IMPLEMENTATION OF BLUE ECONOMY AS AN ALTERNATIVE FOR SUSTAINABLE DEVELOPMENT FINANCING

Beni Hartono[1], Giantoro Rudiman[2], Abet Alpha Pardede[3], Muammar Khaddafi[4]
Master Acounting Program, Faculty of Economics and Business Universitas Batam[1,2,3]
Faculty of Economics and Business Universitas Malikussaleh[4]
*Correspondence Email : 84123001@univbatam.ac.id

Abstract

Indonesia has marine potential spread over a sea area of 5.8 million square km consisting of a territorial area of 3.2 million square km and an Indonesian Exclusive Economic Zone (ZEEI) area of 2.7 million square km. Apart from that, Indonesia has the second longest coastline in the world, with a total length of 81,000 km. However, Indonesia's maritime economic development has not yet provided an optimal contribution to national prosperity and progress, to date the contribution of Indonesia's maritime gross domestic product (GDP) is in the range of 7%, which is still considered relatively small. Furthermore, looking at the 14th SDGs goal, namely Marine Ecosystems, in the marine ecosystem goals in this SDGs there is a policy that has been made by the Indonesian government, namely in 2020-2024 which contains improving maritime and marine management, improving fisheries governance, and revitalization. sustainable fishing practices. To fulfill funding for the seven development agendas stated in the 2020-2024 RPJMN, funding of USD 1,641.3 billion is needed. Meanwhile, the State Revenue and Expenditure Budget (APBN) is only able to fund around 20-25 percent of these needs, including the needs of the maritime, fisheries and maritime sectors. Sustainable infrastructure financing has an important role in achieving Sustainable Development Goals (SDGs), especially those related to conservation and preservation of marine resources. In an effort to overcome financing challenges, Blue Finance emerged as a promising solution. By using financing instruments such as blue bonds/Sukuk and the Government Cooperation Scheme with Business Entities (KPBU), Blue Finance has the potential to attract private participation and specifically support marine elementary school conservation or preservation projects and programs.

Keywords: blue economy, blue financing, sustainable development, blue bond, APBN, PPP

INTRODUCTION

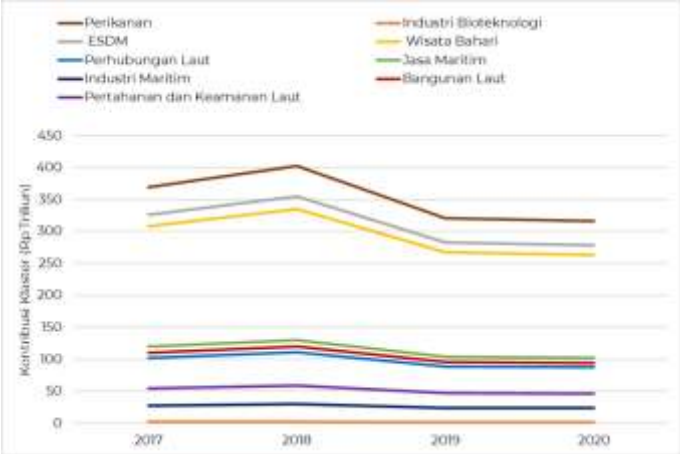
Marine resources play a central role in sustainable development efforts throughout the world, especially for countries that have long coastlines and extensive sea areas. Amid the challenges of climate change and increasing demand for marine resources, the concept of the "blue economy" has become a very important framework. This concept emerged as an effort to optimize the use of marine resources, preserve the marine environment, and support sustainable economic growth. Indonesia, as a maritime country with an extraordinary wealth of marine biodiversity, has included the blue economy concept as an integral part of its development vision. Indonesia, which is located between the continents of Asia and Australia and borders the Pacific and Indian Oceans, has very productive waters with a high natural capacity for shipping. Furthermore, its location in a tropical area with relatively low changes in environmental temperature creates conditions that support the development of various types of marine biota. This is what makes Indonesia known to the world as the country with the highest level of biodiversity in the world. In this context, Indonesia has a big responsibility to protect and manage marine resources wisely, so that it can successfully implement the blue economy concept while maintaining the sustainability of the marine environment and providing significant economic benefits.

Indonesia has marine potential spread over a sea area of 5.8 million square km, consisting of a territorial area of 3.2 million square km and an Indonesian Exclusive Economic Zone (ZEEI) area of 2.7 million square km. Apart from that, Indonesia has the second longest coastline in the world, with a total length of 81,000 km. However, Indonesia's maritime economic development has not yet provided an optimal contribution to national prosperity and progress. This can be seen by

comparing the ratio of sea area and coast length to the contribution of the marine sector to the total national Gross Domestic Product (GDP). Indonesia's maritime area is 62 percent of Indonesia's territory, but the economic contribution to GDP in the maritime sector from 2016 to 2020 is around 11 percent. 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 profits that can be achieved from Indonesian marine products or waters per year are US$ 1.33 trillion (Sari & Muslimah, 2020). In 2017, the maritime and fisheries sector contributed to fisheries production increasing by 23,186,442 tonnes at a price of 384.48 trillion rupiah (Ministry of Maritime Affairs and Fisheries, 2018; Sari & Muslimah, 2020).

As an illustration of countries with less potential marine wealth than Indonesia, such as Iceland, Norway, Japan, South Korea, Thailand and China, their contribution to the marine sector is on average more than 30 percent of GDP. In fact, in these countries, the average length of coast and ocean area is relatively smaller than Indonesia. The fisheries sector consistently contributes the most to the national economy (see Figure 1). However, this contribution tended to decline even before the Covid-19 Pandemic, namely from IDR 369.5 trillion in 2017 to IDR 320.7 trillion in 2019. Two other sectors that consistently provide the second and third largest contributions respectively are Energy and Mineral Resources (ESDM) and marine tourism. Just like the fisheries sector, there was a trend of decreasing contribution from these two sectors even before the pandemic. The economic contribution of the ESDM sector fell to IDR 282.6 trillion in 2019 from IDR 325.5 trillion in 2017. The marine tourism sector also experienced a decline of IDR 40.7 trillion to IDR 267.3 trillion in 2019.

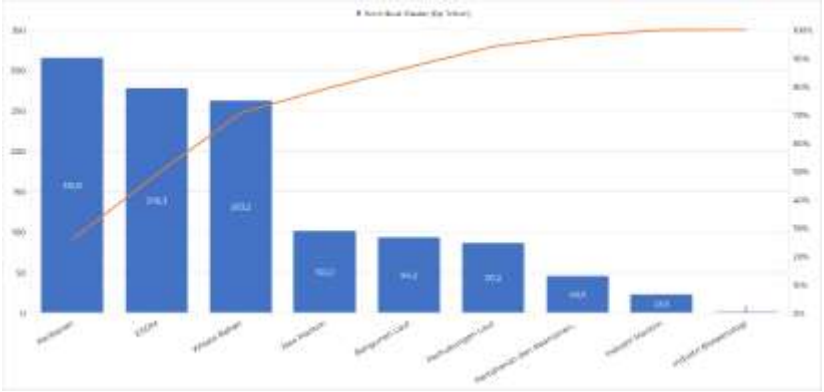
Figure 1. Contribution of Blue Economy GDP-forming Sectors, 2017-2020



Source: Performance Report of the Coordinating Ministry for Maritime Affairs and Investment, 2021

The decline in the contribution of these three sectors also continued in 2020 due to the Covid-19 pandemic, although relatively little. The contribution of the fisheries sector was recorded to have decreased by IDR 4.9 trillion to IDR 315.8 trillion. Meanwhile, the economic contribution from the ESDM and marine tourism sectors also decreased to IDR 278.3 trillion and IDR 263.2 trillion respectively. The economic contribution of the three largest sectors in the blue economy influenced the aggregate realization of blue economy GDP which fell from IDR 1,418.7 trillion in 2017 to IDR 1,212.5 trillion in 2020. In proportion, the contribution of the blue economy decreased from 10,000. 44% of GDP to 7.86% of GDP in 2020. Using the Pareto concept, the analysis concludes that the fisheries, ESDM and marine tourism sectors play a very important role in blue economy GDP. These three sectors contribute almost 80% of the economy's total GDP in 2021 (Figure 2). Meanwhile, other sectors make a relatively small contribution to the economy.

Figure 2. Contribution of 2021 Blue Economy GDP Forming Clusters



Source: Performance Report of the Coordinating Ministry for Maritime Affairs and Investment, 2021

This matterindicating that the contribution of the maritime sector has a tendency to slowly decrease to national GDP. Apart from that, if you look at maritime GDP growth from 2016, it tends to be around 3 percent to 4.4 percent. Even though in 2020 there was a decline due to the Covid 19 pandemic of -1.5 percent. However, seeing that the maritime GDP contribution to the national level in the same year was 11.31 percent, this indicates that the maritime sector is surviving in this situation. When compared with its potential, maritime resources, especially marine resources, are still not being exploited optimally. If you look at national development policies so far, they tend to be too oriented towards land areas, so that resource allocation is not carried out in a balanced manner to support development between land and sea areas.

The blue economy concept which emphasizes the sustainable use of oceans and marine resources has become an important paradigm for global economic development. Along with the need for sustainable economic growth, the role of the sea and marine resources becomes increasingly important. However, making the blue economy concept a reality is not easy. The main challenges in implementing this concept include sustainable management of marine resources, careful monitoring of the marine environment, and wise decision making.

Financing plays an important role in determining the economic progress of a region in the future. Financing is also a tool for decision making, so that the budget reflects the economic conditions of a country. Good financing will be reflected in good budget realization as well. However, unfortunately, in financing a budget, it is not only assessed from the output produced but also the outcomes that will have an impact on the economy in the long term. Sustainable development of the marine and fisheries sector through blue economy principles is a global demand. The Indonesian government needs to make breakthrough programs that are in line with environmental sustainability and supported in the annual budget. The blue economy must support Indonesia's economic development by exploiting the potential of mariculture while maintaining ecological balance and biodiversity, strengthening export production and developing cultivation villages will have a positive impact on economic growth and improving the livelihoods of coastal communities.

METHOD

This research uses a descriptive approach with a literature study method, which is an approach that describes and explains the phenomenon being studied. The library study research method is used to collect relevant and significant data by detailing information from various literature sources. Data obtained from this library study research method includes books, reports, documents and research results that have been published in journals that have gone through a peer review process. These data sources include reports and documents published by government agencies and national and international organizations. In the context of this study, a descriptive approach and literature study methods are used to present a comprehensive understanding of the topic under study, by exploring various relevant information and research results that already exist in the literature.

RESULTS AND DISCUSSION

Contents Results and Discussion

Blue Economy Concept and Sustainable Development Financing

The blue economy is a sustainable marine economic concept that produces economic and social benefits, while preserving the marine environment for the long term. The blue economy concept refers to the sustainable use of marine resources with the aim of increasing economic growth and social welfare. This paradigm emphasizes the importance of recognizing the complex relationships between different sectors in the use of marine resources, due to their impact on the marine environment. Realizing the blue economy concept involves an integrated management approach, which includes marine spatial planning to overcome conflicting interests across sectors. This requires multi-party collaboration and better data collection to understand and communicate the impacts of these activities on marine resources and marine ecosystems. This concept also encourages recognition of the value of natural resources and encourages "blue finance," which highlights the importance of marine resources as economic assets that need to be safeguarded and managed wisely. Through this approach, the blue economy concept aims to create a balance between economic growth, environmentally sustainable development and better societal welfare in the future.

Recently, the concept of the blue economy has gained mainstream attention as healthy oceans play a key role in providing jobs and food sources, supporting economic growth, regulating the climate, and maintaining the well-being of coastal communities. Millions of people around the world, especially the poorest, depend on healthy oceans as a source of jobs and food supplies, underscoring the urgency to use, manage and protect this natural resource sustainably. According to the OECD, the oceans contribute added value of USD 1.5 trillion per year to the global economy, and this figure is expected to reach USD 3 trillion by 2030. FAO estimates that around 58.5 million people work worldwide in the primary fish production sector , with around 21 percent of them being women. This includes workers in the subsistence and secondary sectors, as well as their family members, resulting in an estimated 600 million livelihoods dependent at least in part on fisheries and aquaculture. The majority of them come from developing countries, and they are often involved on a small scale, such as artisanal fishermen and fish farmers.

Sustainable coastal ecosystems are not only important for economic growth and food production, but also have a crucial role in global efforts to tackle climate change. Although marine resources have increased growth and wealth, their sustainability has been threatened by anthropogenic impacts. FAO noted that the percentage of biologically unsustainable fishing stocks increased from 10 percent in 1974 to 35.4 percent in 2019. However, there are positive signs with 82.5 percent of 2019 landings coming from biologically sustainable stocks, recording an increase by 3.8 percent from 2017. According to World Bank research, The Sunken Billions Revisited, more sustainable fishing would result in an increase in the value of the global ocean by 40 percent, while also reducing costs by more than 40 percent. Furthermore, the study shows that achieving a sustainable balance in global marine fisheries, where maximum net benefits can be achieved, will require reducing global fishing effort by 44 percent. In this context, the concept of the blue economy and sustainable management of marine resources is key in maintaining a balance between economic growth, environmental sustainability and the welfare of people who depend on the ocean. The concept of the blue economy, which emphasizes the sustainable use of marine and marine resources, has become an important paradigm in global economic development.

Planning and environmental change are closely related. Environmental planning involves supporting, assessing, and managing the environmental impacts of development activities or planned changes. The aim is to ensure that these changes are carried out in a sustainable manner and take into account environmental protection. Funding must be published or communicated to the public for criticism, testing and input (Sumenge, 2013). Individuals who face uncertain environmental conditions tend to make financing realization (actual budget) that is not in accordance with the previously determined budget, thereby reducing the achievement of targets, namely budget accuracy (Saputro, 2016). Financing management that is not ideal will disrupt the

function of the budget, one of which is targets not being achieved. Budget planning has a significant impact in the context of economics and financial management.

Sustainable Development Goals (SDGs)

In this last concept, namely the SDGs concept, researchers use this concept because it is related to the focus of discussion and the subject matter of this research. The concept of the Blue Economy focuses on the marine sector with economic aspects aimed at protecting the marine environment, natural sustainability and Indonesia's natural resources. If translated into Indonesian, it is Sustainable Development Goals. Based on the words, it can be interpreted that the SDGs are moving towards a sustainable development process, in the development goals there are 17 types of goals which each have their own focus on developing better quality in all fields. The efforts of the Indonesian government SDGs can become a priority in national development which requires forces that work in synergy with each other both at the national and provincial levels so that development can be carried out evenly across all corners of Indonesia. In the discussion in the research, which focuses on the marine sector and marine ecosystems, it can be seen from the 14th SDGs goal, namely Marine Ecosystems. Regarding the marine ecosystem goals in the SDGs, there is a policy that has been made by the Indonesian government, namely in 2020-2014, which contains improvements in maritime and marine management, improving fisheries governance, and revitalizing sustainable fisheries practices (Ministry of National Development Planning, 2020).

The 14th goal seeks to conserve and sustainably utilize marine resources and riches in the Indonesian oceans. The targets that have been determined in Indonesia's marine division are marine spatial planning and management of the marine area itself, restrictions on safe fishing, eradicating IUU fishing, increasing marine conservation areas, and furthermore there will be support from the government for small fishermen in coastal areas. beach. The targets that have been outlined can be implemented by the government and relevant non-government organizations (Bappeda Jogja, 2022).

Indonesia, with its vast oceans and abundant resources, of course must be managed well so that the environment and natural resources are not damaged. Indonesia's marine wealth can provide benefits for Indonesia. The large number of people who live in coastal areas must have good knowledge about how the Blue Economy concept will be implemented so that the objectives of this concept can be carried out well. The aim of the Blue Economy is to socialize it to coastal communities so that people can think critically about this concept to minimize excessive use of natural resources and later be able to extract marine natural resources more efficiently and in a balanced manner. The principles in managing natural resources in the Blue Economy concept are increasing resource efficiency, a cycle system in production, minimizing waste disposal, social awareness, innovation, adaptation, as well as good management of natural resources so that in the future it can increase good economic growth. (Prayuda et al., 2019).

The influence on the environment of course also has an impact that suppresses waste disposal which will have a negative impact, this is of course an additional point in implementing the Blue Economy concept. The blue economy also prioritizes regional development with the aim of creating good jobs, building social capital, increasing income, and regenerating the ecosystem in which

The discussion in this research focuses on Indonesia's marine ecosystem and protecting marine resources from being overused or dredged (Pauli, 2010).

In the era of President Joko Widodo, where the concept of the Blue Economy was used to protect natural resources, especially in the Indonesian marine sector, this could
beneficial for Indonesia in terms of sustainable development or Sustainable Development Goals (SDGs), more specifically the 14th SDGs point, namely regarding Marine Ecosystems, the aim of which is to preserve and sustainably utilize marine and oceanic natural resources for sustainable development. There are targets prepared and expected by the Indonesian government to make the SGD a success, especially in point 14 which has been prepared for the next 5 years from 2020.

In 2020, the government has effectively made permanent arrangements to stop excessive fishing or dredging fish illegally, cases of illegal fishing and fishing practices that can damage nature such as the use of bombs that can damage coral reefs, then implement plans for management science-based, restoring fish stocks appropriately in the shortest possible time, and to a level that produces maximum sustainable production in accordance with its biological characteristics. Still in the same year, in protecting and preserving there were at least 10 percent coastal and marine areas consistent with national and international law based on the best available scientific information. In 2023, the hope and target for that year is to increase economic benefits for small island developing countries and countries that lack development in the sustainable use of marine resources, and sustainable management of fisheries, aquaculture and tourism in the future. . Furthermore, by 2025 the target is to significantly prevent and reduce all types of natural pollution, especially the sea, then marine waste and nutrient pollution which will have a negative impact on the sea and its resources (SGDs Bappenas, 2020).

The relevance of the Blue Economy to the SDGs includes at least 4 points. First, Blue Economy as a way out alternative to climate change (SDGs 13). Second, the Blue Economy explores marine natural resources while conserving them (SDGs 14). Third, the Blue Economy empowers society in terms of knowledge (SDGs 4). Fourth, the Blue Economy creates jobs through regional development (SDGs points 1, 8 and 9).

Limited APBN Funding to Support the Blue Economy

To fulfill funding for the seven development agendas stated in the 2020-2024 RPJMN, funding of USD 1,641.3 billion is needed. Meanwhile, the State Revenue and Expenditure Budget (APBN) is only able to fund around 20-25 percent of these needs, including the needs of the maritime, fisheries and maritime sectors. So it is difficult to assume responsibility for developing a blue economy using APBN funds alone. In 2020, as a form of the government's response to the Covid-19 pandemic, the government revised the 2020 APBN to add a budget of around IDR 695 trillion as a step to provide economic assistance. Top priorities include improving health care, expanding social protection coverage and supporting the business sector. Due to budget limitations, several existing blue economy programs need to be adjusted. The Ministry of Maritime Affairs and Fisheries (KKP) budget for 2020 was cut by 20 percent. Reflecting on this incident, innovation is needed to obtain other sources of funding that can support blue finance to drive growth in the marine and fisheries sector.

The Indonesian government, through Bappenas, is encouraging innovative blue financing for the development of blue economy development. In terms of funding innovation, Indonesia has actually issued a Green Bond/Green Sukuk instrument which succeeded in raising USD 3.5 billion and IDR 5.4 trillion. Apart from that, the government also issued a Sustainable Development Goals (SDGs) Bond which reached EUR 500 million. However, if you look at the funding needs, the results of this innovative funding are still not sufficient for development funding. Therefore, to meet this funding shortfall, Bappenas is currently taking the initiative to develop Blue Bonds/Blue Sukuk whose value will depend on future development needs in the maritime sector. To date, Bappenas has prepared main policies, namely the Blue Economy Development Framework and SDGs Security Framework, which have then been translated into a strategy in the form of a Blue Finance Policy Note through the support of the World Bank, which is expected to become one of the bases for blue financing policies in Indonesia. It is hoped that blue financing can support economic growth in the marine and fisheries sector in a sustainable manner. For this reason, it is necessary to accelerate the realization of blue financing so that it can be used to support blue economy funding.

Challenges of Blue Economy Development in Indonesia

Challenge mapping can be done by looking at the sectors included in the blue economy. First, Indonesia is still having difficulty meeting sustainable standards in the marine living sector, specifically within the capture and aquaculture sector. This is reflected in the low value of the Indonesian fisheries sustainability indicator in the Ocean Health Index (OHI). More specifically, Indonesia's scores are quite low for indicators, namely Food Provision and Coastal Livelihoods and Economies. The Food Provision indicator calculates the food security of a country's maritime resources by balancing exploitation and ecology. Indonesia received a score of 28 and is in 175th place out of 220 countries in the assessment of this indicator. On the other hand,

Indonesia also received a relatively low score in managing the balance between the economy and coastal ecology which is included in the Coastal Livelihoods and Economies measurement. The total score that Indonesia can get from this indicator is only 70 and places Indonesia in 175th place out of 220 countries. This achievement is quite low when compared to Indonesia's potential as a large maritime country.

The tourism sector also faces quite serious challenges in an environmental context, even though it makes a relatively large contribution economically. The future of the ecosystem that supports the tourism sector is threatened with damage due to excessive exploitation. This can be seen from changes in forest cover, minimal wastewater treatment, the large number of endangered species, and other measurements. Finally, the blue economy sector that faces the most fundamental challenges is trade, transportation and logistics by sea. The connectivity gap between western and eastern sea routes is still very large, resulting in relatively expensive logistics costs. Logistics disruption due to the Covid-19 pandemic has further worsened the situation on international trade routes. One of the consequences is the dwelling time process which is getting longer due to social restrictions at various ports. As a result, Indonesian trade by sea has become more dormant than before.

The challenges of developing a blue economy need to be studied in each industrial sector (see table 1). This is because each industry faces diverse and unique conditions. The following are the challenges faced by each blue economy industrial sector operating in Indonesia. For the industrial sector supporting the blue economy which has not yet developed in Indonesia, of course there are its own challenges.

For the renewable energy industry, Indonesia's current challenge is the contribution of marine and wind energy which is still limited with their combined share in total renewable energy use below 3 percent. Renewable energy investment is one of the factors causing the low contribution of renewable energy in Indonesia. The lack of investment in renewable energy signals a lack of investor confidence in the sector. Investors were disappointed due to the lack of incentives provided by the government through existing regulations and the political situation resulting from the election and government transition (Bappenas, 2021). Overall, this level of investment does not correspond to the level of investment needed to meet the renewable energy mix target of 23 percent by 2025 (Bappenas, 2021).

The bioeconomic industrial sector has challenges in its development, especially in seaweed processing activities. For example, processing seaweed for products such as food, cosmetics and spices can produce large amounts of waste. Processing gracilaria and cottonii seaweed can produce 8,174,150 cubic meters of liquid waste and 62,506 tons of solid waste per year (Rahman & Fadhli, 2021). Therefore, it is recommended to balance seaweed processing and environmental sustainability. Much of the waste produced when processing seaweed can be recycled for other uses. For example, liquid waste can be used as liquid fertilizer, while solid waste can be used as raw material for making ceramics, particle boards, fertilizers, even lightweight bricks. Another challenge is related to the limited management capacity of several seaweed factories in the eastern part, most of which are owned by local governments. A 2019 CBI report stated that no processors were operating at full capacity. Some use only 30 percent to 40 percent of their productive capacity. Low capacity is most likely caused by lack of access to seaweed or lack of market access (Bappenas, 2021).

Table 1. Challenges for the Development of the Blue Economy Industrial Sector in Indonesia

Industry Type	Qchallenges faced
Fishing industry	• Overfishing in national capture fisheries has the potential to damage future economic potential. utilization of marine resources can damage the potential of the marine economy in Indonesia; • Aquaculture has not met sustainability standards in its production process by reducing carbon emissions, and implementing efficient and clean practices; • The quality of genetic material required in the cloning system for the seaweed industry is still relatively low.
Marine manufacturing and construction	• The more volatile nature of the industry compared to the economy as a whole. A decline in economic growth such as that which occurred during the Covid-19 pandemic resulted in reduced demand for new products and new facilities.
Oil and gas	• Resource reserves are running low; And • There is an urgency to switch from conventional energy to new and renewable energy, including from marine-based energy sources.
Marine-based food processing industry	• Industry is dominated by MSMEs: • The capacity of marine-based food processing units is generally still low; • Lack of skills and technical knowledge of human resources regarding production standards, as well as low quality assurance of products and raw materials; • Risk of unsustainable raw material supply; And • Dynamic changes in consumer preferences.
Marine based chemical industry	• The increase in demand for products continues to occur, but the Indonesian petrochemical industry is not yet able to meet all domestic needs.
Salt	• The salt industry is still unable to meet domestic needs.
Shipbuilding industry	• Price competition with foreign ship manufacturers; • Cheap labor but not skilled labor; • Low production level; • Technology research and development is still at an early stage, innovation is needed.
Coastal tourism	• The richness and diversity of natural capital which is a tourism object is increasingly threatened by environmental degradation due to unsustainable tourism.
Trade, transportation and logistics	• Linkages between more than 1,000 ports remain relatively weak; The imbalance in economic and trade activities between the western and eastern regions of Indonesia adds to the problem of connectivity and efficiency in transporting goods.

Industry Type	Qchallenges faced
	• Logistics costs are higher compared to neighboring countries; • During the pandemic there has been a shortage of supply in the container and shipping space as well as a decrease in shipping frequency has increased shipping costs significantly.

Meanwhile, the marine biotechnology industry in Indonesia is still underdeveloped due to various challenges. This is because research and development in marine biotechnology generally takes 5-10 years and is relatively expensive to produce pharmaceutical products, cosmetics, bioenergy, superior species, microbes for bioremediation, and other products. Second, an innovation ecosystem has not yet been realized, especially in the marine biotechnology industry, due to a lack of human resources for researchers and engineers. Third, research and development infrastructure and facilities, budget incentives and disincentives, and political-economic policies are still inadequate (Dahuri, 2021).

Blue Economy Development Strategy for a Sustainable Economy in Indonesia

The blue economy development strategy for Indonesia is in line with the 14th sustainable development goal/SDGs, namely life under water (Lee et al., 2020). This is in line with the objectives of the national marine development policy stated in the 2005-2025 RPJPN in the seventh mission, namely to make Indonesia an archipelagic country that is independent, advanced, strong and based on national interests through environmentally friendly sustainable marine economic development. To achieve this goal, Indonesia has committed to allocating 10 percent of its territorial waters or 32.5 million hectares as marine protected areas by 2030. Until the end of the third quarter of 2021, around 28.4 million hectares of marine protected areas (MPA) has been determined, consisting of 9.9 million hectares managed by the central government, and 18.5 million hectares managed by the provincial government. By establishing the MPA and protecting marine ecosystems, it is hoped that it can ensure sustainable use of marine resources, so that people whose livelihoods depend on the sea can benefit from the MPA (Bappenas, 2021). Using a zoning system, Indonesia's marine areas are divided into 4 zones, based on the level of utilization. The core zone is a completely closed area, protected from all forms of exploitation except for research and education. This zone is expected to function as a maintenance and replenishment center for marine resources and provide overflow for the surrounding zone. Sustainable fisheries zones, utilization zones and other zones are open to limited sustainable activities such as environmentally friendly fisheries and ecotourism.

Indonesia also has a clear legal framework governing marine environmental issues from the constitution, laws and other related regulations. Article 25 of the 1945 Constitution states that Indonesia is an archipelagic country whose territorial boundaries and rights are determined by law. Furthermore, Indonesia ratified the United Nations Convention on the Law of the Sea (UNCLOS) in 1982 with Law no. 17 of 1985 to comply with the convention governing territorial sea sovereignty and Indonesia's legal status. In addition, Indonesia implemented Safety of Life at Sea (SOLAS) in 1974 and ratified it in Presidential Decree No. 65 of 1980. Therefore, Indonesia has a collection of fundamental regulations that can become enabler policies for the blue economy, which are classified into their respective subsectors and aim to support the implementation of the blue economy concept. For your information, several laws regulate one or more sectors (Bappenas, 2021). Thus, coordination and synergy for law enforcement need to be strengthened.

A sustainable ocean economy is high on the Indonesian government's agenda and is leading to the creation of specific policies, institutional structures, and the adoption of integrated policy tools. Indonesia established a special maritime policy strategy and established the Coordinating Ministry for Maritime Affairs and Fisheries to streamline maritime governance. The ministry coordinates with KKP, Ministry of Energy and Mineral Resources, Ministry of Transportation, Ministry of Environment and Forestry, Ministry of Public Works and Public

Housing, and Ministry of Tourism and Creative Economy/Creative Economy Agency. A number of ad hoc structures were also created to improve the country's marine governance, particularly those focused on Illegal, Unreported and Unregulated (IUU) fishing. These are positive steps to improve coordination and increase policy coherence on ocean issues across administrations, although ocean governance remains somewhat fragmented both horizontally and vertically, reflecting the complex nature of Indonesia's central and regional governments (Agnelli & Tortora, 2021).

Indonesia also realizes the importance of partnerships between countries that support blue economy development and cooperation. Currently, Indonesia has joined several International Declarations and Joint Statements which consist of bilateral and multilateral cooperation between Indonesia and other countries (Bappenas, 2021). In addition to the above cooperation, Indonesia plays a leadership role in developing joint IUU fishing practices among ASEAN countries, including contributing to Guidelines for Preventing the Entry of Fish and Fishery Products from IUU Fishing Activities into the Supply Chain. Indonesia also became the first country – and the only country in ASEAN – to share Vessel Monitoring System (VMS) data with Global Fishing Watch, an NGO platform that seeks to increase transparency of fishing activities around the world to tackle overfishing and IUU.

Indonesia has begun prioritizing coastal and marine development and is now faced with the difficulties inherent in the transition from problem analysis and planning to implementation. Through maritime-based research, new needs will bring changes and improvements to Indonesia's marine and coastal governance, for example studies on the impact of marine debris on and human resource support for the marine sector. In developing a blue economy, strong research support is needed. To accelerate solutions to maritime challenges, it is necessary to institute methods to review targets and indicators, link research and careers to sustainable development goals, and support innovative ecosystems. For the benefit of present and future generations, marine resilience for the future is necessary for future-proof marine education. To make this happen, a highly structured national policy is needed. To deal with disruptive technologies and their potential use in the sustainable development of marine resources, universities need to continuously update their facilities and innovative capacity (Bappenas, 2021).

Marine education is also needed to help students develop the knowledge, skills and attitudes needed to preserve the environment in the future, especially coastal ecosystems. So far, maritime concepts have been limited and marginalized in the curriculum, due to the public's lack of knowledge about basic maritime principles and the inability to make good judgments (McPherson et al., 2018). Increasing public awareness of the importance of marine conservation through education would be ideal if education experts were also taught about marine literacy. Ocean literacy is a strategy not only to increase public awareness of the ocean but also to encourage all communities and stakeholders to act more responsibly and intelligently in relation to the ocean and its resources (Tsai & Chang, 2019). Irawan & Hindrasti (2018) found that for maritime education to be successful, students must be taught to have a strong understanding of the ocean. Increasing concern for marine protection begins with a paradigm shift from efforts to protect the earth to efforts to protect human life because it is human nature that will be threatened if environmental damage occurs.

Explore New Financing Mechanisms and Tools

Innovative new financing vehicles can be created and launched by the private sector itself or through partnerships with public entities in developed and developing countries. In fact, these countries can leverage innovative financial instruments to support state-owned enterprises, climate change mitigation and adaptation, and the environment in general. The following are examples of innovative financing from other countries, including:

1. Ghana launches fund to achieve Sustainable Development Goals (SDGs). On 1 August 2019, Ghana introduced two funds with the aim of attracting funding for the country's efforts to achieve the United Nations SDGs. Funds known as the SDG Green Fund and SDG Delivery Fund will be mobilized and managed by the private sector, with government support in a

kind of public private partnership arrangement. The SDG Green Fund is geared towards providing clean and renewable energy ('Think Ocean') for use by industry, while the SDG Delivery Fund will attract funds to fund climate-smart activities. The fund is expected to raise billions of Ghanaian cedis (US$1 = 5, 40 cedis) from voluntary contributions and corporate social responsibility initiatives from the private sector to support the country's efforts to achieve the SDGs.

2. The Southern African Development Bank is providing a 2 billion rand (US$142.86 million) Climate Finance Facility (CFF). CFF will be available for infrastructure projects and businesses that mitigate or adapt to climate change. This financing facility increases capital from both private commercial banks and other development financing institutions. This bank participates in financing the project by offering credit enhancement products in the form of subordinated funding and/or tenor extensions. CFF provides risk mitigation if new technology is involved or projects and businesses are still in the development stage. This initiative applies the green bank concept. Green banks have been established in developed countries, but South Africa may be the first country to establish an environmentally friendly bank in a developing country. The aim of these banks is to support the Paris Agreement and the SDGs. A similar example is the Seychelles blue bond. This blended financing combines Global Environmental Facility concession loans guaranteed by the World Bank and private investment to support the transition to sustainable fisheries and is implemented through the independent Seychelles Conservation and Climate Adaptation Trust and the Seychelles national Development Bank.

New funding tools and access to capital markets are needed to become an alternative financing in sustainable blue economy development.

Financing Sustainable Economic Development

The government must focus on sustainable economic planning, this is because the economic sustainability of a country is not only about how much wealth is obtained but about how wealth is managed properly and correctly. In an effort to achieve sustainable economic development, several important aspects must be met, including:

1. Natural environmental aspects. Development efforts must be carried out by paying attention to environmental sustainability, maintaining biodiversity and minimizing environmental damage. This is important to maintain ecosystem balance and prevent long-term negative impacts on the environment.
2. Social Aspects. Development must be able to provide benefits to all members of society, including communities in remote or less developed areas. Social equality and reducing economic disparities must be a priority in efforts to achieve sustainable economic development.
3. Economic aspects must also be considered in sustainable economic development. Development must be able to create jobs, increase people's income and reduce poverty. In this regard, it is important to pay attention to long-term economic sustainability and build a strong and stable economy.
4. The aspect of community participation is also an important aspect in sustainable economic development. The community must be involved in the decision-making process and implementation of development policies. Community participation can increase the effectiveness and sustainability of development, as well as ensure that the interests of all parties are represented.

The impact of the blue economy concept on economic growth and development in Indonesia (Banu, 2020):

1. This concept prioritizes increasing marine production.
2. Marine productivity is the main sector contributing to national income.

3. The amount of fishery production is very large and can be used as an export commodity that will generate foreign exchange.
4. The development of the marine sector in the blue economy concept not only affects the fisheries sector, but other sectors are also encouraged because Indonesia's marine potential includes biological and non-biological resources such as petroleum and other mining materials which can contribute highly to national income and economic growth.
5. Blue Economycan be a mainstay in sustainable economic development, because it is environmentally friendly and prioritizes ecosystem sustainability.

Application of Blue Economy in Financing Sustainable Development

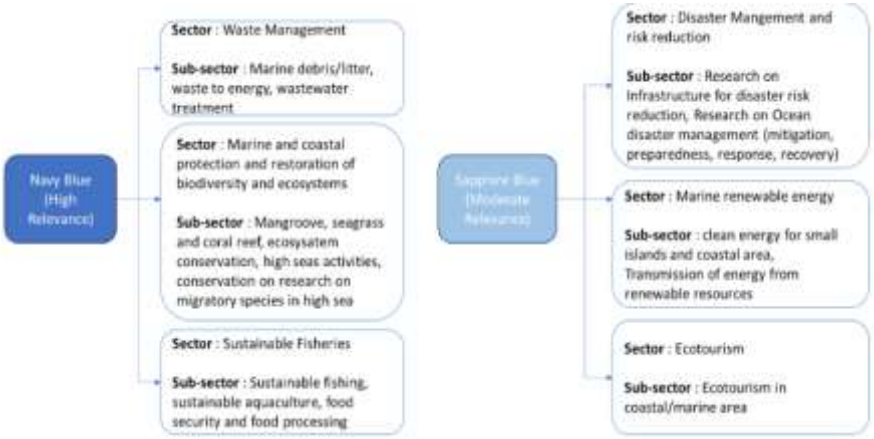
Each segment of the blue economy has sustainability standards and metrics used to define, finance and monitor project performance. The blue economy metrics identified for this knowledge product can be used by various stakeholders to identify and find appropriate standards for any blue economy segment or sustainability issue. Stakeholders can also use these standards to demonstrate the potential benefits and risks of specific blue economy projects. This can then be leveraged to increase their bankability for environmental, social and governance investors. This global standard applies to the entire range of projects: SMEs, ecosystems and infrastructure. Many financial and industrial leaders are actively seeking environmental and societal benefits to fulfill their new sustainable investment mandates or as new sources of value for their portfolios. The tools and guidance in these metrics aim to help create bankable and sustainable blue economy projects. Monitoring, reporting, and verification processes also require reference to these metrics. Because of the interrelationships between standards, even between segments, it is important to consider the full combination of case studies and metrics from financial, industry, and policy sources along with SDG, ADB, and Poverty-Environment Action targets. This matrix is a valuable tool that matches and makes key metrics accessible to every segment of the blue economy and every stakeholder.

Small and medium enterprises (SMEs) dominate the local and national economy, but their limited access to capital makes them the "missing middle" in sustainable blue economy development. This collaborative report proposes priorities for the SME sector in the blue economy, analyzes financing gaps, and shares tools and resources to support new financial relationships between international capital and local actors. The report recommends the creation of a new blended finance platform—SME BlueImpact Asia—to help fill the estimated $2 trillion SME blue economy financing gap in developing countries in Asia.

Journey of development and implementation of Blue Finance in Infrastructure Financing

1. Preparation of the Blue Finance Strategic Plan
   To provide direction for the development and development of the blue economy, the government needs to prepare and establish a clear strategic plan including long-term goals, performance targets and project targets. In Indonesia, policies related to the Blue Economy were issued in 2021 through the preparation of the Blue Economy Development Framework and SDGs Security Framework. Based on the development of these policies, Blue Finance has increasingly potential in financing infrastructure to support economic growth in the maritime and fisheries sector, including involving several parties who benefit from this sector, especially the private sector.
2. Development of Thematic Financing Instruments
   Designing appropriate financing instruments is one of the key enablers for achieving a blue economy. Indonesia can reflect on the government's success in issuing thematic bonds in the form of green sukuk or SDG Bonds which have been introduced since 2018. To provide confidence, comfort and certainty to fund owners/fund sources, the Blue Finance Policy Note has also provided guidance and project classification. and its relevance to efforts to achieve a blue economy, namely navy blue for high relevance projects, and Sapphire Blue for projects with moderate relevance.

Beni Hartono[1], Giantoro Rudiman[2], Abet Alpha Pardede[3], Muammar Khaddafi[4]



Efforts to study Blue Finance through government financing instruments are also in line with the World Bank's study in the Blue Finance Policy Note, there are several financing potentials for Blue Finance:

Table 2. Blue Finance financing potential

Instrumen	Teruji di Indonesia	Next Steps
Blue Bond /Sukuk	Tidak; tapi green bond & sukuk telah diuji	Uji kelayakan blue bond / sukuk
Environmental Impact Bonds	Tidak	Uji kelayakan instrumen berbasis kredit karbon atau *Payment for Ecosystem Services* (PES) setelah kebijakan berlaku
Insurance (*Parametric Coral Reefs* dan Mangrove)	Ya (ADB & GEF; Mercy Corps)	Uji kelayakan *parametric insurance* untuk dampak lingkungan
Trust Funds	Ya	Uji pendirian *marine trust funds* via BLU
Blended Finance Facilities, termasuk KPBU	Ya – terutama di terrestrial	Terlibat dengan *blended facilities* yang relevan secara langsung
Impact Investment	Ya- terutama akuakultur, teknologi, fin tech, dan plastik	Menentukan keterkaitan dengan sektor prioritas
Debt for Nature Swap	Ya, terrestrial	Menentukan apakah ada peluang untuk investasi terkait kelautan

3. Strengthening coordination & programs between Ministries/Institutions

Implementing Blue Finance requires close collaboration between government, the private sector, financial institutions and civil society organizations. Strong partnerships will ensure wider and more effective adoption of Blue Finance, and not just claim to contribute to the achievement of a blue economy. In improving coordination of roles and programs between ministries, the Indonesia Blue Finance Policy Note has mentioned the need to initiate the formation of a Blue Finance Advisory Committee to form leadership in encouraging cross-sectoral collaboration and coordination in various existing initiatives.

Issuance of Blue Bonds as an alternative to blue economy financing

In May 2023, Indonesia issued its first Blue Bond in the Japanese bond market, raising 20.7 billion Yen (150 million US Dollars). This issuance marks the world's first Sovereign Blue Bond offered to the public, which is in line with the principles of the International Capital Market Association (ICMA). Its publication shows Indonesia's commitment to utilizing innovative financing sources for investments that benefit society and sustainable use of marine ecosystems – the blue economy.

The bonds were issued with tenors of 7 years and 10 years, with coupons of 1.2 and 1.43 percent respectively. Proceeds from this bond issuance will provide a much-needed boost to Indonesia's blue economy, including coastal protection, sustainable fisheries management and cultivation, marine biodiversity conservation, and mangrove rehabilitation. Thematic bonds can play an important role in addressing the SDGs financing gap, especially in developing countries as they enable access to private capital and ensure the proceeds contribute to sustainable development. Blue Bonds accelerate the development of the blue economy in a better and more sustainable way. The issuance of blue bonds will complement the APBN financing portfolio and show the government's increasingly strong commitment to sustainable financing.

Simultaneously, the Indonesian Government has developed a blue economy strategy that aims to improve management of marine and coastal ecosystems, create equal economic opportunities, and promote sustainable livelihoods. Blue Bonds are an important means of financing the conservation and sustainable management of marine and coastal resources. Blue Bonds and their potential future issuance can help bridge Indonesia's financing gap for the SDGs, which is estimated to reach 1 trillion US Dollars by 2030.

Additionally, Blue Bonds contribute to the goals of the Archipelagic and Island States (AIS) Forum. Formed in 2018, the AIS Forum functions as a development cooperation platform for archipelagic and small island countries. The success of the Indonesian Blue Bond in the

international market can become a blueprint for other Forum member countries to finance their maritime agenda.

Indonesia's inaugural Sovereign Blue Bond was issued in accordance with the Republic of Indonesia SDG Government Securities Framework, which was developed in 2021 by the Ministry of Finance in collaboration with other ministries, and with assistance from UNDP, HSBC Bank and Credit Agricole. Integrating Green, Social and Blue sustainability objectives, the framework enables the issuance of a wide range of thematic bonds and Sukuk. This bond complements the previously issued Green Sukuk and SDG Bonds. Similar to Green Sukuk, Blue Bond utilizes Climate Budget Tagging, a mechanism for tracking public spending on climate change mitigation and adaptation, implemented with UNDP support.

CLOSING

Conclusion

The concept of the blue economy, which emphasizes the sustainable use of marine and marine resources, has become an important paradigm in global economic development, especially in Indonesia where the potential contribution of sectors supporting the blue economy is very abundant. In the midst of demands for sustainable economic growth, marine and marine resources have a very important role. However, realizing the blue economy concept is not a simple task because in its implementation Indonesia has not yet fully developed the renewable energy, bioeconomy and biotechnology sectors optimally.

In the process of implementing the development and development of the blue economy, the government needs to prepare and establish a clear strategic plan including long-term goals, performance targets, project targets. Choosing the right financing instrument is also one of the main keys to the success of this type of economic focus. Even close collaboration between the government, private sector, financial institutions and civil society organizations also plays a role in its development. On the other hand, in the process of developing the Blue Economy, it has encountered several challenges, such as the fisheries sector which is depleting due to overfishing and if this continues, the supply of fish from this industry will continue to decrease.

In facing these challenges, Indonesia has made several efforts, including implementing marine zoning or MPA to control overfishing; enact regulations in the maritime sector and carry out strict enforcement; implementation of strong coordination and synergy between stakeholders who have duties and functions in the maritime and fisheries sector. Apart from that, opportunities for cooperation with international parties must also continue to be explored. This is intended to achieve equal and sustainable economic opportunities.

It is hoped that through sustainable management of marine resources, careful monitoring of the marine environment, and wise decision making, Indonesia will improve Indonesia's ability to face challenges in the process of developing this concept.

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