Littoral and Coastal Management in Supporting Maritime Security for Realizing Indonesia as World Maritime Axis

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Abstract: The Indonesian under President Joko Widodo has new goal to make Indonesia as the world maritime axis. This is supported by the geographic of Indonesia as the largest archipelagic country where the sea is two-thirds wide among the whole spacious. Indonesia is the world largest archipelagic state. More than two-third of its territory consist of seas. The ecosystem of littoral and coastal has correlative relationship with country development. There is no doubt of physically facts that Indonesian littoral and coastal with total wide of 5.8 million km² is rich with various natural resources. Therefore, the condition of Indonesia with its world second longest coastline has several comparative advantages. Not only the country has an abundant natural resources, but it also blessed by demographic bonus advantage. The population of Indonesian is the fifth largest in the world which approximately 220 million people and approximately 60 percent among them live at coastal areas. The people in coastal area relies their live from its surrounding natural resource. Hence, most of their life and daily activity is related with the presence of natural resources. The dealing of conflict potential and attention to maritime security are important to be studied as a reference in preparing and facing the government policies that will lead to the development of maritime.

Keywords: natural system, coastal management, maritime axis, littoral areas, security conflict.

1. Introduction

Indonesia is the largest archipelagic country. It consist of 17,508 islands and 81,000 km coastline as well as numerous potential littoral and coastal resources. [1]. The littoral and coastal resource consists of renewable resource such as fisheries, mangroves, and coral reefs. Meanwhile un-renewable resources are oil, gas, mineral, and environmental services [2]. For example in economy, the Indonesian fishery potential resources is estimated 6.7 million tons per year, where 4.4 million tons is from territorial and Indonesian waters, and 2.3 tons is from Exclusive Economic Zones (ZEE) waters (Department of Marine and Fisheries, 2002). Meanwhile the coastal areas are rich of mining and mineral as well as its potential to develop industrial activities, tourism, agriculture, housing, etc. The entire economic value of coastal and marine resource potential is up to 82 billion dollars per year [3].

Indonesia as the world maritime axis is supported by the wide of littoral and coastal areas. Coastal area is an area of land that is adjacent to the sea, with its limits of land includes flooded or not flooded areas and still influenced by ocean processes such as ebb and others. The Coastal area is dynamic and susceptible with environmental changes either by natural processes and human activities. The coastal as transition area between land and ocean ecosystem is an area on the surface of the earth's that mostly densely populated. Nearly 60% (as happened in Indonesia) of the world total population are living in the area around 60 km from the coastline. Two thirds cities in the world with more than 2.5 million populations are located in coastal areas. Even in Australia, 86% of its population is located in coastal areas [4]. According to geographical issues as archipelagic country, Indonesia has potential conflict with neighboring countries as well as maritime security issues that recently influenced national policy to develop maritime sector.

As consequence of Indonesian strategic position, the ocean of Indonesia is very important for the world community marine users. If Indonesia could take advantage of this challenge and opportunity, it
will improve the nation’s welfare. Based on history note, the ancestor of Indonesia was able to control the sea of Nusantara (Indonesia in the past), moreover they could voyage the wide ocean till the coast of Madagascar, South Africa. It was proved that the Indonesian ancestors had maritime character in cooperated with other countries in the world. In addition, the Indonesian ancestors had understood the meaning and the useful of sea as a means to secure its national interests, such as trade and communication. Therefore it can be concluded that the traditional use of sea was for transportation and the world trading is mostly passing the sea where its volume is going increase until now [5].

2. Theoretical review

The condition of littoral and coastal areas has impact of resource utilization by its communities which is very dynamic and highly dependent on availability of its surrounding resources [6]. Coastal community in generally have become a part of pluralistic society, however, it is still have togetherness spirit. It means that the structure of coastal communities is combination of urban and rural community characteristics. The coastal community structure is various, hence it forms system and cultural values that is culture acculturation of each components that formed the society structure.

Coastal environment is dynamic, unique, and vulnerable to environmental change [7]. Factors that influenced the coastal environment are including: population growth, climate change, the increasing of space and resources demands, and beach variety. The annually increasing of population growth that lives in coastal areas caused the increasing of human activity especially in utilization of natural resources and coastal ecosystem. Various kinds of human activities both in land and sea are stimulating its coastal environmental change including its coastline [8]. Therefore, as Lanza said about beach replenishment, careful management of resources will allow the reduction of management costs for maintenance, which has always been the critical point of artificial beach replenishment [9]. It also meant that careful management is crucial for environment matter in this case is for littoral and coastal environment.

Human activities such as mangrove clearing, sea sand mining, and coral reefs mining in several locations have contributed significantly erosion of the coast, because the losses of coastal protection from waves and hurricane, directly or indirectly, it reduces sediment availability on the beach if it compares with the losses of sediment because of natural impact. This is probably caused by continuously huge waves from the sea or perpendicular to the coast which finally influences the people’s pond under the coastline of redundant beach. One of the most influential waves is the sharpness of the wave that usually occurs during high winds or storms which resulted in much coastal erosion.

Meanwhile in coastal management, the model favors the involvement of stakeholders, but does not use complicated assessment procedures for non-economic indicators or relative weights to combine economic, social, and environmental indicators. Instead, the integration between economic activities or properties and the environmental status and landscape is represented objectively and non-linearly by referring to initial and sustainability conditions, combined with budgetary and environmental constraints. The model successfully accounted for both human and environmental dynamics by depicting delayed effects, neighborhood externalities, and feedback effects [10].

The logical consequence of Indonesian water geographical condition is having political value and security strategy not only for Indonesia but also for other countries especially in Asia Pacific region [11]. The existence of maritime security challenge from the possibility of conflicts among states is becoming concerned issues. The conflict refers to the competition level among states in requiring natural resources and claiming of national and territorial boundaries.

Based on Bateman [12], Maritime security is a major concern in the Asia Pacific, yet is riddled with highly complex “wicked problems” that have thus far defied solution. These include different interpretations of the Law of the Sea underpinning regional maritime security, the lack of good order at sea, numerous conflicting claims to maritime jurisdiction, the implications of increased naval activity in the region and the lack of agreed maritime boundaries.

According Londynsky of Matson Navigation [13], in order to improve maritime security, two things must happen. First, The Department of Homeland Security must find a way to share actual threat information with the carrier community so that the true threat can be quantified. This will assist us in
better allocating our resources. Second, there needs to be more coordination between security grant recipients so that projects can build on each other and be managed in such a way as to capture the best ideas. These ideas will then be able to build on each other toward a more complete security solution. Security is very important in this case, as well as detailed by Casey [14], who said that Singapore concerns with security on Malacca Strait as transnational line of sea transportation. Therefore, Singapore has placed significant emphasis on the maritime threat environment. This is caused by potential of conflict that related with national strategic matters such as strategic interest in military and economy. Furthermore, this is caused by the great resource of its ocean such as crude oil and gas. The example is at around South China Sea where having gas potential for almost 18 trillion tons. Therefore this sea becomes source of conflict between neighboring countries that could endanger the maritime security of Indonesian [15].

According to Londynsky [16], the carrier communities understand that they have a unique responsibility to maintain the security of our global supply chain. There is no question that maritime transportation is a particularly attractive target to those who hope to do us harm. It is clear that an attack on the maritime sector could have an impact on economic viability of USA and at the same time potentially impact the ability to project power overseas. In addition, according to Gomes et all [17], number of strategies can be suggested for the improvement of conditions in the coastal area. One of them is the regulation of land use in order to minimize conflicts between the economic sector and protected areas.

The role of local government in optimizing the local coastal communities and stakeholders is very important to create together comprehension of maritime security. It also said by Helmick [18] that a “top-down” approach to the crafting of a long-term and sustainable research agenda in maritime security would be inappropriate and wasteful. Industry, organizations, state and local governments, the academic community, and other constituent groups represent enormous collective expertise and in many cases, are the entities that are ultimately responsible for the deployment of new technologies and the implementation of new procedures intended to enhance security.

3. Methodology

The study used qualitative research construction. According to Usman and Akbar (1996), the objective of qualitative research is not getting relationship between variables but just looking the meaning. On the other hand, based on Surakhmad (1985), the correct description of phenomenon in qualitative research is not limited just only in collecting and compiling data, but should include data analysis and interpretation of data’s meaning. The research steps and stages are done by observation and intensive interviews with informants in Jakarta, Manado, and Medan. The selection of study sites is based on the fact that the major ports and coastal area are numerous in these regions. Medan city in North Sumatera which controlled Belawan port city becomes monitoring and supervisory traffic postal in Malacca Strait. Malacca Strait is a very busy because the numerous of its maritime’s traffic, hence that potential of problems and conflicts is very large along that area. The researcher hopes to get example of maritime problems and conflicts of sea transnational traffic in order to arrange the best cooperation model as the objective of this research. The other city is Manado in North Sulawesi which controlled Bitung port city. Its position as transit and service port to the ships that passing ALKI II (Indonesian chokepoints) makes Indonesia is important to have power of diplomacy and strong maritime cooperation.

4. Results and discussions

Coastal area is an area with the highest interaction of land and sea. This area has relationship with upland and the broken of it will have negative impact to the shoreline. For example, agriculture and forestry activities without concerning the conservation rules will cause erosion and flood as well as damage the ecosystem of river and continues to the coastal and coastline. Other example is people’s activities which produce industrial and household waste that causing sedimentation and flow through the river to the coastal area. Brotosusilo [19] said that any change of landscape and its negative impacts such
as pollution, erosion, and drastically changes of freshwater regime in land ecosystem will have impact to coastal ecosystems, including the coastline.

According to the result of observation and collecting information from informant in Manado, North Sulawesi, there are some findings. Manado is the city of North Sulawesi, meanwhile the port city of this area is Bitung which located about a hour from Manado city. Bitung is preparing for the big port city where its port will be prepared as the North gate of Indonesia. Therefore the atmosphere of maritime there is so signed. Based on the city situation, it has been arranged to become port city with well supporting of infrastructure. Shipping industry is running together with the progress of the fisherman who has small scope of getting income from the sea. Many people there are working in fishery canning industry. The local culture is also shown maritime attitude by its primary food which are not far from fish. Besides economic port that exist there, it also shoreline in some part of Bitung city. That place was used by the fisherman to place their boats and selecting their fish before send to bigger collector. Some beach is also becoming tourism destination for surrounding people and even the people from Manado. It seems that the atmosphere of Bitung Port City as maritime centre in northern Indonesia influence the people to act and develop their live with maritime comprehension.

The comparison between findings and previous research result could be explained by the table below.

| Description | Previous research result | Finding |
|-------------|--------------------------|---------|
| Ecological of surrounding coastal ecosystem | Shows worse condition as pollution, mal-treatment, and impact of global warming. | The condition is still getting worse but many programs conducted to make it slower and even many conservation programs aimed to avoid further breakdown. |
| Developed natural resources by the people | There are many obstacles to maximize the people’s income on coastal area. Those are coming from outside (illegal fishing) and inside (minimum concern of fisherman living from the government). | The change of doctrine of the country results in initiative effort to develop maritime sector including develop natural resources for fisherman welfare and maritime stakeholders goodness. |
| Empowerment of groups that rely on natural resources | The empowerment was running well but in-maximum speed to obtain the specific nor great goals from maritime sector | The empowerment is forcing to be fast in order to reach high target of getting maximum advantages from maritime sector. It also supported by government maritime policy which stand behind the national interest. |
| Maritime perspective of people | Low consciousness because maritime thinking was covered by land orientation | Getting raise along with government campaign of being the world maritime axis |
| Maritime Infrastructure | Weak and unsupported the willing of becoming maritime country | On progress of revitalization and expansion of capacity instead capability. |
| Littoral and coastal development | Running slow as many problems that have no serious mitigation | Getting run faster and shows definite progress on the right track. |
| Coastal people living | In poverty and have no spirit of becoming prosperous by just only depends on coastal surrounding | Getting prosperous during the development steps of making coastal live quality better than before. |
Government mission | Maritime is not priority, even though the state was getting significant income from maritime sector, but it was not maximum | Maritime as vision and goal, therefore the development of infrastructure and maritime consciousness is forcing faster than the others.  

Achievement of mission recently | Giving great positive income to the state but not as maximum as we hope | Beginning to see by the decrease of illegal fishing meanwhile the increasing of coastal people and fisherman contributions are still forcing to the max.

The gap analysis of this research is describing based on the findings of research. Based on literature review and crossed with interview result, the former situation about littoral and coastal live in Indonesia is very pity in general. Perspective of mostly people at the former was mostly filled by land orientation, hence the sea potential was ignored to be maximized. It has been general knowledge that the fisherman and the people who live in coastal area were living in the low level of prosperity. Meanwhile our sea potential such as fish was stole by another country’s fisherman who had modern and big ship to catch the fish. The local fisherman could not do anything because they defeated by big ship and the law enforcement of that violation was so weak. The infrastructure problem such as commercial port and other supporting tools were also become obstacle of maritime side development. The coordination and cooperation between related maritime stakeholders which have existed for a long time, practically brought problems that resulted in in-optimum work of developing maritime potential as well as maritime security. Abdulkadir [20] that the idea of preventing abuse of global market should never be seen as being incongruous with economic interests because security cannot be compromised for economic advantages. Therefore, formulation of maritime or ocean with laws is for the administration of maritime sector. For ensuring economic gains, it is not compromises with national security, which could be effected through environment insecurity.

Since the new President Joko Widodo who promoted the mission of Indonesia as maritime axis power in the world, the situation was changed slowly but sure. Meanwhile the law enforcement of illegal fishing is showed bravely by bombing the ship that has been proved stealing fish in Indonesian water territory. Slow but sure, the direction of maritime development in Indonesia is getting clear. It shows by the observation of researcher in Bitung and Belawan port cities. The people who are living in coastal area begin to develop their sightseeing of maritime axis by supporting the government effort to enrich their fish, maritime production, and even maximized its maritime tourism potential to develop the local prosperity and burned out the spirit of maritime country. The mindset, attitude, and nation pattern should be based on maritime spatial awareness of where we are. Therefore maritime vision becomes a need for Indonesia [21].

5. Conclusion

Littoral and coastal aspect to support maritime security is basically used to avoid any conflict of maritime that related with space seizure. Based on geo-politic perspective, there is an interaction between the space and human beings. That interaction results in space consciousness which directly or indirectly related with security and human prosperity interests. Space awareness concept which originally started from individual and family level is developing to the wider aspect. In the context of modern state, spatial awareness concept is realized by the claim of sovereignty, which limited with boundary and laws as well as apparatus to ensure security and sovereignty.

Management of littoral and coastal in supporting maritime axis is basically in accordance with the vision of the present government who wants to transform and build maritime axis as a vision or goal of nation. In this context, the idea of the maritime axis is a call to Indonesia to return to national identity as archipelagic country, which will build Indonesia as united maritime power, prosperity, and dignity. Maritime axis is a doctrine that guides us to a sense of common purpose.
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