PRODUCTIVITY AND BUSINESS INCOME OF CATTLE BASED ON THE MAINTENANCE SYSTEM

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ABSTRACT

The development of the livestock subsector is an inseparable part of agricultural development in order to improve the economy of the nation and the state. This effort aims to prosper farmers and ranchers and their ability to encourage the growth of the agricultural sector, especially the livestock subsector. Cattle development in Indonesia is generally small in scale and only as a side business with a traditional rearing system. Such conditions lead to low production and productivity of beef cattle, so that it is unable to meet the increasing demand for meat and has an impact on increasing imports of meat and cattle (Yusran, 2004). This research has been carried out in Donggala Regency, Central Sulawesi Province, from February to June 2022. This study aims to analyze the productivity and income of cattle business based on the maintenance system. The method used in this study was a survey method and interviews. The types of data used are primary and secondary data which include education, number of livestock, livestock experience, maintenance system, productivity and business income. The analysis model used is total productivity and income. The results showed that the business productivity of the intensive maintenance system of beef cattle farmers was the highest with a value of 14.23, followed by an extensive and semi-intensive maintenance system with values of 13.47 and 12.25, respectively. Likewise, the largest livestock business income is in the intensive maintenance system, which is Rp. 387,000,000,-, followed by an extensive maintenance system of Rp. 243,000,000, and semi-intensive of Rp. 58.500.000.

Keywords: Productivity, income, cows, maintenance system.

I. Introductions

1) The development of the livestock subsector is an inseparable part of agricultural development in order to improve the economy of the nation and the state. This effort aims to prosper farmers and ranchers and their ability to encourage the growth of the agricultural sector, especially the livestock subsector. Cattle development in Indonesia is generally small in scale and only as a side business with a traditional rearing system. Such conditions lead to low production and productivity of beef cattle, so that it is unable to meet the increasing demand for meat and has an impact on increasing imports of meat and cattle (Yusran, 2004). The contribution of beef to national meat needs is 23% and is expected to continue to increase (Directorate General of Animal Husbandry, 2015).

2) In general, the need for beef is still met by imports of meat and beef. The need for beef as a source of animal protein is increasing in line with the increasing public awareness of the importance of balanced nutrition, population growth and increasing people's purchasing power (Deptan 2006). Efforts to avoid the draining of beef cattle and meet people's meat consumption require an approach that integrates technical, economic and social aspects in an integrated manner in the program package.

3) The principles that need to be adopted are the principle of sustainability of national livestock resources (population), the principle of balance (supply-demand), and the principle of independence (reducing imports) (Sudardjat, 2004).

4) The carrying capacity of the development of beef cattle is one of the important factors to support the increase in beef cattle productivity, to achieve optimal results, it is necessary to develop a livestock development strategy that has a good carrying capacity, Such feed given to livestock must contain good nutritional value, large land, waste treatment, utilization of fodder forage. Evaluation of the availability of forage and food storage waste is carried out to determine the carrying capacity of the area for fodder forage as a support for beef cattle feed.

5) Based on this, an area is needed for the development of beef cattle which is now one of the leading commodities of the region that is able to produce high production to fulfill animal protein and already has its own market (Riady 2004).According to (Sugeng 2008), the prospect of raising beef cattle in Indonesia still remains wide open for a long time. This is because beef cattle is one of the resources that has high economic value and is important in people's lives. Because cattle can produce various kinds of needs in the form of meat as a source of protein, leather as an industrial material (bags, belts, jackets, shoes, hats), horns can be used as craft materials and manure can be used as manure.

6) In terms of existing potential, Indonesia should be able to meet the needs of food from livestock and has the potential to become an exporter of livestock products. This is possible because it is supported by the availability of livestock and farmer resources, land with various types of feed crops, by-products of the agricultural industry as a source of feed, and the availability of technological innovations. If the potential of existing land can be utilized only 50%, the number of livestock that can be accommodated reaches 29 million units of livestock. Not to mention that the existing natural pastures are improved and improved in quality by using superior grasses so that their capacity increases markedly (Bamualim et al. 2008).

7) The large livestock commodity that has the largest population in Central Sulawesi Province is beef cattle which is then followed by horses, buffaloes and dairy cows (Disnakeswan, 2015).

8) Central Sulawesi Province has potential in the development of beef cattle so that it is able to be a provider of beef because the need for beef every year continues to increase along with the pace of population growth.

9) One of the efforts that must be made, namely developing types of livestock that are adapted to the potential of the community and its territory. The form of efforts to develop cattle is considered very appropriate in the regions in the Central Sulawesi Region, because it is one of the potential commodities of the region. This is possible, because it sees the potential of the community in carrying out cattle raising activities. According to (Handayani and Gayatri 2005), states that in general the beef cattle business is a business that aims to produce a livestock product to meet the demand for community needs for animal protein and aims to generate profits from the business. Livestock business will be more efficient if expenses are less than receipts.

10) Beef cattle farming activities include breeding, maintenance, provision of fodder forage, provision of pens, water supply, health care and productivity.

11) The development of beef cattle business in Donggala Regency is quite developed by looking at the data on the beef cattle population in Donggala Regency of 36,328 heads, Meanwhile, in Balaesang District, the beef cattle population reached 2,974 heads (Central Statistics Agency of Donggala Regency 2013). Based on the description above, it is important to conduct research on the productivity of beef cattle business based on the maintenance system in Donggala Regency.

2. Methode

The research was carried out in February 2022 until it was completed, this research was located in Balaesang District, Donggala Regency, Central Sulawesi Province.

Method

This research was conducted with a survey method, namely research that takes samples from a population of breeders and uses questionnaires as a data collection tool. In obtaining research data, data

collection can be done by: Observation, Interview, Questionnaire, Documentation

The type of data used in this study is descriptive quantifiable, namely data in the form of numbers which include, education, number of livestock, livestock experience, maintenance system and farmer income which is an independent (free) variable. As for productivity, it is a dependent bound (bound) variable.

Income

Income analysis serves to measure the success or failure of a business activity, determine the main components of income and whether that component can still be improved or not. Business activities are said to be successful if the income meets the requirements sufficient to meet all means of production. The formula used for revenue analysis is as follows:

$$I = TR - TC$$

Information:

I	: Income
TR	: Total Revenue
TC	: Total Cost

Productivity

Productivity is a comparison between the results achieved (output) and the overall resources (inputs) used by the unity of time (Simanjuntak, 1998). The same statement was expressed by Reksohadiprodjo (1995) that productivity is the improvement of the production process. The process of increasing production means an improved comparison between the amount of resources used (input) and the amount of goods and services produced (output). A reduction in input with fixed expenditure or an increase in output with fixed input is an increase in productivity. The formula used in productivity analysis is as follows:

$$A = Ti/To$$

Information:
A : Productivity
To : Total Output
Ti : Total input

RESULTS AND DISCUSSION

Beef Cattle Business Productivity Based on Maintenance System

Productivity is the improvement of the production process. The process of increasing production means an improved comparison between the amount of resources used (input) and the amount of goods and services produced (output). Reductions in inputs

with fixed expenditures or increases. Output with fixed inputs is an increase in productivity. Productivity is also used to measure a person's efficiency. Based on the data obtained, the average level of business productivity of beef cattle farmers in Balaesang District, Donggala Regency is 14.09, which means that the business productivity value is very high because it is able to produce large amounts of output value. This can be influenced by several factors including capital and income which are very influential in determining the productivity of the farmer's business.

Table 1. Beef Cattle Business Productivity Results Based on The Maintenance System

Maintenance System	Farmers	Total Input (Ti)	Total Output (To)	Productivity
semi intensive	18	4.774.000	58.500.000	12,25
Ekstensive	12	18.046.000	243.000.000	13,47
Intensive	3	27.194.000	387.000.000	14,23
Total	33	50.014.000	688.500.000	39,95

Source : Primary Data Analysis 2022

Table 1. shows that the highest productivity is in the intensive maintenance system of 14.23, followed by the Extensive maintenance system with a productivity of 13.47 and the semi-intensive maintenance system with a productivity of 12.25.

In an extensive maintenance system, livestock have the opportunity to move from one place to another higher than the intensive maintenance system so that the energy released is higher. In addition, the intensive maintenance system makes it easier for farmers to control feed, health, and body weight so as to produce beef cattle with good skin.

In addition to maintenance, feed factors are other factors that affect livestock growth (weight and body size). The feed given to livestock is in the form of forage and concentrates (complete. feed) as additional feed. Meanwhile, the semi-intensive and extensive forage maintenance system is obtained from grass and grazing pastures. Competition for feed acquisition between livestock is also likely to be another factor that affects the

low performance of growth compared to intensive patterns. Intensive maintenance of beef cattle affects the maintenance system to obtain more optimal beef cattle growth performance, especially in the purpose of fattening beef cattle so that the selling price is high.

Total Farmer Income

The success of a livestock business can be seen from the level of income and business efficiency achieved. The business will be more advanced if the operating income obtained is higher. According to Nasaban, (2006) people who have higher incomes have more opportunities to increase their knowledge so that in the end they will easily be able to receive new information. Table 1. shows that the average income of beef cattle farmers can provide a clear picture of the importance of a farmer developing his business even though the business requires greater expenditure costs, this is balanced according to the opinion (Triana., 2007) that production costs are large and balanced with the scale of the business, the level of income of farmers will be greater if the management system is carried out optimally.

Table 2. Total Farmer Income

Maintenance System	Farmers	Income (IDR)
semi intensive	18	19.605.900
Ekstensive	12	17.604.500
Intensive	3	17.908.700
Average		18.373.000

Based on Table 2. above shows that the average income of cattle business in Balaesang District, Donggala Regency is Rp. 18,373,000 per year, or Rp. 1,531,000 per month. This income is still below the Donggala Regency minimum wage of Rp. 2,300,000,-, so of course it cannot cover the needs of farmers and their families. However, when viewed from the maintenance system, the highest income is in the semi-intensive maintenance system, which is Rp. 19,605,900,-, followed by operating income in the intensive maintenance system (Rp. 17,908,700,-) and an extensive maintenance system (Rp. 17,604,500,-).

This condition shows that the average income of beef cattle farmers can provide a clear picture of the importance of the maintenance system, even though the business requires increasingly large expenditure costs, in order to obtain maximum results. (Triana., 2007) states that production costs are large and balanced with the scale of the business, the level of income of farmers will be even greater if the management system is carried out optimally.

Conclutions

Based on the results and discussion, it can be concluded as follows:

1. The productivity of beef cattle business in a semi-intensive rearing system has the highest value, followed by an extensive maintenance system and an intensive maintenance system.
2. The highest beef cattle operating income was in the semi-intensive maintenance system, followed by the intensive maintenance system and the extensive maintenance system

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