Determining strategy of beef cattle development in Karanganyar Regency, Central Java, Indonesia

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Abstract. The purpose of this study was to determine the profile of beef cattle entrepreneur group members, to analyse the main factors that influence the development of beef cattle business, and to determine the strategies that can be applied for the development of beef cattle business in Ngargoyoso District, Karanganyar Regency. The basic method in this research was survey research method. Determination of the location of the study was conducted by purposive sampling. The research sample was determined by convenience sampling consist of 60 farmers. Data collection techniques were carried out by means of interviews, observation and questionnaires. The data analysis method used the IFE matrix, EFE matrix and SWOT analysis. The profile of beef cattle business in Karanganyar regency was still traditional in the management system, providing reef resources and managing in the financial sector. The results of the quantitative SWOT matrix analysis show that the appropriate strategy in the development of beef cattle farms was in quadrant 2. The strategy must be implemented in quadrant 2 was to take advantage of long-term opportunities by means of diversification or innovation that can be done by applying technology in the form of feed processing technology, reproduction technology, and waste treatment technology.

1. Introduction

Indonesia is an agricultural country that has abundant natural resources, especially from the agricultural sector. One of the agricultural sub-sectors that has great potential to be developed is livestock, because various layers of Indonesian society need of food from livestock in order to create a healthy and intelligent generation of the nation. Sources of beef cattle rely on smallholder farming system. In general, beef cattle breeding is still carried out traditionally, has not received the touch of management technology, and lacks of agribusiness insight [1]. Beef cattle business development is closely related to the level of public consumption [2]. Livestock business has good prospects in the future. One of the livestock business which is mostly carried out by rural communities is raising beef cattle in the form of smallholder farming [3]. In this regard, it is necessary to identify alternative patterns of development of community farms that have economies scale and will be able to contribute to family income. Beef cattle business in Karanganyar regency generally still dominated by smallholder farming system integrated with other farms. Animal husbandry is only done as a side business while the main business is farming [4]. The maintenance system used by farmers consists of several methods, namely with intensive maintenance system (with full maintenance being stalled and forage is obtained by looking for grass in the field), semi-intensive (by means of maintaining part of the time on the pond and...
part of the pasture in the field or extensive plantation fields) and extensive maintenance (with full grazing) [5].

In order to improve business feasibility and the competitiveness of beef cattle production systems is recommended by applying proven applied technology, especially in feeding systems and good farming practices through the use of resources location-specific local feed from agricultural and agro-industrial waste [5]. Several policies to improve access to credit financing are: including (i) Strengthening of group dynamics and the application of technology to improve the productivity of beef cattle, (ii) government assistance regarding aspects of guarantee and credit subsidies, the provision of assistance to revitalize agriculture and the government-run banks [6]. The purpose of this study was to determine the profile of beef cattle entrepreneur group members, know the main factors that influence the development of beef cattle business, and determine the strategies that can be applied for the development of beef cattle business in Karanganyar Regency. The research need to identify internal and external factors that influence the development of beef cattle breeding, analyze alternative strategies that can be applied in developing beef cattle agribusiness and analyze the priority strategies that can be applied in developing beef cattle agribusiness in Karanganyar Regency. Based on the description above, it is necessary to do a research on the beef cattle business to determine the development Strategy in Karanganyar Regency.

2. Materials and Methods

Research on the beef cattle business development strategy in Ngargoyoso District, Karanganyar Regency, Central Java Province began in February to March 2018. The type of data obtained consisted of primary data and secondary data. Primary data was data collected directly from respondents. Primary data consists of several techniques, among others, namely, questionnaires, interviews, observations and others. Secondary data was data through documents. Secondary data was obtained from BPS Karanganyar regency in year period 2017 [7].

2.1. Sampling methods

The location of this study was determined by purposive sampling. The method of taking the research location used purposively with the consideration that Ngargoyo district had an animal market that facilitates livestock marketing, access to supporting infrastructure facilities, a large number of breeders or livestock, adequate natural resources and human resources. This condition can be developed as well as it has the potential to support the development of beef cattle [8]. District Ngargoyo was selected because Ngargoyo sub-district has a highest beef cattle population of 5,049 animals in 2017. Besides, these three villages had a group of livestock farmers who were active in contributing to the business of fattening beef cattle. The research was conducted using a survey method on the beef cattle farmers in Ngargoyo District, Karanganyar Regency. Determination of the location of the study was done by purposive sampling based on certain considerations in accordance with the research objectives [9]. The determination of this sample respondent using convenience sampling with criteria the farmers who were the member of group livestock farmers and had 2 beef cattle ownership. The number of samples taken in this study were 60 respondents.

2.2. SWOT Analysis

Primary data was described descriptively and was tested using the SWOT matrix. SWOT analysis was used to determine the internal and external effects of beef cattle business on strengths, weaknesses, opportunities and threats as well as the formulation of development strategies based on the potential possessed by Ngargoyo District. Company’s performance can be determined by a combination of environmental factors Internal strength and Weakness and the external environment of Opportunities and Threats faced by the business stakeholders [10].

Primary and secondary data were collected by making a questionnaire and obtained results in the form of numbers and then calculated using the average method. The SWOT Research questionnaire was created to formulate strategic planning and determine strategic priorities to support comprehensive results. The main objectives of the results were:

1. Analyzing and classifying quantitative internal and external factors.
2. Analyze driving factors, define strategies based on these mappings.
3. Looking at various policy alternatives that might be based on opportunities and threats in the future, following alternative solutions.

The results of this questionnaire were numbers. Each question answered by respondents in the form of a calculated scale, in order to obtain a certain number. With the average method, details of internal (SW) and external (OT) factors will be obtained [7].

3. Results and Discussion
3.1. Characteristics of Respondents
Respondent characteristics were used to determine the potential development of beef cattle in Ngargoyoso district including: experience of raising beef cattle, education level, employment status, number of family members, age, and beef cattle population that were kept by respondents.

| Characteristics          | total | Percentage (%) |
|--------------------------|-------|----------------|
| Age                      |       |                |
| <15                      | 0     | 0              |
| 15-64                    | 57    | 95             |
| > 64                     | 3     | 5              |
| Education                |       |                |
| No school                | 1     | 1.6            |
| Elementary school        | 26    | 43.3           |
| Middle School            | 23    | 38.3           |
| High school              | 8     | 13.3           |
| College                  | 2     | 3.3            |
| Main Job                 |       |                |
| Farmers                  | 48    | 80             |
| Civil servants           | 1     | 1.6            |
| Private                  | 8     | 13.2           |
| Entrepreneur             | 1     | 1.6            |
| Broker                   | 2     | 3.3            |
| Farming experience       |       |                |
| 1-10 years               | 4     | 6.6            |
| 11-20 years              | 25    | 41.6           |
| > 20 years old           | 31    | 51.6           |
| Number of family members |       |                |
| 1-3                      | 21    | 35             |
| 4-5                      | 34    | 56.6           |
| > 5                      | 5     | 8.3            |

Source: Processed Primary Data, 2018

Table 1 shows the age of the respondent at most age 15-64 years as many as 57 people (95 %). The average age of respondents in this study was classified as productive age for work, because most respondents are aged between 15-64 years. This result was supported based on the Manpower Act No. 13 of 2003, which states that a person who is classified as a workforce is aged 15 to 64 years [11]. The level of education of beef cattle breeders in Ngargoyoso District, the majority of breeders' education is still low 26 (43.3%) were elementary school graduates. The majority of respondents in Ngargoyoso district worked as farmers (80%). While the members of the livestock farmer groups who work in the non-agricultural sector such as civil servants, private, entrepreneurial, private, and labour were about 12 respondents (19.7%) of the total respondents. This shows generally still dependent on the family income by working outside the sub sector of livestock. The experience of in farming system shows that the largest respondents had experience over 20 years (51.6%). Beef cattle business in general was a business inheritance from their parent. They get experience of raising livestock since childhood from parents and the surrounding environment. The number of family members shows that most of the respondents had family member of 4-5 people (56, 6 %), while only 8.3% had family members of more than 5 people. The total of labour in average was one labour from family member.
3.2. Identification of Internal and External Factors

This research was done by identifying the internal and external factors (IFE and EFE matrix) that influence the success of the development of beef cattle business in Karanganyar regency [12]. Identification of internal and external factors were derived from interviews with respondents consisted of 60 respondents. This study determined the Strengths, Weaknesses, Opportunities, Threats (SWOT) based on identification of internal and external factors as Table 2.

| Internal factors | Strength | Weakness |
|------------------|----------|----------|
| HR               | 1. Experience raising enough |
|                  | 2. Availability of labor |
|                  | 3. Interaction between communities is more familial |
| Production       | 1. Availability of land as a feed provider base |
| Marketing        | 1. The existence of the animal market makes it easy to market beef cattle |
|                  | 2. Access to transportation and supporting infrastructure |
| Capital          | 1. The existence of credit loans from banking institutions |
| Management       | 1. The availability of abundant agricultural waste |

| External Factors | Opportunity | Threat |
|------------------|-------------|--------|
| The economy      | 1. Increase in demand for beef |
|                  | 2. The role of the pillar in determining prices |
| Social and cultural | 1. Market trends in accordance with beef cattle business |
|                  | 2. High competition in investment management |
| Government policy | 1. Government policies restrict beef imports |
|                  | 1. The conversion of agricultural land functions |

Source: Primary data processed, 2018

3.3. SWOT Analysis

Strategy formulation development of beef cattle can be obtained by referring to the identification on the strength (strength), weakness (Weakness), opportunity (opportunity) and threats (threats) of a SWOT analysis. Formulation development strategy begins by analyzing the internal and external factors of farm businesses to identify strategic factors into strengths and weaknesses, opportunities and threats in the development of beef cattle farms in Karanganyar. Development of beef cattle farms consists of internal factors. Internal factors consist of strengths and weaknesses is presented in table 3.
Table 3. Internal factors for beef cattle development

| No. | Internal factors                                                                 | Weight | Rating | Average Total Score |
|-----|-----------------------------------------------------------------------------------|--------|--------|---------------------|
| 1.  | The experience of raising enough                                                  | 4.5    | 0.1    | 0.45                |
| 2.  | Availability of labor will be                                                    | 4.1    | 0.09   | 0.36                |
| 3.  | Interaction between people who are family-friendly                               | 4.6    | 0.10   | 0.46                |
| 4.  | Land availability as feed provider base                                           | 4.6    | 0.10   | 0.46                |
| 5.  | Having HR with young age and potential                                           | 3.8    | 0.08   | 0.30                |
| 6.  | Access to transportation and infrastructure facilities                            | 4.6    | 0.10   | 0.46                |
| 7.  | There is an animal market                                                        | 4.8    | 0.11   | 0.52                |
| 8.  | Availability of abundant agricultural waste                                      | 3.5    | 0.08   | 0.28                |
| 9.  | The cost of capital issued is relatively low                                     | 3.6    | 0.08   | 0.30                |
| 10. | Support from local government                                                    | 4.3    | 0.10   | 0.43                |
|     | **Total**                                                                        | **1**  |        | **4.02**            |

Source: Primary data processed, 2018

An external factor was the business environment that appears opportunities and threats faced by beef cattle farms in Ngargoyoso district. External factors consist of economic, socio-cultural, governance and technological forces [13]. External factors can be identified in Table 4.

Internal and external factors determined the position of development of beef cattle breeding in Ngargoyoso district, Karanganyar regency. Total score obtained from the analysis of the internal factor was the total score total score weakness and was reduced by strength of 0.73, and the external factor was the total score of the opportunities and was reduced by total score threat of - 0.19. The appropriate strategy in the development of beef cattle development is presented in quadrant 2 (Figure 1.).

Strategic that is carried out in quadrant 2 is a situation where facing various threats, while has internal strength [14]. Even though farmers face threats, there are some opportunities. For this reason, farmers can use alternative strategy 2, namely diversification strategy or innovation strategy by using the power to take advantage of long-term opportunities in either products or markets.
Table 4. External factors for beef cattle development

| No. | External Factors                                                                 | Weight | Rating | Average Total Score |
|-----|----------------------------------------------------------------------------------|--------|--------|---------------------|
| 1.  | The extent of the market in Central Java / Indonesia                             | 3.5    | 0.14   | 0.49                |
| 2.  | Increase in demand for beef cattle                                              | 2.8    | 0.11   | 0.30                |
| 3.  | Government policies limit beef import                                            | 2.0    | 0.08   | 0.16                |
| 4.  | The existence of feed processing technology                                     | 2.6    | 0.10   | 0.26                |
| 5.  | Widespread IB technology in the community                                       | 2.7    | 0.11   | 0.22                |
| 6.  | Market trends in accordance with beef cattle business                           | 3.1    | 0.12   | 0.37                |
| 7.  | The low cost of banking institutions / financial institutions                    | 2.2    | 0.09   | 0.19                |
| 8.  | Processing manure waste into organic fertilizer                                 | 2.1    | 0.08   | 0.16                |
| 9.  | The form and field of investment is very broad                                  | 3.0    | 0.12   | 0.36                |
|     | **Total**                                                                        | 1      |        | **2.51**            |

### Threat

| No. | External Factors                                                                 | Weight | Rating | Average Total Score |
|-----|----------------------------------------------------------------------------------|--------|--------|---------------------|
| 1.  | The price of bran fluctuations                                                    | 2.6    | 0.09   | 0.23                |
| 2.  | The existence of the function change of agricultural land                         | 3.1    | 0.11   | 0.34                |
| 3.  | Farmers / livestock institutions are still weak                                   | 2.6    | 0.60   | 0.33                |
| 4.  | Difficulty of loans from banks or cooperatives                                   | 3.0    | 0.11   | 0.33                |
| 5.  | Uncertainty about obtaining investment funds                                      | 3.1    | 0.11   | 0.34                |
| 6.  | The dominant role of inaugurations in determining prices is                      | 2.8    | 0.10   | 0.28                |
| 7.  | The existence of substitute products and cattle price fluctuations               | 2.7    | 0.10   | 0.27                |
| 8.  | License for beef cattle business                                                 | 3.1    | 0.11   | 0.34                |
| 9.  | High competition in investment management                                        | 3.1    | 0.11   | 0.34                |
|     | **Total**                                                                        | 1      |        | **2.70**            |

Source: Primary data processed, 2018

Figure 1. Diagram of SWOT Analysis
Conclusion

Based on the results, it can be concluded that the alternative strategy adopted for the development of beef cattle business in Ngargoyoso district, Karanganyar regency was to optimize and develop the internal capabilities of farmers’ resources and utilize the available natural resources to increase the scale of beef cattle business to be more advanced. Moreover, introduction of superior cattle feed resources and breeding technology need to be adapted to the conditions of the local area, establish partnerships with the government and third parties by utilizing the interaction of rural communities, strengthen farmer institutions hence farmers have strong bargaining power. Moreover, it need also to develop strategy on diversification strategy or innovation strategy by using the power to take advantage of long-term opportunities in either products or markets.

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