

Analysis of Fish Cultivation Business in Cages in Tering Sub-District, Kutai Barat Regency East Kalimantan Province

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ABSTRACT

The purpose of this study was to determine the business analysis of goldfish cultivation in cages in Tering District using the Revenue Cost Ratio, Return on Investment, and Payback Period methods. This research was conducted from July to September 2022. The types of data in this research are primary data and secondary data with the data collection method using a questionnaire. The results showed that the RCR value was 1.48, ROI was 13,62%, and the payback period was 0,62. The results of business analysis research show that cultivating carp in cages is profitable.

INTRODUCTION

The economy of a country is greatly influenced by its business activities, which can either enhance or hinder its economic growth. Various types of business activities exist in a country, particularly in Indonesia, spanning sectors such as agriculture, plantations, and fisheries. One of the business activities within the fisheries sector is aquaculture.

Aquaculture is a relatively accessible activity in the fisheries sector, yet it involves competent players. Several approaches can be taken to address this, including understanding the specific aquaculture business, identifying strategic locations, understanding the market, and importantly, conducting a feasibility analysis of the aquaculture venture.

Tering Sub-district is an area with fisheries potential and business opportunities due to its location, which is traversed by the Mahakam River and serves as a route for commercial vessels. One of the fisheries businesses in Tering Sub-district is fish cultivation in cages, with an annual production of approximately 1,650.3 tons in the Kutai Barat Regency, including Tering Sub-district.

The fish cultivation business in Tering Sub-district has been running smoothly, and its continued development and optimal profitability are expected. However, until now, no feasibility analysis has been conducted on the fish cultivation business in Tering Sub-district to determine whether it is profitable, and if so, the extent of profitability achieved by the business operators.

METHODOLOGY

This study was conducted in Kampung Tering Seberang, Tering Sub-district, Kutai Barat Regency. The sampling method employed was a census, which involves including the entire population as the sample

(Sugiyono, 2008), given that there were 20 individuals in the population of goldfish cage aquaculture farmers.

Quantitative data will be analyzed using a business analysis with the following formulations:

1. Revenue Cost Ratio (RCR)

The analysis of the revenue cost ratio (RCR) is a comparison between the total revenue and total costs (Soekartawi, 2006).

$$NPV = \sum_{t=1}^n \frac{Bt - Ct}{(1 + i)^t}$$

Criteria:

- a. If $RCR > 1$, then goldfish cage aquaculture is profitable.
- b. If $RCR < 1$, then goldfish cage aquaculture is not profitable.
- c. If $RCR = 1$, then goldfish cage aquaculture neither gains nor loses.

2. Return on Investment (ROI)

ROI is a ratio that indicates the return on assets used in a business (Kasmir, 2015). The ROI method is employed to measure the effectiveness of overall operational activities and capital utilization in a company (Munawir, 2014). The formula for ROI is as follows:

$$ROI = (\text{Net Income}) / (\text{Total Assets}) \times 100\%$$

3. Payback Period

The payback period is a method to measure the time required to recover the investment expenditure of a business (Wijayanto, 2012). The formula for calculating payback period is as follows:

$$PP = (\text{Total Investment}) / (\text{Net Cash Flow})$$

RESULT AND DISCUSSION

Description of Research Location

Kampung Tering Seberang is located in Tering Subdistrict, West Kutai Regency, East Kalimantan. Kampung Tering Lama has a population of 644 people. Kampung Tering Seberang is bordered by the following areas:

- a. To the North: Mahakam River;
- b. To the South: Kampung Purworejo;
- c. To the West: Kampung Kelubaq;
- d. To the East: Kampung Jelemuq.

Respondents' Profile

1. Age

The age range of the participants in the tilapia cage farming business is 21-60 years old, with the youngest being 37 years old and the oldest being 59 years old. Age does not have a significant impact as long as an individual is within the productive age range (Makatita, 2021).

The percentage distribution of the age of tilapia cage farmers in Kampung Tering Seberang can be seen in Table 1.

Table 1. Age Distribution of Tilapia Cage Farmers in Kampung Tering Seberang.

No.	Age (years)	Number of farmers	%
1	21-30	2	10
2	31-40	10	50
3	41-50	6	30
4	51-60	2	10
Total		20	100

2. Education

The tilapia fish farming business in Kampung Tering Seberang is entirely carried out by individuals with a primary school education background. Those involved in the business with this educational background are capable of engaging in tilapia fish farming due to the continuous experience they acquire while running the business, which makes them experts in this field. In this business activity, the level of education does not significantly affect the performance of the fish farmers or business operators.

3. Business Duration

Individuals who have been engaged in a business or enterprise for an extended period of time will influence their level of productivity (professional expertise or skills). The duration of one's business experience contributes more to productivity than increasing education and openness to information (Umela, 2015). The longer the work experience a worker has, the higher the level of achievement in their work (Alwi, 2001).

The research results in Kampung Tering Seberang show that tilapia fish farmers in the floating cages have varying levels of experience as fish farmers, with their business durations ranging from one year (the youngest business age) to as long as six years (the oldest business age).

Analysis of Tilapia Fish Farming Business in Floating Cages

a. Business Costs

Tilapia fish farming business in Kampung Tering Seberang, Kutai Barat Regency, is known to have various costs, including investment costs and operational costs. The breakdown is as follows:

1) Investment Costs

The investment costs incurred in the tilapia fish farming business in floating cages in Kampung Tering Seberang include the cost of cages, scales, buckets, and shovels. The average total investment cost in the tilapia fish farming business in floating cages in Kampung Tering Seberang amounts to IDR 37,264,100, with the breakdown as follows:

Table 2. Investment Costs

No.	Description	Quantity (Unit)	Satuan	Unit Price (IDR/unit)	Economic Life (Years)	Total Cost (IDR)
1	Cage	28	Unit	1,229,500	6	440,000
2	Scale	2	Unit	145,750	4	242,750
3	Bucket	35	Unit	57,950	3	331,000
4	Nets	2	Unit	28,550	3	59,500
5	Mobile Phone	1	Unit	327,500		

Jumlah	37,264,100
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2) Fixed Costs

Fixed costs are expenses incurred periodically and their amounts remain constant, unaffected by the volume or process of business that occurs during that period (Assegaf, 2019). The average fixed costs incurred for the cultivation of carp fish in cages in Kampung Tering Seberang amount to IDR 1,753,342 per production.

Table 3. Details of Average Fixed Costs

No.	Description	Quantity (unit)	Price (IDR/unit)	Total Cost (IDR/Production)
1	Cage	28	1.209.500	1.155.033
2	Scale	2	145.750	49.833
3	Bucket	35	58.200	266.667
4	Nets	2	28.550	10.225
5	Mobile Phone	1	237.500	21.833
6	Partition nets	1	120.000	249.750
Total				1.753.342

3) Variable Costs

Variable costs are expenses that change in proportion to business activities (Assegaf, 2019). The average variable costs incurred for the catfish farming business in Keramba at Kampung Tering Seberang, including Seedlings, Feed, Plastic, Oxygen, and Labor, amount to IDR 8,912,225 per production.

Table 4. Details of Average Variable Costs

No.	Description	Unit	Quantity (/production)	Price (IDR/kg)	Total Cost (IDR/production)
1	Goldfish Fry	Individual	2,735	623	1,689,000
2	Feed	Kg	567	8,375	4,788,525
3	Plastic	Sheet	8	7,000	58,450
4	Oxygen	Tank	0,5	102,500	51,250
5	Labor	Person	1	1,500,000	2,325,000
Total					8,912,225

b. Business Production

The aquaculture business of cultivating goldfish in cages in Kampung Tering Seberang, Tering Subdistrict, Kutai Barat Regency, within a single production cycle (4 months), can yield 492.3 kg of goldfish. This production result accounts for a 10% mortality rate among the cultivated fish.

c. Revenue and Profit

The total revenue and income from the aquaculture business of cultivating goldfish in cages in Kampung Tering Seberang, Tering Subdistrict, Kutai Barat Regency, amount to IDR 15,753,600 per production, and the profit obtained is IDR 5,088,033 per production, based on the collected data.

d. Financial Analysis

1) Revenue Cost Ratio (RCR)

The RCR analysis aims to determine how much value each unit of expenditure from the business can generate in terms of revenue (Laitupa, 2013). The research results of the goldfish aquaculture business in

cages in Kampung Tering Seberang, Tering Subdistrict, Kutai Barat Regency, indicate an RCR value of 1.48. The research conducted by Liana (2015) showed an RCR value of 1.09. Maulana et al. (2020) stated that the RCR value in their research was 1.3. A value exceeding 1, according to the criteria, indicates that the business is viable and profitable.

2) Return on Investment (ROI)

The ROI analysis aims to determine the level of profit gained from each unit of initial investment in a business (Bhokaleba & Mengi, 2019). The research results of the goldfish aquaculture business in cages in Kampung Tering Seberang show an ROI value of 13.62%.

3) Payback Period

Kasmir and Jakfar (2003) state that the Payback Period (PP) method is a technique for assessing the period of time required for the return on investment in a project or business. The Payback Period value for the goldfish aquaculture business in cages in Kampung Tering Seberang is 0.62 years or 7 months 12 days. Manullang et al. (2019) stated that their calculation resulted in a Payback Period of 1.75 years, indicating a shorter return time compared to the investment period, thus making the investment feasible. Ediwodjojo & Ginting (2018) mentioned a Payback Period calculation of 4 years 3 months 12 days.

CONCLUSION

The goldfish aquaculture business in cages in Kampung Tering Seberang, Tering Subdistrict, Kutai Barat Regency, generally proves to be profitable based on the business feasibility analysis, with an RCR (revenue cost ratio) value of 1.48, ROI (return on investment) value of 13.62%, and a Payback Period of 0.62 years.

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