

EVALUATION OF THE INTEGRATED MARINE AND FISHERIES CENTER DEVELOPMENT PROGRAM IN NATUNA REGENCY

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ABSTRACT

This study aims to evaluate the implementation of the Integrated Marine and Fisheries Center Development Program (Sentra Kelautan dan Perikanan Terpadu or SKPT) in Natuna Regency, focusing on its benefits for fishers and coastal communities. A descriptive qualitative approach was used, involving in-depth interviews, observations, and documentation. The results show diverse perspectives among stakeholders. Some fishers and cooperative managers perceive the SKPT as beneficial in expanding market access and maintaining product quality; however, limited capital, low post-harvest skills, and weak institutional readiness remain major challenges. Meanwhile, officials from the Department of Marine and Fisheries and SKPT managers emphasize the need to improve inter-institutional coordination and landing regulations to optimize the program's effectiveness. The study also reveals protests and resistance from coastal communities, particularly traditional fishers, who feel disadvantaged due to reduced fishing zones and unequal distribution of aid. Furthermore, academic assessments indicate that the program's success remains partial, with significant physical achievements but limited impact on broad economic welfare improvements. Based on these findings, it is concluded that the success of the SKPT requires a participatory approach, strengthening of local capacity, and continuous evaluation based on comprehensive evaluation models such as CIPP. The implications of this study highlight the importance of aligning physical, social, and economic development to achieve the goals of independence and sustainable welfare for Natuna's coastal communities.

Keywords: SKPT, Natuna, program evaluation, fisher empowerment, inclusive development.

INTRODUCTION

The development of integrated fisheries areas emphasizes the important of integration between landing, processing, and marketing to create economic added value. Poernomo and Heruwati (2011); Rahim et al., (2024). However, the implementation is often not optimal, as seen in SKPT Natuna where the facilities already

exist, but ship visits and auction activities are still low.

Factually, the potential of Natuna's fisheries is very large, the value of capture fisheries production reached IDR 2,859 trillion in 2021 and the cultivation capacity is 41,669 ha (Riau Islands Provincial Government, 2022) but

the utilization is only around 36%, where local fishermen only utilize 4.3% of the total potential, showing the inequality in the utilization of the fisheries economy in SKPT. (Suraya and Sulisty, 2019). There is a socio-economic gap for the local fishing community. Ship assistance is often not as needed, for example ships that are not compatible with characteristics, so they are not optimally utilized. (Inal and Deniz, 2022).

Nurani et al. (2021) conducted a strategic analysis to accelerate the functionalization of SKPT Natuna, finding various challenges such as limited fishermen's resources, limited ice to go to sea, and weak access to marketing. Arifnur, et al., (2023) evaluate the operational performance of SKPT; The results of the analysis showed negative gaps in the indicators of fish landings, ship visits, and auction services and cooling facilities. They recommend integrated landing regulations, investor engagement, and improved fishing skills.

Different from previous research that focused on operational strategies and gaps, this study comprehensively evaluates the SKPT program from policy, operational, and socio-economic aspects, and includes the perspective of local fishermen as the main actor. This study also proposes a multidimensional evaluation model based on performance and sustainability indicators.

This study aims to (1) measure the effectiveness of the SKPT Natuna program through operational, social, and economic indicators; (2) identify the main obstacles in implementation; and (3) formulate policy recommendations and strategies to improve sustainability and benefits for local fishermen.

The success of the SKPT program does not only depend on infrastructure development, but also on increasing fishermen's capacity, strengthening institutions, and integrating supply chains. Without a combination of the three, the potential of SKPT will not be realized to the fullest.

This research is important to fill the gap between theory and practice in the development of SKPT, as well as provide concrete recommendations for local governments and KKPs in formulating follow-up policies. With an evaluative and multidimensional approach, the results are expected to increase the utilization of Natuna's fishery potential, strengthen fishermen's welfare, and support the region's economic resilience.

DATA AND METHODS

The object of this research is the Integrated Marine and Fisheries Center Development Program (SKPT) in Natuna Regency, which

includes fisheries infrastructure, fish landing activities, cold chain facilities, processing facilities, and socio-economic empowerment of local fishing communities

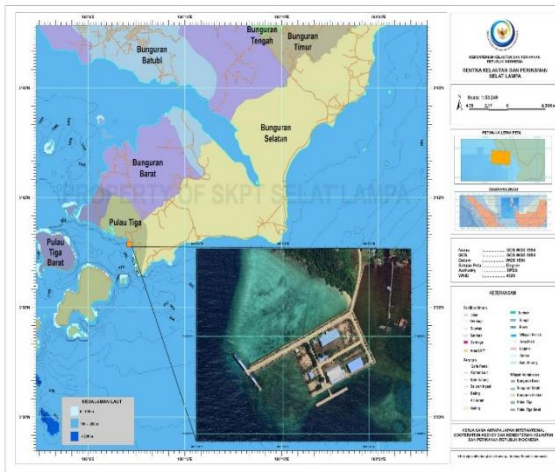


Figure 1. SKPT Natuna Location Map

The research is focused on the Pulau Tiga area as the main location of SKPT and its surroundings, where the potential for capture fisheries and aquaculture is quite large but has not been optimally utilized. The tools used in this study are in the form of structured questionnaires, in-depth interview guidelines, and observation sheets prepared based on program evaluation indicators (effectiveness, efficiency, relevance, and sustainability). The questionnaire was given to beneficiary fishermen, SKPT managers, and regional policy makers. This instrument was validated using content validity test with the help of fisheries experts and public policy.

Data collection methods

Primary data was collected through in-depth interviews with 20 key informants

consisting of fishermen, cooperative administrators, officers of the Marine and Fisheries Service, and SKPT managers. In addition, direct observation was carried out at the SKPT location, including checking fish landing facilities, cold storage, processing facilities, and auction activities. The technique of taking informants is carried out by the purposive sampling method, which is to select respondents who are considered to have the best understanding of the program and its implementation process (Creswell & Poth, 2018; Rasyid et al., 2020).

Data Analysis Methods

The data obtained were analyzed using a qualitative descriptive analysis method, with a CIPP (Context, Input, Process, Product) model evaluation approach. This model assesses the context of the program, inputs (resources), processes (implementation), and products (program results), so that it can comprehensively describe the effectiveness and constraints of SKPT implementation. The results of the interviews were analyzed through source triangulation techniques and methods to improve the validity of the findings. Quantitative data from the questionnaire were processed using descriptive statistics (percentages and average scores) to support qualitative interpretation (Stufflebeam & Zhang, 2017; Nurani et al., 2021).

RESULT AND DISCUSSION

Diverse Opinions from Fishermen, Cooperative Administrators, Service Officers, and SKPT Managers

Based on the results of in-depth interviews with fishermen, most of them stated that the existence of SKPT provides new opportunities, especially related to the availability of cold storage and wider market access. However, they also mentioned that the facilities are still not fully utilized due to limited business capital and post-harvest technology management skills. The management of the fishermen's cooperative argued that the SKPT program opened up opportunities for cooperation with buyers outside the region, but still experienced administrative obstacles and difficulties in meeting the quality standards set by large industrial buyers. They hope that there will be intensive training and business assistance so that cooperatives can be more professional. Marine and Fisheries Service officers acknowledged that there is still a gap between program planning and implementation in the field. According to them, not all facilities are used optimally due to low cross-party coordination and low level of fishermen's business literacy. The SKPT manager himself emphasized the need to improve fish landing regulations so that large ships are

required to lower their catch in Natuna, so that the local supply chain can grow.

The results of the study show that there are diverse opinions among fishermen, cooperative administrators, officers of the Marine and Fisheries Service, and SKPT managers. Some fishermen admitted that cold storage facilities and expanding market access through SKPT helped maintain the quality of their catches and expand their marketing network. However, limited capital and low post-harvest skills are obstacles that reduce the effectiveness of the program (Nurani et al., 2021; Ismail et al., 2018).

This is in line with the community-based development theory, which emphasizes that the success of local economic development is highly dependent on active involvement and capacity building of target communities. Franco and Tracey (2019); Raco, M. (2000). In addition, according to institutional capacity building theory, increasing the capacity of local organizations (such as cooperatives) is crucial to be able to support program sustainability (Mohammadi, et al., 2023). The cooperative management considers SKPT as an opportunity to strengthen business networks and increase trade volume. However, administrative problems and quality standards are challenges that indicate weak institutional readiness. Marine and Fisheries Service officers also

highlighted the lack of cross-sector coordination, which is in line with the statements of Reed, et al., (2018); Buyucek, et al., (2016) explained in the theory of stakeholder participation, that failure of coordination between parties can reduce the effectiveness of program implementation. The SKPT manager emphasized the need to update the fish landing regulations, so that the catch of large ships can be managed in the Natuna area and support the local economy.

Protests and Rejections from the Community

In the results of observation and documentation, it was found that there were protests from some coastal communities, especially traditional fishermen. They feel that the existence of large ships pushed by SKPT reduces their traditional fishing zones, thus triggering conflicts in fishing areas. In addition, some communities reject the top-down empowerment pattern carried out by SKPT, because they feel that they are not involved in program planning. This rejection is reflected in the lack of participation in the village deliberation forum and the low participation in the SKPT training. Several community leaders also mentioned the inequality in the distribution of aid, where fishermen groups who are members of cooperatives are prioritized over independent fishermen groups.

The protests of coastal communities, especially traditional fishermen, show that there is an imbalance in the distribution of SKPT program benefits. They feel disadvantaged due to the reduction of fishing zones due to the presence of large ships, and feel that they are not involved in planning. This emphasizes the importance of a participatory development approach, where the community must be involved from the planning stage to program evaluation (Pretty, 1995; Haldane, et al., 2019).

The injustice of aid distribution, where cooperatives take precedence over independent fishermen's groups, reflects the weak application of the principle of equity in development policies. According to social equity theory, equitable distribution of benefits is a prerequisite for creating community support and program success (Gupta et al., 2015; Sovacool, 2021).

Protests and social resistance also reinforce the findings of Rasyid et al. (2020); Condie, et al., (2024). which states that social conflicts in fisheries programs often arise due to a lack of communication and inclusive community involvement. The village deliberation mechanism that was supposed to be a forum for expressing aspirations was not used optimally, showing the weak system of dialogue and feedback.

Table 1. Summary of CIPP Model Evaluation Results of SKPT Program in Natuna Regency

Components CIPP	Key Findings	Additional Details
Context	High fishery potential; the fishing community is still traditional; The need to strengthen the local economy has not been fully accommodated.	The needs analysis is not thorough and there is minimal community involvement.
Input	Physical infrastructure available (cold storage, docks); there are supporting policies; However, human resources, cooperatives, and technical assistance are still weak.	Low institutional readiness; Unsustainable training.
Process	Implementation is top-down; low community participation; uneven distribution of aid; conflict with traditional fishermen.	Public protests show the failure of participatory approaches.
Product	Fish landing volume increased ($\pm 18\%$); the quality of the catch is improved; However, only 37% of fishermen feel the direct economic impact.	Success is more dominant in physical achievements, and equal distribution of welfare has not been achieved.

Varied Academic Outcomes

The documentation of the results of academic studies shows a variety of evaluations. Some academics consider SKPT to be in accordance with the theory of integrated regional development that emphasizes the synergy of the upstream-downstream sector and the cluster approach (Stufflebeam & Zhang, 2017). However, other results assessed that the implementation of SKPT is still "infrastructure-centric" and has not paid adequate attention to socio-cultural aspects. An internal study of the IPB campus stated that this program succeeded

in increasing fish landing capacity by 18% over three years, but failed to significantly increase the average income of fishermen (Nurani et al., 2021). Meanwhile, research by Raja Ali Haji Maritime University shows that only 37% of fishermen feel the direct economic impact of SKPT. Local academics also emphasize the importance of longitudinal data-driven policy evaluation, so that it focuses not only on physical achievements, but also on social impacts and long-term economic sustainability (Arifnur et al., 2023).

Table 2. Findings of SKPT Program Evaluation Research in Natuna Regency

Aspects	Findings Information	Data Source
Fishermen's Opinion	- Feeling that SKPT opens up market opportunities and cold storage access.	In-depth interviews, Observations
	- Constraints on capital and post-harvest skills are still high.	
	- Not all fishermen are actively involved.	
Cooperative Opinion	- It helps to expand the marketing network.	In-depth interviews, Documentation
	- Constrained by quality standards and cooperative administration.	
	- Requires sustainable business assistance.	
Opinion of the Service	- There is a gap in coordination between agencies.	In-depth interviews, Documentation
	- Low business literacy of fishermen is an obstacle.	
	-Need to improve fish landing regulations.	
Opinion of SKPT Manager	- The infrastructure is quite adequate.	In-depth interviews, Observations
	- Mandatory landing regulations are required.	
	- It is necessary to strengthen cooperation with the private sector and investors.	
Community Protest	- The rejection of large vessels is considered to reduce the traditional fishing zone.	Direct observation, Documentation
	- Not involved in program planning.	
	- Inequality in aid distribution.	
Academic Outcomes	- Some assess according to the integrated cluster concept.	Academic study documentation
	- The implementation is considered to be still infrastructure-centric.	
	- The direct economic impact has not been even (only 37% of fishermen feel the benefits).	

The results of varied academic studies show that there are different perspectives in assessing the success of SKPT. Some academics consider SKPT to be in accordance with the cluster-based development approach, which prioritizes upstream-downstream integration and multi-stakeholder synergy to increase regional competitiveness (Zhao, et al., (2024). This approach does support an increase in the volume of fish landings (18%), but is not followed by a significant increase in the welfare of fishermen (Arifnur et al., 2023). Another

academic study, such as the one conducted by the Raja Ali Haji Maritime University, shows that only 37% of fishermen feel the direct economic impact of the SKPT program. This indicates that the program approach still focuses on infrastructure development (infrastructure-centric), not the socio-economic empowerment of the community (Nurani et al., 2021; Drici et al., (2025). According to the theory of inclusive development, the success of development is not only measured by physical or macroeconomic achievements, but also by the equitable

distribution of benefits and social sustainability. Gupta et al., (2015); Kamran, et al., (2023). In addition, evaluations based on the CIPP (Context, Input, Process, Product) model also show that the success of the product (output)

does not always reflect the success of the process and the supporting social context (Stufflebeam & Zhang, 2017; Faishol, et al., 2024).

Table 3. Policy Recommendations Based on Research Findings

Aspects of the Findings	Main Problems	Policy Recommendations
Involvement of local fishermen	Lack of access to capital and post-harvest skills	Increased access to microfinance, processing training and simple technology-based marketing.
Strengthening cooperatives	Difficulty meeting quality and administrative standards	Cooperative management assistance, collective certification).
Interagency coordination	Weak synchronization of fish landing policies	Determination of mandatory landing regulations at SKPT, establishment of cross-agency forums.
Local community conflicts	Rejection of large ships and inequality of aid	Participatory dialogue, re-evaluation of catch zoning, equitable distribution of fisheries assistance.
Infrastructure focus	Lack of attention to socio-economic aspects	Adjustment of the SKPT program to be more pro-people, prioritizing the social and economic sustainability of local fishermen.

Therefore, the success of SKPT in Natuna must be reviewed by considering social sustainability and inclusivity indicators. Improvement efforts must prioritize empowerment, distribution equity, and strengthening the capacity of the community as the main beneficiaries.

CONCLUSION

Based on the results of the research, it can be concluded that the Integrated Marine and Fisheries Center Development Program (SKPT) in Natuna Regency has not fully had an optimal impact on improving the welfare of fishermen. Although physical facilities such as cold storage

and strengthening market access are considered helpful, limited capital, post-harvest skills, and institutional readiness of cooperatives are the main obstacles. This shows the need for a development approach that focuses more on strengthening the capacity of communities and local institutions, as emphasized in the theory of community-based development and institutional capacity building. On the other hand, the protests and rejections of the community, especially traditional fishermen, show the inequality of benefit distribution and weak community involvement in the planning and implementation process of the program.

Inequities in aid distribution and reduced traditional fishing space are the main sources of resistance. These findings reinforce the importance of applying the principles of social equity and participatory development, so that the community is not only an object, but also a subject who is actively involved in all stages of the program.

The difference in the results of academic studies also shows that the success of SKPT is still partial, with fairly high physical achievements but not followed by an even economic improvement. This shows the need for in-depth and sustainable evaluation based on comprehensive evaluation models such as CIPP (Context, Input, Process, Product), to ensure success not only from short-term output, but also from long-term social and economic impacts. Thus, an inclusive and collaborative approach must be the main focus so that SKPT is truly able to support the independence and welfare of the coastal community of Natuna.

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