

DYNAMICS AND CHALLENGES OF IMPLEMENTING THE CONCEPTS OF GREEN ECONOMY AND BLUE ECONOMY IN FACING CLIMATE CHANGE IN INDONESIA

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Abstract

Introduction: This research investigates the impact of climate change in Indonesia, particularly concerning the policy on the export of sea sand regulated by Government Regulation Number 26 of 2023. Utilizing a literature review and document analysis method, the study reveals the interconnection of international and national legal norms with climate change and its effects on vital sectors. Methodology: The research stands out for its interdisciplinary approach, exploring the implications of climate change on sectors such as agriculture, fisheries, and the consequences of natural disasters. Discussion: The analysis of the sea sand export policy highlights potential environmental damage and non-compliance with sustainable economic principles, becoming a primary focus in the global context of climate change. Conclusion: Concluding that a reevaluation of the sea sand export policy is needed from the perspective of climate change and environmental protection, the research offers legal recommendations to strengthen sustainability aspects.

Keywords: Climate change, Sea sand export, Government policy, Environment, Environmental law

INTRODUCTION

Climate change refers to long-term changes in temperature and weather patterns. This process can occur naturally through variations in the solar cycle. However, since the 19th century, human activity has been the main cause of climate change, mainly through the burning of fossil fuels such as coal, oil, and gas (United Nation, 2023). Internationally recognized climate change report conducted by the Intergovernmental Panel on Climate Change (IPCC) (Purbo, Ardino., 2016). Based on IPCC reports over the last century, the earth's temperature has increased by around 0.8°C, and the last three decades have been consistently warmer than the previous decade. Based on modeling scenarios, it is estimated that by the end of this century global temperatures will increase by 1.8-4°C compared to the 1980-1999 period. When compared with the pre-industrial period in 1750, this global temperature increase is equivalent to 2.5-4.7°C.

The global warming process is mainly caused by increased heat energy entering the ocean, which accounts for around 90% of total warming. There is evidence that the oceans continued to warm during this period. Additionally, heat and heat waves have also become more common since 1950, while droughts in some regions have shown an increase in severity and frequency. It is predicted that tropical storms of magnitude 4 and 5 will increase globally. Ocean conditions are also changing due to the absorption of carbon dioxide, which makes it more acidic. Global sea levels have risen by around 20 cm since the beginning of this century

and continue to accelerate. The rate of sea level rise was twice as fast in the 1993-2010 period compared to the 1901-1993 period. Apart from that, climate change is also affecting glacier areas throughout the world which are experiencing shrinkage and permafrost melting. Monsoon snow cover in the northern hemisphere has also decreased. Summer Arctic Sea ice cover has decreased by about 40% since 1979.

Natural disasters such as floods, droughts, heat waves and changes in the period of tropical cyclone phenomena have frequently occurred in Indonesia recently (CNN, 2023). According to the Meteorology, Climatology and Geophysics Agency (BMKG), cyclone phenomena previously rarely occurred in Indonesia, and when they did, usually only the tail part affected Indonesia (Rachmatica Dewi, Ajeng., 2022). For example, in April 2021, a tropical cyclone occurred in East Nusa Tenggara Province which caused flash floods and landslides. According to the National Disaster Management Agency (BNPB), the tropical cyclone, known as Tropical Cyclone Seroja, caused thousands of people to lose their homes, 182 people died, and 47 people went missing (Kompas, 2023). Climate change also has a significant impact on temperature changes and rainfall irregularities in Indonesia, which in turn affects the agricultural sector. A young farmer from Nias Island, North Sumatra, named Marlan Ifantri, has experienced difficulties in the last six years. Even though he has been farming since the age of seven and has a good knowledge of planting, harvesting and how to care for crops, he realizes that things will no longer be the same due to climate change (Detik, 2023). Based on a study entitled "*Unprecedented threats to cities from multi-century sea level rise*" conducted by a number of experts from Climate Central (US), Princeton University (US), Potsdam Institute for Climate Impact Research (Germany), Lamont-Doherty Earth Observatory (US), and the Institute of Physics (Germany) in 2021, Indonesia will become one of the countries most affected by climate change (Aisha, Nova., 2023). This study reveals that with a high emissions scenario that has the potential to cause global warming of 4 degrees Celsius and an average sea level rise of between 200 centimeters to 8.9 meters over a 2,000 year period, Indonesia is one of the 50 large cities in Asia that is most affected. .

The study states that, with projected average sea level rise, at least one large country on every continent except Australia and Antarctica will face very high risks. Many small island nations are at risk of near-total loss. If the ice sheet west of Antarctica begins to melt, sea level rise in the next few centuries could be higher than described. For example, with a scenario of a global temperature increase of 2 degrees Celsius, global sea level rise could

reach more than 1 meter (21%), whereas with a scenario of a temperature increase of 4 degrees Celsius, sea level rise could reach 0.5 meters (6 %) higher.

Many small islands are still vulnerable and can be protected on a certain scale, especially with the presence of coral reefs. However, climate changes such as global warming, ocean acidification, and other ecological degradation may threaten this hope. Indonesia as an archipelagic country will be one that is threatened and directly affected by climate change. Apart from that, climate change also has an impact on the richness of marine biota. Research published on April 5 found that the total number of species in open waters in tropical marine zones around the world had decreased by around 50% in the 40 years to 2010 (Mrash, Sarah., 2023). An increase in sea surface temperatures in tropical areas of almost 0.2 degrees Celsius is one of the factors contributing to this decline.

The sea and coastal areas have a major contribution to food security and poverty alleviation. More than 3 billion people rely on marine resources for their livelihoods, and 80% of world trade is carried out by sea. Indonesia is even ranked second as the largest fisheries sector in the world after China, with a fisheries sector contribution to Gross Domestic Product (GDP) of 27 billion US dollars and providing 7 million jobs (Gondo, Eko., 2023). However, marine resources are increasingly facing the threat of damage due to human activities that prioritize economic profits without paying attention to environmental sustainability, such as waste pollution and even the use of dangerous chemicals used for fishing.

Recently, the public was shocked by the enactment of Government Regulation (PP) Number 26 of 2023 concerning Management of Marine Sedimentation, which allowed the export of beach sand again after being banned for more than 20 years. This policy has the potential to cause environmental damage, especially in marine ecosystems. This occurs in the midst of global efforts to implement the concept of a sustainable economy, where various countries strive to utilize natural resources, including the sea, in a responsible way. Indonesia should follow this trend and develop the concepts of "Blue Economy" and "Green Economy" which focus on sustainable use of marine resources. This policy of course raises questions and suspicions from various sectors of society, especially in terms of monitoring and implementing the policy. In fact, it is not uncommon for the public to believe that the sea sand export policy aims to facilitate foreign investment in the Indonesian National Capital (IKN), even though there have been official statements from the President of the Republic of

Indonesia Jokowi, the Coordinating Minister for the Economy Airlangga Hartarto, and the Minister of Maritime Affairs and Fisheries (KKP) Sakti Wahyu Trenggono. The impact of this policy on the environment, especially on the nation's future generations, is very serious.

RESEARCH METHODOLOGY

This research adopts a descriptive juridical legal approach to explore the impact of climate change in Indonesia, specifically focusing on sea sand export policies regulated by Government Regulation Number 26 of 2023. The beginning of the research includes identifying legal problems related to climate change and natural disasters that have occurred recently in Indonesia . At the literature study stage, the analysis of international legal norms related to climate change and national regulations related to mitigation and adaptation is thoroughly investigated. Legal document research involves mapping existing regulations, while interdisciplinary legal research explores the links between climate change and critical sectors such as agriculture and fisheries. Furthermore, the focus was expanded to analysis of government policies, especially Government Regulation Number 26 of 2023 which allows the export of sea sand again after being banned for more than 20 years. The literature review also includes analysis of concrete cases related to the impacts of climate change, including natural disasters and changes in marine ecosystems. Information was obtained through a literature review involving legal literature, official documents and related scientific research. The results of this study are compiled into a legal analysis that includes legal, ethical and sustainability aspects. The aim of this research is to develop legal recommendations to improve sustainability and environmental protection amidst climate change.

RESULTS AND DISCUSSION

Coordinating Minister for the Economy's Commitment to the Green Economy and Blue Economy

The concept of a green economy was first put forward by David Pearce in his book entitled "Blueprint for a Green Economy" in 1989, where it was explained that a green economy is an economy that must be able to help environmental policy. It can be explained that a green economy is economic development that does not ignore aspects of environmental protection in its activities, pays attention to future impacts so that they can be felt by the next generation, and is economically just so that equality is paid to each section of the community in the surrounding area. The United Nations Environment Program (UNEP) has also

explained the overall concept of the green economy. According to UNEP, green economy is an economic activity that is low carbon, saves resources and is socially inclusive.

If the focus on the green economy concept is sustainable economic development accompanied by reducing environmental damage. Meanwhile, the blue economy was first put forward by Prof. Gunter Pauli in his book entitled "The Blue Economy, 10 Years, 100 Innovations, 100 Million Jobs" and was introduced to countries around the world through the United Nations Conference on Sustainable Development or Rio+20. Blue economy is a model of economic development approach that no longer relies on economic development based on excessive exploitation of natural resources and the environment (Dwi Wiratma, Harits., 2019). This is a big leap in development by abandoning economic practices that prioritize short-term profits and moving a low carbon economy focusing on the blue economy concept, namely economic development that focuses on the marine sector. The concept of the blue economy was originally the sustainable use of resources in the marine sector for the rate of economic growth which in its implementation still pays attention to the preservation of the marine ecosystem. The blue economy concept initially covered all fishery products with economic value, but currently the blue economy concept has become broader by integrating the triple bottom line of sustainable development, namely environmental, social and governance aspects (ESG).

Based on the explanation from the paragraphs above, it can be concluded the relationship between the green economy and the blue economy. Both are ideas about economic development that pay attention to and preserve the environment so that it is maintained, economic development is no longer focused on excessive exploitation of natural resources which prioritizes short-term profits. As a maritime country, Indonesia has abundant marine resources. So, if we look at the existing marine wealth potential based on the statement from the Ministry of Maritime Affairs and Fisheries, Indonesia's marine wealth potential reaches IDR 19,840 trillion from 11 business segments. Through the blue economy concept, it is hoped that this wealth can build a sustainable economy, improve livelihoods and preserve marine ecosystems (Yanwardhana, Emir., 2023).

The Blue Economy was first discussed at the (United Nation Conference on Sustainable Development/UNCSD) The UN Conference on Sustainable Development UNCSD aims to secure a renewed political commitment to support sustainable development, reviewing the progress achieved to date from the implementation of the outcomes that have been decided

from various high-level meetings on sustainable development. This conference itself is focused on two main things, namely the green economy in relation to sustainable development and poverty reduction, as well as the institutional framework for sustainable development. The conference also discussed the blue economy.

But long before the UN conference, this was mandated by the constitution of the Unitary State of the Republic of Indonesia, namely in article 33 paragraph (4) with the following article:

“Perekonomian nasional diselenggarakan berdasar atas demokrasi ekonomi dengan prinsip kebersamaan, efisiensi berkeadilan, berkelanjutan, berwawasan lingkungan, kemandirian, serta dengan menjaga keseimbangan kemajuan dan kesatuan ekonomi nasional.”

It is said in this paragraph that the Indonesian economy must be fair, sustainable and environmentally friendly, it is appropriate for it to be a rule of law country that is subject to and obedient to the constitution. The Government should and should be able to run the national economy by carrying out the mandate of the constitution. Apart from that, the regulations governing the blue economy after the implementation of the UN Conference on Sustainable Development, UNCSD, are in Article 14 paragraph 1 of Law (UU) No. 32 of 2014 concerning Maritime Affairs with the following article:

“Pemerintah dan Pemerintah Daerah sesuai dengan kewenangannya melakukan Pengelolaan Kelautan untuk sebesar-besarnya kemakmuran rakyat melalui pemanfaatan dan pengusaha Sumber Daya Kelautan dengan menggunakan prinsip ekonomi biru.”

In fact, the article states explicitly that the government and its authority to manage marine resources must use the blue economy principles that have been explained previously. This makes it clear that Indonesia has ratified the rules regarding the blue economy in its positive law, it remains to be seen how this law is implemented and becomes a reality. Indonesia as a maritime country is shown by its sea area reaching 70% of the country's territory (Helga, Ruth., 2023). So, as a maritime country, Indonesia certainly has very abundant marine resources. Marine resources that can be utilized optimally by Indonesia include fisheries, abundant sea sand, coral reefs, mangrove plants, seagrass beds, seaweed, tourism, even energy and mining. As of 2022, based on data, the richness of Indonesia's marine biota will reach 8,500 species of fish, 555 species of seaweed and 950 coral reef biota,

this makes biological resources in Indonesia's seas one of the greatest potential (Afrillia, Dian., 2023). However, non-biological marine wealth in Indonesia cannot be underestimated either.

The Indonesian Ministry of Maritime Affairs and Fisheries estimates that the potential of Indonesia's marine wealth reaches hundreds of trillions of rupiah. Based on data presented by the Director General of Aquaculture at the Ministry of Maritime Affairs and Fisheries, TB Haeru, the potential for Indonesia's marine wealth reaches USD 1.33 trillion or the equivalent of IDR 19,840 trillion, originating from 11 business segments, with 16% potential coming from the cultivation side (Mutiara, Aulia., 2023). Therefore, Indonesia ranks second as the country with the largest fisheries sector in the world after China, which contributes USD 27 billion to Gross Domestic Product (GDP) and provides 7 million jobs (Gondo Saputro, Eko., 2023). Bappenas also estimates that the potential of the blue economy is USD 1.33 trillion, which can create up to 45 million jobs (Bappenas, 2023).

By paying attention to the existing potential, the government, in this case through Bappenas, has committed to the G20 Development Ministerial Meeting (DMM) 2022 Side Event conference entitled "The Development of Indonesia's Blue Economy Roadmap" in Belitung, on 7-8 September 2022. "Bappenas in "The Blue Economic Development Framework is directed at optimizing the modalities that Indonesia has as an archipelagic country with a diversity of marine resources, and Indonesia's strategic political and economic position in the region," explained Minister Suharso. Management of marine resources and ecosystems is also directed at overcoming the challenges of coastal and natural resource degradation, climate change and marine pollution, as well as the socio-economic vulnerability of coastal communities affected by changes in marine and coastal ecosystem conditions. The development of the blue economy is also expected to expand the utilization of opportunities for developing high added value economic activities, such as quality tourism, renewable energy development, circular economy, and marine resource-based processing industries (Bappenas, 2023).

The government's commitment to implementing the blue economy must be put into practice, it should not just become a plan and wishful thinking. In practice, it requires cooperation from all parties in implementing the blue economy and there are at least 3 ministries that are directly related to the implementation of the blue economy in Indonesia, namely the Ministry of Economy, the Ministry of Energy and Mineral Resources, and the

Ministry of Maritime Affairs and Fisheries. But currently the government with Government Regulation (PP) No. 26 of 2023 concerning Management of Sedimentation Products in the Sea, instead of implementing the blue economy commitment, the government is actually counterproductive with the blue economy concept which is currently being promoted intensively. So, to initiate this matter, the Ministry of Maritime Affairs and Fisheries is in the process of making derivative regulations from the PP. This indicates poor coordination between institutions and even ministries in Indonesia.

The concepts of blue economy and green economy are important for Indonesia to pay attention to and implement because they are in line with sustainable development. The implementation of a green economy in Indonesia needs to be promoted for the sake of a more efficient economic continuity while still paying attention to the preservation of the surrounding environment, namely with zero emission efforts which affect the life of the ecosystem and the life within it. Apart from that, implementing a blue economy in Indonesia is also necessary considering that the enormous economic potential in Indonesia comes from the marine and fisheries sector, so economic activities that pay attention to marine sustainability are needed to maintain this potential for the next generation. Instead of focusing on development and planning to maximize the green economy and blue economy, the government has passed Government Regulations that contradict the concept of environmentally friendly economic development, even though Coordinating Minister for the Economy Airlangga Hartarto said the implementation of the green economy and blue economy will encourage inclusive and sustainable economic development. . The government through Airlangga has also said that it will focus on pushing this concept into the foundations of the nation's economy (Daughter, Inkana., 2023).

Problems with the Formation Process and Content of Government Regulation Number 26 of 2023 concerning Management of Sedimentation Products in the Sea

The issue of sea sand exports is actually not something new, because it has been around for a long time. In 2002, President Megawati Soekarnoputri issued Presidential Decree Number 33 of 2002 which regulates the Control and Supervision of Sea Sand Cultivation. One of the reasons behind the issuance of this decision is the negative impact caused by uncontrolled mining, dredging, transporting and trading of sea sand. These impacts include damage to coastal and marine ecosystems, difficulties experienced by fishermen and

fish farmers, as well as a decrease in the price of sea sand. This presidential decree shows that the government at that time was aware of the potential environmental damage caused by the exploitation of sea sand.

A good control and supervision scheme for sea sand exploitation has also been established in this decision. A cross-ministerial and regional government team was formed to report directly to the president. They have the authority to determine which zones and how large volumes of sea sand can be dredged and exported, with strict reporting mechanisms and the responsibility of business actors to carry out environmental restoration. This Presidential Decree was then followed by the Decree of the Minister of Industry and Trade in 2003 which prohibited the export of sea sand. However, interestingly, this presidential decision was revoked by Government Regulation Number 26 of 2023, which according to the government is not aimed at exploiting sea sand, but rather managing marine sedimentation. Reflecting on the Decree of the Minister of Industry and Trade 20 years ago, regarding the ratification of the temporary suspension of sea sand exports. This was motivated by the consideration that sea sand dredging at that time was uncontrolled, as a result small islands around the outermost areas of Indonesia's territorial boundaries were sinking. This finding prompted the President to issue an order to stop the export of sea sand as a form of protection and management of Indonesia's coastal and marine resources, including fishermen's fishing areas. Although sea sand export activities are a profitable sale.

As for the existence of this Government Decree, it turns out that it has not been properly complied with. In fact, there were still illegal sand export activities to Singapore until 2012. Illegal mining occurred in Karimun and Riau Islands Regency. The volume of sea sand exports to Singapore reaches 250 million cubic meters per year, with a selling price of 1.3 Singapore dollars per cubic meter. Given these facts, the price of sand in Singapore is known to be twice as expensive as the price in Indonesia. Singapore uses sea sand to expand its land area, as evidenced by the increase in Singapore's area by 25 percent (Idris, Muhammad., 2023). So why did Indonesia suddenly change its policy to the opposite after 20 years have passed, despite the fact that the government that issued the policy knew very well what damage and losses were caused by sea sand dredging.

Government Regulation Number 26 of 2023 (PP No. 26/2023) is considered to be contrary to the provisions of the Maritime Law. Understanding an article should be done by considering the text and context of the article. This means that an article cannot be

understood separately from the context of the chapter in which the article is contained, general provisions, general explanations, and article-by-article explanations of the Law. From this perspective, there are several things that need to be considered in PP No. 26/2023. PP No 26/2023 is based on Article 56 of the Maritime Law. In reading Article 56 as a whole, it can be concluded that this PP is not a derivative regulation as intended by the Maritime Law. Article 56 Paragraph (2) of the Marine Law states that the government is responsible for protecting and preserving the sea by preventing, reducing and controlling all forms of pollution and dealing with its damage. In addition, Article 1 number 10 of the Maritime Law states that marine environmental protection is a "systematic and integrated effort". Looking at the content, a question arises, how can this article be interpreted as managing marine sedimentation? Article 50 of the Marine Law explains that marine protection is carried out through four things, namely marine conservation, controlling marine pollution, managing marine disasters, and preventing and managing pollution, damage and disasters. Sedimentation management is clearly not included in the categories of marine conservation, pollution, disaster or damage, in accordance with the explanation in Article 50 of the Marine Law. According to the Marine Law, an important element of "pollution" is "human activities that exceed the quality limits of the marine environment", and the element of "damage" is "adverse impacts on marine resources, human health and other marine activities". Marine sedimentation, which in consideration of PP No 26/2023 is referred to as a "natural process", is clearly not "pollution" or "damage". Apart from that, the types of disasters are regulated in Article 53 of the Marine Law, and the formation of sedimentation is clearly not one of them.

PP No. 26/2023 is also inconsistent with Government Regulation Number 5 of 2021 concerning the Implementation of Risk-Based Business Licensing which regulates sea sand mining activities (KBLI 08104) as a high-risk activity that requires an Environmental Impact Analysis (AMDAL) and prohibits it from being carried out on small islands. outermost, small islands with an area of less than 100 hectares, and prohibits reducing the area of small islands by 10%. There is no prohibition on drilling for sand from small islands in PP No 26/2023, even though the object is the same, namely sea sand. Apart from that, PP No. 26/2023 also does not require an AMDAL, even though Government Regulation Number 5 of 2021 regulates that sea sand excavation is a high-risk activity that requires an AMDAL. Apart from that, there are high risks from sea sand mining activities which will be explained in detail in the following discussion.

Further problems arose when the government was once again reluctant to comply with Constitutional Court Decision No. 91/PUU-XVIII/2020 concerning Review of Law Number 11 of 2020 concerning Job Creation regarding real community involvement (meaningful public participation) in the process of forming statutory regulations. This problem can be proven by the many civil society groups and academics criticizing the lack of public participation in the formation of PP No. 26/2023 (CNN Indonesia, 2023). Apart from that, statements by several government officials stating that PP No. 26/2023 is important for regulating shipping lanes cannot be justified because Article 3 Paragraph (1) of PP No. 26/2023 itself excludes shipping lanes (Ombudsman, 2023). Furthermore, regarding sand exports, Article 9 Paragraph (2) PP No. 26/2023 states that exports can only be carried out if domestic needs are met and in accordance with the provisions of laws and regulations, even though in Minister of Trade Regulation No. 18 of 2021 No. 40 of 2022 has determined that silica sand, unprocessed quartz sand and other natural sand are prohibited from being exported.

Another problem is that this PP is in conflict with Law Number 27 of 2007 which was changed to Law Number 1 of 2014 concerning Management of Coastal Areas and Small Islands, which in Law 27/2007 clearly prohibits mining practices in coastal areas and small islands. . Given this conflict, the principle of *lex superior derogate legi inferiori* must be applied, which states that lower regulations must not conflict with higher regulations. Thus, higher regulations will override lower regulations (Augustine, Valerie., 2023). Article 9 paragraph (2) states that sedimentation results in the form of sea sand can be used not only for reclamation, government infrastructure development, and infrastructure development by business actors, but also for export purposes.

According to the author, this shows that what is meant is the use of sea sand minerals, not mud. This is an error in the regulations because the title is "sedimentation dredging", not "sand extraction". In fact, according to Bambang as a member of Commission VII DPR, in accordance with the Mineral and Coal Law, the Ministry of Energy and Mineral Resources has the authority to carry out sedimentation dredging, not the Ministry of Maritime Affairs and Fisheries. He also reminded that the emergence of this PP regarding shipping disruptions should involve the Ministry of Transportation (Kemenhub), not the Ministry of Maritime Affairs and Fisheries. In the explanation of article 1 paragraph 9, there is a statement that the Minister referred to in this PP is the Minister responsible for maritime affairs, namely the

Ministry of Maritime Affairs and Fisheries (Cendra Arini, Shafira., 2023). The Indonesian Ombudsman Commission (ORI) also considers that this PP tends to be a sectoral policy, based only on maritime law. This PP could cause conflicts of interest between regions and the central government.

In its formation, PP No. 26 of 2023 is felt to have not fulfilled the principles of forming existing statutory regulations because it is not known for certain whether in the formation process or at the formal level, this PP has been subject to Law No. 13 of 2022. The principle of meaningful participation is one formal principles in the formation of statutory regulations as stated in Article 96 of Law Number 13 of 2022 which reads:

"The public has the right to provide input verbally and/or in writing at every stage of the Formation of Legislative Regulations."

Evidence that this PP does not provide meaningful participation is that at the DPR-RI Commission IV meeting with the Ministry of Maritime Affairs and Fisheries (KKP), DPR Commission IV members said that they had never heard of the draft government regulation, and the second proof was when the article was published. become a polemic and controversy in society. These two things prove that PP No.26 of 2023 does not fulfill the principle of meaningful participation. Government regulations that fall into the category of statutory regulations should comply with the principles of establishing statutory regulations as well as the principles of content or material.

Then in the consideration of the PP only two legal bases are considered, namely Article 5 paragraph (2) of the 1945 Constitution of the Republic of Indonesia and Law Number 32 of 2014 concerning Maritime Affairs. It is felt that PP No. 26 of 2023 ignores Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management and does not take into account in its consideration the constitutional rights of citizens as stated in article 28 H paragraph (1) with the following article:

"Every person has the right to live in physical and spiritual prosperity, to have a place to live, and to have a good and healthy living environment and has the right to receive health services."

From an economic perspective, the sale of sea sand can be seen as a very profitable potential. Moreover, the existence of GPS technology increases the possibility that the

practice of exporting sea sand this year will not damage the environment. This is in line with the statement of Wahyu Muryadi, Special Staff to the Minister of Maritime Affairs and Fisheries, who stated that exports are not the main objective in utilizing sea sand, but rather to meet domestic needs in the form of reclamation and infrastructure development at sea (Ave Airiza Gunanto., 2023).

Talking about sales transaction activities, it seems that until May 2023, the Central Statistics Agency had not found any transactions related to sea sand exports. In fact, sea sand is included in the HS code grouping, namely HS 25059000. With the HS Code, both exporters and importers know how much they have to pay for taxes. Procurement of sea sand exports is now aimed at improving the larger economy, especially for BUMN and the Government. However, it also needs to be underlined that sea sand management is not merely to increase investment, but is prioritized to meet domestic needs in the context of reclamation needs (CNN Indonesia, 2023). This is stated in PP Number 26 of 2023. Considering that the potential for sedimentation in Indonesia currently reaches 23 billion cubic meters per year.

According to the author, although sea sand has a high selling value and is very profitable, this value is not commensurate with the environmental damage it causes. Environmental damage resulting from any economic activity cannot be justified, because it will have a direct impact on Indonesian society, especially the nation's future generations who will feel the impact directly. Instead, instead of over-exploiting and destroying nature through dredging beach sand, it would be better if the government maximized the potential of the "blue economy" and "green economy" concepts which have more sustainable economic opportunities and value.

The Bad Impact of Sea Sand Exploitation on the Environment and Society

In the previous discussion, the author explained that there were negative impacts that would result if the government exploited sea sand. The following are some of the losses that can be obtained from sand export activities, especially in coastal ecosystems:

1. Loss of Blue Carbon Producer Source and Storage Media

There are several losses that can be obtained from sand export activities, especially in coastal ecosystems. Marine vegetation is all vegetation or stands of low-level plants and higher-level plants that have marine or coastal habitats. This marine vegetation then consists of seagrass beds, algae fields and mangrove forests.

Mangrove forests and seagrass beds themselves are also known as coastal vegetation. Thus, the use of the terms 'marine vegetation' and 'coastal vegetation' is the same while still referring to the three types of vegetation mentioned above.

There are three important roles in this ecosystem, namely as a spawning ground, a nursery ground, and a feeding ground. Apart from that, this ecosystem also has an important role as the highest producer of blue carbon in the ocean. Blue Carbon refers to the concept of using coastal ecosystems as a carbon storage place that can be utilized for various needs, including nutrition (Wahyudi, 2018).

Coastal vegetation, such as seagrass beds and mangroves, is estimated to make a large contribution to carbon deposition in sediments, around 50% of the total 216 TgC per year. Globally, it is known that seagrass has carbon reserves of around 4.2 to 8.4 PgC, while mangroves have carbon reserves of between 4 and 20 PgC. Coastal ecosystems with marine vegetation also have significant net primary production (NPP) compared to other ecosystems. Carbon stored by coastal vegetation is in the form of body biomass. The high carbon stock in sediments in coastal ecosystems is a large carbon storage area which is estimated to be capable of burying between 48-112 TgC of carbon per year, based on data from 207 seagrass meadows in 88 locations. Coastal ecosystems are capable of storing 4.2 - 8.4 PgC of carbon in sediment, but at the current rate of degradation they will release 299 TgC per year due to sediment mineralization and deforestation processes (Prihantono etc., 2016).

Coastal vegetation is also closely related to sand sediments. Sand sediments are solid particles with sizes between 0.0625 and 2 millimeters consisting of grains of sand collected and deposited at the bottom of waters, rivers or beaches. Sand sediments consist of various minerals, such as quartz, feldspar, and decomposed organic materials. Sand sediments usually have a granular structure and the ability to transmit water through the spaces between their particles.

Sand sediments have an important role in providing habitat for coastal communities. The resource-rich environment of sand sediments and microhabitats provides shelter, protection, and food sources for coastal organisms. Apart from that, sand sediments also play a role in nutrient circulation in coastal ecosystems. Through the decomposition of organic matter in sediments, important nutrients such as carbon are produced, which can then be absorbed and used by roots as nutrients.

2. Changes in Plankton Abundance as an Indicator of Water Fertility

Another negative impact caused by sand dredging is high turbidity in the waters which can disrupt the photosynthesis process of organisms in it. Apart from that, it can also result in environmental changes, including changes in the landscape, changes in flora and fauna habitat, changes in soil structure, changes in surface and ground water flow patterns. The existence of various sand dredging activities upstream can reduce water quality and the abundance of microorganisms, including plankton. The fertility of a body of water can be seen from the abundance of plankton in that water. If the abundance of plankton in the waters is high then the fertility of the waters will be high and conversely if the abundance of plankton in the waters is low then the fertility of the waters will also be low (Sidik, 2017). According to Abida, zooplankton in flowing waters tends to have a lower density than phytoplankton. The influence of current speed on zooplankton is stronger than on phytoplankton. Therefore, zooplankton are generally found more often in waters with low current speeds and low levels of water turbidity. The impact could be widespread and affect the habitat of other sensitive organisms.

3. Loss of Islands and Maritime Boundaries in a Region

The biggest impact of sand dredging in an area is the loss of the island itself. The real proof of this activity is Nipah Island. Nipah Island is an uninhabited island which is part of Pemping Village, Behind Padang District, Batam City, Riau Islands Province. Nipah Island has strategic value as one of the outermost points on the Indonesia-Singapore border line. According to information from the Directorate of Small Islands Utilization, geographically Nipah Island is located at coordinates 01°09'13” N and 103°39'11” E (Budi Hermawan, 2017).

The reclamation carried out by Singapore, including using Nipah Island, has had a major impact on the expansion of the country's territory. Previous research conducted by AG Sinulingga revealed that reclamation carried out by the Singapore government changed the shape of the coastline and the distance of sea boundary points to mainland Singapore. This resulted in an increase in Singapore's land area. This reclamation began in 1960 as a response to territorial limitations that were disproportionate to population growth. With an initial area of around 581.5 square kilometers, Singapore needs to meet the growing needs for infrastructure, housing,

industry and recreation. Therefore, the Singapore government implemented a coastal reclamation policy to overcome this problem, which resulted in an increase in the area to 697.2 square kilometers (Akmaludin, 2017).

However, the existence of Nipah Island itself is threatened due to sand mining carried out around the waters in the Riau Islands for the needs of the Singapore reclamation project. This causes sea currents to increase, so that abrasion will continue to occur and pose a risk of drowning. The area of Nipah Island was only around 6 hectares when the water receded in 2003 before the government decided to carry out reclamation on Nipah Island.

It should be noted that the threat of losing Nipah Island in the context of territorial restrictions between Indonesia and Singapore could have an impact on Indonesia's position in negotiations regarding maritime boundaries that have not yet been determined with Singapore, especially in the western part of the Singapore Strait (western segment region). As previously explained, the territorial delimitation agreement between Indonesia and Singapore only covers 6 points in the southern segment (v-line), while the eastern region with a length of 28 miles and the western region with a length of 14 miles are still not finalized. Nipah Island is located in the western segment of the region, so if Nipah Island sinks, it will have an impact on Indonesia's position in the bilateral negotiations that have been under discussion since 2005 between Indonesia and Singapore.

4. Threats to the Economy of Fishermen and Coastal Communities

The Indonesian Traditional Fishermen's Association (KNTI) said that sea sand mining could cause problems on beaches which would also affect fishermen and coastal communities economically. Misbachul Munir, Chair of the KNTI DPP for Fisherman Advocacy and Protection, explained that sea sand mining can cause beach damage and loss of sand, which in turn can damage the water quality in the sea and beaches. This can increase pollution on beaches and make sea water cloudy. In addition, mining of sea sand sediments can cause damage to fish spawning areas, damage mangrove ecosystems, and disturb fish farming areas (Merdeka, 2023).

Sand mining in coastal areas refers to activities that involve the extraction of sand, including rocks and coral reefs, which are habitats for fish, squid and crab species in the spawning and pond stages. This process involves the use of vessels with

sophisticated suction technology and has a large capacity to withdraw all these materials. This mining is usually carried out to a depth of 10 meters below the surface and possibly deeper, depending on the availability of sand at the dredged location (Anggriani., 2020). In addition, sea sand mining activities cause water turbidity. This is caused by the presence of a layer of mud at the very bottom of the sea sand. When the excavation process reaches the deepest layers, this will cause the water to become cloudy. The impact of this condition means that fishermen have not been able to catch fish in the area since mining was carried out.

Sea sand mining can also have an impact on changes in the social conditions of fishermen. Fishermen will lose their fishing areas so they will go out to sea, which incidentally takes around 15 days. This is also experienced by crab fishermen. Before sand mining was carried out, fishermen usually placed their rakkang side by side with other fishermen. However, after the sand mining took place, competition occurred between the fishermen which led to fighting over land and damage to their rakkang. Apart from that, fishermen often lose their rakkang.

5. Minimal Sources of Food Security

A global network of journalists who are members of the Environmental Reporting Collective (ERC) found evidence that sea sand exports damage the environment and disrupt food security. ERC interviewed a group of women who fought against a sand mining company at Seluma Market, Bengkulu, with a peaceful and symbolic protest. There, sea sand mining by PT Faminglevto Bakti Abadi is accused of threatening the mussel-sea shell ecosystem which is a source of income and protein for the Serawai indigenous community (krjogja.com, 2023).

Not only in Seluma Market, similar cases have also occurred in various coastal areas throughout the world. Traditional fishermen and coastal communities are victims of irresponsible exploitation of sea sand. They lost their main source of income and a vital source of protein for daily life. Those who previously had easy access to abundant catches now have to struggle to find enough fish to meet their daily needs. As a result, poverty and hunger are problems that plague coastal communities. Losing sustainable sources of seafood also makes them dependent on external food aid, which exacerbates social inequality and injustice in society.

Apart from that, exploitation of sea sand also has an impact on food availability for the entire human population. Seafood, such as fish, shellfish and shrimp, is an important source of protein for human health. However, with the decline in fish populations and damage to marine habitats due to sand exploitation, the availability of seafood is increasingly threatened. This drives an increase in demand for alternative food, which can lead to deforestation, land use changes, and other negative impacts on the ecosystem.

Social inequality will also arise among society. Traditional fishermen are now faced with a tragic fate so that they will continue to be trapped in an endless cycle of poverty. As a result, many of them experience poor nutrition, especially when children are growing up. Slowly they will abandon this livelihood in order to get a certain income and erode traditions and often do not match their previous income.

The government is basically defending the issuance of this PP. There are several reasons and mitigation efforts given by the government regarding the sand export policy, including:

1. The spirit of this PP is the utilization and management of marine sedimentation, not mining

The reason is that the government feels weak and actually has the potential to become a legal loophole for parties who want to benefit themselves. This PP gives legitimacy to entrepreneurs to run a sea sand export business which has the potential to be dangerous for the environment and detrimental to the communities around the affected sea sand mining, because when Even now, sea sand export permits have not been implemented, so there have been many protests from fishermen against sea sand mining, including hundreds of fishermen in Takalar Regency, South Sulawesi, Wednesday, (19/7/2017), clashing with police officers providing security when they held a demonstration. Rasa demands the revocation of sea sand mining permits off the coast of Galesong and Sanrobone (Bone, Abdul Haq, 2017). With the current real impact of natural damage due to sea sand mining, it is felt that the government is making greenwashing efforts. The government is playing again with a narrative that seems to prioritize the spirit of environmental recovery and sustainability, but in reality it is like rolling out the red carpet for business and oligarchic interests.

2. Inadequate Supervision Due to Limited Budget and Resources

The Ministry of Maritime Affairs and Fisheries guarantees that it will monitor the export of sea sand and that not all areas are permitted to carry out sand mining and a study team is needed first. Apart from that, the issuance of this regulation was driven by the high demand for reclamation in the country. With this regulation, it is hoped that we can anticipate sea sand dredging which could have an impact on environmental damage. However, considering the current situation with a limited budget, supervision by the Ministry of Maritime Affairs and Fisheries (KKP) regarding violations at sea is still inadequate. Illegal practices, such as illegal fishing, still occur frequently with high levels of activity. The Ministry of Maritime Affairs and Fisheries is trying to increase supervision by increasing their workload, but without guarantees that they can supervise effectively. Budget limitations are the main obstacle in carrying out effective supervision. Limited resources make it difficult for MPAs to expand the scope of their supervision. Considering Indonesia's vast sea area, it is difficult for the KKP to cover all areas and monitor every activity at sea. In addition, illegal practices such as illegal fishing still continue.

3. Exports are carried out if domestic needs are met

The government always makes promises regarding export activities if the country's needs are met. However, in reality, the government always ignores this and provides concrete evidence as previously described. The government may deliberately ignore or modify the criteria used to determine whether domestic needs have been met. They may use incomplete or inaccurate data to support their arguments about the need to export. In this way, the government can easily claim that domestic needs have been met, even though in fact there are still many needs that have not been met.

In addition, when there are strong business interests to allow the export of a commodity, the government can put aside domestic needs and prioritize the profits of related industrial and business sectors. The government is able to manipulate information to make it appear that domestic needs have been met, solely to gain financial benefits from sand exports.

Authoritarian governments tend to use propaganda and information control to influence public perceptions. They can suppress reports that do not fit the narrative they want to convey and control the media to present stories that support their claims that domestic needs have

been met. In this way, society can be influenced to accept exports as a reasonable and profitable act.

CONCLUSION

In its journey towards sustainable development, Indonesia realizes the importance of implementing the concepts of blue economy and green economy. These concepts play an important role in maintaining a balance between economic growth and environmental sustainability. Green economy, which carries the principles of economic efficiency and sustainability, is a foundation for Indonesia to build a better future. In this effort, the government is committed to reducing emissions and paying attention to the impact on ecosystem life and the biodiversity within it. In line with this, the huge potential possessed by the maritime and fisheries sector encourages the implementation of the blue economy. Through sustainable use and protection of marine resources, this economic potential can be maintained and enjoyed by future generations.

Along the way, a paradox occurred when the government passed a government regulation that was contrary to the concept of environmentally friendly economic development. This decision raised doubts and suspicions from various parties, including the public, regarding the supervision and implementation of this policy. Some groups even doubt the government's intentions, seeing the sea sand export policy as a step to facilitate foreign investment in the Indonesian National Capital (IKN). In the discussions that emerged, critical voices were heard reminding the government to remain focused on developing and planning the green economy and blue economy. With consistency and good coordination, the government can direct inclusive and sustainable economic development, while preserving the environment and the potential of marine resources.

The impact of these conflicting policies cannot be ignored, especially for the nation's future generations. Communities pay serious attention to how their environment will be maintained and passed on to their children and grandchildren. Therefore, there needs to be concrete steps to ensure that the green economy and blue economy are not just rhetoric, but actually become the basis for real policies and actions. In facing this challenge, the government needs to listen to the voices of the people and commit to greater consistency and coordination between the government and stakeholders to ensure that the concepts of blue economy and green economy can be implemented effectively. Only with strong collaboration

and real action, Indonesia can achieve sustainable economic growth without sacrificing environmental sustainability. The future of this nation depends on how we are able to integrate the concepts of blue economy and green economy into the foundations of our economy, making it a strong foundation for the next generation.

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