

STRATEGY FOR MANAGING THE POTENTIAL OF THE FISHERIES
SECTOR IN THE ECONOMIC GROWTH OF THE INDONESIA-
MALAYSIA BORDER COASTAL REGION

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ABSTRACT

This research aims to analyze the potential of the fisheries sector in Sambas Regency using the Location Quotient (LQ) and Shift-Share approaches, as well as to formulate management strategies to encourage economic growth in the Indonesia-Malaysia border region. With a qualitative approach, this research integrates normative-theological, sociological, and scientific analyses, using data from the 2015-2019 period collected through interviews, observations, and documentation, and analyzed using LQ, Shift-Share, and SWOT. The research results show that the fisheries sector is a leading sector with an average LQ value of 2.75, reflecting its ability to meet local and export needs, while the Shift-Share analysis reveals the competitive advantage of this sector in regional economic growth. This research produces strategic recommendations including the improvement of facilities and infrastructure, technology adoption, human resource development, and institutional strengthening. This result is expected to serve as a reference for local governments in formulating policies to optimize the fisheries sector as a driving force for the border economy. This study recommends improving fisheries facilities and infrastructure, adopting modern technology, and strengthening institutions and regulations to improve the competitiveness of the fisheries sector in Sambas Regency. In addition, human resource development through training and diversification of fisheries businesses needs to be done to improve the welfare of fishermen. Optimizing the trade and export of fishery products is also the main strategy in encouraging economic growth in the Indonesia-Malaysia border region.

Keywords, Coastal Community Welfare, Fisheries Sector, SWOT

A. INTRODUCTION

Indonesia, as the largest archipelagic country in the world, has abundant marine wealth. Two-thirds of its territory consists of ocean, with a coastline stretching 95,000 km and a coral reef expanse of 24.5 million hectares (Department of Marine Exploration and Fisheries, 2002). This potential makes the maritime and fisheries sector one of the strategic resources for national economic development, especially in supporting the welfare of coastal communities. The coastal areas of Indonesia are inhabited by around 7.87 million people or 25.14% of the total national poor population (BPS, 2021). These coastal communities depend on the fisheries sector as their main source of livelihood. However, constraints such as limited facilities and

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infrastructure, high fish prices despite living in coastal areas, and minimal fishery exports indicate that this sector has not been optimally managed (Sambas Fisheries Office, 2020).

Sambas Regency, which borders East Malaysia directly, has great maritime potential. This district has a coastline of 198.76 km and a water area of up to 26,000 km². Fishery production in Sambas Regency experienced a significant increase from 13,933 tons in 2018 to 21,741 tons in 2019, indicating great potential for further development of this sector (BPS, 2020). However, despite having great potential, the fisheries sector in Sambas Regency faces significant challenges. The low capacity of the community to utilize fishery resources sustainably, limited access to international markets, and dependence on traditional technology are the main obstacles (Ramli, 2021). Therefore, appropriate strategies are needed to optimize this sector in order to improve the welfare of the community.

In the perspective of Islamic economics, economic development must encompass spiritual, moral, and social dimensions, in addition to material dimensions (Beik and Arsyanti, 2017). This concept is based on verses from the Quran that contain the principle of balance in human life, one of which is found in Surah Quraysh (106:1-4):

لَا يَلْفُ قُرَيْشٌ^١ إِيَّاهُمْ رِحْلَةَ الشِّتَاءِ وَالصَّيْفِ^٢ فَلْيَعْبُدُوا رَبَّ هَذَا الْبَيْتِ^٣ الَّذِي أَطْعَمَهُمْ
مِّنْ جُوعٍ^٤ وَأَمَّنَّهُمْ^٥ مِّنْ خَوْفٍ^٤

The translation:

Because of the custom of the Quraysh people, (namely) their custom of traveling in the winter and summer. So let them worship the Lord of this House (Ka'bah), who has fed them against hunger and made them safe from fear." (QS. Quraysh [106]: 1-4).

This verse explains the habit of the Quraysh people who traded in two main seasons, namely the winter season to the region of Yemen and the summer season to the region of Sham (Tabari, 1992). Allah reminds them of the blessings bestowed upon them, such as the smoothness of their trade journeys, the fulfillment of their food needs, and security. As a reward, Allah commanded them to worship Him, as the Lord of the Ka'bah, the place where they seek refuge and attain glory. In resource management, including the economic sector, Islam emphasizes the importance of submission to Allah as the core of spiritual development. Economic development should not solely focus on materialism but must be integrated with the values of faith.

Islamic economics emphasizes the importance of fair distribution of results and resource management based on sustainability principles (Syahrida Ariani, 2014). In the context of Sambas Regency, the management of the fisheries sector can be carried out through collaboration between the local government, the community, and the private sector, so that the existing great potential can be optimally utilized.

The development of the fisheries sector in accordance with Islamic economic principles can also encourage the creation of new jobs and reduce poverty rates in coastal communities (Safitri, 2022). This is important for improving the living standards of the community through increased income and access to basic needs such as education and health. In addition, the optimization of the fisheries sector can also make a significant contribution to the Regional Original Revenue (PAD) and the regional GDP. According to the concept of economic base theory, leading sectors such as fisheries can become the main drivers of regional development

through the multiplier effect they generate (Arsyad, 1999). This strategy can be applied in Sambas to accelerate regional economic growth.

This research is important to identify the potential of the fisheries sector in Sambas Regency, both from the production and distribution sides, and to analyze its management based on Islamic economic principles. With the right approach, this sector can become the main driving force in improving the welfare of coastal communities while also strengthening the region's competitiveness (Siska, 2018). An approach based on Islamic economics can provide innovative solutions to address existing challenges while simultaneously creating sustainable development (Beik and Arsyianti, 2017).

B. METHOD

This research method uses a mixed methods approach, namely qualitative and quantitative. The qualitative approach is used to deeply understand the dynamics of the fisheries sector in Sambas Regency, particularly in the context of managing fisheries potential and development strategies. Qualitative data collection was conducted through in-depth interviews with key informants, such as fishermen, shrimp farm entrepreneurs, government officials, and community leaders. In addition, direct observation of fishing activities in coastal areas was also conducted to obtain more accurate contextual data. This qualitative approach is also complemented by a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to identify the strengths, weaknesses, opportunities, and threats affecting the fisheries sector. This SWOT analysis helps to illustrate the internal and external conditions of the fisheries sector that are relevant to support more effective development and management strategies.

The quantitative approach is used to measure and analyze the relationships between variables using numerical data. Quantitative data were collected through surveys with structured questionnaires distributed to respondents selected using purposive sampling techniques. Respondents include coastal communities involved in the fisheries sector, such as fishermen and fish farmers. Quantitative data analysis was conducted using descriptive statistics methods to depict the general condition of the fisheries sector. Additionally, Location Quotient (LQ) and Shift-Share (SS) analyses are used to determine the basic sector and identify changes in the contribution of the fisheries sector to the regional economy. This approach aims to provide a deep understanding of the potential of the fisheries sector as well as a strong foundation for data-based policy-making. The combination of these methods is expected to provide comprehensive insights to address the research problems.

C. DISCUSSION

The Potential of the Fisheries Sector in the Sambas Regency Based on the Location Quotient (LQ) and Shift Share (SS) Approaches

a. Analysis Results LQ (*Location Quotient*)

The Location Quotient (LQ) analysis aims to identify the basic sectors that play an important role in the regional economy. Based on the GDP data of Sambas Regency from 2015–2019, the fisheries sector has an average LQ value of 2.75 ($LQ > 1$), indicating that this sector is a basic sector. This means that the fisheries sector has a significant contribution to the local economy and is capable of producing a surplus that can be exported to other regions. This shows that Sambas Regency has a comparative advantage in the fisheries sector compared to other areas in West Kalimantan Province.

The high LQ value also reflects the importance of this sector as the main support for the economic activities of coastal communities. With a potential of 6,457.6 hectares of ponds, aquaculture in an area of 1,845 hectares, and the presence of the Nusantara Fishery Port (PPN) Pemangkat, the fisheries sector in Sambas continues to develop as one of the leading sectors in the coastal region.

DLQ (Dynamic Location Quotient) analysis is used to project the future prospects of the base sector. The DLQ results for the fisheries sector show a value of 1.17 ($DLQ > 1$), indicating that the fisheries sector is not only a current base but also prospective for future regional economic development. This means that this sector has the potential to continue developing and become a major driver of economic growth in Sambas Regency, both through local markets and exports to other regions.

b. Analysis Results *Shift Share* (SS):

The Shift Share approach is used to identify the contribution of the fisheries sector to economic growth by comparing the performance of the region with the provincial economy. The analysis results show:

- 1) National Growth Component (Nij): The fisheries sector contributed positively with Rp115,004 billion to the economic growth of Sambas Regency. This indicates that the local economy is still greatly influenced by the economic growth at the West Kalimantan Province level.
- 2) Industrial Mix Component (Mij): The fisheries sector has an industrial mix component of -Rp40.422 billion (negative). This indicates that although this sector is a basic sector, its growth is still slower compared to the fisheries sector at the provincial level. This condition highlights the importance of intervention and innovation to accelerate the growth of this sector.
- 3) Competitive Advantage Component (Cij): The fisheries sector has a competitive advantage with a positive value of Rp2.648 billion. This indicates that this sector has high competitiveness and potential for continuous growth.

The fisheries sector contributes an average of 4.5% to the total GRDP of Sambas Regency (2015–2019). Although its contribution appears small compared to the agricultural sector (30%), the fisheries sector shows a steady increasing trend each year. In 2019, this sector contributed Rp598.75 billion to the total GDP. The increase in the contribution of the fisheries sector can be optimized through the development of capture technology, intensive cultivation, and diversification of fishery products. Sambas Regency has a coastline of 198.76 km, four main rivers (Sambas River, Selakau River, Paloh River, and Sebangkau River), and a marine ecosystem rich in catches such as skipjack tuna, red snapper, and lobster. This potential is supported by infrastructure such as productive shrimp ponds in Paloh District, which produce up to 1,200 tons per cycle per year, as well as the Pemangkat Fish Auction Market, which facilitates the marketing of catch.

This research is in line with the study conducted by Hasbiullah (2015), which highlights that leading sectors based on natural resources, such as fisheries, make a significant contribution to economic growth in coastal areas. Additionally, the study by Mangilaleng et al. (2015) also shows that primary sectors such as fisheries have great potential to create jobs, encourage investment, and improve the welfare of local communities. The results of this study reinforce that the fisheries sector in Sambas Regency has a comparative advantage that not only meets local needs but also contributes to regional exports, as found by Taringan (2006) in his

study on regional economics. In this context, LQ and SS analysis provide strong evidence that the fisheries sector in Sambas Regency is a leading sector with potential for sustainable development.

The management of fishery resources in Sambas Regency is based on the principle of sustainability, aiming to preserve the fishery ecosystem and ensure its availability for future generations. The potential of the fisheries sector, such as shrimp farms in Paloh District and capture fisheries resources in PPN Pemangkat, is managed in an environmentally friendly manner with attention to sustainability aspects. The practices implemented include:

- 1) Conservation of fishery habitats: The protection of ecosystems such as mangroves, coral reefs, and seagrass beds, which serve as nursery grounds and fish habitats.
- 2) Application of environmentally friendly technology: In shrimp farming, an intensive system is used to maximize production without harming the environment. Partnerships with cooperatives such as the Paloh Jaya Fishermen's Cooperative help manage ponds efficiently and ensure ecological balance.

Although the fisheries sector in Sambas Regency has great potential, there are still several challenges that need to be addressed, including:

- 1) Dependence on weather: Capture fisheries activities are greatly influenced by weather conditions, which are often unpredictable.
- 2) Lack of access to financing: Many small fishermen face limitations in accessing capital to increase production capacity.
- 3) Education and environmental awareness: Many fishermen still do not understand the importance of sustainable fisheries resources and tend to exploit them excessively.

This research is consistent with the findings of Dahuri et al. (2001), which emphasize the importance of integrated coastal zone management to achieve community welfare while preserving the environment. Furthermore, Nikijuluw's (2002) research highlights the importance of collaboration between local communities and the government to manage fishery resources sustainably.

Strategy for Managing the Potential of the Fisheries Sector in the Economic Growth of the Border Coastal Areas in Sambas Regency

The strategy for managing the fisheries sector in Sambas Regency needs to be designed to maximize the potential of existing resources and address various challenges faced by coastal communities. This approach is carried out by considering a SWOT analysis (Strength, Weakness, Opportunity, Threat) to determine sustainable strategic steps. The implementation of this strategy is aimed at supporting the economic growth of the country's border regions, improving the welfare of the community, and maintaining the sustainability of the fishery ecosystem.

a. SWOT Analysis of the Fisheries Sector in Sambas Regency

Based on the results of interviews, field observations, and available data, here is the SWOT analysis that forms the basis for the fisheries sector management strategy:

- 1) **Strength:**
 - a) Strategic location with a coastline of 198.76 km directly bordering the Natuna Sea and Malaysia, allowing direct access to international markets.
 - b) Supporting infrastructure, such as the Nusantara Fishery Port (PPN) Pemangkat with cold storage facilities, ice factory, and adequate pier.

- c) The potential of the ponds is vast, with an area of 6,457.6 hectares for shrimp ponds and 1,845 hectares for pond aquaculture.
 - d) The diversity of fishery products, such as sea fish (skipjack, red snapper), shrimp, lobster, and even jellyfish, which have high economic value.
- 2) **Weakness:**
- a) The fishing technology used by fishermen is mostly still traditional, resulting in suboptimal catch yields.
 - b) Market price fluctuations and dependence on certain seasons cause instability in fishermen's income.
 - c) The lack of access to business capital and financing, especially for small fishermen and shrimp farmers.
 - d) The low education level of coastal communities, resulting in slow adoption of new technology.
- 3) **Opportunity:**
- a) The potential for exporting fishery products to neighboring countries, such as Malaysia and Singapore, through more efficient sea routes.
 - b) Government support through border economic development policies and fishermen empowerment programs.
 - c) The global trend towards environmentally friendly fishery products provides an opportunity to develop sustainable intensive aquaculture.
 - d) The potential of coastal tourism that can be combined with the fisheries sector, such as mangrove ecotourism and educational shrimp ponds.
- 4) **Threat:**
- a) Climate change and environmental degradation that threaten the sustainability of fishery resources.
 - b) Competition from fishermen from outside the region and imported products that can suppress the prices of local fishery products.
 - c) Overfishing due to lack of supervision and environmental awareness
 - d) High dependence on intermediaries in marketing catch results, which can harm fishermen.

Table 1. Results of Internal and External Factor Identification

Internal Factor	External Factor
<i>Strenght</i>	<i>Opportunity</i>
1. The great potential of capture fisheries	1. Availability of market access for fishery products
2. The availability of human resources as support for the fisheries sector	2. The availability of physical facilities and infrastructure supporting the fisheries sector
3. Increase in demand for fishery sector production	3. Government production facility assistance program
4. Diversity of types of capture fishery production	4. The opening of other business opportunities related to the fisheries sector
5. The existence of institutionalized fishermen groups	The existence of financial institutions

<i>Weakness</i>	<i>Treats</i>
1. Most fishermen are traditional fishermen.	1. The presence of pollution and damage to the marine ecosystem
2. The limited capacity for handling and processing fishery products	2. The planning and implementation policies for the development of the fisheries sector have not been carried out in an integrated manner.
3. The production of capture fisheries is seasonal.	3. The lack of investment in the fisheries sector
4. The length of the marketing channel for fishery products	4. High fuel prices
	5. The presence of illegal fishing
	6. Insufficient information regarding fisheries sector data

Source: Data processed, 2024

b. Management Strategy Based on SWOT

Based on the SWOT analysis, here are the strategies for managing the fisheries sector to encourage economic growth in the coastal areas of Sambas Regency:

1) Strategy SO (Strength-Opportunity):

- a) **Strengthening Production and Technology Capacity:** Utilizing strategic locations and the vast potential of ponds to increase production with environmentally friendly technology, such as the biofloc system in vannamei shrimp farming.
- b) **Export Market Expansion:** Optimizing trade relations with neighboring countries, such as Malaysia, to increase the export of fishery products, particularly shrimp and lobster.

2) WO Strategy (Weakness-Opportunity):

- a) **Empowerment of Fishermen and Shrimp Farmers:** Through training, access to financing, and partnership programs with fishermen's cooperatives, such as the Paloh Jaya Fishermen's Cooperative.
- b) **Diversification of Fishery Products:** Increasing added value through the processing of fishery products into processed products (canned fish, fish floss, shrimp crackers) oriented towards local and export markets.

3) ST Strategy (Strength-Threat):

- a) **Sustainable Management:** Conducting coastal ecosystem conservation, such as mangrove rehabilitation and banning fishing in coral reef zones to reduce the risk of overfishing.
- b) **Improvement of Logistics Infrastructure:** Enhancing transportation access from production centers to main markets to reduce dependence on intermediaries.

4) WT Strategy (Weakness-Threat):

- a) **Participatory Approach in Management:** Involving all stakeholders, including fishermen, local governments, universities, and NGOs, to raise awareness of the importance of sustainable management.
- b) **Implementation of Monitoring and Evaluation System:** Developing an integrated monitoring system to ensure the sustainability of fishery resources and reduce the impact of climate change.

The strategies formulated above are expected to have a positive impact on the economic growth of Sambas Regency, such as:

- 1) Coastal Area GDP Growth: Increasing the contribution of the fisheries sector to the GDP of Sambas Regency, which currently averages 4.5%.
- 2) Job Creation: The development of intensive shrimp farms and the diversification of fishery products can absorb local labor, reducing unemployment in coastal areas.
- 3) Fishermen's Welfare: With better access to financing and markets, fishermen's incomes are expected to be more stable and increase, thereby realizing the welfare of coastal communities.
- 4) Environmental Sustainability: The application of environmentally friendly technology and the rehabilitation of coastal ecosystems will support the sustainability of fishery resources.

The results of this analysis are in line with the study by Dahuri et al. (2001), which emphasizes the importance of integrated management to support coastal area development. The study by Mangilaleng et al. (2015) also revealed that strengthening base sectors such as fisheries can accelerate local economic growth. Moreover, these findings are consistent with Pomeroy's (1997) research on community-based management, which shows that active stakeholder involvement can enhance the effectiveness of sustainable fisheries resource management.

D. CONCLUSION

The potential of the fisheries sector in Sambas Regency is very large due to its strategic geographical location, including coastal areas, three River Basin Areas (DAS), and the presence of the Nusantara Fishing Port (PPN) in Pemangkat District. The Location Quotient (LQ) analysis shows that the fisheries sector is a basic sector with an average LQ of 2.75 ($LQ > 1$), affirming its significant role in the regional economy. Additionally, the Dynamic Location Quotient (DLQ) result of 1.17 ($DLQ > 1$) indicates the future development prospects of this sector. The Shift Share Analysis, which shows a positive value, further emphasizes the potential of the fisheries sector as a key driver of economic growth in Sambas Regency. For sustainable management, the application of resource, cultural, economic sustainability principles, as well as accountability and transparency, is required. The recommended strategies based on the SWOT analysis include the improvement of facilities and infrastructure, technology development, empowerment of human and institutional resources, as well as strengthening extension or training programs. The local government is expected to collaborate with relevant institutions and academic entities to maximize the potential of this fisheries sector, so that it remains a foundational sector supporting the sustainable economic growth of Sambas Regency.

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