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THE COMPARATIVE ADVANTAGE OF CATTLE FARMING AND ITS CONTRIBUTION TO DONGGALA REGENCY LIVESTOCK DEVELOPMENT

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ABSTRACT

Beef cattle business, especially in Central Sulawesi Province, is people's livestock business that needs to be developed. To support the efforts of the development of livestock business, it is necessary to have a data base on the existence of beef cattle and the potential of its development area, so can be used as a basis in establishing the model of beef cattle business development. This study aims to analyze the Comparative Advantage of Cattle Business and Its Contribution to Livestock Development in Donggala Regency by using time series data for 10 years, starting from 2010 to 2019. The analytical model used in this study is a combination of Location Quotient (LQ) and Growth and Share analysis. The Location Quotient (LQ) technique is used as a guide to find out how much cattle have influenced on regional economic growth, by comparing the production value in the area, namely Donggala Regency. The acquisition of the LQ value of cattle in Donggala Regency is 1.03 > 1 which means that the beef cattle business is a basic sector, it can be said that cattle have a comparative advantage because they are able to provide regional markets and markets outside the region from Donggala Regency. Based on the Growth and Share analysis, beef cattle commodities have positive growth where x = 8, with a contribution (positive share) X = 9.8 > 2, and it is stated that the beef cattle business is superior and contributes greatly to the development of livestock in Donggala Regency.

Keywords: Cattle, Comparative Advantage, Location Quotient, Growth and Share and Contribute.

INTRODUCTION

Livestock development in Indonesia livestock production at the same time the income and welfare of farmers, both in meeting food and nutritional needs, as well as creating job opportunities, as well as encouraging the development of agro-industry and agribusiness. (Saputra, 2009). Cattle play a major role in fulfilling national food as a source of nutrients such as protein, fat, vitamins, minerals, and other nutrients. The popularity of cattle meat is no longer in doubt in Indonesia because cattle meat is believed to have higher efficacy than lamb.

Cattle farming business in Indonesia has become one of the most developing livestock businesses because from being an integrated business with lowland rice

farming as a labor and means of transportation for cattle, it is also a large meat producer after poultry, because beef is more preferred by the community compared to poultry with goat, sheep and buffalo meat. Thus, the cattle farming business can be said to has spread throughout Indonesia. Central Sulawesi province is no exception, because is considered very appropriate as a potential livestock commodity area.

This condition can be seen based on cattle population data in Central Sulawesi. According to the latest data from the Director General of Livestock and Animal Health (2019) the current population of cattle is 343,630. One of the areas in Central Sulawesi Province that has the potential for the development of a cattle farming business is Donggala Regency.

Regarding livestock business development efforts, a data base of the existence of livestock in the area, especially cattle and the potential of its development area is needed, so it can be used as a model for developing certain livestock commodity businesses. This is a consideration for researchers to conduct research on the comparative advantage of cattle and their contribution to livestock development in Donggala Regency which later will be able to become an alternative material for cattle business development strategies.

Objective

Analyzing the comparative advantage of cattle against ruminants (cows, buffaloes, cattle and sheep) in Donggala Regency and analyzing the contribution of cattle to livestock development in Donggala Regency.

Comparative advantage is a commodity for a country or region commodity is superior to other commodities in the region. The leading sector can also be said to be the base sector in a region, the needs of the region have been met and can still be exported out and can be a source of original income region. Commodities that have superiority, even if only in the form of comparison, are more profitable to be developed compared to other commodities that are equally produced by both countries or regions (Robinson, 2005).

Location Quotien (LQ) is an analysis used to determine the extent to which the level of specialization of economic sectors in an area that utilizes the basic sector or leading sector. Location Quotien calculating sector output share comparison (i) in the city or district and share out sector (i) in the province. Tarigan (2012) also explained that the LQ method can also be used as a guide to determine the comparative advantage of an area.

Endri (2012) states that the economic quadrant is needed to determine the economic sector or sub-sector that is superior, potential, dominant or static by using the growth and share method. The growth method is useful for getting the growth of each sector while the share method is used to determine the contribution of a sector's results to the results of all sectors in the study area within one year of production.

RESEARCH METHODS

In this study, the method used is a literature study using time series data for 10 years as well as a field survey on the capacity of the grass field. The analytical model used is a combination of Location Quotient analysis and Growth Share analysis. Location Quotient analysis is used to compare base activities in an area relative to a larger area hierarchically. Systematically the LQ equation can be written as follows (Dinc, 2002):

$$LQ = \frac{{}^{X}ij \Big/ \sum_{i=1}^{4} {}^{X}ij}{\sum_{i=1}^{8} {}^{X}ij \Big/ \sum_{J=1}^{8} \sum_{i=1}^{4} {}^{X}ij}$$

Based on (Sukirno, 1985) Growth analysis is used to obtain the growth of each sector with the following formulation model :

$$Growth = \frac{Tn-(Tn-1)}{Tn-1} x\ 100$$

While the share method is used to determine the contribution of the results of a sector to the results of all sectors in the study area every year within a period of fifteen years with the following formulation model :

$$Share = \frac{NP1}{NP2} x\ 100$$

If share > 1 then it is given a value of 3, if share = 1 then it is given a value of 2 and if share < 1 it is given a value of 1. Whether or not the contribution is given by looking at the following provisions : if the share is given a value of 2 and 3 then it is given a value (+) and it is stated that the contribution given is large and if the share is given a value of 1 then it is marked (-) and it is stated that the contribution given is small (low). A value of 2 is declared to have a large contribution with the assumption that the next development will increase or within 3 years the contribution given will remain or not increase and decrease. The results of growth share can be diagrammed as follows (Warpani S, 1980).

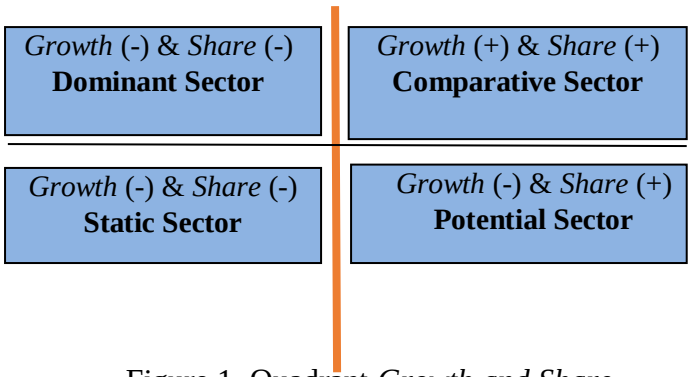

Figure 1. Quadrant *Growth and Share*

The figure shows that if the commodity sector has a fairly high growth (+) and the contribution made is quite large (+), it is called a leading sector and this sector is used as the base sector of a region. If a sector share has growth (-) and share (+), it is called a potential commodity, where the commodity can later be used as a base product for a long time. If the sector commodity in an area has growth (+) and share (-) then it is called a dominant commodity which will be able to become a base product with special treatments and if the sector has growth (-) and share (-) then this product is called a commodity dominant with special treatment and efforts to diversify commodities (Warpani S, 2016).

RESULTS AND DISCUSSIONS

The results of this study are shown in the location quotient analysis table by looking at how much influence cattle population has on regional economic growth, throughout comparing the production value in the area studied, namely Donggala Regency. The results of these calculations can be seen in the table. 1.

Tabel 1. Average Ruminant Livestock LQ Index in Donggala Regency

No.	District	Cattle	Buffalo	Goat	Sheep
1.	Rio Pakava	0.63	3.10	1.06	0.0
2.	Pinembani	0.06	0.00	1.14	0.0
3.	Banawa	0.59	0.00	1.07	0.0
4.	Banawa Selatan	0.74	0.00	1.04	0.0
5.	Banawa Tengah	0.42	0.00	1.09	0.0
6.	Labuan	1.29	0.00	0.96	0.0
7.	Tanantovea	0.72	0.00	0.99	10.2
8.	Sindue	1.42	0.00	0.94	0.0
9.	Sindue Tombusabora	1.75	0.00	0.90	0.0
10.	Sindue Tobata	1.94	0.00	0.87	0.0
11.	Sirenja	1.40	0.00	0.95	0.0
12.	Balaesang	1.50	7.98	0.93	0.0
13.	Balaesang Tanjung	0.57	0.00	1.07	0.0
14.	Dampelas	2.15	0.00	0.84	0.0
15.	Sojol	0.66	5.16	1.05	0.0
16.	Sojol Utara	0.65	0.00	1.06	0.0
	Total	1.03	1.01	1.00	0.64

Source : Secondary data processed, 2021

Table 1 above shows that cattle are the basic sector in Donggala Regency. This is indicated by the average LQ index value of 1.03 > 1 which means that the beef cattle business is a basic sector, which has a comparative advantage because it is able to provide regional markets within and outside the region of Donggala Regency.

Furthermore, to determine the extent of economic growth and the contribution of a commodity to other commodities in region, Growth Share analysis is carried out which begins with calculating the growth of-each sector while the Share calculation method is used to determine the contribution of a sector's results to the results of all sectors in the study area during one year production period. The list used for this analysis is in the form of population data for ruminants in Donggala Regency, Central Sulawesi Province.

Table 2. *Growth Share*

Ternak	*Growth*	*Share*
Cattle	8	9,80
Buffalo	-12	0,45
Goat	6	0,72
Sheep	-1	0,78

Source: Secondary Data processed, 2021

Based on Table 2, It appears that beef cattle in Donggala Regency with a value of Growth = 8 shows that the growth of the cattle population is quite high, while the value of beef cattle share = 9.8 > 2 and marked (+) which means that the contribution of beef cattle to the development of livestock in Donggala Regency is quite large. To find out the classification of superior commodities or base regions can be seen in Table 3.

Table 3. Results of Ruminant Commodity *Growth Share*

Komoditas	Nilai *Growth* (y)	Nilai *Share* (x)	Klasifikasi Komoditas
Cattle	+	+	Superior
Buffalo	-	+	static
Goat	+	+	Superior
Sheep	-	+	static

Source: Primary data processed (2021)

Based on Table 3, it is shown that both the Growth and Share values of beef cattle are marked (+) which means that beef cattle are a superior commodity in Donggala Regency and can be used as a basis for developing beef cattle because in further developments it will experience a significant increase. The advantages and determination of the beef cattle base area in Donggala Regency can be seen in the following quadrant image.

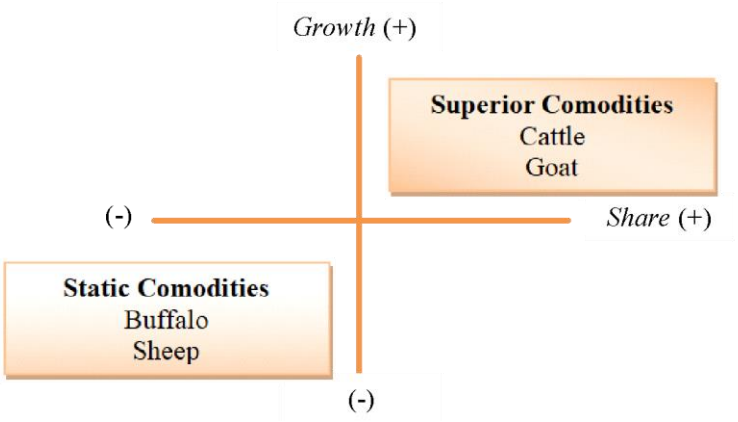

Figure 2. Quadrant of Growth Share

Based on the classification of the sector in terms of the growth rate of the last ten years and the contribution of commodities to the development of ruminant livestock in Donggala Regency, it shows that beef cattle and goats are designated as superior commodities and have the potential to be developed in Donggala Regency. The classification of leading sectors shows that these commodities have growth quite high (+) and the contribution is quite large (+), while buffalo and sheep are designated as static commodities, as the static sector classification shows that these commodities have very less growth (-).

CONCLUSIONS AND SUGGESTIONS

Conclusions

1. Beef cattle business in Donggala Regency is a base sector or has a comparative advantage compared to other ruminant cattle

2. The slaughterhouse cattle business has a great contribution to the development of livestock in Donggala Regency.

Suggestions

1. For the development of beef cattle business should be directed to the region that is a base sector with an LQ value index of > 1, and has a relatively large tapung capacity.
2. To increase the production and nutritional content of field grass, it is necessary to process the soil and strive for superior grass gardens on the land around the cage.

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