

BUSINESS ANALYSIS OF PROCESSED JELLYFISH PRODUCTS AS A TRADITIONAL SOUVENIR FROM PALOH

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Abstract

The local community has not yet fully utilised the potential of the marine resources in Paloh Sub-district, specifically jellyfish. In addition to the high volume of jellyfish caught in the area, Paloh Sub-district's tourist attractions are always bustling with visitors. However, despite the tourism potential, there is a lack of distinctive souvenirs for tourists to take home. This presents a business opportunity for suppliers of distinctive Paloh souvenirs. Field data from this study indicate that, during the season from around February to April, processing plants in Paloh Sub-district can yield 10–40 tonnes of processed jellyfish. These products are hard to find elsewhere, making them a potential signature souvenir for Paloh Sub-district. Preserved processed jellyfish, packaged in small containers, represent an innovative, affordable product that is easy for tourists to carry. The product has a shelf life of 1–2 years. A business analysis of the jellyfish processing venture indicates that it is viable. The feasibility analysis shows total costs of IDR 1,580,000, revenue of IDR 3,150,000, a profit of IDR 1,570,000, an R/C ratio of 2.006, a production BEP of 45.14 packs, and a price BEP of IDR 17,555.6.

Keywords: local specialties, jellyfish, Paloh sub-district

INTRODUCTION

The Paloh sub-district is a region with significant potential for jellyfish harvesting. Jellyfish are a traded species and, based on the trade specialisation index, it is evident that they are an established export commodity (Murniyati, 2008). However, jellyfish have not yet been utilised to their full potential in Indonesia, meaning that a significant proportion is exported abroad. In 2010, the value of edible jellyfish exports accounted for 1.5% of the total value of Indonesia's fisheries exports. The opportunities offered by the jellyfish trade have reached communities in Sambas Regency, particularly in the villages of Temajuk, Sebus, Nibung and Tanah Hitam in the Paloh sub-district. Many residents become jellyfish fishermen between March and May. According to 2019 data

from the Sambas Regency Fisheries Department, the jellyfish population in Paloh waters exceeds 300,000, comprising helmet, moon and cendol jellyfish.

Paloh Sub-district's potential for tourism is just as impressive as its natural resources. Visitors can explore many tourist destinations in the sub-district, including Tanah Hitam Beach, Haji Sani Island, Liteng Hill, the Sebusus Mangrove Ecotourism site and the Sea Turtle Conservation Areas at Tanjung Api and Sungai Belacan beaches. They can also enjoy the beautiful beaches in Temajuk village.

Despite its abundance of tourism potential, Paloh Sub-district lacks distinctive souvenirs for tourists to take home. This presents a business opportunity for suppliers of distinctive Paloh souvenirs.

RESEARCH METHOD

The method used in this study is the quantitative descriptive method. According to Winarta (2006), the quantitative descriptive method involves analysing, describing and summarising various conditions and situations based on data in numerical form, collected from analyses, interviews or observations regarding the research problem observed in the field. Research data collection:

1. Primary data was collected through field observations using interview techniques, namely direct questioning of respondents conducted systematically. Experiments were carried out to produce the product, as the product being developed is a new product that has never existed before.
2. Secondary data was collected through the compilation of literature relevant to the research focus, sourced from books, journals, articles, reports, and data from the internet.

The data obtained was analysed by examining the results of field interviews and experiments conducted at the Fisheries and Marine Sciences Laboratory of the Sambas State Polytechnic.

1. Production costs are all the economic expenses incurred in the production of processed jellyfish. The formula for calculating total costs (Soekartawi, 2006):

$$TC = TFC + TVC$$

TC = Total Cost / Rp

TFC = Total Fixed Cost/ Rp

TVC = Total Variabel Cost / Rp

2. Revenue is the amount of money received from the sale of processed jellyfish. The formula used to calculate revenue is as follows (Soekartawi, 2006):

$$TR = P.Q$$

TR = Total Revenue/Rp

P = Price / Rp

Q = Quantity/Rp

3. The profit of the business is calculated by subtracting the total costs from the total revenue of the jellied jellyfish processing business. The profit formula is as follows (Rahim and Hastuti, 2007):

$$\pi = TR - TC$$

π = the benefits of a business specialising in processed jellyfish/ Rp

TR = total revenue / Rp

TC = total cost / Rp

4. The Revenue-to-Cost Ratio is the ratio of total revenue to total costs. According to Darsono (2008), the calculation of the revenue-to-cost (R/C) ratio is as follows:

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

5. The Break-Even Point (BEP) is a point at which a company neither makes a profit nor incurs a loss:

$$\text{BEP Production} = \frac{\text{Total Cost}}{\text{Price}}$$

$$\text{BEP Price} = \frac{\text{Total Cost}}{\text{Production Volume}}$$

RESULT AND DISCUSSION

The potential of jellyfish in Paloh Sub-district

The people of Paloh Sub-district have long utilised jellyfish as a by-catch alongside fish and prawns, as jellyfish are seasonal. The jellyfish fishing season occurs once every one to four years. Paloh Sub-district, covering an area of 1,148.28 km², comprises eight villages: Kalimantan Village, Matang Danau Village, Tanah Hitam Village, Mentibar Village, Malek Village, Nibung Village, Sebusus Village and Temajuk Village. Based on field data, only the villages of Kalimantan, Matang Danau, Mentibar and Malek do not have jellyfish processing facilities. On average, villages in Paloh Sub-district have a jellyfish processing facility during the jellyfish season.



Figure 1. The Process of Transporting Jellyfish from Fishing Boats

Table 1. Data on the Jellyfish Processing Plant in Paloh Sub-district

No	Owner	Address	total catch /day
1	Kion	Tanah Hitam	1000
2	Alex	Tanah Hitam	3000
3	Hasan	Nibung	2000
4	Ahui	Nibung	2000
5	Adi	Sebubus	1000-4000
6	Hasan	Sebubus	1000
7	Ason	Sebubus	1000
8	Nedi	Sebubus	1000
9	Sarmili	Sebubus	1000
10	Sindi	Sebubus	1000
11	Acan	Sebubus	1000
12	Halang	Sebubus	1000
13	Sapor	Sebubus	1000
14	Saleh	Sebubus	1000
15	Akong	Temajuk	2000
16	Acan	Temajuk	2000
17	Dedi	Temajuk	2000
18	Johan	Temajuk	2000
19	Anyit	Temajuk	2000
20	Doni	Temajuk	2000

Source: primary data

The volume of jellyfish processed at the processing plant depends on the fishermen's ability to catch them and the workforce available to process them. Processing of the caught jellyfish is carried out on the same day as the catch to ensure the quality of the jellyfish is maintained. In addition to labour capacity, the processing of the jellyfish catch is also influenced by the availability of salt and alum as preservatives. Salt supplies are limited, so jellyfish processing plant operators need to regulate catch volumes. Field data indicates that one jellyfish processing plant requires approximately 10 tonnes of salt and 5 tonnes of alum. The wage for carrying jellyfish is Rp.400 per jellyfish, whilst the wage for cleaning—which involves removing the slime and separating the legs from the body—is Rp.10,000 per hour.



Figure 2. The Jellyfish Processing Process at the Plant

Market Potential

Temajuk Village is one of the favourite tourist destinations in Paloh Sub-district. The village is situated at the very edge of the district and shares a direct border with neighbouring Malaysia. Natural attractions such as beaches, hills, waterfalls and the border mark are special draws for visiting Temajuk Village. The number of tourists visiting Temajuk Village in 2023 reached 40,000 (Ministry of Tourism and Creative Economy, 2024).

In addition to Temajuk Village, the tourist attractions in Sebus Village are also a draw for visitors. Along the coast of Ceremai Hamlet lies a Sea Turtle Conservation Area, situated on the shores of Sungai Belacan and Tanjung Api Beach. In the Sea Turtle Conservation Area, visitors can enjoy the beauty of the pristine beach, release hatchlings (baby turtles) and observe the turtles laying their eggs at night. Visitors usually stop off at this conservation area on their way back from Temajuk Village, as it lies along the same route.

The next popular tourist route is the coastline of Tanah Hitam Village and Matang Danau Village. Along this stretch of coastline, there are relaxation areas where visitors can enjoy the natural beauty and a variety of culinary delights from the afternoon until late in the evening.

The high number of tourists visiting Temajuk Village will also have an impact on tourist attractions in other villages, as the road to Temajuk Village passes through villages with tourism potential, such as Matang Danau, Tanah Hitam and Sebus. This is why it is important to produce processed jellyfish products to serve as food souvenirs for tourists. Processed jellyfish has become a signature souvenir of Paloh Sub-district because this product is hard to find in other areas; it is produced locally in Paloh Sub-district and has a shelf life of 1–2 years. The product can be marketed through social media promotions or direct sales in shops located near tourist attractions.

Jellyfish Product Innovations

Jellyfish in the Paloh sub-district are sold by locals in the form of processed snacks such as fruit salad—a mixture of local fruits like pineapple and cucumber, dressed with peanut sauce and topped with thinly sliced jellyfish. Such products can only be found in Temajuk Village at specific times, so tourists visiting Paloh sub-district who wish to sample jellyfish products are at the mercy of chance. Tourists can only sample them if the local community happens to be preparing the product at that time. Furthermore, there are currently no processed jellyfish products available as souvenirs.

Processed jellyfish preserved with salt and alum are generally sold in buckets containing around 10–15 kg. This is a very large quantity to take home as a souvenir, and buyers have to pay a high price for it.

Given the availability of raw materials for processed jellyfish products, it would be excellent to develop these into innovative products that could serve as distinctive local souvenirs. One such innovative product involves packaging preserved jellyfish in small containers.



Figure 3. Jellyfish Souvenirs

The packaged product is processed jellyfish preserved with salt and alum. As per the serving instructions, this jellyfish product needs to be soaked for at least 12 hours to remove the excessively salty taste. After soaking, the processed product should be dipped in boiling water for 5 seconds to ensure it is more hygienic when consumed. Leaving the jellyfish in boiling water for too long will cause the product to shrink. The jellyfish will easily dissolve, causing the product to shrink and eventually turn completely into liquid. Once these steps have been completed, the jellyfish is ready to be prepared as desired, such as used as an ingredient in vegetable dishes, mixed into fruit salads, fruit rujak, jellyfish satay, or various other dishes made with jellyfish as the main ingredient.

Feasibility Study

Based on the research findings, the costs of processing processed products are divided into fixed costs and variable costs. Fixed costs are costs that remain constant throughout the production process of processed jellyfish. Variable costs, on the other hand, are costs that vary during the production process of processed jellyfish.

$$TC = TFC + TVC$$

$$TC = \text{IDR. } 835.000 + \text{IDR. } 745.000$$

$$TC = \text{IDR. } 1.580.000$$

The total cost incurred in the production of processed jellyfish was IDR1.580.000.

Revenue from processed jellyfish is calculated by multiplying the selling price of processed jellyfish—Rp35,000 per pack—by the estimated sales volume of 90 packs.

$$TR = P.Q$$

$$TR = \text{IDR.}35.000 \times 90$$

$$TR = \text{IDR. } 3.150.000$$

The total revenue from the sale of 90 packets of jellyfish amounted to Rp 3.150.000

Profit is calculated by subtracting total costs from total revenue in the jellyfish processing industry.

$$\pi = TR - TC$$

$$\pi = \text{IDR. } 3.150.000 - \text{IDR. } 1.580.000$$

$$\pi = \text{IDR. } 1.570.000$$

Based on the above calculations, the profit from jellyfish sales amounts to IDR 1.570.000.

The revenue-to-cost ratio (R/C Ratio) is the ratio of total revenue to total operating costs in the jellyfish processing industry.

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

$$\text{R/C Ratio} = \frac{\text{IDR.}3.150.000}{\text{IDR.}1.580.000}$$

$$\text{R/C Ratio} = \text{IDR. } 2,006$$

Based on the calculation of the R/C ratio, the result is IDR 2.006, meaning that for every Rp1.00 spent, the jellyfish processing business will generate IDR2.006; therefore, this business is viable.

The Break-Even Point is the point at which a jellyfish processing business breaks even. When a jellyfish processing business reaches the break-even point, it is neither making a profit nor incurring a loss. The benefit of calculating the BEP is to avoid losses, thereby helping business owners determine the most efficient course of action for their business. This jellyfish processing business calculates the Production BEP and Price BEP as follows:

$$1. \text{ BEP Produksi} = \frac{\text{Total Biaya}}{\text{Harga Jual}}$$

$$\text{BEP Produksi} = \frac{\text{IDR.}1.580.000}{\text{IDR.}35000}$$

$$\text{BEP Produksi} = 45,14$$

The break-even point (BEP) calculation yields a figure of 45.14, meaning that the jellyfish processing business breaks even at a production level of 45–46 packets. If production exceeds this figure, the business will generate a profit

$$2. \text{ BEP harga} = \frac{\text{total cost}}{\text{production quantity}}$$

$$\text{BEP harga} = \frac{\text{IDR.}1.580.000}{90}$$

BEP harga = 17.555,6

The break-even price calculation yields 17,555.6, meaning that the processed jellyfish business will break even if sold at a price of IDR17,555.6 per pack. To make a profit, the business owner must sell at a price higher than this.

This break-even point calculation can also be used to take key steps such as developing product innovations and planning operations, thereby maximising profits.

CONCLUSION

The jellyfish processing industry in Paloh sub-district, which operates from around February to April each year, produces 10–40 tonnes per processing plant. The potential for tourism and the high number of tourist visits to Paloh sub-district present a significant opportunity for processed jellyfish to become a signature souvenir of Paloh sub-district. Producing preserved jellyfish packaged in small containers represents an innovative processed product that is easy to carry and affordable for tourists. The results of the business analysis for the jellyfish processing venture indicate that it is viable to undertake, as evidenced by the feasibility analysis showing total costs of Rp. 1,580,000, revenue of Rp. 3,150,000, a profit of IDR. 1,570,000, an R/C ratio of 2.006, a production BEP of 45.14 packs and a price BEP of IDR. 17,555.6.

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