

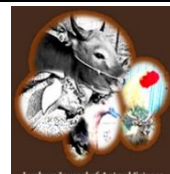


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Research Article

Analysis of Beef Cattle Fattening Business; Case Study

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ABSTRACT

The cattle fattening business in Limboto District is predominantly managed by farmers through farmer groups. These fattening groups are spread across several villages, including Hutabohu Village, where the Ilohelumo group operates. Beef cattle fattening is a viable strategy to enhance community income, as it involves specific inputs and produces outputs in the form of revenue and business profits (Abidin, 2012). This study employed a case study method, with the research location selected through purposive sampling based on the presence of a successful cattle fattening group. The selected location was Hutabohu Village in Limboto District, Gorontalo Regency. The respondents were selected using total sampling from the Ilohelumo group, consisted of 20 members. The analytical methods used included descriptive analysis, income analysis, Return on Revenue (ROR), Break Even Point (BEP), Return Cost Ratio (R/C), and Benefit Cost Ratio (B/C). The Ilohelumo cattle fattening group managed 20 heads of cattle with a total production cost of IDR 215,300,000, comprising both fixed and variable costs. The group generated a profit of IDR 118,223,112 per fattening period, or approximately IDR 5,911,155 per head per month. The business achieved an R/C ratio of 2.864 and a B/C ratio of 1.482, indicating that the beef cattle fattening enterprise is profitable and financially feasible.

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INTRODUCTION

Beef cattle are one of the major meat-producing livestock commodities among ruminant animals and serve as an important source of protein (Susanti et al., 2014). Fattened beef cattle have significant potential to be developed as a profitable agribusiness (Sudarmono & Sugeng, 2006). One of the most effective strategies to generate income from beef cattle is through fattening practices. Beef cattle produce meat that rich an essential nutrients, including 250 kilocalories, 15 grams of fat, 26 grams of protein, 18 milligrams of calcium, 2.6 milligrams of iron, vitamin D, 0.4 milligrams of vitamin B6, 2.6 µg of vitamin B12, and 21 milligrams of magnesium. This high nutritional value, along with increasing demand for beef, continues to encourage the expansion of cattle fattening efforts.

Limboto District, located in Gorontalo Regency, is one of the regional centers for beef cattle development, with a relatively high cattle population of 4,717 heads (BPS Gorontalo, 2022). This area is supported by a community of farmers who recognize the substantial economic potential of beef cattle farming. Various initiatives have been undertaken to develop beef cattle agribusinesses, both through breeding and fattening activities. Many local farmers have long been engaged in cattle fattening, often organizing themselves into groups to manage these operations more effectively. In Limboto District, cattle fattening is predominantly carried out by farmer groups, including the Ilohelumo group in Hutabohu Village. The cattle fattening business requires specific inputs and yields outputs in the form of revenue and profit. As suggested by Abidin (2012), cattle fattening is a practical and applicable method to improve household income in rural communities. Based on the previous statement, we intend to analysis beef cattle fattening bussines as case study

RESEARCH METHOD

This study employed a survey method with purposive sampling to select the research location. The selection was based on the consideration that the location included a cattle farming group that had success in demonstrated beef cattle fattening activities. The chosen site was Hutabohu Village in Limboto District, Gorontalo Regency.

The respondents were selected using a total sampling technique from the selected group, namely the Ilohelumo cattle farmer group, consisting of 20 members. The data were analyzed using descriptive analysis and financial analysis, including income analysis, Break Even Point (BEP), and Return Cost Ratio (R/C).

The general formula for calculating net income is:

$$\text{Net Income} = \text{Total Revenue} - \text{Total Expenses.}$$

The formula for Break Even Point (BEP) is:

$$\text{BEP (in units)} = \text{Total Fixed Costs} / (\text{Selling Price per Unit} - \text{Variable Cost per Unit})$$

The formula for Return Cost Ratio (R/C) is:

$$\text{R/C} = \text{Total Revenue} / \text{Total Cost}$$

RESULT AND DISCUSSION

A. Production Costs

Production costs refer to the compensation received by the owners of production factors or the expenditures incurred by farmers during the production process, whether in cash or non-cash forms (Daniel, 2004). These costs are generally categorized into fixed costs and variable costs.

Fixed costs are expenses that remain constant regardless of production activity. These include depreciation of cattle sheds, equipment depreciation, and land rental. In contrast, variable costs are incurred only when production activities take place. In this study, variable costs included feed, veterinary medicine, and labor for cattle maintenance. The Ilohelumo cattle farmer group managed a total of 20 cattle with an initial investment of IDR 12,500,000. The total production cost amounted to IDR 215,300,000, which comprised IDR 13,275,000 in fixed costs and IDR 202,025,000 in variable costs. The average production cost for beef cattle fattening is presented in Table 1.

Table 1. Components of Production Costs

No	Cost Components	Quantity (Unit)	Price (IDR)	Period	Value (IDR)
1	Fixed Costs				
	a. Shed Depreciation	1 Month	2,000,000	3 Months	6,000,000
	b. Equipment Depreciation	1 Month	525,000	3 Months	1,575,000
	c. Electricity & Water	1 Month	500,000	3 Months	1,500,000
	d. Land Rental	1 Month	1,500,000	3 Months	4,500,000
	Total Fixed Costs				13,275,000
2	Variable Costs				
	a. Feeder Cattle				140,000,000
	- Number of Cattle	20 Head	7,000,000		
	- Weight per Head	250 Kg			
	Jumlah Bakalan Sapi				
	b. Concentrate Feed	400 Kg/Day	1,000	90 Days	36,000,000
	c. Elephant Grass	200 Kg/Day	1,000	90 Days	18,000,000
	d. Fine Bran	50 Kg/Day	1,500	90 Days	6,750,000
	e. Deworming Medicine	1 Bolus/ Month	300,000	3 Months	900,000
	f. Vitamin B Complex	250 ML/ Month	25,000	3 Months	75,000
	g. Labor	1 Month	100,000	3 Months	300,000
	Total Variable Costs				202,025,000
	Total Production Costs				215,300,000

Source: Processed Data, 2023

According to Ekowati et al. (2014), production cost refers to the burden borne by producers to carry out a specific production process, expressed in monetary terms over a certain period. In the cattle fattening business managed by the Ilohelumo Farmer Group in Hutabohu Village, Limboto District, Gorontalo Regency, the largest component of total production costs by respondents was feed cost i.e. IDR 60,750,000. This finding was in line with the opinion of Sandi et al. (2018), who emphasized that the success of beef cattle farming relies heavily on feed management. In addition to being the highest cost component, feed is a critical factor influencing livestock productivity.

B. Revenue

Revenue refers to the total income received by producers from the sale of goods or outputs. Revenue is calculated by multiplying the quantity of production by the selling price, whereas income is defined as the difference between total revenue and total cost (Ross, 2008). The general formula used is: $TR = Q \times P$

The total revenue earned from the cattle fattening activities conducted by the Ilohelumo Farmer Group in Hutabohu Village was presented in Table 2.

Table 2. Revenue from Beef Cattle Fattening Enterprise

No	Revenue Components	Quantity (Unit)	Price (IDR)	Period	Value (IDR)
1	Cash Revenue				
	Sale of Cattle				
	- Number of Cattle	20 Head			460,000,000
	- Price per Kg		23,000		
	- Average Weight per Head	270 Kg			
	Total Cash Revenue				460,000,000
2	Non-Cash Revenue				
	Cattle Manure	25 Kg/Day	1,000	90 Days	2,250,000
	Total Non-Cash Revenue				2,250,000
	Total Revenue				462,250,000

Source: Processed Data, 2023

According to Siregar (2013), revenue from a beef cattle farming business consists of both cash and non-cash income. Business income is derived from the multiplication of production output by the selling price. The level of revenue received is directly influenced by the volume of products sold. This aligns with the view of Soeprapto and Abidin (2012), who stated that revenue in beef cattle fattening businesses comes from both the sale of cattle and the sale of by-products, such as manure. This statement supported by Soekardono (2009), who emphasized that revenue from farming enterprises encompasses all outputs produced, and the greater the output, the higher the revenue earned.

C. Profit

Profit refers to the difference between total revenue and total expenditures, and it serves as an indicator of a business's ability to generate cash income. Profitability in a business reflects the gap between output value and input value – where output refers to the results achieved and input represents the total production costs (Hartono, 2016).

Table 3. Profit from Beef Cattle Fattening Enterprise

No	Component	Quantity (Unit)	Price (IDR)	Period	Value (IDR)
1	Total Revenue				
	a. Beef Cattle	20 Head	23,000,000	90 Days	460,000,000
	b. Cattle Manure	25 Kg		90 Days	2,250,000
2	Total Production Costs			90 Days	215,300,000
	Profit				246,950,000
	Average Profit				82,316,666

Source: Processed Data, 2023

The cattle fattening business conducted by the Ilohelumo farmer group in Hutabohu Village was categorized as profitable, with an average income of IDR 82,316,666 per production period, or approximately IDR 4,115,833 per head per month. This result indicates that the more cattle are fattened, the greater the profits obtained. The level of income among beef cattle farmers was strongly influenced by the total revenue received and the total production costs incurred throughout the production process.

The finding aligns with the view of Sahala et al. (2016), who stated that income from beef cattle fattening is the difference between total revenue and total cost. Soeprapto and Abidin (2012) also emphasized that the income from beef cattle farming is calculated as the difference between total sales proceeds and overall expenditures. Furthermore, the study by Krisna and Manshur (2006) shows that the level of income earned by cattle farmers is affected by the number of livestock kept. This is supported by Sudiyono (2004), who noted that the greater the number of animals raised, the greater the potential profit for the farmer.

Profit in cattle fattening businesses is derived from the difference between total revenue and total costs over a production period. In this study, profits were obtained from the sale of fattened cattle and by-products such as cattle manure and increased calf production. According to Syaddad (2017), cattle manure represents a form of non-cash income, as it can be processed into organic fertilizer or used as a renewable energy source in the form of biogas.

D. Business Feasibility

The feasibility analysis of the cattle fattening business carried out by the Ilohelumo farmer group aims to determine whether the enterprise is profitable and viable for long-term development. The feasibility of this fattening business was assessed using several financial indicators, including Return on Investment (ROI), Return Cost Ratio (R/C), and Benefit Cost Ratio (B/C).

Table 4. Values of ROI, R/C Ratio, and B/C Ratio

No	Description of Total Cost, Revenue/Profit	Feasibility Component	Value	Interpretation
1	IDR 215,300,000	ROI	46,58 %	Feasible
2	IDR 462,250,000	R/C Ratio	2,15	Feasible
3	IDR 246,950,000	B/C Ratio	1, 15	Feasible

Source: Primary data, processed in 2024.

1. Return on Investment (ROI)

Return on Investment (ROI) is a measure of the return on capital, where the net income is divided by the investment cost, providing an indication of the profitability of an investment. If the ROI value exceeds the prevailing bank interest rate, the business is considered financially viable. According to Budiraharjo (2011) and Soekartawi (2013), ROI can be used to assess the profitability level of a business in relation to the capital invested.

The formula used:

$$\text{ROI} = (\text{Total Revenue} - \text{Investment Cost}) / \text{Investment Cost} \times 100\%$$

Based on the calculation, the ROI value obtained was 46.58%, which indicates that the use of capital (production cost) in the Ilohelumo cattle fattening enterprise was efficient and yielded a satisfactory profit margin. On a per-head basis, this translates to a profit of approximately IDR 4,115,833 per production period. This is consistent with Sunyoto (2014), who stated that the higher the ROI, the better the business performance, as it reflects stronger profitability.

2. Return Cost Ratio (R/C)

The Return Cost Ratio (R/C) is the ratio between total revenue and total production costs. It is used to determine whether a business is profitable. The R/C ratio is considered:

- a. Less than 1: the business is unprofitable
- b. Equal to 1: the business breaks even
- c. Greater than 1: the business is profitable

The formula used:

$$\text{R/C} = \text{Total Revenue} / \text{Total Cost} \text{ (Febrianti, 2022)}$$

In this study, the R/C value was 2.15, means that for every IDR 1,000 spent, the Ilohelumo group generated IDR 2,150 in revenue. This indicates that the enterprise was highly efficient. As supported by Soekartawi (2013), an R/C value greater than 1 confirms that the business is economically profitable and suitable for development.

3. Benefit Cost Ratio (B/C)

The Benefit Cost Ratio (B/C) compares the net benefits (profits) with total costs incurred. It reflects the amount of benefit received for each unit of cost. According to Ernawan (2016), the formula used:

$$B/C = (\text{Total Revenue} - \text{Total Cost}) / \text{Total Cost}$$

The B/C ratio for the Ilohelumo beef cattle fattening business was 1.15. This means that every IDR 1,000 spent resulted in a profit of IDR 115. This result supports the feasibility of expanding the scale of the cattle fattening business. According to Nurmalina et al. (2010), a B/C ratio greater than 1 indicates that an investment is financially feasible. Similarly, Tri (2015) stated that the B/C ratio reflects the present value of benefits compared to the present value of costs. The higher the B/C ratio, the more favorable the investment.

4. Break Even Point (BEP)

The Break Even Point (BEP) is a financial metric that identifies the point at which a business neither gains profit nor incurs a loss. It helps determine the minimum volume of production or sales required to cover total costs (Hansen, 2009). There are two types of BEP:

- a. BEP unit (production): Calculated as fixed costs divided by the difference between unit selling price and variable cost per unit.
- b. BEP price: Calculated as total cost divided by the number of units sold, indicating the minimum price per unit needed to avoid losses (Halim, 2013).

This analysis enables livestock farmers to set appropriate pricing strategies and production targets to ensure financial sustainability.

Table 5. Break Even Point (BEP) of Beef Cattle Fattening Business.

No	BEP	Amount	Interpretation
1	Production	9 Heads	Feasible
2	Price	IDR 10,765,000	Feasible

Source: Primary data, processed in 2024.

CONCLUSION

The beef cattle fattening business carried out by the Ilohelumo farmer group in Hutabohu Village, Limboto District, generated an average profit of IDR 8,231,666 per production period, or approximately IDR 4,115,833 per head per month. The business demonstrated financial feasibility with a Return Cost (R/C) ratio of 2.15 and a Benefit Cost (B/C) ratio of 1.15. The Break Even Point (BEP) analysis indicated that the business would reach the breakeven level at a production volume of 9 heads and a minimum selling price of IDR 10,765,000 per head.

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