Strategy development of goat and sheep in North Labuhanbatu Regency to support North Sumatra Province as a producer of goat and sheep

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Abstract. North Labuhanbatu regency is one of the districts in North Sumatra Province that has the potential in the development of agriculture and livestock sector. This research aims to identify internal and external factors in the development of goat and sheep farming businesses, formulate alternative development strategies, and strategic priorities that can be applied in the development of goat and sheep in North Labuhanbatu regency. The research site is in North Labuhanbatu regency in February – April 2020. The data used is primary and secondary data. The basic method used in this study is descriptive analytics. The data analysis method used matrix analysis (IFE), matrix (EFE) and matrix (SWOT). The results showed that alternative strategies that can be used in the development of goat and sheep livestock in North Labuhanbatu regency are active and professional agriculture and livestock counselling human resources, establishing livestock institutions such as livestock groups, the role of local governments in mentoring and approaching, establishing livestock health services and cooperative as well as strengthening the livestock and sheep markets in North Labuhanbatu regency.

1. Introduction
The development of livestock sub-sector is part of agriculture development that aims to provide food from animals in the form of meat, milk, and eggs of high nutritional value, improve the opinion of farmers, and expand employment opportunities in the countryside. This encourages the development of the livestock sub-sector, so that in the future it is expected to make a real contribution in the development of the nation. One of the important roles of the livestock sub-sector in development is in order to encourage the growth and dynamics of the rural economy [1]. Livestock is one the land use efforts that needs attention. So far, the government’s attention to the livestock sector has been directed more towards a program of increasing livestock production involving large financiers laden with subsidies, whereas behind it there is a role of farmers in terms of management and more dominant natural conditions. Livestock businesses are expected to directly touch communities with lighter capital and relatively small risks in losses, and one of the relevant livestock business options is goat farming [2].

North Labuhanbatu regency is one of the districts in North Sumatra Province that has the potential to develop goat and sheep livestock supported by agriculture waste and plantations as a source of feed. The development of goat and sheep farms in North Labuhanbatu regency has potential in its development such as climate awareness, temperature, altitude, feed availability, labour and others.
2. Material and methods

2.1. Study Area
This research was conducted in North Labuhanbatu regency, North Sumatra Province in February – April 2020. The basic method used in this study is the descriptive method of analytics. According to [3], the characteristic of the descriptive method of analytics are to take problems or focus on the problems as they were when the research was conducted, the results of the study are then processed and analysis for conclusions [4,5]

2.2. Population and Sample
The population in this study is the area of North Labuhanbatu regency. Determination of sub-district research place is done deliberately (purposive). Data collection techniques use interview, observation and recording techniques.

2.3. Analysis of the internal factor (IFE)
Analysis of internal factor (IFE) methods analysis include human resource conditions, production and operations, finance, marketing, and management. These internal factors were then analysis using the IFE matrix (Internal Factor Evaluation) [4-6]. Internal strategy factor analysis is used to determine various strengths and weaknesses in the development of goat and sheep livestock in North Labuhanbatu regency.

2.4. Analysis of the external factor (EFE)
Analysis of external factor (EFE) methods analysis include socio-cultural conditions, government policies, technology, competitors, suppliers and consumers. These external factors were then analysis using the EFE (External Factor Evaluation) [7]. Analysis of external strategic factors is used to determine various opportunities and threats in the development of goat and sheep livestock in North Labuhanbatu regency.

2.5. SWOT
Swot analysis method is a way to systematically identify various factors to formulate alternative strategies [8]. This analysis is based on logic that maximizes strength (Strength) and Opportunities, but can simultaneously minimize weaknesses and threats [9]. This analysis will be useful in planning strategies for the development of goat and sheep livestock in North Labuhanbatu regency.

The secondary data collected is quantitative by using a questionnaire and the results are obtained in the form of numbers then calculated by the average method, which will obtain details of internal and external factors and will obtain a total number of scores. The stages in implementing the scoring method are : a) determining internal and external factors in column 1, b) calculating the rating (in column 1 add up then divided by the total number), for each factor by giving a scale starting from 1 (very less) up to 4 (very good), based on the influence of the factors on the condition of the area concerned, c) calculate the weight (in the overall column) for each factor by giving a scale ranging from 1 (not important) to 4 (very important), based on an assessment of the urgency of handling the development of a sheep business (all these weights should not exceed the total score of 1.00), d) calculate the weighted average strength minus the weighted average weakness to get the value x [10]

3. Results and discussion

3.1. Analysis of the internal factor (IFE)
In general, the result of the IFE (Internal Factor Evaluation) matrix calculation in table 1 indicates that the total weighted value of key internal factors is 3.53. Based on the IFE matrix score, it identifies that the internal factor is in a position of strength because it is above 2.5 [9]. This shows that North
Labuhanbatu regency in order to use agricultural waste and plantations as animal feed for goats and sheep still relatively has a high strength factor.

**Table 1.** IFE matrix in the development of goat and sheep livestock in North Labuhanbatu Regency

| No | Strength                              | IFES                |
|----|--------------------------------------|---------------------|
|    |                                      | Rating | Weight | Score |
| 1. | Availability of livestock feeding forage | 4       | 0.25   | 1     |
| 2. | High goat and sheep population        | 3       | 0.20   | 0.6   |
| 3. | Area of agriculture land and plantations | 4       | 0.28   | 1.12  |
| 4. | Agriculture waste and high plantations | 3       | 0.18   | 0.54  |
| 5. | Pretty good breeding experience       | 3       | 0.09   | 0.27  |
|    |                                      | **Total**         | **1**   | **3.53** |

**Weakness**

| No | Weakness                                | IFES                |
|----|-----------------------------------------|---------------------|
|    |                                        | Rating | Weight | Score |
| 1. | Use of feed technology/low waste        | 3       | 0.23   | 0.69  |
| 2. | Motivation to breed as a part-time business | 3       | 0.17   | 0.51  |
| 3. | Limited capital                        | 2       | 0.19   | 0.38  |
| 4. | Hr counselling has not been optimal    | 2       | 0.21   | 0.42  |
| 5. | Traditional maintenance pattern        | 2       | 0.20   | 0.4   |
|    |                                        | **Total**         | **1**   | **2.4** |

Source: results of primary data processing (2020)

3.2. **Analysis of the external factor (EFE)**

Analysis of the EFE matrix calculation (External Factor Evaluation) in table 2 shows that the total weighted value of key external factors is 3.22. Based on the EFE matrix score, it identifies that external factors are in as position of opportunity because they are above 2.5 [10]. This shows that North Labuhanbatu regency has a good enough opportunity in developing goat and sheep livestock in accordance with the availability of feed in the region.

**Table 2.** EFE matrix in the development of goat and sheep livestock in North Labuhanbatu Regency

| No | Opportunities                                      | EFES                |
|----|---------------------------------------------------|---------------------|
|    |                                                   | Rating | Weight | Score |
| 1. | Attention from the local government is quite good | 4       | 0.25   | 1     |
| 2. | Increase in demand for lamb                       | 3       | 0.20   | 0.6   |
| 3. | Livestock waste treatment                         | 4       | 0.26   | 1.04  |
| 4. | Availability of goat and sheep farmers market     | 2       | 0.17   | 0.34  |
| 5. | IB technology trends in society                   | 2       | 0.12   | 0.24  |
|    |                                                   | **Total**         | **1**   | **3.22** |

**Threats**

| No | Threats                                             | IFES                |
|----|-----------------------------------------------------|---------------------|
|    |                                                     | Rating | Weight | Score |
| 1. | Land widely diversional                              | 3       | 0.23   | 0.69  |
| 2. | Still weak institutional breeder                     | 4       | 0.17   | 0.68  |
| 3. | Sales of goat and sheep that are still productive    | 2       | 0.19   | 0.38  |
| 4. | Disease outbreak                                     | 2       | 0.21   | 0.42  |
| 5. | Attractiveness of other sectors                      | 2       | 0.20   | 0.4   |
|    |                                                     | **Total**         | **1**   | **2.57** |

Source: results of primary data processing (2020)
3.3. SWOT
The results of the IFE and EFE matrix that can be arranged on the SWOT matrix with a quantitative approach that can show the development position of goats and sheep in North Labuhanbatu regency are in quadrant I is using force to gain opportunities, as can be seen in the following scheme

![SWOT Matrix Diagram]

**Figure 1.** The SWOT matrix with a qualitative approach

The SWOT matrix with a qualitative approach is an analytical tool used to formulate alternative strategies. In this matrix will be faced with 4 types of strategies namely strength strategies (SO Strategies), weakness strategies (WO Strategies), strength strategies – threats (ST Strategies), and weakness strategies – threats (WT Strategies).

Based on the analysis in the Swot matrix quadrant with quantitative approach it is known that the formulation of alternative development strategies is considered based on the identification of internal and external factors, as well as influential and homogeneous with those located at the site of the research namely North Labuhanbatu regency. The combination of alternative internal and external factors will be obtained several alternative strategies that can be applied in the development of goat and sheep livestock in North Labuhanbatu regency which can be seen in table 3

Based on SWOT matrix analysis in the development of goat and sheep livestock in North Labuhanbatu regency obtained several alternative strategies that have been adjusted to the position of internal and external factors including (1) human resources of active and professional agriculture and livestock counselling. This strategy is based because the counselling program given to farmers in North Labuhanbatu district has not been done optimally and is not running property. (2) Establish the institutional of livestock such as cattle groups. This strategy needs to be done to improve management in the development of goat and sheep livestock business in North Labuhanbatu regency. (3) The government’s role in mentoring and approaching the development of goat and sheep livestock businesses in the region.

The government’s policy should be in line with the needs of farmers and not to the detriment of any party. This needs to be done given that in the development efforts of the region there needs to be cooperation between the community in this case farmers and local governments. (4) Establish livestock
health services. This strategy needs to be done in supporting every sub-district in North Labuhanbatu regency in developing goat and sheep farming businesses. This livestock health service should be available given the farmer’s lack of knowledge in treating his livestock according to the cause [11]. (5) Availability of goat and sheep markets. This is supported by the lack of animal market in North Labuhanbatu regency, causing confused farmers in selling their livestock to meet their needs. The availability of the market will also have an impact on the mindset of farmers to make the livestock sector no longer a part-time business but a staple business

Table 3. Alternative matrix of goat and sheep livestock development strategy in North Labuhanbatu Regency

| Internal Factors | STRENGTH (S) | WEAKNESSES (W) |
|------------------|-------------|---------------|
| 1. Availability of forage livestock food |
| 2. High goat and sheep population |
| 3. Area of agriculture land and plantations |
| 4. Abundant agriculture and plantation waste |
| 5. Experience breeding quite well |
| 1. The use of feed technology is still low |
| 2. Maintenance pattern is still traditional |
| 3. Capital is still limited |
| 4. HR counselling is not optimal |
| 5. Motivation to breed as a part-time business |

| External Factors | OPPORTUNITIES (O) | STRATEGI – O |
|------------------|-------------------|-------------|
| 1. Attention from local government both |
| 2. Waste treatment of livestock manure into organic fertilizer |
| 3. IB technology trends in society |
| 4. Availability of existing markets |
| 5. Increased demand for lamb chops |
| 1. Cooperation with other institutions in the development of feed by utilizing existing land |
| 2. Cooperate with local governments to effectively effectively marketing |
| 3. Providing knowledge and technology to farmers |
| 1. Carry out mentoring and counselling programs accompanied by demonstrations (pirots) |
| 2. Introduction to agriculture and plantation feed processing technology |
| 3. Forming and activating cattle groups |

| TREATHS (T) | STRATEGI S – T | STRATEGI W – T |
|-------------|--------------|---------------|
| 1. Land is widely switched |
| 2. Still weak institutional breeders |
| 3. Sales of young and productive goat and sheep |
| 4. Disease outbreak |
| 5. Attractiveness of other sectors |
| 1. Develop human resources skills and improve efficiency patterns in order to master and increase productivity in livestock business |
| 2. Establish a partnership with the government and private parties |
| 1. Improving business management, strengthening the role and function of livestock groups |
| 2. Fostering or cooperation with other institutions, the development of sheep |
| 3. Need evaluation and coaching |

Source : results of primary data processing (2020)

North Labuhan batu regency has potential in the development of goat and sheep livestock seen from SWOT matrix in the creation of the right strategy to support North Sumatra Province as a producer of goats and sheep.
4. Conclusions and suggestions
SWOT analysis shows that the agribusiness conditions of the identified goat and sheep livestock production area have the potential to be developed because it has strength and opportunity in SWOT matrix schemes with quantitative approach. This shows that North Labuhanbatu regency has a great opportunity in developing goat and sheep farming business to Support North Sumatra Province as a producer of goat and sheep. It is expected to further optimize and develop the internal capabilities of farmers and utilize the natural resources available to scale up the business of goat and sheep to better. Working with local governments to effectively network marketing to take advantage of unmet market demand opportunities and optimally utilized agriculture and plantation waste as a source of goat and sheep feed in North Labuhanbatu regency.

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