

Financial And Marketing Feasibility Analysis Of The Mangrove Crab Business In Kulisusu Subdistrict, North Buton Regency (Case Study Of Mrs. Wa Ode Lisnaria's Mangrove Crab Business)

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Abstract

This study aims to analyze the financial feasibility and marketing efficiency of the mangrove crab business in Kulisusu Subdistrict, North Buton Regency. The mangrove crab business is one of the economic activities of coastal communities that has the potential to increase business operators' income through the collection and marketing of mangrove crabs. However, the success of this business is greatly influenced by the business operators' ability to manage operational costs and implement an efficient marketing system. This study employs a case study approach with data collection through observation, interviews, and documentation. The data were analyzed using quantitative descriptive methods, including analysis of costs, receipts, revenue, *the Revenue-Cost Ratio* (R-C Ratio), and marketing efficiency. The results showed that the total costs of the mangrove crab business for one month amounted to Rp15,732,250, with receipts of Rp81,000,000 and revenue of Rp65,267,750. The analysis revealed an R-C Ratio of 5.1, meaning that every Rp100,000 in expenses generates Rp510,000 in revenue; thus, the mangrove crab business is deemed viable and profitable to operate. Furthermore, the results of the marketing efficiency analysis show an efficiency value of 1.85%, indicating that the mangrove crab business's marketing channels are efficient because the marketing costs incurred are relatively very small compared to the value of the products marketed. The findings of this study are expected to serve as a source of information for business operators and local governments in their efforts to develop a sustainable mangrove crab business and improve the welfare of coastal communities

Keywords: Financial Feasibility, Marketing Efficiency, *Revenue-Cost Ratio* (R-C Ratio), Mangrove Crabs, Case Study



INTRODUCTION

Indonesia is an archipelagic nation with vast potential in marine and fisheries resources. Indonesia's maritime area spans approximately 6.3 million km², comprising territorial waters and the Exclusive Economic Zone (EEZ), making the marine and fisheries sector strategically important to the national economy (Rahim et al., 2024). This potential positions Indonesia as one of the leading producers of various fishery commodities with economic value and market opportunities both domestically and internationally, such as marine fish, shrimp, shellfish, crabs, and seaweed (Nugrahaini et al., 2025). One commodity with high economic value is the mangrove crab (*Scylla* spp.), which is in high demand in both domestic and international markets, particularly in Singapore, Malaysia, China, and Hong Kong (Iromo et al., 2021). This high demand indicates that mangrove crabs offer business development opportunities and have the potential to serve as a source of income for coastal communities.

Trends in the crab trade reveal dynamic changes in export volume and value to various destination countries during the 2021–2025 period. These conditions highlight the vast market opportunities for crabs and the importance of this commodity in the trade of fishery products. In addition to their economic value, mangrove crabs possess biological characteristics and product qualities that support their market value. Mangrove crabs have a high reproductive capacity, can survive for a relatively long time after being caught, and possess a flavor and nutritional content that are in high demand among consumers. Hariyanto et al. (2024) reported that mangrove crab meat contains protein, fat, ash, and carbohydrates, giving it nutritional value that supports market demand. However, increased demand can also put pressure on wild crab populations through overfishing. On the other hand, the development of aquaculture still faces challenges in the form of limited seed stock and a shortage of experienced labor (Andayani et al., 2022). Therefore, the development of aquaculture must be supported by proper management of environmental quality, water, feed, as well as effective pest and disease control (Ningsih and Affandi, 2023).

One area developing the mangrove crab industry is Bangkudu Village, Kulisusu Subdistrict, North Buton Regency. The mangrove crab industry in this area is conducted through a *fattening* system using cages or rearing containers, as well as pond rearing. The fattening system involves rearing crabs that have not yet reached market-ready condition for several weeks, while the pond system involves rearing crabs until they reach market size. Both systems require costs for the procurement of seed stock or juvenile crabs, feed, labor, maintenance of rearing containers, and repairs to production facilities. The level of production costs will determine the revenue and profits earned; therefore, it is necessary to assess the financial





viability of the business. In addition to production aspects, marketing is also a critical factor because crabs are generally marketed through collectors or middlemen. A marketing chain involving multiple intermediaries can increase costs and marketing margins while affecting the portion of the price received by business operators. Limited market information and weak bargaining power also cause business operators to rely heavily on middlemen.

These cost and marketing issues highlight the need for an analysis that examines not only business profits but also the efficiency of the existing marketing system. Research by Parapat and Abdurrachman (2019) indicates that mangrove crab businesses utilize several marketing channels with varying costs, margins, and efficiency levels. Meanwhile, Zain et al. (2021) demonstrate that revenue and marketing analysis can be used to determine costs, receipts, revenue, channels, and the marketing efficiency of fishery commodities. From a financial perspective, Bariuddin (2024) employs financial viability indicators to assess a business's ability to generate economic benefits. These previous studies provide a basis for the importance of conducting financial and marketing analyses in assessing a business's sustainability; however, studies that integrate financial viability with an analysis of marketing channels, margins, and efficiency for mangrove crab businesses in the coastal areas of North Buton Regency remain limited.

Given these circumstances, this study was conducted to analyze the mangrove crab business in Bangkudu Village, Kulisusu Subdistrict, North Buton Regency, with a focus on financial and marketing aspects. The financial analysis covers costs, revenues, profits, and business viability, while the marketing analysis covers marketing channels, margins, and marketing efficiency. The research results are expected to provide an overview of the economic conditions of the mangrove crab business and serve as a resource for business operators and relevant parties in developing a more efficient and sustainable mangrove crab business.

METHOD

This study was conducted in Lipu Village, Kulisusu Subdistrict, North Buton Regency, in June 2026. The research location was selected through *purposive* sampling, considering that the area is home to mangrove crab farming businesses. The study employed a quantitative descriptive approach to describe business conditions and calculate production costs, revenue, income, financial viability, and marketing efficiency of the mangrove crab business.

The population in this study consisted of one mangrove crab farmer in Lipu Village. Since the population comprised only one person, the entire population served as the sample; therefore, a census was used as the sampling technique. The data used consisted of primary and





secondary data. Primary data was obtained directly from the respondent through interviews, questionnaires, observations, and documentation, covering production data, selling prices, fixed costs, variable costs, receipts, revenue, and marketing activities. Secondary data was obtained from books, journals, scientific articles, and documents or publications relevant to the study. Data collection was conducted through direct observation of business activities, interviews with respondents, and questionnaires designed based on the research's data requirements (Sahir, 2021).

Data analysis was conducted using quantitative descriptive methods through the stages of data processing, tabulation, and calculation in accordance with the research objectives. The business's financial viability was analyzed based on production costs, receipts, revenue, and *the Revenue-to-Cost Ratio* (R/C Ratio). Total production costs are the sum of fixed costs and variable costs, formulated as:

$$TC = TFC + TVC$$

Notes:

TC = total cost (Rp),

TFC = total fixed costs (Rp), and

TVC = total variable cost (Rp).

Revenue is calculated based on the quantity produced multiplied by the selling price, using the formula:

$$TR = Y \times Py$$

Explanation:

TR = total revenue (Rp),

Y = production volume (kg), and

Py = selling price (Rp/kg).

Revenue or profit is calculated based on the difference between total revenue and total production costs using the formula:

$$\pi = TR - TC$$

Explanation:

π = revenue/profit (Rp),

TR = total revenue (Rp), and

TC = total costs (Rp).

Next, the feasibility of the business is analyzed using the R/C Ratio with the formula:

$$R/C \text{ Ratio} = TR / TC$$





The criteria used are as follows: $R/C > 1$ indicates a viable and profitable business, $R/C = 1$ indicates a break-even point, while $R/C < 1$ indicates an unviable business or one that is operating at a loss.

Marketing efficiency is analyzed to determine the efficiency level of the mangrove crab marketing channel based on a comparison of marketing costs with the value of the marketed product. Marketing efficiency is calculated using the formula:

$$EP = (BP / NP) \times 100\%$$

Explanation:

EP = marketing efficiency (%),

BP = marketing costs (Rp), and

NP = sales value (Rp).

The marketing efficiency criterion used is that $EP < 50\%$ indicates an efficient marketing channel, while $EP > 50\%$ indicates an inefficient marketing channel. The lower the percentage of marketing costs relative to product value, the more efficient the marketing channel used.

RESULTS AND DISCUSSION

The study respondent was Mrs. Wa Ode Lisnaria, the owner and manager of a mangrove crab business in Lipu Village, Kulisusu Subdistrict, North Buton Regency. The respondent, is 45 years old, has a high school education, and has managed the business since 2012. The business is a family-run enterprise that was established in 1997, giving her considerable business experience. In day-to-day operations, the respondent is assisted by family members, particularly her children, in tasks ranging from holding tanks, sorting, and maintenance to the marketing of mangrove crabs.

The business is managed using personal capital of Rp100,000,000. This capital is used for procuring crabs, constructing holding tanks, purchasing equipment, feed, transportation, electricity, and other operational needs. The business has a 200 m² holding area used to house and maintain the crabs' condition before they are marketed. These characteristics provide an overview of the business's basic conditions, which serve as the context for analyzing cost structure, receipts, revenue, financial viability, and marketing efficiency.

Financial Feasibility of the Mangrove Crab Business

Financial feasibility is used to determine the mangrove crab business's ability to generate profits based on a comparison between costs incurred and revenue earned. The analysis in this study covers variable costs, fixed costs, total costs, receipts, revenue, and *the Revenue-to-Cost*



Ratio (R/C Ratio). The results show that the mangrove crab business managed by Mrs. Wa Ode Lisnaria has a cost structure dominated by operating costs, particularly the procurement of crabs as the primary raw material.

Table 1. Variable Costs of the Mangrove Crab Business in One Month, 2026

No.	Component	Volume	Price (Rp)	Total (Rp/month)
1	Crab larvae	129 kg	63,000/kg	8,127,000
2	Feed	200 kg	3,000/kg	600,000
3	Electricity	1 month	500,000	500,000
4	Water	1 month	300,000	300,000
5	Packaging	1 month	50,000	50,000
6	Marketing/transportation	1 time	1,500,000	1,500,000
	Total			11,077,000

Source: Primary Data Analysis, 2026.

Based on Table 1, total variable costs amount to Rp11,077,000 per month. The largest component is the purchase of crabs, totaling Rp8,127,000, or approximately 73.37% of total variable costs. The crabs are sourced from local fishermen and held in storage for about 15–20 days before being sold to wholesalers. Feed costs of Rp600,000 are used to purchase 200 kg of bycatch, while electricity and water costs of Rp500,000 and Rp300,000, respectively, are used to support the operation and maintenance of the holding tanks. Marketing costs of Rp1,500,000 are used to transport the crabs from Kulisusu Subdistrict to wholesalers in Kendari City. The dominance of crab procurement costs indicates that the availability and price of raw materials are important factors in determining the business's cost structure. This finding aligns with Soekartawi (2006), who noted that variable costs fluctuate with business activity and are a key component in determining operating costs.

Table 2. Fixed Costs of the Mangrove Crab Business in One Month, 2026

No.	Component	Cost (Rp/month)
1	Depreciation of storage tanks	41,667
2	Depreciation of machetes	1,083
3	Depreciation of scales	16,667
4	Depreciation of storage containers	58,333
5	Depreciation of cork	37,500

6	Labor wages	4,500,000
7	Land rent	-
	Total	4,655,250

Source: Primary Data Analysis, 2026.

Fixed business costs amount to Rp4,655,250 per month, with the largest component being labor wages at Rp4,500,000, or approximately 96.66% of total fixed costs. Meanwhile, total equipment depreciation amounts to only Rp155,250 per month. The equipment includes a storage tank, a machete, a scale, storage containers, and cork. The storage tank is a government-provided asset, so its depreciation value is calculated based on the asset's appraised value. This cost structure indicates that business expenditures are allocated more toward operations than toward investment in equipment. Furthermore, total business costs are obtained by adding variable costs and fixed costs, namely $\text{Rp}11,077,000 + \text{Rp}4,655,250 = \text{Rp}15,732,250$ per month.

Business revenue is derived from crab sales based on product volume and quality. A total of 200 kg of high-quality crabs are sold at Rp400,000/kg, generating revenue of Rp80,000,000. In addition, 10 kg of defective crabs are sold at Rp100,000 per kg, generating Rp1,000,000. Thus, total business revenue for one month amounts to Rp81,000,000. After subtracting total costs of Rp15,732,250, the monthly profit is Rp65,267,750. The amount of revenue indicates that business income is sufficient to cover all expenses and still generate a profit for the business owner. Economically, this situation indicates a significant surplus of revenue over operating costs, meaning the business has the capacity to generate a profit.

The business's viability is further assessed through the R/C Ratio. The calculation yields an R/C Ratio of 5.15, derived from comparing revenue of Rp81,000,000 with total costs of Rp15,732,250. Since this value is greater than one, the mangrove crab business is considered financially viable. This means that for every Rp1.00 in expenses incurred, revenue of approximately Rp5.15 is generated; or for every Rp100,000 in expenses, revenue of approximately Rp515,000 is generated. These results indicate that the business is capable of generating revenue that exceeds its expenses. This finding aligns with Soekartawi (2006), who states that businesses with an R/C ratio >1 are profitable and viable. Thus, the business's ability to generate relatively high revenue compared to costs is one of the factors supporting the sustainability of the mangrove crab business at the study site.

Marketing Efficiency of the Mangrove Crab Business

Marketing plays a crucial role in determining the economic value received by business operators. The study findings indicate that the marketing channel for mangrove crabs at the study site involves fishermen, collectors, and wholesalers, following the pattern: **fishermen → collectors → wholesalers**. Within this channel, Mrs. Wa Ode Lisnaria serves as a collector who purchases crabs from fishermen, stores and sorts them, and then markets them to wholesalers in Kendari City. The presence of collectors helps fishermen distribute their catch and connects the product to a broader market. This pattern aligns with Kohls and Uhl (2002), who explain that marketing institutions play a role in facilitating the flow of products through collection, storage, transportation, and sales activities.

Table 3. Marketing Efficiency of the Mangrove Crab Business in One Month, 2026

Marketing Costs (Rp)	Sales Value (Rp)	Marketing Efficiency (%)
1,500,000	81,000,000	1.85

Source: Primary Data Analysis, 2026.

Based on Table 3, marketing costs totaled Rp1,500,000, with sales revenue of Rp81,000,000. Calculations using the marketing efficiency formula yielded a value of **1.85%**. This value is well below the 50% threshold, indicating that the mangrove crab marketing channel in this study is considered efficient. The low efficiency value suggests that distribution costs are relatively small compared to the value of the marketed product. These costs are used to transport approximately 200 kg of crabs from Kulisusu Subdistrict to wholesalers in Kendari City.

The relatively short marketing channel also contributes to the low distribution costs. Fishermen can sell their catch to collectors without having to distribute it directly to more distant markets, while the collectors handle the collection, storage, sorting, and transportation of the products. These conditions demonstrate that the role of marketing institutions can facilitate distribution while ensuring the crabs remain in marketable condition. These results are consistent with Soekartawi (2002), who states that the smaller the proportion of marketing costs relative to the product's value, the more efficient a marketing channel is. With an efficiency value of 1.85%, the mangrove crab marketing system at the study site indicates that distribution costs are relatively low, thereby supporting business revenue and profits.

CONCLUSION

Based on the research results, the mangrove crab business in Lipu Village, Kulisusu Subdistrict, North Buton Regency is financially viable. The business generates revenue of

Rp81,000,000 per month with total costs of Rp15,732,250, resulting in a monthly profit of Rp65,267,750. A *Revenue-to-Cost- -Ratio* (R/C) of 5.15 indicates that every Rp1.00 spent generates revenue of Rp5.15.

From a marketing perspective, the marketing channel consisting of fishermen–collectors–wholesalers is considered efficient. The marketing efficiency ratio of 1.85% indicates that marketing costs are relatively small compared to the value of the products sold, suggesting that the marketing activities for the mangrove crab business have been conducted efficiently.

Business operators are advised to maintain the quality of mangrove crabs, improve the recording of costs and revenue, and expand their marketing networks to support increased sales volume and revenue. Local governments are expected to provide guidance, management training, and access to information and market networks for mangrove crab business operators. Future research could involve more stakeholders in the marketing chain and include analyses of *the farmer's share*, marketing margins, *the supply chain*, and business sustainability aspects to provide a more comprehensive picture of the marketing system.

REFERENCE

- Andayani, A., Sugama, K., Rusdi, I., Luhur, E. S., Sulaeman, S., Rasidi, R., & Koesharyani, I. (2022). Kajian Pengembangan Budidaya Kepiting Bakau (*Scylla* spp.) di Indonesia. *Jurnal Kebijakan Perikanan Indonesia*, 14(2), 99–110. <https://doi.org/10.15578/jkpi.14.2.2022.41-52>
- Bariuddin, A. A. (2024). Analisis Kelayakan Finansial Usaha Sarang Burung Walet (Studi Kasus Usaha Milik Bapak Rusdin) di Kecamatan Kosambi Kabupaten Muna Barat. Skripsi. Universitas Halu Oleo.
- Hariyanto, H. D., Safitri, N. M., & Firmani, U. (2024). Pertumbuhan Kepiting Bakau *Scylla serrata* pada Kolam Beton dengan Kombinasi Pemberian Pakan Berbeda. *BEST Journal (Biology Education, Sains and Technology)*, 7(1), 352–358. <https://doi.org/10.30743/best.v7i1.8627>
- Iromo, H., Rachmawani, D., Zainuddin, & Hidayat, N. (2021). *Pemanfaatan Tambak Tradisional untuk Budidaya Kepiting Bakau*. Syiah Kuala University Press.
- Kohls, R. L., & Uhl, J. N. (2002). *Marketing of Agricultural Products*. 9th Edition. Prentice Hall, New Jersey.
- Ningsih, M. A. (2020). *Kajian Usaha Budidaya Kepiting Bakau (Scylla spp.) di Desa Pallime Kecamatan Cenrana Kabupaten Bone*. Skripsi. Universitas Hasanuddin.



- Nugrahaini, A. D., Humaidi, T. R., Syahnaz, C., Agustina, J., & Mutmainah, D. N. (2025). Peran Sektor Perikanan Budidaya dalam Mendukung Ketahanan Pangan Perikanan di Provinsi Jawa Timur. *Orchidagri*, 5(1), 55–64. <https://doi.org/10.35138/orchidagri.v5i1.911>
- Parapat, E. R. (2019). Analisis Pendapatan dan Efisiensi Pemasaran Kepiting Bakau di Kecamatan Seruway Kabupaten Aceh Tamiang. *Jurnal Penelitian Agrisamudra*, 6(1).
- Rahim, A., Hastuti, D. R. D., & Malik, A. (2024). *Pembangunan Ekonomi Biru di Indonesia*. Nasya Expanding Management.
- Sahir, S. H. (2021). *Metodologi Penelitian*. KBM Indonesia. <https://repositori.ma.ac.id/handle/123456789/16455>
- Soekartawi. (2002). *Prinsip Dasar Ekonomi Pertanian: Teori dan Aplikasi*. PT RajaGrafindo Persada, Jakarta.
- Soekartawi. (2006). *Analisis Usahatani*. UI-Press, Jakarta

