

The Role of Blue Economy in Enhancing Economic Growth

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Abstract: This study investigates the role of the Blue Economy in fostering economic growth in Indonesia, focusing on the sustainable management of marine resources. Marine biotechnology presents immense potential for innovation and economic growth through the development of new products and technologies. Environmentally friendly maritime transportation reduces the environmental impact of shipping, supporting broader sustainability goals. This study underscores the importance of integrating sustainable practices across various marine sectors to achieve a balance between economic growth and environmental conservation. The novelty of the study lies in its comprehensive analysis of the Blue Economy's diverse sectors and their collective impact on Indonesia's economy. The findings contribute to the understanding of the Blue Economy's potential and provide valuable insights for policymakers to formulate strategies that promote sustainable development in marine sectors, ultimately benefiting the economy, society, and the environment.

Keywords: Blue Economy, Economic Growth, Environmental Sustainability, Marine Biotechnology, Renewable Energy

A. Introduction

Economic growth serves as a fundamental indicator of a nation's progress in achieving social and economic well-being. In Indonesia, the government has placed a strong emphasis on economic growth as a vital component in improving the welfare of its citizens. A significant contributor to sustainable economic growth is the blue economy, which encompasses various sectors including fisheries, marine tourism, maritime transport, and renewable marine-based energy sources such as solar and wind power (Duarte, 2023). Indonesia possesses the second longest coastline in the world, following Canada, which presents substantial opportunities for the development of a blue economy. However, the advancement of the blue economy in Indonesia encounters several challenges, including the unsustainable utilization of marine resources, conflicts among stakeholders, and marine pollution. It is imperative to address these challenges to enhance the blue economy's potential contribution to national economic growth. Additionally, ineffective management and a lack of cross-sectoral coordination can hinder the progress of the blue economy (Olteanu & Stinga, 2019).

The blue economy represents a developmental paradigm that emphasizes the sustainable utilization of marine resources to foster economic growth and enhance societal well-being (Banu, 2020). This approach integrates various economic, environmental, and social dimensions with the objective of achieving a harmonious balance between resource utilization and ecosystem preservation. Beyond mere economic development, the blue economy seeks to promote innovation and efficiency in the utilization of marine resources. Its objectives include the creation of sustainable employment opportunities, the increase of income, and the safeguarding of marine biodiversity (Sujiwo & Nurlaili, 2024). The implementation of the blue economy presents considerable opportunities for fostering global economic growth. The marine sector can play a pivotal role in enhancing the Gross Domestic Product (GDP) of numerous countries. By judiciously managing marine resources, the blue economy has the potential to generate sustainable employment and enhance the socio-economic conditions in coastal communities (Khoiriyah, 2024). For instance, the sustainable fishing sector can provide a stable food supply while simultaneously protecting marine ecosystems from harmful fishing practices. Implementing responsible fishing practices can enhance productivity and strengthen the economic resilience of coastal communities (Sujiwo & Nurlaili, 2024).

The marine tourism sector is also a crucial pillar of the blue economy. It has been noted that sustainable tourism, which is based on natural attractions and local culture, can attract tourists and generate significant revenue for communities in coastal areas (Salim & Purbani, 2015). By focusing on sustainability, this sector can provide economic benefits while also contributing to the preservation of cultural heritage and the environment. Initiatives such as ecotourism and marine protected areas (MPAs) serve as tangible examples of developing the tourism sector in harmony with marine ecosystems (Lasaiba, 2020). However, there are several challenges in implementing the blue economy. One of the main issues is the need for a resource management approach based on scientific knowledge and technology. Collaboration between the government, the private sector, and local communities is crucial to create policies that support the development of the blue economy. This includes investing in research and development and utilizing innovative technologies to enhance efficiency and reduce the environmental impact of economic activities (Sujiwo & Nurlaili, 2024). Other challenges include unsustainable fishing practices, marine pollution, and the impacts of climate change, which threaten biodiversity and marine ecosystems. To address these issues, it is crucial that all stakeholders recognize the importance of sustainability in marine resource management. Studies emphasize the need for enhanced education and public awareness to support the transition towards a blue economy.

Indonesia, located along the equator, has a strategic geographical position and great potential. The Indonesian seas, stretching from Sabang to Merauke, are rich in maritime resources. This makes Indonesia one of the largest archipelagic countries in the world (Lestari et al., 2021). Indonesia's strategic position between two continents,

Asia and Australia, and flanked by the Pacific and Indian Oceans, makes its marine areas highly productive. Coupled with a stable tropical climate, marine biodiversity can thrive and flourish optimally, which is why Indonesia is recognized as a megabiodiversity region. This potential can be harnessed to boost economic growth through sectors such as fisheries, marine tourism, and renewable energy (Lasaiba, 2020). Sustainable management in this sector not only provides economic benefits but also helps maintain the balance of marine ecosystems, which are vital resources for human life. The sustainable fisheries sector is a key pillar that can significantly contribute to Indonesia's economy (Geng et al., 2024). Effective management in this sector can enhance food security, create jobs, and support the income of coastal communities. The marine tourism sector also has significant potential in supporting the blue economy, with numerous attractive marine destinations and unique biodiversity. Sustainable tourism can become a major driver of economic growth, create employment opportunities, and boost local income (Salim & Purbani, 2015).

Although the implementation of the blue economy in Indonesia is promising, the challenges faced are also significant. Issues that need to be addressed include a lack of awareness about the importance of sustainability, unsustainable fishing practices, and marine pollution that negatively impacts ecosystems. Research indicates that education and public awareness regarding sustainable marine resource management must be enhanced. Collaboration between the government, private sector, and local communities is essential to create policies that effectively support the development of the blue economy (Dian et al., 2023). Policy challenges also need attention; unintegrated policies between central and regional levels often hinder effective marine resource management. Emphasizing the importance of developing a holistic policy framework to support the blue economy and environmental sustainability (Dian et al., 2023).

This study focuses on a deep understanding of the role of the blue economy in enhancing economic growth in Indonesia, as well as identifying the factors that support and hinder the implementation of this concept. It is hoped that the results of this research can provide new insights and policy recommendations that can promote the sustainable development of the blue economy in Indonesia, thereby benefiting society, the environment, and the economy as a whole (Andaiyani et al., 2024). The following research questions were found: 1) How can the application of the Blue Economy concept improve the fisheries and marine sector in supporting economic growth in developing countries? 2) What are the challenges and opportunities faced by coastal countries in utilizing the potential of the Blue Economy to drive sustainable economic growth?

B. Methods

Research Paradigm

This research paradigm uses a qualitative approach with an emphasis on exploration and in-depth understanding of the role of the Blue Economy in driving economic growth in Indonesia. This approach focuses on the analysis of qualitative data obtained from relevant literature, as well as providing broader insights into the context and phenomena studied.

Approach and Method

This study uses a desk-based study approach with an extensive literature review. Data were collected from various credible sources such as academic journals, policy documents, and official reports. The data collection process was carried out through a structured literature review checklist to ensure that the information obtained was systematic and comprehensive.

Data Collection Instrument

The main instrument used in this study was a structured literature review checklist, which functions to focus the search for information on important themes related to the Blue Economy. By using this instrument, relevant data can be identified and categorized in an organized manner.

Data Analysis Process

The collected data was analyzed using qualitative content analysis. This process involved coding the data into thematic categories that describe core aspects of the Blue Economy. Patterns, relationships, and gaps in the data were identified to draw meaningful and relevant conclusions.

The research did not involve direct respondents as it was based on secondary data obtained from existing literature and reports. The study was conducted through a desk-based approach, with data collected from various online databases, libraries, and institutional repositories. This methodological approach ensures a thorough examination of the Blue Economy's role in Indonesia's economic growth, providing a comprehensive understanding of its potential and challenges.

C. Results and Discussion

Determination of Research Questions and Concept Focus

First, this study begins with determining the focus on the role of the Blue Economy in

driving Indonesia's economic growth. The Blue Economy is considered a concept that prioritizes sustainable management of marine resources, which includes the use of marine resources for economic growth, social welfare, and preservation of marine ecosystems. The research question that arises is how the implementation of the Blue Economy in Indonesia can increase economic growth while maintaining the sustainability of marine resources.

The concept of the Blue Economy emphasizes the importance of sustainable management of marine resources to support economic growth, improve societal well-being, and maintain the health of marine ecosystems. At the core of this concept is the wise and responsible use of marine resources to ensure their sustainability for the future (Alifa & Zahidi, 2024). Several key elements in the Blue Economy include sustainable fisheries, which aim to manage fish populations without damaging ecosystems, ensuring a continuous supply of fish, and supporting the welfare of communities that rely on this sector. Additionally, marine tourism leverages the beauty of marine nature, such as beaches, coral reefs, and marine life, ensuring that tourist activities do not harm the marine environment while providing long-term economic benefits to local communities (Dian et al., 2023). The use of renewable energy from the sea, such as wave energy, tidal energy, and offshore wind, not only reduces reliance on fossil fuels but also significantly contributes to mitigating global climate change (Purba, 2014).

Marine biotechnology, which utilizes marine organisms to develop new products and technologies such as medicines, food ingredients, and industrial materials, offers significant opportunities for innovation and quality of life improvement while supporting the economy. Additionally, efficient and environmentally friendly maritime transportation plays a crucial role in international trade and mobility, as well as in reducing the environmental impact of shipping activities. Overall, the Blue Economy concept aims to achieve a balance between economic growth and marine environmental conservation (Bappenas et al., 2023). By applying principles of sustainability in every utilization of marine resources, the Blue Economy is expected to promote inclusive development and provide benefits to all levels of society.

Literature Collection

The main sources used are journal articles, policy documents, and relevant reports on the Blue Economy, marine resource management, and its impact on the economy. Data were obtained from academic databases such as Google Scholar, JSTOR, and government and international organization publications that can provide comprehensive information on the Blue Economy concept and its implementation. Some of the main references referred to in this study include Alifa & Zahidi (2024) on the importance of wise and sustainable use of marine resources. Dian et al. (2023) who reviews the role of marine tourism in supporting the local economy without damaging the environment. Purba (2014) on the use of renewable energy from the sea to reduce

dependence on fossil fuels. Bappenas et al. (2023) on the principles of sustainability in managing the blue economy that can provide social and economic benefits inclusively. The implementation of the Blue Economy is also expected to support community welfare. Furthermore, the implementation of the Blue Economy is anticipated to foster economic growth while maintaining the sustainability of marine ecosystems, so that economic, social, and environmental benefits can be enjoyed by current and future generations (AP, 2023). As the world's largest archipelago, Indonesia has an abundance of marine resources. Therefore, the government needs to shift its development focus to utilize the marine potential as the main driver of national economic growth. However, currently, the government has not fully focused on managing, improving, and supporting communities and businesses that want to implement marine development based on the blue economy concept (Saksono, 2013). Indonesia is the largest archipelagic country with the second longest coastline after Canada. Therefore, the Indonesian government must prioritize the implementation of the blue economy concept. It is crucial for policymakers to formulate strategies for the conservation of marine resources, which will have a direct impact on the food security of the community (Ervianto, 2018).

The maritime sector plays a crucial role as the backbone of livelihoods for many communities, such as fishermen, seafood processors, marine tourism operators, and various related businesses. Additionally, increased economic activity on land can cause environmental damage that negatively affects water bodies, including rivers, coasts, and seas. Such damage can include pollution and sedimentation that harm marine ecosystems and threaten the livelihoods of communities dependent on these marine resources (Chandra, 2021). In the implementation of the blue economy concept, development in Indonesia is aimed at increasing income and community welfare. Therefore, it is essential for development planning to ensure harmony between environmental protection and natural resource management (Andaiyani et al., 2024). This approach aims to ensure sustainability, support economic growth, and improve the standard of living for the community. The marine sector based on the blue economy is expected to become a key pillar in increasing national income in the future. Additionally, the implementation of the blue economy in national marine development is expected to address the challenges of economic dependency on ecosystems and reduce the negative impacts of economic activities, such as climate change and global warming. These findings contrast with research indicating that blue economy policies have had a positive impact on the management of marine and fisheries resources in Indonesia (Alifa & Zahidi, 2024). The Role Theory provides a useful framework to understand how individuals in the blue economy fulfill societal expectations. Fishermen adopting sustainable practices reflect positive role behavior, fostering a culture of conservation and mutual respect (Hehanussa, 2023). However, role conflict arises when economic and environmental interests clash, as seen in the dilemmas faced by tourism managers and fishermen. Similarly, role ambiguity, often due to unclear government policies, can hinder effective marine resource management.

This study answers the research question by highlighting the critical role of sustainable management of marine resources in enhancing Indonesia's economic growth. It identifies the key elements of the blue economy and discusses the challenges and opportunities associated with its implementation. The findings are supported by various studies (Duarte, 2023), (Banu, 2020), (Khoiriyah, 2024), (Salim & Purbani, 2015), (Lasaiba, 2020), (Ervianto, 2018), which emphasize the potential of the blue economy to drive economic development while ensuring environmental conservation. However, challenges such as ineffective management, unsustainable practices, and lack of coordination must be addressed (Olteanu & Stinga, 2019)(Saksono, 2013). Although the implementation of the blue economy in Indonesia shows promise, it is evident that a holistic policy framework and collaborative efforts among stakeholders are essential.

Previous studies (Dian et al., 2023) and findings from (AP, 2023) and (Alifa & Zahidi, 2024). support the positive impact of the blue economy on economic growth and resource management. However, (Chandra, 2021) and (Purba, 2014) highlight the adverse effects of environmental damage from increased economic activities, underscoring the need for balanced and sustainable development approaches.

Used Analysis and Synthesis of Findings

Data synthesis was conducted by connecting findings from various studies and relevant literature. The results of the analysis indicate that wise management of the Blue Economy can generate significant economic and social benefits, with an emphasis on sustainable management in the fisheries, tourism, renewable energy, and marine biotechnology sectors.

Key findings include the Blue Economy can improve the welfare of coastal communities by encouraging a sustainable fisheries sector and environmentally friendly marine tourism. The potential for renewable energy from the sea can reduce dependence on fossil fuels and reduce the impact of climate change (Purba, 2014). Challenges in management and coordination between various parties and the need for more holistic policies to maximize the benefits of the Blue Economy.

Discussion and Validation of Findings

The findings of this study were compared with previous studies to validate the conclusions obtained. For example, a study by Chandra (2021) showed that increasing economic activity on land can cause environmental damage that affects the quality of marine ecosystems, so it is important to adopt a more balanced approach. Further analysis identified that the role of the government is very important in creating policies that support the implementation of the Blue Economy and maintain a balance between marine resource management and economic development.

D. Conclusions

The sustainable management of marine resources within the Blue Economy framework significantly enhances Indonesia's economic growth by promoting inclusive development and ensuring environmental conservation. Key sectors such as sustainable fisheries, eco-friendly marine tourism, renewable energy, marine biotechnology, and environmentally friendly maritime transportation drive this growth. However, effective implementation requires addressing challenges like unsustainable practices, stakeholder conflicts, and inadequate policy coordination.

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