

# Developing Natuna: Integrating Tourism, Marine and Infrastructure Strategies towards Implementing Indonesia's Global Maritime Fulcrum

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**Abstract:** *Marine waters in Natuna Regency are rich in oil and gas, but the population has ever received significant benefits since there is no oil and gas channeled to the Natuna land. The channels are only to Singapore and Malaysia. This is because the Natuna development has not been a priority for the central government and there is also a central government intervention in oil and gas management. Natuna is only given the authority to manage tourism and fisheries. Natuna is declared as a strategic area for fisheries and marine tourism because 99.25% of the Natuna region consists of sea, and it is hoped that these two sectors will be able to increase the economy in Natuna. This, along with the Indonesia's vision on Global Maritime Fulcrum, was carried out to increase the Maritime Economic Potential. In addition, Natuna is included in the planning of the implementation of Global Maritime Fulcrum with the Sea Toll Program which provides a Logistics Center that originates from a synergy with state-owned enterprises in Natuna Port. This paper discusses the conditions for developing tourism, fisheries and the existence of infrastructure specifically Sea Tolls in Natuna. By observing and interviewing stakeholders and business activists, this study found out that despite various efforts to develop Natuna tourism, it was still hampered by transportation, infrastructure and promotion problems. Obstacles in the fisheries sector due to the character of local fishermen, lack of fish processing technology and huge number of illegal fishing. Whereas the obstacle in the field of goods distribution is the Sea Toll Program which is of little help due to the trip schedules of ships which are only twice a month. The fishermen's catch has become no longer fresh and cannot be sold at high prices. There should be special treatment for Natuna by developing a model of economic integration of Maritime and Tourism with adequate infrastructures.*

**Keywords:** *Natuna, Global Maritime Fulcrum, Tourism, Marine, Sea Toll Program, Indonesia.*

## I. INTRODUCTION

In Indonesian history, there are only two presidents who have a strong desire to place Indonesia's role as an important country in the constellation of political and defense security movements in the region and the world. The two presidents

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were Soekarno and Joko Widodo (Jokowi). The two leaders realize that Indonesia is the largest archipelago in the world that has the potential to become the Global Maritime Fulcrum. Through the idea of an Indonesian maritime fulcrum, the government seeks to show the national strength and prosperity of the Indonesian people based on activities related to maritime affairs. In addition, the Global Maritime Fulcrum aims to make Indonesia a large, strong and prosperous maritime country through returning Indonesia's identity as a maritime nation, safeguarding interests and maritime security, empowering maritime potential to realize Indonesia's economic equality. This maritime development cannot be done in short terms.

In the context of heading towards the Indonesia's Global Maritime Fulcrum, there are several aspects of development that must be achieved, namely the aspects of infrastructure, politics, socio-culture, law, security, and economy through enforcing the sovereignty of Indonesia's marine territory, revitalizing sectors of marine economy, strengthening and developing connectivity maritime affairs, as well as improving the quality and quantity of marine human resources. To succeed in maritime development at the national, regional and global levels, it requires direction, orientation, strategy and anticipation of effective, consistent and sustainable development. Therefore, various efforts are needed to maintain the superiority of resources, strategic position, and geopolitics that are directed to answer the challenges of realizing Indonesia's excellence.

Indonesia's vision on Global Maritime Fulcrum is a comprehensive economic development doctrine to increase prosperity in Indonesia through economic development in the maritime domain. In realizing Indonesia as the global maritime fulcrum, there are five main pillars written in *Nawacita* launched by President Jokowi. First pillar: rebuilding Indonesian maritime culture; second pillar: committed to maintaining and managing marine resources by focusing on building sea food sovereignty through the development of the fishing industry by placing fishermen as the main pillars; third pillar: commitment to encourage infrastructure development and maritime connectivity by building sea tolls, seaports,



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logistics, and shipping industries, as well as maritime tourism; fourth pillar: maritime diplomacy that invites all Indonesian partners to work together on the maritime sector; and fifth pillar: building the power of maritime defense.

Based on the presentation of Indonesia's Global Maritime Fulcrum discourse by the Ministry of Maritime Affairs Coordinator in Jakarta on October 18, 2017, tourism is the main trigger of the economy. So far, the maritime economic potential has not been exploited yet optimally. Marine tourism only contributes 4%, it should be more than that because 75% of Indonesia's territory consists of the sea so the potential for marine tourism should be very large. One of the potentials for marine tourism is the Natuna Islands, Riau Island Province. The area of the Natuna Sea is 99.25% [1] thus it is very potential to develop marine tourism. Natuna is also a potential point for Indonesia to become the global maritime fulcrum because it is located in a very profitable border region. To the north, Natuna is bordered by Vietnam and Cambodia, in the south borders South Sumatra and Jambi, in the west borders Singapore, Malaysia, Riau and in the east borders East Malaysia and West Kalimantan. Natuna is in Hong Kong, Japan, South Korea and Taiwan international shipping lines. Natuna also has the potential to improve Indonesia's maritime economy in the marine tourism and fisheries sector.

Natuna is also blessed with the great potential of natural resources and is famous for its oil and gas producers. Based on Governmental Decree No. 26 of 2008 concerning the National Spatial Plan (*Rencana Tata Ruang Wilayah -RTRW*), Natuna is one of the National Strategic Activities Centers, namely the nationally defined areas that have strategic values that are prioritized in spatial planning. Natuna has the potential of natural resources which is large and influences the development of the socio-cultural economy of defense and security and the development of the surrounding region. However, the management is still centralized in Jakarta (central government). Until now, Natuna is still difficult to visit because it is located far from the Indonesia's capital city, this also causes the price of basic commodities in Natuna to be very high when compared to Java. Therefore, the government also subsidizes transportation costs and logistics costs through the Sea Toll Program which provides a Logistics Center which is a synergy with state-owned enterprises in Natuna Port.

Natuna was included in the planning of the Global Maritime Fulcrum, and was given the authority to manage tourism and its fisheries. But in its implementation, it still faces obstacles and challenges. This paper explores three things, namely: 1. Natuna tourism development; 2. Conditions of the fisheries sector; and 3. Existence of Sea Tolls in Natuna as importance infrastructure.

## II. METHODOLOGY

This research is a grounded research by collecting data from fieldwork in qualitative form through in-depth interviews and participatory observation. The gathered data is the basis for the analysis combined with secondary data from literature. The researchers collected data from 2-6 October 2018. The data collected from the Focus Group Discussion on

October 2, 2018 at the Natuna Regency Regional Research and Development Planning Agency (BP3D) office. Focus Group Discussion participants are BP3D chairpersons; representatives of Planning and Natural Resources Agency; representative of Socio-Cultural Affairs; representative for Infrastructure and Regional Development; representatives for Data Collection, Research, Development and Evaluation; Education and Health Representative; National and Political Unity Agency; Tourism and Culture Agency; Transportation Agency; and from Communication and Information Agency. In addition, the results of interviews with Mr. Rodhial Huda, a community leader whose expertise in marine tourism and local development and former captain of the ship; tourism entrepreneur Alif Stone Park and director and instructor of the Islamic religious school in Natuna district.

## III. LITERATURE REVIEW

The territory of Indonesia, which has a sea area of approximately 75% of the total area of the country, has an important role in the flow of local trade traffic and between countries in the past [2]. During the New Order government, namely President Soeharto's era, the maritime sector did not get serious attention so that the maritime sector suffered a setback with conditions of development lagging behind other regions on various islands in several provinces [3]. The imbalance between land and sea development and infrastructure is the main obstacle in development. Jokowi realizes that most parts of Indonesia are in the form of the sea, so he conveys the concept of the Global Maritime Fulcrum and expects to make Indonesia rise to the middle-income group through this vision [4]. Jokowi launched his mid-term economic agenda including infrastructure projects because the most important economic development is infrastructure [5]. Inter-island and coastal infrastructure development in every island must be built and developed to become a maritime country [6].

Besides infrastructure, maritime economic development can be realized through 'sea tolls' and connectivity of goods and services throughout Indonesia [7]. The development of maritime connectivity through the Sea Toll Road is carried out in order to increase competitiveness and availability of products needed by the community [8]. The challenges and threats to become the Global Maritime Fulcrum need to be answered well because Indonesia is in an international business transit between the Pacific and Indian Oceans [9]. In the design of the Global Maritime Fulcrum, the Indonesian government needs to organize a strategy to balance the island reclamation race and military capabilities [10]. Building the Global Maritime Fulcrum is a big project and needs the support of all elements of the nation. Indonesian maritime characters who are dynamic, egalitarian and unyielding need to always be developed [11]. The idea of Indonesia's Global Maritime Fulcrum with tourism as the main economic activity must be supported by government for maritime economic growth and an increase in the tourism economy [12] and tourism activities will bring changes to the economy [13].

#### IV. RESULT AND DISCUSSION

There are three strategies that can be pursued in developing Natuna Island. From the Focus Group Discussion, in-depth interviews, and observation, the findings and discussion are as follows.

##### A. Strategies in the Tourism Sector

In order to increase economic growth in Natuna, the central government gave power to the government of the Natuna region to regulate its tourism policy. The strategic position of Natuna surrounded by 7 Crossborder Countries, which have rapidly developing tourism, namely: China, Singapore, Thailand, Malaysia, Vietnam, Brunei, the Philippines, provides opportunities for Natuna to develop its tourism and attract tourists from these countries. Based on the National Archeology Agency study, in the 9th century until 17th was the Natuna golden age, as the World Maritime Port and the Leading Nusantara Corridor of the Global Maritime Network.

Natuna tourism service is preparing a strategy to develop Natuna tourism as the gateway to Indonesia's tourism destinations. The strategy taken to increase tourism is the establishment of the Natuna Tourism Development Acceleration Team (TP3N) on May 20, 2017 by the Natuna Regent.

The background for the formation of TP3N is the vision of the TP3N, namely the realization of Natuna as a Regional Tourist Destination (DTW) and Attractive Cultural Arts. The current condition is that the collaboration between Regional Organizations (OPD) has not yet synergized in developing the Tourism sector. So far, the issue of Natuna tourism includes:

- a) Tourist Visits Are Still Low
- b) The Tourism Sector has not maximally contributed to Regional Original Revenue (PAD) and improvement of people's welfare (KESRA)
- c) Tourism facilities and infrastructure are not yet proper

Therefore, the solution and innovation of the problem is to realize the acceleration and synchronization of the development of Kabuna Tourism through the establishment of TP3N. The establishment of the TP3N is in accordance with the National Strategic Issues as follows:

- a) Nawacita of the President of the Republic of Indonesia (Nine Jokowi Priority Agenda)
- b) The President's instruction to build Natuna through the Tourism Sector
- c) Natuna is located on the Indonesia's Archipelagic Sea Lanes (*Alur Laut Kepulauan Indonesia - ALKI*) 1 line & Cross Border Country
- d) The 99.24% area is the sea

In addition, taking into account the ideal conditions for developing the Natuna tourism sector are as follows:

- a) Synergy of Regional Officials (OPD)
- b) The object of tourist attraction (ODTW) is improved
- c) The Tourism Sector is a priority
- d) Increased tourist visits

Through the formation of TP3N, it is expected that the benefits obtained are:

- a) Synergy / Acceleration Occurs

b) Accelerating regional development through the tourism sector

c) The occurrence of the Tourism effect multiplier

The stakeholders involved in Natuna tourism development are internal and external stakeholders. Internal Stakeholders consist of Regent, Secretary, Assistant, Secretary of the tourism and culture office, Head of Division, Section Head, and Office of Tourism and Culture. While external stakeholders consist of the Regional People's Leadership Council (DPRD), Air Force Commander (Danlanud), Navy Commander (Danlanal), Chief of Resort Police (Kapolres), Military District Commander (Dandim), Regional Apparatus Organization (OPD), Non-Governmental Organizations Society (NGO), Art and Culture Studio, Tourism Awareness Group (Pokdarwis), Tour Guide, Mass Media, and the Circle of Friends

Based on official document from Natuna Tourism Agency, the Solution for Accelerating Natuna Tourism Development is:

- a) Natuna must be designated as a new tourist destination in the forefront of the N besides Java and Bali
- b) The government must participate in making an international event in Natuna by involving relevant parties, the provincial / district government, to show to the international community that Natuna is part of Indonesia and the country is present to take care of its frontier region.
- c) The Government Immediately opens an Entry and Exit Port in Natuna and helps fix infrastructure that supports the Tourism sector
- d) The government immediately opens intermodal (seaplane) connectivity to open connectivity between regions / sub-districts / mainstays and leading islands in Natuna
- e) Increasing funding assistance in the Tourism sector in Natuna Regency

From the same document, the SWOT analysis of the potential and constraints of Natuna tourism development is as follows:

- a) Strength: Natuna is set nationally by the government as a National Tourism Development Zone (KPPN), the National Tourism Strategic Zone (KSPN) and National Tourism Destination (DPN).
- b) Weakness: such as limited infrastructure, accommodation, transportation / connectivity facilities, internet, tourism human resources, budgeting, expensive airline ticket prices, etc.
- c) Opportunity:
  - a. Nawacita of the President of the Republic of Indonesia (Point 1, namely strengthening itself as a maritime country and point 3, namely building Indonesia from the periphery by strengthening regions and villages)
  - b. The President's instruction to build Natuna through the Tourism Sector
  - c. Natuna is located on the ALKI 1 line & Cross Border Country

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d. The 99.24% area is the sea

- d) Threat: Environmental pollution, destruction of natural flora / fauna. Land ownership conflict, theft of Vessel Sinks (BMKT), Conflict of interests of the Agency, and the issue of the South China Sea conflict

The strength of Natuna Tourism is that the tourism sector is one of the focuses of Natuna Regency, Riau Islands. In the process, the Natuna Regency Government focused on developing the Maritime, Ecotourism and Marine Archeology sectors, known as MEA Tourism. For the Maritime sector, the Natuna tourism and culture service is looking for investors and improving coastal tourism. At the end of 2018, there are already investors who are interested in Natuna tourism. There are also investors who will develop tourism resorts and several similar tourism resorts in 2019. Especially for the Maritime sector, it has a huge potential because 99.24 percent of the Natuna region is the sea. There are 154 islands with different topography equipped with the potential of beautiful beaches and good coral reefs. With the number of inhabited islands as many as 27 islands, Natuna also has beautiful water spots for sports, such as surfing, diving and so on. Resorts can also be developed in several exotic islands in Natuna, such as Sisi, Setanau and several other islands. The focus of maritime development is to increase island and sea tourism objects with a variety of destinations. In addition, there are a number of leading tourism destinations that continuously carry out events such as the Pulau Tiga tourist community from Balai Permai, which holds marine tourism events on Sentanau Island.

In the ecotourism sector, Natuna has mountains, waterfalls, mangroves and a variety of flora and fauna. Different types of plants are still complete in Natuna. Meanwhile, Natuna fauna is very rich and unique, especially the species of *Kekah Natuna* (*Presbytis Natunae*), which are entity animals or regional identities. *Kekah Natuna* only lives in Natuna and this animal is very rare. In the future, this *Kekah Natuna* habitat will be bred in a botanical garden to maintain the continuity of its habitat from extinction as the rapid development in Natuna. Natuna also has the smallest frog species found on Serasan island by researchers from Japan. Besides that, Natuna also has a variety of butterfly species. From Indonesian Institute of Science (*Lembaga Ilmu Pengetahuan Indonesia* – LIPI) research data from 2011 to 2014, there were 75 rare butterfly species and 101 bird species. Especially for butterflies, the Tourism Office plans to make sufficient conservation sites in Setengar Selatan Bunguran District.

One of the interesting ecotourism in Natuna is Natuna Geopark. Natuna Geopark will have an impact on foreign tourist visits to Natuna. Moreover, the status of the Natuna Geopark has been confirmed UNESCO in 2019. Geopark in Natuna can have a direct domino effect on the community. The economy is increasing as is the case with people's welfare. Travelers always spend their money on tourism resorts, both for lodging, dining, transportation and even entertainment. Money is spinning very fast in a tourism resort. The community must maintain and use this as a means to improve the economy. Natuna is a national strategic area that

gets serious attention from the central government because it is strategically located and borders on four countries. Therefore, the development of tourism resorts in Natuna must take into account the security and sovereignty aspects of the State.

The concept of tourism development must also prioritize the concept of security by communicating and synergizing with related parties, especially the Indonesian National Army (*Tentara Nasional Indonesia* – TNI). The importance of economic development is supported by stability in defense and security. Economics and security are two aspects that are inseparable and mutually supportive so that Indonesia's ideals as a global maritime foundation can be achieved [14].

The last is about Marine Archeology. Natuna has 24 shipwreck sites in the Natuna Sea, which consists of shipwrecks containing antiques and historic objects, ordinary wrecks and aircraft wrecks. These sites have high attractiveness and will be packaged into the best diving tourism centered on the island of Laut, Natuna. There are 6 sunken ships in Natuna that have high economic value. These data from Marine Affairs and Fisheries Ministry will be coordinated so that the potential of underwater artifacts can become regional wealth. Later, the island of Laut will be branding as a National archeology park. Coordination with related parties has been carried out, together with the Marine Research Center of the Ministry of Maritime Affairs and Fisheries (*Kementerian Kelautan dan Perikanan* - KKP) and the tourism and cultural services are preparing supporting data and making studies. Underwater tourism is expected to become one of the areas in Natuna that attracts tourists. In order to maintain this potential, an agreement has been made to lift the sunken ship in shallow waters and move the ship's cargo to the regional museum while sunken ships in deep waters will be left as underwater diving destinations. In addition to the abundant wealth of maritime archeology, Natuna also has several historical heritage sites that have high historical values, such as the Sukarno ship site, the Jadayat ship which is still well maintained in Sedanau, the site of the Karakasmir aircraft wreck in Sedanau, Sultan Berunai tomb site, and also some ancient tombs with Islamic architecture spread over several islands such as Subi and other areas. These ancient tombs are estimated to have existed since the 17th century.

From the results of the discussion about the conditions and potential of tourism in Natuna, it is necessary to think about Natuna's natural resources which have a lot of natural marine tourism. One of them is by utilizing traditional ships to be used as traditional tourist ships in the Natuna Sea, so that foreign tourists will be interested in coming to Natuna [2]. Most of the foreign tourists are from developed countries and sailing or fishing on traditional ships will be a new experience for them. Using traditional ships can also provide additional income for Natuna fishermen. Thus, tourism activities can improve the community economy [13]. The strategy to develop Natuna tourism is already right since tourism plays a role as a development agent on a small island. Through tourism it is hoped that it will bring prosperity to Natuna residents.

Tourism is the main source of employment, foreign exchange earnings and promising economic sectors [14]. (Sharpley, 2003). Neto (2003) also agrees that tourism is one of the largest and fastest growing industries in the world [15]. This is an increasingly important source of income, employment and wealth in many countries. Ward and Butler (2002) state that small islands present significant challenges in terms of developing sustainable tourism [16]. A small island has limited resources, economic and social activities tend to be concentrated in the coastal zone, and the linkages between the economic, environmental, social, cultural and political fields are strong and pervasive. As a result, the development of sustainable tourism is more a practical need than an optional addition. Therefore, it is very important for the Natuna regional government to formulate clear objectives before trying to identify indicators, and the need to design an effective framework with implementation that is flexible to convert indicator results into management actions. With good and mature design by utilizing all facilities and resources in small island areas, all obstacles and challenges in developing sustainable tourism are expected to be overcome.

Given that the location of Natuna is strategic, it is expected that the Natuna regional government can work with the Batam provincial government to promote Natuna tourism by offering integrated tour packages. Foreign tourists in Batam are increasing every year. According to the Central Bureau of Statistics, in November 2018 the number of foreign tourists reached 220,868 visits. This number increased 7.31 percent compared to the number of foreign tourists in October 2018, which only amounted to 205,819 visits. Inter-island cooperation to bring in foreign tourists can be an effort to promote Natuna tourism as well. Batam facilities are more modern than Natuna, but Natuna can sell tours with man-made attractions. Human attractions can replace facilities that do not yet exist [17].

Natuna's weakness is infrastructure. It cannot be denied that transportation infrastructure is a factor in developing goals. Infrastructure is part of the classic demand for international tourism functions. Tourists from Europe / America and Asia are very sensitive to the island's transportation infrastructure. Those from Europe / America are also sensitive to their non-transportation infrastructure. Besides infrastructure, tourist income, distance, and relative prices are also important elements [18]. Inadequate physical infrastructure is a major obstacle to economic growth because infrastructure gaps reduce opportunities to participate in the growth process [5]. The quality of access to and from rural areas would affect their competitiveness. Therefore the Indonesian government needs to continue to build infrastructure in Natuna so that Natuna can become a "Go International" tourism destination [19].

Tourism development does not only rely on the efforts of the regional government and the central government but also the efforts of all tourism stakeholders. There are five stakeholders in this tourism sector, namely government, businessmen, academics, social media, printed and online mass media and so on. The fifth stakeholder is the communities. These communities are engaged in inviting people to come to a place by holding tourist events. Then the task of the Regional Government through the Tourism Office

is to hold tourist events both national and international. This event aims to attract tourist visits and economic growth in the community.

Local people are also expected to participate in promoting tourism by being positive towards tourists. The local people need to be aware of the success of tourism, so that their income also increases. Tourism development is a double-edged sword for local people and attitudes directly influence the development of the tourism industry today and in the future. The positive attitude of the local people will encourage the level of satisfaction of tourists and contribute to the word of mouth promotion among them [20].

Tourism is clearly a major contributor to economic development on many small islands in developing countries and is often the only industry in these countries that has consistently shown growth in recent years [21]. However, tourism growth is not at all synonymous with poverty reduction. The government needs to build an effective policy environment and increase the role of regulation to become stronger if the government wants sustainable tourism that increases equity to emerge. This strong regulation is also based on findings from the Natuna tourism agency that tourism can cause environmental pollution. Many tourists visit a particular tourist attraction so that it exceeds the capacity of the tourist attraction and then they throw garbage everywhere so that it damages the environment, including the natural environment of flora / fauna. Therefore, there is a need to regulate the maximum number of tourists in a tourist attraction on a day visit so that the destruction of the natural environment can be avoided. In addition, there is also a need to regulate not stepping on grass or removing plants around tourist objects and catching fish in certain places so that the flora and fauna in the tourist attraction are maintained.

Regulation on ownership of tourism land also needs to be clarified early. If the government uses population land to develop tourism, the government needs a written agreement on profit sharing and management so that there will be no land issues. In addition, the government needs to reinforce regulations to sanction thieves of sunken ships cargo (BMKT), considering that the cargo consists of historical items that belong to the Natuna government, which can be displayed in museums as a tourist attraction. Natuna government needs to think of a legal framework for Underwater Cultural Heritage (UCH) by collaborating with the International Maritime Organization (IMO) to determine UCH for scientific or commercial interests and the United Nations Educational, Scientific and Cultural Organization (UNESCO) for UCH Protection to deal with Treasure Hunters [22].

## B. Strategy in the Fisheries Sector

From the results of the FGD with the Natuna fisheries service, several strategies have been carried out in the fisheries sector. The fisheries sector is a concern of the government because of Natuna district, the Riau Islands is Indonesia's foremost island with enormous marine fishing potential.

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Statistical data records the Natuna Sea fishery resources at 1.2 million tons per year. Seeing this great potential, it is not unusual if most of the Natuna people make a living by catching fish in the sea. To maximize this potential, an Integrated Marine and Fisheries Center (SKPT) has been built in the Lampa Strait, North Natuna on an area of 16.8 hectares. The development of the Integrated Marine and Fisheries Center (SKPT) aims to integrate community-based maritime and fisheries business processes through the optimization of sustainable use of marine and fisheries resources on small islands and / or border areas. SKPT is one of the steps from the Ministry of Maritime Affairs and Fisheries (KKP) to accelerate the development of the national fisheries industry from regional upstream to downstream in the outermost / foremost small islands.

This SKPT Natuna will be used to accommodate fish from the Fisheries Management Area (WPP) 711 which includes the Karimata Strait, Natuna Sea and North Natuna Sea. Only about 37,000 tons per year of WPP 711 marine fishery resources can be produced. Unexplored sea and abundant fish stocks need to be utilized optimally. If Natuna is developed as a center for the growth of the marine and fisheries economy, several things must be ensured. First, the availability of fish stocks in the intended WPP. Second, the capacity of fishermen to encourage Natuna as the center of economic growth. In the case of the SKPT Natuna, the Natuna fishing population is still inadequate, so fishermen from other regions are needed to take part in economic activities in the Natuna Sea.

Ships from other regions can operate in Natuna on the condition that they land fish and ships in the Natuna SKPT. This policy is carried out so that the Natuna community can experience the direct benefit of the role of SKPT through buying and selling activities and preventing transshipment in the middle of the sea. Ship landing and direct sale of fish catches at the fish auction site (TPI) can also reduce the operational costs that must be incurred by fishermen compared to if they have to bring a boat and catch fish to the area of origin. Third, the availability of infrastructure and supporting facilities. With 3 hectares of land, 800 m<sup>2</sup> of docks, 800 m<sup>2</sup> of fish auction, and a joint management building equipped with Brackish Water Reverse Osmosis (BWRO) to process 250 tons / day of brackish water into drinking water. SKPT Natuna also features a fuel oil kiosk with a capacity of 12,000 liters, cold storage with a capacity of 200 tons, an ice factory, a net repair center covering 800 m<sup>2</sup>, a backup engine and generator, a logistics warehouse, and public facilities such as public toilets, water towers can accommodate 17 m<sup>3</sup> of water, water reservoirs of 27m<sup>3</sup>, supply kiosks, 6m wide access roads to the Lampa Strait complex and telecommunications network support.

This is the first step to build an integrated industrial area and fish processing. But, from the existing 200-ton cooling warehouse, 70 assisted fishermen were only able to fill it with 120 tons. Fisheries statistics in Natuna Regency illustrate that the majority of fishing fleets in Natuna Regency are still traditional, small scale with a low level of catch production. Although there has been a significant increase in fishermen and the number of fishing vessels in the last five years, there has not been a significant change in the structure of fishing

technology. The limited ability of the fishing fleet has caused many small fishermen to be concentrated in waters near the coast and must compete in limited resources. With fishing gear that is still not modern, the income of fishermen in Natuna Regency has not been able to increase. The character of Natuna fishermen who are mostly Malay tribes is the same as the character of Malaysian fishermen who still use traditional methods of fishing. Although the application of modern technology has been widely applied to the fishing industry (i.e., GPS, sonar, echo sounder, remote sensing), the government's efforts to popularize the use of modern technology to fishermen have not been successful. Many small-scale fishermen in rural areas continue to depend on traditional fishing methods [23].

In addition, Natuna fishermen have the habit of catching fish once a day. Thus the results obtained from the catch are also not optimal. Natuna fishing gear is still as simple as the Tangku Bilis traditional fishing gear. People around Natuna are still very easy to get fish, either medium or large fish using fishing rods. Although currently fish are still abundant, in the future fishermen also need to be encouraged to recognize the benefits of various coastal development strategies, such as marine-conservation tourism through the use of technological applications. Fishermen can use mobile phone applications to sell their catches and monitor the weather so they can predict the weather before going to sea [24].

The Natuna Government needs to think of a method to change the decision of fishermen who still use traditional methods of fishing and are still not familiar with technology. This process takes time because it changes the way of thinking, especially since the fisherman's culture has been handed down for generations so it is rather difficult to change it. Fishermen's children need to get technology education early so that their thinking can change and they can make good decisions and make innovations in fishing. One of the factors that causes the low income level of fishermen in Natuna Regency is the low productivity that is closely related to the level of knowledge, skills and competencies in utilizing the potential of existing resources.

Access to non-formal education is also very limited which results in the low ability of fishermen to access technology and improve business management. One of the efforts to improve fishermen's welfare is by strengthening their abilities and skills through technical guidance for fishermen. Fishermen need to be given reinforcement of vocational skills for fishing activities [25].

In Natuna Regency one of the potential fisheries commodities and has a high economic value is octopus. The utilization of economic value for octopus has not been maximized because of the low skill of fishermen in operating octopus fishing equipment. Fishermen in general still use traditional fishing rods to catch octopus. Technical guidance on octopus fishing equipment has been carried out on fishermen to improve fisherman skills. This skill will have an impact on increasing the income of fishermen with an introduction to the technology transfer of octopus fishing equipment.

The technical guidance objectives are:

1. To increase the human resource capacity of Natuna Regency fishermen to become more skilled, trained and productive in utilizing the natural resource potential of octopus in the marine waters around Natuna,
2. To introduce technology for operating octopus fishing tools, and
3. To Increase the effectiveness of fishing institutions in fishing businesses

This technical guidance was attended by as many as 40 (forty) fishermen. 20 (twenty) fishermen from Natuna Regency and 20 (twenty) fishermen from Java. Java Island fishermen participated in the technology transfer of the operation of the octopus fishing tools [26]. The role of the community is very much needed to achieve development goals, because the success of development is determined by the level of community participation with a model of empowerment determined by the government [27].

In addition, the Ministry of Maritime Affairs and Fisheries has eradicated illegal, unreported, and unregulated (IUU) fishing for the development of maritime and marine economies. Enforcement of IUU fishing is the government's main priority in protecting marine and fisheries resources. The success of handling the prevention and eradication of illegal fishing is determined by the implementation of supervision on the management and utilization of marine and fisheries resources. Regulations are also needed to prevent the extinction of certain fish species such as Napoleon fish by placing the name of the fish on the catch label. IUU occurred because of the increasing consumer demand for seafood. The trade steps to prevent fish and fish products sourced from IUU from entering the European Union's international market are taking the initiative to draft laws that include the name of the species on catch labels throughout the distribution chain [28]. To overcome IUU, fish catches that are not listed on official records would be a challenge for fisheries managers. If the catch is left unchecked, it will threaten the long-term sustainability of fisheries and livelihoods in the region. Natuna is also expected to have professional fisheries management [29].

Natuna needs to have Community Based Fisheries Management (CBFM) and support from various parties. The failure of CBFM was caused by a lack of skills, education, technological knowledge, conflict among stakeholders and lack of coordination between government institutions, marketing facilities, infrastructure, and inappropriate financial services [30]. Fishermen need to think of a forum for communication between fishermen who support each other to achieve mutual economic prosperity [31].

### C. Strategy in the Connectivity Sector: Sea Toll

Sea transportation policy is regulated to increase national development. This policy serves as a support system to achieve optimal allocation of economic resources and provide fair and affordable purchasing power services [32]. Therefore, with the presence of sea transportation known as the Sea Toll Road, it is expected that the prices of basic necessities in Natuna are not much different from Java and

Jakarta. To support the government's program with the sea logistic toll model in Natuna, Pelni operates KM. Caraka Jaya Niaga (CJN) III-4 from Tanjung Priok-Tarempa-Natuna, Round trip with a 14-day cruise. From Jakarta the ship transports basic necessities to be put in a warehouse that has been prepared at the port. PT. Perinus will fill the cargo to return to Jakarta with fish catches from Natuna to be marketed in Jakarta. The sea toll route to Natuna has been underway since November 4, 2015. The Sea Logistics Toll Road in Natuna is expected to be more comprehensive through state-owned enterprises' synergy, and will be more optimal in the shipping lane with regular shipping schedules to the Natuna Islands. One of the success indicators of the sea logistic Toll model in the short term is to reduce loading and unloading time, reduce the prices of basic commodities, and stock availability. The long term indicator is the Sea Toll will encourage Natuna economic growth, especially marine fish commodities.

According to Natuna's deputy regent, Sea Toll is very helpful for Natuna's community and Pelni's Managing Director said that Sea Toll would reduce the price of goods. "Some commodities, such as rice, have decreased in price by 10.71%, sugar 21.88%, wheat flour 42.86%, instant noodles 11.58% and cement 23.16%," said President Director Agus Hendryanto. The goal of Sea Toll has been achieved, namely to participate in economic development and play a role in the distribution of goods to and from Natuna [8]. The ports play an important role in supporting connectivity and increasing the competitiveness of the Indonesian economy. Port performance will affect efficiency in the production and distribution process. An economic development was realized through 'sea tolls' and connectivity of goods and services throughout Indonesia [7].

The obstacle experienced by the sea toll is that the ship through the sea toll carries commodities from Jakarta to Natuna, but after returning from Natuna, the ship does not carry commodities that can be marketed to Jakarta, so this will bring losses to ships passing the Sea Toll road. This caused the ship's reluctance to serve the Sea Toll Road to Natuna. The system for shipping goods on the sea highway should be improved. In addition, there is a dispute with Anambas in terms of shipping. This dispute should be resolved so that Anambas and Natuna can benefit greatly from the Sea Toll Road. The government needs to think about how to process fishery products that are abundant in Natuna to be brought to Jakarta so that the Sea Toll can also be a trade intermediary for the processing of Natuna catch fish. It is necessary to think about ways to attract investors who can invest in fish processing. In addition, the selling value of fresh fish and frozen fish is also different. If the Sea Toll can benefit from the shipping lanes on Natuna, it will be more often stop at Natuna not only twice a month. This allows Natuna fishermen to sell fresh fish at high prices. Sea Toll is expected not only to sell and distribute goods from Java to Natuna, but also to sell and distribute Natuna sea products to Java to improve the fishermen's economy.

# Developing Natuna: Integrating Tourism, Marine and Infrastructure Strategies towards Implementing Indonesia's Global Maritime Fulcrum

## V. CONCLUSION

Before Natuna received special attention from the Indonesian government because of its strategic location among the four ASEAN countries. In addition, 99, 24% of the Natuna region consists of marine waters, the development of Maritime tourism is very suitable with the geographical conditions of Natuna. Despite various efforts made by the Natuna tourism agency to promote tourism, infrastructure constraints have become a big problem. This obstacle needs to be dealt with by selling tourism objects that can be renewed through human creation, flora and fauna and cooperation with several surrounding islands, especially Batam, by making a tourism package from Batam that can bring tourists to continue their vacation to Natuna.

In the fisheries sector, there is a need for a massive mental revolution of fishermen with a psychological approach. The fishermen need to be given an understanding to think of life in the future for their families, so that they are not only satisfied with fish catches in the traditional way. Besides that fishermen need to be given assistance in the use of technology in marketing their fish production and monitoring the weather. The assistance of fishermen is not enough if it is only done a few days. Long-term assistance and role models are needed so that fishermen feel confident to move and use modern technology. The inconvenience of fishermen to leave their habit of descending is due to their worries. The way to get rid of their worries is to convince them that this breakthrough will be more profitable for a long period of time.

Government regulations on the development of Natuna tourism need to be reviewed by providing independence for Natuna to make decisions not only to manage tourism but also to make regulations relating to illegal fishing. The Natuna Fisheries Service also has the right to arrest foreign fishermen who catch fish in Natuna.

Natuna needs to work with international organizations such as the International Maritime Organization (IMO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) in managing Underwater Cultural Heritage (UCH). This is expected by professional management, UCH can provide income in the tourism sector and attract local and international tourists to come to Natuna.

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