

Tata Kelola Ekonomi Biru: Bukti Pengembangan Pariwisata Bahari Bagi Nelayan Skala Kecil di Wilayah Pesisir

Blue Economy Governance: Evidence of Marine Tourism Development for Small-Scale Fishers in the Coastal Area

Jasman^{1*}, Sri Wahyuni¹, Andang Suryana Soma², Amran Achmad²

¹Politeknik Pariwisata Makassar, Indonesia

²Universitas Hasanuddin, Indonesia

*e-mail (corresponding author): jasman270@gmail.com

Abstrak

Penelitian ini dilakukan di wilayah pesisir Kabupaten Maros, Sulawesi Selatan, Indonesia, dengan fokus pada keadilan biru bagi nelayan skala kecil dalam pengembangan pariwisata bahari dan penerapan kebijakan ekonomi biru. Penelitian ini menggunakan desain studi kasus kualitatif dengan data yang diperoleh melalui analisis dokumen kebijakan, data statistik perencanaan pembangunan daerah, dan tinjauan literatur. Temuan menunjukkan bahwa tata kelola ekonomi biru di Kabupaten Maros masih menghadapi persoalan keadilan pengakuan, distributif, dan prosedural. Hak nelayan belum sepenuhnya diakui karena mereka tidak lagi menjadi aktor utama dalam pemanfaatan sumber daya pesisir. Pengembangan pariwisata dan infrastruktur pendukung juga meningkatkan tekanan terhadap habitat laut sehingga memengaruhi kuantitas dan kualitas hasil tangkapan. Selain itu, manfaat pembangunan belum terdistribusi secara merata dan partisipasi nelayan dalam proses pengambilan keputusan masih terbatas. Namun, pemerintah daerah telah menunjukkan komitmen melalui penetapan Indeks Ekonomi Biru sebagai indikator pembangunan dan pengembangan kawasan pesisir berbasis konservasi. Studi ini menyimpulkan bahwa tata kelola ekonomi biru yang lebih inklusif diperlukan dengan mengintegrasikan prinsip keadilan biru dalam perencanaan, pemanfaatan, dan pengendalian sumber daya pesisir guna mendukung pariwisata bahari yang adil dan berkelanjutan.

Kata kunci: ekonomi biru; keadilan biru; nelayan skala kecil; pariwisata bahari; tata kelola pesisir

Abstract

This study was conducted in the coastal area of Maros Regency, South Sulawesi, Indonesia, focusing on blue justice for small-scale fishers amid marine tourism development and the implementation of blue economy policies. This study employed a qualitative case study design, with data collected through policy document analysis, regional development planning statistics, and a review of relevant literature. The findings indicate that blue economy governance in Maros Regency continues to face challenges related to recognitional, distributive, and procedural justice. The rights of small-scale fishers have not been fully recognized, as they are no longer positioned as the primary actors in coastal resource utilization. Marine tourism development and supporting infrastructure have also increased pressure on marine habitats, affecting the quantity and quality of fish catches. In addition, development benefits have not been distributed equitably, while fishers' participation in planning and decision-making processes remains limited. Nevertheless, the local government has demonstrated its commitment through the adoption of the Blue Economy Index as a development indicator and the promotion of conservation-based coastal development. This study concludes that more inclusive blue economy governance is required by integrating blue justice principles into the planning, utilization, and control of coastal resources to support equitable and sustainable marine tourism.

Keywords: blue economy; blue justice; coastal governance; marine tourism; small-scale fishers



1. INTRODUCTION

In the context of Indonesia, the country with the second-longest coastline in the world, the blue economy agenda is aimed at optimising the potential of marine and coastal resources, particularly through the development of marine tourism and supporting infrastructure (Surabaya et al., 2025). Maros Regency, as one of the regencies in South Sulawesi Province with a fairly long coastline and abundant coastal resource potential, has become a strategic location for implementing blue economy policies (Yapanto et al., 2025).

The coastal area of Maros Regency, particularly in Bontoa District, including Bonto Bahari Village and surrounding areas, has unique characteristics, combining capture fisheries potential, pond aquaculture, mangrove ecosystems, and marine tourism development (Jasman et al., 2025). Bonto Bahari Village, a fishing village, covers 15.71 km² and had a population of 1,327 in 2019, with a population density of 84.47 people/km². This village has Bonto Bahari Fishing Port which serves as a stopover for fishing vessels from various small island clusters around the Makassar Strait, as well as a Fish Landing Base (PPI) with a pier length of approximately 500 m and an auction site area of about 1 hectare (Idrus et al., 2022).

The transformation of the coastal area of Maros Regency from a traditional fishing area to a marine tourism area has had a dual impact (Phelan et al., 2020). On the one hand, Maros has benefited from increased investment, infrastructure, and tourist flows, both domestic and international, including the promotion of the Maros-Pangkep Geopark as a leading tourist destination (Rahman et al., 2025). On the other hand, these changes have also disrupted the socio-economic order of the local community, which has long relied on traditional fishing. As the tourism sector has grown rapidly, small-scale fishermen have faced a variety of new challenges, such as increasingly limited fishing grounds, coastal ecosystem degradation, and marginalisation in the development planning process (Said & Trouillet, 2020).

Research on the blue economy and small-scale fisheries is growing globally. In Indonesia, the existing literature primarily focuses on the potential of the blue economy to increase national income growth and create new jobs (Oktaviani & Iqbal, 2023). However, empirical evidence on how implementing the blue economy can achieve a fair distribution of benefits for small-scale fishermen who are structurally marginalised remains relatively limited (Bennett et al., 2021).

A study of the coastal area of Maros Regency provides valuable evidence on the dynamics of the blue economy and on social and environmental justice for small-scale fishermen (Das, 2023). The interaction between tourism expansion, conservation, and traditional fishing practices makes Maros a relevant location for exploring how blue economy policies are translated in the local context, and to what extent this has implications for the access, rights, and sustainability of small-scale fishermen's livelihoods (Cohen et al., 2019).

Therefore, the implementation of Blue Justice in Maros is crucial to ensure that tourism development is not only oriented towards economic growth but also towards the sustainability of marine resources and the welfare of small-scale fishermen (Tambun et al., 2025). This approach aligns with the Sustainable Development Goals (SDGs) agenda, particularly Goal 14 (Life Below Water), which emphasises the sustainable management of marine ecosystems. It is important to identify the potential and risks of injustice caused by the development of blue-economy marine tourism for small-scale fishermen in the coastal area of Maros Regency (Swanson et al., 2023). Thus, studies on Blue Justice in the coastal area of Maros not only enrich the academic literature on justice-based marine governance but also provide practical contributions to inclusive blue development policies in Indonesia (Swanson et al., 2023).

2. LITERATURE REVIEW

2.1. Blue Economy and Small-Scale Fisheries

The concept of the blue economy has been viewed as a strategy to promote marine-based economic development and place the ocean at the centre of global sustainability discourse (Engen et al., 2021; He et al., 2024). However, in practice, this agenda often marginalises small-scale fishermen, who should be the main actors in the utilisation of coastal resources. Various studies show that the implementation of the blue economy in several regions has resulted in injustice for



small-scale fishermen (Cohen *et al.*, 2019; Louey, 2022) These injustices include marine-based economic development that damages marine ecosystems, increased marine pollution, weak marine regulation effectiveness, the emergence of non-traditional security threats, and a decline in the number of traditional fishermen, which threatens the sustainability of coastal communities' livelihoods (Dao *et al.*, 2024).

In general, the blue economy is understood as the utilisation of marine resources for sustainable marine-based economic development (Susandi *et al.*, 2024). Therefore, many coastal and island countries, especially those with low to middle average incomes, have high hopes and consider blue economy growth as an opportunity to provide employment and income, particularly focusing on small-scale fisheries and tourism, in order to reduce poverty and provide food security (Rahman *et al.*, 2023; Rizky *et al.*, 2025)

This phenomenon reflects the paradox of implementing the blue economy. The sea is managed by concentrating activities where conditions are favourable and create opportunities, but also pose risks to coastal communities (Evans *et al.*, 2023). As one of Indonesia's sustainable development agendas, the blue economy emphasises optimising the potential of marine resources to drive economic growth (Rudi, 2023). However, in practice, the expansion of marine tourism and industrial-scale fisheries often leads to blue injustice, a condition where small-scale fishers lose their access rights, living space, and welfare due to the dominance of large actors in the marine sector (Blythe *et al.*, 2023).

2.2. Blue Justice and Coastal Governance

In the context of Maros, tourism expansion has not only transformed the local economic landscape but also had ecological consequences, including coastal land conversion and increased pressure on marine resources (Fabinyi, 2019). This has exacerbated the vulnerability of traditional fishermen, who face competition for space, ecosystem degradation, and limited influence over the direction of regional development. To that end, the Blue Justice approach has emerged as a normative framework that emphasises the importance of access rights, ecological sustainability, and social justice for coastal communities (Isnurwanto & Rafiqi, 2025).

This study adopts instruments from Too Big To Ignore (TBTI) Blue Justice, along with other complementary instruments. These instruments were adopted because they provide questions about distributive, procedural, and recognitional justice. Distributive justice can be defined as justice in the distribution of benefits and disadvantages from decisions and actions to different groups. Procedural justice refers to the level of participation and inclusiveness in decision-making and the quality of the governance process. Meanwhile, recognitional justice refers to the recognition and respect for existing governance arrangements, as well as the rights, worldviews, knowledge, needs, livelihoods, histories, and cultures of different groups, in decision-making.

3. RESEARCH METHODOLOGY

3.1. Research Design

This study uses a qualitative case study approach, focusing on the blue economy as a form of marine tourism development in the coastal area of Maros Regency, particularly in Bontoa District and Bonto Bahari Village. The case study approach was chosen because it represents a unique coastal environment, where the main livelihood is fishing. The purpose of this study is to identify blue justice for small-scale fishermen in tourist areas.

3.2. Data and Sources

The main source of data in this study is secondary data obtained through analysis of policy documents, statistical reports, and academic literature relevant to marine governance issues, coastal tourism development, and Blue Justice discourse in Maros Regency. The secondary data used includes:

1. Maros Regency Long-Term Development Plan (RPJPD) 2025-2045
2. Maros Regency Regional Regulation No. 12 of 2005 concerning Coastal and Marine Resource Management



3. Maros Regency Medium-Term Development Plan (RPJMD)
4. Central Statistics Agency (BPS) data for Maros Regency
5. Reports and publications from the Ministry of Marine Affairs and Fisheries
6. Research results and scientific articles on the blue economy in Maros Regency

In addition to secondary data, this study also utilises information from credible news sources and media reports to complement the analysis, including reports on the working visit of Commission IV of the Indonesian House of Representatives (DPR RI) to the Marine and Coastal Resource Management Centre (BPSPL) Makassar in Maros, as well as community service programs in the coastal areas of Maros.

3.3. Data Analysis Techniques

This study uses qualitative data analysis techniques with a thematic approach. Data were analysed using the analytical framework developed by Bennett *et al.*, which groups 10 blue justice indicators into three main dimensions: recognitional justice, distributive justice, and procedural justice.

In addition to thematic analysis, this study utilises Geographic Information System (GIS) techniques to examine coastal spatial changes, mangrove land conversion, and coastal zoning in Maros Regency. Spatial analysis helps identify:

1. Changes in coastal land cover, including mangrove deforestation and pond land conversion
2. Conflicts in marine space utilisation between traditional fishing zones and marine tourism development zones
3. Small-scale fishermen's accessibility to fishing areas
4. Spatial distribution of tourism infrastructure and its impact on coastal ecosystems

Spatial data were analysed using satellite imagery data and spatial planning maps of Maros Regency. This analysis helps visualise changes occurring in coastal areas due to marine tourism development and blue economy policies.

4. RESULTS AND DISCUSSION

4.1. Profile of Maros Regency Coastal Area

Maros Regency is located in South Sulawesi Province, with coastal areas stretching along the Makassar Strait. The coastal area of Maros Regency comprises several districts, including Bontoa District, the focus of this research. Bonto Bahari Village, located in Bontoa District, is one of the coastal villages with significant marine resource potential.

Based on data, Bonto Bahari Village has an area of 15.71 km² and a population of 1,327 in 2019, with a population density of 84.47 people/km². This village is known as a fishing village because most of its population works as fishermen in the waters of the Makassar Strait. Bonto Bahari Village has Bonto Bahari Fishing Port, which serves as a stopover for fishing vessels from various small island clusters around the Makassar Strait, as well as a Fish Landing Base (PPI) with a pier approximately 500 m long and an auction site of about 1 hectare.

Fishery potential in Bonto Bahari Village includes 578 hectares of pond aquaculture, with 395 hectares of well-maintained ponds and 183 hectares of less-maintained ponds. The types of fish cultivated include tiger shrimp, milkfish, and tilapia. In the coastal area of Bonto Bahari Village, crabs are widely cultivated, and about 55% of the village's population works as fishermen. In one year, fish catches reach approximately 126 tons, consisting of about 26 tons of marine fish, about 96 tons of shrimp, and about 4 tons of other fish.

In addition to fishery potential, the coastal area of Maros Regency also has marine tourism potential. Bonto Bahari Mangrove Forest Tourism Village has been designated as a developing tourism village in 2022 and 2023. This indicates a transformation from a traditional fishing area to an integrated marine tourism area.

4.2. Blue Economy Policy in Maros Regency

Maros Regency has demonstrated a strong commitment to the development of the blue economy. This is reflected in various regional development planning documents that explicitly include the blue economy as a development priority.

4.2.1. Blue Economy Index in RPJPD

In the Maros Regency Long-Term Development Plan (RPJPD) 2025-2045, the blue economy is one of the main indicators in the vision target for long-term development. The Maros Regency Blue Economy Index target is set to increase from 83.44 in 2025 to 262.45 in 2045. This achievement is part of the target for increasing the per capita income of the people of Maros.

The Maros Regency Blue Economy Index is also calculated as an indicator to measure the extent to which this regency manages and utilises marine and water resources sustainably. Based on the data, the Maros Regency Blue Economy Index reached 57.64 in 2023 and increased to 65.56 in 2024. This increase indicates progress in implementing the blue economy in Maros Regency, although further efforts are still needed to achieve the set targets.

4.2.2. Blue Economy Policy Framework

Maros Regency has integrated the blue economy into the regional development policy framework. One tangible manifestation of this commitment is the enactment of Maros Regency Regional Regulation No. 12 of 2005 concerning Coastal and Marine Resource Management. This regulation governs the principles and objectives of coastal and marine resource management, based on balance and sustainability, integration, community empowerment, accountability and transparency, and recognition of the traditional rights of local communities (Zein *et al.*, 2023).

Article 3 of this regulation states that coastal and marine resource management aims to achieve a sustainable ecological and economic balance to be utilised to the greatest extent for the people's welfare. To achieve this goal, the regional government is tasked with strengthening communities and government institutions in coastal and marine area management, protecting and conserving coastal resources, encouraging cooperation and improving integrated management capacity, and increasing the capacity and independence of local communities through education and training.

This regulation also recognises the traditional rights of local communities over coastal and marine resource utilisation and management activities that have been carried out for generations, without damaging the environment and maintaining the sustainability of coastal and marine environments. This recognition forms the basis for inclusive and just coastal resource management (Stori *et al.*, 2019).

4.2.3. Long-Term Development Policy Direction

In the Maros Regency RPJPD 2025-2045 document, strengthening the foundation of economic transformation is aimed at developing sustainable and environmentally friendly economic development, with a focus on the green and blue economies, the promotion of renewable energy, sustainable natural resource management, and carbon emissions reduction.

Development priorities for the 2025-2029 period include developing new economic sectors such as services, creative industries, tourism, the digital economy, the blue economy, and the green economy, as well as strengthening traditional sectors such as agriculture, fisheries, and manufacturing. This shows that the blue economy has become one of the strategic pillars in the development of Maros Regency, while still paying attention to traditional sectors that are the main livelihood of coastal communities.

4.3. Marine Tourism Potential and Development

Maros Regency has considerable marine tourism potential, supported by the existence of diverse coastal ecosystems, including mangrove forests, coral reefs, and beautiful beaches. The existence of the Maros-Pangkep Geopark is one of the main attractions promoted as a leading tourist destination.



The Regent of Maros, HAS Chaidir Syam, has actively promoted the Maros-Pangkep Geopark's potential at various forums, including the ASEAN Blue Economy Forum 2023 in Belitung. In this forum, the Regent of Maros shared his experience in implementing the blue economy in Maros Regency and promoted the natural exoticism and economic potential of the Maros-Pangkep Geopark.

Marine tourism development in Maros Regency is also supported by adequate infrastructure, including Bonto Bahari Fishing Port and Fish Landing Base (PPI). Additionally, the Marine and Coastal Resource Management Centre (BPSPL) Makassar, located in Turikale, Maros, serves as the centre for coastal and marine resource management in the Sulawesi region.

4.4. Blue Justice Phenomena

4.4.1. Recognition Justice

In terms of recognition justice, this study found that the rights of small-scale fishermen in Maros Regency remain neglected. Although Regional Regulation No. 12 of 2005 recognises the traditional rights of local communities over coastal and marine resource utilisation and management activities, its implementation on the ground still faces various challenges. Small-scale fishermen are often no longer the main actors in coastal resource utilisation. The government is more focused on tourism development, which in some cases sacrifices marine habitats and reduces the quantity and quality of catches. Mangrove deforestation for access to tourist areas and supporting tourism infrastructure has disrupted fish habitats and reduced fishermen's catches.

Based on Maros Regency Regional Regulation No. 12 of 2005, coastal and marine area management includes the process of planning, utilisation, and control of coastal and marine resources sustainably to improve community welfare. This management is carried out by integrating government, business, and community activities, as well as cross-sector planning, land and sea ecosystems, science, and management. However, in practice, this integration has not been fully implemented.

4.4.2. Distributive Justice

The aspect of distributive justice reveals injustice in the distribution of benefits and burdens associated with marine tourism development. Data show that the contribution of Maros Regency's GRDP from the fisheries and marine sector remains relatively small compared to other sectors. In 2025, the contribution of Maros Regency's GRDP is targeted to reach 4.03%, increasing to 4.29% in 2045. Although there is an increase in contribution targets, small-scale fishermen have not fully felt the benefits of blue economy development. Fishermen face various challenges, including limited access to resources, competition with large vessels, and environmental degradation that reduces catches. The imbalance in the distribution of government assistance is also a problem, where assistance intended for fishermen is often diverted to the tourism sector.

Article 9 of Regional Regulation No. 12 of 2005 stipulates that the boundary of the regional sea area is the area parallel up to 4 nautical miles measured from the coastline at the lowest low water level. However, small-scale fishermen who rely solely on simple boats often struggle to reach distant fishing grounds, while large vessels from outside the region can easily access these areas and engage in environmentally unfriendly fishing practices.

4.4.3. Procedural Justice

In the aspect of procedural justice, this study found that small-scale fishermen are often sidelined in the decision-making process. Although Regional Regulation No. 12 of 2005 stipulates that community groups, village governments, and BPD jointly submit coastal and marine area management plans, fishermen's participation in decision-making is still limited (Nurlinah & Haryanto, 2020). The relevant agency or institution is tasked with developing programs after receiving oral and/or written input from the community. However, on-the-ground implementation shows that input from small-scale fishermen is often not well accommodated. The gap between the government's role and small-scale fishermen's expectations remains a significant issue.



The coastal and marine area management process should be carried out at three levels: technical, consultative, and coordinative. At the technical level, all technical, economic, social, and environmental considerations should be given equal weight in the planning and implementation of coastal resource development (Islahuddin et al., 2021). At the consultative level, all aspirations and needs of stakeholders and those affected by the development of these resources should be considered. At the coordinative level, the community needs to cooperate with all parties to achieve the desired common goal. However, in practice, this process has not been fully implemented.

4.5. Environmental and Social Impacts

4.5.1. Environmental Impacts

Marine tourism development in Maros Regency has brought significant environmental impacts. Mangrove land conversion for access to tourist areas has disrupted coastal ecosystems and reduced the ecological functions of mangroves, including their roles as fish habitats, coastal abrasion barriers, and carbon sinks.

Data shows that the coastal area of Maros Regency, including Bonto Bahari Village, still faces coastal waste management problems. Commission IV member of the Indonesian House of Representatives (DPR RI), Dwita Ria Gunadi, during a working visit to BPSPL Makassar in Maros, highlighted the issue of waste management in coastal areas and small islands. Waste from the sea, rivers, land, and remote islands has not been managed through an integrated system and cross-sector collaboration.

The problem of coastal waste not only damages environmental aesthetics but also threatens marine ecosystems and the health of coastal communities. Waste that is not properly sorted between organic and inorganic indicates the need for special handling and an integrated system (Yulianti et al., 2025). One proposed solution is to establish waste banks in coastal areas that provide economic incentives for the community.

4.5.2. Social Impacts

Marine tourism development has also brought social impacts to coastal communities. On the one hand, tourism development creates new job opportunities, especially in the service and tourism management sectors. On the other hand, it also threatens the sustainability of traditional fishermen's livelihoods.

Coastal community empowerment programs have been carried out by various parties, including universities. Students from the Fisheries Agribusiness Study Program at Hasanuddin University conducted community service activities in Ampekale Village, Bontoa District, Maros Regency, focusing on raising awareness of the economic value of carbon credit trading within the blue economy framework. This program aims to strengthen community understanding that coastal ecosystem sustainability is not only ecologically important but also economically valuable and can be utilised sustainably.

In addition, lecturers and students from the Indonesian Muslim University (UMI) implemented a Technology Transformation and Fish Processing Innovation program to strengthen the blue economy in Nisombalia Coastal Village, Maros Regency. The main focus of this program is to increase the capacity of coastal communities to use semi-modern technology tools for fish processing, apply hygiene and sanitation principles, and receive training in product packaging and online marketing.

4.6. Blue Economy Innovation and Development

Despite facing various challenges, Maros Regency also demonstrates innovations in blue economy development that involve coastal communities. One notable innovation is the development of the Blue Entrepreneurship concept.

Research on blue entrepreneurship policy in Maros Regency indicates that this approach is a strategy for supporting sustainable coastal economic development. However, coastal communities still face challenges related to fragmented policies, limited entrepreneurial capacity, weak stakeholder collaboration, and inadequate innovation support.



The existence of the Maros Brackish Water Aquaculture Research and Fisheries Extension Centre (BRPBAP3) is an important asset for blue economy development in Maros Regency. BRPBAP3 Maros manages three main investment property assets that have been optimised to support the digital-based and sustainable Smart Fisheries Village (SFV) program:

1. Irrigated Rice Fields at the Mina Padi Installation, with a utilisation area of 18.6 hectares out of a total of 22.2 hectares (83.8%), managed by community groups Mina Padi Raya, Mina Padi Alam, and Mina Padi Bersama. Throughout 2024, this installation recorded unhusked rice production of 34,850 kg, exceeding the target of 15,000 kg with 232% realisation, as well as tilapia fingerling production reaching 27,500 fish and tilapia rearing of 1,535 kg.
2. Pond Land at the Silvofishery SFV Wanamina Marana Installation, with a utilization area of 34.2 hectares out of a total of 44.52 hectares (76.98%), managed by Pokdakan Manrimisi Jaya and Poklahsar Marlo Jaya groups. 2024 production included unhusked rice 1,765 kg, tilapia fingerlings 2,000 fish, seaweed 20,359 kg, milkfish fingerlings 291,114 fish, tiger shrimp fingerlings 263,200 shrimp, krosok salt production 1,397.5 kg, consumption milkfish 1,763 kg, as well as 15,875 mangrove seedlings.
3. Concrete Ponds and Earthen Ponds at the SFV Shrimp Cultivation Installation Takalar, with a utilisation area of 3.92 hectares out of a total of 12 hectares (32%), managed by Pokdakan Akuakultur Makmur Jaya. Vannamei shrimp production reached 10.8 tons with household-scale, semi-intensive, intensive, to super-intensive cultivation systems using 100-ton tanks.

The utilisation of these investment property assets contributes significantly to the 2024 Non-Tax State Revenue (PNBP), with total revenue reaching Rp950,832,800. This shows that optimising state assets can be a strategic revenue source that supports innovation and sustainability in the aquaculture sector.

4.7. Analysis of Blue Justice in the Maros Coastal Area

This study identifies that the implementation of the blue economy in the coastal area of Maros Regency still faces various challenges in realising blue justice. Although there is strong political commitment from the regional government, reflected in various planning documents and policies, implementation on the ground still shows significant gaps between policy and practice.

4.7.1. Recognition Justice

Recognition justice in Maros Regency still faces challenges. Although Regional Regulation No. 12 of 2005 explicitly recognises the traditional rights of local communities, its implementation remains limited. Small-scale fishermen, who are an integral part of coastal communities, are often not recognised as the main actors in coastal resource utilisation. The government is more focused on marine tourism development and private-sector investment, which, in some cases, sacrifices the interests of small-scale fishermen.

This aligns with the findings of Bennett et al., who stated that risks from blue economy development have the potential to harm the marine environment and coastal communities. In the case of Maros, mangrove deforestation to access tourist areas and support tourism infrastructure has disrupted fish habitats and reduced fishermen's catches. Mangroves have important functions as barriers against abrasion and flooding, habitats for marine and terrestrial biota, carbon sinks, and guardians of water quality. Thus, mangrove deforestation has a significant negative impact on ecosystems and coastal communities.

For small-scale fishermen who can only fish around the coast, mangrove forests are vital as habitats for fish to breed. The reduction in mangrove area has led to a decline in their catch, resulting in inequality. Blue economy development should align with the characteristics of small-scale fishermen and should not deprive them of their rights to access marine resources.

4.7.2. Distributive Justice

Distributive justice in Maros Regency still shows significant imbalance. Although there has been an increase in the fisheries and marine sector's contribution to GRDP, small-scale fishermen have not fully felt the benefits of blue economy development. The distribution of government



assistance is also a problem, where assistance intended for fishermen is often diverted to the tourism sector.

This distributive injustice is also evident in access to resources. Small-scale fishermen who rely solely on simple boats often struggle to reach distant fishing grounds, while large vessels from outside the region can easily access these areas and engage in environmentally unfriendly fishing practices. This reflects a form of distributive injustice and recognition injustice: small-scale fishermen who are legal and dependent on local resources are increasingly marginalised, their access rights are being eroded, and their catches are declining.

Under Law No. 31 of 2004, small-scale fishers have the right to fish in all Indonesian fisheries management zones. However, according to the fishermen, there has been no visible follow-up on violations of fishing areas, as they still see large motorboats from other areas, such as Sibolga, roaming around the South Coast's fishing areas.

4.7.3. Procedural Justice

Procedural justice in Maros Regency still faces significant challenges. Although Regional Regulation No. 12 of 2005 stipulates that community groups, village governments, and BPD jointly submit coastal and marine area management plans, fishermen's participation in decision-making is still limited. The gap between the government's role and small-scale fishermen's expectations remains a significant issue.

This study found that the coastal and marine area management process that should be carried out at three levels - technical, consultative, and coordinative - has not been fully implemented. At the consultative level, the aspirations and needs of small-scale fishermen are often not well accommodated. This causes fishermen to feel marginalised and neglected in the decision-making process.

The limited human resources at BPSPL Makassar, which currently has only dozens of personnel to handle four provinces (South Sulawesi, West Sulawesi, Southeast Sulawesi, and Central Sulawesi), is an obstacle to coastal and marine management. This contributes to the lack of supervision and assistance for small-scale fishermen, as well as to the limited socialisation of fishery resource management policies in coastal areas.

4.8. Challenges in Blue Economy Implementation

4.8.1. Marine Space Utilisation Conflicts

One of the biggest challenges in implementing the blue economy in Maros Regency is conflict over marine space utilisation. South Sulawesi is considered a pioneer in coastal and marine management in Indonesia as it is the first province to complete a coastal map complete with marine space designation. The existence of a complete map is important for regulating marine space utilisation permits and avoiding confusion and conflict in the community regarding coastal space utilisation.

However, despite having a coastal map, conflicts of interest between the tourism and fisheries sectors still occur. Marine tourism development often encroaches on traditional fishing areas, affecting small-scale fishermen. This reflects what is referred to as the practices of seizure, displacement, and seizure of marine space, which is the first indicator of blue injustice.

4.8.2. Environmental Degradation and Waste Management

Environmental degradation is a significant challenge in blue economy implementation in Maros Regency. Marine tourism development has caused various environmental problems, including mangrove deforestation, water pollution, and tourist waste accumulation. The problem of waste in coastal areas and small islands is a major concern, as waste that is not properly sorted between organic and inorganic indicates the need for special handling and an integrated system.

Coastal waste management requires commitment from upstream to downstream, including human resource development and budget support. Programs such as the Sea Love Month (BCL) from the Ministry of Marine Affairs and Fisheries are examples that can be developed more



broadly. Clean coastal areas are not only comfortable but also open up tourism and economic opportunities, which are part of the blue economy vision.

4.8.3. Institutional Strengthening

Institutions are a key factor in the implementation of a just blue economy. The existence of BRPBAP3 Maros as a research and development centre for brackish water aquaculture is an important asset for the development of the blue economy in Maros Regency. However, institutional capacity still needs to be improved, especially in supervision, assistance, and policy socialisation for coastal communities.

Socialisation of fishery resource management policies in coastal areas has not been properly and evenly carried out across all coastal areas in Maros Regency, including remote areas. Business actors, both individuals and legal entities, often do not understand the rules set forth in Maros Regency Regional Regulation No. 12 of 2005, leading to frequent violations. This is due to the government's lack of human resources to support the implementation of socialisation, even to the stage of supervising fishery resource management in the coastal areas of Maros Regency.

4.9. Opportunities and Innovations

4.9.1. Blue Entrepreneurship Development

Blue entrepreneurship is an important opportunity for implementing the blue economy in Maros Regency. This approach emphasises entrepreneurial activities that utilise marine and coastal resources while maintaining ecological sustainability, social justice, and economic viability.

Blue entrepreneurship development in Maros Regency requires an integrated policy framework that encompasses institutional support, entrepreneurial capacity, stakeholder collaboration, innovation systems, and sustainable governance of marine resources. Strengthening these dimensions is very important to promote resilient and sustainable coastal economic development.

4.9.2. Blue Carbon Ecosystem

Coastal ecosystems such as mangroves, seagrass beds, and marine waters have potential as carbon sinks with economic value in the global carbon trading scheme (Wylie et al., 2016). Students from the Fisheries Agribusiness Study Program at Hasanuddin University have conducted socialisation about the economic value of carbon credit trading within the blue economy framework in Ampekale Village, Bontoa District, Maros Regency.

Implementation of carbon credit trading requires institutional readiness at the local level. Without institutional strengthening, communities risk being unable to optimally access the economic benefits of such schemes. Therefore, institutional strengthening and community capacity building are important prerequisites in utilising blue carbon potential.

4.9.3. Fishery Product Processing

Fishery product processing is a strategy to increase the added value of fishery products and strengthen the economy of coastal communities. The Technology Transformation and Fish Processing Innovation program in Nisombalia Coastal Village, Maros Regency, is an example of community-based innovation in fish processing (Siang et al., 2025).

The main focus of this program is to increase the capacity of coastal communities to use semi-modern technology tools for fish processing, apply hygiene and sanitation principles, and receive training in product packaging, business recording, work role division, and calculating the Cost of Production (HPP). As part of digital transformation, communities are also introduced to online-based marketing systems (e-marketing) to expand product reach.

The Kuri Caddi Fishermen Group and Kuri Caddi Young Mothers Group produce various processed fish products, including shredded fish, fish bone crackers, and fish bone flour. Through this program, they gain new knowledge on maintaining product quality, ensuring food safety, and applying modern marketing strategies.

4.9.4. Smart Fisheries Village

The digital-based, sustainable Smart Fisheries Village (SFV) program is one of the innovations in the development of the blue economy in Maros Regency. BRPBAP3 Maros manages investment property assets in the SFV program, which includes SFV Mina Padi, SFV Wanamina Marana, and SFV Shrimp Cultivation Takalar.

This SFV program is not only economically valuable but also provides direct benefits to the community. With proper management standards, these assets are optimised to continue growing, empowering communities, and becoming the main driver of Indonesia's fisheries economy. The Minister of Marine Affairs and Fisheries emphasised that optimising investment property assets is a concrete step in supporting the transformation of the sustainable marine and fisheries sector.

4.10. Towards Inclusive Blue Economy Governance

Based on the above analysis, this study recommends several strategies to realise inclusive blue economy governance in Maros Regency:

4.10.1. Strengthening Small-Scale Fishermen's Participation

The Maros Regency government needs to strengthen the participation of small-scale fishermen at every stage of coastal resource management, from planning, utilisation, to control. This is in line with the mandate of Regional Regulation No. 12 of 2005, which stipulates that community groups, village governments, and BPD jointly submit coastal and marine area management plans.

The government also needs to ensure that the aspirations and needs of small-scale fishermen are accommodated in the decision-making process (Bennett et al., 2021). This is important to prevent gaps between the government's role and small-scale fishermen's expectations, and to ensure that blue economy development does not harm them.

4.10.2. Institutional Capacity Strengthening

Institutional capacity strengthening is an important prerequisite for the implementation of a just blue economy (Cohen et al., 2019). The government needs to increase the human resource capacity at BPSPL Makassar and relevant agencies to support the implementation of socialisation and supervision of fishery resource management in coastal areas.

In addition, institutional strengthening at the local level, including fishermen's groups and fish-processing groups, needs to be carried out to increase community capacity to manage coastal resources sustainably. This institutional strengthening is also important to ensure that communities can access economic benefits from blue carbon trading schemes.

4.10.3. Integrated Coastal Resource Management

Integrated coastal resource management, which integrates government, business, and community activities, is key to realising inclusive blue economy governance (Evans et al., 2023). This is in line with the mandate of Regional Regulation No. 12 of 2005, which stipulates that coastal and marine area management is carried out by integrating government, business, and community activities, as well as cross-sector planning, land and sea ecosystems, science, and management.

The government needs to ensure that marine tourism development does not sacrifice the interests of small-scale fishermen and coastal ecosystems. This can be done through clear zoning and strict supervision of marine space utilisation, as well as ensuring that government assistance is on target and not diverted to other sectors.

4.10.4. Community-Based Blue Economy Development

Community-based blue economy development, which involves coastal communities as the main actors, is an important strategy in realising inclusive blue economy governance. This can be done through blue entrepreneurship development, fishery product processing, and utilisation of blue carbon potential (Alfiandri et al., 2024).



Programs such as the Technology Transformation and Fish Processing Innovation in Nisombalia Coastal Village, and the socialisation of the economic value of carbon credit trading in Ampekale Village, are examples of community-based blue economy development that can be replicated in other coastal areas in Maros Regency.

5. CONCLUSION

This study examines the implementation of the blue economy, which has actually given rise to blue injustice. For small-scale fishermen in the coastal area of Maros Regency, blue economy policies do not fully deliver ecological and social benefits, but often lead to injustice. They feel increasingly marginalised because the government's attention and support, which were originally focused on the sustainability of fishermen's livelihoods, are now divided as development priorities shift toward marine tourism. Not to mention the deforestation of mangrove forests, which destroys marine habitats, and the piles of rubbish left behind by tourists, which reduce the quantity and quality of fish catches.

This study identifies three dimensions of blue justice that are the focus of analysis:

1. **Recognition Justice:** The rights of small-scale fishermen are still neglected. Fishermen are no longer the primary actors in coastal resource utilisation, and the government is increasingly focused on tourism development, which, in some cases, sacrifices marine habitats and reduces the quantity and quality of catches.
2. **Distributive Justice:** Small-scale fishermen have not fully felt the benefits of blue economy development. Mangrove deforestation for access to tourist areas has disrupted fish habitats and reduced fishermen's catches. Assistance intended for fishermen is often diverted to the tourism sector, and fishermen face competition from large vessels that use environmentally unfriendly fishing gear.
3. **Procedural Justice:** Small-scale fishermen are often sidelined in the decision-making process. Although Regional Regulation No. 12 of 2005 stipulates that community groups, village governments, and BPD jointly submit coastal and marine area management plans, fishermen's participation in decision-making is still limited. The gap between the government's role and small-scale fishermen's expectations remains a significant issue.

Nevertheless, this study also found that coastal communities, which tend to be economically vulnerable due to the relatively risky nature of their work, see the blue economy as a bridge to maintaining or even improving their welfare. They are taking advantage of the diversification of jobs in the blue economy, including fish processing and marine tourism management. Without abandoning their main occupation as fishermen, coastal communities use periods of bad weather to switch to other professions, such as tourism workers or fish processors.

Maros Regency has demonstrated a strong commitment to the blue economy, as reflected in various regional development planning documents and policies. The Maros Regency Blue Economy Index target is set to increase from 83.44 in 2025 to 262.45 in 2045. In 2024, the Maros Regency Blue Economy Index reached 65.56. However, the local government's orientation, which prefers to collaborate with investors rather than focus on community-based marine tourism development, remains a challenge.

The concept of blue justice should be viewed not solely from an economic perspective but also from the perspectives of ecosystem sustainability and the welfare of coastal communities. Therefore, blue economy governance should be more inclusive, especially for small-scale fishermen.

This study recommends several strategies to realise inclusive blue economy governance in Maros Regency:

1. Strengthening small-scale fishermen's participation at every stage of coastal resource management, from planning, utilisation, to control.
2. Institutional capacity strengthening, including increasing human resource capacity at BPSPL Makassar and relevant agencies, as well as strengthening fishermen groups and fish processing groups at the local level.



3. Integrated coastal resource management, which integrates government, business, and community activities, and ensures that marine tourism development does not sacrifice the interests of small-scale fishermen and coastal ecosystems.
4. Community-based blue economy development, through blue entrepreneurship development, fishery product processing, and utilisation of blue carbon potential.

By implementing these strategies, Maros Regency can realise inclusive and just blue economy governance, which not only drives economic growth but also ensures the sustainability of coastal ecosystems and the welfare of small-scale fishermen.

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