The Role of Blue Economy Towards Golden Indonesia 2045

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Abstract. This study aims to investigate the role of the blue economy and strategic leadership in driving sustainable development in Indonesia. In 2045, exactly 100 years after independence, Indonesia is projected to have become the 4th largest economic power (based on PPP GDP) and the 8th largest economy in the world (based on Real GDP). Both projections will place Indonesia as a high-income country and escape the middle-income trap. Indonesia 2045 has a vision to be Resilient, Prosperous, inclusive and sustainable. To realize this vision, one of the interesting things is how the blue economy supports Indonesia's growth. The blue economy, as a concept that focuses on the sustainable use of marine resources, is the main focus to understand how this sector can contribute to inclusive economic growth that is environmentally friendly and provides a coherent picture of the blue economy in realizing sustainable development strategies and realizing Indonesia Emas 2045.

Keywords: Blue Economy, Sustainable Development, Golden Indonesia.

1 Introduction

The term "blue economy" was first used in 2010 by Gunter Pauli in his book "The Blue Economy, 10 Years, 100 Innovations, 100 Million Jobs." Pauli proposed a theory that could be advantageous for preserving natural resources, protecting the environment, and lowering industrial costs through the use of environmentally friendly, clean, recycled, or renewable energy. The book is a compilation of inventions that, by looking for workable solutions derived from sustainable natural systems, help to create a sense of global consciousness [6]. A nation's numerous sectors ought to keep progressing and growing over time. For the community to benefit from progress, the government's involvement in maximizing and raising the caliber of operations in each sector is crucial.

The existence of the Blue Economy in Indonesia is one of the steps the Indonesian government has made to achieve the Sustainable Development Goals (SDGs). This is because the ocean has a big impact on climate change. The ocean covers more than 70% of the earth's surface and has a major role in both climate regulation and oxygen generation. [8]. In addition, 500,000–10 million marine species call the ocean home, and it supplies 99 percent of the world's edible food [9][12]. The ocean also circulates 83% of the world's carbon, absorbs 30% of carbon dioxide (CO2) and 93% of greenhouse gas (GHG) emissions [9][12]. Marine ecosystems are also affected by the turmoil of climate change. According to the State of World Fisheries and Aquaculture

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(SOFIA) 2020 issued by FAO, illegal fishing or fishing beyond sustainable limits occurs at a rate of 34.2% [5][8]. Furthermore, based on data from the Living Blue Planet Report 2015 issued by WWF, the population in the ocean has decreased by 49% between 1970 and 2012 [9][15]. In the last 30 years, marine heat waves are estimated to have increased by more than 50%, and it is predicted that by 2100, ocean temperatures will increase by 1-4 degrees Celsius [8]. The data above shows concerns about the current condition of the marine ecosystem, requiring new, innovative and solution-oriented breakthroughs to save our planet, Earth, especially the marine ecosystem in Indonesia.

The contribution of Indonesia's marine wealth not only has an impact on climate change or the global environmental crisis, but also contributes to Indonesia's domestic economy. In terms of Indonesia's marine economic potential, the benefits that can be obtained from Indonesia's seas or waters each year amount to 1.33 trillion US$ [18]. In 2017, the marine and fisheries sector contributed to fish production of 23,186,442 tons with a value of 384.48 trillion rupiah [7]. The presence of sustainable development or what is commonly called the Sustainable Development Goals (SDGs) is designed as a form of solution or new breakthrough to overcome various climate change crises and environmental conditions on planet earth, especially in marine ecosystems.

In order to achieve Indonesia Emas 2045, economic restoration is needed that is able to drive Indonesia's transformation into a country with high income. One of the economic sectors that can make this vision a reality is the maritime economy [3]. The fisheries industry plays a number of roles in economic growth, including creating jobs, raising personal productivity, boosting income and livelihoods, and generating foreign exchange through export-import trade. The movement of other sectors, including trade, industry, and even education, which is connected to diverse campus research and the absorption of educated personnel, demonstrates the fishing sector's ability to create numerous effects or chain effects

The welfare of the community and the advancement of the nation are greatly impacted by the fishing industry as an economic sector [10]. In areas of the economy where the fishing industry should be prioritized and allowed to go further in order to generate growth that will benefit the whole, the sector should continue to be advanced and developed. To ensure that fishing operations continue and can benefit the nation's welfare, this may require ingenuity and imagination in addition to optimizing the role of stakeholders, in this case the government. By keeping an eye on the sustainability and balance of the waterways, fisheries that are currently moving toward industrialization must be able to sustain their operation. Consequently, the notion of a blue economy surfaced, which was instigated by Minister of Maritime Affairs and Fisheries Cicip Sutardjo.

2. Methodology

Descriptive-qualitative research is the method employed, which is based on the problems or phenomena examined in relation to the "Role of the Blue Economy Towards Golden Indonesia 2045". Research that gathers data in the form of words and images rather than numbers is known as descriptive-qualitative research.

Descriptive-qualitative research tries to describe, illustrate, explain, and provide more in-depth responses to the subjects under study. A research technique based on post-positivist philosophy, the qualitative descriptive approach is used to examine items in their natural environments [16].

3. Results and Discussion

3.1 Explanation of Blue Economy Principles

The blue economy principle bases economic development on the principles of a healthy and sustainable economy, with a focus on marine economic policies and the marine environment. The Blue Economy concept emphasizes natural efficiency, waste minimization, innovation, and creativity [1]. The blue economy principle can also strengthen food and economic security, as well as support sustainable growth and community welfare [11].

Given that the health of our seas is vital to the welfare of both people and the planet, this paradigm highlights the significance of striking a balance between environmental preservation and economic development. Businesses can lessen their environmental effect and seize new chances for innovation and expansion by embracing a blue economy strategy. For businesses wishing to incorporate sustainability into their operations and help create a more sustainable future for everybody, this theoretical framework offers a road map.

Circular economy concepts are a fundamental component of the blue economy approach, with the dual goals of reducing waste and optimizing resource efficiency. Through the design of products that prioritize recycling and reuse, companies can lower their environmental impact and establish a more sustainable supply chain. To further lessen their dependence on fossil fuels and contribute to a cleaner, greener future, businesses are encouraged under the blue economy framework to invest in sustainable technology and renewable energy sources. By implementing these principles, businesses may improve social and economic conditions for communities worldwide in addition to safeguarding the health of our seas.

Implementing sustainable practices not only benefits the environment but also has a positive impact on the bottom line. Companies that prioritize sustainability often see increased efficiency, cost savings, and improved brand reputation. By investing in renewable energy and sustainable technologies, businesses can reduce their carbon footprint and reduce their reliance on finite resources. This not only helps protect the planet for future generations but also positions the company as a leader in the global shift toward a more sustainable economy. Additionally, by supporting local communities and promoting social responsibility, businesses can create a more inclusive and equitable society for all. For example, companies that switch to solar energy for their operations can reduce electricity costs and reliance on fossil fuels, ultimately saving money and reducing their environmental impact. By partnering with local organizations to support community initiatives such as education and healthcare, businesses can build stronger relationships with stakeholders and enhance their reputation as socially responsible entities.

3.2 The Relevance of the Blue Economy Concept to Sustainable Development Goals (SDGs)

primary objectives. The blue economy promotes equitable economic growth and the preservation of marine ecosystems in addition to the sustainable use of marine resources. According to the SDG agenda, implementing the blue economy is viewed as one of the primary measures to attain Indonesia Emas 2045.

It goes without saying that Indonesia, with its enormous oceans and wealth of resources, needs to be managed well to prevent harm to the environment and natural resources. The riches of Indonesia's marine resources can help the nation itself. For the goals of the Blue Economy idea to be effectively carried out, the vast majority of people who live in coastal areas must be well-informed about how it will be implemented. The goal of the Blue Economy is to instill a critical mindset in coastal communities so that people can reduce overuse of natural resources and eventually be able to use marine resources more effectively and sustainably. The Blue Economy concept's natural resource management tenets include improving resource efficiency, production cycle systems, reducing waste disposal, social awareness, innovation, adaptation, and good governance in order to eventually boost positive economic growth. [13]

This is undoubtedly another aspect of putting the Blue Economy concept into practice. The environmental impact also undoubtedly decreases garbage disposal, which will have a negative influence. In order to create good jobs, build social capital, increase income, and restore ecosystems, the Blue Economy also places a high priority on regional development. In this study, the discussion centers on the Indonesian marine ecosystem and the preservation of marine resources to prevent overuse or exploitation. [14] This can help Indonesia achieve the Sustainable Development Goals (SDGs), particularly point 14 of the SDGs, which is the Marine Ecosystem, which aims to conserve and sustainably utilize marine and oceanic natural resources for sustainable development. Under the Joko Widodo administration, the Blue Economy concept is being used to protect natural resources, particularly in the Indonesian marine sector.

For the next five years starting in 2020, the Indonesian government has set goals and expectations to ensure the success of the SGD, particularly in point 14. In 2020, the government successfully implemented permanent regulations to prevent overfishing, illegal fishing, and fishing practices that harm the environment, such as using bombs that harm coral reefs. A science-based management plan was then put into place, and fish stocks were restored in a timely manner and to a level that yielded the highest sustainable production possible based on their biological characteristics. In the same year, at least 10% of coastal areas were protected and preserved.

3.3 Analysis of Blue Economy Policy in Indonesia

Indonesia's economy has shown resilience in the face of global challenges, with stable GDP growth and increasing foreign investment. However, the country still faces challenges such as income inequality, infrastructure gaps, and environmental degradation.

Some policies that have been implemented by the Indonesian government in implementing the blue economy program are: Note on Blue Finance Policy: Bappenas and the World Bank worked together to create this policy. The Oceans for Prosperity study [15], serves as the foundation for this policy and lists the following industries as priority ones for blue finance involvement: [1], Combating garbage, particularly plastic waste; [2], Sustainable fisheries (including aquaculture); [3], Coastal and marine tourism; [4], Managing coastal and marine assets (especially marine conservation areas). In order to secure the sustainability of the ecosystem by using natural circumstances as the foundation, all of these sectors have funding shortfalls and are in desperate need of capital and operating money.

Sustainable Development Goals Security Framework: This framework produces SDG Bonds (sukuk-shaped debt securities). In 2021, the Indonesian government became the first country in Southeast Asia to issue SDG Bonds in the global debt capital market, raising EUR 500 million (USD 548 million). The proceeds from these bonds were used to finance social and environmental projects.

Blue Economy Development Framework: This framework serves as a reference for blue economy activities. The World Bank has launched the BEDF to help develop coastal countries' transformation towards a sustainable blue economy in order to build resilience to climate change. The framework is a collection of technical aid and analytical tools designed to assist nations in creating a path toward a diversified and sustainable maritime economy. emphasizes marine biotechnology, fisheries, aquaculture, mariculture, coastal tourism, and ocean energy. The framework seeks to expand the blue economy in order to fight poverty and hasten prosperity.

Blue Financing Strategy: This strategy is the result of collaboration between Bappenas and the Coordinating Ministry for Maritime Affairs and Investment. This strategy is known as blue financing, which is a financing innovation for the development of Indonesia's marine and fisheries sector, which is the target for achieving the vision of Advanced Indonesia 2045. In 2045, the maritime sector is expected to contribute 12.5% to GDP. In order for this activity to be implemented, assistance for funding the needs of the maritime sector for the 2020-2024 period is estimated to reach 4.3 billion US dollars, while the government through the APBN can only help finance 20 to 25 percent of the funding needs. Bappenas also plans to take concrete steps such as compiling the Blue Indonesia Financial Instrument Guidelines, which are a combination of policies and strategies prepared by the Ministry of PPN/Bappenas and the Coordinating Ministry for Maritime Affairs and Investment. This policy will be used as a guide for the development of innovative financing instruments in the maritime sector.

Blue Bond: the issuance of blue bonds has benefits in helping to develop a sustainable blue economy by providing financing for marine issues with clean energy-based financing solutions, transportation and food systems, also supporting the preservation of marine ecosystems and improving marine health. Blue economy policies also include the scope and effectiveness of marine conservation areas with descriptive zones and empowerment of local communities, reduction of marine debris. Arrangement of the use of marine space to protect coastal and marine ecosystems as well as control of development activities in coastal areas and small islands. In addition, measured fishing based on quotas by maintaining the sustainability of fish resources, increasing economic growth in coastal areas for the

welfare of fishermen, maintaining environmental carrying capacity and sustainable environmentally friendly culture for the welfare of the community is also part of this policy.

3.3 Environmental Status

Indonesia is known around the world for having a wide diversity of marine life. This is caused by a number of causes, including the fact that Indonesia is home to 18% of all coral reefs worldwide and 22.6 % of all mangroves worldwide [2]. Habitats including mangrove forests, coral reefs, and seagrass beds can be found in the sea and along the coast, and they are vital to the Indonesian maritime ecology. The region of the coral triangle, which includes the entirety of Indonesia's territory, is home to a large number of coral reefs and is crucial to the blue economy, particularly in the fishing and tourism industries. Indonesia has not fully incorporated the wealthy state of the region into its blue economy.

The health of the maritime environment is threatened by climate change and environmental deterioration; fishing, poorly managed tourism, and coastal development are common causes of physical harm. Apart from the aforementioned issues, numerous more variables exist that pose a threat to the demise of the blue economy, one of which is the accumulation of plastic garbage in the ocean. Plastic garbage has an adverse effect on the public's health as well as the quality of marine products and the growth of marine tourism. An estimated USD 450 million is lost annually to plastic waste's effects on the marine economy [19]. Indonesia is ranked 137th out of 221 countries in the world according to the Ocean Health Index (OHI). This does not point to a successful outcome for a sustainable economy.

Around 28.91 hectares of waters in Indonesia have currently been designated as marine conservation areas (MPA), which is in line with the commitment to the Convention on Biodiversity (CBD) and Sustainable Development Goals (SDG) 14. Not only that, in 2030 Indonesia plans to add around 32.5 hectares (10% of the total marine area) as a conservation area (MPA).

3.4 Indonesia Vision 2045

By 2045, Indonesia wants to rank among the top five economies in the world, according to its Vision 2045. Four pillars support the vision: [1], human development and scientific and technological mastery [2], sustainable economic development [3], equitable development [4], and good governance. In particular, pillar 2 of the vision acknowledges the significance of Indonesia's maritime economy and establishes a goal to increase it from 6.4 percent of GDP in 2015 to 12.5 percent in 2045 through three strategies: [1] expanding the role through an emphasis on competitive and sustainable marine technology, sustainable and effective sea connectivity, and inclusive marine tourism; [2] developing competitive, high-quality human resources for the maritime industry; and [3] realizing robust and dependable maritime defense and security capabilities to confront regional and global challenges

Indonesia recognizes the significance of maritime economic development in achieving sustainable economic development. The marine economic concept, which

emphasizes sea transportation as the primary factor in promoting national connectedness and integration throughout the archipelago, is also seen to be able to foster equitable development. This goal is achieved by (I) the growth of 48 port cities; (II) the establishment of seven international hubs and the central port system of the sea toll; and (III) short-distance sea transportation and contemporary port administration

It is also anticipated that the growth of an inclusive maritime tourism sector and a competitive and sustainable fishing business will add value and increase job possibilities for the populace, promoting economic advancement. bolstered by a top-notch maritime workforce.

The outcomes of this sector's development are also anticipated to assist improved environmental and resource management through the provision of resources, advancements in technical innovation, and a robust maritime culture. Along with boosting water security through integrated and sustainable land-water management, urban forest development, rainwater gathering, and forest and land rehabilitation, this strategy also intends to increase the percentage of renewable energy from 5% in 2015 to 30% in 2045. These initiatives are in keeping with Indonesia's objective to raise the Environmental Quality Index by more than 80 points and reduce emissions by almost 41% compared to the baseline scenario. By taking these steps, Indonesia hopes to promote sustainable economic growth and improve the environment for living things, especially aquatic ecosystems. The growth of marine power, which focuses on building strong maritime security and defense and is capable of facing regional and global problem

3. Conclusion

The results of the literature study found that the blue economy has enormous potential in the tourism sector and it can be concluded that from the results of the study, the blue economy has an impact on the economy.

For archipelagic nations like Indonesia, the blue economy is the best way to raise economic well-being. If properly managed, Indonesia's maritime industry has the potential to significantly boost the country's economy and play a significant role in its economic advancement. Marine capture fisheries and aquaculture, shipbuilding, marine-based manufacturing, tourism centered on the coast, marine services, biotechnology and the bioeconomy, research and development, and education are some of the industries that make up the blue economy. These industries demonstrate what Indonesia can offer if its marine-based economy is run sustainably. In fact, one of the ways the Indonesian government is working to achieve the sustainable development goals (SDGs) is through the establishment of a blue economy. Given that the blue economy is a key component of Indonesia's plan to develop an advanced economy and improve the country's economy, more policies centered on it should be implemented

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