Improvement strategy of livestock business in Deli Serdang

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Abstract. The purpose of this study was to determine the feasibility of livestock business to find out the strategies taken in improving livestock products. Determination of the study area was done purposively. The method of determining the sample is a census with a total sample of 37 breeders. Data analysis methods used were business feasibility analysis (R/C) and SWOT analysis. The results showed livestock business in the study area can be said to be feasible where the value of R/C > 1 was 1.89 obtained from depreciation costs of IDR 3,287,552, variable costs of IDR 5,403,108, revenue of IDR 111,414,865 and income of IDR 52,724,205. The right strategy to increase the production of livestock business in the study area lies in quadrant I, which is Aggressive or SO (Strengths and Opportunity) strategies which include forcing the availability of labour and forage feed to increase implementation patterns of integration of livestock with plants, beef quality can be supported by the condition of livestock that is protected from disease so that the availability of local livestock products in the market is sufficient to meet the high demand for beef. The experience of livestock can broaden knowledge in developing livestock business supported by technological developments.

1. Introduction
Indonesia's population of approximately 258 million in 2016 and the population growth rate of 1.39% per year requires the fulfilment of large food needs, especially the need for beef. The consumption of beef in Indonesia continues to increase. In addition to increasing the population, several other factors such as increasing public awareness of the importance of animal protein and also increasing community income contributed to the increase in beef consumption in Indonesia. With the rate of increase in beef consumption reaching 4.43%, compared to the rate of increase in livestock production by 2.33% in 2001, in the long run it is estimated that there is a shortage of production so that it is still supplied from imports [1][2].

In 2010-2012 the national livestock production increased but in 2013-2014 it decreased. In 2016 national livestock production increased to 441 thousand tons from 416.1 thousand tons in 2015. This data shows that meat production from 2010 to 2016 experienced a tendency to increase production which was quite low [3].

National livestock production comes from people's farms (± 90%), and the rest from government-owned companies and farms. Apart from small scale farms, the commercial nature has not been well developed, so that productive adult cows are often sold or cut. The reason for farmers to sell livestock before the ideal cut weight is due to limited capital, cash needs for family needs such as school fees for
Some of these reasons also contributed to the low proportion of livestock production and were unable to keep up with the increasing demand for beef. The income of livestock business is influenced by livestock production, which means that the income of farmers/livestock farmers will increase if livestock production increases [4] [5].

| Year | National Beef Production (000 tons) | Beef Consumption (000 tons) | Beef Imports (thousand ton) | Beef Consumption /kg/capita/year |
|------|-----------------------------------|-----------------------------|-----------------------------|--------------------------------|
| 2010 | 350                               | 440.8                       | 90.5                        | 1.76                           |
| 2011 | 410.7                             | 488.9                       | 65                          | 1.87                           |
| 2012 | 425.5                             | 544.9                       | 39.4                        | 2.09                           |
| 2013 | 383.3                             | 559.6                       | 130                         | 2.22                           |
| 2014 | 395.1                             | 594.4                       | 246.5                       | 2.36                           |
| 2015 | 416.1                             | 653.9                       | 197.6                       | 2.56                           |
| 2016 | 441.0                             | 674.7                       | 107.2                       | 2.61                           |

Source: Ministry of Agriculture. 2017

North Sumatra Province is one of the livestock productions centres. Deli Serdang Regency is one of the two largest livestock producing regions in North Sumatra. The average consumption rate of meat is quite large at 5.58% per year and the rate of livestock production is quite low. resulting in North Sumatera still not being able to meet the people's needs for beef so that the shortfall is met through imports [1] [2].

Low livestock production causes low local farmer income. This is due to the small number of livestock. lack of knowledge and guidance on how to raise good livestock. limited capital and assume that livestock work is a side. For this reason., it is necessary to know how feasibility of livestock business and how to improve livestock business so that people can make livestock raising activities as economic activities that have considerable opportunities and potential to increase income. Based on the description above. this study aims (1) To find out the feasibility of livestock business. (2) To find out the strategies carried out in improving livestock products

2. Methodology

2.1. Location and method of samples determination
The research was conducted purposively. namely Galang Subdistrict. Tanjung Morawa Subdistrict and Hamparan Perak Subdistrict in Deli Serdang District with consideration of the area because it has a relatively a greater number of livestock than other regions. Determination of population and sample using purposive sampling with consideration of having at least two cows. Data on the number of samples in the study area are in Galang Subdistrict as many as 15 Farmers. Tanjung Morawa as many as 10 farmers and Hamparan Perak 12 Farmers. then a total of 37 Farmers.

2.2. Types of data
The types of data were cross sectional and time series data. while the data source were primary and secondary data. Primary data were obtained through direct interviews with respondents. whereas secondary data were obtained from the Bureau of Statistics Centre (BPS) in Deli Serdang. Department of agriculture and animal husbandry. district or sub district as well as the village. the results of the study related publications and references.
2.3. Analysis methods
The analysis method to answer the first question was used R/C analysis stands for Revenue Cost Ratio or more is known as a comparison between the level of income obtained with costs incurred [6]. Mathematically formulated as follows:

\[ \frac{R}{C} = \frac{Revenue}{Cost} \]

Testing Criteria:
If \( R/C > 1 \), it is feasible
If \( R/C < 1 \), it is not feasible

The analysis method to answer the second question was used SWOT Analysis. According to [7], the SWOT analysis is used to describe clearly how opportunities and threats both from the external and internal aspects faced by farmers. The SWOT matrix can produce four strategic alternative possibilities, namely:

a. SO strategy
This strategy is based on the mind-set of the company, which is to use all strengths to seize and take advantage of opportunities as much as possible.

b. ST strategy
This strategy is a strategy to use the strength of the company to overcome threats.

c. WO strategy
This strategy is implemented based on utilizing existing opportunities by minimizing existing weaknesses.

d. WT Strategy
This strategy is based on activities to minimize existing weaknesses and avoid threats

3. Result and discussions

3.1. Feasibility of livestock business
The research results obtained fixed costs amounting 3,287,552 IDR variable costs amounting to 55,403,108 IDR revenues amounting to 111,414,865 IDR and income of 52,724,205 IDR obtained the value of \( R/C > 1 \) which is 1.89. Thus, it can be said that livestock business activities are feasible in the research area, because the \( R/C \) value is greater than one (1.89 > 1).

\( R/C \) is a comparison of total revenues divided by total costs. Then it can be seen that the average \( R/C \) obtained from the study is equal to 1.89. It can be interpreted that on average for every Rp.1 spent in livestock business activities, the revenue of Rp.1.89 at the end of the livestock business activity is obtained. So, from the results of the study it can be said that the livestock business in the research area has benefited in carrying out its livestock business. The greater the \( R/C \) the greater the profit received by the farmer.

3.2. Strategy for increasing livestock production
In the business of livestock farmers are often faced with problems. These problems can arise from animal husbandry activities and labour management. These problems can be a reference for farmers to determine the right strategy in increasing production. The increase in livestock production is expected to be able to meet the need for beef, so that it can reduce the quota of imported livestock from abroad to realize local livestock farmers as prosperous farmers.

The stage of data collection is an activity carried out to obtain information needed in analysing every problem faced by farmers. At this stage the data is divided into two, namely internal data and external data. The matrix model used to determine internal factors and external factors is the Internal Strategy Factor Matrix (IFAS) and the External Strategy Factor Matrix (EFAS).
Table 2. Matrix of internal strategy factors

| Internal Strategy Factors | Rating | Weight | Scoring (Rating x Weight) |
|---------------------------|--------|--------|---------------------------|
| **Strength**              |        |        |                           |
| 1. Availability of labour | 3.14   | 0.10   | 0.31                      |
| 2. Good quality of beef   | 3.32   | 0.10   | 0.33                      |
| 3. Having experience in livestock business | 3.65 | 0.11 | 0.40                      |
| 4. The abundance of forage feed | 3.43 | 0.10 | 0.34                      |
| 5. Avoid livestock diseases | 3.11  | 0.09   | 0.28                      |
| **Total Strength**        | 16.65  | 0.5    | 1.67                      |
| **Weakness**              |        |        |                           |
| 1. Availability of feeder livestock which is less than | 2.41  | 0.08   | 0.19                      |
| 2. Livestock waste is not utilized well | 2.92  | 0.09   | 0.26                      |
| 3. Limited capital        | 3.24   | 0.10   | 0.32                      |
| 4. Traditional maintenance technical | 3.68 | 0.12 | 0.44                      |
| 5. Poor housing           | 3.51   | 0.11   | 0.39                      |
| **Total Weakness**        | 15.76  | 0.5    | 1.61                      |
| **TOTAL**                 | 15.76  | 1      | 1.61                      |
| **Difference (Strengths - Weaknesses)** |   |       | 0.06                      |

Source: Data processed. 2018

The results of identification of internal factors are strengths and weaknesses, while external factors represent opportunities and threats. Then we determine the weight and rating included in the matrix table of IFAS factors and EFAS matrix. The difference in internal strategic factors (Strength - Weakness) is equal to 0.06 which means that the influence of strength is greater than the influence of weaknesses in increasing livestock production in the study area.

Table 3. Matrix of external strategy factors

| External Strategy Factor | Rating | Weight | Scoring (Rating x Weight) |
|--------------------------|--------|--------|---------------------------|
| **Opportunity**          |        |        |                           |
| 1. Application of patterns of integration of livestock with plants | 3.22  | 0.09   | 0.29                      |
| 2. Provision of markets for livestock products | 3.03  | 0.09   | 0.27                      |
| 3. High demand for beef  | 3.51   | 0.11   | 0.39                      |
| 4. The development of information technology | 3.16 | 0.11 | 0.35                      |
| 5. Government Support    | 3.27   | 0.10   | 0.33                      |
| **Total Opportunity**    | 16.19  | 0.5    | 1.62                      |
| **Threat**               |        |        |                           |
| 1. The absence of cooperative partners | 2.95  | 0.09   | 0.27                      |
| 2. Substitue livestock   | 2.46   | 0.08   | 0.20                      |
| 3. Instability in selling prices of livestock | 3.49 | 0.11 | 0.38                      |
| 4. Opening of industrial estates and housing | 3.76 | 0.12 | 0.45                      |
| 5. The policy of importing beef to Indonesia | 3.00 | 0.10 | 0.30                      |
| **Total Threats**        | 15.66  | 0.5    | 1.60                      |
| **TOTAL**                | 1      | 3.22   |                           |
| **Difference (Opportunity - Threat)** |   |       | 0.02                      |

Source: Data processed. 2018
Table 3 shows that the difference in external strategic factors (Opportunities and Threats) is 0.02. which means that the influence of opportunities is greater than the effect of threats on increasing livestock business. Merging the matrix of internal and external factors, it can be seen, then the strategic position of livestock business improvement in Deli Serdang Regency is known. Strategic position in livestock business in Deli Serdang Regency is analysed using position matrix, so that it will produce coordinate points (x, y). The value of x is obtained from the difference in internal factors (Strengths - Weaknesses) and the value of y is obtained from the difference in external factors (Opportunities - Threats). The position of the coordinates can be seen in Figure 1.

From the results of the internal-external matrix quadrant that has been obtained in the picture above, the increase in livestock business in Deli Serdang Regency is in a favourable position, which is in quadrant I, namely Aggressive Strategy, meaning that this position indicates that the increase in Livestock Business in Deli Serdang Regency has strength and also opportunities in increasing livestock business. So that they can use strength or take advantage of opportunities to improve livestock business. For this reason, the strategy that must be applied in such conditions is the SO (Strengths and Opportunity) Strategy.

Aggressive Strategy is where the conditions are very good because of the strength of the strategy used to achieve profitable opportunities. Aggressive strategies focus on SO (Strengths and Opportunity) strategies. The right strategies used to increase livestock production in breeders in Deli Serdang Regency are:
1. Maximize the availability of labour and animal feed to improve the application of patterns of integration of livestock with plants.
2. The quality of beef can be supported by the condition of livestock that are spared disease so that the availability of local livestock products in the market remains sufficient to meet the high demand for beef.
3. The experience of raising livestock can expand knowledge in developing livestock businesses that are supported by technological developments.

4. Conclusions
The livestock business in the research area is feasible where the value of R/C > 1 is 1.89 obtained from depreciation costs of 3,287,552 IDR variable costs of 55,403,108 IDR revenues of 111,414,865 IDR and revenues of 52,724,205 IDR

The right strategy to increase the production of livestock business in the research area lies in quadrant I. which is Aggressive or SO (Strengths and Opportunity) strategies which include forcing the availability of manpower and forage feed to increase the application of patterns of integration of livestock to plants. beef quality can be supported by the condition of livestock that is protected from disease so that the availability of local livestock products in the market is sufficient to meet the high demand for beef. the experience of raising livestock can expand knowledge in developing livestock business supported by technological developments.

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