

Implementation of the Measured Fishing Policy-Penangkapan Ikan Terukur (PIT) in the Riau Islands Province

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ABSTRACT

The implementation of the Measured Fishing Policy/Penangkapan Ikan Terukur (PIT) in the Riau Islands Province is a strategic step to manage fishery resources sustainably. The background of this study focuses on the challenges faced in the implementation of the PIT policy, including filling in logbooks by 10-30 GT fishing vessels, conflicts between traditional fishermen and industry players, and limited supporting infrastructure. This study aims to analyze the implementation of the PIT policy using the Van Meter and Van Horn theory, which refers to four main indicators: communication, resources, bureaucratic structure, and implementer disposition. The research method used is a descriptive qualitative approach, with secondary data collection and triangulation analysis to increase validity and reliability. The results of the study indicate that the implementation of the PIT policy in the Riau Islands still faces obstacles in the form of uneven communication, lack of skilled human resources, and inadequate infrastructure. The complex bureaucratic structure also hinders the efficiency of policy implementation. However, government efforts, such as policy socialization through training and the establishment of the Fisheries Management Institution (LPP) in WPPNRI 711, have begun to show positive impacts. In conclusion, the successful implementation of the PIT policy requires a holistic approach that includes strengthening human resources, infrastructure investment, bureaucratic reform, and inclusive communication strategies. Thus, this policy is expected to contribute to the sustainability of marine ecosystems and the welfare of coastal communities in the Riau Islands Province

Keyword: Measured Fishing Policy/Penangkapan Ikan Terukur (PIT), Implementation, Logbook

INTRODUCTION

The implementation of the Measured Fishing Policy/Penangkapan Ikan Terukur (PIT) in the Riau Islands Province faces significant challenges, especially in terms of filling out and reporting logbooks for fishing vessels measuring 10–30 GT. This policy aims to ensure sustainable and measured fishing, but its implementation requires thorough preparation from various related parties. The Riau Islands Province Marine and Fisheries Service (DKP) has completed preparations for the implementation of filling out and reporting the logbook, as secondary data obtained by researchers.

The urgency of filling out and reporting logbooks for fishing vessels measuring 10–30 GT lies in the importance of accurate data for fishery resource management (Gerungan et al., 2024). This data is the basis for determining fishing quotas, monitoring fishing activities, and

ensuring compliance with applicable regulations (Jentoft, 2000; Pratiwi & Gina Boangmanalu, 2017). Without valid data, efforts to maintain the sustainability of fish resources can be hampered, which ultimately has a negative impact on the marine ecosystem and the welfare of local fishermen (Ambari, 2023; Rio, 2021). In the context of implementing PIT in the Riau Islands Province, filling out and reporting logbooks is a crucial component. The PIT policy regulated in Government Regulation Number 11 of 2023 and Regulation of the Minister of Marine Affairs and Fisheries Number 28 of 2023 emphasizes the importance of quota-based fisheries management and accurate data (Luthfia, 2023; Nurlaela, 2023). Therefore, the readiness of the Riau Islands Province Marine Affairs and Fisheries Service in implementing the logbook system reflects the region's commitment to supporting this national policy.

However, the implementation of filling out and reporting logbooks is not without challenges. Some of these include the lack of understanding of fishermen regarding the importance of logbooks, limited human resources skilled in data management, and inadequate supporting infrastructure. Overcoming these challenges requires collaboration between local governments, fishermen, and other stakeholders to ensure smooth reporting and data collection processes (Pelajar, 2023; Zaini, 2021).

Thus, this article will discuss in depth the preparations that have been made by the Riau Islands Province Marine Affairs and Fisheries Department in the implementation of filling and reporting logbooks for fishing vessels of 10–30 GT. In addition, the challenges faced and the strategies implemented to overcome these obstacles will also be analyzed. This discussion is expected to contribute to understanding the dynamics of PIT implementation at the regional level and offer practical solutions to improve the effectiveness of measurable fishing policies in Indonesia.

In the context of PIT, the use of technology such as digital applications for logbooks can improve data accuracy and reporting efficiency, which discusses the role of technology in the efficiency of the reporting process and also provides a new perspective (Ngabalin, 2024). The implementation of the Measured Fishing Policy (PIT) is one of the main focuses of fisheries management in Indonesia, especially in the Riau Islands Province. In this context, various related articles and studies can be used as a basis for enriching the discussion and strengthening the arguments in this study. The Fisheries Logbook Implementation Strategy to Support Quota-Based Fishing Policy provides an in-depth overview of the importance of logbooks in creating transparency and accountability in fishing activities. This study is relevant because it underlines the role of logbooks as an important instrument in the implementation of PIT, which is in line with ongoing efforts in the Riau Islands Province.

Ecosystem-based fisheries resource management strategy. This article emphasizes the importance of data integration and community participation in supporting fisheries sustainability (Cahyarani, 2024). This is closely related to the PIT approach in the Riau Islands, which requires collaboration between the government, fishermen, and other stakeholders to maximize the benefits of the policy. The challenges of implementing fisheries policies in coastal areas identify obstacles such as low awareness of fishermen and minimal supporting infrastructure, which are significant obstacles to implementing PIT (Cahyarani et al., 2023). Therefore, it is important to understand the potential obstacles in filling out and reporting logbooks in the Implementation of the Measured Fishing Policy (PIT) in the Riau Islands Province.

METHODOLOGY

The research method with a qualitative descriptive approach (Moleong, 2012) on the implementation of the Measured Fishing Policy (PIT) in the Riau Islands Province. The theory used (Meter & Horn, 1975), which explains the process of policy implementation, is conceptually divided into four indicators, namely communication, resources, bureaucratic

structure, and implementer disposition. Secondary data is used in in-depth data analysis using triangulation analysis collected from various sources (Johnston, 2014). Triangulation is a method used to increase the validity and reliability of data in qualitative research (Olsen, 2004; Thurmond, 2001). In the context of research on the implementation of the Measured Fishing Policy (PIT) in the Riau Islands Province, triangulation is used to ensure that the data obtained is accurate, consistent, and reliable. This study uses data triangulation, method triangulation, and theory triangulation to analyze policy implementation in depth. By using triangulation, this study is expected to provide a stronger and more comprehensive analysis of the implementation of PIT policies in the Riau Islands Province.

RESULTS AND DISCUSSION

1. General Conditions of Measured Fishing in Riau Islands Province

Riau Islands Province, with a water area reaching 96% of the total area and a coastline of 8,564 kilometers, has significant fishing potential. The sustainable potential of fisheries resources in this region is estimated to reach 1.1 million tons per year, but its utilization is only around 33%. To optimize the utilization of these resources sustainably, the government has implemented a Measured Fishing Policy (PIT), which aims to maintain a balance between ecology and economy in the fishing sector.

The implementation of PIT in the Riau Islands involves dividing the waters into several fishing zones with certain quotas. The Republic of Indonesia State Fisheries Management Area (WPPNRI) 711, which includes the waters of the Karimata Strait, Natuna Sea, and North Natuna Sea, is included in the Fishing Industry Zone. This zone is designated for industrial-scale fishing with appropriate quota and fishing gear arrangements to ensure the sustainability of fish resources.

As part of the implementation of PIT, the Ministry of Marine Affairs and Fisheries (KKP) has designated a conservation area in the waters east of Bintan Island covering an area of 138,561.42 hectares through the Decree of the Minister of Marine Affairs and Fisheries Number 18 of 2022. The establishment of this conservation area aims to protect coral reef ecosystems, seagrass beds, and fish nursery habitats, as well as support the sustainability of fisheries in WPPNRI 711. The conservation area is expected to provide a spillover effect that increases fish stocks outside the conservation area, thereby supporting sustainable catches.

The implementation of PIT in the Riau Islands also faces challenges, such as conflicts between fishermen due to differences in fishing gear, land and house certification for fishermen, and development funding. The Governor of the Riau Islands, Ansar Ahmad, welcomed the PIT policy and hoped that it would increase local revenue (PAD) and coastal area development. He also emphasized the importance of empowering local fishermen through training and capacity building so that they can adapt to the policy. To support the implementation of PIT, the Ministry of Marine Affairs and Fisheries held a coordination meeting of the Fisheries Management Institution (LPP) WPPNRI 711 in Batam in November 2023. This meeting aims to strengthen the role and function of LPP in sustainable fisheries management, including determining the allocation and quota of fishing efforts for the center and regions per province and per WPP.

2. Analysis of Policy Implementation of Van Meter & Van Horn Theory

a. Communication

Communication indicators in Van Meter and Van Horn's policy implementation theory emphasize the importance of delivering clear, consistent, and targeted information to policy implementers. In the context of implementing the Measured Fishing Policy (PIT) in the Riau Islands Province, communication plays an important role in ensuring that all parties, from fishermen and local stakeholders to the central government, understand the objectives and

mechanisms of the policy. The communication process in the early stages of implementing this policy includes socialization of the division of fishing quotas, regulated fishing zones, and logbook reporting. However, obstacles in delivering information are often a challenge, especially due to the low level of literacy and access to technology among traditional fishermen.

One of the main obstacles in the communication indicator is the information gap between the central government as the policy designer and local fishermen as the implementers. Although the government has conducted socialization through formal meetings and training, many fishermen in the Riau Islands feel that they do not fully understand the PIT policy. Socialization often only reaches certain groups, such as cooperative administrators or fishermen's associations, so that information is not evenly distributed to all fishermen. This results in confusion about quota distribution and procedures for filling out logbooks, which are key elements in the implementation of the PIT policy. In this case, an ineffective communication process can hinder optimal policy implementation.

Another aspect that needs to be considered is the communication media used in conveying information. In implementing PIT, the government often relies on conventional media such as circulars and direct meetings. However, this approach is less relevant for fishermen in remote areas or small islands in the Riau Islands that are difficult to reach. Alternatives such as the use of digital technology and social media have not been fully utilized, even though this technology can increase the reach and efficiency of communication. With the increasing level of internet penetration in coastal areas, technology-based communication strategies need to be considered to ensure that policy messages reach all levels of society.

In addition, communication between government agencies is also an important factor influencing the success of the implementation of the PIT policy. The involvement of various parties, such as the Riau Islands Province Marine and Fisheries Service, district/city governments, and maritime security forces, requires intensive coordination to ensure that all parties have the same understanding of this policy. Inconsistency of information between the central and regional levels can cause policies implemented in the field to be inconsistent with their initial design. Therefore, an integrated communication system is needed, such as the preparation of uniform policy implementation guidelines, to minimize information gaps between various actors.

The success of the implementation of the PIT policy in the Riau Islands is highly dependent on the effectiveness of communication as a key indicator. Clear, timely, and consistent delivery of information will increase the understanding of implementers in the field and encourage them to support this policy. In the long term, the government needs to develop a more inclusive and adaptive communication approach, including using digital media and expanding the reach of socialization to small fishermen groups in remote areas. Thus, obstacles in communication indicators can be overcome so that the implementation of the PIT policy can run more effectively and sustainably.

b. Resource

The resource indicator in Van Meter & Van Horn's theory emphasizes the importance of adequate resources to support the success of policy implementation. In the context of the Measured Fishing (PIT) policy in the Riau Islands Province, resources are one of the key factors influencing the effectiveness of policy implementation. The resources in question include budget, infrastructure, skilled labor, technology, and information. In the Riau Islands Province, the local government has attempted to provide a number of resources to support the PIT policy, such as the distribution of environmentally friendly fishing gear, training in the use of logbooks, and the procurement of digital-based technology for monitoring fishing activities.

However, one of the main challenges in implementing the PIT policy in the Riau Islands is the limited supporting infrastructure. Infrastructure such as fishing ports, cold storage, and catch processing facilities is not yet fully adequate to support the implementation of this policy. Many fishing ports in the region are still in a state of minimal facilities, so the distribution process of fish catches is often constrained. This affects the effectiveness of the PIT policy because, without adequate infrastructure, the quota-based fisheries management system and logbook are difficult to implement optimally.

In addition to infrastructure, human resource factors are also a major challenge. Not all fishermen and government officials have adequate capacity and expertise to support the implementation of the PIT policy. For example, many fishermen still do not understand the importance of filling out logbooks as a tool to record catches in a measurable manner. Training and education provided by the local Marine and Fisheries Service are not evenly distributed, so that the gap in knowledge and skills among fishermen is an obstacle to policy implementation. In addition, experts in the field of fisheries management technology are still limited at the regional level, which causes the monitoring and evaluation process to run less than optimally.

In terms of budget, the allocation of funds to support the implementation of the PIT policy in the Riau Islands is still inadequate. Many operational needs, such as the procurement of environmentally friendly fishing gear, development of monitoring technology, and training of fishermen, have not been fully met due to budget constraints. Although the central government has provided support in the form of policies and technical directives, significant financial support is still needed to increase regional capacity in managing fishery resources in a measurable and sustainable manner.

Finally, information resources are also an important concern in the implementation of the PIT policy. Management of fish catch data, fishermen's compliance with quotas, and monitoring of fishing areas still face obstacles due to limited access to sophisticated information technology. The digitalization system for logbooks, which is expected to create transparency and accuracy in reporting, is still in the early stages of development in the Riau Islands. Therefore, to increase the effectiveness of the PIT policy, it is necessary to strengthen all aspects of resources, including infrastructure investment, increasing human resource capacity, increasing budget allocation, and developing technology-based information systems. With adequate resource support, the PIT policy is expected to have a positive impact on the sustainability of fishery resources and the welfare of coastal communities in the Riau Islands Province.

c. Bureaucratic Structure

Bureaucratic structure is one of the main indicators in Van Meter & Van Horn's policy implementation theory, which includes aspects of formality, procedures, hierarchy, and coordination between institutions that play a role in implementing the policy. In the context of implementing the Measured Fishing Policy (PIT) in the Riau Islands Province, the bureaucratic structure plays an important role in determining the extent to which this policy can be implemented effectively and achieve the expected goals. The implementation of the PIT policy involves various parties, starting from the Ministry of Marine Affairs and Fisheries (KKP), the Riau Islands Province Marine Affairs and Fisheries Service (DKP), to local fisheries business actors and fishermen.

In implementing the PIT policy, the bureaucratic structure in the Riau Islands Province faces several challenges, one of which is the complexity of coordination between the central government and local governments. The central government, through the Ministry of Marine Affairs and Fisheries, has the authority to set national policy regulations, such as fishing quotas and zoning, while local governments are responsible for technical implementation in the field.

However, there is often overlap between central policies and implementation at the local level. For example, differences in priorities between sustainable resource management and urgent local economic needs can hinder optimal policy implementation.

The long bureaucratic hierarchy is also an obstacle in the implementation of the PIT policy. The multi-layered decision-making process often slows down the resolution of problems that arise in the field. For example, in the management of logbooks to record fishing activities, approval from various levels of government is required before the data can be used for evaluation. This complicated procedure not only burdens policy implementers in the regions but also reduces the effectiveness of the policy in responding to the needs of fishermen directly. As a result, fishermen often feel that this policy benefits certain parties in the center more than those operating in the field.

On the other hand, the implementation of the PIT policy in the Riau Islands also shows a positive initiative in strengthening the bureaucratic structure. The local government has made efforts to simplify the reporting mechanism and strengthen coordination through the establishment of the Fisheries Management Institution (LPP) in WPPNRI 711. This LPP aims to integrate data and coordinate the implementation of policies between the center and regions so that the implementation process becomes more efficient. However, the success of this effort is highly dependent on the commitment of all parties to carry out their duties and responsibilities consistently in accordance with the established rules.

Overall, the analysis based on bureaucratic structure indicators in Van Meter & Van Horn's theory shows that the success of implementing the PIT policy in the Riau Islands Province is highly dependent on the capacity of the bureaucracy to adapt to local needs and strengthen cross-sector coordination. In addition, reforms are needed in bureaucratic governance, especially in simplifying procedures and increasing transparency in decision-making. Thus, the PIT policy can be implemented effectively to support the sustainability of fisheries resources in the Riau Islands region.

d. Disposition of the Executor

The implementer disposition indicator in the policy implementation theory proposed by Van Meter and Van Horn focuses on the attitude, commitment, and understanding of policy implementers towards the implemented policy. In the context of the Measured Fishing Policy (PIT) in the Riau Islands Province, the implementer's disposition is a key element that determines the effectiveness of the implementation of this policy. Policy implementers at the local government level, such as the Riau Islands Province Marine and Fisheries Service (DKP), have a great responsibility in ensuring that the PIT policy is implemented in accordance with applicable regulations. However, the success of implementation is highly dependent on the extent to which implementers understand the objectives of the policy, have a strong commitment to implementing it, and work synergistically with various stakeholders.

The attitudes and understanding of implementers towards the PIT policy in the Riau Islands Province indicate challenges. One of the main obstacles is the lack of in-depth understanding among local policy implementers regarding the technical aspects and strategic objectives of the PIT policy. For example, some implementers in the field have difficulty explaining to fishermen the importance of logbooks as a crucial data collection tool for quota-based fisheries management. This lack of understanding can affect the quality of communication between policy implementers and target communities, which ultimately impacts the effectiveness of overall policy implementation.

In addition, the implementation commitment to the PIT policy also faces challenges in the form of limited resources. Although policy implementers at the provincial and district/city levels have shown a strong initial commitment to support this national policy, budget and facility limitations hamper its implementation in the field. For example, the Marine Affairs and

Fisheries Department often faces logistical constraints in providing training to fishermen on filling out logbooks or ensuring that fishing zone supervision is carried out in accordance with quotas. This shows that even though implementers have good intentions, limited resources can hinder a positive disposition towards policy implementation.

On the other hand, the disposition of implementers is also influenced by the support and coordination between the central and regional governments. In PIT policies, complex bureaucratic structures often slow down decision-making and resource allocation, which impacts the attitudes of implementers at the local level. For example, the lack of clear technical guidance from the central government regarding quota management at the provincial level can cause confusion among regional implementers. This has the potential to reduce their motivation and commitment to implementing PIT policies optimally.

To improve the disposition of PIT policy implementers in the Riau Islands Province, integrated efforts need to be made, such as ongoing technical training, adequate budget allocation, and simplification of bureaucratic procedures. Policy implementers need to understand that the PIT policy is not only aimed at maintaining the sustainability of fish resources but also supporting the welfare of local fishermen through a data-based approach. By strengthening the disposition of implementers, the PIT policy can be implemented more effectively, providing significant ecological and economic benefits to the community in the Riau Islands Province.

3. Challenges and Obstacles to Management of Measured Fishing/Penangkapan Ikan Terukur (PIT) in Riau Islands Province

The management of the Measured Fishing Policy/Penangkapan Ikan Terukur (PIT) in the Riau Islands Province faces a number of complex challenges. One of the main challenges is the lack of understanding and awareness of local fishermen regarding the PIT policy, especially regarding the importance of reporting data through fisheries logbooks. Traditional fishermen often feel that this policy is too technical and burdensome, especially in terms of filling out the logbook, which requires certain administrative skills. In many cases, the lack of adequate information from authorities about the objectives of this policy makes fishermen skeptical about the benefits they can obtain, resulting in low levels of compliance.

In addition, inadequate infrastructure and supporting technology are major obstacles to implementing the PIT policy. Several fishing ports in the Riau Islands are not yet equipped with adequate facilities to support effective monitoring and data collection. The digitalization system needed to process logbook data in real time is also still limited, especially in remote areas. Without adequate infrastructure, it is difficult for local governments to monitor fishing activities and ensure that the quotas that have been set are actually followed by fisheries business actors.

Another obstacle is the limited human resources competent in managing the PIT policy. Implementation of this policy requires experts who are able to supervise, collect data, and analyze quotas and fishing zones. However, at the regional level, the number of workers with relevant technical skills is still minimal. This causes supervision to be less than optimal, especially when it comes to ensuring that fishing activities remain within the specified limits. This limitation also impacts the effectiveness of the socialization and training programs provided to fishermen.

Another challenge is the conflict between small-scale fishermen and fisheries industry players that often arises due to the struggle for fishing areas. The Riau Islands Province has great potential as a fishing area, but the management of fishing zones that has not been fully integrated often causes tension in the field. Small-scale fishermen often feel marginalized by large business actors who have more sophisticated vessels and technology, making it difficult

for them to compete in accessing the same fish resources. This conflict is a serious obstacle to the sustainability of the implementation of the PIT policy.

Finally, suboptimal political support and cross-agency coordination are also significant obstacles. PIT policies require cooperation between the central government, local governments, and various other stakeholders. However, there is often a mismatch between central policies and local needs or conditions. For example, local governments may have difficulty adapting general national policies to more specific local contexts. This lack of synergy can slow down the policy implementation process and reduce the effectiveness of fisheries management in the Riau Islands. To overcome these obstacles, a more inclusive approach is needed, involving all stakeholders in the planning and implementation of PIT policies as a whole.

CONCLUSION

The Measured Fishing Policy (PIT) in the Riau Islands Province is a strategic step aimed at maintaining the sustainability of fishery resources while improving the welfare of coastal communities. With a sustainable potential of 1.1 million tons per year, but only 33% utilized, the implementation of the PIT policy is very relevant to optimize the utilization of existing resources sustainably. The division of water areas into several fishing zones and the determination of quotas and appropriate fishing gear are efforts to create a balance between ecology and economy. Support in the form of conservation areas, such as that which has been carried out in the eastern region of Bintan Island, is an important part of this policy to ensure that the marine ecosystem is maintained and is able to provide a spillover effect for fishermen's catches.

However, the implementation of the PIT policy in the Riau Islands is not free from complex challenges and obstacles. The biggest challenges include the lack of understanding of the policy by fishermen, limited infrastructure, lack of competent human resources, and conflicts between small-scale fishermen and fisheries industry players. In addition, the complex bureaucratic structure, lack of coordination across agencies, and suboptimal political support are also significant obstacles. This condition shows that the success of the PIT policy depends not only on good policy design but also on the effectiveness of implementation involving all related parties, including the central government, regional governments, and fishing communities.

To ensure the success of the PIT policy in the Riau Islands, synergistic efforts are needed that include strengthening human resource capacity, improving supporting infrastructure, and simplifying bureaucratic procedures. The government also needs to adopt a more inclusive communication strategy, such as utilizing digital technology, to reach fishermen in remote areas. In addition, close collaboration between the central government, local governments, academics, and business actors is key to creating measurable and sustainable fisheries management. With an integrated and data-based approach, the PIT policy is expected to not only maintain the sustainability of fish resources but also provide a positive economic impact on coastal communities in the Riau Islands Province.

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