

**FUTURE BLUE ECONOMY POLICY MODEL BASED ON BALANCE OF FISHERIES
AND MARITIME SECTORS WITH MINING TO ACHIEVE SUSTAINABLE
ECONOMIC GROWTH IN EASTERN INDONESIA**

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ABSTRACT

The blue economy is a national development goal in strengthening Indonesia's role as a maritime country. The added value of fisheries and marine affairs in recent years has been very important for national economic growth, but we are faced with challenges such as the decline in the quality of the marine environment. Around 50% of national mining reserves are in Eastern Indonesia, so this area has been designated as the center of national mining activities. Empirical facts show that mining activities have negative consequences for the sustainability of marine resources, so there is a need for an economic policy model that leads to development and economic growth based on a balance between the two. The blue economy approach is the answer to balancing these two sectors as a basis for new growth that is inclusive and resilient in order to create sustainable development. This article presents several blue economy models that refer to the balance between maritime affairs, fisheries, and mining. The direction for accelerating the development of the Sulawesi Economic Corridor will also end in 2025, so the results of this research can also be used as a reference in further preparations.

Keywords : Blue Economy, Economic Policy, Maritime and Mining Sector

INTRODUCTION

Currently, the world is experiencing economic turmoil, starting with the Covid-19 pandemic and the security crisis involving Russia and Ukraine, which until now has been considered a trigger for a recession. Beginning in 2023 some countries have experienced it. The concern of all countries, including Indonesia, is that economic growth is slowing down and poverty is increasing, if it is not controlled it can give rise to broad consequences (conflict). Within the last 10 years, the issue of poverty has begun to slow down, around 0.6 points/year. Economic turmoil since Covid-19 as reported by Filmer et al., (2022); Jolliffe et al., (2022); Baah et al., (2022); Bhalla et al., (2022); Mahler et al., (2021); and World Bank (2020) that World poverty in 2018/2019 is around 8.4%, equivalent to 648 million people, in 2020 it has increased to 11%, and this figure is projected to increase by 1.2 points in the coming year.

The World Bank (2022) reports that the ability of developing countries in terms of fiscal is stronger (around 2.4%) than developed countries. This position is an opportunity for Indonesia to play its role in the global economy. One reason is that developing countries have slightly more reserves of natural resources to survive. The challenge is that natural resources are limited and some of them are renewable, so to balance their availability and use they are carried out with a sustainable development goals (SDGs) approach (Hasddin et al., 2023), one of which is the internalization of the blue economy concept. All agenda goals (there are 17 goals) of SDGs by UNDESA, (2016); Ferreira et al., (2022); (Hasddin et al., 2022); (Hasddin et al., 2022); Kharas & Dooley, 2022) can be answered by implementing the blue economy concept in spurring economic growth, along with other SDGs goals.

Indonesia has an important position in the blue economy, because the performance of the fisheries and marine sector is the highest in the ASEAN region, contributing more than USD 30,000 million or around 67% (2015), followed by Vietnam at USD 5,000 million (OECD, 2021). In 2021, Bappenas (2022) records that the economic value will grow to USD 27 billion. On this basis, since 2015 the Government through Bappenas has formulated specific directions regarding the internalization of the blue economy in the national development agenda covering marine, marine, and fisheries industry, tourism, as well as trade, transportation, and logistics.

There is still a gap between the potential and economic value of marine and fisheries and the fact of poverty. Indonesia's performance in poverty alleviation is still lower than in ASEAN countries. At the beginning of the 2020s, Indonesia's poor population remained at 9.57% (BPS, 2023), this figure has improved compared to 2015 at 11.13% (Hill, 2021). This performance is quite good when compared to Laos with a poverty rate of 10%. However, it is still higher than the Philippines with a poverty rate of 4.7%; Vietnam 1.8%; Thailand and Malaysia around 0.1%. Maximizing the potential of the blue economy, the Government through Bappenas (2022) then sets an agenda for the future that is based on renewable energy, biotechnology and bio-economy, circular economy, and research agenda. Blue economy research according to Pace et al., (2023); and Keliat et al., (2022) is important for clouding the database in formulating policy directives.

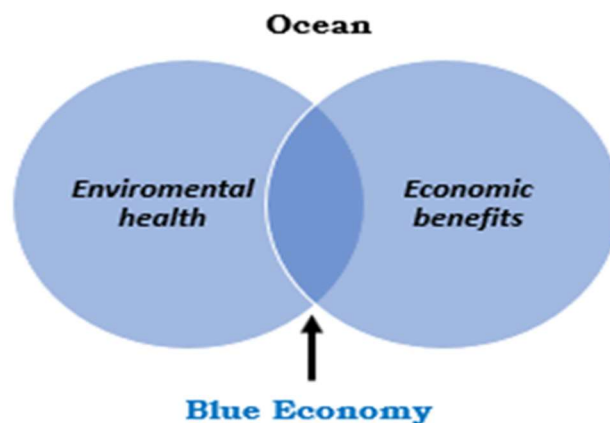
Since the 2014-2024 development period, the President of the Republic of Indonesia has begun to focus on development in the Eastern Indonesia region to reduce inequality and maximize the potential of the blue economy. Several provinces in Eastern Indonesia, such as the provinces of West Sulawesi, Central Sulawesi (Mukaddas., 2023), and Southeast Sulawesi, are economically based on three leading sectors, namely agriculture, fisheries, and maritime affairs (blue economy sector basis) and the mining and oil and gas sectors. Specifically in Sulawesi, the government has set strategic directions for the Sulawesi Economic Corridor through Presidential Regulation (Perpres) Number 48 Year 14 as a reference in accelerating national economic development until 2025 in Sulawesi. Mining in KTI has become the focus of the Government's attention, marked by

several mega projects and the establishment of several national mining industrial areas such as in Morowali (Central Sulawesi), Pomaala, Morosi, Routa, and North Konawe (Southeast Sulawesi), Sorowako and Bantaeng (South Sulawesi).

LITERATURE REVIEW

The word blue economy consists of two words, blue literally refers to the sea which is identical in color blue, so the concept of blue economy is protecting marine resources and ecosystems from overuse. Gunter Pauli first introduced the blue economy concept around 2010, published in his book entitled “The Blue Economy, 10 Years, 100 Innovations, 100 Million Jobs” (Patil et al., 2016; and Chandra et al., 2021).

The object of the blue economy concept is the sea and the economy, while the targets are the balance (health) of the marine environment and economic income. Theoretically, the blue economy concept is shown in Figure 1. The conceptual model is intrinsic, the blue economy is related to a healthy ocean and preserving natural and social capital (Pace et al., 2023; Clark, & A.G. Harley, 2020; and Van-Hoof., 2019).



Source: Patil et al., (2016)

Figure 1: Blue Economy Concept

Studies related to the blue economy in Indonesia (the last five years) are still general in nature, spatial on a regional scale, and the type (object) of business analyzed (Marwiyah & Fitria, 2022; Wahyuddin et al., 2022; Nurfauzi & Mansur 2022; Rasyid et al., 2022; Chandra et al., 2021; Prayuda & Sary, 2019; and Zamroni & Mirwantini, 2018). Likewise in other countries such as Auad & Fath (2022); Xie, (2021); Zafra (2021); Kobayashi et al., (2021); Islam & Sarker (2021); and Chen et al., (2020) respectively are limited to assessing achievements, obstacles, directions, sustainable tourism (Hasddin, 2021), the collaboration between countries and between sectors, and coastal poverty (Mukaddas et al., 2021); and (Mukaddas et al., 2023). This study has not produced a blue economy strategy model in the form of a general framework (it does not lead to an action plan).

The latest is the study by Pace et al., (2023) as supported by Novaglio et al., (2022); Cisneros-Montemayor et al., (2021); Claudet et al., (2020); Wisz et al., (2020); Hoerterer et al., (2020); Brent et al., (2020); Winther et al., (2020); Van-Hoof et al., (2019); Issa et al., (2019); Laibach et al., (2019); Voyer et al., (2018); and Wiebe et al., (2018) mentioned four important agendas that need to be followed up in future research in implementing blue economy, namely integrated marine resource management (between regions and between interests), a "polyculture" system (coordinated multi-sector), interdisciplinary innovation and research, as well as providing collaborative databases in supporting marine ecosystem services.

METHODOLOGY

Analysis based on review studies from indexed and reputable scientific journals, around 45 journals that specifically discuss the blue economy. Descriptive analysis with review studies, analyzing, tabulating, coding issues, and interpretation (Hasddin et al., 2022).

With such an analysis basis, the resulting information is strong and representative enough to generate new concepts in order to fulfill logical and scientific principles. At the same time increasing the confidence of decision-makers (central government and regional governments throughout Indonesia, including being a reference for researchers/practitioners to reconstruct results (findings) for the breadth of scientific implications.

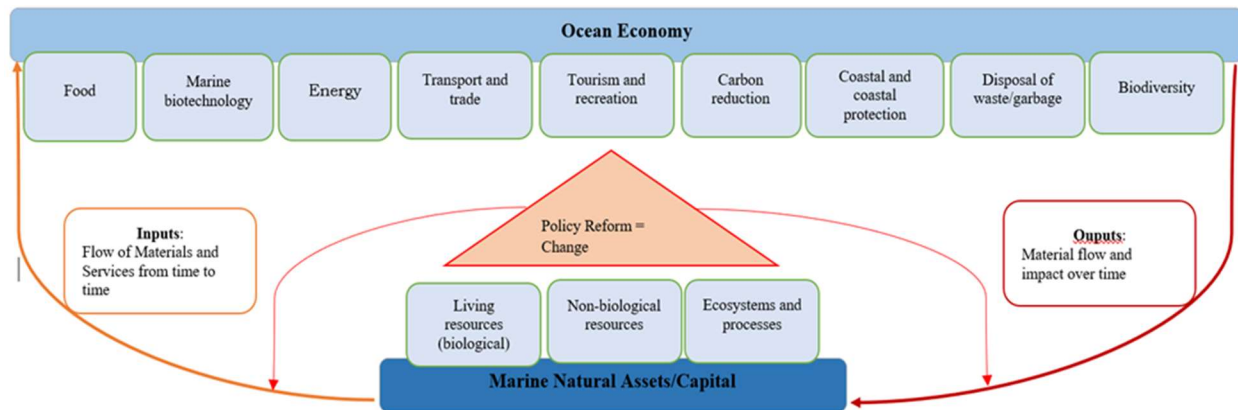
RESULTS

1. Blue Economy Contextual

The blue economy in several studies is referred to as the sustainable use of marine resources for economic growth, increased livelihoods and jobs, and the health of marine ecosystems (World Bank, 2013). This idea arose to promote increased global attention and interest in the growth of marine resource-based activities (Schutter & Hicks, 2019; and Graziano et al., 2019). This view is then translated by Phelan et al., (2020) as an ocean development approach that is synonymous with generating wealth from ocean-related activities while protecting and supporting marine ecosystems. Whenever there are (industry) marine management activities, the blue economy is here to rethink the industrial process on an ecological basis to reduce contamination ((Martínez Vázquez et al., 2021; and Costa et al., 2019).

Since ancient times, the sea and its waters have been a source of production to support the lives of coastal communities and society in general (bioproduction), more than today they are known as ecosystem services (tourism and carbon reduction). The sea maintains the supply chain for human needs, and because of that the United Nations has set the protection of marine resources as the 14th SDGs agenda (Stuchtey et al., 2020). This agenda emphasizes that economic growth from maritime activities must not add to and exceed pressure on the ocean, undermining its resources, and the other ecosystem services it supports (UNESCO-IOC, 2022; and Pace et al., 2023).

The concept of the blue economy as an approach to sustainable marine and fisheries development changes the paradigm of thinking about managing marine and fisheries resources from a purely extractive-exploitative approach to a conservative one. It is true that human needs are important, but the blue economy is a framework for ensuring that marine resources continue to provide benefits between generations. Therefore, the blue economy is an effective instrument of "protection", sustainable production, and equitable prosperity from various activities fulfilling society from the resources in the sea (UNESCO-IOC, 2022).



Source: Patil et al., (2016)

Figure 2: Blue Economy Conceptual Framework

The blue economy concept considers the ecological systems that provide many of the services associated with the ocean economy (Figure 2). This ecological service system is an asset and natural capital that is fundamental to human livelihoods in general, some of which are not even felt directly. The assets and capital of ecological services include (example, visible and felt production capital), and intangible capital comes from social resources of society (skills, expertise, etc., including labor (Patil et al., 2016). The blue economy is not within the framework of suppressing or excluding the intrinsic value of the sea, nor is it positioning its economic value as a priority, but rather emphasizes the unequal relationship between the marine ecological system and economic activity. The blue economy views that large-scale utilization of marine resources, and similar activities have the potential to reduce the quality (health) of the sea (such as offshore oil production, or seabed mining). Many aspects, resources, and sectors are involved in the blue economy, so that more and more parties, policy frameworks, and emerging industries can simultaneously enhance or expand the ocean economy in a more sustainable manner, i.e. grow the blue economy and include new economic growth in potential special areas.

The framework for applying the blue economy to harmonize ocean health and economic growth was proposed by the World Bank as referred to by the World Bank (2012), Economist Intelligence Unit, (2015); and Patil et al., (2016). There are three paths (roadmaps) each grouped into 3 sections. The first instrument begins by designing a policy instrument with three goals namely green, clean, and resilient. Green (green): sustainable management of renewable resource stocks, such as ecosystem-based fisheries management. Clean, namely reducing (a) the environmental impact of

the use of non-renewable resources and (b) pollution from land-based sources (such as untreated waste, plastics, and others). Can be done with coastal and marine spatial objects Transparency of extractive industries. Tangguh, namely increasing the ability of the coastal economy to bounce back from natural disasters and volatile weather and carry out adaptation planning to the impacts of climate change. For example, the national strategy for adapting to climate change. The second instrument or stage is rules and organization, and the third is technically identifying marine economic sectors. The conceptual framework for a proposed blue economy policy framework to harmonize ocean health and economic growth is simply shown in Figure 3.

2. Economic Growth and Blue Growth

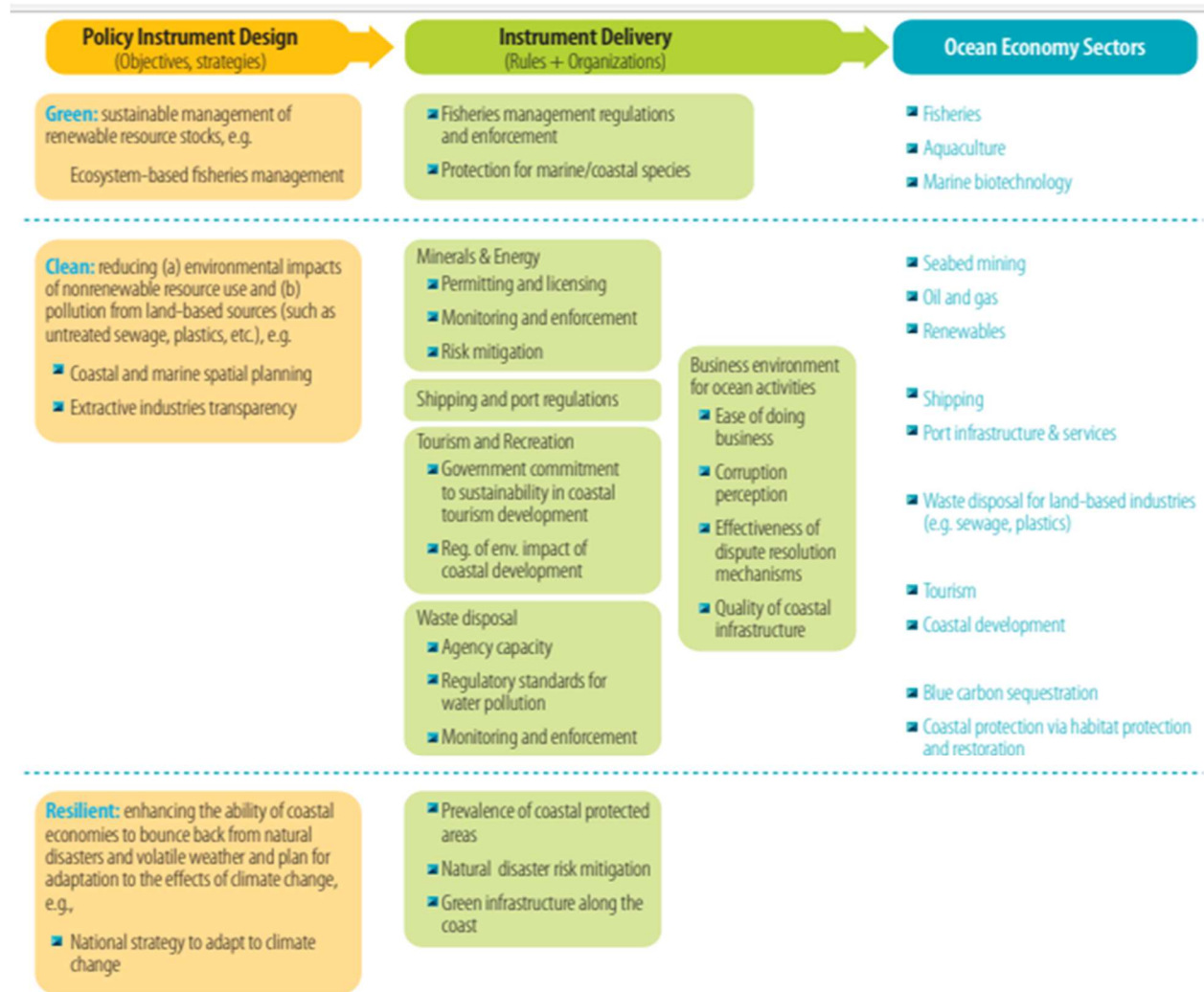
An explanation of the theory and concept of economic growth in research uses Keynes's opinion or Keynesian understanding, that consumption by one person in the economy will become income for other people in the same economy. When someone spends his money, he helps increase other people's income. Departing from this theory, on a macro (country) scale, national economic output and employment opportunities are determined by aggregate demand. the implication is that monetary policy and fiscal policy must be used to overcome unemployment and reduce the inflation rate” (Restiasanti & Yuliana, 2023).

According to Caswell et al., (2020), blue growth emerges from national and international marine policies, aiming to encourage marine economic growth. In line with that, Dalton et al., (2019) view blue growth as an effort to create economic activity and jobs in the sea, while the use of various spaces makes efficient use of available sea levels by combining industries.

This blue growth idea and approach has started to gain popularity in the last two decades, but its implementation has had its ups and downs due to various factors, especially in terms of consistency of government policy and conflicts of interest between institutions. The main basis for the birth of the blue economy concept is to achieve economic growth followed by the exploitation of marine and fisheries resources. Therefore, the emphasis is on economic growth while avoiding degradation, overuse, and pollution. The term blue growth refers to the most holistic management of complex marine socio-ecological systems. It is a dynamic and complex system that spans all industries and regions (Martínez Vázquez et al., 2021).

Martínez Vázquez et al., (2021) in his study stated that developing countries have great prospects in implementing blue growth for a sustainable blue economy. Developing countries still have quite a lot of marine resources, however apart from that the study results present several challenges. Continued Martínez Vázquez et al., (2021), one of the most obvious obstacles is the lack of blue growth (BG) goals, which in general have not agreed on a policy framework and the role of each sector. There are facts that Boonstra et al., (2018); and Holma et al., (2019) that there are efforts to maximize economic growth originating from marine and aquatic resources. Then other facts put forward by researchers of "inclusive" economic growth originating from marine and aquatic

resources (Eikeset et al., 2018; Hay et al., 2019; Pudzis et al., 2018; and Soma et al., 2018), but the pollution and degradation of the oceans, climate change, and energy exploration around the coast bring their own problems. Dilemmatic, because there is an impossibility for developing countries to reduce poverty, at the same time pressure to guarantee the health of marine ecosystems that must be preserved. The health of the oceans is critical to food security, livelihoods, and economies. therefore a robust sustainability approach model brings significant social, economic, and environmental benefits (Clube & Tennant, 2020).



Sources: World Bank (2012); Economist Intelligence Unit (2015); and Patil et al., (2016)

Figure 3: Conceptual Framework Proposed Blue Economy Policy Framework to Harmonize Ocean Health and Economic Growth

According to Rayner et al., (2019), what is often found is a conflict between sectors, arising from the nature of the resource itself (because it is a limited resource), its use, and commitment to developing efficient management of marine resources, for example, tourism versus offshore hydrocarbon extraction (Klinger et al., 2018) or even within the same region. with the difference between fish feet, fish ponds, and small-scale artisanal fisheries. It is important to create synergies between various sectors that form blue growth to contribute to regional economic development

and achieve the shared SDGs, this is a local challenge (bottom-up strategy) that must be formulated so that each sector knows its position (scope and limitations). The blue growth approach must also be more flexible and adaptable for policymaking that takes into account changing economic, social, and environmental realities (Hoerterer et al., 2020).

3. Sulawesi Economic Corridor Policy Framework in Accelerating Development of Eastern Indonesia

The Sulawesi Economic Corridor is established through Presidential Decree No. 48 of 2014. The foundation is in the area used as a production and processing center including fisheries, oil and gas, and national mining. This corridor is expected to be the front line of the national economy for East Asian, Australian and American markets.

Fishery production in this region (Sulawesi) is around 22% of the national total, sourced from 24% capture fisheries and 74% aquaculture. Aquaculture in this area is quite large, such as about 47% seaweed, 21% shrimp, and the rest below that number such as milkfish, tilapia, carp, and others (Presidential Decree No. 48 of 2014).

Mining potential in the Sulawesi Economic Corridor Area is generally nickel. Nickel content in this area is around 8% of world reserves, or around 50% of national reserves. The contribution of nickel in this area is on average around 6% of Sulawesi's GRDP. Since the beginning of 2015, there have been four (nickel) mining development targets, namely Sorowako, East Luwu Regency, South Sulawesi Province. Then there are in Morowali Regency, Central Sulawesi; Pomalaa, Kolaka Regency, Southeast Sulawesi; and North Konawe Regency, Southeast Sulawesi Province (Presidential Decree No. 48 of 2014). Later the national mining area was expanded, in Southeast Sulawesi there are national mining areas in Morosi and Routa.

4. Future Blue Economy Agenda

The results of the analysis of review studies show that several previous studies have not reviewed the linkages between fisheries and marine and mining in the blue economy model scheme. Research that has been widely discussed in several countries is still limited to the topics of assessing achievements, obstacles, directions, sustainable tourism, collaboration between countries and between sectors, and coastal poverty (Auad & Fath, 2022; Xie, 2021; Zafra, 2021; Kobayashi et al., 2021; Islam & Sarker, 2021; and Chen et al., 2020). The study has not produced a blue economy strategy model in the form of a general framework (does not lead to an action plan).

The most recent is the study of Pace et al., (2023) as supported by Novaglio et al., (2022); Cisneros-Montemayor et al., (2021); Claudet et al., (2020); Wisz et al., (2020); Hoerterer et al., (2020); Brent et al., (2020); Winther et al., (2020); Van-Hoof et al., (2019); Issa et al., (2019); Laibach et al., (2019); Voyer et al., (2018); and Wiebe et al., (2018) mention four important agendas that need to be followed up on future research in the implementation of blue economy namely integrated management of marine resources (between regions and between interests), "polyculture" system

(coordinated multi-sector), innovation and interdisciplinary research, as well as provision of collaborative databases in support of marine ecosystem services.

Studies related to the blue economy in Indonesia (the last five years) are still general in nature, spatially in terms of the area and type (object) of business being analyzed (Marwiyah & Fitria, 2022; Wahyuddin et al., 2022; Nurfauzi & Mansur 2022; Rasyid et al., 2022; Chandra et al., 2021; Prayuda & Sary, 2019; and Zamroni & Mirwantini, 2018).

The state of the art regarding mining activities and their consequences for fisheries and marine resources needs to be followed up. The second gap is that it has not specifically created a comprehensive and measurable (multi-sectoral and interdisciplinary) strategy scheme (model) regarding the blue economy as a follow-up to the issues (suggested research positions) that have been disclosed.

Information on the blue economy model based on the balance of the fisheries and marine and mining sectors in order to create new economic growth in eastern Indonesia is urgent because the long-term national development plan (RPJPN) and the medium-term (RPJMN) will end in 2024/2025. Likewise, the accelerated development of the Sulawesi Economic Corridor ends in 2025. The research yields important information (newness) in formulating a blue economy strategy model as a direction for the government (central and regional) in formulating development plans (long-term and medium-term), as well as direction for the development of the Sulawesi Economic Corridor next, at least until the SDGs goal of 2030.

CONCLUSION

The blue economy is one of the pillars of development for the purpose of sustainable economic growth, especially for maritime countries, and Indonesia plays an important role in this issue. However, there is a dichotomy between fisheries and maritime affairs and the mining sector, especially in Eastern Indonesia. These two sectors play an important role in the structure of the national economy, especially mining.

In order to accelerate development in Eastern Indonesia in the Sulawesi Economic Corridor policy package as the basis for a new sustainable national economic growth (blue economy), the author offers four agendas that need to be carried out. First, the provision of a database of economic growth achievements and potential for new blue economic growth in Eastern Indonesia along with the challenges and problems. The second agenda is to study and collect data on the resources and performance achievements of the mining and oil and gas sector and their contribution to national economic growth, economic growth in Eastern Indonesia, and the level of community welfare.

The third agenda is an investigation regarding the causal relationship (forecasting) between important sectors supporting the blue economy as a basis for formulating a model for a new

economic growth strategy in Eastern Indonesia. The final or fourth item on the agenda is the formulation of a blue economy model (strategy and policy directives) based on a balance between sectors (fishery-marine and mining) to accelerate new integrated economic growth in Eastern Indonesia.

Conflicts of Interest Free Statement

The authors declare that they have no conflicts of interest to this work.

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