

Developing the Blue Economy in Indonesia

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Key Messages:

- Indonesia has made key strides in developing a blue economy framework to leverage its rich maritime potential as a driver of sustainable economic growth and transformation. With a sturdy legal foundation to support it, the government's efforts include the ratification of a maritime spatial planning system for sea use, and the formulation of a new Blue Economy Index.
- Tourism and fisheries continue to be the largest blue economy contributors, but Indonesia has innovated with new financing mechanisms and inter-sectoral partnerships to support research in emerging subsectors such as aquaculture, renewables, and marine manufacturing.
- Implementing new laws and initiatives remains difficult as weak enforcement, overfishing, climate change, and the complexity of stakeholders exacerbate social risks and environmental threats.

During Indonesia's chairmanship of ASEAN in 2023, it has highlighted the blue economy as a key sector for the region's sustainable future. A greener and bluer economy requires both environmental and societal balance. In prioritising the sector, Indonesia recognises both the steep challenges and the abundant potential associated with the blue economy, alongside the need for international and inter-sectoral cooperation to fully leverage the sector's capacity for a more inclusive and equitable future. This brief explores Indonesia's existing progress in harnessing its blue economy, what challenges lie ahead, and what strategic initiatives Indonesia must undertake to pave a pathway towards a blue economic transformation.

The Blue Economy Concept in Indonesia

The 2021 ASEAN Leaders' Declaration on the Blue Economy reaffirmed the commitment of Indonesia and the community to the seas: recognising that the ocean is a key driver of economic growth and innovation, and acknowledging the need for sustainability and rules-based governance.

As the largest country in the Association of Southeast Asian Nations (ASEAN) in terms of land, water, and people, Indonesia has more than 18,000 islands, 80,791 kilometres of coastline, and 3 million square kilometres of exclusive economic waters, including the Coral Triangle that marks the world's largest collection of marine biodiversity (BAPPENAS, 2022), which Indonesia shares with other countries. Indonesia's blue economy holds potential value of \$1,334 billion, equivalent to Rp19,371 trillion (BAPPENAS, 2021).

The Ministry of National Development Planning/National Development Planning Agency (BAPPENAS) and the Organisation for Economic Cooperation and Development (OECD) formulated the Blue Economy Development Framework for Indonesia's Economic Transformation (BAPPENAS, 2021). The framework emphasises Indonesia's inclusive economic growth, and charts a path towards fulfilling the mandate in Indonesia's Long-Term National Development Plan (RPJPN) 2005–2025 – to realise Indonesia as a sovereign, advanced, resilient archipelago through the implementation of sustainable development – and in Indonesia's National Medium-Term Development Plan (RPJMN) 2020–2024, emphasising the need for good ocean management to achieve the sustainable development agenda.

Indonesia's established blue economy sectors are capture fisheries, seafood processing, shipping and ports, shipbuilding and repair, shallow water offshore oil and gas, marine manufacturing and coastal tourism, marine business services, marine research and development and education, and dredging (BAPPENAS, 2021). BAPPENAS and the OECD have also identified Indonesia's key emerging blue subsectors to be marine aquaculture, deep-water and ultra-deep-water oil and gas, offshore wind energy, ocean renewable energy, marine and seabed mining, maritime safety and surveillance, marine biotechnology, and high-technology marine products and services.

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Transitioning to the Blue Economy

Emphasis on the blue economy as a sustainable sector began its integration into Indonesia's national and local policies with the RPJPN's 2005–2025 focus on the sustainable use of maritime resources. However, unsustainable fishing practices that degrade marine environments and harmful tourism activities have challenged Indonesia's ability to achieve ocean sustainability.

The newly established Coordinating Ministry for Maritime Affairs and Investment underscores the high political priority of Indonesia's ocean agenda and the government's understanding that a synergised, inter-sectoral approach is required to tackle the blue economy's multidimensional challenges. Indeed, as of 2021, 28 out of Indonesia's 34 provinces had ratified local regulations to implement maritime spatial planning (*Rencana Zonasi Wilayah Perairan dan Pulau Pulau Kecil* (RZ-WP3K)), with the six remaining provinces having legislation ready at the final stage before ratification (MMAF, 2021).

Institutional and Regulatory Landscape

Law No. 17 of 1985 ratified the 1982 United Nations Convention on the Law of the Sea in Indonesia's legal framework, codifying that the governance and sovereignty of Indonesia's territorial seas must comply with the convention. Indonesia also ratified the 1974 International Convention for the Safety of Life at Sea in Presidential Decree No. 65 of 1980.

Other regulations include those to support the general ocean economy concept (e.g. Presidential Regulation No. 16 of 2017 on the Indonesian Ocean Policy); those to support the implementation of business processes in the maritime and fisheries sector (e.g. Government Regulation No. 60 of 2007 on the conservation of fish resources stocks); those to implement ocean spatial planning, protection, and waste management (e.g. Law No. 32 of 2009 on Environmental Protection and Management); those to support sea transportation (e.g. Government Regulation No. 37 of 2002 regulating Indonesia's sea lanes); those to protect energy, mineral resources, and non-conventional maritime resources (e.g. Law No. 1 of 2014 on the Management of Coastal Area and Isles); those to manage sea construction and biotechnology (e.g. Government Regulation No. 27 of 2021 on Maritime and Fisheries Sector Business Processes); and those to support sea usage for marine tourism and business activities in coastal areas and isles (e.g. Law No. 10 of 2009 on Tourism).

The government bodies responsible for implementing, enforcing, and developing strategic initiatives for the blue economy include the Coordinating Ministry for Maritime Affairs and Investment (for policy coordination and synchronisation), Statistics Indonesia (for Indonesia's ocean accounting framework), and the Ministry of Cooperatives and Small and Medium Enterprises (for the welfare of small businesses in the marine/fisheries sector), as well as the ministries of defence, energy and mineral resources, environment and forestry, finance, foreign

affairs, home affairs, law and human rights, marine affairs and fisheries, tourism and creative economy, transportation, and BAPPENAS.

International cooperation commitments have also supported the blue transition. Recent commitments Indonesia has signed outside ASEAN include the 2017 Declaration of the Indian Ocean Rim Association on the Blue Economy in the Indian Ocean Region, Sweden and Indonesia's 2021 Joint Statement on Cooperation in the Field of the Blue Economy, and the 2021 Australia–Indonesia Joint Statement on Cooperation on the Green Economy and Energy Transition. These partnerships led to the 2021 Blue Economic Development Framework for Indonesia's economic transformation, alongside the G20 Development Working Group in 2022, with the blue economy amongst its focus areas.

Strategic Initiatives for a Blue Future

In formulating a redesigned economic transformation for Indonesia's post-coronavirus disease (COVID-19) recovery, the government has identified six strategies: (i) competitive human resources, (ii) economic productivity, (iii) green economy, (iv) digital transformation, (v) domestic economic integration, and (vi) a new capital city. Highlighted in its economic productivity strategy is the need for industrialisation, improvement of small businesses, agricultural modernisation, and the development of a blue economy to support domestic economic integration, which requires more robust maritime hubs in Indonesia, at the local, national, and international level (BAPPENAS, 2022). The government is also designing a Blue Economy Index (IBEI) for Indonesia, together with the International Labour Organization, United Nations Convention on the Rights of the Child, United Nations Environment Programme, the Swedish Agency for Marine and Water Management (SwAM), ARISE+ Indonesia, and the EcoNusa Foundation, to support these strategies. The following sections explore how these strategies have begun their implementation in some of Indonesia's key blue sectors.

Fisheries and Aquaculture

Indonesia's fish production (capture) totalled 7.7 million tons in 2020, with aquaculture products accounting for 42% of the total produced fishery products (OECD, 2021). Aquaculture has grown by more than 100% in the past decade in Indonesia, and has become a crucial alternative in developing Indonesia's fisheries as higher demand for fishery products exacerbates the reduced production threat due to overfishing (World Bank, 2021).

Indonesia's previous iteration of the RPJMN (2015–2019) included the 2017 Oceans Policy. This policy took a strong stance against illegal, unregulated, and unreported fishing and established a fisheries management authority to decentralise and improve fisheries management. To help resolve coordination challenges across provincial boundaries, Indonesia launched Fisheries Management Areas (*Wilayah Pengelolaan Perikanan* (WPP)) in 2014 – including provincial governments, industry, and

community stakeholders – to advise on the decision-making processes within each WPP (World Bank, 2021). This strategy has helped the successful implementation of policies such as fees and charges on fishery licences to ensure sustainable resource use and to adopt better marine spatial planning.

Marine Biodiversity and Conservation

Indonesia has the largest area of mangroves in the world, accounting for 22.6% of the global total, and its coral reefs account for 18% of the world's reefs (BAPPENAS, 2021). This ocean biodiversity continues to be critical for the livelihoods of both coastal and inland communities.

Indonesia has made substantial progress in expanding its Marine Protected Areas (MPAs) to more than 23 million hectares, with the goal of reaching 30 million hectares by 2030. A scorecard system (*Evaluasi Efektivitas Pengelolaan Kawasan Konservasi Perairan, Pesisir dan Pulau-Pulau Kecil* (E-KKP3K)) has been implemented across MPAs to provide rigorous effectiveness tracking for environmental health. The RZ-WP3K has also leveraged community participatory processes to integrate the sustainable use of coastal and marine ecosystems, and to build a resolution tool for oceans and coastal land use conflicts. These, alongside the 2017 National Action Plan on Marine Debris and Extended Producer Responsibility, have helped stem the rise of marine pollution.

Tourism

Tourism represents a significant source of revenue for Indonesia's coastal and marine regions, with potential to support the sustainability and conservation of marine resources. Yet, the World Economic Forum Travel and Tourism Competitiveness rankings place Indonesia 135th out of 140 countries for its tourism sector's environmental sustainability (BAPPENAS, 2021). This low rank reflects the reduction in forest cover, the low prevalence of wastewater treatment, and the rising number of threatened species.

In response, Indonesia launched the Integrated and Sustainable Tourism Development Program in 2018, which incorporates planning functions, business support, community empowerment, environmental and cultural asset management, and investment in tourism-relevant basic infrastructure and skills (World Bank, 2021). By taking a more holistic approach, Indonesia hopes that ecotourism, community-based tourism, and nature-based tourism will improve sustainability while providing economic opportunities for local communities.

Marine Manufacturing and Construction

The government's strategic initiatives also encompass marine infrastructure and development: the Ministry of Energy and Mineral Resources estimated in 2019 that Indonesia's potential new and renewable marine energy has 49 gigawatts of annual power-generating capacity, with tidal energy producing 18 gigawatts alone. Although Indonesia's marine infrastructure currently consists largely of oil rigs that are due to be decommissioned

because they have reached the end of their useful life, Indonesia's policies have taken steps towards streamlining regulations and increasing multilateral cooperation to support the development of renewable ocean technologies – expanding the renewable sector beyond energy into technologies such as decarbonised shipping to reduce the country's emission footprint across various fronts (BAPPENAS, 2021).

Inter-Sectoral Partnerships

Past policy evidence has found that government policies support the development of blue finance, public-private partnership schemes, and the creation of industrial clusters to integrate various subsectors have been key elements in the successful development of the blue economy across countries (ADBI, 2022). To facilitate and accelerate these partnerships, Indonesia has ramped up its systems for improving data and monitoring maritime activities (World Bank, 2021).

BAPPENAS plans to launch the IBEI, based on a dashboard of various macroeconomic indicators. Working together with government planning, monitoring, intervention, and technological development, the IBEI aims to improve coordination between government agencies and stakeholders in the sector and can be used to set specific targets for each pillar of the blue economy. These pillars include the environment (e.g. the quality of marine renewable energy resources); the economy (e.g. fisheries, aquaculture, tourism, and marine-based manufacturing); and the social aspect (e.g. labour and welfare, health, and marine education), which align with the Sustainable Development Goals to ensure inclusivity (BAPPENAS, 2022).

Financing Mechanisms

Indonesia established the Marine and Fisheries Financing Institution to promote financial sustainability and access to finance in the sector. This approach has allowed Indonesia to attract private sector cash flows and diversify the funding sources available to fisheries (ADBI, 2022). With new instruments such as blue *sukuk* (Sharia-compliant bonds), coral reef insurance, and outcome-based bonds, the government has recognised the importance of financing innovations to support the sector's further growth.

Challenges and Risks

Amongst Indonesia's largest hurdles in achieving a sustainable ocean economy is the integrity of its marine and coastal ecosystems. With mangrove numbers facing some of the fastest rates of loss in the world, and with more than 50% of its mangroves in degraded condition (MMAF, 2019), coastal development has become the most imminent threat to the country's marine ecosystems (BAPPENAS, 2021). If not managed well, this degradation could undermine the blue economy's potential and existing capacity.

Second, the fisheries management system remains unoptimised and inefficient. Some 38% of Indonesia's

marine capture fisheries were estimated to be overfished in 2017, with a further 44% fully fished. This has resulted in reduced returns from export earnings and government revenues, and has threatened the welfare of coastal livelihoods.

Third, marine plastic debris raises ecosystem costs, endangers human health, and threatens coastal economic activities. Indonesia contributes an estimated 0.20–0.55 million tons of plastic annually to the oceans (World Bank, 2021), with the direct costs alone from plastic pollution economic damage in Indonesia exceeding \$450 million each year (APEC, 2020).

Basic infrastructure and service deficiencies for residents also exacerbate the impact of marine pollution and climate change on important tourism sites. Growing visitor numbers and business needs have compounded the resulting environmental pressure and led to increased coral reef losses. The complex network of stakeholders involved steepens the challenges the government must overcome, but this richness of interests also reflects the opportunities the ocean holds. For Indonesia to lead the ASEAN community in building an ocean of shared prosperity, it must navigate these challenges while addressing an uncertain future and an unexplored sea of opportunity.

Policy Recommendations

The highly fragmented governance of the sea – both horizontally and vertically – reflects the complex nature of Indonesia's central and regional governments. Indonesia requires clearer and more streamlined institutional foundations to improve its capacity for cooperation, particularly in emerging subsectors.

1. While Indonesia's laws are relatively comprehensive in the ASEAN region, their implementation remains challenging, and enforcement remains flawed. The establishment of the IBEI represents a necessary step towards better data collection for policy monitoring, evaluation, and improvement.
2. Financing and budgeting will be critical in developing subsectors that remain underdeveloped in Indonesia – such as those in marine biotechnology, subsea construction, and offshore renewable energy. This requires incentives and tools that balance potential with environmental sustainability.
3. Leveraging existing anti-poverty government programmes will help Indonesia improve livelihoods in coastal and isolated areas without drawing funds away from other programmes on the ecosystem and

other blue sectors. Ensuring the welfare of these coastal livelihoods and small businesses is necessary to achieve an inclusive and equitable future.

References

- ADB (2022), *Blue Economy and Blue Finance: Toward Sustainable Development and Ocean Governance*. Manila: Asian Development Bank Institute.
- APEC (2020), *Update of 2009 APEC Report on Economic Costs of Marine Debris to APEC Economies*. Singapore: Asia-Pacific Economic Cooperation Oceans and Fisheries Working Group.
- BAPPENAS (2021), *Blue Economy Development Framework for Indonesia's Economic Transformation*. Jakarta: Ministry of National Development Planning/ National Development Planning Agency).
- BAPPENAS (2022), 'Indonesia's Blue Economy Development Roadmap', Presentation by Deasy Damayanti Putri Pane at the Regional Actions for Operationalizing the ASEAN Leaders' Declaration on Blue Economy, Webinar, 3 November. Jakarta: Ministry of National Development Planning/ National Development Planning Agency.
- MMAF (Ministry of Marine Affairs and Fisheries) (2021), *KKP Gelar Rakerteknas Percepat Penyelesaian Materi Teknis Perairan Pesisir/RZWP-3-K Integrasi dengan RTRW Provinsi* (KKP Holds National Working Meeting to Accelerate the Completion of Technical Material for Coastal Waters/RZWP-3-K Integration with Provincial RTRW). Press release, 29 March. <https://kkp.go.id/djprl/artikel/39292-kkp-gelar-rakerteknas-percepat-penyelesaian-materi-teknis-perairan-pesisir-rzwp-3-k-integrasi-dengan-rtrw-provinsi>
- MMAF (Ministry of Marine Affairs and Fisheries) (2019), *Resource Management of Mangrove and Seagrass Ecosystem*. Presentation by Sapta Putra at the Workshop on Enhancing Resilience of Coastal and Marine Resources. 2019 by Directorate General of Marine Spatial Management. Indonesia: MMAF.
- OECD (2021), *Sustainable Ocean Economy Country Diagnostics of Indonesia*. Paris: Organisation for Economic Co-operation and Development.
- World Bank (2021), *Oceans for Prosperity: Reforms for a Blue Economy in Indonesia*. Washington, DC: World Bank.

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