016. The main objective of the project is to reduce price differences by strengthening ports and logistics integration using a shipping support system. And for the long term would able to boost the economic growth in remote, rural, outermost and borderland regions.

Currently, the Indonesian government is trying to implement a sea lane program project to solve some problems related to burden sharing and reduce tariff differences. The plan includes 24 strategic ports from west to east Indonesia.

Between 2015 and 2019, the Indonesian government focused on developing 24 strategic

ports for new facilities and increasing their capacity. However, the price difference due to the high cost of Indonesian logistics must be resolved immediately. That's why the Indonesian government took the initiative to implement the maritime route program in 2016 and 2017. The 2016 and 2017 Sea Highway Program uses the direct network concept that connects hub ports with sub feeder ports or multi port call networks.

The Port of Tanjung Perak is considered one of the most important ports in the western part of the country and serves as the port of departure for cargo bound for eastern Indonesia. In connection with the master plan for the Sea Road program to be implemented in 2019, the concept that will be presented is the hub-and-a-half network, where the feeder port is an important link between the hub and the feeder sub-ports. This concept allows the use of larger ships, which is expected to reduce operational costs because it can achieve economies of scale.

In 2016, the Indonesian government adopted a strategy by establishing six routes connecting major ports with underserved ports on the country's smaller islands. This line started operating in early 2016 and is operated by the state-owned PELNI. The six routes specified in the Public Sea Transport Ordinance are: Al.108/7/8/DJPL-2015 as follows.

In the beginning of 2017, the Indonesian government decided to change the routes after evaluating the implementation of Sea Toll Road Programme in 2016. Several routes were added, increasing the number of routes to 13. Four routes were changed from the previous route. The board found that the ship had to cover a great distance on the route laid down in 2016 and therefore had to be replaced.

In 2017, the Indonesian government also determined the type of ship, main port route and secondary supply port, shipping frequency and maximum sailing time for ships. Apart from the number of routes, what differentiates this program from last year is that the Indonesian government allows private shipping companies to participate by serving certain routes that PELNI cannot handle due to a lack of facilities. The government opened bidding process to assess the private shipping company that has capability to serve the certain routes

Furthermore, this project has become one of the most significant maritime network projects in Indonesia, where the government is stressing a massive expansion of the capacity of this program. In addition, the subsidy models are increasingly diverse, so that in 2018 there are two types of subsidies, namely subsidies for ship operating costs and subsidies for container costs. On the other hand, the budget of the project has increased remarkably from 2016 to 2018, but in 2019 the subsidy is decline around 50percent from the last year.

To connect west and east as a whole, the Indonesian government built a very wide sea route called the Laut Toll. According to Zamal (2018), we can identify several sea lanes based on their designs, such as pendulums, circles and butterflies. However, Indonesian Sea-Toll Road was originally the part of the pendulum network. Adliya (2017) explained that the Sea Highway line was built on a modified Pendulum Nusantara network with the aim of being able to cover all regions as a whole.

In particular, the Sea Highway project is not only designed for the distribution of goods from the city to the outskirts. This project also aims to improve the economy in remote, rural, foreign and border areas through the creation of new industrial areas through the development of new industries or special economic zones in suburban areas based on sea potential. Until now, the Ministry of Transportation has designated 19 sea lanes and 24 ports to support the Sea Highway project. Contains 5 hub ports and 19 feed ports.

The development of the implementation of sea toll way from 2015 to 2019 has increased in quantity. The total routes serving transportation through the sea toll program increased from 2015 to 3 routes, in 2016 to 6 routes, in 2017 there were 13 routes and in 2018 to 18 routes. By 2019 there will be 18 routes planned to be served. Most of the routes chosen by the government are routes that do not have much demand, so the operational pattern of sea tolls is more oriented to ship shipping that promotes trade. In 2015 and 2016, all routes were operated by PELNI which financed ship operations with support systems. The number of subsidies issued by the government in 2016 is IDR 218.990.000.000,00. Whereas in 2017 out of 13 routes operated, there are 6 routes operated by private shipping with auction patterns. This year, government subsidies amount to IDR 355.051.237.000,00 (Ministry of Transportation, 2019)

In 2018 there were several adjustments to the subsidy pattern on 18 operating routes. If in the previous three years subsidies were given only to

ship operations, this year subsidies were also given to rent reefer containers. This reefer container subsidy is done to be able to attract the return charge to the base/loading port. Of these 18 routes, 11 routes are served by the government (PELNI 6 routes, ASDP 2 routes and Djakarta Lloyd 3 routes) while the rest (7 routes) are handed over to private companies.

The amount of subsidies distributed by the government in 2018 was IDR 447,628,808,000.00. The significant increase in subsidies in the 2017-2018 period was due to a significant increase in the number of vessels. In 2017, only 13 ships were operating on 13 operational routes. In 2018, 18 routes were served by 32 ships. The number of trips also increased significantly between the two years. In 2017 there were 254 of 152 travel plans, in 2018 there were 352 of 239 travel plans. Ports included in this program can be classified into three forms: main/cargo ports, transshipment ports and transit ports. Transport volume increased significantly in 2016-2017 from 81,404 tonnes to 233,139 tonnes. However, in 2018, the volume of transport reached 239,875 tons, which means a slight increase compared to the previous year. Dividing this amount into transportation costs and return costs, the average return fee is only 20percent of the cargo load (Department of Transportation, 2019).

We know that by implementing the Sea Tollway concept, it is expected to create:

1. An integrated shipping system has an impact on increasing accessibility to reach all regionsin Indonesia.
2. Shipping will be able to increase efficiency which in turn can reduce logistics costs nationally, thereby reducing price dispensation.
3. Ports will be very efficient in terms of productivity and will make Indonesia included inthe 10 largest port countries in the world.

Therefore, looking at the condition of Indonesia, the basic idea of sea tollways, the development of the implementation of the sea tollway program, we can discuss several challenges in implementing this program. First, the backload brought from the East to the West is still lacking. First is the low level of accessibility that reaches all regions of Indonesia from the sea tollway program. Data shows the backload of the Tanjung Perak-Timika route is only 0,39percent, the Tanjung Perak-Waingapu route is only 7,93percent, the Tanjung Priok-Natuna route is only 9,04percent.

This also can be seen from the Indonesian National Ship Owner Association (INSA), until 2020 national shipping companies can only obtain the international shipping market share of around 30percent of 550 million tons of containers valued at US$ 22 billion, The domestic market share is estimated to get 80percent of 370 million tons of cargo which value reaches IDR 23 trillion (S.N. Bahagia. 2018).

Another thing that can be used as a basis to support the first challenge is the ability of the national fleet carrying capacity for domestic cargo to only reach 54,5 percent and only 4 percent for exports, the rest are still controlled by foreign fleets. Hundreds of ships moving in the territorial waters of the archipelago are chartered vessels from other countries and most shipping companies do not have their own vessels. In addition, many of the ships are old and more than 20 years old. The area of the port needed for ship repair and maintenance is only able to meet 83 percent of the need. The shipping line network is currently not yet integrated with maritime services (W. Bimarso, 2018) The second challenge is the price disparity that is still felt in eastern Indonesia. Nationalexport-import activities that are served by foreign vessels are 96,59 percent, while domestic cargo transportation served by foreign vessels is 46,8percent. As a result, the total national foreign exchange taken by foreign vessels reaches 11 billion US dollars or IDR 99 trillion per year (S.N. Bahagia. 2018).

Shipping of Short Sea Shipping (Coastal Shipping) as a backbone of national goods transportation has not realized. The high-cost Economy is not only caused by sea transportation, but also by land transportation and Local Monopoly from local businesses, such as PELNI Sea Toll Road, with multimodal upgrading also needs attention. The consultant invited by PELINDO II concluded from Drewry's research that the distribution of transportation costs is as follows:Land pays 50 percent, port fees 30percent, sea pays 20 percent (W. Bimarso, 2018). Maximum east-west movement of 20 percent (including Sorong, Jayapura, Ambon, Ternate, Kendari, Pantoloan, Tenau) because there is no industry.

Third, it is necessary to improve port performance. Port productivity must be increased to 25-30 boxes/crane/hour (W. Bimarso, 2018). 70percent of Indonesia's exports of goods and raw

materials pass through Singapore because Singapore has succeeded in building a transhipment port for world trade (S.N. Bahagia. 2018). Fourth is the use of information and technology in the implementation of the sea tollway. The process of shipping goods in the digital world today must be supported by the application of the latest technology, so that in addition to improving the performance of the supply chain but alsoproviding a sense of security and certainty for consumers, operators, and producers.

Thus, it is also necessary to pay attention to the use of technology in determining the standardization of vessel type and size, revitalization of advanced technology-based shipyard facilities and equipment, development of innovation capabilities and shipbuilding design, and development of domestic ship component industries .

Conclusion

As a maritime country, Indonesia has a long history as one of the rulers of the sea in theworld. With its strategic position as a world trade route, Indonesia has a big prospect to becoming the advanced maritime country. Realizing this prospect, the Indonesian government launched theSea Tollway program in 2014. Programs with the concept of sea connectivity that are served by regular and scheduled fleets from the west to eastern Indonesia.

In the implementation process, sea tollway programs face various challenges. The first challenge that arises is that backload is still lacking. This problem arises because the industry in Eastern Indonesia is low so that the back-ships transportation is not optimal. The second challengeis price disparity in eastern Indonesia, although this program is intended to reduce the level of disparity. The third challenge is the port performance problem, and the fourth challenge is the useof technology and information that has not been maximized.

Problems usually arise in every development program, including the sea highway program. Statistically this program shows an increase every year, so it still gives hope that this program will show significant results the following year. Currently, the high number of ship accidents in Indonesia must be a concern of all parties involved, not only ship owners, but also the government, relevant authorities and the public who will be more active in informing them. According to observations, the main cause of ship accidents is overloading both cargo and passenger transport. Service users are often not even required to board a full cruise, although proof of origin may be provided on board.

Reference

Adam, L. & Dwiastuti, I. Membangun Poros Maritim Melalui Pelabuhan. Jakarta: Lembaga IlmuPengetahuan Indonesia. 2015.

Adiliya, A., Analysing an Integrated Maritime Trasnsportation System: The case The Port ofTenau Kupang As a PotentialTranshipment Port for South-East Indonesia. 2017

Fahmiasari, H. & Parikesit, D., The Asian Journal of Shipping and Logistics. *Container ShippingNetwork Efficiency Comparison in Indonesia: Nusantara Pendulum and Sea Tollway. 2017.*

Fahmiahsary Hafida, Prikesit Danang. "Container Shipping Network Efficiency Comparison in Indonesia: Nusantara Pendulum and Sea Tollway ". The Asian Journal of Shipping and Logistics, vol 33, no. 2, pp: 079-084, 2017.

Faturachman Danny, Mustafa Shariman. " Sea Transportation Accident Analysis In Indonesia "The 2012 International (Spring) Conference on Asia Pacific Business Innovation and Technology Management, Pattaya, Thailand. Procedia - Social and Behavioral Sciences, vol40, pp : 616 – 621, 2012.

Hasanah, U., Alafi, J., Nisa, R. L. K. & Wicaksono, S.. Dynamics in Logistics. *Fleet Expansion Strategy of Indonesian Container. 2017.*

Indonesian Bureau Statistic, 2018. *Statistik Indonesia*, Jakarta: BPS.

Kurdin Akbar M and All. "Operational Manajement Marine Transportation on Shipping Lanes Wangiwangi, Kaledupa, Wakatobi-Indonesia". 2nd Global Conference on Business and Social

Since. Vol 211, pp : 184-191, 17-18 September, Bali, Indonesia, 2015.

Ministry of Transportation, "Continuing Connectivity, Opening Logistics Paths and Suppressing Price Disparity", January 17th , 2019.

Rumaji and Adiliya. " *An a Port Maritime Connectivity in South-East Indonesia: A New Strategic Positioning for Transhipment Port of Tenau Kupang*". The Asian Journal of Shipping and Logistics. vol 35, no. 4, pp: 172-180, 2019.

Rumaji and Adiliya. " *An a Port Maritime*