How perception of farmers about development potential of goats in Pamboang subdistrict, West Sulawesi

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Abstract. The efforts of a regional government in supporting programs to increase livestock populations, especially goats, can be seen from the potential of the area. The potentials include the availability of human resources, natural resources, technology, and support from institutions related to the development of goats. The purpose of this research was to analyze how farmers’ perceptions of the potential for goat development in Pamboang Sub-district. The respondents were chosen by simple random sampling. The number of respondents in this study were 80 farmers. Observation and direct interview methods were used to collect the data by farmers’ perception. The results showed that the majority of respondents agree with goats have a potential to be developed in Pamboang Sub district in terms of natural resources, human resources, and technology.

1. Introduction

Goat is widely known in Indonesia as livestock. For Indonesian, goat has roles as source of meat, for local rituals, saving for future needs, and income for the family. Goats are also able to adapt with local condition even in less fertile area with less green fodder [1]. In Indonesia, the species of goat mainly Kacang and Etawa goats. Kacang goat, which already bred in Indonesia since 1900, has smaller size to ettawah which later introduced to Indonesia. These two species later crossbreed and created ettawah cross breed goat [2].

Every region has a unique potential depends on local conditions: natural resources, human resources, its geography, cultures, and technology owned by that region. Region with abilities to maximize the potential able to generate a better regional income. Nowadays, the people in Majene start breeding the ettawa crossbreed goat in line with local government of Majene’s policy in developing Majene as center of goat rearing in Western Sulawesi Province. The regency of Majene, which has less fertile soil and unsuitable for rice field, known for its vast smallholder plantation which suitable for goat farming.

The farming potential is abilities owned by the breeder and supports from their family to enhance their goat farming business. This potential also important indicator and the developed potential has a positive impact for the business [3]. Pamboang sub-district in Majene is a promising area for developing of goat farming, however, the production and productivity still below the expected level. Mostly farmer engaged in small scale breeding activities. The rise of goat population in a region should be supported
by resources that available in a region. These supporting resources including availability of land, human resources, livestock, demand, and income of farmer among other resources. While all these resources available in Pamboang sub-district, the low productivity of livestock production still in place. One inherent problem in this context is the perception. Perception is very important for a person to realize and understand the surrounding environment and making a right decision. Based on the above context, this research conducted to analyze the perception of goat farmer on the development of goat farming in Pamboang sub-district.

2. Methods

This research explored the perception of farmer on the development of goat rearing. This research is a descriptive research and the data analyzed with quantitative method. The primary data collected through survey by taking samples from a population using questionnaire as a main data collection tool and through direct observations and interviews with the farmer [4]. The secondary data collected from documents publisher Central Agency on Statistics, Governments’ Agency on Agriculture, Livestock, and Plantation of Majene regency. The sub district of Pamboang chosen purposively based on previous data of Majene regency that mentions Pamboang as a potential region for developing goat farming.

In specifying the number respondents to represent the population the formula deployed as follows: \((t-1)(r-1) \geq 15\) [5]. The calculation result is 80 respondents. All the respondents included in this research are goat farmers.

The gathered data analyzed descriptively using Likert scale. Likert scale deployed to measure attitude and perception of the farmers on the development of goat farm business based on natural resources, human resources, and existing technology of local context.

3. Results and discussion

Perception is an experience on object, phenomenon, or relations absorbed by a person by concluding information and interpreting messages. Perception determined factors such as personal factor and situational factor [6]. Perception comes from functional factors such as needs, past experiences, and other things including personal factors that are received by the five senses and then processed in the mind influenced by sensation, attention, expectations, motivation and memory so that they can infer something. Perception is not determined by the type of stimulation but the characteristics of people who respond to these stimuli. It is thought that environmental influences on individual perspectives can help overcome social pressures. Individual needs are one important factor that can affect one's perception an object.

Perception of farmers about development potential of goats are quite diverse in terms of several factors. The factors examined in this study relate to the potential development of goats, namely the availability of natural resources in this case land, the availability of human resources, and technology that supports the sustainability of goats farming. Frequency distribution of answers respondents who have been grouped, obtained a clear picture of the response of farmers to the variables of this study. The results of the analysis perception farmers about development potential of goats can be seen in table 1.

| Table 1. Perception of farmers about development potential of goats in Pamboang |
|-----------------------------------------------|---|---|---|
| Indicator | Score | Frequency (person) | Percentage (%) | Quality |
| The potential development of the carrying capacity of natural resource: | | | | |
| Strongly Agree | 4 | 36 | 45 | 144 |
| Agree | 3 | 43 | 53.75 | 129 |
| Neither disagree Not Agree | 2 | 1 | 1.25 | 2 |
| Disagree | 1 | 0 | 0 | 0 |
| Total | 80 | 100 | 275 |
The potential development of human resources factor:

|                | Strongly Agree | Agree | Neither disagree Not Agree | Disagree |
|----------------|----------------|-------|----------------------------|----------|
| Number of responses | 4              | 3     | 2                          | 1        |
| Percentage       | 47.5%          | 52.5% | 0%                         | 0%       |
| Total            | 80             | 100   | 278                        |          |

Average: 275.33

3.1. Farmers perception about the potential development in terms of natural resource factor

Natural resources are natural resources owned by the community such as the availability of agricultural land, irrigation and other resources that are needed to support the implementation of agricultural business development policies. Perceptions of farmers related to natural resource availability factors seem to largely agree with the potential development of goats in this area which reaches 53.75%. This is because all respondents (100%) have their own cage in the running of their livestock, the ownership status of goat livestock farmers in Pamboang Sub District is their own property, cash used farmers to conduct business activities comes from their own asset. These conditions encourage farmers to have potential currently in the supply of production inputs.

Ownership of their own land encourages many farmers to agree, farmers keep most goats in the yard or under the house is a habit and is done down and down by the people in this area. The observations show that the potential of the population is sufficient to support the implementation of agricultural business development policies. This can be seen from the population and interest in getting livestock assistance and developing their farming business. In addition there are natural resources such as land and plants that can be useful in livestock development.

Natural resources that can be used to support the implementation of other farming business development policies are land, plants and water. Crops in the form of fodder plants can be planted by farmers on their own farmland, so there is no need to spend money to provide feed for livestock. This potential can be developed because the available land area is very large and has an expected fertility rate. Another factor that also determines the successful implementation of livestock farming policy development is natural resources in the form of sufficient land area and can be used to plant various types of plants to support the development of livestock business. Agricultural land has potential as a source of animal feed, it is necessary to carry out animal feed forage evaluation to predict the potential of livestock in an area to support the capacity of increasing livestock population [7].

3.2. Farmers perception about the potential development in terms of human resources factor

Human resources in livestock business is an important factor in innovating and developing agribusiness ideas. The study of the potential development of farmer resources as an effort to improve the competitiveness of goat farms in Pamboang Sub District is expected to formulate the stages of farmer resource development in realizing competitive agribusiness. Farmer potential is a measure of a farmer ability based on basic potential, potential to manage production inputs, potential labor supply, and technological mastery potential.

Farmers perceptions about the potential for goat development in terms of human resources as shown in table 1, that the majority of respondents (52.5%) agree with the development of goat livestock business. Potential of human resources in Pamboang Sub District, in this case farmers have sufficient
(moderate) potential in developing goat agribusiness. Supported by the age factor of farmers who are still productive, long experience of breeding, the skills needed still require more development of increasingly sophisticated production, reproduction, feed and marketing technologies. This condition is due to farmers having sufficient potential on the basic potential of farmers, supply production inputs, labor.

Individuals who have higher human capital can have skills and competencies to manage the production process more efficiently and increase productivity through the ability to have financial resources, market information and business networks. This is supported by research which states that human resources play an important role in economic growth because human resources hold the chains of production, distribution and consumption. From a macroeconomic perspective, the accumulation of human resource productivity and technological innovation is driving the growth of agricultural production to continue. Potential development of potential farmers in goat agribusiness is believed to be an important effort that can improve the competitiveness of the goat livestock business through the achievement of efficient business [8].

Farmer resources are an important production factor and have a direct impact on improving business competitiveness. The higher the capacity of human resources, the more output will be produced. Improving the quality of human resources can reduce production costs (business efficiency), reduce marginal production costs, and enable businesses to produce quality products at lower prices [9].

3.3. Farmers perception about the potential development in terms of technology factor
Technology in a livestock business can be interpreted as how to do livestock business work to get better productivity and get more efficient ways. Efforts to increase productivity and efficiency to a better level can be achieved by changing the technology used by farmers. In table 1, to show that the majority of respondents agree with the potential development of goats from the technological aspect (58.78%). Technology in the goat livestock business that is more advanced can encourage the development of livestock business carried out by farmers.

Currently, some existing technologies have been utilized in the seeds supply program and increased production including the development activities of Ettawah Cross breed goat population through the supply of superior seeds (genetic improvement), development of the Ettawah Cross breed population in the countryside and increasing livestock productivity through revitalization artificial insemination and improving goat quality to optimize production and strengthening the quality of feed and supplements. The program has been running since 2017 which includes the development of a breeding center that is made according to the Village Breeding Center (VBC) model centered in Pamboang Sub District, Majene Regency and managed by the Office Technical Implementation Unit as the core business of developing and fattening ettawah goats and their plasmas is a community of farmers who have experience in ettawah cross breed goats at location.

However, this technology still needs to be disseminated to farmers in the District of Pamboang because of the knowledge of farmers regarding technologies such as feed technology, waste treatment technology, and livestock product technology which is still low. Inadequate maintenance management in this case is still a lot of goat maintenance is less focused on increasing the profit of goat livestock business. Utilization of feed technology in this area does not use lawn mowers, farmers still rely on manual tools, feed processing technology has also not been done to overcome the problem of feed, and treatment of livestock waste that has never been use technology. The traditional breeding system is very much found in the Pamboang Sub District, there are many pens that are not in accordance with the standards in raising goats that are oriented to livestock production and productivity. The production and productivity of livestock is also low, which is a weakness in developing the Ettawah Cross breed goat livestock business in Pamboang Sub District.

Utilization of agricultural waste as animal feed is very necessary to ensure the availability of forage throughout the year, especially in the dry season or when forage production decreases. Problems in using agricultural and plantation waste feeds include, farmers knowledge factors, quality of agricultural and plantation wastes as well as pollution factors, to overcome these problems requires the support of technology and solutions on the sustainable use of waste as animal feed. Farmers need to be given a
touch of feed technology for processing agricultural waste into animal feed such as making Hay and Silage.

Economic conditions and technological progress in the form of progress that has been achieved by the society in the form of an improvement in the level of life (economy) of society and technological progress. This can be seen from the availability of facilities in the form of facilities and infrastructure of roads and bridges, the use of transportation equipment, communication and the existence of economic growth through the trading of agricultural and livestock which basically also determines success in livestock business development policies.

![Figure 1](image_url)

**Figure 1.** Rating of Perception Farmers about Development Potential of Goat in Pamboang Note: DA (Disagree) = little/low, KS (Middle disagree) = half/medium, A (Agree) = high and SA (Strongly agree) = overall/veryhigh

Based on figure 1, farmers' perceptions of the potential development of goats in Pamboang Sub District are in the category of agreeing with a value of 275.33, indicating that the potential for development based on natural resource factors, human resources, and the availability of technology that supports livestock business is considered good by farmers. In accordance with the results of research conducted in Bogor that despite facing various threats, Ettawah cross breed goat farms in Bogor Regency have superior resources both from internal factors such as human resources, organizational structure, and external factors such as feed technology, production technology, marketing and promotion of the products, customer satisfaction and environmental supports [10]

4. Conclusion

Based on the results and discussion, it can be concluded research is that the farmers perception mostly agree with a value of 275.33 about the potential development in Pamboang Sub District in terms of natural resources, human resources and technology that support the development potential of farm goats.

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