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ANALYSIS OF BEEF CATTLE FATTENING BUSINESS INCOME IN BUKIT PARIAMAN VILLAGE, TENGGARONG SEBERANGDISTRICT, KUTAI KARTANEGARA REGENCY, EASTKALIMANTAN, INDONESIA

By:

Yohanes Adi W ahyono and Nella N aomi Duakaju

Agribusiness Study Program, Faculty of Agriculture, Mulawarman University Samarinda, East Kalimantan Indonesia

Corresponding author: nella_duakaju@yahoo.co.id

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ABSTRACT

The agricultural sector provides a lot of food for the needs of the population and creates many jobs, especially in rural and urban areas. The large number of conversions to the function of agricultural land as settlements encourages farmers to increase their income by fattening beef cattle which is a side job. The study aimed to determine the production costs and revenues of the beef cattle fattening business and to analyze the income of the beef cattle fattening business in Bukit Pariaman Village, Tenggarong Seberang District, Kutai Kartanegara Regency, East Kalimantan.

This research was conducted in Bukit Pariaman Village from November 2022 until January 2023. The data collection method was carried out using the census method with a total of 13 respondents, the data analysis method used income analysis.

The average production cost of beef cattle fattening business was IDR 129,493,422 breeder⁻¹ cycle⁻¹ with details of an average variable cost of IDR 124,559,256 and an average fixed cost of IDR 4,934,167 breeder⁻¹ cycle⁻¹, with an average rearing scale of 7 cows/breeder. The total revenue from the beef cattle fattening business was IDR 2,085,500,000 cycle⁻¹ with a total number of cattle fattened by 99 heads or an average of IDR 160,423,077 breeder⁻¹ cycle⁻¹ with an average maintenance scale of 7 head breeder⁻¹. The average income of farmers was IDR 402,085,511 cycle⁻¹.

Based on this research, it can be concluded that the components at production costs with the highest costs are found in feeder costs of IDR 13,400,000 head, with an admission fee of IDR 21,065,657 head cycle⁻¹, the income received by farmers is IDR 4,061,470 head breeder⁻¹ cycle⁻¹

KEYWORDS

Income, Cattle Fattening, Bukit Pariaman Village.

INTRODUCTION

Indonesia is a country where the average population works as farmers and livestock breeders or is involved in the agricultural sector. The agricultural sector provides a lot of food for the population's needs and opens up many job opportunities, especially in rural and urban areas. The conversion of agricultural land as a residential area encourages farmers to increase their income with other businesses that are side jobs.

One agricultural sector that has the potential to be developed is beef cattle farming which is part of the livestock sub-sector, this is because the need for meat in Indonesia is high and is increasing every year, as well as imports of meat and beef increasing every year [1].

Beef cattle are a source of food in the form of meat, which is one of the staple foods that has quite high economic value and is important for the needs of society. Cattle can produce a variety of needs, especially food in the form of meat and manure which can be used as organic fertilizer. The development of the livestock business is a positive thing and new hope in improving the welfare of farmers, of course in increasing income. This is of course accompanied by proper business management and good marketing management [2].

Development of the livestock sector is one part of agricultural development to achieve a resilient livestock system, as well as characterizing capabilities that can improve the welfare of farmers and livestock breeders to encourage overall sector growth. Increasing animal husbandry is aimed at improving the quality of production, increasing income, opening employment opportunities, and providing business opportunities for people in rural areas [3].

According to data sourced from the East Kalimantan Provincial Livestock Service in Kutai Kartanegara Regency in 2019, the number of cows was 27,509 head, whereas in 2020 it was 30,030 head, which means that cattle production has increased, but the need for beef is still lacking due to the lack of available cattle. , the Kutai Kartanegara Government must increase the fulfillment of beef production, even though there are still many obstacles or problems faced [4].

The need for feeder cattle in the East Kalimantan region is still lacking, so the East Kalimantan Provincial Government through the cattle senders/(stakeholders) must bring in cattle from outside the island, namely from the islands of Sulawesi and East Nusa Tenggara for the Balinese breed of cattle. The arrival of cattle from outside the island, namely in the form of feeder cattle to be fattened for approximately 6 months, is intended by the government so that local farmers can benefit from fattening cattle with intensive care.

Bukit Pariaman Village is one of the villages located in the Tenggara Seberang subdistrict where the majority of the people work as farmers and livestock breeders. This is supported by the existence of agricultural land that is large enough to support farmers and breeders. However, the cattle fattening system in Bukit Pariaman Village still uses a traditional system that only uses wild grass and corn stalk waste as cattle feed. With the traditional system, farmers have to keep livestock for quite a long time because there is no additional feed. This will affect the farmer's income level and cause the fattening process to take longer namely 6-7 months.

In general, breeders in Bukit Pariaman Village buy feeder cattle less than 6-7 months after Eid Al-Adha because at that time the demand for cattle increases, and also the breeders hope to get quite

large profits and income. The cost of caring for and purchasing prices for feeder cattle has increased due to the foot and mouth disease outbreak, which means farmers have to buy feeder cattle that are more expensive than the previous year's price.

In this regard, it is necessary to develop a beef cattle fattening business that can be managed by farmers by paying attention to production which can increase income. Income analysis must be carried out to determine the farmer's income from the beef cattle fattening business being carried out as well as determining the farmer's profit results [3]. Profit is an indicator of the success of a business. These profits can be determined through income analysis.

The objectives of this research are: to determine the production costs and revenues of beef cattle fattening businesses; and to analyze the income of beef cattle fattening businesses

RESEARCH METHODS

A. Time and Location

This research was carried out from November 2022 to January 2023 in Bukit Pariaman Village, Tenggarong Seberang District, Kutai Kartanegara Regency, East Kalimantan. Bukit Pariaman Village is one of the villages where the majority of the population work as farmers and livestock breeders.

B. Data Collection Methods

The data collected were: (1) primary data obtained by direct observation at the research location and conducting interviews with breeders who run beef cattle fattening businesses, guided by a list of questions that have been prepared according to the research objectives; and (2) secondary data obtained from literature studies, related agencies from other sources that can support this research.

C. Sampling Method

The sampling method was carried out using the census method consisting of 30 respondents and there were only 13 breeders in the beef cattle business using a fattening system in Bukit Pariaman Village.

D. Variable Definition and Measurement

To obtain a clearer understanding of what will be researched, about the concept, it is operationally described as follows:

1. The fattening period is the fattening cycle for beef cattle for approximately 6 months from the fattening period until the beef cattle sale period.
2. Production costs are costs incurred by farmers during the process of fattening beef cattle. These costs consist of fixed costs and variable costs ($\text{IDR}_{\text{cycle}}^{-1}$).
3. Fixed costs are costs incurred by farmers that do not change and are not used up during the fattening process. Fixed costs include equipment depreciation costs, cage depreciation costs, and transportation or fuel costs ($\text{IDR}_{\text{cycle}}^{-1}$).
4. Cage depreciation costs are the costs obtained by breeders from the price of making the cage divided by the durability of the cage or the age of the cage.
5. Equipment life depreciation costs are the costs obtained from purchasing the equipment divided by the technical life of the equipment.
6. Variable costs are costs incurred by breeders that are relatively unstable and these costs are influenced by the number of livestock that will be fattened in one production ($\text{IDR}_{\text{cycle}}^{-1}$).
7. Revenue is the value of the proceeds from the sale of beef cattle received by the farmer through

the number of cattle fattened multiplied by the price of the cattle sold (IDR cycle^{-1}).

8. Income from the beef cattle fattening business is the income that has been obtained with the costs that have been incurred during the fattening process (IDR cycle^{-1}).

E. Data Analysis Method

The data analysis method used is as follows:

1. Production Costs

According to [5], the total costs during the production process are formulated as follows:

$$TC = TFC + TVC$$

Information :

TC = Total Production Cost (IDR cycle^{-1}); TFC = Total Fixed Cost (IDR cycle^{-1}); and TVC = Total Variable Costs (IDR cycle^{-1}).

2. Acceptance

According to [6], the total amount of revenue can be obtained by multiplying the price and the number of goods formulated as follows:

$$TR = P \times Q$$

Information :

TR = Total Revenue (IDR cycle^{-1}); P = Price (IDR Head^{-1}); and Q = Quantity OR Amount of Production (Head)

3. Income

According to [5], total income can be obtained through total revenue minus the total in the production process with the following formula:

$$I = TR - TC$$

Information :

I = Income (IDR cycle^{-1}); TR = Total Revenue (IDR cycle^{-1}); and TC = Total Cost (IDR cycle^{-1})

RESULTS AND DISCUSSION

A. General description of Bukit Pariaman Village

Bukit Pariaman Village is a village located in Tenggara Seberang District, Kutai Kartanegara Regency with an area of 7,937 hectares. This village is a village that supplies agricultural and livestock commodities because the majority of its residents make their living as farmers with an area of 850 ha of rice fields and 706 ha of farmland. Plantations 101 ha and forest area 6,280 ha.

The population of Bukit Pariaman Village consists of 3,827 men and 3,618 women. Based on their livelihoods, there are 2,484 farmers, 740 farm workers, 50 civil servants, 73 traders, 25 breeders, 3 doctors, 3 soldiers, 27 mechanics, 10 household assistants, 906 private employees, and 2,330 people who are not working.

B. Respondent Characteristics

The characteristics of the respondent farmers in Bukit Pariaman Village are 13 people who are active beef cattle fattening business actors, namely as follows:

1. Age

The condition of the respondents consisted of: 9 respondents aged 15-64 years (69,23%), and 4 respondents aged more than 64 years (30,77%). This shows that breeders who are active in the beef cattle fattening business are of productive age.

2. Education level

The educational level of respondents who did not attend school was 1 person (8%), elementary school was 5 respondents (38%), middle school and high school each was 3 respondents (23%) and bachelor's degree was 1 respondent (8%).

3. Number of Family Dependents

The number of family dependents influences the beef cattle fattening business, namely, it can reduce labor costs by using family labor. Based on the data obtained, the number of dependents 0-1 people has a percentage of 6 respondents (46%), the number of dependents 2-3 people is 6 people (46%), and for the number of dependents 4-5 people is 1 respondent (8%).

4. Long time breeding

The condition of the respondents based on the length of time they have been raising breeders consists of starting from 0-5 years as many as 6 respondents (46%), 6-10 years as many as 3 respondents (23%), 11-16 years as many as 1 respondent (8%), and 16-20 years as many as 3 respondents (23%). This shows that there are more breeders with 0 to 5 years of farming experience than those with more than 5 years of farming experience.

5. Cage Size

The size of the cage greatly influences the number of livestock fattened by farmers. Based on the research, 5 respondents (38%) obtained data from breeders with cage sizes of 0-50 m² and 8 respondents (62%) with cage sizes of 51-10 m².

6. Area of Forage Gardens for Animal Food

The area of the forage garden can influence the use of production costs for beef cattle fattening businesses. The wider the garden, the easier it is for farmers to find feed. Based on the research, data was obtained from breeders with Forage Gardens for Animal Food garden areas of 0 to 2000 m² as many as 2 respondents (15%), breeders with anAnimal Food garden area of 2100 to 3000 m²with as many as 9 respondents (69%) and breeders with anAnimal Food garden area >3000 m² as many as 2 respondents (15%).

7. Use of Forage Fertilizer for Animal Feed

For forage, farmers use two types of fertilizer, namely urea and manure.

B. Overview of Beef Cattle Fattening Business

The beef cattle fattening business is a business carried out by farmers in Bukit Pariaman Village as a side business because there is a large amount of agricultural waste that can be used as feed for beef cattle and can reduce feed costs. Farmers in Bukit Pariaman Village choose the type of male Bali cattle to be cultivated in the fattening business compared to breeding. Because beef cattle fattening has a shorter time of approximately 6 months in one cycle or only once a year the beef cattle fattening business is used as a side business to the farmer's main business, namely farming. The labor used by breeders is to help breeders look for animal feed, while breeders who do not use labor look for livestock feed themselves.

Several stages in the beef cattle fattening business include: (1) building a pen; (2) planting forage trees, (3) selecting feeder cattle, (4) administering vitamins and deworming, (5) searching for animal feed, (6) providing food and water, (7) caring for cattle, and (8) selling.

C. Production Costs and Revenue from Beef Cattle Fattening Business

1. Production Costs

Total production costs are all costs incurred by farmers in the process of fattening beef cattle in Bukit Pariaman Village. These costs include : (1) fixed costs including depreciation of equipment, building cages, and transportation or fuel costs, and (2) variable costs including the cost of purchasing cattle feed, the cost of forage fertilizer for livestock, the cost of rope, the cost of salt, the cost of deworming, vitamin costs, labor costs, electricity costs). Details of production costs are presented in Table 1.

Table 1. Production Costs in Beef Cattle Fattening Businesses in One Cycle

| Description | Average cost (IDR cycle ⁻¹) |
|--|--|
| Fixed cost | |
| Equipment Depreciation Costs | 208.013 |
| Cage Depreciation Costs | 2.455.385 |
| Transportation Costs (BBM) | 2.270.769 |
| Total Fixed Costs | 4.934.167 |
| Variable Costs | |
| Animal Food Forestry Garden Fertilizer | 282.385 TM |
| Rope | 234.231 |
| Mineral (salt) costs | 286.769 |
| Medicines and vitamins | 442.230 |
| Electricity cost | 109.794 |
| Labor costs | 21.288.462 |
| Total Variable Costs | 124.559.256 |
| Total Production Costs | .493.422 |
| Cost Per Head | 17.004.187 |

Source: Primary Data (processed), 2023

Table 2. Total Production Costs of Beef Cattle Fattening Business in Total 99 Heads and 13 Breeders in One Cycle

| Cost Type | Total Cost (IDR cycle ⁻¹) | Average (IDR cycle ⁻¹) |
|-----------------------|--|---------------------------------------|
| Fixed cost | 64.144.167 | 4.934.167 |
| Variable Costs | 1.619.270.322 | 124.559.256 |
| Total | 1.683.414.489 | 129.493.422 |

Source: Primary Data (processed), 2023

The cost of producing beef cattle using a fattening system with a fattening period of approximately 6 months with an average cost per farmer of IDR 129,493,422 cycle⁻¹ with an average cost per head of IDR 17,004,187 cycle⁻¹. Production costs incurred include fixed costs and variable costs.

Fixed costs consist of the components of equipment depreciation, cage depreciation, and transportation or fuel costs, while variable costs consist of components of the cost of purchasing cattle feed, the cost of forage fertilizer, the cost of rope, the cost of salt, the cost of deworming, the cost of vitamins, the cost of labor. electricity cost. Of these components, the largest cost is found in the cost of feeder beef cattle.

The cost of feeder beef cattle for breeders is IDR 13,400,000 head⁻¹. This feeder cost is relatively more expensive compared to research [7], with feeder costs amounting to IDR 8,617,222 head⁻¹. This is because in previous research the feeder cattle purchased were obtained through local breeders, while breeders in Bukit Pariaman Village process beef cattle feed imported from outside the island, which makes the feeder price relatively more expensive.

The existing electricity cost component is used for bathing livestock, drinking livestock, and lighting by calculating the number of tools multiplied by the amount of electricity consumed multiplied by the length of use and then multiplied by one fattening cycle.

Another component of production costs that has large costs is labor costs. When compared with research [8] there is quite a big difference in labor costs, this is influenced by the fact that breeders in Sebulu District carry out a semi-intensive rearing system, so that beef cattle breeders in Sebulu District do not have to look for grass every day, in contrast to breeders in Bukit Pariaman Village where farmers have to look for food every day.

Based on Table 2, it is known that the total production costs in one cycle for 13 breeders are for fixed costs IDR 64,144,167 cycle⁻¹ or with an average of IDR 4,934,167 cycle⁻¹ and for variable costs it reaches IDR 1,619,270,322 cycle⁻¹ with an average -an average of IDR 124,559,256 per cycle for a total production cost of IDR 1,683,414,489 in one fattening cycle.

2. Revenue and Income

Revenue is the result received by the farmer which consists of two parts, namely total production and livestock selling price. Based on the data obtained, the number of beef cattle being fattened was 99 heads. The income obtained by all breeders in one fattening cycle is IDR 2,085,500,000 with an average income per head of beef cattle of IDR 21,065,657 and each breeder receives an average income of IDR 160,423,077. This shows the farmer's acceptance during one fattening cycle.

Income is obtained through receipts reduced by total production costs in one cycle. The total income of the 13 beef cattle breeder respondents was IDR 402,085,511 cycle⁻¹ and on average each cow earned an income of IDR 4,061,470 cycle⁻¹. Details of the average revenue and income from beef cattle fattening businesses are presented in Table 3.

Table 3. Details of Beef Cattle Fattening Business Income with a Total of 99 Tails and 13 Breeders in One Cycle

| Description | Amount(IDRcycle ⁻¹) |
|-------------------|---------------------------------|
| Fixed cost | 64.144.167 |
| Variable Costs | 1.619.270.322 |
| Total cost | 1.683.414.489 |
| Reception | 2.085.500.000 |
| Income | 402.085.511 |
| Income (per head) | 4.061.470 |

Source: Primary Data (processed), 2023

The revenue obtained by beef cattle breeders with a total of 99 beef cattle reached IDR 2,085,500,000 per cycle⁻¹ with an average revenue per beef cattle of IDR 21,065,657 per cycle⁻¹. The amount of income earned by farmers depends on the selling price of beef cattle and the number of beef cattle being fattened. The size of production costs can also influence the income received by farmers. The difference in income received by each farmer in one cycle is influenced by the purchase price of cattle or the price of beef cattle feeder because the lower cost of beef cattle feeder can increase the revenue received by breeders.

Based on the results of research [9], breeders in Tasikmalaya Regency get two income inputs, namely from the sale of manure waste and the sale of beef cattle. This makes breeders get greater revenue than if they only sell beef cattle. This is inversely proportional to breeders in the village. Bukit Pariaman, where farmers only sell beef cattle, generates revenue through only one input. Furthermore, research results [10] show that the total revenue (TR) from the people's beef cattle farming business is an average of IDR 39,898,474.00 per farmer per one beef cattle fattening period, while the total cost (TC) is an average of IDR 34,270,431 cycle⁻¹ for each farmer per one beef cattle fattening period. So the level of profit (n) obtained by each farmer in one beef cattle fattening period is IDR 5,628,042 cycle⁻¹.

The income of beef cattle in one cycle received by 13 breeders in Bukit Pariaman Village with a total of 99 beef cattle is IDR 402,085,511 cycle⁻¹ and for each head, they get an income of IDR 4,061,470 cycle⁻¹. On average, each breeder earns an income of IDR 30,929,655 cycle⁻¹. The size of the income received by farmers depends on production costs, the number of beef cattle being fattened, and the selling price of beef cattle. Determining the selling price of beef cattle is usually done using an estimation system of the meat that the buyer will get.

Production costs greatly influence the income received by breeders, because the smaller the production costs incurred by breeders in one cycle and the greater the selling price of cattle can increase the income of beef cattle in Bukit Pariaman Village.

Based on research [8], the beef cattle business in Sebulu District with 3 beef cattle for each farmer, the average income for the people's livestock farming beef cattle business in Sebulu District reaches IDR 16,889,851 cycle⁻¹, while for breeders in Bukit Pariaman Village they get IDR 4,061,470 head⁻¹ cycle⁻¹. Based on this comparison, it can be stated that the income of breeders in Bukit Pariaman Village is relatively smaller compared to research [8]. This is due to the presence of components in production costs that are quite large.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

Based on the results of research in Bukit Pariaman Village, Tenggara Seberang District, Kutai Kartanegara Regency, East Kalimantan, the following conclusions can be drawn:

1. The average production cost in one cycle is approximately 6 months, the average total production cost is IDR 129,493,422 for breeder⁻¹ cycle⁻¹ for one breeder and the total production cost for all breeders in Bukit Pariaman Village is IDR 1,683,414,489 cycle⁻¹. The average income of breeders during one cycle with the average selling price of beef cattle is Rp. 21,065,657 head⁻¹ breeder⁻¹ cycle⁻¹ and the total income for all beef cattle fattening business actors in Bukit Pariaman Village is IDR 2,085,500,000 cycle⁻¹.
2. The average income from the beef cattle fattening business per head of beef cattle is IDR 4,061,470 head⁻¹ breeder⁻¹ cycle⁻¹ and for total income IDR 402,085,511 cycle⁻¹.

B. Suggestions

Suggestions that can be given include:

1. Breeders in Bukit Pariaman Village have great potential to develop a female cattle breeding business so that feeder cattle do not depend on feeders from outside East Kalimantan.
2. Farmers can process livestock manure waste as organic/manure fertilizer to gain additional income and breeders can use the drum fertilizer as HMT fertilizer.

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