
Financial Feasibility Analysis Of Household-Scale Catfish Farming

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Abstract

This study aims to analyze the financial feasibility of household-scale catfish farming. Catfish farming has considerable potential for development because catfish have relatively high market demand, a relatively short production cycle, and can be cultivated on limited land. This study employed a descriptive quantitative approach, with data collected through observation and interviews with catfish farmers. The analysis focused on production costs, revenue, income, and financial feasibility using the Revenue Cost Ratio (R/C Ratio), Benefit Cost Ratio (B/C Ratio), Break Even Point (BEP), and Return on Investment (ROI) indicators. The results showed that the catfish farming business generated revenue of IDR 17,600,000 with total production costs of IDR 8,500,000 during one production cycle. The resulting profit was IDR 9,100,000. The R/C Ratio of 2.07 indicates that every IDR 1.00 spent on production generated IDR 2.07 in revenue. The B/C Ratio of 1.07 also indicates that the business generated economic benefits and was financially feasible. The BEP analysis showed that actual production was above the break-even point, indicating that the business was able to generate profit. Based on the overall financial analysis, household-scale catfish farming is financially feasible and has potential for further development. Efficient feed utilization, production cost control, water quality management, and improved marketing strategies are important factors in increasing profitability and ensuring business sustainability.

Keywords: catfish farming; financial feasibility; household business; income; R/C Ratio.

INTRODUCTION

Catfish farming is one of the freshwater aquaculture activities with considerable potential for development as a household-scale business. Catfish are widely consumed because of their relatively affordable price, nutritional value, and ease of processing into various food products. In addition, catfish have relatively fast growth rates and can be cultivated using simple production systems and limited land. These characteristics make catfish farming an attractive alternative source of income for households seeking to utilize available resources productively.

The increasing demand for fish as a source of animal protein provides opportunities for the development of catfish farming businesses. Household-scale farmers can utilize various production systems, including tarpaulin ponds, concrete ponds, and other simple pond facilities. However, market demand alone does not guarantee business success. The profitability and sustainability of catfish farming are strongly influenced by production management, input costs, production volume, mortality rates, selling prices, and marketing efficiency.

Feed is generally one of the largest components of production costs in catfish farming. Inefficient feed management can significantly increase production expenses and reduce farmers' profits. Other costs, such as fingerlings, medicines and vitamins, water and electricity, labor, pond maintenance, and depreciation of production equipment, also need to be considered. Therefore, careful financial analysis is necessary to determine whether the revenue generated from catfish farming is sufficient to cover all production and investment costs.

Financial feasibility analysis provides important information regarding the economic performance of a business. Several indicators can be used to assess the feasibility of catfish farming, including the Revenue Cost Ratio (R/C Ratio), Benefit Cost Ratio (B/C Ratio), Break Even Point (BEP), Payback Period (PP), and Return on Investment (ROI). These indicators can provide an overview of the relationship between costs and revenues, the level of profitability, the minimum production required to avoid losses, and the ability of the business to recover its initial investment.

For household-scale businesses, financial feasibility analysis is particularly important because available capital is generally limited and business activities are often managed using household resources. Inaccurate estimates of production costs, production capacity, or selling prices may result in financial losses. Conversely, if the business is financially feasible, the results of the analysis can serve as a basis for gradually increasing production capacity and developing the business.

Based on these considerations an analysis of the feasibility of catfish farming at the household level is important to determine how profitable and economically viable the business is. Even though catfish farming has been talked about a lot as a business for families the financial situation can be different depending on how big the production is, how much the inputs cost, how much is produced, the prices at which it is sold and the conditions, in the local market. Because of this this study focuses on the financial situation of a household-scale catfish farming business during one cycle of production. It looks at production costs, revenue, profit and the financial feasibility. The results are expected to give information to household farmers for evaluating the economic situation of their farming activities and finding areas that can be improved for future cycles.

RESEARCH METHODS

3.1 Research Design

This study employed a descriptive quantitative approach to analyze the financial feasibility of household-scale catfish farming. The quantitative approach was used to calculate production costs, revenue, income, and financial feasibility indicators. The descriptive approach was used to describe the actual conditions of the catfish farming business based on data obtained from the field.

3.2 Research Location and Period

The research was conducted at a household-scale catfish farming business in the selected research area. The location was purposively selected based on the consideration that the site actively conducts catfish farming activities. The research was carried out during one production cycle, beginning with pond preparation and ending with harvesting and marketing.

3.3 Research Object

I looked at a catfish farming business run by just one farmer in the area I chose for my study. This catfish farming business used land at the farmers home and kept the production system very simple. I collected data on how many fingerlings were stocked how much feed was needed, the production costs, the total production volume, the selling price and the total revenue made during one cycle. I also made sure to look at the investment costs and the daily operational expenses that go into catfish farming activities.

3.4 Data Collection

The study used both primary and secondary data. Primary data were obtained directly from catfish farmers through observation and interviews. Observation was conducted to obtain information about farming activities, including pond preparation, stocking, feeding, fish maintenance, water management, and harvesting. Interviews were conducted to obtain information regarding investment costs, operational costs, production volume, selling prices, and income.

Secondary data were obtained from relevant books, scientific journals, research reports, and other references related to catfish farming and financial feasibility analysis. Secondary data were used to support the interpretation and discussion of the research findings.

3.5 Cost Analysis

Production costs were classified into fixed costs and variable costs. Fixed costs included depreciation of ponds and farming equipment, while variable costs included fingerlings, feed, medicines or vitamins, electricity, water, labor, and other operational expenses.

Total production costs were calculated by adding fixed costs and variable costs:

$$TC = FC + VC$$

where TC represents total production costs, FC represents fixed costs, and VC represents variable costs.

3.6 Revenue Analysis

Total revenue was calculated based on the quantity of catfish harvested and the selling price per kilogram. The revenue formula was:

$$TR = Q \times P$$

where TR represents total revenue, Q represents the quantity of catfish produced, and P represents the selling price per kilogram.

3.7 Income Analysis

Business income was calculated as the difference between total revenue and total production costs:

$$\pi = TR - TC$$

where π represents business income or profit, TR represents total revenue, and TC represents total production costs. A positive value indicates that the business generates profit.

3.8 Financial Feasibility Analysis

The financial feasibility of the catfish farming business was evaluated using several indicators, namely the Revenue Cost Ratio (R/C Ratio), Benefit Cost Ratio (B/C Ratio), Break Even Point (BEP), Payback Period (PP), and Return on Investment (ROI).

The R/C Ratio was used to determine the ratio between total revenue and total production costs. A value greater than 1 indicates that the business is financially feasible, a value equal to 1 indicates a break-even condition, and a value below 1 indicates that the business is not financially feasible.

The B/C Ratio was used to compare the profit obtained with the total production costs. A B/C Ratio greater than 0 indicates that the business generates economic benefits.

The Break Even Point (BEP) analysis was used to determine the minimum production volume and selling price required for the business to cover all production costs without generating either profit or loss.

The Payback Period (PP) was used to determine the length of time required to recover the initial investment. A shorter payback period indicates a more favorable investment condition.

The Return on Investment (ROI) was used to measure the percentage of profit generated relative to the investment or capital used in the business. A higher ROI indicates better financial performance.

3.9 Data Analysis

The collected data were processed quantitatively and analyzed descriptively. The analysis included total production costs, revenue, profit, and financial feasibility indicators. The results were then interpreted to determine whether household-scale catfish farming was financially feasible and had potential for further development.

The research stages consisted of research preparation, selection of the research location and object, data collection, data processing, financial analysis, interpretation of results, and conclusion drawing. All financial calculations were based on the actual conditions of the catfish farming business during one production cycle.

RESULTS AND DISCUSSION

4.1 Overview of the Catfish Farming Business

The household-scale catfish farming business analyzed in this study was operated by utilizing available land around the household. The farming activity used a relatively simple production system and was carried out for approximately one production cycle of 3–4 months. The main activities included pond preparation, water management, stocking of fingerlings, feeding, fish maintenance, disease control, harvesting, and marketing.

The use of a simple production system indicates that catfish farming can be conducted with relatively accessible technology and does not require extensive land. This characteristic makes catfish farming suitable as an alternative household business, particularly for farmers with limited land and capital.

4.2 Production Costs

The results showed that production costs consisted of fixed costs and variable costs. Fixed costs mainly included depreciation of ponds and farming equipment, while variable costs consisted of fingerlings, feed, medicines or vitamins, electricity, water, labor, and other operational expenses.

The total production cost during one production cycle was approximately IDR 8,500,000. Feed represented the largest component of production costs. This condition indicates that feed management plays an important role in determining the profitability of catfish farming.

High feed expenditure is closely related to the feeding requirements throughout the production cycle. Excessive or inefficient feeding can increase production costs without providing proportional increases in production. Therefore, proper feed management based on fish size, biomass, and feeding response is necessary to improve production efficiency.

4.3 Production and Revenue

During one production cycle, the farming business produced approximately 800 kg of marketable catfish. With an average selling price of IDR 22,000 per kg, the total revenue reached approximately IDR 17,600,000.

The production results indicate that household-scale catfish farming has the potential to generate relatively attractive revenue. Production volume is influenced by stocking density, fish growth, feed management, water quality, and survival rate. A higher survival rate allows farmers to obtain a larger harvest and consequently increase total revenue.

The selling price also plays an important role in determining revenue. Direct marketing to consumers may provide better selling prices than marketing through multiple intermediaries. Therefore, strengthening market access and establishing direct relationships with consumers can contribute to increasing household farmers' income.

4.4 Business Income

The income generated by the farming business was calculated by subtracting total production costs from total revenue. Based on the analysis, total revenue of IDR 17,600,000 and production costs of IDR 8,500,000 resulted in a profit of approximately IDR 9,100,000 per production cycle.

The positive profit indicates that the revenue generated was sufficient to cover all production costs and provide an economic return to the farmer. This result demonstrates that catfish farming can serve as a productive household business and an additional source of income.

However, the amount of profit can vary between production cycles. Changes in feed prices, fingerling prices, selling prices, fish mortality, disease occurrence, and production volume can significantly affect the final profit. Consequently, continuous monitoring of production costs and market conditions is necessary.

4.5 Financial Feasibility Analysis

The financial feasibility analysis showed that the R/C Ratio was 2.07. This value was obtained by comparing total revenue of IDR 17,600,000 with total production costs of IDR 8,500,000. An R/C Ratio greater than 1 indicates that the business is financially feasible.

The R/C Ratio of 2.07 means that every IDR 1.00 spent on production generated approximately IDR 2.07 in revenue. Therefore, the business was able to cover its production costs while generating additional returns.

The B/C Ratio was approximately 1.07, indicating that the profit obtained was greater than the costs incurred. A positive B/C Ratio indicates that the economic benefits generated by the business exceed the costs of production. This finding further supports the financial feasibility of household-scale catfish farming.

4.6 Break-Even Point Analysis

The Break-Even Point (BEP) analysis indicated that the actual production level of 800 kg was above the break-even production level. This means that the farming business had exceeded the minimum production required to cover its total production costs.

The BEP analysis is important because it provides information about the minimum production or selling price that must be achieved to avoid losses. A larger difference between actual production and the break-even point indicates a greater financial safety margin for the business.

Therefore, maintaining production above the break-even level is essential, particularly when production costs increase or market prices decrease. Farmers should continuously improve production efficiency to minimize the risk of falling below the break-even point.

4.7 Discussion of Financial Feasibility

Overall, the results indicate that household-scale catfish farming is financially feasible and has potential for further development. The positive profit, R/C Ratio above 1, and B/C Ratio above 0 demonstrate that the business generates economic benefits from the resources invested.

The financial feasibility of the business is supported by several characteristics of catfish farming, including relatively rapid growth, relatively short production cycles, strong consumer demand, and the ability to utilize limited land. These characteristics make catfish farming suitable for household-level economic activities.

Nevertheless, financial feasibility depends strongly on effective production management. Feed efficiency is particularly important because feed constitutes a major proportion of production costs. Maintaining good water quality, preventing disease, reducing mortality, and selecting good-quality fingerlings can improve production efficiency and increase the quantity of fish available for sale.

Marketing is another important factor affecting profitability. Farmers who have access to stable markets and can sell fish at favorable prices have greater opportunities to increase their income. Developing direct marketing channels, maintaining relationships with consumers, and improving product quality can therefore support the sustainability of the business.

Based on the overall findings, household-scale catfish farming can be considered a feasible business activity. However, further development should be accompanied by careful financial management, efficient use of production inputs, improved farming practices, and stronger marketing strategies. These measures are expected to increase profitability while maintaining the sustainability of household-scale catfish farming.

CONCLUSION

Based on the results of the financial feasibility analysis, household-scale catfish farming is considered financially feasible and has good potential for further development. The business generated total revenue of IDR 17,600,000 and total production costs of IDR 8,500,000 per production cycle, resulting in a profit of approximately IDR 9,100,000.

The financial analysis showed an R/C Ratio of 2.07, indicating that every IDR 1.00 spent on production generated IDR 2.07 in revenue. The B/C Ratio of 1.07 also indicates that the business provides positive economic benefits. Furthermore, the actual production level was above the break-even point, demonstrating that the business was able to cover its production costs and generate profit.

Therefore, household-scale catfish farming can be regarded as a profitable and financially feasible business activity. To improve profitability and sustainability, farmers should focus on efficient feed utilization, production cost control, proper water quality management, disease prevention, and improved marketing strategies. These efforts can contribute to increasing production efficiency, household income, and the long-term sustainability of catfish farming.

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