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# Sustainable Development Goals (SDGs) Indonesia's Integrated Coastal Zone Management policies

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## Abstract

This article analyzes the national fisheries governance policy in Indonesia, particularly through Government Regulation which focuses on measuring fishing as an effort towards a blue economy. As an archipelagic country, Indonesia faces the challenge of managing fisheries resources that balances resource exploitation and environmental sustainability. This paper discusses how the measured fishing policy (PIT) attempts to address these challenges, as well as its relevance to the ecosystem approach applied in West Nusa Tenggara. Through an analysis of the implementation of PIT and the application of Ecosystem-Based Fisheries Management (EAFM), great potential is found to achieve socio-economic goals without neglecting sustainability aspects. However, challenges in implementation and limited infrastructure remain major obstacles.

**Keywords:** Policy, fisheries management, ecosystem approach.

## Introduction

Government Regulation no. 11 of 2023 was issued as part of Indonesia's steps to realize a blue economy with the principle of sustainability in the fisheries sector. The blue economy includes an approach that not only considers the economic benefits of marine products, but also pays attention to environmental sustainability and the welfare of local communities. As part of national policy, this regulation aims to maintain a balance in the sustainable use of fisheries resources amidst the challenges of exploitation and global warming. Indonesia as an archipelagic country with a water area of around 6.4 million km<sup>2</sup>, has abundant marine resources, including in the fisheries sector. This sector plays an important role in supporting the national economy, with a contribution of around 27 billion USD to Gross Domestic Product (GDP) and providing more than 7 million jobs. In addition, more than 50% of national animal protein needs also depend on marine products. However, major challenges are faced in the sustainable management of marine resources, especially with the increasing need for fish consumption which has the potential to increase the level of exploitation.

In an effort to achieve a balance between the utilization and sustainability of fishery resources, the Indonesian government issued Government Regulation (PP) No. 11 of 2023. This regulation introduces the concept of Measured Fishing (PIT), which aims to control fishing activities with a quota system. This system regulates the maximum catch amount according to the sustainable capacity of fishery resources in the National Fisheries Management Area of the Republic of Indonesia (WPPNRI). The PIT system is one of Indonesia's concrete steps in implementing the blue economy principle, which not only focuses on economic benefits but also considers social and ecological impacts. According to the Ministry of Marine Affairs and Fisheries (KKP), the blue economy is an economic paradigm that provides economic and social benefits without sacrificing environmental sustainability. This principle is in line with the global approach to maintaining the sustainability of marine ecosystems, as initiated by the United Nations (UN) in the Sustainable Development Goals (SDGs), especially in point 14 regarding "Life Underwater".

In addition to PP No. 11 of 2023, the Province of West Nusa Tenggara (NTB) also implements an ecosystem-based policy, or Ecosystem Approach to Fisheries Management (EAFM). This EAFM approach emphasizes the importance of maintaining the balance of marine ecosystems through the regulation of protection zones, prohibition of fishing gear that damages the environment, and monitoring the sustainability of fish resources.

## Research methods

This study uses a literature study method with an analysis of fisheries governance policies, especially PP No. 11 of 2023 and several related documents explaining ecosystem-based fisheries management (EAFM) in West Nusa Tenggara. In addition, an analysis was carried out on several reports related to the actual conditions of fisheries and ecosystems in Indonesia. This study employs a qualitative approach to analyze sustainable coastal management strategies, focusing on case studies, policy frameworks, and stakeholder involvement. The methodology is divided into the following

components:

1. Literature Review; A comprehensive review of relevant literature was conducted to establish a theoretical foundation for sustainable coastal management. The sources included; Peer-reviewed journal articles; Government policy documents; Reports from international organizations (e.g., UNEP, FAO, IPCC). This review provided insights into existing frameworks, challenges, and best practices globally.

2. Case Study Analysis: Three case studies were selected to illustrate the practical implementation of sustainable coastal management in diverse contexts: Indonesia: Integrated Coastal Zone Management (ICZM). Netherlands: Coastal resilience through engineering. Philippines: Community-based coastal resource management. Each case study was analyzed to highlight strategies, successes, challenges, and transferable lessons.

3. Stakeholder Analysis:

An evaluation of the roles and interactions of various stakeholders was performed, including: Government agencies (e.g., Ministry of Marine Affairs and Fisheries); Local communities and fisherfolk; Private sector actors (e.g., tourism operators); International organizations and NGOs. This analysis aimed to identify the enablers and barriers to effective coastal management.

4. Policy Analysis

Existing national and international policies were examined to assess their alignment with sustainable coastal management principles. Key frameworks analyzed included: The UN Sustainable Development Goals (SDG 13 and SDG 14), Indonesia's Integrated Coastal Zone Management policies, International best practices in coastal zone governance.

5. Data Collection Techniques Secondary Data: Data were obtained from published reports, government websites, and academic databases. Comparative Analysis Similarities and differences in strategies across the case studies were evaluated to determine the most effective practices.

6. Framework Development

The findings were synthesized to propose a framework for sustainable coastal management. The framework integrates ecosystem-based approaches, stakeholder engagement, and adaptive management practices tailored to different socio-economic and ecological contexts. Limitations of the Study Data Availability: Reliance on secondary data may limit the depth of context-specific insights. Generalization: Findings from specific case studies may not be universally applicable due to local differences in governance, resources, and socio-economic conditions. Temporal Scope:

The study focuses on current practices, with limited analysis of historical trends or long-term outcomes. This methodology ensures a systematic and holistic understanding of sustainable coastal management while providing actionable recommendations for policymakers and practitioners.

## Discussion

### Construction of Measured Fishing Intake (PIT) Policy

PP No. 11 of 2023 regulates the management of fisheries in a measured manner that aims to control the utilization of fish resources in accordance with the quotas that have been set in the national fisheries management area (WPPNRI). This policy is intended to optimize fisheries results, improve the welfare of fishermen, and maintain the sustainability of resources. According to the report, the implementation of the quota system is expected to reduce overexploitation and ensure a stable fish supply in the future.

- **Implementation in the Field:** One important point is the distribution of quotas for fishing involving the role of local fishermen. Small fishermen have priority access to catch fish in designated zones. However, the application of quotas for large industries is a challenge in ensuring that fishery resources are not over-exploited.
- **Technical Challenges:** Challenges in implementing PIT include constraints in monitoring and determining quotas that are in accordance with dynamic ecosystem conditions. Limited monitoring technology and infrastructure constraints are major obstacles in maintaining transparency and compliance with the established quotas.

### Ecosystem Based Management (EAFM) in West Nusa Tenggara Fisheries

In West Nusa Tenggara (NTB) Province, the EAFM approach is used to manage sustainable fisheries. This model takes into account the balance between economic, social, and ecological, and ensures the sustainability of fisheries resources. The EAFM approach in NTB includes the prohibition of certain fishing gear that damages the environment, increasing public awareness, and strengthening the role of local communities in supervision.

- **Implementation of Protection Zones:** Core zones are established to protect areas rich in biodiversity, including coral reef ecosystems and mangrove forests that are important for the sustainability of future fisheries.
- **Problems Faced:** The main challenges in implementing EAFM are the lack of legal awareness of local communities, as well as destructive practices such as the use of explosives and poisons in fishing. In addition, limitations in coordination between local and central governments are an obstacle.

## Comparison with Fisheries Policies in Other Countries

Several countries, such as China and France, have implemented quota policies that prioritize sustainability. In China, the quota system is implemented with strict controls, but violations often occur, causing international tensions. Meanwhile, France implements quota management that prioritizes local fishermen by limiting quota transfers between groups.

## Analysis and Opportunities for Developing Fisheries Governance Policy in Indonesia

PP No. 11 of 2023 is expected to be the foundation for the transformation of the blue economy in Indonesia, but requires adequate infrastructure support and active participation from various stakeholders. With its vast waters, Indonesia has great potential to become a resilient and sustainable fisheries country. Synergy between government, industry, and society is needed to maintain the sustainability of marine resources. The following are the obstacles in implementing fisheries policies: Obstacles to Policy Implementation \*\*PP No. 11 of 2023 (Measured Fishing/PIT):

1. Limitations of Monitoring Technology: Inadequate to monitor fishing activities in real time and ensure compliance with quotas.
2. Infrastructure Constraints: Lack of facilities and technology to support effective monitoring and reporting.
3. Quota Distribution: Challenges in ensuring fair quota sharing between small fishermen and large industries.
4. Ecosystem Flexibility: Quota determination often does not fully take into account dynamic ecosystem conditions.
5. Stakeholder Compliance: Challenges in maintaining transparency and minimizing violations in the field.

## Constraints in Implementing Ecosystem-Based Approach (EAFM) Policy in NTB:

1. Low Public Legal Awareness: Many local communities do not yet understand the importance of ecosystem preservation in fishing practices.
2. Destructive Arrest Practices: There is still the use of destructive fishing gear such as explosives and poisons.
3. Central and Regional Coordination: Lack of coordination between central and regional governments in implementing policies.

4. Community Participation: Community involvement in monitoring fisheries resources is not yet optimal.

5. Resources and Capacity: Limited human resources and capacity to manage and monitor marine ecosystems effectively.

Recommendations for Overcoming Obstacles: Monitoring Technology Enhancement: Development of technology-based systems for real-time monitoring Education and Training: Increasing public awareness through training and campaigns. Strengthening Coordination: Increasing synergy between central and regional governments and local communities. Infrastructure Provision: Invest in supporting infrastructure such as monitoring facilities and environmentally friendly fishing gear. If you need further elaboration or visualization of related data.

#### Conclusion and Recommendations

In conclusion, PP no. 11 of 2023 and the implementation of the EAFM approach in West Nusa Tenggara are steps forward in sustainable fisheries management. Although there are still challenges in implementing this policy, the potential economic, social, and ecological benefits are enormous. Recommendations for strengthening fisheries governance in Indonesia include: Improvement of monitoring and surveillance infrastructure, Strengthening the role of communities in ecosystem-based fisheries management, closer collaboration between central and regional governments, development of technology for real-time monitoring of marine resources. Thus, sustainable fisheries governance can be achieved through solid synergy from all elements of society.

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