FINANCIAL FEASIBILITY ANALYSIS
(Case Study of Tunas Maru Catfish Enlargement Business in Poasia District Kendari City)

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ABSTRACT

This research aims to determine the financial feasibility and sensitivity of the catfish enlargement business in the Poasia District of Kendari City from a financial perspective. This research was conducted in the Poasia District of Kendari City from August 2021 to April 2022. The object of this study is the Tunas Maru catfish enlargement business. The study uses case study methods with quantitative data analysis. This research aims to determine the feasibility of catfish enlargement businesses in terms of financial aspects. Financial aspects are analyzed using the present net method value. Net B/C Ratio, Internal Rate Of Return, Payback Period, and Sensitivity Analysis. The data used in this study are primary and secondary. This study's results obtained the value of NPV =52.364.673, Net B / C = 39.3, IRR = 52%, and Payback Period = 2 years five months. This business is worth working on financially. In addition, based on the calculation of sensitivity analysis, the effort of catfish enlargement remains feasible for a 10% decrease in production.

Keywords: catfish; enlargement business; financial.

INTRODUCTION

Catfish is a type of freshwater fish cultivated and used as food for the people of Indonesia. Consumption of catfish in recent years has increased. In the past, catfish was only consumed by farming families. Now, its consumers are increasingly widespread and are loved by various circles of society. The distinctive taste of the meat and various cooking methods make catfish more attractive; even many large restaurants make it a mainstay of the menu. Previously, people only relied on catches from nature to get these fish. Now, catfish have been cultivated on a large scale, namely in earthen ponds, tarpaulin ponds, and permanent ponds. (Estellita & Andriani, 2014)

In Indonesia, especially in Kendari City, most people perceive catfish as not sound; catfish is considered a cheap fish and synonymous with dirty rearing places. However, the demand for catfish in the city of Kendari is increasing, as evidenced by the increasing number of food stalls selling catfish parcels. (Ngadiyo et al., 2017)

Poasia sub-district is one of the sub-districts in the city of Kendari, which is the destination for catfish rearing. Based on the results of field interviews, catfish farming in Kendari City is still lacking. A lack of public understanding about catfish farming causes this. The Tuna's maru catfish rearing business has been running for 12 years, using 7 ponds as soil media. The production of catfish every year is erratic. This is caused by pests and diseases that cause many catfish to die.

Given the future conditions that are full of uncertainty, specific considerations are needed in starting a business or maintaining it, as well as the business of raising catfish tunas maru where the opportunities and potential for raising catfish amid ignorance of the financial aspects in the form of profits and threats they face as well as the production of its products in the future, it is necessary to determine the feasibility of the business from a financial point of view and perform a sensitivity analysis. This is in line with the opinion of Sulastri (2016), who says that given the uncertain future conditions, specific considerations are needed in starting a business, where the basis for these
considerations can be obtained through a study of various aspects regarding the feasibility of a business to run so that the results of the study can be used. To decide whether a project or business should be implemented. Feasible or delayed or even canceled. Therefore, it is essential to perform a sensitivity analysis. Research that focuses on the cultivation of catfish rearing was conducted by Jatnika et al. (2014), who researched the development of catfish farming on dry land. The analysis results showed that the feasibility of a business in a pond area of 12-16 m2, a pond area of 20-25 m2, and a pond area of 30-45 m2 is feasible and can provide benefits. Furthermore, research conducted by Rahayu & Farid (2018) focuses on the analysis of the catfish farming business, where the analysis results show that catfish rearing is feasible with an R/C value > 1. Research conducted by Wajdi et al. (2018) only focuses on a feasibility study of catfish farming businesses. The result of the analysis shows that the business is feasible but does not calculate the sensitivity analysis, so it does not know if there is an increase in what percentage of the business is still feasible or not, while this study does not analyze the feasibility of the business but also performs sensitivity analysis of fish rearing, catfish so that they know the tolerance limit for the increase in what percentage of the business is still feasible to run. Research conducted by (Wardana et al., 2014)

with an analysis of financial feasibility and income contribution to a household income of catfish farming, further research conducted by Sudana et al. (2013) analyzed the feasibility of African catfish farming and its effect on the income level of fish farmers, the result of this business is that the catfish is feasible to be cultivated in terms of financial, marketing and social aspects, these three aspects have a significant effect on farmers’ income. Furthermore, Astari et al. (2021) researched business feasibility analysis and development strategies for catfish farming from financial and non-financial aspects to determine the feasibility of the business from all aspects and not focus on financial aspects from a financial and non-financial perspective. Furthermore, research conducted by Mahyuddin et al. (2014), which analyzed the feasibility and sensitivity of input prices in catfish farming, showed that the business was feasible to develop. If there was an increase of 20%, then the business was still feasible to operate, as for the problem, namely the price. Expensive fish feed, low selling price, cannibalistic nature of catfish and tarpaulin replacement costs.

The phenomena in the field show that the opportunities and potential for enlargement of Tunas Maru catfish are in the midst of ignorance of the financial aspects in the form of profits and threats they face and the production of their products. So, the researchers aimed to study the financial feasibility and sensitivity of the business of raising catfish tunas maru in the Poasia sub-district, Kendari city.

MATERIALS AND METHODS

This research was conducted in the Poasia District of Kendari City. The location is determined purposively, considering that Tunas Maru is a catfish enlargement business that meets the criteria for researching its feasibility in terms of long-term effort. This research was carried out for 8 months, from August 2021 to April 2022. The data analysis in this study is quantitative. Namely, the analysis used to analyze financial feasibility agricultural criteria and sensitivity analyses were also performed. To review the research objectives, NPV, Net B/C, IRR, Payback Period, and Sensitivity Analysis according to (Pandangaran, 2008)

RESULTS AND DISCUSSION

Business Overview/ History

The maru catfish farming business was founded in 2010 and is managed by Mr. Amrin. This business already has a business license. Based on the research results, Mr. Amrin is 50 years old. This shows that the respondents are in the productive age range, in line with the opinion of Suratiyah (2015), which states that the productive age range is between 15 and 54 years old, and the rest are in the non-productive age category. Cost is a sacrifice made by producers in managing their business to get maximum results. The catfish rearing business is located in the Poasia sub-district, Kendari City. This business was initially established to open a business, and also because the location is suitable for fish farming, Mr. Amrin made a catfish enlargement business. According to (Purwanto & Taftazani, 2018) which say that the more significant number of dependents a family has will usually affect the level of family expenditure, and the allocation of funds will decrease if it is not followed by sufficient income; therefore, the number of dependents is a reason for someone to work. Based on the results of interviews with respondents, it is known that the respondent’s last education was junior high school, which shows that the respondent has sufficient education. (Nurkholis, 2013) argues that education is necessary to achieve balance and perfection in individual development. The level of education is
closely related to mindset and can affect technological knowledge. In 2010, Mr. Amrin established a catfish-rearing business with an initial capital of around IDR39,740,000, which was obtained from a bank loan and used as investment capital for land and equipment purchases.

Cost Analysis

Overall costs are grouped into investment costs and operating costs. Investment costs are transaction costs that must be paid by Mr. Amrin when starting a Tunas Maru catfish-rearing business. In contrast, operational costs are incurred from the first to the eleventh year of running a catfish-rearing business.

Table 1. Total cost of catfish rearing business in 2010-2021

<table>
<thead>
<tr>
<th>No</th>
<th>Cost Component</th>
<th>Cost (IDR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Investment Fee</td>
<td>39,740,000</td>
</tr>
<tr>
<td>2</td>
<td>Operating Costs</td>
<td>61,359,000</td>
</tr>
<tr>
<td></td>
<td>Total Cost</td>
<td>101,099,000</td>
</tr>
</tbody>
</table>

Source: Primary Data Processed, 2022

Investment costs incurred at the beginning of the implementation of the tunas maru catfish rearing business include land, buildings, ponds, nets, and various equipment used in the amount of IDR 39,740,000. Financially, all investment costs are charged at the beginning of the business year. The tools invested in this business have different economic lives, which, after passing the economic life of the item, will experience damage or sub-optimal performance, so investment tools that can no longer be used must be replaced with new ones and will require reinvestment costs, which has an economic life. Based on Table 1, the total investment costs incurred for raising catfish are IDR39,740,000. This can be a guide for someone who wants to cultivate catfish. The total operating costs incurred amounted to IDR61,359,000, consisting of fixed and variable costs. Variable costs are costs incurred by the business of raising catfish shoots maru, whose amount varies depending on the amount of production. The total cost incurred was IDR101,099,000.

Table 2. Total income of catfish rearing business in 2021

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Total (IDR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reception</td>
<td>32,500,000</td>
</tr>
<tr>
<td>2</td>
<td>Total cost</td>
<td>4,993,272</td>
</tr>
<tr>
<td></td>
<td>Total Income</td>
<td>27,506,727</td>
</tr>
</tbody>
</table>

Source: Primary Data Processed, 2022

In Table 2, it can be seen that the revenue obtained from Tunas Maru catfish is IDR, 32,500,000/year is obtained from the number of catfish production times and the selling price of catfish. The revenue obtained from the beginning of the business until now has always fluctuated, which is influenced by the quantity of the product and the selling price. This is in line with the research of (Kusumastuti et al., 2016), which says that the revenue from the catfish processing agroindustry comes from products sold at a selling price, the revenue obtained is influenced by the quantity of the product and the selling price. The amount of income received is IDR, 27,506,727/year is obtained from revenue after deducting the total cost. This is in line with the research of (Ramdhani et al., 2021), which states that income is the total revenue (TR) per harvest minus the total cost (TC) per harvest. Income is also called profit or net income; the smaller the total costs incurred and the greater the amount of production obtained, the greater the income obtained. This is also in line with Sumardani et al. (2017), which says that the revenue of catfish farmers is obtained from the amount of catfish production, the selling price of catfish in the market, and the income of catfish farmers, the total revenue of catfish is reduced by the total cost of catfish production incurred.

Financial Feasibility Analysis

Analysis of the feasibility of catfish rearing business in Poasia District to determine the financial feasibility analysis used the analysis of Net Present Value (NPV), Internal Rate of Return (IRR), Net Benefit Cost Ratio (NBCR), and Payback Period (PP).

Results Based on the NPV calculations presented in Table 3, the results of the NPV calculations on Tunas Maru catfish are IDR, 52,364,673 NPV obtained, or greater than 0, indicates that the tuna fish business is feasible. The results of the NPV found by Wardana et al. (2014) are greater, namely IDR. 130,113,461. This aligns with research conducted by Mahyuddin et al. (2014),
who found that if the NVP is greater than 0, this business is financially feasible because it can return or exceed the capital used.

Table 3. Feasibility of Catfish Raising Business in Poasia District

<table>
<thead>
<tr>
<th>No</th>
<th>Business Feasibility Analysis</th>
<th>Results</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Net Present Value (NPV)</td>
<td>IDR52,364,673</td>
<td>Feasible</td>
</tr>
<tr>
<td>2</td>
<td>Internal Rate of Return (IRR)</td>
<td>52%</td>
<td>Feasible</td>
</tr>
<tr>
<td>3</td>
<td>Net Benefit Cost Ratio</td>
<td>39.3</td>
<td>Feasible</td>
</tr>
<tr>
<td>4</td>
<td>Payback Period</td>
<td>2.5 years</td>
<td>Feasible</td>
</tr>
</tbody>
</table>

Source: Primary Data Processed, 2022

Furthermore, Kusmiati & Wati (2020) say farming is feasible if the NVP is more favorable because the NPV is greater than 0. It can be interpreted that the value to be obtained and the benefits obtained are more significant than the costs incurred. Based on Table 3, the IRR value obtained is 52%. Because the IRR value obtained exceeds the current interest rate of 14%, catfish can be cultivated. Research conducted by Mahyuddin et al. (2014) shows that the IRR value obtained is 23.24% because the interest rate obtained is greater than the current interest rate. This figure shows that agricultural operations are still profitable. Based on Net B/C, a value of 39.3 was obtained. This indicates that the Tunas Maru catfish game is feasible because it meets the requirements for a value greater than 1, which means a business can be feasible if the Net B/C value is greater than 1. Net B/C of 39.3 means cultivating catfish tunas maru will provide 39.3 times the total cost incurred. This is in line with the research of Wardana et al. (2014), Gusnawati et al. (2014), and Abidin et al. (2019), where the Net B/C value is greater than 1, which is 2.29, which can be said to be feasible, meaning that the Net B/C value of 2.29 will provide a net benefit of 2.29 times that of total costs incurred. The payback period is a specific period that shows the flow of income with the investment amount in the form of present value in maru tuna catfish. The value of the payback period in Table 3 is 2.5, showing how long the investment capital will return, expressed in years. The value of 2.5 in several periods indicates that a tuna catfish is suitable for cultivation considering that the investment capital can be returned within two years and five months.

In contrast, research shows that a payback period value of 2 months means the investment will return in 2 months. This value is relatively small because the investment used is relatively low so that capital can be obtained faster. Considerations based on four appropriate considerations: NPV of IDR 52,364,673; IDR 52%; Net B/C 39.3; PP 2.5 years. The result of the analysis is that tuna catfish is suitable for cultivation.

Sensitivity Analysis

Table 4. Sensitivity Analysis of Catfish Cultivation Business in Poasia District with a 10% Decrease

<table>
<thead>
<tr>
<th>No</th>
<th>Investment appraisal criteria</th>
<th>Results</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Net Present Value (NPV)</td>
<td>IDR47,128,205</td>
<td>Feasible</td>
</tr>
<tr>
<td>2</td>
<td>Internal rate of return (IRR)</td>
<td>51%</td>
<td>Feasible</td>
</tr>
<tr>
<td>3</td>
<td>Benefit-cost Ratio</td>
<td>38.5</td>
<td>Feasible</td>
</tr>
<tr>
<td>4</td>
<td>Payback period</td>
<td>2.5 year</td>
<td>Feasible</td>
</tr>
</tbody>
</table>

Source: Primary Data Processed, 2022

The sensitivity analysis results on the financial feasibility analysis in Table 4 show that if there is a 10% increase in costs and a 10% decrease in production, the NPV obtained is IDR. Maru is still worth cultivating. At the ARR, if there is a 10% decrease in cost increase and a 10% decrease in production, the IRR value obtained is 51% because the IRR value is greater than the current interest rate of 14%, then catfish rearing is still feasible. At the Net B/C value, if there is a 10% increase in costs and a 10% decrease in production, the result is 38.5 because the Net B/C value is greater than 1, then the enlargement of catfish tunas maru is still feasible. Suppose there is an increase in costs of 10% and a decrease in production of 10% in the payback period. The results were obtained for 2.5 years, where there was no change in the payback period. In that case, this indicates that the enlargement of the tunas maru catfish is feasible to be cultivated. The sensitivity analysis results show a decrease in the value of the business feasibility criteria, but it still meets all the investment feasibility criteria. There is a 10% increase in costs and a 10% decrease in production in the future. While other factors are considered constant, the business of raising catfish tunas maru in an earthen pond is worth developing in the future. This aligns with research conducted by Mahyuddin et al. (2014). If there is an increase in feed prices by 20% in the future while other factors are considered
constant, the catfish farming business in tarpaulin ponds can still survive. Hence, it is feasible to be developed further in the future, which will come.

CONCLUSIONS

Based on the study's results, raising catfish shoots maru is feasible to cultivate when viewed from the financial aspect based on the assessment of the four investment feasibility criteria. The results of the sensitivity analysis with changes in the form of a 10% increase in costs and a 10% decrease in production on the four investment eligibility criteria, namely the results of calculations on NPV of IDR 47,128,205, IRR value of 51%, Net B/C 38.5 and a payback period of 2.5 years. Therefore, the enlargement of the catfish shoots maru is still feasible to be cultivated if there is a change in the form of a 10% increase in costs and a 10% decrease in production.

REFERENCES


