

The Booming Vaname Shrimp Farms: Analysis of the Impact on the Economic Well-Being of Coastal Communities in Bengkalis Regency

Nageeta Tara Rosa¹, M. Alkadri Perdana², Retno Saputri³

Politeknik Negeri Bengkalis, Indonesia

id.nageeta@gmail.com¹, m.alkadri.perdana@gmail.com², retnosaputriiii03@gmail.com³

Abstract

The booming phenomenon of vannamei shrimp farming in Bengkalis Regency has become one of the fisheries sectors that enhances the welfare of coastal communities. This research is unique in its focus on the socio-economic and environmental dimensions of shrimp farming in Bengkalis Regency, which plays a dominant role in shrimp production across Riau Province. The literature review was conducted systematically through the selection of academic journals, statistical reports, and government documents to obtain a comprehensive understanding of aquaculture development and its sustainability aspects. The results show that vannamei shrimp farming increases income, creates jobs, and shifts community livelihoods from traditional sectors to more promising aquaculture sectors. This success is supported by the strategic geographic location of Bengkalis, the availability of aquaculture land, and stable market demand. However, several challenges remain, including limited funding access, high feed prices, seed fluctuations, and suboptimal environmental management. In conclusion, the development of vannamei shrimp farming in Bengkalis will provide sustainable benefits if managed optimally and supported by effective government policies. Collaboration between local communities, the government, and the private sector is also crucial to ensure that this sector continues to drive sustainable coastal economic growth.

Keyword : Booming, Shrimp Farming, Community Welfare, Coastal Communities

1. INTRODUCTION

Indonesia is an archipelagic country with the second longest coastline in the world, giving it tremendous potential in terms of marine and fishery resources. Coastal areas play an important role for local communities as a source of livelihood through fishing and aquaculture. One form of exploitation is aquaculture or fish and shrimp farming in ponds. If managed optimally, this sector can improve the social and economic conditions of coastal communities. This is due to increased production that not only meets food needs but also directly supports the improvement of community welfare, including in coastal areas with abundant fishery potential such as Bengkalis Regency.

Based on data from the Bengkalis Regency Central Statistics Agency (BPS) in 2023, the area of Bengkalis Regency is 8,628.054 km² or 862,805.4 Ha, consisting of coastal areas, small islands and offshore waters. The 2024-2045 Bengkalis Regency Long-Term Development Plan (RPJPD) document states that this region has three islands, namely Rupat Island, Beting Aceh Island, and Bengkalis Island. Bengkalis Regency has a geographical character consisting of coastal islands and mainland areas. Bengkalis Island covers Bengkalis District and Bantan District, with a land area and surrounding waters reaching 938 km² or equivalent to 93,840 hectares. Meanwhile, Rupat Island, which consists of Rupat District and North Rupat District, has a land area and waters of 1,514.99 km² or around 151,499 hectares. Other coastal areas include Bukit Batu District, Siak Kecil District, and Bandar Laksamana District with a total area of 2,722.27 km² or 272,227 hectares, located around the waters of the Pakning Strait connecting Bengkalis Island and Merbau Island in Meranti Islands Regency. The Bengkalis mainland is located on the island of Sumatra, covering the districts of Mandau, Pinggir, Bathin Solapan, and Talang Muandau, which have undulating terrain covering an area of 3,284.04 km² or 328,404 hectares. This geographical position is reinforced by its

location directly bordering the Malacca Strait to the north and east, making it an important asset in the development of the marine, fisheries, and aquaculture sectors, including vaname shrimp ponds.

Shrimp farming, especially the vanamei species, has now developed into one of the leading fisheries sectors in Bengkalis Regency. Vanamei shrimp have promising market prospects with stable demand both domestically and internationally. This condition has encouraged coastal communities to make vanamei shrimp their main commodity in shrimp farming. This potential is reflected in the wide distribution of shrimp ponds across various subdistricts, such as Bantan, Bengkalis, Bandar Laksamana, Bukit Batu, Rupert, and North Rupert. In addition, the existence of sea transportation infrastructure also supports the mobility of fishery products. Bengkalis Regency is also equipped with sea transportation facilities in the form of medium-class cargo ships, Roll on Roll off (Roro) passenger ferries, speedboats, and small to medium-sized ships. On Bengkalis Island, there are two major ports, namely the main port of Bandar Sri Laksamana and the port of Bandar Sri Setia Raja in Selat Baru, which serve international routes (Ajijah, 2021).

Despite its great potential, vaname shrimp farming in Bengkalis Regency is not without its challenges. This situation highlights the need for a more in-depth study to understand how this sector contributes to community welfare, the factors that support its success, the obstacles it faces, and its development potential in line with the principles of sustainable economic development.

Based on the background description above, this study was conducted to assess the contribution of shrimp farming, particularly vaname shrimp, in improving the economic welfare of coastal communities in Bengkalis Regency. In addition, this study aims to identify factors that support the success of farming businesses, obstacles faced by farmers, and opportunities for developing this sector within the framework of sustainable coastal development. The results of this study are expected to provide practical and theoretical benefits for the development of aquaculture, particularly vaname shrimp, and serve as important input for local governments in formulating policies to improve the community's economy through the optimal and environmentally friendly use of coastal resources. Therefore, a more in-depth study is needed on *The Booming Vaname Shrimp Farms: Analysis of the Impact on the Economic Well-Being of Coastal Communities in Bengkalis Regency*

2. REVIEW OF LITERATURE

To provide a solid basis for analysis, the literature review in this study was compiled by referring to basic theories and relevant previous studies. This literature review is expected to clarify and strengthen the results of the discussion.

The phenomenon of a boom

- a. The booming phenomenon is a condition when a sector of the economy, industry, or trend experiences a rapid surge over a short period of time. Fluctuations in aggregate demand can cause business cycles, including periods of boom. According to him, government intervention through fiscal and monetary policy can stabilize the economy during periods of expansion and contraction (Keynes, 1936). Long-term economic growth is primarily determined by internal factors such as investment in human capital, innovation, and knowledge. Thus, a boom can occur as a result of increased investment in research and development as well as education (Romer, 1990).
- b. Shrimp ponds are places used for shrimp farming and are generally located in coastal areas (Jeanua et al., 2014). This farming is carried out by utilizing ponds as a medium for shrimp to grow and develop. The water used in ponds can be brackish water, seawater, or fresh water, depending on the type of shrimp and location conditions, although in general ponds are more commonly found in coastal areas (Kusrini et al., 2016).

- c. Community welfare reflects a group of individuals as seen from their standard of living. The concept of welfare can be measured by four main indicators, namely security, material welfare, freedom, and identity (Syamsuri, 2018).
- d. Coastal communities are social groups that live in transitional areas between land and sea, whose livelihoods are highly dependent on coastal and marine resources. This area is a transition zone that marks the shift between land and sea, where most of the community lives by managing coastal and marine resources, either directly or indirectly (Danilwan et al., 2022).

3. METHOD

This study uses a qualitative descriptive method that aims to provide an overview of the impact of vaname shrimp farming on the economic welfare of coastal communities in Bengkalis Regency. Data was collected through literature studies from various sources such as scientific journals and related articles. Data analysis was conducted descriptively, namely by grouping and interpreting the information obtained, then relating it to previous theories and research findings. With this approach, the study is expected to provide a comprehensive understanding of the contributions, supporting factors, obstacles faced, and potential for the development of vaname shrimp ponds in Bengkalis Regency within the framework of sustainable development.

4. RESULT & DISCUSSION

4.1 The Impact of Shrimp Farming Business on the Economic Welfare of Coastal Communities in Bengkalis Regency

Based on the results of an analysis of the impact of Vaname shrimp farming on the economic welfare of coastal communities in Bengkalis Regency, it can be seen that Vaname shrimp farming in Bengkalis Regency contributes significantly to improving the welfare of coastal communities. Data shows that shrimp pond production in Bengkalis can reach 200-250 tons per month, a figure that makes this sector one of the pillars of the coastal economy. This high production scale has a direct impact on increasing the income of coastal communities, both those who work as farmers and those who work as supporting labor in the production chain. In addition, pond farming also creates a multiplier effect on other sectors, such as feed distribution, harvest transportation, and fishery product processing.

Apart from adding to the source of income, the existence of vaname shrimp ponds has opened up many new job opportunities. Communities that previously depended on traditional sectors such as fishing are now starting to shift to the aquaculture sector, which is more promising economically. This shift in livelihoods shows that aquaculture is not just a production activity, but also an important instrument in driving the socioeconomic transformation of coastal communities. Thus, the vaname shrimp farm boom has become a driving force for improving the welfare of the people of Bengkalis.

These findings are in line with the results of research conducted in Tapak Kuda Village, which shows that shrimp farming has a positive impact on increasing community income and living standards, as well as being an effective economic development strategy in coastal areas (Pratama & Zuska, 2022). In addition, research conducted in Pantai Gading Village also shows that the development of vaname shrimp ponds has an impact on improving welfare indicators such as income, education, and community health through the utilization of non-productive land as a new source of income (Sutoyo et al., 2022).

Compared with other coastal regions in Indonesia, the situation in Bengkalis demonstrates a similar pattern of livelihood transformation, but with distinct community-based characteristics. The shrimp farming sector here is still dominated by small- and medium-scale farmers relying on traditional systems, while other regions have begun to integrate more modern and capital-intensive approaches. This comparison highlights

Bengkalis's unique position, where shrimp farming contributes directly to household income growth, despite challenges in access to technology and institutional support.

Table 1. Shrimp Production List in Riau Province

Regency/Municipality	Shrimp	
	Volume (Ton)	Value (000 Rp)
<i>Regency</i>		
Kuantan Singingi	-	-
Indragiri Hulu	-	-
Indragiri Hilir	-	-
Pelalawan	13,00	1.170.000
Siak	342,84	30.855.510
Kampar	-	-
Rokan Hulu	-	-
Bengkalis	3.149,70	213.042.249
Rokan Hilir	-	-
Kepulauan Meranti	3,00	240.000
<i>Municipality</i>		
Pekanbaru	-	-
Dumai	70,69	4.855.885
Riau	3.579,23	250.163.644

Source: Riau Province Central Statistics Agency, 2025

Based on data from the Riau Province Central Statistics Agency in 2025, Bengkalis Regency was recorded as the highest contributor to shrimp production volume in Riau Province, amounting to 3,149.70 tons with a production value of Rp213.04 billion. This figure places Bengkalis far above other regions such as Siak (342.84 tons) and Dumai (70.69 tons). Bengkalis' dominance in Riau's total shrimp production of 3,579.23 tons shows that more than 87% of Riau's shrimp production comes from Bengkalis. This data reinforces that the shrimp farming sector in Bengkalis is not only important for the local community but also a key contributor to the province's fisheries economy. With an economic value of hundreds of billions of rupiah, the presence of shrimp farms significantly contributes to improving the welfare of coastal communities while strengthening the region's competitiveness in the regional economy.

4.2 Supporting Factors for the Success of Vannamei Shrimp Farm Cultivation in Bengkalis Regency

The success of vaname shrimp farming in Bengkalis Regency cannot be separated from a number of interrelated supporting factors. These factors provide competitive advantages for the region and encourage improved welfare for coastal communities.

a. Strategic Geographical Location

Bengkalis' strategic geographical location, bordering the Malacca Strait, facilitates the distribution of aquaculture products to both domestic and international markets. This condition provides added value as international shipping lanes become a potential export gateway for local fishery products.

b. Availability of Aquaculture Land

Bengkalis has extensive aquaculture land in coastal areas, such as in the districts of Bantan, Bengkalis, Bukit Batu, and Rupert. The vastness of this land allows for the development of large and small-scale aquaculture businesses, giving the local community more opportunities to get involved.

c. Market Demand

Market demand for vaname shrimp is high, both domestically and for export. Neighboring countries such as Malaysia and Singapore, as well as several regions such as Medan, Jambi, and Jakarta, are the main destinations. This makes vaname shrimp a promising commodity in economic terms.

d. Support from Local and Central Government

Both local and central governments support the development of vaname shrimp farms through assistance programs, promotion of regional potential, and efforts to open up market access. This support strengthens the community's capacity to manage farms while increasing the competitiveness of products in the global market.

4.3 Obstacles in Vaname Shrimp Farming in Bengkalis Regency

Despite its great potential, the vaname shrimp farming business in Bengkalis still faces a number of serious obstacles. One of the main problems is the high price of feed and fluctuations in the price of seeds, which are the biggest operational burden for farmers. This situation has resulted in slim profit margins for farmers. In addition, limited access to capital and modern technology also hinders small farmers in increasing their productivity. From an environmental perspective, poorly managed shrimp farming activities cause a number of serious problems. Organic waste in the form of feed residues, shrimp feces, and chemicals from the maintenance process are often discharged directly into the water without prior treatment. This condition triggers a decline in water quality and poses a risk of pollution that can disrupt the surrounding marine ecosystem.

The clearing of land for shrimp farms by cutting down mangrove forests also causes damage to coastal ecosystems. Mangroves, which should function as natural buffers against abrasion, waste filters, and habitats for coastal biota, are increasingly threatened. The loss of mangroves not only accelerates abrasion but also reduces the environmental carrying capacity for aquaculture activities. Several previous studies have emphasized the importance of sustainable management in shrimp aquaculture. ProdesaNews (2023) noted that poor waste management and mangrove conversion in Bengkalis can threaten long-term ecosystem balance. In addition, Kusri et al. (2016) suggested that digital water quality monitoring systems could serve as effective mitigation strategies to reduce environmental impact while maintaining productivity. These findings indicate that implementing sustainability-based management practices is essential to balance economic growth and environmental protection in Bengkalis. The obstacles to shrimp farming in Bengkalis are not only economic but also ecological. Without proper waste management and protection of the mangrove ecosystem, the competitiveness and sustainability of the aquaculture sector will be difficult to maintain. This assessment emphasizes the importance of implementing environmentally friendly technologies to maintain a balance between economic benefits and coastal environmental sustainability.

4.4 Opportunities for Developing Vannamei Shrimp Farming in Supporting Sustainable Economic Development

The potential for developing vaname shrimp farming in Bengkalis Regency remains vast, especially if guided by the principles of sustainability. With a production capacity that has reached hundreds of tons per month, Bengkalis has the opportunity to become one of the largest centers of vaname shrimp production in Sumatra. The local government has also encouraged increased production and expanded access to exporting aquaculture products as an effort to strengthen the local economy. This shows that the vaname shrimp farming sector is not only capable of increasing community income, but also plays an important role in helping to improve the welfare of coastal communities.

In addition to promising market potential, the development of this sector can be achieved through the application of technological innovations and environmentally friendly farming standards. For example, the use of a digital technology-based water quality monitoring system can help increase productivity while maintaining crop quality. On the other hand, mangrove restoration and aquaculture waste management policies are important steps to maintain the balance of the coastal ecosystem. By integrating economic, technological, and environmental strategies, vaname shrimp farming in Bengkalis has the potential to become a leading sector that is not only oriented towards short-term profits but also in line with the principles of sustainable economic development.

Efforts to develop shrimp farms in Bengkalis have attracted the attention of both local and central government, although the results are still not entirely optimal. The Bengkalis Regency Government has taken a number of steps to support the development of shrimp farming, but its implementation still faces serious obstacles. The Regent of Bengkalis even brought the issue of pond management and fishermen directly to the Ministry of Maritime Affairs and Fisheries (KKP) in 2025, emphasizing the need for regulatory support, capital facilities, and strengthening the distribution network for pond products. Although there are no regulations that specifically regulate shrimp ponds, aquaculture activities in Bengkalis remain within the scope of a number of relevant national and regional regulations, namely Law Number 32 of 2009 concerning Environmental Protection and Management, Government Regulation Number 22 of 2021 concerning the Implementation of Environmental Protection and Management, and Law No. 1 of 2014 concerning Coastal Zone and Small Island Management. However, weak supervision has resulted in regulations only being implemented normatively, without any real effect in the field. In other words, the existence of regulations does not automatically guarantee the sustainability of aquaculture if there is no monitoring system and strict sanctions. The main problem lies not in the lack of regulations, but in the weak consistency of implementation and supervision.

The development of vaname shrimp ponds in Bengkalis is largely determined by the region's ability to bridge economic potential with sustainability demands. High production and a large market do indeed open up great opportunities, but without adequate waste management and protection of the mangrove ecosystem, these advantages could turn into threats. Existing regulations already provide guidelines for shrimp farming activities, but implementation in Bengkalis still depends on the extent to which the local government is able to enforce the rules and encourage compliance among the community and shrimp farming businesses. Through collaboration between the community, government, and private sector, vaname shrimp farming in Bengkalis has the potential to become a pillar of sustainable coastal economic development, while also addressing social, economic, and environmental challenges in an integrated manner.

5. CONCLUSION

Vaname shrimp farming in Bengkalis Regency has made a significant contribution to improving the economic welfare of coastal communities through job creation, increased income, and a shift in livelihoods from traditional sectors to the more promising modern aquaculture sector. This success is supported by Bengkalis' strategic geographical location and high domestic and export market demand. However, a number of obstacles such as limited access to capital, inadequate infrastructure, fluctuations in feed prices, disease outbreaks, and suboptimal environmental management pose serious challenges to the sustainability of pond farming businesses. Therefore, vaname shrimp aquaculture management in Bengkalis can have an optimal impact if it is carried out based on the principles of sustainability, community support, the application of environmentally friendly technology, and appropriate government policy intervention. Increasing human resource capacity through modern aquaculture training is also an important key to supporting pond productivity. With these steps, this sector has the

potential to become a driving force for sustainable economic development in Bengkalis Regency.

Based on the research results and discussions outlined above, several recommendations can be considered as efforts to develop vaname shrimp farming in Bengkalis Regency.

1. The government needs to strengthen its support through technical assistance, access to capital, and infrastructure improvements so that the productivity of shrimp farms in Bengkalis Regency is more stable.
2. Farm management must be oriented towards sustainability with waste control and mangrove restoration to maintain the balance of the coastal ecosystem.
3. The development of this sector requires multi-stakeholder cooperation between the government, academia, the private sector, and the community to create an innovative, competitive, and sustainable vaname shrimp farming ecosystem.
4. There is a need to strengthen the regulatory system and establish stricter monitoring mechanisms to ensure that all shrimp farming operations comply with spatial planning regulations and environmental standards, while also preventing illegal practices that are detrimental to the region.

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