

Current Status and Trends of Blue Economy Development in Indonesia: Policy Direction, Practice-driven Approaches, and Regional Collaboration

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Abstract. In the context of increasing global attention to the blue economy, Indonesia, as the world's largest archipelagic nation, is leveraging its geographical advantages and marine resources to incorporate the blue economy into its national development strategy. This strategy involves promoting the sustainable utilization of marine resources, advancing digital transformation, and fostering international cooperation, all aimed at enhancing Indonesia's competitiveness in the blue economy within the Asia-Pacific region. Indonesia is confronted with considerable sustainability challenges, including overfishing, marine ecological degradation, and plastic pollution, while also navigating complex maritime disputes with neighboring countries and external powers. Furthermore, issues such as insufficient interdepartmental collaboration, central-local coordination barriers, and weak local implementation hinder the development of its blue economy. Despite these challenges, Indonesia continues to demonstrate its role as a key advocate of the blue economy through multilateral cooperation and regional alignment. This not only facilitates its economic structural transformation and modernization of regional governance but also contributes to international blue governance and the creation of a regional community of shared future, offering the "Indonesian approach" as a model.

Keywords: Indonesia; Blue Economy; Marine Resources; Sustainable Development.

1. Introduction

In recent years, the blue economy has emerged as a central issue in the global development agenda, with many countries formulating and implementing corresponding development strategies. The exploitation and utilization of marine resources offer nations significant economic benefits, including food, energy, biodiversity, and recreational opportunities. However, as resource development intensifies, the marine ecological environment faces increasingly severe threats, and over-exploitation has profound negative impacts on marine health. In this context, the blue economy arose as a new concept aimed at addressing environmental pressures while promoting sustainable development. It is gradually becoming a critical component of national development strategies. For countries like Indonesia, endowed with abundant marine resources, the blue economy serves not only as a key driver of economic growth but also as an important pathway to achieving sustainable development. As the largest country in Southeast Asia in terms of area, maritime territory, and population, Indonesia is also the world's largest archipelagic nation, comprising 17,504 islands and approximately 108,000 kilometers of coastline.[1]Its maritime territory spans 5.8 million square kilometers, including 2.7 million square kilometers of territorial fishing zones and 3.1 million square kilometers of exclusive economic zones.[2]res highlight Indonesia's unique natural advantages in the development of the blue economy.

This paper aims to explore the current state, driving forces, key initiatives, and challenges of Indonesia's blue economy development. First, this paper examines Indonesia's understanding of and policy planning for the blue economy, emphasizing its pivotal role in the country's development strategy. Second, it discusses the economic, political, and external factors driving the development of Indonesia's blue economy. Next, the paper explores Indonesia's key initiatives in the sustainable development of marine resources, digital transformation, and international cooperation. Finally, it analyzes the challenges faced by Indonesia's blue economy, particularly those related to environmental sustainability and policy coordination. Through an in-depth analysis of Indonesia's

blue economy development, this paper seeks to provide new insights into the implementation pathways and challenges of the blue economy in developing countries and offer valuable lessons for other nations with similar resource advantages.

2. Indonesia's Understanding and Policy Planning for the Blue Economy

2.1 Indonesia's Understanding of the Blue Economy

The concept of the “Blue Economy” was first introduced in 1999 at the “Blue Economy and St. Lawrence Development” forum held in Canada. It belongs to the broader category of the ocean economy, with a focus on the integrated development and utilization of marine resources.^[3] After more than a decade of evolution, the concept of the blue economy was formally established at the 2012 United Nations Conference on Sustainable Development as a crucial approach to promoting the sustainable use of marine resources.^[4] For Indonesia, as the world's largest archipelagic nation, with 17,504 islands and approximately 108,000 kilometers of coastline,^[5] covering a marine area of 5.8 million square kilometers, including 2.7 million square kilometers of territorial fishing zones and 3.1 million square kilometers of exclusive economic zones,^[6] marine resources are exceptionally abundant. These favorable conditions provide a solid foundation for Indonesia's development of the blue economy, particularly in sectors such as fisheries, energy, and tourism. Indonesia is the second-largest fisheries producer globally, with a diverse range of fishery resources, and its annual production ranks among the highest in the world.^[7] Fisheries and aquaculture serve as vital pillars for Indonesia's food security and the livelihoods of its fishermen. By introducing sustainable management practices, the blue economy has the potential to increase production capacity and mitigate the ecological damage caused by overfishing. What's more, Indonesia possesses substantial tidal, wave, and offshore wind energy resources, presenting significant potential for marine energy development, which could support the country's green transformation and carbon neutrality objectives. Furthermore, marine tourism is emerging as a pivotal economic driver in Indonesia, where the strategic development of ecotourism and marine protected area (MPA) tourism seeks to achieve synergistic alignment between ecological conservation and economic growth imperatives.

2.2 Indonesia's Policy Planning for the Blue Economy

Since the Indonesian government launched the “Global Ocean Anchor” strategy in 2014, it has gradually established the strategic position of the blue economy. Indonesia's blue economy policy primarily concentrates on the following aspects: First, it emphasizes the integrated use of marine resources to promote green and sustainable development; second, it aligns with national development plans through reforms in marine management systems, enhanced marine infrastructure, and strengthened international cooperation; third, it actively participates in international marine governance mechanisms, particularly in the fields of UN marine affairs and climate change. At the policy level, the National Development Planning Agency of Indonesia published the “Indonesian Blue Economy Roadmap 2023-2045”, which outlines a diversified and sustainable ocean economy development path to achieve Indonesia's 2045 vision.^[8] The country has also promoted the formation of regional cooperation frameworks at platforms such as the G20 Development Ministerial Meeting and the ASEAN Blue Economy Forum. In terms of strategic implementation, Indonesia plans to expand Marine Protected Areas (MPAs) to over 23 million hectares and has set a goal of expanding them to 30 million hectares by 2030.^[9] It has also identified five key sectors for development: fisheries, energy, tourism, logistics, and ecological protection. In terms of legal and institutional development, the government remains committed to improving the marine resource management legal framework, addressing policy overlaps, and strengthening the rule of law. On the international cooperation front, Indonesia actively participates in multilateral platforms such as ASEAN and the Davos Forum, integrating the blue economy with global issues such as sustainable development, water resource crises, and South-South cooperation. Indonesia is also advancing capacity-building

for developing countries in marine governance and renewable energy, demonstrating its responsibility as a maritime power and its leadership role in the region.[10]

3. Driving Factors Behind Indonesia's Blue Economy Practices

3.1 Economic Drivers

First, the blue economy represents a crucial pathway for Indonesia's national economic transformation. According to a report by Indonesia's Ministry of National Development Planning (BAPPENAS), the marine economy currently contributes approximately 7.92% to the country's GDP. This share is expected to increase to 15% by 2045.[11] This projected growth not only underscores the vital role of the marine economy in driving national economic development but also highlights Indonesia's strategic positioning in the global blue economy landscape. Second, at the specific industrial level, key sectors such as fisheries, marine energy, and marine tourism provide strong momentum for Indonesia's economic growth. In the fisheries sector, Indonesia ranks as the world's second-largest producer of fishery products,[12] endowed with abundant marine resources, particularly in fishing and aquaculture, which hold substantial potential. According to a report by the Indonesian Ministry of Marine Affairs and Fisheries Quality Control and Supervision Agency (BPPMHKP), in the first half of 2024, the fisheries export value from the Maluku region reached IDR 400 billion (approximately USD 25 million).[13] In the marine energy sector, the Indonesian government is actively encouraging the development of offshore wind power and tidal energy. These initiatives not only help reduce dependency on fossil fuels but also provide new drivers for Indonesia's energy security and green transformation. Regarding marine tourism, Indonesia's vast island resources attract large numbers of both domestic and international tourists annually. In 2024, Indonesia's tourism sector secured significant success, contributing 4.01% to GDP, generating foreign exchange earnings of 12.63 billion USD, and providing employment for over 24.5 million people.[14] With the continuous growth of both domestic and international visitors, Indonesia's tourism industry presents robust growth, and is expected to further propel economic diversification and sustainable development in the future.

3.2 Political Drivers

Firstly, in terms of national security and sovereignty protection, Indonesia's marine resources not only support its economic growth but also hold significant strategic importance for national security. As the world's largest archipelagic state, located along key maritime routes such as the Strait of Malacca, Indonesia's marine resources constitute not merely an economic asset but are inextricably linked to national security and sovereign rights safeguard. In this context, the Indonesian government has accelerated the development of marine resources while strengthening its governance over maritime rights. For example, on January 10, 2025, Indonesian Foreign Minister Retno Marsudi stated that Indonesia would intensify defense cooperation, enhance maritime security, stabilize shipping lanes, protect fisheries, and promote a code of conduct between ASEAN and China regarding the South China Sea, in order to maintain regional stability and reinforce ASEAN's central role.[15] Secondly, with respect to foreign policy strategy, Indonesia's blue economy initiatives not only contribute to domestic transformation but also aim to enhance its international standing and influence. Former President Joko Widodo, in his speech on National Maritime Day, emphasized that Indonesia, as the world's largest archipelagic nation, should fully harness the potential of its marine resources and strive to establish itself as a global maritime hub.[16] To this end, the government has actively pursued the "Tol Laut" (Sea Highway) project, aimed at improving port infrastructure, developing maritime logistics, and enhancing regional cooperation and marine governance. Indonesia's objective is not only to become a core player in Southeast Asia's blue economy but also to assume a leadership and coordinating role in global blue economy governance, thereby reinforcing its position as a major regional power in Southeast Asia and a middle-ranking global power. Finally, in terms of domestic politics and governance structure, Indonesia's political system plays a pivotal role in its blue economy

strategies. In recent years, the Indonesian government has made substantial strides in implementing structural reforms, endeavoring to strengthen the marine governance framework and promoting the blue economy agenda. Through the development of the “Blue Economy Roadmap”, the government has established the strategic significance of marine resources in national development, while increasing investments in infrastructure to boost fisheries productivity. Minister of Marine Affairs and Fisheries Sakti Wahyu Trenggono has stated that government interventions can effectively increase the purchasing power of fishermen and farmers, thereby fostering the overall growth of the fisheries sector and optimizing the national economic structure. [17] This government-led approach to the blue economy not only stimulates economic growth but also strengthens governance effectiveness and lays the foundation for sustainable development.

3.3 External Environmental Drivers

Indonesia’s blue economy practices are shaped by a range of external environmental factors, including domestic economic demands and political strategies, as well as global and regional trends in blue economy development. From a global perspective, the emphasis placed by international organizations such as the United Nations on the blue economy provides Indonesia with both a policy framework and opportunities for international cooperation. The United Nations’ “2030 Agenda for Sustainable Development” (SDGs) includes Goal 14 (SDG 14), which explicitly calls for the “conservation and sustainable use of oceans and marine resources” [18], thereby offering Indonesia policy guidance and a platform for collaboration. Indonesia has actively engaged in the UN Ocean Science “Decade of Sustainable Development” program, which promotes sustainable utilization and research cooperation. [19] Meanwhile, the close attention paid to the blue economy by countries such as the United States and China has provided external support to Indonesia. Through its “Indo-Pacific Strategy,” the United States has reinforced blue economy cooperation in the Indian Ocean and Pacific regions. For example, the United States Agency for International Development (USAID) has funded various marine resource management and sustainable fisheries projects across Southeast Asia, thereby providing Indonesia with technical support and financial assistance. [20] At the same time, China has launched the “21st Century Maritime Silk Road” initiative and is conducting extensive cooperation with Indonesia in areas such as port construction, marine resource development, and fisheries cooperation. At the regional level in Southeast Asia, the blue economy has emerged as a shared consensus. In May 2024, ASEAN launched the “Blue Economy Innovation Project”, which values sustainable fisheries, eco-tourism, and marine conservation, underscoring the member states’ collective commitment to the sustainable use of marine resources. [21] The Vietnamese government has explicitly incorporated the “blue economy” into its national development strategy, and has formulated a sustainable marine economic development strategy through 2030 and a vision for 2045. The strategy emphasizes advancing the sustainable development of the marine economy based on green growth, biodiversity conservation, marine ecological protection, coordination between economic and natural ecologies, balancing conservation and development, harmonizing the interests of coastal and non-coastal regions, enhancing intersectoral collaboration, and optimizing industrial structures, thus injecting new momentum into the national economy. [22] Finally, the strategic competition among global powers in the Indian Ocean region has exerted a profound impact on Indonesia’s blue economy practices. For example, through its “Indo-Pacific Strategy,” the United States has strengthened cooperation with countries along the Indian Ocean, particularly in marine security and infrastructure development. [23] In 2021, the United States, India, Japan, and Australia formed the “Quad Security Dialogue” (Quad) to pursue maritime security and economic cooperation in the Indo-Pacific region, thus offering Indonesia opportunities to participate in regional cooperation, while also presenting challenges to its strategic position in the Indian Ocean. [24] At the same time, Russia has expanded its influence in the region through its 2022 “New Maritime Doctrine”, which attaches great importance to economic and security cooperation in the Indian Ocean, particularly through energy development and port construction projects. [25] In the face of both opportunities and

challenges, Indonesia must boost its capabilities through cooperation while flexibly adapting to changes in the regional political and economic environment in order to safeguard its national interests.

4. New Pathways for Indonesia's Blue Economy Practices

4.1 Sustainable Development and Innovative Applications of Marine Resources

First, in terms of marine fisheries management, Indonesia has implemented a series of innovative measures in order to promote sustainable development. In response to the challenge of Illegal, Unreported, and Unregulated (IUU) fishing, the country has introduced fishing moratoriums and resource quota systems. Since the enactment of *Presidential Regulation No. 115* in 2015, these measures have been effective in reducing overfishing, significantly mitigating the depletion of marine resources. Data indicates that fisheries losses in Indonesia's Exclusive Economic Zones (EEZ) have decreased by at least 25%, with fisheries resources gradually recovering. Second, in the realm of marine conservation, Indonesia has set ambitious targets. By 2030, the country aims to designate 10% of its territorial waters (approximately 32.5 million hectares) as Marine Protected Areas (MPAs). [26]s of the end of 2022, nearly 28.91 million hectares of MPAs had been established, encompassing core zones, sustainable fisheries areas, and utilization zones, thereby balancing ecological preservation with community livelihoods.[27]Lastly, in the development of marine renewable energy, Indonesia is progressively establishing itself as a paradigm for blue economy advancement. First of all, the Indonesian government has made substantial strides in the research and application of renewable energy sources such as offshore wind and tidal energy, with relevant technologies maturing steadily. These advancements have become a crucial driving force behind the country's green development strategy. For instance, according to the 2023 estimates by Indonesia's National Development Planning Agency (BAPPENAS), the total potential of marine renewable energy in Indonesia could reach up to 60 gigawatts, with tidal energy alone estimated to have a potential of approximately 18 gigawatts.[28]Secondly, the government has strengthened its legal and policy frameworks to provide clear guidance for marine energy projects, while also increasing support for research and technological development. Through feasibility studies and project evaluations, Indonesia is establishing a solid scientific foundation for the development of offshore energy.

4.2 Digital Transformation of Indonesia's Marine Economy

Firstly, in the realm of smart fisheries, Indonesia has implemented digital management of fisheries catch data through Information and Communication Technology (ICT). Taking the Bali Strait as a case study, Indonesia has developed a smart fisheries management system that includes the MICT-L (Marine Information and Communication Technology Landing) digital recording application, Internet of Things (IoT) GPS tracking devices, and an online database platform. This system provides robust technical support for the sustainable management of fisheries resources.[29]Besides, Indonesia employs big data analytics and Decision Support Systems (DSS) to conduct precise assessments of fisheries resources, calculate the Maximum Sustainable Yield (MSY), and predict catch volumes and changes in fishing grounds through modeling.[30]Integrating satellite monitoring with environmental indices, Indonesia effectively optimizes its fishing strategies and ecological management, thus providing strong support for the sustainable development of the blue economy and offering valuable, replicable lessons for the international community. Secondly, in terms of marine ecological protection, Indonesia has undertaken several innovative measures. As the country with the highest global mangrove coverage, Indonesia's mangrove area accounts for 22.6% of the global total, while its coral reef area constitutes 18% of the world's coral reefs.[31]These unique marine ecosystems are vital to the livelihoods of both coastal and inland communities. To ensure effective management of protected areas, Indonesia has implemented the Marine Protected Area Effectiveness Tracking System (E-KKP3K) and has promoted sustainable use of coastal and marine ecosystems through community participation mechanisms.[32]Finally, despite Indonesia's notable progress in the digital transformation of its marine economy and ecological protection, several challenges still exist. First,

the level of community participation needs to be expanded, and the production capacity and market reach of local products still require significant improvement. Second, there is a shortage of management funding for marine protected areas, and limited financial support from local governments, which becomes a bottleneck for sustainable development. To address these challenges, Indonesia must explore innovative approaches, foster the processing and commercialization of more local products, and establish a robust regulatory framework that provides necessary infrastructure and livelihood opportunities for local communities. These measures will be key to Indonesia's blue economy strategy and offer important insights for global marine sustainable development.

4.3 International Cooperation of the Blue Economy

Firstly, Indonesia has actively sought to establish blue economy partnerships with relevant countries, aiming to promote the sustainable development and utilization of marine resources through both bilateral and multilateral cooperation. The country has fostered blue economy partnerships with marine powerhouses such as Australia, Japan, and Norway to advance the sustainable exploitation of marine resources. Under President Joko Widodo's leadership, Indonesia-Australia relations have notably improved, with numerous high-level visits since 2014, culminating in the elevation of the bilateral relationship to a Comprehensive Strategic Partnership in 2018. The two countries have reinforced cooperation in areas such as fisheries, shipping, and port infrastructure through platforms like the annual leaders' meetings and the "2+2" diplomatic and defense mechanism, thereby providing a stable institutional foundation for sustained collaboration. Secondly, Indonesia has actively leveraged regional mechanisms and organizations to build a cooperative network, positioning itself as a proactive advocate and a key partner in the blue economy. Within the framework of the Indian Ocean Rim Association (IORA), Indonesia led the development of the *Jakarta Blue Economy Declaration*, which offers strategic guidance for regional marine development and ecological protection[33] At the ASEAN level, Indonesia has been instrumental in promoting the formulation of the *ASEAN Maritime Outlook (AMO)*, which aims to strengthen resource-sharing and environmental governance within the region.[34] Through participation in these regional mechanisms, Indonesia has effectively enhanced its influence and contributed to the collaborative development of the regional blue economy. Finally, Indonesia has expanded its international cooperation efforts to broaden its network of blue economy partnerships, thereby increasing its influence in global maritime governance. In 2023, during its tenure as ASEAN Chair, Indonesia facilitated the adoption of the *ASEAN Declaration on the Placement and Protection of Migrant Fishers* to strengthen the protection of migrant fishers' rights.[35] Also, Indonesia hosted the ASEAN Migrant Workers Forum under the framework of the International Labour Organization (ILO), promoting the standardization of labor contracts and the provision of legal assistance[36] Furthermore, Indonesia has enhanced its influence in global maritime governance by actively engaging in the implementation of the United Nations Sustainable Development Goal 14 (SDG 14).[37]

5. Challenges in Implementing Blue Economy Practices in Indonesia

5.1 Contradictions Between Environmental Sustainability and Resource Over-Exploitation

Firstly, the degradation of marine and coastal ecosystems is the primary challenge faced by Indonesia's blue economy development. Indonesia's mangroves are disappearing at the fastest rate globally, with an average annual loss of 52,000 hectares.[38] At the same time, the rapid urbanization and infrastructure development in coastal areas, such as port expansions and tourism facility constructions, have caused severe damage to the mangrove ecosystem.[39] Therefore, protecting mangroves is not only an urgent ecological task but also a core element for achieving sustainable blue economy development. To achieve sustainable blue economy development, Indonesia urgently needs to address this through legislative protection, ecological restoration, and international cooperation. Secondly, over-exploitation and poor management of fishery resources have further exacerbated the vulnerability of the blue economy. Indonesia is a major global fishing nation, but its fishery resources

are experiencing serious over-exploitation. Statistics show that approximately 38% of Indonesia's marine fisheries are over-exploited, while another 44% are fully exploited.[40] This has led to a decline in fishery yields, damage to fiscal revenues, and threatens the livelihoods of coastal communities, especially small-scale fishermen. The lack of a well-developed fishery management system and inadequate measures to combat illegal, unreported, and unregulated (IUU) fishing are the main causes of resource depletion. To ensure sustainable development of the blue economy, Indonesia needs to establish a scientific fishery management system, such as fishing quotas, the promotion of sustainable technologies, and improved enforcement capabilities, as well as enhance regional cooperation to combat illegal fishing. Thirdly, marine plastic pollution is becoming an increasingly serious issue and a major threat to Indonesia's blue economy. Indonesia discharges approximately 200,000 to 550,000 tons of plastic waste into the ocean every year[41], leading to direct economic losses exceeding \$450 million.[42] Plastic pollution poses a severe threat to the fisheries and tourism industries and increases the costs of ecosystem management. Studies show that over 80% of marine pollution originates from land-based sources, including plastic waste, toxic metals, oil spills, industrial wastewater, and agricultural runoff.[43] Among these pollutants, plastic waste has become a major threat to marine ecosystems due to its persistence and difficulty in degradation. More seriously, the widespread presence of microplastics not only directly harms the health of marine organisms but also poses potential risks to human health through the food chain. In addition, weak infrastructure and inadequate public services exacerbate pollution in tourist areas, and climate change, which leads to coral reef degradation, further weakens ecosystem resilience.

5.2 Maritime Security and Geopolitical Tensions

Firstly, the development and management of marine resources are central to Indonesia's blue economy agenda. However, these issues have also sparked conflicts of interest with neighboring countries. Although Indonesia is not directly involved in the sovereignty disputes over the islands in the South China Sea, this region, as one of the world's most critical maritime routes, produces immense economic significance to Indonesia due to its rich fisheries and oil and gas resources. Consequently, Indonesia faces disputes with neighboring countries such as Malaysia, the Philippines, and Vietnam regarding maritime boundaries and resource development. For instance, in the Natuna Sea, illegal fishing activities by Vietnamese fishing vessels pose a serious threat to local fisheries.[44] Vietnamese fishermen, utilizing modern fishing technology, directly compete with Indonesian fishermen, who rely on traditional methods, resulting in growing resource depletion and placing significant pressure on the livelihoods of local fishermen. In response, Indonesia has intensified maritime law enforcement to safeguard its Exclusive Economic Zone, but this has also escalated tensions with its neighboring countries. Secondly, Indonesia faces complex diplomatic challenges in managing its strategic relations with major powers. From a geopolitical standpoint, Indonesia's cooperation with Australia is largely shaped by the strategic agendas of external powers. As a key player in the Indo-Pacific region, Indonesia's maritime cooperation with Australia depends not only on mutual willingness but also on external factors such as the U.S. "Indo-Pacific Strategy" and China's "Belt and Road Initiative". Since the Trump administration, the United States has actively pursued the "Indo-Pacific Strategy", seeking to reshape the regional order by enhancing its engagement in the Indo-Pacific. Within this framework, Australia is regarded as one of the four strategic pillars of the U.S., while Indonesia's position has been somewhat marginalized. This asymmetric strategic positioning necessitates that Indonesia carefully balances its cooperation with Australia to avoid over-reliance on any one external power, which could undermine its diplomatic autonomy. Simultaneously, China's "Belt and Road Initiative" has exerted influence on Indonesia's maritime strategy and its cooperation with Australia. As a result, Indonesia must maintain a delicate balance between these two great powers, leveraging its cooperation with Australia to advance its blue economy objectives while steering clear of becoming embroiled in the broader geopolitical competition. Thirdly, climate change poses a new challenge to Indonesia's marine security. As one of the countries most vulnerable to the impacts of climate change, Indonesia's coastlines are

increasingly threatened by rising sea levels and extreme weather events. This poses a significant risk of widespread flooding for Indonesia's low-lying coastal areas. Jakarta, the nation's capital, has already become one of the fastest-sinking cities globally, with certain areas sinking by as much as 25 centimeters annually.[43] This trend not only jeopardizes the security of urban infrastructure but could also force millions of residents to relocate, leading to social and economic instability. Moreover, the increasing frequency of extreme weather events has made profound implications for Indonesia's marine ecosystems and economic activities. Climate change has caused a marked rise in the frequency and intensity of extreme weather phenomena such as tropical storms, heavy rainfall, and droughts. To address these challenges, Indonesia needs to enhance its domestic climate adaptation strategies and actively engage in regional and global climate governance. By leveraging resource integration and international cooperation, Indonesia can create an enabling environment for the sustainable development of its blue economy.

5.3 Inadequate Governance Structures and Policy Coordination

Firstly, the lack of inter-departmental collaboration constitutes one of the core challenges in the governance of Indonesia's blue economy. The implementation of the blue economy involves multiple government agencies, including the Ministry of Maritime Affairs and Fisheries, the Ministry of Environment and Forestry, and the Ministry of Energy and Mineral Resources. However, these agencies often lack effective coordination mechanisms in both policy formulation and execution. For instance, the Ministry of Maritime Affairs and Fisheries, the Ministry of Environment and Forestry, and the Ministry of Energy and Mineral Resources frequently fail to align their policy goals and implementation strategies, resulting in conflicts between production objectives and ecological preservation targets. In addition, overlapping responsibilities and inadequate communication hinder the efficiency of marine resource development and management. To enhance governance effectiveness, Indonesia needs to establish a unified inter-departmental coordination mechanism to ensure policy coherence and consistent execution. Secondly, insufficient coordination between central and local governments represents another major obstacle to the successful implementation of blue economy policies. Local governments are often constrained by resource limitations and driven by short-term economic incentives, leading them to overlook ecological protection and, consequently, deviate from the intended policy objectives. To improve policy consistency, Indonesia urgently needs to strengthen collaboration between central and local authorities. This can be achieved through fiscal transfers, technical assistance, and other measures aimed at bolstering local governance capacity. Meanwhile, it is crucial to establish a performance evaluation and incentive system to enhance the oversight and accountability of local-level policy implementation, thereby ensuring the effective and sustainable realization of the blue economy strategy at the regional level. Thirdly, the insufficient integration of stakeholders further exacerbates the complexity of governance structures. According to a report by the United Nations Development Programme (UNDP), Indonesia faces significant challenges in achieving the Sustainable Development Goals (SDGs) due to the lack of coordination between government, business, and civil society. The successful implementation of the blue economy needs a consensus among these stakeholders on issues such as resource development, environmental protection, and social equity. However, this process is fraught with complex conflicts of interest and difficult trade-offs. For example, government agencies are often confronted with the dilemma of choosing between short-term economic benefits and long-term environmental protection, while businesses and civil society may have divergent understandings and approaches regarding policy objectives and their implementation. Balancing these competing interests to achieve common sustainable development goals remains a critical challenge for the Indonesian government.[44] In order to achieve the SDGs, Indonesia must urgently build a more inclusive and transparent governance framework. This can be accomplished through the establishment of multi-stakeholder consultation platforms, regular stakeholder forums, and the introduction of public consultation mechanisms to enhance participation and transparency in policy-making. Such measures would ultimately improve the legitimacy and effectiveness of blue economy policies.

6. Conclusion

This paper provides a systematic analysis of the development pathways and challenges of Indonesia's blue economy, focusing on aspects such as policy planning, practical drivers, and international cooperation. As the world's largest archipelagic nation, Indonesia continues to enhance its position in global blue economy governance through sustainable development, digital transformation, and regional collaboration. However, challenges such as environmental sustainability, geopolitical security dynamics, and governance coordination remain significant constraints. Looking ahead, the blue economy is expected to play a pivotal role in the global green recovery, and Indonesia's experience offers valuable insights for other maritime nations. Notably, cooperation between China and India in the blue economy sector has deepened, with the blue economy emerging as a key growth area in bilateral relations. Through sustained innovation and collaborative governance, Indonesia is poised to play an increasingly prominent role in the global blue economy landscape, contributing to the realization of the United Nations Sustainable Development Goals and advancing the creation of a harmonious future for humanity and the ocean.

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