The Implication of Indonesia's Sea Toll Road towards the Sustainability of Its Coral Reefs Preservation: The Resilience and Prospect

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Abstract: This paper analyze the important of coral reef conservation in Indonesia within the massif sea transportation. Sea toll road and China's Belt and Road initiative become one of important factor as well as indicator the destruction of coral reef. Indonesia is one of the richest coral reefs in the world, it is one of the important ecosystem both for productivity and high biodiversity. As one of tropical country which consist of water and sea, Indonesia has become the highest contributor of 18% in a world coral reefs. Globalization allows the rapid development of transportation, thus both human mobility and goods become significant. Marine transportation is one of the massive transportation tools used for both business and travel, as well as private both locally and internationally. These activities could threaten the existence of the coral reef. The massif destruction of coral reefs will likely affect numbers of sectors as well as the ecosystem around it. Thus, it is important to understand the resilience and the prospect as well as preserve and maintain it from the extinction. In analyzing this problem the concepts and theories of international cooperation become a useful tool of analysis. Through the cooperation and involvement of the formal and informal sectors, Indonesia's centrality in conserving coral reefs is important for further study. The result of this research is supposed to be a reference for the decision maker in the future.

1 INTRODUCING

This paper want to talk about the implications of Indonesia's Sea Tolls in the sustainability of coral reef conservation. Indonesia is a country largely composed of seas and islands. The location of the Indonesian state also makes it one of six countries together with Malaysia, Timor Leste, Philippines, Papua New Guinea, and Solomon Islands that enter into the coral triangle world. This makes the six countries have the highest coral reef biodiversity in the world. Since 2009, every May 8 is celebrated as the day of the world's coral reefs. (CNN Indonesia, 2018)

Based on data from the Indonesian Institute of Sciences (LIPI) in 2017, it was identified that only 6.39 percent of coral reefs are in excellent condition. In addition, coral reefs are in good condition as much as 23.40 percent, with sufficient conditions 35.06 percent, and poor condition there are 35.15 percent. This result is taken from 108 locations and 1064 stations in all Indonesia's waters. The category is based on the percentage of live coral cover. Very good category when the cover reaches 76-100 percent, good category with cover 51-75 percent, enough category at 26-50 percent, and bad category with 0-25 percent cover.

The condition of coral reefs is certainly very important for marine ecosystem life. Coral reefs are widely used as a home and a living pedestal of coral fishes, as well as other marine biota. Therefore, maintaining the quality of coral reefs is needed. It takes tens to hundreds of years in the coral reef growth process. Not only for sea creatures, coral reefs are also a source of protein for humans though fish that grow big I the surrounding area of coral reefs. This means, there are about 120 millions people dependent on the supply of dish in the waters as a source of food. In addition, coral reefs also include a source of revenue of 2.4 million US dollars through the fishery business and 12 million US dollars of tourism business in Southeast Asia, such as the island of Komodo and Raja Ampat Island. This ecosystem also has a high productivity and biodiversity species, so coral reefs are also known as laboratories of ecology and potentially as medicinal,

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anti-viral, anti-cancer, and so on. (Wahyu D. dkk, 2013).

Look at that issues, its very clear that coral reefs are very important both for the inhabitants of the oceans and for human life. The question then what will happen to the corral reef when it is linked to the sea tolls, which is one of the infrastructure to connect all parts of Indonesia as an archipelagic country by sea. What the implications of the sea tolls on coral reefs that are scattered almost throughout the waters of Indonesia.

2 CONDITION OF INDONESIAN CORAL REEFS

Based on Greenpeace's records, the coral reefs in Indonesia reach 50.875 kilo square meters which accounts for 18 percent of the total coral reef in the world and 65 percent of the total area of coral triangle. Most of the coral reefs are located in the eastern part of Indonesia. Indonesia has coral reef biodiversity, there are approximately 590 hard coral species, 76 representing more than 95 percent of species recorded in the Coral Triangle Center.

In Indonesia's coral reefs there are fish and other marine biodiversity that is very much and diverse, at least have recorded about 2200 species are considered endemic and show that most species have extensive and interconnected races throughout the Coral Triangle Area (Desiana Wahyu, et al., 2013)

According to Suharsono, senior researcher and coral reef expert of LIPI Oceanography Research Center, the condition of coral reefs in Indonesia has decreased compared to previous years. The main causes of this are human activities, global climate change, and pests diseases. The spread of Indonesian coral reefs is found from Sabang to Merauke with the highest concentration of distribution is in the central and eastern waters of Indonesia.

According to data from 2007 Coral Reef Rehabilitation and Management Project (COREMAP) survey, Indonesia's coral reefs are considered to be very healthy. Entering the year 2014, a study conducted by researchers of the Indonesian Institute of Sciences (LIPI) at 1135 stations shows there are 30.4 percent of the location of coral reefs are in damaged condition. Seen only about 27 percent of coral reef sites are declared in good condition. Nevertheless, Suharsono, principal researcher on coral reefs at LIPI, said that coral reefs damaged by nature events can generally return to normal. Moreover, the implementation of the COREMAP II Program of decentralization and acceleration has improved the condition of coral reefs in good condition (2% increase in national trend).

3 INDONESIA'S SEA TOLLS INFRASTRUCTURE

A whole of Indonesia is an island nation and has a vast ocean. The total area of the sea in Indonesia reaches 5.9 million square kilometers (National Sea Jurisdiction), the area comprises 2.9 million square kilometers of the Nusantara Sea, 0.3 million square meters of Territorial Sea, and 2.7 square kilometers is Exclusive Economic Zone Indonesia (ZEEI). Based on its geo-strategic, Indonesia lies between the Asian Continent and the Australian Continent and has two Indonesian Archipelagic Sea Lines (ALKI) that have been established under the international maritime law conventions. In addition, the potential of Indonesia's marine resources is also very abundant, not only fish but also minerals located below sea level. That materials are tin, iron ore, gold, bauxite, nickel, and oil gas. Coastal resources did not escape the form of coral reefs, mangroves, etc.

Some of the things that make infrastructure in maritime it becomes very important. The Sea Toll Project is one of President Joko Widodo's ideals to create effectiveness and efficiency in development and economic growth in Indonesia. During his leadership, the Sea Toll can not be separated from the vision and mission of Jokowi and JK government. Together with the development of integrated and connected marine infrastructure such as the Sea Toll, the main outcome to be achieved is efficiency, especially in travel time of faster transport at a cheaper cost. Ahead of Presidential election in 2014, Presidential Candidate Jokowi said "Sea Toll is not a road, meaning there is a deep sea port, there are ports in Sumatra, Java, Kalimantan, Sulawesi and Papua. There is a large ship that paced every day, so the prices in all these are the same."

Accumulatively, it is expected to reduce high cost economies and reduce price gaps between regions, create equitable distribution and ultimately increase the competitiveness of Indonesia's economy in the context of global trade. This way also means that business actors will get a better profit margin, which will attract investors to compete to invest and the national economy will move more dynamic. Employment will increase,

state revenues increase, and the welfare if society will be better. Basically the Sea Toll is an effort to provide the sea transport network regularly and though the implementation of sea transport service and improvement of port facilities. Sea Toll will form a node and connect the main port (Hub) with the feeder ports (Feeder).

As in general, mass transports are already working well in some developed countries, the Sea Tolls will certainly provide a regular and regular sea transport service and can connect it to smaller, more evenly distributed ports in the western and eastern parts of Indonesia. In this way the sea will actually be a connection between the islands in Indonesia. Now the sea is no longer a separator, but rather as a land hub. From any port we depart, through the Sea Tolls infrastructure can get us to any port in the Indonesia territory. Sea Tolls is expected to be a solution of even distribution of regional development until now more focused to the island of Java. Evidenced by looking at the Gross Regional Domestic Product (GRDP) based on constant 2010 prices, which is calculated in billion rupiah. Total GDP in Sumatra is 1.774.934,9; Java 4.883.536,3; Bali and Nusa Tenggara 249.171,2; Kalimantan 794,6; Sulawesi 485.369,8; Maluku and Papua 213,286. Comparation of GRDP in Java and outside Java indicates that the funds flowing only to the island of Java. Many areas are rich in natural resources such as squeezed juice and shipped to Java, while those returning to the area are few. As a result of this would make Java Island more advanced on the contrary in the area who getting left behind. At the end of Sea Toll is a means of driving the engine of the economy to all regions in Indonesia.

The sea toll which is still under construction and equipment is now showing more positive result. Secretary General of the DPP INSA (Indonesia National Shipowners Association). Budi Halim highlights on the Sea Toll of domestic maritime axis to the world. According to Budi Halim, the Sea Toll is a way to get all logistics in all parts of the archipelago cheap. In 2016, while there are 24 newly built ports and no fleets, there are 12 roads ready for the road, and by 2017 there will be 3 port routes (Himaindonesia. 2016). Budi Halim said "There is a shortage of the port built, the new in and out the ship leaning. There should be logistic support, industrial, and powerplant to become one unit in order not to be high cost, and both are subsidized by Pelni Company. The subsidy should be given to the local government, increasing the production of its home industry so that there is a backlink from the area, let not empty the charge from there". Then concerning the maritime axis, according to him is the access from Indonesia as a sea that is passed by the international. A clear example can be seen from the Malacca Strait, it is the territorial oceans of Indonesia but who get the toll fee is Singapore. Therefore the rules and regulations of Indonesia Should be more clear.

4 EFFECT OF SEA TOLLS ON CORAL REEF CONSERVATION

The increasingly massive Sea Tolls Infrastructure will greatly affect the various marine life on the surface, coastal, and in the ocean. It can not be denied that the development of a technology there will be a sacrifice made to achieve it. Examples such as the Indonesian Sea Toll, the continuous development that takes place the sea as the main character here is well realized or not, suffered a very fatal damage if not immediately addressed.

Professor of marine biology research Center of Oceanographic Research LIPI, Suharsono, added that of all damaged coral reefs is caused by mass bleaching, but most of it arises because of lack of public awareness of the importance of maintaining the marine biota. Whereas the existence of coral reefs is very important but its growth every year is very slow when it compared with the damage is so massive. The coral bleaching events of coral reefs are caused by a combination of climate change and global warming. Suharsono also has conducted observations in the field at several locations that are still just found destructive activity, such as fishing using bombs, pollution, and increased development in coastal areas. Sea Toll Infrastructure is one of enhancement and development of coastal areas. Surely this is one cause of damage that occurs on coral reefs. Because with the Sea Toll, Sea vehicle will be more massive passing by. The development that occurred in coastal areas was already undeniable.

The existence of sea toll indeed facilitate economic equity not only in Java, but also to all parts of Indonesia. But sadly, it also makes a lot of coral reef damage caused by continuous sea passengers. One example that can be taken is Karimunjawa as one of Indonesia's coral reef conservation areas.

Karimunjawa National Park (KjNP) is one of the conservation areas that are busy crossed by ship crossing from various directions. Located at a crossroads of shipping traffic makes the wisdom in managing the regional to be able to make all parties

satisfied. What is more, KjNP is the only coastal and small islands located in the northern coastal oceans of Central Java. The welfare of local communities is a major global problem for the management of KjNP. Coral reef ecosystem is so expected to be a buffer of economic inputs of local communities Karimunjawa. Coral reefs are very meritorious to generate income for communities derived from catch fish and snorkeling-diving attractions. Healthy coral reefs produce an abundance of marine fish production in accordance with the maximum sustainable yield to be captured by local fishermen. Healthy coral reef will be very attractive as a fun water dive and snorkeling attraction. As a global issues, the oceans of KjNP are able to play a role not only as nursery ground but also fishing ground and a tourism ground for the welfare of the local community.

The upgrading of this tourism ground will lead to increased ship crossing in passengers, goods, services, and energy in the oceans of KjNP. There was an increase in sea traffic and the addition of infrastructure in the ocean of KjNP. This condition becomes a real threat to the health of coral reef. The outside of the oceans of KjNP used to have normal and traditional routes of voyages that often pass by passenger ships, cargo, and super tankers with 10-20 meters draft is a real damage to coral reefs both collisions, air ballasts, and oil spills from tankers that is leaking. Can be imagined now with the Sea Toll, oceans more facilitate the sea lane and the damage is getting bigger. During the year 2017 to July, there are 5 barges that hit the coral reefs being conserved, one incident shipwreck aggregation fertilizer ship due to leaking ship bodies.

The trajectory of ships and coral reefs is like a double-edged knife. We can not prohibit ship crossings to save coral reefs, but also allow the crossing of ships not necessarily damaging coral reefs. Integration and synergy of alternative management policies that are premature, preventive, and repressive with the main program of early detection of ship existence utilizing Automatic Identification System (AIS) device installed on ship body is a must try. This requires the development of information systems and ship surveillance technology that must be done at the level of KjNP Hall, where the growth of coral reefs.

In premature, it must be socialized to the shipping company so that the captains will turn on AIS when they will cross the oceans of KjNP even report the position and identity of the ship to AIS Base Station which has been connected to internet network. That way the BKjNP officer can download the service on the site that provides data and information of the vessel. So preventively, KjNP officers who are on patrol can know the position of ships entering the ocean of KjNP and provide guidance to safe places from coral reefs to cross even the mooring of ships. The KjNP officers must also super vice the mooring operations procedures. Suppose that in addition to holding the inter-vessel with a standard strap, each ship also installed anchor on the location that there are no coral reefs.

5 CONCLUSION

The conclusion is the sea tolls is very useful for Indonesia. Seeing the country of Indonesia as a maritime country, the sea is not as a separator but a connector with the sea tolls. This is makes the sea traffic more crowded and will affect the marine biota that passed. Coral reefs are one of the most important underwater biota. Massive ship traffic due to sea tolls would affect the damage occurs on coral reefs. Although most of the coral reefs in Indonesia are damaged, conservation is continuing for the survival of coral reefs. Resilience of coral reefs is to continue to conserve and try to prevent damage, one of them in a way as applied in Karimunjawa National Park.

The prospect of coral reeds against sea tolls, can continue to survive with the consciousness of humans to keep trying to conserve. Sea tolls is not the reason for the destruction of coral reefs, but make the sea tolls as one of conservation tool by bringing tourists who care about the preservation of coral reefs.

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