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REVIEW OF FINANCIAL FEASIBILITY OF THE VANNAMEI SHRIMP BUSINESS IN THE LAMONGAN REGENCY

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Financial Feasibility, Lamongan Regency, Vannamei Shrimp

ABSTRACT

The purpose of this paper is to determine the financial feasibility of Vannamei shrimp farming business in the Lamongan Regency and then to provide information on the economic, social, and cultural value of Lamongan Regency. This review contains several analyzed pattern models including total cost, receipt cost, revenue cost, benefit-cost ratio, return cost ratio, internal rate of return, and break-even point. A valuation review exercise is undertaken to focus on the area of Vannamei shrimp farming business in Lamongan Regency. The review will provide information that can be used to ascertain the value of Vannamei shrimp farming business through regional. The final result of the feasibility analysis of shrimp culture in the Lamongan regency is feasible to run. So that the overall, shrimp farming business in Lamongan Regency is very feasible to be applied when viewed from economic advantage, and can be used as an alternative for business aquaculture in areas that have the location of a pond much. People who do Vannamei shrimp farming business are suggested to get workforce guidance and training to develop in order to improve the competitiveness of the farmers.

INTORDUCTION

Fishery is a sector of excellence in Indonesia in the export sector. One of the leading products for export in the fishery sector is shrimp. Vannamei shrimp holds a high potential market prospect, especially for export. The production of shrimp in Indonesia is developed from the shrimp caught at sea and shrimp yielded in cultivation. In terms of development, the production of shrimp caught at sea has undergone rises and falls while the production of shrimp in cultivation has undergone significant fluctuations [1]

Shrimp farming has a high economic value and development prospects in the community, which is indicated by the increasing number of cultivation activities in the community, as well as consumer demand, both public and exports, which continues to increase. Shrimp production nationally is used to meet export needs.

Vannamei shrimp is able to contribute 25% of Vannamei shrimp production in East Java. Fish farming problems encountered in Lamongan Regency today are the decreasing number of fish cultivation lands as a result of the activity of changing the function of fish cultivation land to residential areas and industrial and office development. The constraints on the development of the fish farming industry to increase production are limited by several factors, including limited water, land, and pollution to the environment. So, efforts that can be done to maintain the continuity of Vannamei shrimp cultivation activities are by initiating shrimp cultivation on a narrow area such as utilizing home yards using tarpaulin pond media without reducing the target amount of product obtained.

Financial analysis is used because investment valuation factors in financial analysis could provide the considerations needed by the farmers in the cultivation business such as the profit or loss, the long process of payback, and the business that is still safe to do although not profitable [2]. Business analysis and business feasibility in the form of calculating the Benefit-Cost Ratio (B / C Ratio), Net Benefit Cost Ratio (B / C Ratio), Internal Rate of Return (IRR), calculation of Net Present Value (NPV), and breakeven point (BEP). This can provide information to farmers about the business achievements it has established. It also relates to the system applied to Vannamei shrimp farmers who use an incentive system and a semi-incentive system [3].

In this study, the focus of the discussion is only on the analysis of financial feasibility in maximizing farming business in support of a financial benefit for the shrimp farmers in Lamongan. In Lamongan Regency, there is a Vannamei shrimp cultivation business that uses a semi-intensive system and an intensive system; therefore, it is necessary to analyze whether the Vannamei shrimp cultivation business and existing ones can be said to be economically feasible or not. The study is expected to aid the farmers' business plan as well as to provide input for the local government in taking appropriate policies for the development of the farming business [4]. Based on the discussion above, the study aims to investigate the financial feasibility of the shrimp farming business in the Lamongan Regency

Financial Feasibility Analysis

Cost and benefit components were used to facilitate the grouping of both sections. The investment criteria were used to determine the level of business feasibility quantitatively. The cost components incurred include investment costs, fixed costs, and operating costs [5]. Further description of some of method financial feasibility business shrimp can be seen in the following table:

Table 1. Business Feasibility Analysis Method

Method Analysis	**Equation**	**Indicators**
Net Present Value (NPV)	NPV $\sum_{t=0}^{n} \frac{Bt-Ct}{(1+i)^2}$ *Bt = gross revenue years to t* *Ct = gross cost years to t* *n = economic life* *i = interest rate*	If NPV was positive (NPV>0), then the business was feasible to run. Conversely, if the NPV was negative (NPV<0)
Internal Rate of Return (IRR)	IRR = $i_1 + \frac{NPV1}{NPV1-NPV2} (i_2-i_1)$	If the IRR>interest rate applied, then the project was declared feasible. If the IRR<interest rate applied, then the

Method Analysis	Equation	Indicators
	NPV1 = NPV which is still positive *NPV2 = NPV which is already negative* *i 1 = discount rate which still gives positive NPV* *i 2 = discount rate which already gives negative NPV*	project was declared unfeasible
Net Benefit/Cost Ratio (Net B/C Ratio)	Net $\frac{B}{C} = \frac{\sum_{t=0}^{t=5}\frac{(Bt-Ct)}{(1+i)t}}{\sum_{t=0}^{t=5}\frac{(Ct-Bt)}{(1+i)t}} = \frac{(Bt-Ct)<0}{(Bt-Ct)>0}$ *Bt = gross benefit caused by investment in year t* *Ct = gross cost caused by investment in year t* *i = interest rate* *t = project life 0, 1, 2, 3, 4, 5*	If the Net B/C Ratio>1, then the business was feasible. Furthermore, if the Net B/C Ratio<1, then the business was not feasible.
R/C Ratio Analysis	R/C Ratio = TR/TC *TR = total revenue* *TC = total cost*	RC = 1, the business is neither profitable nor loss RC> 1, profitable business RC <1, the business is not profitable
Profitability Analysis	Profitability = $\frac{Profit}{Capital\ \ Total}$ x100	The comparison between operating profit and the capital that generates profit, in other words, a company to generate profits during a certain period.

Review result of the Shrimp Farming Business Feasibility Journal in Lamongan Regency that using Financial Feasibility Analysis pattern models are described in the following table:

Table 2. Studies that study feasibility business shrimp in Lamongan Regency

Location	Culture Techniques	Financial Feasibility Analysis Model	Indicators	Result	Authors
Brondong Districts	Semi-intensive and Intensive	Net Present Value (NPV) and Internal Rate of Return (IRR)	● Semi Intensive NPV 46.293.103,45 ● Intensive NPV 15.357.758,62 ● IRR semi intensive 9.98% ● IRR intensive 8.19%	● (NPV>1), then the business was feasible to run ● IRR> MARR, the investment was feasible to run	Dawud (2020)
Sidokumpul Village, Lamongan Districts	-	Rentability Analysis	● Average RE = **69,96%**	● This profitability means that is feasible to be run.	Sa'adah (2010) [7]
Dukuh Tunggal Village, Glagah Districts	-	R/C ratio analysis	• Pond size from 0,5-3 Ha the value of **2,12; 2,02;1,87;2,12; 3,98**	RC > 1, profitable business	Sa'adah (2018) [8]

Location	Culture Techniques	Financial Feasibility Analysis Model	Indicators	Result	Authors
Rejotengah Village, Deket Districts	-	R/C ratio analysis	• Value of R/C Ratio = **1,12.**	RC > 1, profitable business	Fariyanto (2012) [9]
Kandang Semangkon Village, Paciran Districts	-	R/C ratio analysis	• Pond Size from 1500-4000 m2 the value of R/C is **1,13-1,96**	RC > 1, profitable business	Mas'ud and Slamet H (2015) [10]
Dukuh Tunggal Village, Glagah Districts	-	R/C ratio analysis	• Pond Size < 0,5 - > 3 Ha the value of R/C is following: **1.77775; 1.72869 2.09984;2.43546 ;1.87398**	RC > 1, profitable business	Qomariyati *et al* (2013) [11]
Dinoyo Village, Deket Districts	Intensive	R/C ratio analysis	• Value of R/C Ratio is **2,62**.	RC > 1, profitable business	Chusnul *et al* (2010)

Every activity must be able to what extent the benefits can be obtained. The results of the analysis are used as material for consideration in making decisions for the business actor whether this business will continue or not for certain reasons. A type of business will stop whether it is feasible to implement some of the existing criteria. Feasible for a business that is profitable, because it can cover all costs incurred.

Business analysis and business feasibility in the form of calculating the Benefit-Cost Ratio (B / C Ratio), Net Benefit Cost Ratio (B / C Ratio), Internal Level Ratio (IRR), calculation of Net Present Value (NPV), and breakeven point (BEP)). This can provide information to farmers about the credibility of the business they have established [3].

In the first journal, the Vannamei shrimp farming business was declared feasible, with NPV in an intensive system of more than 1 (NPV>1), this means that the business is profitable and feasible to develop. Whereas in the NPV in semi-intensive systems the highest value is also more than 1 (NPV>1) and IRR in semi-intensive systems and IRR in intensive systems which means the value of IRR> MARR, which indicates that the investment is feasible to run. This feasibility is also supported by the calculation of the method that occurs in the period occurring in the second year and the IRR value is greater than MARR, which is 18% compared to 16%.

In addition, the development of business feasibility analysis criteria includes income/profit and R / C ratio (Dawud, 2010). The table shows the annual R / C ratio from each location, and the highest R / C ratio is in Dukuh Tunggal Village in Glagah District which has a value of 3.98 from the Saadah (2018) research. Most of the results obtained were > 1, it means that this cultivation business is feasible because it is profitable.

As we know from several studies conducted, from several areas from year to year in Lamongan Regency, Vannamei shrimp farming is feasible to do, using intensive and semi-intensive methods. Shrimp Farmer that the motivations that underlie the community in carrying out Vannamei shrimp business activities are physiological needs, the need for security, satisfying social needs, esteem needs, and self-actualization needs. In addition, the socio-economic factors that affect income in Vannamei shrimp farming can be in the form of land area, input costs, labor costs, number of family members, age, and education. Factors that have a real effect are production and input costs. Meanwhile, the factors that had no significant effect were land area, labor costs, number of family members, age, and education [6].

Therefore, from some of the results of the feasibility study of shrimp business in Lamongan Regency, government interaction is needed in conducting guidance and training in Vannamei shrimp cultivation in increasing the ability of shrimp cultivators in Vannamei shrimp cultivation. So that the increase in running its business will increase and in increasing the value of shrimp export production

Conclusion

The business of Vannameii shrimp cultivation in Lamongan District is feasible according to criteria concerning income NPV, IRR, and R/C Ratio. Therefore, there is a need for business development so that the fulfillment of Vannamei Shrimp production for export can be achieved. In addition, there is also a need for technical support from the local marine and fisheries office in order to solve climate change and weather problems and then people who do Vannamei shrimp farming business are suggested to get workforce guidance and training to develop in order to improve the competitiveness of the farmers.

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