# Profits Analysis of the Sheep Breeding Business in BuluCina Village, Indonesia


## ABSTRACT

**Aims:** Analyze the profits of sheep breeders in BuluCina Village, Deli Serdang Regency, Indonesia.
**Study design:**Descriptive quantitative
**Place and Duration of Study:**From September to November 2023, Bulu Cina Village will be situated in Deli Serdang Regency, Indonesia.
**Methodology:**This type of research is descriptive, researchers who describe the variable conditions obtained by sheep farming business actors. The material that were used in this research is related to the overall data and field studies obtained, namely in the form of production costs and income from sheep farming businesses so that the income of sheep farming business breeders can be calculated and obtained.
**Results:**Sheep farming in the research area is profitable for sheep farmers as it yields an average net income of IDR 29.519.791 per 6 month. The breeders of beef sheep receive an average net income of IDR 2.459.983 per month. This type of activity is a feasible business option with an Revenue Cost Ratio value of 4,27.
**Conclusion:**To increase income from sheep farming businesses, it is essential to use production factors efficiently.



*Keywords:breeders, business feasibility, sheep, production, profits.*


## 1. INTRODUCTION

Success is the ultimate goal of every beef and sheep farming in their livestock business[1]. The profit obtained by efficiently utilizing production factors is one of the parameters that can be used to measure the success of a business[2]. Utilizing the right production factors in every business is an absolute requirement for making a profit[3]. Effective management is crucial in achieving profit and efficiency in sheep-fattening businesses. Breeding, feeding, and livestock management are critical elements[4].

Bulu Cina Village is an autonomous region with abundant resources that can be harnessed to achieve the primary objective of economic development, which is to increase the variety and number of job opportunities available to the local community, thereby promoting a more equitable distribution of wealth[5]. To achieve this goal, the government needs to focus on developing the potential economic sectors to become leading industries in the region.

The sheep breeders in BuluCina Village have done a commendable job in managing their sheep. However, a more intensive handling of the process is required to increase production. Unfortunately, more intensive handling often comes with its own set of challenges. One such challenge in sheep production is the level of risk involved in the process[6]. *Risk* is an uncertain situation that can have a detrimental impact on an individual or a company.

Profit analysis is a crucial tool to evaluate the success or failure of a business activity[7]. It helps to identify the main components of income and assess whether they can be improved. A business activity is successful if the income generated is sufficient to cover

all production expenses. Business analysis provides a detailed report of financial transactions over a specific period. The purpose of this study is to analyze the profits earned by sheep breeders in Bulu Cina Village.

## 2. MATERIAL AND METHODS

This study utilized a descriptive quantitative approach to describe the various conditions experienced by sheep farming business owners, particularly regarding the data obtained from both field studies and overall data. The study is descriptive, meaning that the researchers aim to describe the conditions experienced by sheep farming business owners. The research was be conducted in Bulu Cina Village, Deli Serdang Regency, and focused on production costs and revenues from sheep farming businesses. By analyzing these factors, the researchers aim to the income earned was calculated by sheep farming business owners.

The study population consisted of seven beef sheep breeders in Bulu Cina Village. The sampling method used was census or overall sampling, which involves investigating or interviewing all individuals in the population, also known as the complete enumeration method[8].

During the research stage, initial observations are carried out to determine the general conditions of the research location. This was achieved by conducting interviews and identifying any problem phenomena. Following observation and socialization, the problem was assessed and a solution is proposed. The implementation stages are then prioritized and research is conducted by using questionnaires to gather data through interviews. Finally, the gathered data is analyzed, and a final research report is written.

During the survey, some data collection techniques like personal observation, individual interviews and secondary data sources were used

1. Observation
   Observation is a data collection method that can be used to measure not only respondents' attitudes (through interviews and questionnaires), but also to record various phenomena that occur such as situations and conditions. This technique is commonly used when survey activities are intended to study human behavior, work processes, and natural phenomena. It is carried out on respondents to gather accurate and reliable information[4].
2. Interviews
   Interviews are a data collection method where researchers ask direct, face-to-face questions to sources or data sources.
3. Documentation
   Documentation provides accurate evidence from recorded sources to depict events that occurred at the researcher's location.
4. Questionnaires
   Questionnaires are distributed to farmers to collect data on their income during one planting season.

Data analysis was conducted to determine the income of a beef and sheep farming business in Bulu Cina. The general formula used to determine the income of a sheep business:

1. To perform a revenue analysis use a formula:

   **$TR = P \times Q$ ……[9]**

   **Description**,

   TR = Total Revenue (IDR)
   P = Price (IDR)

Q = Quantity (IDR)

2. Analyze costs with formulas:

**TC =TFC +TVC ……..[4]**

**Description,**

TC = Total *Cost* (IDR)
TFC = Total *Fixed Cost*(IDR)
TVC= Total Variable *Cost* (IDR)

3. Analisispendapatandenganrumus

**Pd = TR –TC ……[10]**

**Description,**

Pd = Pendapata (IDR)
TR = Total Revenue(IDR)
TC = Total Cost(IDR)

## 3. RESULTS AND DISCUSSION

**Respondent Characteristics**

The data presents the characteristics of breeders in the beef sheep industry in Bandar Senembah Village, Binjai City. These characteristics include the breeder's age, formal education, number of children, and experience in the beef sheep farming industry. You can find detailed information about the respondents' characteristics in Table 1.

**Table 1. Characteristics of Respondents**

| No | Description | Unit | Range | | Average |
|---|---|---|---|---|---|
| | | | Lowest | Highest | |
| 1. | Age | Year | 15 | 42 | 28 |
| 2. | Education | Year | 12 | 18 | 16 |
| 3. | Number of children | Person | 0 | 6 | 3 |
| 4. | Experience | Year | 3 | 12 | 7 |

**Cost Analysis**

Farmers who manage a sheep business incur two types of costs: fixed costs and variable costs. Fixed costs remain constant per output level or are still incurred even when no production occurs, as they are not exhausted within a production per 6 month. Examples of fixed costs in a beef sheep fattening business include depreciation costs for pens and equipment. To calculate depreciation costs, one can subtract the item's final value from its initial value and then divide the difference by the length of use. Depreciation costs are calculated by dividing an investment's cost by the years it is expected to be valid[4].

*Variable costs* vary depending on the production level or the goods produced. These costs are typically used up during the production process. In the case of a beef sheep fattening business, variable costs could include purchasing slaughtered sheep at the beginning of the year, additional feed expenses, medicines and vitamins, and wages for labor. For more detailed information on the average costs associated with this business, please refer to Table 2.

**Table 2. Average Production Costs in Sheep Businesses**

| No | Total BiayaProduksi (Rp) | | |
|---|---|---|---|
| | Fixed Cost (IDR) | Variable Cost (IDR) | Amount (IDR) |
| 1 | 677.300 | 8.073.600 | 8.750.900 |
| 2 | 580.500 | 7.980.100 | 8.560.600 |
| 3 | 877.000 | 7.229.800 | 8.106.800 |
| 4 | 845.600 | 8.325.000 | 9.170.600 |
| 5 | 685.000 | 8.851.500 | 9.536.500 |
| 6 | 405.500 | 8.713.200 | 9.118.700 |
| 7 | 659.700 | 9.165.500 | 9.825.200 |
| Amount (IDR) | 4.730.600 | 58.338.700 | 63.069.300 |
| Average (IDR) | 675.800 | 8.334.100 | 9.009.900 |

Table 2 presents the fixed and variable costs involved in sheep farming at the research location. The total fixed cost amounts to IDR 675.800, which includes cage depreciation and other depreciation costs. On the other hand, the variable costs comprise production facility costs and labor costs. The production facility costs for the sheep farming business add up to Rp. 8.334.100, which makes up 26% of the total cost. This category includes feed, vitamins, medicine, and livestock costs at the beginning of the year. The remaining 74% of the total cost is allocated to labor costs, the main expense in beef sheep fattening in the study area.

According to the research findings, variable costs account for 92.50% of the total costs, while fixed costs only make up 7.50%. Fixed costs do not impact the production output but affect the profit level that sheep farmers can achieve. On the other hand, variable costs directly affect the amount of production that can be produced[10], [11].

**Sheep Business Revenue and Income**

The income of a sheep business depends on the size of production and the price at harvest. In Bulu Cina Village, the selling price of sheep ranges from IDR 1.056.685 to IDR 1.598.750with an average of IDR 1.244.948. On average, a sheep farming business produces 18 heads per period, six months. The average revenue and income for sheep farming businesses in Table 3.

**Table 3. Sheep Business Revenue and Income Per Period**

| No | Description | Business Value (IDR) |
|---|---|---|
| 1 | Fix Cost | 675.800 |
| 2 | Variable Cost | 8.334.100 |
| 3 | Total Cost (1+2) | 9.009.900 |
| 4 | Total Revenue (P*Q) | 38.529.691 |
| 5 | Profit (4 - 3) | 29.519.791 |

According to Table 3, businesses in this research area generated a production value of IDR.38,529,691 per period by selling live and fresh lambs. The total cost, which includes fixed and variable costs, was IDR. 9,009,900. Based on the data in Table 3, sheep breeders earned a net income of IDR. 29,519,791 per period is the difference between total revenue

and total costs. To determine whether a sheep business is profitable, we can use the assessment criteria considering the price level multiplied by the amount of sheep production, which should exceed all costs. By meeting this criterion, we can conclude that investing in developing a sheep business is wise. In order to maximize profits, it is essential to focus on increasing technical efficiency.

**Sheep Farmer Income Per Month**

**Table 4. Distribution of Income Levels for Sheep Farming Businesses**

| No. | Pendapatan (Rp/Tahun) | | | Farmer's Income (IDR/ Month) |
|---|---|---|---|---|
| | Revenue (IDR) | Production cost (IDR) | Profit (IDR/Period) | |
| 1 | 40.629.310 | 8.750.900 | 31.878.410 | 2.656.534 |
| 2 | 39.972.580 | 8.560.600 | 31.411.980 | 2.617.665 |
| 3 | 32.783.000 | 8.106.800 | 24.676.200 | 2.056.350 |
| 4 | 28.752.590 | 9.170.600 | 19.581.990 | 1.631.833 |
| 5 | 39.005.300 | 9.536.500 | 29.468.800 | 2.455.733 |
| 6 | 36.482.560 | 9.118.700 | 27.363.860 | 2.280.322 |
| 7 | 52.082.500 | 9.825.200 | 42.257.300 | 3.521.442 |
| Total (IDR) | 269.707.840 | 63.069.300 | 206.638.540 | 17.219.878 |
| Average (IDR) | 38.529.691 | 9.009.900 | 29.519.791 | 2.459.983 |

Table 4 presents the monthly net income of sheep farmers in the research area. The table reveals that the net income of sheep farming businesses ranges from IDR 1.631.833 per month to IDR 3.521.442 per month. On average, beef sheep breeders in the research area receive a monthly net income of IDR 2.459.983. The difference in net income is due to variations in production and breeder use of superior seeds. The amount of production affects the costs and income of farmers.

According to the findings from field surveys, the size of a sheep farming business significantly affects its production and income. As the scale of the business increases, so does the production and income. Conversely, smaller-scale sheep businesses tend to generate less production. Additionally, the expertise of the breeders in the field of research also plays a role in business production. The more experienced the breeders, the more opportunities they have to increase production and income. This was confirmed when the sample group with the highest experience, who had been involved in sheep farming for 12 years and had a large business scale, produced the highest production and income. They earned IDR. 3.521.442 per month.

**Economic Analysis and Business Feasibility**

After conducting a production cost analysis and income analysis, we carried out a feasibility analysis of sheep farming in Bulu Cina Village, as shown in Table 5.

**Table 5. Feasibility Analysis of Sheep Farming Business**

| No | Description | Unit | Business Value |
|---|---|---|---|
| 1 | Total Cost | IDR | 9.009.900 |

| | | | |
|---|---|---|---|
| 2 | Total Revenue | IDR | 38.529.691 |
| 3 | Profit (2 - 1) | IDR | 29.519.791 |
| 4 | Revenue Cost Ratio ( 2/1 ) | - | 4,27 |

From Table 5, it can be seen that the R/C ratio value for the sheep farming business in Bulu Cina Village is 4,27. This value is obtained by comparing the total receipts of IDR 38.529.691 with the total costs of IDR 9.009.900. This indicates that the sheep farming business is economically feasible, as the R/C ratio value is greater than 1, with an average value of 4,27.

## 4. CONCLUSION

After conducting thorough research, it can be concluded that the sheep fattening business in the research area is profitable for sheep farmers, with an average net income of IDR 2,459,983 per month and a total profit of IDR 29,519,791 per period. Thus, this type of business is worth pursuing and developing as it has a high RCR value of 4.27. To increase production and income from sheep farming businesses, it is essential to utilize production factors efficiently.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## AUTHORS' CONTRIBUTIONS

All authors collaborated in carrying out this work. Julia Marisa was responsible for designing the study, performing the statistical analysis, writing the protocol, and drafting the manuscript. SukmaAdityaSitepu managed the study analyses, while Aditiya Amanda Rianto managed the literature searches. Anwar Suhut accommodated facilities for conducting research. The final manuscript was reviewed and approved by all authors.

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