Analysis of Eel (*Monopterus albus*) Export Development Strategy in South Kalimantan Province

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ABSTRACT

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| Eel is a freshwater fish that has not yet been optimally utilized in the development of Indonesia's national fisheries sector.The study aims to analyze the strategy for developing eel exports in South Kalimantan Province. This study was conducted in South Kalimantan Province covering the areas producing eel catches, collectors or suppliers and exporters, namely Hulu Sungai Utara Regency. Data analysis using SWOT analysis. The eel export strategy in South Kalimantan Province, Indonesia, especially Hulu Sungai Regency, is the largest eel producing area with Commanditaire Vennootschap (CV). Tiga A as the sole active exporter that exports live eels to the Chinese market through a distribution chain involving catchers, collectors, suppliers, and exporters. SWOT analysis places CV. Tiga A in Quadrant I (S-O), which reflects the company's solid internal strengths and significant external opportunities. This condition is a strategic foundation for the company to implement an aggressive strategy in developing sustainable live eel exports, so that it has the potential to increase competitiveness and export market growth optimally. |

Keywords: Eel, Export, Economist, Strategy

1. INTRODUCTION

The fisheries sector in Indonesia is an important part of the national food system, with great potential to support food security, increase community income, and contribute to national economic growth. As an archipelagic country with two-thirds of its area covered by seas, Indonesia possesses abundant and diverse fishery resources. This sector is categorized into two major sub-sectors: capture fisheries and aquaculture. In recent decades, aquaculture has shown significant development in marine, brackish, and freshwater environments. One of the promising freshwater commodities is eel (*Monopterus albus*), which, despite its limited domestic consumption, has high economic value and nutritional content (Mugiarto et al., 2021).

Eel is a freshwater fish that has not yet been optimally utilized in the development of Indonesia’s national fisheries sector. Rich in protein and energy, eel can be consumed either fresh or in processed forms such as dried products. Its high nutritional content positions eel as a potential source of nutritious food that may help meet community nutritional needs and contribute to efforts in preventing malnutrition (Suciati & Hasballah, 2015). However, low consumption rates in Indonesia are mainly due to cultural consumption patterns and lack of public knowledge about its health benefits.

In the global market, eels represent a high-demand export commodity. Countries such as Japan, South Korea, China, Hong Kong, and several European nations show consistently strong demand for eel imports. According to Trubus (2022), Japan alone imports between 130,000–140,000 tons of eel annually, with China as the main supplier. Meanwhile, markets in Korea, Hong Kong, and Singapore also offer considerable export opportunities for Indonesia. These market conditions indicate that eel has a wide-open export potential if supported by sustainable production and consistent supply (Ahsan et al., 2020).

Indonesia’s eel export performance in recent years has shown a positive trend. Data from the Central Statistics Agency (BPS) shows that in 2023, the export value of Indonesian eel reached USD 18.9 million, up from USD 15.4 million in the previous year. China was the largest importer, absorbing approximately 62% of the total exports. The appeal of Indonesian eels lies in their superior qualities, including soft texture, unique taste, and balanced fat content. However, to maintain and enhance competitiveness in the international market, Indonesia must comply with strict quality standards and regulations of importing countries while also improving processing facilities and the efficiency of its supply chain (Nova et al., 2020).

South Kalimantan is one of the provinces in Indonesia with great potential as a natural eel habitat, thanks to its extensive wetlands such as swamps, rivers, and lakes. Sitompul (2017) reports that the total wetland area in South Kalimantan reaches approximately 1.4 million hectares. Hulu Sungai Utara Regency, which is dominated by swamp waters, has long been known as a source of swamp fish, including eel. The eel commodity in this area plays a vital role in supporting the livelihoods of local communities. However, declining catch rates in recent years highlight the need to address ecological and anthropogenic factors that affect eel populations.

Export opportunities for eels from South Kalimantan began to materialize significantly in 2020, when a direct shipment of 1.55 tons of live eels to China was carried out via Syamsudin Noor International Airport. This marked a strategic first step in introducing South Kalimantan’s eels to the global market. These eels were wild-caught from rice fields and swamp areas in the Hulu Sungai region. Given their high protein content and the strong demand from Asian markets, eels are well-suited for further development through aquaculture initiatives and improvements in post-harvest quality (Riani & Ernawati, 2004).

Eel export data from Commanditaire Vennootschap (CV) Tiga A Banjarmasin—a type of business entity commonly used in Indonesia provides insight into the role of private companies in driving this industry forward. CV Tiga A is the most frequent and consistent eel exporter in South Kalimantan. In 2020, the company exported 4,866 kg of eels. However, there were no exports in 2021, likely due to external factors such as market regulations, importer demand, economic challenges, or the surge in COVID-19 cases at the time. The company resumed exports in 2022 with 1,654 kg, followed by a significant increase to 105,172 kg in 2023. In 2024, total exports rose further to 196,811 kg. This upward trend continued into 2025, with 24,219 kg exported during the January–February period. These data indicate that CV Tiga A Banjarmasin plays an active and growing role in the region’s eel export industry.

With rising export interest and the abundance of natural resources, South Kalimantan has the potential to become a national center for export-oriented eel production. A comprehensive strategy is needed to support this development—ranging from the management of wetland habitats, capacity-building for fisher groups, institutional strengthening, to the advancement of efficient eel aquaculture technologies. When managed sustainably, eel commodities can improve local livelihoods, increase export earnings, and enhance Indonesia’s competitiveness in the global fisheries market. This study aims to analyze the development strategy for eel exports in South Kalimantan Province.

2. material and methods

This research was conducted in South Kalimantan Province, Indonesia covering the areas of eel catch producers, collectors or suppliers and exporters. The determination of the research location was done intentionally, using the Purposive sampling method because it considered areas that have high eel production levels, areas that have a network of collectors or suppliers, and companies that export, where all three have a relationship or relationship with eel supplier locations in South Kalimantan Province, namely Hulu Sungai Utara Regency.

**Data Analysis**

SWOT analysis is used to answer the analysis of eel export business development strategies in South Kalimantan. SWOT analysis is an analysis of the internal and external conditions of an organization which will then be used as a basis for designing strategies and work programs. Internal analysis includes an assessment of strength and weakness factors. External analysis includes opportunity and threat factors. There are two approaches in SWOT analysis, namely the qualitative approach of the SWOT matrix and the quantitative approach of the SWOT matrix (Rangkuti, 2009).

The qualitative approach of the SWOT matrix as developed by Kearns displays eight boxes/cells, namely the top two cells are external factor cells (opportunities (O) and challenges (T)), while the left two cells are internal factor cells (strengths (S) and weaknesses (W)). The other four cells are strategic issue cells that arise as a result of the intersection between internal and external factors.

**Determining Factor Weights**

The next step in the SWOT analysis is to determine the factor weights, where the steps are as follows:

1. The weight of each factor is expressed in decimal form, with a total weight for internal factors of 1.00 and external factors also of 1.00. Weights are given based on the relative importance of each factor to the success of the business, while the rating reflects the level of influence of each factor.
2. Rating of strengths and opportunities: 4 = very strong; 3 = strong; 2 = quite strong; 1 = weak
3. Rating of weaknesses and threats: 1 = very weak; 2 = weak; 3 = quite weak; 4 = strong

3. results and discussion

**Export Strategy Based on SWOT Analysis**

This SWOT analysis will help identify the strengths of Commanditaire Vennootschap (CV). Tiga A in facing competition in the international market. The results of the identification and inventory are:

**1. Internal Factors**

**1) Strengths**

1. Commanditaire Vennootschap (CV). Tiga A has complete export permits and supporting facilities that meet international standards.
2. The company has its own cargo business which supports the effectiveness of export shipments.
3. Establishing a strong network with collectors and suppliers in Hulu Sungai Utara Regency, the largest eel producing area in South Kalimantan.
4. Good business relations with overseas buyers and more than five years of export experience.

**2) Weaknesses**

1. Dependence on one airline with limited capacity and quota can hinder the increase in shipment volume and delivery schedules.
2. Export human resources have dual duties with other export commodities.
3. The availability of eels is highly dependent on the fishing season in nature.
4. Dependence on one export destination country (China).

**2. External Factors**

**1) Opportunities**

1. Global demand for live eels continues to increase, especially from Japan, Korea, and others.
2. The potential of eels from other districts in South Kalimantan has not been optimally utilized.
3. Fluctuations in the dollar index strengthen against the rupiah.
4. Opportunities for additional shipments from airlines on an incidental basis.

**2) Threats**

1. Domestic and international competition.
2. Changes in export regulations.
3. Fluctuations in the dollar index weakening against the rupiah.
4. Price fluctuations in foreign markets cause prices to plummet.

Table 1. Internal factor matrix of eel export development strategy.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | **SWOT Elements** |  **Weight** | **Rating** |  **Score** |
|  | **Internal** |
| **Strength** |  |  |  |
| K1 | Have export permit and complete facilities | 0,15 | 4 | 0,60 |
| K2 | Own cargo business | 0,10 | 3 | 0,30 |
| K3 | Strong network with collectors | 0,10 | 4 | 0,40 |
| K4 | Buyer relationship and experience | 0,15 | 4 | 0,60 |
|  | **Weakness** |  |  |  |
| L1 | Only one airline is subscribed | 0,10 | 2 | 0,20 |
| L2 | Export HR dual task | 0,10 | 2 | 0,20 |
| L3 | Availability depends on season | 0,15 | 3 | 0,45 |
| L4 | Dependence on one destination country | 0,15 | 3 | 0,45 |
| Total | 1,00 |  | 3,20 |

Table 2. External factor matrix of eel export development strategy.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Code** | **SWOT Elements** | **Weight** | **Rating** | **Score** |
|  | **Eksternal** |
| **Opportunity** |  |  |  |
| P1 | Global demand is increasing | 0,15 | 4 | 0,60 |
| P2 | Eel stock from other areas | 0,10 | 3 | 0,30 |
| P3 | Dollar index fluctuations strengthen | 0,15 | 4 | 0,60 |
| P4 | Other airline opportunities are incidental | 0,10 | 3 | 0,30 |
|  | **Threat** |  |  |  |
| A1 | Domestic and international competition | 0,15 | 3 | 0,45 |
| A2 | Regulatory changes | 0,10 | 3 | 0,30 |
| A3 | Dollar index fluctuations weaken | 0,15 | 3 | 0,45 |
| A4 | Foreign market price fluctuations | 0,10 | 4 | 0,40 |
| Total | 1,00 |  | 2,40 |

In determining the eel export development policy strategy, the technique used is to find a cross strategy from the four factors, namely:

1) KP policy, a policy made by utilizing all strengths to take advantage of opportunities as much as possible;

2) KA Policy, a policy made by using existing strengths to overcome threats;

3) LP Policy, a policy made based on utilizing existing opportunities by minimizing existing weaknesses;

4) LA policy, a policy created based on defensive activities by trying to minimize existing weaknesses and avoid threats.

Next, scoring is carried out to determine the priority of fisheries development strategies. The priority strategies for fisheries development are as shown in Table 3.

Table 3. Determination of eel export development policy priorities

|  |  |  |  |
| --- | --- | --- | --- |
| **SWOT Elements** | **Relatedness** | **Score** | **Ranking** |
| Increasing export volume by utilizing own collection network and cargo facilities | K1, K2, K3, P1, P3  | 2,50 | 1 |
| Diversifying export markets to other countries (Japan, Korea, ASEAN) | K4, L4, A1, A4 | 1,90 | 2 |
| Participating in foreign trade promotion programs to expand the market | K4, P1, A2 | 1,50 | 3 |
| Expanding eel supply sources to other regions during the lean season | L3, P2, P4, K3 | 1,45 | 4 |
| Strengthening risk management in the face of price and regulatory fluctuations | A3, A4, L4 | 1,30 | 5 |
| Utilizing the strengthening dollar to increase export margins | K4, P3 | 1,20 | 6 |
| Using alternative airlines during peak export seasons | L1, P4 | 0,50 | 7 |
| Developing special export human resources so as not to have dual duties | L2, A2 | 0,50 | 8 |

**1. Strategy Calculation**

Total strategy score based on internal and external factor assessment results:

Strength (K): 0.60 + 0.30 + 0.40 + 0.60 = 1.90

Weakness (L): 0.20 + 0.20 + 0.45 + 0.45 = 1.30

Opportunity (P): 0.60 + 0.30 + 0.60 + 0.30 = 1.80

Threat (A): 0.45 + 0.30 + 0.45 + 0.40 = 1.60

Combined Strategy Score Calculation

1. S-O Strategy = Strength (1.90) + Opportunity (1.80) = 3.70
2. S-T Strategy = Strength (1.90) + Threat (1.60) = 3.50
3. Strategi W-O = Weakness (1,30) + Opportunity (1,80) = 3,10
4. Strategi W-T = Weakness (1,30) + Threat (1,60) = 2,90
5. The largest number is the S-O Strategy (3.70).
6. Determining Quadrants (SWOT Quadrant System)

Strengths – Weaknesses = 1.90 – 1.30 = + 0.60 (positive)

Opportunities – Threats = 1,80 – 1,60 = + 0,20 (positif)

Since the results are in a positive position for both, the company's strategy is in: Quadrant I (S-O): Aggressive Strategy

Opportunities

 *W - O* (- , +) *S - O* (+ , +)

0,2***CV. Tiga A***

 Kuadran III Kuadran I

WeaknessesStrengths

 Kuadran IV Kuadran II 0,6

 *W - T* (- , -) *S - T* (+ , -)

Threats

Figure 1. Quadrant of eel export development strategy

The results of the SWOT coordinate calculation, the position of Commanditaire Vennootschap (CV). Tiga A is in Quadrant I (S-O) with a value of X = + 0.60 and Y = + 0.20. This position illustrates that the company's internal strengths are greater than its weaknesses, and the available market opportunities are greater than its threats. This position is ideal because it shows that the company has a strong internal foundation and a supportive external environment for growth. The strategy implemented is the Aggressive Strategy (S-O), namely by utilizing all strengths to achieve maximum opportunities. Commanditaire Vennootschap (CV). Tiga A's Eel Export Business Development Strategy Because it is in Quadrant I, the company must use its strengths to the maximum to seize opportunities. Key Strategy Recommendations (Based on SWOT Score Ranking)

1. Increase export volume by utilizing supplier/collector network and own cargo facilities. It is expected that by strengthening cooperation with local suppliers/collectors, it can ensure continuity of supply, maximize the utilization of own cargo facilities for logistics efficiency, take advantage of high world demand and strengthening dollar exchange rate to boost profit margins.
2. Diversification of export markets to other countries with the hope of reducing export dependence on one country (for example China) by opening access to the Japanese, Korean and ASEAN markets, for example through international exhibitions or economic diplomatic channels, as well as preparing strategies to face price competition and global market fluctuations.
3. Promotion of foreign trade through programs from the Ministry or related institutions, utilizing the strength of relationships with buyers to expand networks, and anticipating regulatory changes by monitoring the latest export policies.
4. Expanding supply during the lean season by collaborating with collectors from other areas, preparing logistics for transportation from alternative areas when local eels are hard to come by and using alternative airlines if the opportunity arises.
5. Strengthening risk management by building a risk management system for price and exchange rate fluctuations, periodically evaluating market dependencies in order to respond quickly when conditions change, and using medium or long-term price contracts whenever possible.
6. Add human resources or workers to avoid duplicate tasks and take special training for export staff to be more professional and focused.

Research on the export strategy analysis approach conducted by Lilimantik (2024) in his study of dried seaweed marketing by PT. SELT Alga Indonesia. In this study, the marketing strategy was formulated through a SWOT approach that includes the strengths, weaknesses, opportunities, and threats faced by business actors in seaweed exports. The findings show that export success is highly dependent on the quality of raw materials, the sustainability of partnerships with farmers, and the company's ability to strategically utilize foreign market opportunities. This is relevant to the conditions of eel exports in South Kalimantan, which although it has great potential in terms of natural resource availability and international demand, still faces challenges in terms of marketing structure, limited post-harvest processing, and fluctuations in selling prices (Hidayah, 2024). By adopting a similar approach, namely through SWOT analysis and the preparation of marketing strategies based on internal and external conditions.

The eel export strategy as a fishery commodity requires a deep understanding of market potential, supply chain management, and technical and institutional readiness. Dekayanti et al. (2021) emphasized that although export efforts are faced with occupational safety risks and simple processing, export market demand remains high, especially from China, Vietnam, and Japan. This is an important lesson that commodities such as eels also have similar export opportunities, as long as they are able to meet international quality standards and global market needs. The eel export strategy should be directed at improving the quality of processing, quality certification, and strengthening international trade networks (Rahmayati, 2015).

4. Conclusion

Eel export strategy in South Kalimantan Province, especially Hulu Sungai Regency, is the largest eel producing area with Commanditaire Vennootschap (CV). Tiga A as the sole active exporter that exports live eels to the Chinese market through a distribution chain involving catchers, collectors, suppliers, and exporters. SWOT analysis places Commanditaire Vennootschap (CV). Tiga A in Quadrant I (S-O), which reflects the company's solid internal strengths and significant external opportunities. This condition provides a strategic foundation for the company to implement an aggressive strategy in developing sustainable live eel exports, thus potentially increasing competitiveness and optimal export market growth.

Disclaimer

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

References

1. Ahsan Mardjudo, Wika Indah Pratiwi Djamal (2020), Strategy for Developing Dried Eel Fish Business in Tinombala Village, Ongka District, Perigi Moutong Regency, Central Sulawesi Province Lecturer in Fisheries Agribusiness Study Program, Faculty of Fisheries, Alkhairaat University, Jl. Diponegoro, No. 39, Palu 94221, Central Sulawesi Indonesia. <https://www.neliti.com/id/publications/480403/strategi-pengembangan-usaha-ikan-belut-kering-di-desa-tinombala-kecamatan-ongka>
2. Dekayanti, T., Agusliani, E., & Rahayu, A. (2021). Analysis of business and marketing prospects for sea cucumbers (Holothuria sp) in Muara Kintap Village, Kintap District, Tanah Laut Regency, South Kalimantan Province. Fish Scientiae Journal, 11(1). <https://fishscientiae.ulm.ac.id/index.php/fs/article/view/174>
3. Hidayah, N. (2024). Prevalence, intensity of Gnathostoma sp. parasites and health status of eels (Fluta alba) transported through the KIPM Banjarmasin Center, South Kalimantan Province. [Thesis]. Master Program in Fisheries Science, Faculty of Fisheries and Marine Sciences, Lambung Mangkurat University. <https://digilib.ulm.ac.id/archive/digital/detailed.php?code=35498>
4. Lilimantik, E., & Husein, M. S. (2024). Dried seaweed marketing strategy of PT. Selt Alga Indonesia, DKI Jakarta Province, Indonesia. Russian Journal of Agricultural and Socio-Economic Sciences, 6(150): 133-140. <https://rjoas.com/issue-2024-06/article_14.pdf>
5. Mugiarto, L., Elrifadah, & Mukhlisah. (2021). Identification and prevalence of endoparasites (Gnathostoma sp.) in rice field eels (*Monopterus albus*) of different sizes shipped outside South Kalimantan Province. ZIRAA’AH, 46(3), 352–362. <https://ojs.uniska-bjm.ac.id/index.php/ziraah/article/view/5171>
6. Nova, T.S.D., Indra G.Y., and Yudha T.A. 2020. Identification of Male and Female Candidate Broodstock of Field Eel *Monopterus albus* (Zuiew, 1793) for Seeding Using Truss Morphometrics. Fisheries Journal. 10(2): 167-174. <https://www.researchgate.net/publication/358527786_IDENTIFIKASI_CALON_INDUK_BELUT_SAWAH_Monopterus_albus_Zuiew_1793_JANTAN_DAN_BETINA_UNTUK_PEMBENIHAN_DENGAN_MORFOMETRIK_TRUSS>
7. Rahmayati, H. M. (2015). SWOT analysis in determining the frozen shrimp marketing strategy of PT. Mustika Mina Nusa Aurora Tarakan, North Kalimantan. Galung Tropika Journal, 4(1), 60–67.

<https://www.jurnalpertanianumpar.com/index.php/jgt/article/view/28>

1. Riani, E. & Y. Ernawati (2004). Relationship between sex changes and body size of rice field eel (*Monopterus albus*). Indonesian Journal of Aquatic Sciences and Fisheries 11: 139- 144. <https://media.neliti.com/media/publications/246714-none-f7ac37e2.pdf>
2. Sitompul, E. (2017). The Effect of Relative Humidity and Polypropylene Thickness on the Shelf Life of Eel Chips (*Monopterus albus* Z.) (Doctoral dissertation, Mercu Buana University Yogyakarta). <https://eprints.mercubuana-yogya.ac.id/id/eprint/1495/>
3. Suciati, & Hasballah. (2015). Promising business prospects for eel cultivation that yield big profits. <https://pengolahanpangan.jurnalpertanianunisapalu.com/index.php/pangan/article/view/42>
4. Trubus. (2022). Looking for eel supply. <https://trubus.id/dicari-pasokan-belut>