Application of Measured Fishing Method in Kei Islands, Maluku Province

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ABSTRACT

As an implementation of Government Regulation of the Republic of Indonesia Number 11 of 2023 concerning Measured Fishing in Indonesian waters, the Ministry of Marine Affairs and Fisheries is implementing a priority program agenda by implementing the measured fishing method (Penangkapan Ikan Terukur/PIT) in a number of waters in Indonesia in zone classification. Measured Fishing is a controlled and proportional fishing practice, carried out in special zones with certain quotas to maintain the sustainability of fish resources and their ecosystems. The implementation of this PIT method has been carried out in the province of Maluku, Kei Islands which are included in zone 3. This policy is a response to the serious challenges faced in marine fisheries management, including overfishing and ecosystem degradation. With clear regulations, it is hoped that it can reduce pressure on fish populations and support sustainable economic growth for coastal communities. The implementation of this policy requires support and collaboration between the government, fisheries business actors, academics, and the community to ensure its success. Evaluation and scientific research will be key in measuring the impact and effectiveness of this policy, as well as in identifying areas of improvement needed to improve the sustainability of the fisheries sector in Indonesia for a better future.

***Keywords**: Measured Fishing Intake, Marine Fisheries, Regulatory Policy*

ABSTRAK

Sebagai implementasi Peraturan Pemerintah Republik Indonesia Nomor 11 Tahun 2023 yang mengatur tentang Penangkapan Ikan Terukur di perairan Indonesia, Kementerian Kelautan dan Perikanan melaksanakan agenda program prioritas dengan penerapan metode penangkapan ikan terukur (PIT) di sejumlah wilayah perairan di Indonesia dalam klasifikasi zona. Penangkapan Ikan Terukur adalah praktik penangkapan ikan yang terkendali dan proporsional, dilakukan di zona-zona khusus dengan kuota tertentu untuk menjaga keberlanjutan sumber daya ikan dan ekosistemnya. Penerapan metode PIT ini telah dilaksanakan di provinsi Maluku, Kepulauan Kei yang termasuk dalam zona 3. Kebijakan ini merupakan respons atas tantangan serius yang dihadapi dalam pengelolaan perikanan laut, termasuk overfishing dan degradasi ekosistem. Dengan adanya regulasi yang jelas, diharapkan dapat mengurangi tekanan terhadap populasi ikan dan mendukung pertumbuhan ekonomi berkelanjutan bagi masyarakat pesisir. Pelaksanaan kebijakan ini membutuhkan dukungan dan kolaborasi antara pemerintah, pelaku usaha perikanan, akademisi, dan masyarakat untuk memastikan keberhasilannya. Evaluasi dan penelitian ilmiah akan menjadi kunci dalam mengukur dampak dan efektivitas kebijakan ini, serta untuk mengidentifikasi area perbaikan yang diperlukan guna meningkatkan keberlanjutan sektor perikanan di Indonesia untuk masa depan yang lebih baik.

***Kata kunci**: Penangkapan Ikan Terukur, Perikanan Laut, Kebijakan Regulasi*

INTRODUCTION

Indonesia is the largest archipelagic country in the world, with a coastline of around 6.4 million square kilometers (Haerani et al., 2022). With such a vast ocean area, Indonesia has the potential for promising marine resource development, both economically and environmentally. The marine and fisheries sector is one of the main

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drivers of the Indonesian economy (Ayunda et al., 2018). According to data, this sector contributes around $27 million to Indonesia's gross domestic product and provides employment for around 7 million people. Moreover, the marine sector contributes more than 50% of the protein needs of the Indonesian population. The Ministry of Marine Affairs and Fisheries reported that non-fiscal state revenue (*Penerimaan Negara Bukan Pajak*/PNBP) from the marine and fisheries sector is estimated to reach around IDR 1.79 trillion in 2022. Although there is still debate about how to measure the target value, this figure is considered a significant achievement. In reality, PNBP only reached around 69.98% of the expected target. This shows that there are still challenges that must be overcome in the management of marine fisheries resources in Indonesia (Aprian et al., 2023). One of the steps taken by the Indonesian government to overcome the challenges of managing fisheries resources is the Measured Fisheries Policy (*Penangkapan Ikan Terukur*/PIT) (Warren & Steenbergen, 2021). This policy is an answer to various challenges faced in the management of marine fisheries in Indonesia, including overfishing, unregulated fishing, and the protection of the sustainability of fisheries resources.

There are several important reasons behind the creation of this PIT guideline. First, before the PIT policy, fisheries management in Indonesia focused on the licensing system without setting catch quotas for each fishing vessel. This means that although fishermen and fishing companies are given fishing permits, there are no clear limits on the amount of fish they can catch (Townsend, 2019). This makes it difficult to regulate fishing activities and there is no mechanism to ensure that catches remain within sustainable limits. This leads to overfishing, which has a negative impact on marine ecosystems and threatens the sustainability of fishery resources. Second, the phenomenon known as Race to Fish is also a serious problem in fisheries management in Indonesia. Race to Fish is a competition between fisheries industry players with the aim of catching as many fish as possible in the shortest possible time without paying attention to the quality of the fish caught (Kroetz et al., 2022). This is because no fishing quota regulates the amount of fish that can be caught by each economic actor. In such a situation, fishermen and fishing companies tend to compete to get a larger share of the available fishery resources without considering the impact on the sustainability of the resources. Third, before the implementation of the PIT policy, PNBP from the fisheries sector was mostly generated before production without considering the amount of fish landed. In other words, state revenue from the fisheries sector is more dependent on the permits issued than on the actual fishing results (Outeiro et al., 2018). This creates a distortion in fisheries management because the focus is on government revenue from permits rather than sustainable fisheries resource management.

The Indonesian government recognizes that sustainable management of marine resources is essential to protect marine ecosystems while ensuring the welfare of fisheries stakeholders (Elliott et al., 2020; Custodio et al., 2022). Therefore, the PIT policy aims to address these issues by implementing a more measurable and fair fishing quota system for all economic actors. This system aims to ensure sustainable fishing practices to prevent overfishing and conserve fisheries resources for future generations. In the long term, the PIT policy not only aims to increase government revenue from the fisheries sector but also supports the sustainability of Indonesia's marine resources. The success of this policy is highly dependent on the cooperation of the government, fishing communities, and the wider community in the protection and responsible management of fisheries resources. With the right approach, Indonesia has great potential to become a strong and sustainable maritime country, utilizing its marine wealth for human welfare and sustainable economic development.

To overcome these challenges and ensure that our marine fisheries resources can continue for future generations, the Government of Indonesia has made efforts to manage fisheries. The management of fisheries resources in Indonesia has undergone significant evolution over the past few decades (Oktavia et al., 2018). This journey includes various policies and initiatives that lead to the development of the blue economy concept. On this

occasion we will discuss the implementation of measured fish which is a priority program agenda of the Ministry of Marine Affairs and Fisheries which includes five blue economy policies for marine and fisheries management in Indonesia where Maluku is included in the area with very large marine and fisheries potential in zone 3.

METHOD

The author uses an empirical sociological approach (non-dogmatic) that views law as a social institution that is always closely related to various other social variables. This approach emphasizes the importance of understanding law not only as a set of independent rules, but as an integral part of broader social dynamics. In this study, law is treated as a product and reflection of complex social interactions in which various interests, norms, and social forces interact. To study further, the author uses a normative research approach that focuses on investigating measurable fishing regulations. This study is not only limited to an analysis of legal texts, but also includes a detailed review of relevant literature such as books and research manuscripts related to fisheries management regulations. In conducting this research, the author examines various sources that reveal how these rules are implemented and how they interact with the social, economic, and environmental aspects of society. Therefore, the purpose of this study is to provide a comprehensive picture of measurable fisheries, not only from a normative perspective but also considering the social context around fisheries. We believe that this research can make an important contribution to our understanding of the relationship between law, fisheries management, and society and how the resulting policies can achieve the desired goals more effectively.

RESULT

Measured Fishing is controlled and proportional fishing, carried out in measured fishing zones, based on fishing quotas in order to maintain the sustainability of fish resources and their environment and equitable national economic growth (Copes, 2019). Based on Government Regulation Number 11 of 2023 and Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia Number 28 of 2023 concerning Implementing Regulations of Government Regulation Number 11 of 2023 concerning Measured Fishing is the latest step taken by the government in an effort to ensure the sustainability of Indonesian marine fisheries exploitation (Nurlaela, 2023). This step is expected to reduce the level of excessive and detrimental fishing.

Indonesia, as a maritime country with an ocean area covering more than 5.8 million square kilometers, has abundant marine fishery resources. These resources not only play a role in meeting the animal protein needs of the Indonesian population of more than 270 million people but also have a significant economic impact, create jobs, and play a role in the national economy (Kharisma et al., 2020). However, sustainable management of marine fishery resources has become an increasingly pressing challenge. Indonesian marine fisheries, like many other countries, have been faced with various serious challenges, including overfishing, degradation of marine ecosystems, and threats to the livelihoods of traditional fishermen. For decades, uncontrolled fishing and practices that damage the marine environment have threatened the sustainability of fishery resources, resulting in declining fish stocks and economic uncertainty for fishermen. Measured fishing can also maintain the balance of marine ecosystems and support sustainable economic growth for coastal communities (Boni et al., 2018; Szymkowiak & Kasperski, 2021). The Maluku Waters are included in Zone 3 so that they are included in the implementation of the program by the Ministry of Maritime Affairs and Fisheries to be implemented. With this regulation, it is hoped that sustainability can be created in the management of Indonesian fishery resources.

Regulation is a valid and binding legal instrument. By having a strong legal basis, a policy becomes legally valid, gives legitimacy to the authority that issues it, and provides a legal basis for taking necessary actions (Berger-Walliser & Scott, 2018). Regulation provides legal certainty to the community. This means that the community knows what

is expected of them, what is prohibited, and what the consequences are. Regulation as the legal basis for a policy is very important to ensure the sustainability and success of the policy (Haque & Ntim, 2018; Aragon-Correa et al., 2020 and Kazancoglu et al., 2021).

Table 1. Summary of Measured Fishing Regulations

Regulation	About	Date of Enactment	Status
Ministerial Decree of KP Number 50 of 2022	Determination of Base Ports that Have Fulfilled the Post-Production Withdrawal Requirements for Types of Non-Tax State Revenue Originating from the Utilization of Fisheries Natural Resources	August 18 2022	Not applicable
Ministerial Decree of KP Number 4 of 2023	Determination of Base Ports that Have Fulfilled the Post-Production Withdrawal Requirements for Types of Non-Tax State Revenue Originating from the Utilization of Fisheries Natural Resources	January 04 2023	Not applicable
Ministerial Decree of KP Number 21 of 2023	Fish Reference Price	January 20 2023	Not applicable
PP Number 11 of 2023	Measurable Fishing	March 06 2023	Valid
Ministerial Decree of KP Number 132 of 2023	National Fishing Port Master Plan	August 04	Valid
Ministerial Decree of KP Number 139 of 2023	Determination of Base Ports That Have Met the Requirements for Post-Production Withdrawal of Types of PNBP Originating from the Utilization of Fishery Natural Resources	August 15 2023	Valid
Ministerial Decree of KP Number 28 of 2023	Implementing Regulations of PP Number 11 of 2023 concerning Measured Fishing	September 01 2023	Valid
Ministerial Decree of KP Number 140 of 2023	Reference Price of Fish	September 15 2023	Valid

Regulation also helps in maintaining the balance between public and private interests, and provides guidelines for consistent policy implementation (Wang et al., 2018). Thus, regulation not only creates order in society but also promotes sustainable economic growth. Frequently changing regulations require greater resources to ensure compliance, and this can be an extra burden for the responsible agencies. Uncertainty and rapid changes in regulations can also make strategic decision-making difficult. The PIT policy is a major transformation in fisheries management in Indonesia. It involves comprehensive integration of the entire fisheries value chain, from upstream to downstream, in an integrated and comprehensive management framework. Therefore, careful adjustments in regulations are important to ensure the implementation of this policy runs efficiently. Until this article was written, the design of regulations related to measured fishing was still in the process of being formulated, including regulations on industrial quotas and local fishermen quotas at each base port. Then on November 29, 2023, the Minister of Maritime Affairs and Fisheries issued Circular Letter Number: B.1954/MEN-KP/XI/2023 concerning Policy Relaxation during the Transition Period for the Implementation of Measured Fishing until the end of 2024, which explains that the provisions regarding the withdrawal of non-tax state revenue (*Penerimaan Negara Bukan Pajak*/PNBP) for the provision of fishing quotas, PNBP for the transfer of fishing quotas.

Overfishing can have serious impacts on marine ecosystems. Excessive fishing can lead to a decline in certain fish populations, which in turn can disrupt the marine food chain

and damage the balance of the ecosystem (Rothschild, 2019). In addition, overfishing can also damage the habitat of fish and other species and threaten the sustainability of fish resources in the future. Better protection and management efforts are needed to prevent further negative impacts from this overfishing practice. Stricter measures are needed to regulate the number of fish that can be caught so that fish populations can recover and the balance of the marine ecosystem can be restored. In addition, education for fishermen and the community about the importance of maintaining the sustainability of marine resources also needs to be improved. With cooperation between the government, fishermen, and the community, it is hoped that overfishing practices can be reduced and marine ecosystems can be preserved for future generations. Fishing activities by small fishermen in the Kei Islands based on field surveys in the Southeast Maluku region and Tual City show that fish catches are uncertain because they are mostly influenced by external and internal factors.

Measured fishing is essential to maintain the sustainability of marine resources. With clear and measurable policies, it is hoped that overfishing practices can be reduced and marine ecosystems can be maintained. In addition, this policy can also provide guidelines for small fishermen in the Kei Islands to maintain their catches so that they are not affected by unexpected external or internal factors. With a measured fishing policy, it is hoped that it can reduce pressure on fish populations and maintain the balance of the marine ecosystem. This will also provide protection for fish species that are vulnerable to extinction. Thus, this policy will have a positive impact on small fishermen in the Kei Islands and maintain the sustainability of marine resources for future generations. With clear guidelines, small fishermen in the Kei Islands can understand the importance of maintaining sustainable fish catches. It is hoped that this policy will also encourage environmentally friendly and sustainable fishing practices. In addition, by maintaining the sustainability of marine resources, small fishermen in the Kei Islands will also participate in broader environmental conservation efforts. All of these are positive steps that will provide long-term benefits for local communities and marine ecosystems in the Kei Islands. For example, with clear guidelines on the size of fish that can be caught, small-scale fishermen in the Kei Islands can ensure that fish populations remain manageable. This can also encourage environmentally friendly fishing practices, such as using environmentally friendly fishing gear.

With strict supervision and strict sanctions for violators, it is hoped that environmental conservation policies can be implemented properly. In addition, education and outreach to local communities will also be the main focus in this effort. With better knowledge about the importance of protecting the environment, it is hoped that environmental awareness can increase among the people of the Kei Islands. Thus, the people of the Kei Islands are expected to play an active role in preserving the environment around them. With cooperation between the government, the community, and other related parties, it is hoped that environmental conservation efforts in the Kei Islands can be an example for other regions in Indonesia. With concrete steps taken, it is hoped that the environment in the Kei Islands can continue to be maintained for future generations.

In the implementation of the Measured Fishing Catch in the Kei Islands, there is a lack of public awareness and understanding of the importance of environmental conservation. In addition, economic factors are also an obstacle in protecting the environment because there are economic needs that must be met by the local community. 8 out of 9 respondents from Tual City and Southeast Maluku Regency said that they did not have information about the Measured Fishing Catch policy which is the agenda of the Ministry of Maritime Affairs and Fisheries so that the implementation of fishing activities every day is only based on habits that have been passed down from generation to generation. Therefore, there needs to be more intensive education and socialization to the community so that they can understand the importance of protecting the environment for their survival and future generations. In addition, the government also needs to provide greater incentives and support to the community, so that they can be encouraged to be active in environmental conservation. With joint efforts between the government, the community,

and other related parties, it is hoped that the environment in the Kei Islands, Southeast Maluku, and Tual City can continue to be maintained so as to support the Maluku program as a National Fish Barn in Indonesia.

Measured fishing, changing the input control approach to the output control approach. Control is carried out by implementing a fishing quota and zoning system so that the utilization of fish resources can be in accordance with their carrying capacity. Fishing quotas will be given to investors, local fishermen, and hobbyists. Meanwhile, fishing zoning will be divided into six zones including the spawning and nursery ground zones. Regulation of fishing quotas is needed to protect fish resources in Indonesia, as well as prevent injustice in fishing and trading in Indonesia (Suharti & Kumala, 2019). According to Indriyani et al. (2021), fisheries laws in Indonesia must consider provisions regarding the capture of resources under the quota system. Meanwhile, according to Sulanke & Rybicki (2021), two interrelated management strategies to encourage blue growth in fisheries, namely the implementation of the community development quota (CDQ) system and support for small-scale fisheries. The PIT policy rolled out by the government aims to create social justice in the utilization of fish resources. This justice includes increasing the income and welfare of fishermen and empowering local communities. In addition, by helping to prevent overfishing practices, the PIT policy aims to protect and maintain the sustainability of fish resources so that they can be used sustainably by future generations. In addition, the government considers that PIT allows for better tracking of the origin of the fish (traceability) of fishermen's catches, thereby improving quality.

Minister of Maritime Affairs and Fisheries, Sakti Wahyu Trenggono made Tual City and Aru Islands in Maluku as the location for modeling measured fishing (*Penangkapan Ikan Terukur*/PIT). The implementation of this modelling involved 187 fishing vessels from the North Coast (Pantura). Minister Trenggono explained that the implementation of PIT modelling applies the principles of sustainable fishing and the upstream downstream fisheries business ecosystem. The implementation of modeling aims to connect the upstream (catching) sector with the downstream (processing and marketing) (Asdecker & Felch, 2018). Then, encourage equitable economic growth and efficiency of fishing, maintain the quality of the fish caught and strengthen product downstream, and provide a multiplier effect for the local economy. The implementation of PIT modeling is projected to increase catch production with an estimated 4,578 tons per month, with a transaction value of IDR 48.4 billion, absorption of labor prioritized for local communities, and has prepared various infrastructures to support modeling, ranging from satellite-based ship movement monitoring systems, e-PIT applications, strengthening Human Resources (HR), to downstream fisheries ecosystems.

CONCLUSION

With joint efforts from the government, business actors, and the community, the PIT policy has the potential to be the best solution for fisheries management in Indonesia. The success of this policy will provide long-term benefits for the sustainability of the fisheries sector and marine ecosystems in Indonesia. In addition, the role of academics and researchers is also very important in supporting the implementation of the PIT policy. By conducting comprehensive and in-depth scientific studies, they can provide valuable insights regarding the effectiveness of this policy. Scientific studies can include evaluating the impact of the policy, monitoring the performance of implementation, and identifying potential improvements that can be applied. With the contribution of academics and researchers, we can ensure that the PIT policy continues to develop and improve in accordance with changes in fisheries dynamics and environmental challenges. Comprehensive scientific studies will also help the government and other stakeholders for Measured Fishing. make better decisions based on scientific data in an effort to maintain the sustainability of Indonesian fisheries.

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