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MORALITY BEFORE KNOWLEDGE

Enhancing fisheries sustainability in Indonesia: A critical review of post-production non-tax revenue policy and reform proposals

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ABSTRACT

Background: This study evaluates Indonesia's post-production Non-Tax Revenue policy, introduced to align with the blue economy framework for sustainable fisheries and enhanced state revenue. **Methods** Using a quantitative approach with qualitative data from interviews and field observations, the research assesses the effectiveness of Government Regulation No. 85 of 2021, which shifted Non-Tax Revenue policy collection to post-production. **Findings:** Findings reveal that while the policy shows potential in improving governance, equity, and sustainability, its effectiveness is limited by infrastructure issues and inaccurate data collection. **Conclusion**: The study recommends implementing electronic monitoring (EM) technology to enhance data accuracy and revenue efficiency. This research offers a comprehensive evaluation of the policy and proposes key reforms to support sustainable fisheries in Indonesia. **Novelty/Originality of this article:** The novelty of this research lies in its comprehensive evaluation of the post-production Non-Tax Revenue policy policy and its proposal for reforms to enhance the sustainability of Indonesia's fisheries sector within the blue economy framework.

KEYWORDS: post-production PNPB; blue conomy; sustainable fisheries.

1. Introduction

The Central Statistics Agency reported in February 2023 that fisheries, agriculture, and forestry are key employment sectors in Indonesia, with about 29.63% of the workforce dependent on fisheries. This sector not only supports the local economy but also provides food security, as fresh fish and shrimp are the most consumed proteins, averaging 0.352 kilograms per capita per week in 2023. Fish are rich in Omega-3 fatty acids, which help prevent health issues (Inara, 2020).

Moreover, marine resources play a vital role in combating climate change. Oceans act as significant carbon sinks, and mangroves sequester carbon dioxide, aiding in climate mitigation (The Nature Conservancy, 2020). Thus, marine ecosystems are essential for both livelihoods and environmental sustainability.

Given the paramount importance of marine resources to Indonesian society, it is imperative that the utilization of these resources is maximized while ensuring sustainability. This necessitates a broader perspective that encompasses not only the economic benefits but also the ecological integrity of the oceans. Healthy oceans are

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foundational to human well-being, environmental stability, and prosperous economies (OECD, 2021). To achieve a balance between resource exploitation and conservation, innovative concepts such as the blue economy have emerged.

The blue economy, introduced by Pauli (2010), seeks to balance economic growth and ecological sustainability in marine resource management, promoting development, social inclusion, and livelihoods while protecting marine environments (World Bank & United Nations, 2017). Haimbala (2019) identifies three interconnected pillars: economic, environmental, and social sustainability.

Aligned with Sustainable Development Goal 14 (SDG 14), the blue economy addresses the planetary crisis (UNDP, 2022). Countries like Australia, South Korea, and China have leveraged blue economy opportunities, contributing 4.3% to 9% of their GDP (Novaglio et al., 2022; Park & Kildow, 2014; Xuemei et al., 2021). In Indonesia, it is integrated into the National Medium-Term Development Plan (RPJMN) 2020-2024, highlighting the importance of effective marine management for sustainable development.

The Indonesian Ministry of Marine Affairs and Fisheries (KKP RI) has set a policy direction for the marine and fisheries sector from 2021 to 2024 based on the blue economy framework, including a focus on Non-Tax State Revenue as a crucial tool for developing the blue economy-oriented capture fisheries sector. Law No. 9 of 2018 positions Non-Tax Revenue policy as a supportive factor for the blue economy, emphasizing sustainable resource utilization.

In alignment with these policies, Government Regulation No. 85 of 2021 introduced a shift in Non-Tax Revenue policy collection from pre-production licensing to post-production landings, termed Post-Production Non-Tax Revenue policy. This change requires evaluation to ensure it aligns with Non-Tax Revenue policy frameworks and positively impacts blue economy-based capture fisheries. While the government promotes this policy for equity and sustainability, fisheries stakeholders criticize it for placing economic burdens on fishermen, as seen in Ternate, North Maluku.

Since the Post-Production Non-Tax Revenue policy implementation on January 1, 2023, issues like Illegal, Unreported, and Unregulated Fishing (IUUF) have persisted, with Indonesia ranking sixth worst among 152 countries in the IUU Fishing Risk Index report (GITOC, 2023). Additionally, the Indonesian Blue Economy Index (IBEI) reflects uneven performance, with scores ranging from 11.47% to 80.86% across provinces.

Additionally, the Non-Tax Revenue policy collection from fisheries outputs, which should contribute to enhancing state revenue for the benefit of fishermen and the broader community, has seen a decline in realization during the first year of implementing the Post-Production Non-Tax Revenue policy. The trends in Non-Tax Revenue policy realization are depicted. It is evident that the realization of Non-Tax Revenue policy from fisheries outputs has drastically decreased in the first year of implementing Post-Production Non-Tax Revenue policy compared to the previous year. This decline is particularly concerning given the estimated economic turnover of the capture fisheries sector, which exceeds IDR 140 trillion, with average catch data over the past five years indicating approximately 7 tons annually (Kompas, 2023).

2. Methods

2.1 Research approach

This research adopts a quantitative approach within a post-positivist paradigm. Creswell & Creswell (2018) define quantitative research as an approach aimed at testing objective theories by examining the relationships among variables. This aligns with the research topic focused on evaluating the post-production non-tax revenue policy in relation to supporting the development of the capture fisheries sector under the Blue Economy concept in Indonesia. Furthermore, Creswell & Creswell (2018) explain that knowledge developed from the post-positivist paradigm is based on careful observation and the measurement of objective realities that exist in the world. Therefore, it is crucial for the

researcher to employ qualitative data collection techniques, which will be elaborated. Types of Research Based on Data Collection Techniques. Analysis in quantitative research follows a deductive data analysis pattern, which involves developing or confirming a theory that starts with abstract concepts and theoretical relationships, moving towards more concrete empirical evidence (Neuman, 2014). In this study, the researcher begins with the government's initiative to develop the Blue Economy concept and subsequently discusses the evaluation of Non-Tax Revenue policy as one of the indicators that can support its implementation more concretely.

2.2 Types of research and data analysis

This research is classified as descriptive based on its purpose, aiming to provide an overview of the evaluation of the Non-Tax Revenue policy policy in relation to Indonesia's blue economy goals (Neuman, 2014). It is categorized as cross-sectional regarding time dimension, as it examines information from January 2023 to April 2024. The study is also considered pure research, focused on advancing fundamental knowledge and testing theoretical explanations related to Non-Tax Revenue policy and the blue economy (Neuman, 2014).

Methodologically, it employs qualitative research supported by quantitative data, utilizing literature study—gathering various sources such as books, journal articles, government reports, and news—and field study techniques, which include in-depth interviews and direct observations of post-production Non-Tax Revenue policy implementation at an Indonesian port. This research employs qualitative data analysis techniques. According to Neuman (2014), there are two stages in qualitative data analysis techniques: 1) coding and 2) memoing. In the first stage, the researcher will categorize various raw data into conceptual categories, ultimately forming themes and concepts. In the second stage, the researcher will record, elaborate on, and explain the concepts obtained from the coding stage.

2.3 Research site and limitations

This research was conducted in various locations, both offline and online. To gather qualitative data from in-depth interviews, the researcher directly visited the offices or agreed-upon locations of academics, KKP RI, DJA, PPS NZ, A, and DFW. Additionally, to obtain data through observation, the researcher visited the NZ Jakarta PPS to directly observe the technical implementation of post-production non-tax revenue policies.

This port was selected by the researcher for several considerations, including the fact that it is the largest port in Indonesia, that it frequently serves as a model for policies implemented by KKP, and its strategic location, which facilitates the researcher's observation within budget constraints. To produce focused and in-depth research, the researcher established the post-production non-tax revenue policy as regulated in Government Regulation 85/2021 as the subject of study. In conducting the research, the researcher encountered limitations in interviewing various fishing industry actors due to difficulties in connecting with these actors.

3. Results and Discussion

3.1 Fishing business policy in Indonesia

Capture fisheries are a vital segment of Indonesia's marine sector, governed by Ministerial Regulation No. 58 of 2020. This regulation aims to promote sustainable fish resource management and streamline licensing processes. Capture fisheries encompass fish capture, transport, and combined activities, which are regulated under a unified framework.

Entities engaging in capture fisheries must obtain a Capture Fisheries Business License, valid for 30 years. Additional permits include the Fish Capture License for each fishing vessel and the Fish Transport License, both valid for one year. While small-scale fishermen are exempt, they must register their vessels through the Small Fisherman Vessel Registration. Licensing authority is divided between the Minister and the Governor, depending on the vessel's gross tonnage and operational range.

3.2 Non-tax revenue policy for natural resource utilization

The Natural Resource Non-Tax Revenue Law regulates charges associated with the utilization of natural resources, with non-tax revenue policy defined as fees paid by individuals or entities for benefits derived from state-owned resources. Both the central government and the state budget manage non-tax revenue policy, which includes fishing business levies (PPP) and fish production levies. Importantly, the PHP mechanism has transitioned from a pre-production to a post-production collection system.

To understand the post-production Non-Tax Revenue policy, it is essential to examine the evolution of the Fish Production Levy (PHP). Prior to Government Regulation (PP) 85/2021, PHP was collected during the pre-production phase, as outlined in PP No. 75 of 2015 for the Ministry of Maritime Affairs and Fisheries. In this regime, fishery businesses were required to pay PHP before obtaining the Fish Capture License (SIPI) for the following year. PHP was categorized into small, medium, and large scales to differentiate tariff percentages. The calculation formula, established in Article 7(1) of PP 75/2015, considered the vessel's productivity, benchmark fish prices, and gross tonnage (GT). Vessel productivity were periodically set for each fishing gear type, while benchmark prices were based on the average selling prices of fish in domestic and international markets

3.3 Post-production non-tax revenue policy

The Post-Production non-tax revenue policy was established in Government Regulation No. 85 of 2021, effective January 2023, shifting from the pre-production framework. It levies charges based on marine resource utilization, specifically the PHP collected after fish are landed. The levy is calculated as a percentage of the production value of the fish, differing by vessel size. The objectives of this policy focus on improving fisheries governance, enhancing state revenue, and ensuring fair implementation of levies. Overall, it aligns with the blue economy principles, supporting sustainable marine resource management in Indonesia.

Effectiveness criteria focus on achieving valued outcomes (Dunn, 2018). The post-production non-tax revenue policy encompasses five objectives that support blue economy principles: 1) enhancing fishery governance in Indonesia; 2) ensuring fairness for fishery entrepreneurs; 3) sustaining marine resources; 4) optimizing stakeholder benefits; and 5) increasing non-tax revenue policy from fishery revenues. To evaluate effectiveness, this study examines the achievement of these objectives, particularly concerning governance improvements in data collection and licensing. Currently, non-tax revenue policy realization lacks accuracy and does not reflect actual catch data, complicating data integration and oversight. The Directorate General of Taxation (DJA) faces challenges in obtaining accurate data. As noted by practitioners, catch data under the pre-production non-tax revenue policy regime are often estimates:

> *"When we request data, it is mostly estimations; not all catch data is recorded, complicating integration*." (HS)

These inaccuracies contradict good fishery governance principles, which rely on effective data usage (OECD, 2020). The post-production non-tax revenue policy aims to improve catch data reliability, though its effectiveness remains uncertain. Implementing

post-production non-tax revenue policy should theoretically yield more accurate data. Heaps and Helliwell (1985) indicate that landing taxes are based on gross volume or output value, necessitating precise data for accurate measurement:

> *"For the government, this [post-production non-tax revenue policy] will enhance data accuracy*." (SHW)

Enhanced governance through post-production non-tax revenue policy could lead to significant improvements in catch management. DJA representatives highlight that this policy represents a crucial advancement in fishery governance:

> "*This evolution signifies improved governance*." (HS)

While the policy shift from pre- to post-catch activities is straightforward, further research is needed to assess its long-term effectiveness. Observations at Nizam Zachman Port indicate that fish catch weight data collection remains manual, making records vulnerable to damage. Data reconciliation between the port and fishery enterprises is time-consuming, potentially disadvantaging both parties:

> "*We compare totals; discrepancies must be assessed*." (W)

The manual system also increases corruption risks, according to former corruption commission officials. These challenges impede the intended improvements that the post-production non-tax revenue policy aims to achieve. Adopting electronic monitoring could address these issues, as noted by Gladju et al. (2022). Although essential, implementing such technology may require costly investments and supportive fiscal policies.

Article 12(1) of the Minister of Maritime Affairs and Fisheries Regulation No. 58 of 2020 empowers the minister to issue fishing vessel licenses (SIUP, SIPI, and SIKPI) for vessels exceeding 30 Gross Tonnage (GT) operating in the Indonesian National Fishing Management Area (WPPNRI) beyond 12 nautical miles and/or in international waters. Consequently, vessels of 30 GT or smaller fall under local jurisdiction, exempting them from national non-tax revenue obligations. The practice of "mark down" should be revised for two primary reasons. First, it leads to revenue loss for the state due to the license determination based on vessel size, impacting non-tax revenue payment responsibilities. Second, this practice constitutes illegal, unreported, and unregulated fishing (IUUF), which contributes to the depletion of fishery resources in Indonesian waters. According to Firdaus et al. (2018), the economic impact of depletion reached IDR 9.83 trillion in 2015, projected to rise to IDR 14.55 trillion by 2020.

This issue arises from ineffective licensing governance, which is frequently exploited. Representatives from the Ministry of Maritime Affairs and Fisheries (KKP) indicated that the implementation of non-tax revenue post-production allows for better monitoring and management of fishing vessels. While theoretically sound, the efficacy of this policy in improving fisheries governance is undermined by low implementation capacity in Indonesia. Addressing policy gaps in post-production non-tax revenue is crucial for fostering economic, environmental, and social improvements in the blue economy framework.

The secondary objective of the post-production non-tax revenue policy is to ensure fairness for fishery entrepreneurs in Indonesia. Evaluating this goal involves assessing equity from a public policy standpoint. A key reason for transitioning from pre-production to post-production non-tax revenue was the equity issue; the former was deemed unjust as it relied on estimates. As highlighted by various stakeholders, including representatives from the Directorate General of Budget (DJA):

> *"Previously, pre-production payments were based on estimates for the upcoming year. If a business incurred losses due to unfavorable conditions, such as poor catch rates or equipment failure, it would suffer financially. Conversely, if the estimated catch exceeded actual results, the state would incur losses, as fish are a national resource. This aspect of equity was central to the reform*." (HS)

The post-production non-tax revenue model aligns costs with benefits derived from fishing yields, satisfying distributional fairness as synthesized by Friedman et al. (2018). However, other components of justice, particularly from stakeholders in the fishing industry, must be considered. Representatives from the Indonesian Tuna Association (ASTUIN) argue that the post-production non-tax revenue policy still lacks fairness due to potential manipulation of catch volumes by operators. Moreover, the absence of transparency has resulted in misunderstandings among communities. Academics have noted that public comprehension of the post-production non-tax revenue policy remains limited, with mixed responses regarding its impact on fish prices.

> "*Socially, the community does not fully understand the implications. Some accept the post-production non-tax revenue, while others feel the fish prices have increased unjustly*." (SHW)

In summary, the effectiveness of the post-production non-tax revenue policy in achieving equity for fishery entrepreneurs has not yet been fully realized. The third objective of the post-production non-tax revenue is to ensure the sustainability of marine resources in Indonesia. Under the pre-production model, fishery operators tended to maximize their catch, believing their payments granted them unlimited rights. This concern informed the government's shift to post-production non-tax revenue, as articulated by ministry representatives:

> "*Previously, with pre-production payments, there was a tendency for businesses to overfish, feeling entitled due to their upfront payments. This behavior reinforced the necessity for the post-production framework."* (HS)

The post-production non-tax revenue policy aligns with output control measures designed to regulate catch limits (FAO, 2002), essential in managing capture fisheries. It also supports the regulations for sustainable fishing as detailed in Government Regulation No. 11 of 2023, which KKP aims to implement in promoting a blue economy in the fisheries sector. Although theoretically, the post-production non-tax revenue functions as an output control mechanism to preserve marine resources, the precise effectiveness of this policy in mitigating marine resource depletion remains uncertain due to various influencing factors. Since its implementation on January 1, 2023, the post-production non-tax revenue aimed at conserving marine resources has not significantly addressed the challenges of IUUF. A report from the Global Initiative Against Transnational Organized Crime in December 2023 ranked Indonesia as the sixth highest in IUUF risks. Thus, while the post-production non-tax revenue aligns with established theories supporting marine sustainability, its direct impact on resource conservation cannot be definitively measured.

The fourth goal of the post-production non-tax revenue policy is to optimize benefits and sustainability for fishery entrepreneurs. From the operators' perspective, these concepts are intertwined with business success, focusing on maximizing profits and minimizing costs. Under the pre-production regime, a dichotomy emerged regarding the profitability of fishery operators. Some exploited loopholes to underreport vessel sizes, reducing their non-tax revenue obligations, while others faced financial burdens if their catch fell short of their payments. This lack of readiness poses a challenge for the post-production non-tax revenue policy in facilitating optimal benefits and sustainability for

fishery operators. KKP representatives acknowledged that insufficient infrastructure funding has hindered development:

> *"Development in the fisheries sector is slow due to limited funding. Constructing a single port requires substantial investment, and many ports need simultaneous development to foster sector growth*." (RTA)

This situation may jeopardize the effective implementation of the post-production non-tax revenue policy. As noted by Sabatier and Mazmanian (1980), adequate financial resources are crucial for policy success. During the transition from pre-production to post-production, operators were subjected to both payment structures, complicating their financial viability:

> "*For instance, if one operator has four vessels—three at sea and one returning—the operator must pay non-tax revenue policy upon landing, but upon departure, they must pay upfront fees for the vessels still fishing, regardless of catches. This administrative burden can seem coercive rather than genuinely post-production.*" (MB)

Consequently, the post-production non-tax revenue policy's effectiveness in achieving optimal benefits and sustainability for fishery operators has not been realized, as it distorts profitability and adds to operational costs. The fifth objective of the post-production non-tax revenue policy is to enhance the realization of state revenues from fishing resources. As a quasi-tax, non-tax revenue is designed to increase national revenue, as outlined in the explanation of the non-tax revenue Law, which states that non-tax revenue plays a budgetary role as a vital revenue source. However, the realization of non-tax revenue has been low compared to national fisheries production trends. The low non-tax revenue realization contributed to the policy shift from pre-production to post-production, as indicated in the academic manuscript on post-production non-tax revenue, which highlighted that inadequate revenue was attributed to misaligned formulae for determining non-tax revenue in relation to actual fish catches.

In the first year of the post-production non-tax revenue policy implementation, revenue from fisheries decreased from previous levels. This decline was partly due to many vessels still operating under pre-production permits, thus delaying their obligation to pay the new non-tax revenue. However, with an increasing number of vessels transitioning to post-production non-tax revenue permits, there has been a month-over-month rise in non-tax revenue revenue, reflecting a significant increase in realization—from January to April, the year-over-year comparison showed a 15-fold increase as more vessels migrated to the new permit structure as shown in the Fig. 1.

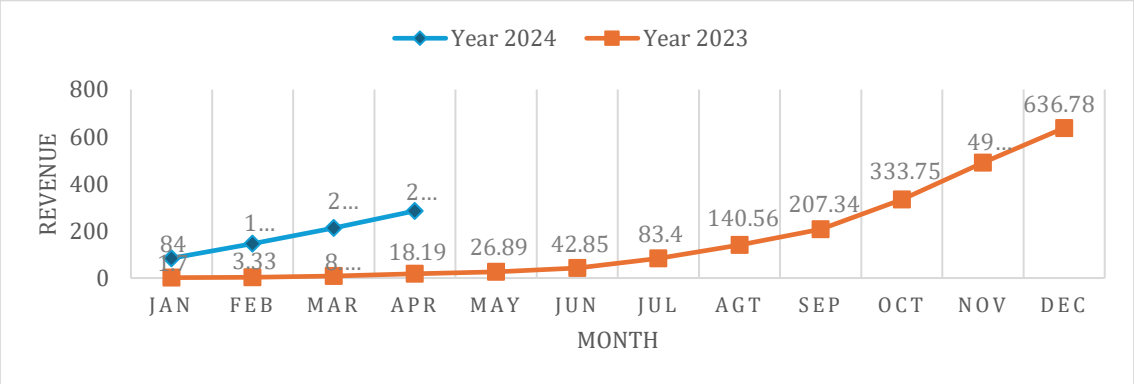

Fig. 1. Graph of realization of non-tax revenue from capture fisheries in 2023 and 2024 (Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia, 2024)

In conclusion, while the effectiveness of the post-production non-tax revenue policy in increasing state revenue remains unclear, there is a consistent upward trend in revenue each month. Supporting the blue economy in fisheries, non-tax revenue realization is crucial, as the blue economy relies on contributions from marine sectors, including fisheries.

4. Conclusions

Based on the information and data analyzed through various theories in the preceding chapters, it can be concluded that the evaluation of post-production Non-Tax Revenue policies in supporting the blue economy-based fisheries sector is as follows. The non-tax revenue post-production policy has not fully met the effectiveness criterion. While it shows potential effectiveness in achieving the five established objectives aligned with the blue economy concept, its overall effectiveness is hindered by inadequate infrastructure.

To improve and refine the non-tax revenue post-production policy for the blue economy-based fisheries sector in Indonesia, further research is essential to measure the effectiveness of the non-tax revenue post-production policy concerning the sustainability of marine resources and enhancing the realization of Non-Tax Revenue from capture fisheries. Additionally, implementing technologies such as electronic monitoring (EM) at all ports where post-production non-tax revenue is collected in Indonesia is crucial. The adoption of EM technology can streamline the weighing process and enhance the accuracy of data collection for catch assessment, thereby improving the effectiveness and efficiency of revenue collection for both taxpayers and tax authorities. Increased funding and stricter oversight for the Ministry of Marine Affairs and Fisheries (KKP RI) and various ports are necessary. Finally, reformulating the tariff index from a progressive rate based on vessel size to a single rate, regardless of the vessel's size, aims to uphold the principle of non-discrimination and equity.

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Author Contribution
The authors independently conducted all aspects of the research, including formulating research questions, designing the methodology, collecting and analyzing data, and interpreting findings. The authors also drafted and revised the manuscript, ensuring it met academic standards and effectively communicated the research outcomes.

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