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Beef Cattle Business Development Strategy Based on Ownership Scale and Income Level of Farmers in Parigi Selatan District Parigi Moutong Regency

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A B S T R A C T
The objectives of the research on Beef Cattle Business Development Strategy Based on Scale of Ownership and Income Level of Farmers in South Parigi Subdistrict, Parigi Moutong Regency are to determine the income of farmers at different ownership scales, determine the internal and external factors of beef cattle rearing and formulate alternative beef cattle development strategies. This research was conducted in a group of farmers in South Parigi Subdistrict, Parigi Moutong Regency in July 2024. The types of data used in this research are quantitative data and qualitative data. Data analysis used income analysis, RC ratio, analysis of external internal environmental factors and SWOT analysis. The results showed that beef cattle business income at the scale of 3-5 heads amounted to Rp.11,354,055 (R/C = 1.49), ownership scale of 6-10 heads amounted to Rp. 25,595,846 (R/C = 1.69) and scale above 10 heads amounted to Rp. 80,732,744 (R/C = 1.41). The position of the beef cattle farming business based on the IE matrix analysis is in the second quadrant with a total internal factor score of 2.73 and a total external factor score of 3.08, so the right strategy to do is the growth and build strategy.

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INTRODUCTION

Intelligent, healthy, quality and productive Human Resources (HR) are positively correlated with the amount of animal protein consumption in a country. This is because of the benefits of animal protein in forming a healthy, intelligent, productive and quality society. In developed countries, it is certain that animal protein consumption is quite high. Even in America, animal protein consumption reaches 70% of total protein consumption, or twice the consumption of vegetable protein. The public is very aware of the essence of consuming animal protein for health, productivity and intelligence. Protein plays an important role in the formation of new body cells and tissues and maintaining the growth and repair of damaged tissues. Protein can also be a source of energy if the body's needs for carbohydrates and fats are not met (Jaelani, 2008).

The contribution of animal protein is very much needed for the process of growth, development, and health maintenance, especially for toddlers and pregnant and lactating mothers. Protein requirements for toddlers are 2-2.5 grams per kilogram of body weight, while for adults it is only 1 gram per kilogram of body weight. Protein is one of the nutrients that is very much needed by humans in their growth and development. Protein plays an important role in the formation of new cells and tissues of the body and maintains the growth and repair of damaged tissues. Protein can also be a source of energy if the body's needs for carbohydrates and fats are not met (Jaelani, 2001).

Protein is divided into two groups, namely animal and vegetable protein. Sources of animal protein are meat, fish, chicken, eggs and milk. While sources of vegetable protein can be obtained from rice, grains and nuts. Vegetable protein can be called incomplete protein because it always lacks one or more essential amino acids. While animal protein has all the essential amino acids, so it is called complete protein (Burhanudin, 2011). As the population continues to increase, the need for meat continues to increase due to increased income which causes the need for animal protein to also increase. In connection with this, cattle, especially beef cattle, are one of the sources of food production in the form of meat which has high economic value and is important in people's lives.

Livestock as a sub-sector of agriculture in Indonesia is expected to provide a beneficial contribution to national development. The development of the livestock sub-sector to date has an important role for overall development. The livestock sub-sector has a fairly important role, especially in efforts to improve the quality and quantity of livestock production to increase income and in meeting food and nutritional needs, especially protein (Cahyo, 2010).

As one of the districts that has the potential for developing livestock businesses, Parigi Moutong Regency has a cattle population recorded in 2022 of 35,482, with Parigi Selatan District having the third largest population, namely 2,650 (BPS Parigi Moutong Regency, 2024). Based on this condition, Parigi Selatan District has been designated as a Livestock Production Center Area (KSPT) in December 2023. In addition to the number of cattle populations, the geographical proximity to the district capital facilitates program intervention, and the

availability of abundant agricultural waste is a potential for the development of local animal feed.

Beef cattle farming business development strategies must consider various aspects, such as efficient feed provision, improving livestock health management, and wider market access. With the right strategy, farmers can increase their livestock productivity, which will ultimately have a positive impact on increasing their income. Therefore, this study aims to develop a beef cattle farming business development strategy based on the scale of ownership and income level of farmers in Parigi Selatan District. Specifically, this study aims to analyze the income of farmers at different maintenance scales, analyze internal and external aspects that influence the success of beef cattle farming businesses in Parigi Selatan District, develop appropriate strategies based on the scale of livestock ownership and income level of farmers to increase productivity and welfare of farmers.

LITERATURE REVIEW

Beef Cattle Business

Beef cattle business is a business established with the main purpose of producing a livestock product to meet the demand for animal protein and aims to make a profit. Aditya's (2015) research aims to determine the income of beef cattle business and compare it with the wages of farm laborers in general in the local area and to determine the value of business profitability and compare it with the prevailing bank interest.

Beef cattle cultivation for meat production and market orientation is still low. Secondly, in cattle production centers in eastern Indonesia, which account for 16% of the national population and have large pastures, cattle become emaciated, have high mortality rates and low birth rates during the long dry season. The driving factors for beef cattle development are increasing market demand for beef, availability of a large workforce, government policies that support beef cattle development efforts, forage and agricultural waste available throughout the year, and local cattle farming is not affected by the global economic crisis (Mayulu and Sutrisno 2010).

Beef Cattle Husbandry System

The most effective beef cattle husbandry system is the intensive system, where cattle are placed in pens with controlled feed. This is so that feed and cattle health can be well controlled, as well as to reduce the physical activity of cattle so as to optimize cattle in producing meat (Sugeng, 2008). Based on their physiological condition and digestive system, cattle are classified as ruminants. Cattle have four parts of the stomach where the rumen contains microbes that help the digestive process. This allows cattle to consume and utilize even poor-quality feed (Herlambang, 2014).

Strategy

W-O (Weakness-Opprtunity) strategy is a strategy that uses existing opportunities to minimize weaknesses. Some alternative strategies are providing training in beef cattle management, increasing the number of calves by increasing the frequency of births through IB, making special counseling related to worm diseases and making cattle farming a promising main business. Based on respondent data, the majority of respondents/farmers only have a primary school education with minimal skills regarding beef cattle management. Karim (2019) training for workers is needed to

increase knowledge for business owners or workers who have an average elementary school education.

The S-T (Strength -Threat) strategy is a strategy that relies on strengths to close possible threats that can interfere with the development of potential beef cattle businesses. Alternative strategies that can be pursued are increasing the effectiveness of land use for beef cattle and building cooperation with the local government in increasing the productivity of beef cattle.

SWOT Analysis

SWOT analysis is the systematic identification of various factors to formulate a business (organization) strategy. This analysis is based on reality or logic that can maximize strengths and weaknesses but can simultaneously create opportunities and threats. SWOT analysis is a strategic planning method used to evaluate strengths, weaknesses, opportunities and threats in a project or a business speculation. These four factors form the acronym SWOT (Strength, weakness, opportunities and threats). This process involves determining the specific objectives of the business speculation or project and identifying the internal and external factors that support and those that do not in achieving these objectives (Rangkuty, 2009).

QSPM Matrix

The QSPM Matrix or Quantitative Strategic Planning Matrix is a matrix used to analyze various alternative strategies available to obtain priority strategies. Alternative strategies analyzed at this stage are strategies that have been produced in the formulation through previous analysis by combining internal and external factors. With the QSPM matrix, management can sort the various existing strategies to form a priority scale in implementing the strategy.

METHODOLOGY

This research was conducted in the Livestock Group, Parigi Selatan District, Parigi Moutong Regency in July 2024. The selection of this research location was based on the consideration that there is a large population of beef cattle in Parigi Selatan District, Parigi Moutong Regency. The types of data used in this study regarding the development strategy for beef cattle farming are quantitative data and qualitative data. The data sources used in this study are:

a. Primary data is data obtained directly from the results of direct interviews or surveys using a list of questions (questionnaires) that have been prepared in advance to obtain data on livestock farmers' income and internal and external factors of beef cattle farming businesses.
b. Secondary data is data that is already available so that researchers only need to search for and collect data. Secondary data is generally used to support primary data, and researchers must choose quality and appropriate data. Secondary data was obtained from the Parigi Moutong Regency Animal Husbandry Service, the Central Statistics Agency (BPS) of Parigi Moutong Regency.

The population in this study were all business actors in the beef cattle farming business activities that were members of a livestock group totaling 47 farmers. Sampling in this study used the census method, namely taking the entire population of beef cattle farmers who were members of the livestock group, who were expected to know well the internal and external conditions of the beef cattle business through group coaching that had been carried out so far. In addition, there were key informants who could provide

information on the internal and external conditions supporting the beef cattle business and were able to provide information related to the strategy for developing the beef cattle business in the Parigi Selatan District area, including the Sub-district Head, Sub-district Secretary, Village Head, and Head of the livestock group, with a total of 8 key informants.

Data analysis is one of the research processes carried out after all the data needed to solve the problem being studied has been obtained completely, accurately and accurately. In the use of analysis tools, it is very important to determine the accuracy of drawing conclusions, therefore data analysis activities are activities that cannot be ignored in the research process. This study uses quantitative and qualitative data analysis techniques, namely using the business analysis method and SWOT analysis.

RESEARCH RESULT AND DISCUSSION

Respondent Characteristics

a. Respondent Age

The average age of respondents according to the productive age grouping is as in Table 1.

Table 1. Respondent Characteristics Based on Age

Age (yrs)	Number of people)	Percentage (%)
28-64	41	87.23
65-70	6	12.77
	47	**100 ,00**

Source: primary data, processed (2024)

Based on the respondents' age data, 87.23% were of productive age and 12.77% were of non-productive age. Asrar et al. (2015) stated that age greatly influences physical ability in working and the way of thinking in making decisions. A person's age influences physical ability. The older a person is, the lower their physical ability and enthusiasm for learning. According to Mardikanto (1993), age will influence a person's level of maturity (both physical and emotional maturity). The age of the respondents is one of the factors that influences the level of ability of farmers in processing their livestock business.

b. Respondents' Education Level

The level of education of respondents affects the ability and mindset in carrying out tasks, the higher the level of education will have an impact on better planning in carrying out roles and functions and easier to accept and absorb new technology and more daring to take business risks compared to lower education. The limited education possessed by farmers and key informants greatly influences the mindset and insight in deciding the activities to be carried out.

Table 2. Respondents' Education Level

No.	Education	Number (Org)		Percentage (%)	
		Breeder	Key Informant	Breeder	Key Informant
1	Elementary School	19	0	40	0
2	Junior High School	9	0	19	0
3	Senior High School	17	5	36	63
4	Bachelor	2	3	4	38
Total		**47**	**8**	**100**	**100**

Source: Primary Data After Processing, 2024

Table 2 shows that education level is not a benchmark in cattle farming in Parigi Selatan District. This is in line with Riadi's opinion (2014) that low education is not a barrier to raising livestock because farmers already have a lot of experience in raising livestock or imitating other people's experiences in raising livestock. Meanwhile, key informants have had formal education at the high school and college level.

c. Livestock Experience

Experience is the most valuable teacher in every human life, because experience will provide more knowledge about everything. The more experience a farmer has, the more skilled he will be in managing a livestock business (Mastuti et al., 2008).

Table 3. Livestock Experience

No.	Livestock Experience (years)	Number of people)	Percentage (%)
1	1-10	35	74.47
2	11-20	3	6.38
3	>21	9	19.15
Total		**47**	**100**

Source: Primary Data After Processing, 2024

Respondent farmers have experience raising beef cattle ranging from one year to 44 years, with the largest number in the 1-10 years range, namely 74.47%.

d. Scale of Beef Cattle Ownership

Table 4. Scale of beef cattle ownership of respondents

No.	Scale of Cattle Ownership (heads)	Number of people)	Percentage (%)
1	1-5	30	72.34
2	6-10	13	27.66
3	>10	4	19.15
Total		**47**	**100**

Source: Primary Data After Processing, 2024

The scale of beef cattle ownership in Parigi Selatan District, Parigi Moutong Regency, shows variations in the number of cattle owned by farmers. Based on the data obtained, most farmers manage their livestock businesses on a small scale with a limited number of cattle. In detail, there are 30 farmers (72.34%) who have between 1 and 5 cattle, 13 people (27.66%) with a scale of 6 to 10 cattle, and 4 people (19.15%) with a scale above 10 cattle. This scale of livestock ownership has a significant influence on the productivity and income of farmers. Small-scale farmers, namely those who have 1 to 5 cattle, tend to face challenges in terms of efficiency and business management. The limited number of livestock makes it difficult for them to optimize production and income, because production costs such as feed, livestock health, and other livestock management cannot be shared among a large number of livestock. In contrast, larger-scale farmers (6 to 10 or more than 10 animals) have the potential to increase efficiency in managing their businesses, because fixed costs can be allocated to a larger number of animals.

Analysis of Beef Cattle Farming Business Income in Villages

Income analysis in beef cattle farming is very much needed to find out the difference between the amount of production obtained and the amount of costs incurred during one year of maintenance. Through this income analysis, the farm can make a plan related to increasing the business it manages. To be able to analyze the income obtained from the beef cattle farming business, we must first know all the components of expenditure during the production process and the recipients obtained from the sale of production results. All components of expenditure and recipients are then calculated for one year of maintenance (365 days) of livestock.

Beef Cattle Farming Production Costs

Production costs in beef cattle farming are costs incurred in the livestock farming business for one year. These production costs greatly define the livestock farming business activities carried out because this can affect the income obtained by the livestock farmer. If the costs incurred are too large and the income obtained is small, then the business is not profitable. Costs in a beef cattle farming business can be grouped into two parts, namely fixed costs and variable costs. The production costs in the cattle farming business in Parigi Selatan District, Parigi Moutong Regency include: Fixed costs

Fixed costs are costs used by livestock farmers that are fixed in nature or the amount does not change even though there is an increase or decrease in the amount of production, or in other words, costs are not affected by the number of cattle raised. This is in accordance with the opinion of Abiding (2002), that fixed costs can be interpreted as costs that remain the same even though the production results change to a certain extent. The components of fixed costs incurred in the beef cattle business in Parigi Selatan District, Parigi Moutong Regency consist of depreciation costs for pens and depreciation costs for equipment. The amount of each fixed cost can be seen in Table 5.

Table 5. Fixed Costs of Beef Cattle Business in South Parigi District, Parigi Moutong Regency

No.	Ownership Scale	Component Cost		
		Cage Depreciation Value (Rp)	Depreciatio Value Equipment (Rp)	Amount
1	**3-5**	973.923	220,189	1,194,112
2	**6-10**	1,094,231	382,231	1,476,462
3	**>10**	2,598,750	1,269,708	3,868,458

Source: Processed Primary Data. 2024

Shrinkage of the Cage

Based on table 10. Shows that the value of depreciation of the pen in the beef cattle business with a livestock ownership scale of >10 heads has the largest depreciation value of the pen with an average cost of Rp 2,598,750, while on a livestock ownership scale of 3-5 heads has the lowest depreciation value of the pen with an average cost of Rp 973,923-,. The amount of costs incurred is due to the condition of the pen owned by the farm and depends on the amount of costs incurred in making the pen. The wider or better a pen owned by the farmer, the more costs incurred to make the pen.

Equipment Depreciation

The depreciation value of equipment in the beef cattle business can be seen that the scale of livestock ownership >10 heads has the largest equipment depreciation value with an average cost of Rp 1,269,708 / farmer, while on a business scale of 3-5 heads has the lowest equipment depreciation value with an average of Rp 220,189 / farmer. This is because farmers use equipment in their livestock farming businesses according to the size of the business they own, the bigger the business they own, the greater the costs incurred to purchase the complete equipment used in raising livestock.

Total Fixed Cost

Total fixed costs are obtained through the total of costs in the form of fixed values such as the depreciation value of the cage and the depreciation value of the equipment. These costs are then added up to obtain the total fixed costs that will be used by the farmer during one maintenance period, based on table 10. It can be seen that the total fixed costs incurred by farmers, namely the scale of >10 heads, have the largest average of Rp. 3,868,458. while the lowest is on a scale of 3-5 heads, which is an average of Rp. 1,194,112. The difference in the amount of fixed costs in the business lies in the difference in the number of cattle raised. The more cattle raised/scale owned, the more it can affect the fixed costs that will be incurred. Likewise, conversely, if the scale of the business owned is relatively small, the costs that will be incurred by the farmer will be smaller. The difference in the amount of fixed costs is influenced by the size of the cage owned by the farmer and the number of cages owned, which will automatically affect the

amount of costs that will be incurred. Another aspect that has an influence is the completeness of the equipment used in managing the beef cattle farming business that is run, the more complete the equipment owned, the greater the costs incurred to purchase the equipment. This is in accordance with the thoughts of Rianto and Purbowati (2009), that in calculating production costs, depreciation costs must be included. The total depreciation costs are based on the scale of the business, if the scale of the business owned is larger, the fixed costs that will be incurred will be higher, this is because the size of the pen owned by the farmer follows the scale of the business in raising cattle and the equipment used is also greater in number.

Variable Costs

Variable costs are costs used by farmers for the purpose of cattle production which are usually used up in one production. Variable costs in the beef cattle business in Parigi Selatan District, Parigi Moutong Regency, include the cost of feed cattle, feed costs, vitamin and medicine costs, labor costs and transportation costs. The amount of variable cost components incurred in the beef cattle business in Parigi Selatan District, Parigi Moutong Regency can be seen in table 6 as follows:

Table 6. Variable Costs of Beef Cattle Business in Parigi Selatan District, Parigi Moutong Regency

Cost No.	Components Ownership Scale	Cost of Feeder Cattle (Rp)	Feed Cost (Rp)	Labor Cost (Rp)	Cost of Vitamins and Medicines-medicine (Rp)	Breast milk transportation costs (Rp)	Amount (Rp)
1	**3-5**	10,920,000	5,687,500	3,500,000	45,000	1,664,000	21,816,500
2	**6-10**	21,384,615	9,135,000	3,500,000	90,000	1,700,000	35,809,615
3	**>10**	149,625,000	38,902,500	3,500,000	194,423	2,360,000	194,581,923

Source: Processed Primary Data. 2024

Cost of Feeder Cattle

Based on Table 11. It can be seen that in the beef cattle business, the highest average cost of feeder cattle ranges from Rp. 149,625,000/year on a scale of >10 heads to Rp. 10,920,000 / Year on a scale of 3-5. This shows that the value obtained from the purchase of cattle for beef cattle farming depends on the number of cattle owned, the age and gender of the cattle which increases along with the increasing number of cattle. The more cattle owned, the more costs will be incurred to buy the cattle. Cattle for beef cattle farming in Parigi Selatan District, Parigi Moutong Regency are on average 1-3 years old with healthy conditions without defects. The average price of cattle ranges from Rp. 5,500,000 - Rp. 9,000,000 per head

Feed Cost

The cost of feed incurred by farmers varies greatly, the greater the cost of feed that will be incurred. The types of feed given to livestock in the maintenance process are bran, salt, tofu dregs, molasses and greens (elephant grass, odot grass). For bran given as much as 1 Kg / day / head, while for salt given as much as 0.2 Kg / day / head, tofu dregs given as much as 1 Kg / head / day / head, Molasses given as much as 0.2 Kg / day / head. Additional feed for bran farmers buy it at a price of around Rp. 2000 / Kg, salt Rp. 500 / Kg, tofu dregs Rp. 500 / Kg, and molasses Rp. 650 / Kg, while green feed (elephant grass, and odot grass) farmers buy it at a price of around Rp. 500 / Kg. The highest feed costs are on the average livestock ownership scale of >10 heads at IDR 38,902,500/year and the smallest on the average livestock ownership scale of 3-5 heads at IDR 5,687,500/year.

Labor

The amount of labor costs incurred by farmers in the beef cattle business in Parigi Selatan District, Parigi Moutong Regency averages around Rp. 3,500,000, in this case the monthly labor wages are Rp. 700,000 and for one period is Rp. 3,500,000 per period for 1 laborer who works to collect feed and feed livestock. The labor used by farmers is divided into two large groups, namely family labor and non-family labor (wage). Where family labor is not paid while for non-family labor in the cattle farming business, wages are issued. Also added by Darmawi (2012), who stated that labor costs also contribute to income, although never paid, but labor is still calculated in non-cash form.

Vitamins and Medicines

The costs of vitamins and medicines incurred are based on the average livestock ownership scale >10 heads of Rp. 194,423/year while the expenditure on the average livestock ownership scale of 3-5 heads is Rp. 45,000/year. The average cost of vitamins and medicines used on all business scales has the same cost, this is because all farmers buy vitamins and medicines in the form of bottles and provide vitamins and medicines for their livestock once/twice per period. The types of vitamins and medicines given to beef cattle are B Complex and worm medicine. Vitamins and medicines are very much needed by livestock because they have a very important role for the body. This is in accordance with the thoughts of Yulianto and Saparinto (2011), that to accelerate the rate of increase and protect livestock from disease, in addition to being given sufficient feed and drink, it is good for the livestock to also be given supplementary feed and vitamins.

Transportation Costs

It can be seen that in the beef cattle business, the total average transportation cost ranges from Rp. 2,360,000/year on a scale of >10 heads to Rp. 1,664,000/year on a scale of 3-5 heads. Transportation is generally used to buy animal feed in the form of concentrate, and to find green fodder using two-wheeled vehicles and tri

sedda or 3-wheeled motorbikes because it will save costs. On average, farmers need transportation costs in the form of 1 liter of gasoline for 2 days at a price of Rp. 10,000/liter.

Total Variable Cost

The total variable cost can be obtained from the sum of all existing cost components such as the cost of feed cattle, feed costs, labor costs, vitamin and medicine costs and transportation costs. The total cost incurred by livestock farmers on a large scale can be seen on average based on the highest, namely >10 heads, amounting to Rp. 194,581,923 / year and the lowest on the scale of livestock ownership of 3-5 heads of Rp. 21,816,500 / year. This shows that the greater the number of beef cattle, the greater the variable costs incurred by farmers. This is in accordance with Rasyaf's statement (1995), that variable costs are costs incurred related to the amount of production carried out. Thus, the number of beef cattle will affect the amount of costs incurred, the more livestock owned, the greater the variable costs incurred, such as labor costs.

Total Cost of Beef Cattle Business

Total cost is the total cost that will be spent or used by beef cattle farmers in their business process. The cost is obtained from the addition of fixed costs and variable costs. The total cost incurred in the beef cattle business in Parigi Selatan District, Parigi Moutong Regency can be seen in table 7. As follows:

Table 7. Total Costs of Beef Cattle Business in South Parigi District, Parigi Moutong Regency

		Total Production cost		
No.	**Ownership Scale**	**Fixed Cost (Rp)**	**Variable Cost (Rp)**	**Amount (Rp)**
1	**3-5**	1,194,112	21,816,500	23,010,612
2	**6-10**	1,476,462	35,809,615	37,286,077
3	**>10**	3,868,458	194,581,923	198,450,381

Source: Processed Primary Data. 2024

Table 12. Shows that the total production cost in the beef cattle business consists of fixed costs and variable costs. Variable costs are the largest cost factor incurred in the business. The highest total production cost incurred in the beef cattle business is respondents with a livestock ownership scale of .10 heads with an average of Rp. 198,450,381 / year and the least on a scale of ownership of 3-5 heads of Rp. 23,010,612 / year. This is in accordance with the opinion of Syamsidar (2012), which explains that the total cost obtained is the total amount of fixed costs and variable costs. This total cost is the cost that will be incurred and borne by the company to purchase various inputs or factors needed for its production needs.

Beef Cattle Business Revenue

In the beef cattle business in Parigi Selatan District, Parigi Moutong Regency, the source of income for livestock farmers can be seen from the sale of livestock and the sale of feces (manure). The income of beef cattle farmers in Parigi Selatan District, Parigi Moutong Regency can be seen in Table 8.

Table 8. Beef Cattle Business Revenue in South Parigi District, Parigi Moutong Regency

No.	Ownership Scale	Revenue		
		Value of Livestock Sold (Rp)	Feces Sales (Rp)	Amount
1	**3-5**	32,466,667	1,898,000	34,364,667
2	**6-10**	58,923,077	3,958,846	62,881,923
3	**>10**	272,750,000	6,433,125	279.183.125

Source: Processed Primary Data. 2024

Value of Livestock Sold

In table 13. It can be seen that the average largest income obtained by respondents from the sale of beef cattle is on a scale of ownership > 10 heads of Rp. 272,750,000 while the lowest income is on a scale of 3-5 heads of Rp. 32,466,667. The average sales value at the livestock farmer level in Parigi Selatan District, Parigi Moutong Regency, namely for heifers ranges from Rp. 10,000,000 - Rp. 12,000,000 / head and adult cattle Rp. 13,000,000 / head. However, not every year beef cattle farmers in Parigi Selatan District sell livestock, both calves and seedlings, so that income depends on the number of beef cattle sold.

Receipt of Sales of Feces (Animal Waste)

In the income from the sale of livestock manure, the highest average income from the sale of feces is on a scale of ownership of >10 heads, namely Rp. 6,433,125, - and the lowest on a scale of ownership of 3-5, namely Rp. 1,898,000,. The price of feces is Rp. 300, - / Kg. The amount of revenue from feces obtained will depend on the number of livestock owned, where the more beef cattle owned, the greater the production of feces produced per day.

Total Income from Beef Cattle Business

The total income from the beef cattle business received by farmers increases along with the increasing scale of the business, where the average income of the largest farmers is on a business scale of >10 heads, namely Rp. 279,183,125,-/year. While the lowest is on a scale of 3-5 heads, namely Rp. 34,364,667,-/year. The difference in the amount of income obtained is due to the different number of populations maintained by each farmer. This is in accordance with the opinion of Harnanto (1992), that the income of each respondent has a difference depending on the number of beef cattle population owned by each farmer by using the relationship between income and costs, it can be known which farming business is profitable to run. Also added by Rasyaf (2003), who stated that the

amount of income depends on two variables, namely the selling price and the variable number of products sold.

Income

The amount of income of livestock breeders in the beef cattle business in South Parigi District, Parigi Moutong Regency can be seen in table 9.

Table 9. Amount of Income from Beef Cattle Business in South Parigi District, Parigi Moutong Regency

No.	Ownership Scale	Revenue (Rp)	Production Cost (Rp)	Income (Rp)	Revenue Cost Ratio
1	3-5	34,364,667	23,010,612	11,354,055	1.49
2	6-10	62,881,923	37,286,077	25,595,846	1.69
3	>10	279.183.125	198,450,381	80,732,744	1.41

Table 9 shows that the income of beef cattle business based on the scale of business is obtained between the results of revenue and the total production costs incurred. The income in the beef cattle business is the largest on the scale of livestock ownership >10 heads of Rp. 80,732,744 and the smallest on the scale of livestock ownership of 3-5 heads of Rp. 11,354,055. The profits obtained by each farmer are different, this is due to the difference in the number of beef cattle population owned by the farmer. In addition, it is also influenced by the quality of the cattle produced, such as a fairly large body weight that can determine the selling price of the livestock. This is in accordance with the opinion of Amin (2013), that the difference in profits obtained by farmers is due to the difference in the number of beef cattle population owned by the farmer.

Research result Rachman et al. (2019), a larger scale of business can increase the income of farmers through increased production and reduced costs per unit of production. In addition, large-scale farmers can utilize more efficient technology and management methods in managing feed and livestock health. Therefore, to increase the productivity and income of farmers in Parigi Selatan District, a strategy is needed that supports the development of larger-scale businesses, including in terms of access to quality feed, livestock health services, and a wider market.

One way that can be implemented is by providing support in the form of training and technical assistance to small farmers so that they can increase their capacity to manage livestock more efficiently. In addition, increasing access to resources such as more affordable and quality animal feed is also very necessary. Government programs that can support this include animal feed subsidy programs, as well as farmer empowerment programs through farmer groups that can increase the scale of their businesses.

In addition, larger livestock ownership scales also allow farmers to take advantage of wider market opportunities, both in local and regional markets. This is in line with the findings Widyastuti et al. (2020), which states that by increasing the scale of the business, farmers can gain greater profits from the sale

of livestock, as well as gain access to more stable and profitable markets. The more livestock owned by the farmer is sold, the higher the income that will be received by the capital owner from the sale of beef cattle. Likewise with the feces produced by livestock, where the more feces sold, the more the farmer's income will increase. Soekartawi (1995), stated that the income obtained from the cattle farming business is greatly influenced by the number of livestock sold by the farmer himself so that the more cattle are raised, the higher the net income obtained, where the improvement in the way they run and manage their livestock business is greatly influenced by socio-economic factors.

Analysis of Internal Strategy Factor Evaluation Matrix of Livestock Group

Based on the identification of internal and external factors, the strengths and weaknesses of the livestock group in Parigi Selatan District, Parigi Moutong Regency were obtained. Weighting was done using a calculation table to obtain the weight of each internal and external variable. The weight used is the total result of the average weighting of the respondents. The rating was obtained from the same respondents, so that to obtain the value of the internal and external strategy factors in table 2, the internal factors show that there are 7 strengths and 5 weaknesses in the Livestock Group in Parigi Selatan District, Parigi Moutong Regency, in the effort to develop beef cattle above, the strengths and weaknesses are arranged based on the weight that has a very important to unimportant impact. The data shows that this effort has greater strengths than weaknesses.

Table 10. Internal Strategy Factor Evaluation Matrix

No	Internal Strategic Factors	Weight	Rating	Mark
	Strengths			
1	Potential Natural Resources (Greenery and Agricultural Waste) that can be used as animal feed, which can reduce feed costs	0.12	4	0.48
2	Beef cattle have relatively easy market access in South Parigi District, both for local and regional markets.	0.10	4	0.40
3	Support for government policies and programs through subsidy programs and technical assistance for small farmers.	0.13	3	0.39
4	Cattle farming in South Parigi is profitable at all business scales with an average R/C of 1.53	0.10	3	0.30
5	Most farmers have up to 10 years of livestock farming experience, which allows farmers to better understand good livestock farming methods.	0.08	3	0.24
Sub-Total		**0.53**		**1.81**
	Weakness			
1	Many farmers only have 1-5 head of livestock, which limits production capacity and profitability.	0.12	2	0.24
2	Limited access to quality feed, which can reduce livestock efficiency and productivity.	0.10	2	0.20
3	Limited capital causes difficulties in purchasing equipment or increasing business capacity.	0.08	2	0.16
4	Limited technology in livestock feed and health management hampers efficiency.	0.08	2	0.16

5	Many farmers do not yet have the knowledge and limited access to adequate livestock health services.	0.08	2	0.16
Sub-Total		**0.46**		**0.92**
Total Value (Sub Total I + Sub Total II)		**1**		**2.73**

Source: Processed primary data, 2024

Strengths are given a rating on a large scale of 4 to a small scale of 1 and each weakness is given a rating of 1 to 4 based on the results of interviews with beef cattle farm owners. The result of multiplying the weight and rating is the score for the strength and weakness factors of the business. The total value of strengths and weaknesses is 2.73.

Analysis of External Strategy Factor Evaluation Matrix of Livestock Group

Table 11. External Strategy Factor Evaluation Matrix

No	External Strategic Factors	Weight	Rating	Mark
	Opportunities			
1	The increase in beef consumption (demand) in both domestic and export markets provides a great opportunity for the beef cattle farming business.	0.13	4	0.52
2	The support of the regional government's policy which has designated the South Parigi region as a center for livestock development encourages livestock empowerment programs through various assistance and subsidy programs.	0.13	4	0.52
3	The urbanization process increases the demand for beef in urban areas and surrounding areas.	0.12	3	0.36
4	Availability of training and extension programs for livestock farmers to improve their skills in managing livestock.	0.12	3	0.36
5	Technological advances in animal feed, vaccination, and livestock management can increase productivity.	0.12	4	0.48
Sub-Total		**0.62**		**2.24**
	Threats (Thereaths)			
1	High fluctuations in animal feed prices can affect operational costs and reduce profits.	0.10	2	0.20
2	Climate change that disrupts rainfall patterns can affect the availability of natural food and worsen grazing conditions.	0.10	2	0.20
3	The existence of competition from large breeders who have higher production capacity can depress prices and markets.	0.08	3	0.24
4	The limited ability of small-scale farmers to access export markets has hampered international market opportunities.	0.05	2	0.10
5	Economic instability or disasters such as a pandemic can reduce people's purchasing power and affect demand for beef.	0.05	2	0.10
Sub-Total		**0.38**		**0.84**
Total Value (Sub Total I + Sub Total II)		**1**		**3.08**

Source: Processed primary data, 2024

Steps to compile an external strategic matrix are the opportunities and threats faced by beef cattle farming businesses in the livestock group of Parigi Selatan District, Parigi Moutong Regency. Based on the results of in-depth interviews conducted by the author with farmers, the total weighted value was obtained, where the total weighted value is the result of the total sum of the multiplication of the weight with the rating of each external strategic factor, by entering the results of identifying opportunities and threats as external strategic factors, then giving weight and rating to each factor. The result of the external strategic matrix analysis is 3.08, this means that the external environment of beef cattle development businesses in Parigi Selatan District, Parigi Moutong Regency has good opportunities compared to threats or challenges in the future.

Internal External (IE) Matrix

Based on the results of the analysis that has been done previously, the total weighted value in the internal matrix is 2.73 which means that the beef cattle farming business in the livestock group of Parigi Selatan District, Parigi Moutong Regency has high internal factors, as well as external factors in a high position with a score of 3.08. The total weighted value of the IE matrix is then determined in the IE matrix, so that the current business position can be known, namely in quadrant III as seen in the picture.

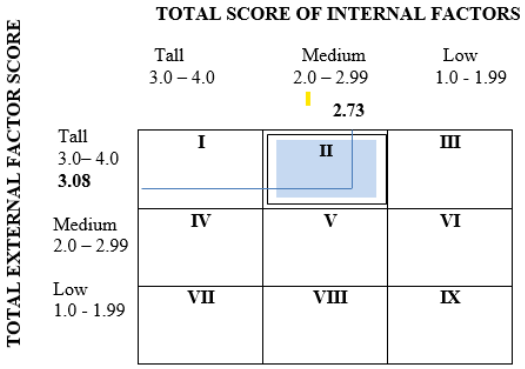

Figure 1. Internal and External (IE) Matrix

Based on the IE matrix in Figure 1, it can be seen that the position of the livestock business is in cell II which indicates that internal factors are responded well or moderately, and external factors are in a high score position. This type of business position is best managed with growth and build strategies. Commonly developed strategies are intensive strategies in the form of market penetration, product development or integrative strategies.

SWOT Matrix of Beef Cattle Farming Business

Alternative strategies for beef cattle development in Parigi Selatan District, Parigi Moutong Regency are formulated using SWOT analysis. One of the series of previous stages in the SWOT matrix clearly describes the internal strengths and weaknesses in beef cattle development combined with external opportunities and threats to produce alternative formulations for business development strategies. In this SWOT matrix, there are four possible alternative

strategy cells which are a combination of internal and external factors, namely SO strategy, WO strategy, WT strategy, ST strategy.

Through the identification of internal and external factors, the strengths and weaknesses as well as opportunities and threats in the beef cattle development efforts in the livestock group of Parigi Selatan District, Parigi Moutong Regency are obtained. The formulation of alternative business development strategies is considered based on the results of the identification of internal and external factors.

Table 12. SWOT Matrix of Beef Cattle Development Business in the livestock group of Parigi Selatan District, Parigi Moutong Regency

Internal / **External**	**Strengths (S)** Strength Potential natural resources in the form of green fodder and agricultural waste Access to local markets Government policy support Profitable business reviewed from RC ratio Livestock experience	**Weakness (W)** Weakness Small scale livestock ownership (1-5 head) Limited access to quality feed Capital and funding limitations Limitations of technology use Suboptimal livestock health management
Opportunities (O) Opportunity Increasing demand for beef market Government policies that support the livestock sector Increasing demand for beef in urban areas Advances in livestock technology Counseling and training programs	**SO Strategy** Increasing business capacity by increasing the scale of livestock ownership by utilizing government feed subsidy and extension programs. Optimizing local marketing networks by building closer relationships with local beef traders and existing consumers. Developing training programs for livestock farmers in the utilization of green fodder and agricultural waste as efficient alternative feed. Improving livestock farmers' knowledge about grass cultivation techniques that are suitable for beef cattle in order to meet livestock feed needs throughout the year.	**WO Strategy** Increasing cooperation with financial institutions for access to livestock financing for small farmers Building partnerships with government agencies and the private sector to access capital, training and new technologies that can increase productivity Organizing training on livestock business management and financial management to improve livestock business management capacity. Forming farmer groups to share knowledge and resources in managing animal feed effectively and efficiently.
Threats (T) Threat 1. Feed price fluctuations 2. Climate change 3. Fierce market competition 4. Lack of access to export markets	**ST Strategy** 1. Using technology to improve the quality and quantity of animal feed, such as making fermented feed or using cheaper and more efficient alternative feeds. 2. Integrating market information systems to predict beef prices and determine the right	**WT Strategy** 1. Diversification of Income Sources to Reduce Market Risk, for example, manure and cow hides as additional sources of income. 2. Building partnerships with the agricultural sector to manage livestock businesses integrated with other agricultural businesses

Economic crisis, pandemic and threat of livestock diseases	time to sell livestock Forming farmer cooperatives to access wider markets and get better selling prices.	Helping farmers gain access to low-interest credit or micro-financing to expand their businesses.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

1. Based on the results of income analysis, beef cattle farming business in Parigi Selatan District, Parigi Moutong Regency on a scale of ownership of 3-5 heads earned income of Rp. 11,354,055,-/year, a scale of 6-10 heads of Rp. 25,595,846,-/year and for a scale of >10 heads the income was Rp. 80,732,744,-/year. The difference in income received by farmers was influenced by the difference in the scale of the business owned, where the higher the scale of the cattle farming business, the greater the income obtained, with an average R/C of 1.53 so that beef cattle farming businesses at all business scales were classified as profitable.
2. Based on the results of the SWOT analysis, the beef cattle business in Parigi Selatan District has great potential to grow. The strategies that need to be taken to strengthen this business involve utilizing internal strengths, such as abundant natural resources, stable market access, and government policy support, to take advantage of external opportunities, such as increasing demand for beef and technological advances. In addition, challenges such as small business scale, limited capital, and threats of market competition need to be overcome through various strategies involving increasing business capacity, adopting technology, and collaboration between farmers.

Recommendation

1. Business Scale Development: Local governments must provide further support to small farmers so that they can develop their livestock businesses, either through financing, training, or feed subsidies.
2. Diversification of Livestock Business: Livestock farmers in South Parigi District must start thinking about diversifying their livestock businesses to deal with potential market risks that could reduce their income.
3. Technology Adoption: Farmers should be encouraged to adopt technology in livestock and feed management, as well as in distribution systems to improve efficiency and competitiveness.

ADVANCED RESEARCH

Based on the conclusions and recommendations presented, a potential avenue for advanced research is an in-depth analysis of the effectiveness of government-facilitated intervention programs aimed at developing the scale of beef cattle farming businesses, as well as the impact of technology adoption on productivity and operational cost efficiency among farmers in Parigi Selatan District. This research could employ a quantitative approach using regression methods to measure the relationship between government support (such as financing, training, and feed subsidies) and the increase in business scale and

farmers' income. Additionally, a qualitative approach is necessary to explore psychological and social barriers that influence the adoption of technology among small-scale farmers. This advanced study is expected to provide more targeted and data-driven policy recommendations to promote the sustainable and competitive growth of the beef cattle farming sector in the region.

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