



Research Paper

Animal Husbandry Industry Growth Center in Pasaman Regency

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This study aims to identify areas that have opportunities as growth centers in Pasaman Regency, analyze the strength of the linkages between the growth center and the surrounding areas, and determine commodity priorities for development in Pasaman Regency. This study uses secondary data and is analyzed with four data analysis methods, namely the Schalogram Analysis with the Centrality Index, which is used to determine the growth center based on the availability of public facilities by determining the regional hierarchy; Location Quotient analysis is used to determine the base livestock commodity in Pasaman Regency; Shift Share analysis is used to determine priority commodities to be developed in Pasaman Regency; Gravity analysis is used to find out how much the relationship between the growth center sub-districts and the supporting sub-districts (hinterland). The results of the analysis show that Lubuk Sikaping District is the center of growth in Pasaman Regency. Lubuk Sikaping sub-district is able to serve quite a wide area for the area behind it. The main livestock commodities in this area are cows, buffalo, goats, native chickens and ducks. Meanwhile, the priority commodity for development is duck. The superior commodity in Pasaman Regency has a comparative advantage. This is influenced by the topography of the region, climate and weather and conditions of cultivated land which can increase competitiveness at the level of West Sumatra Province. The sub-district that has the strongest linkage with the growth center is Panti District of 3,624,863.54, and the weakest linkage result is Mapat Tunggal District of 55,283.34. Strong linkages can facilitate growth centers in obtaining distribution of livestock production products, absorbing labor, trading centers, and providing various regional needs behind them in developing regions. The Pasaman Regency Government is advised to establish policies for basic commodity development and increase interaction between regions, so that can encourage the movement of the regional economy evenly.

Key words: Growth Center, Commodity Base, Interaction

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I. INTRODUCTION

Development is a major problem faced by developing countries. In general, almost all developing countries are faced with the same problems, namely poverty, unemployment, low levels of health and education, inequality in income distribution and even high crime (Todaro, 2009). Just like developing countries in general, limited costs to carry out development, requires the government to focus more on developing growth centers and provide beneficial effects for the regions behind it.

Pasaman Regency has an economic structure dominated by the agricultural sector. The agricultural sector is divided into several subsectors, namely the subsector of food crops, plantations, fisheries, to livestock. Based on data from the GRDP of Pasaman Regency in 2015-2019, the contribution of the livestock subsector is still low compared to other subsectors. The livestock sub-sector made a very small contribution to the GRDP of the agricultural sector in Pasaman Regency in 2019, only at 3.04% (BPS Kabupaten Pasaman, 2020). This indicates that the livestock sub-sector in this area still needs to be improved. One of the causes for the slow economic growth of West Pasaman Regency is the lack of government support for the development of the agricultural industry. In order to increase economic growth in West Pasaman Regency, data and studies are needed on the development potential of the agricultural sector and its subsectors. There have not been many studies on the development of the livestock subsector in West Pasaman Regency to support the regional planning of Pasaman Regency.

The problems in the livestock industry in Pasaman Regency are still quite complicated. In the poultry industry, the provision of seeds and feed is still dependent on imports. In the large ruminant industry, the source

of seeds that rely on the people's livestock business is not able to meet the increasing demand, and the feed industry has not been well cultivated. Limited infrastructure and uncontrolled live livestock trade is likely to spread disease and the quality and safety of the product is not guaranteed. From the consumption side, there is a gap in supply and demand, especially for beef, so it must be met from imports. On the other hand, the production capacity of broiler chickens can still be increased, only the demand is very dependent on consumer purchasing power and product safety. To overcome the problem, a development strategy that is focused and right on target is needed including commodities and areas to be developed (Sofina, 2018).

The livestock commodities that are developing in Pasaman Regency are ruminants (beef cattle and buffalo), small ruminants (goats), and poultry (chickens and ducks). The population development of livestock commodities in Pasaman Regency in 2019 compared to the population in 2015. The ruminant livestock commodity experienced an increase in the population of beef cattle, buffalo and goats, respectively by 3.61 percent, 6.53 percent and 6.35 percent. For poultry commodities, there was also an increase in local chickens, layer hens, broilers and ducks, respectively 1.52 percent, 4.16 percent, 4.79 percent and 6.28 percent (BPS Pasaman, 2020).

A regional superior commodity is defined as a commodity that has high competitiveness. Determination of superior commodities can determine priorities for livestock commodity development to be clearer, more concrete and targeted (Sofina, 2018). The existence of superior commodities will contribute to regional growth. The superior commodities in Pasaman Regency can be seen through the potential to be able to export the goods or services produced. The occurrence of exports of goods and services will create an interaction relationship in several regions, as happened in areas in Pasaman Regency (Oksatriandhi, 2010). The interactions that occur can illustrate the relationship between the growth center and its hinterland areas in Pasaman Regency. In this regard, it is necessary to study which areas have the potential as centers of economic growth in regional development in Pasaman Regency and to find out the superior livestock commodities that are prioritized for development, as well as the level of interaction between the growth center and the surrounding areas (hinterland) in the Regency. Pasaman. The benefits of this research can be used as material for consideration or guidance for district / city governments, especially in growth centers and developing priority commodities.

II. METHOD

This research was conducted from December 2020 to January 2021. The data used are secondary data through library research. The research data were obtained from the West Sumatra Central Statistics Agency, the Pasaman Regency Statistics Agency and the Pasaman Regency Agriculture Office. This study uses four data analysis methods, namely: Schalogram analysis with the Centrality Index is used to determine the center of economic growth based on the availability of public facilities owned by determining the hierarchy of the region; Location Quotient analysis is used to determine the basic livestock commodity in Pasaman Regency; Shift Share analysis is used to determine priority commodities to be developed in Pasaman Regency; Gravity analysis is used to determine how much the interaction between the growth center districts and the supporting districts (hinterland).

III. RESULTS AND DISCUSSION

Pasaman Regency is one of 19 Regencies / Cities in West Sumatra Province, with an area of 3,947.63 km² with a population of 272,804 people and consists of 12 sub-districts and 37 villages, consisting of Duo Koto, Tigo Nagari, Bonjol, Lubuk districts. Sikaping, Mapat Tunggul, Mapat Tunggul Selatan, Panti, Rao, South Rao, Rao Utara, Simpang Alahan Mati and Padang Gelugur. (BPS Pasaman 2020).

1. Pasaman Regency Growth Center

Schalogram analysis to determine the growth center area identified that there are two sub-districts in Pasaman Regency which can be used as growth centers, namely Lubuk Sikaping District and Panti District. As shown in Table 1

Table 1. Hierarchy of Animal Husbandry Facilities Availability for Each District in 2019 in Pasaman Regency.

No	Districts	Number of Facilities	IS	Hiraerki
1	Tigo Nagari	8	112,7	III
2	Simpang Alahan Mati	3	41,59	V
3	Bonjol	9	118,64	III
4	Lubuk Sikaping	10	190,35	I
5	Panti	9	168,64	I
6	Duo Koto	6	73,64	IV
7	Padang Gelugur	7	88,64	V
8	Rao Selatan	3	33,37	V
9	Rao	9	129,36	II
10	Rao Utara	7	81,98	IV
11	Mapat Tunggul	5	55,20	V

Based on Table 1, Lubuk Sikaping District and Panti District are the growth centers in Pasaman Regency, the two districts are in the same hierarchy, namely hierarchy I. The first priority is Lubuk Sikaping District with a centrality index of 190.35. The second priority is Panti District with a centrality index value of 168.65 and the other sub-districts occupy hierarchies II, III, IV and V. This indicates that the availability of the number and types of facilities in these two sub-districts is more than the other sub-districts in Pasaman Regency.

Lubuk Sikaping district is an area that has a very high type of facility and a centrality index value, namely 10 types of facility variations. This is based on the availability of facilities in the sub-district, both in terms of diversity and frequency, which are better than in other districts. Lubuk Sikaping district is area that has the largest population when compared to other sub-districts, namely 45,578 people in 2019. The large number of residents in this sub-district has resulted in the community's need for the availability of facilities that will also increase. Facilities that support various agribusiness system activities such as upstream agribusiness sub-system (livestock production facilities stalls and warehouses), farming subsystem (provision of feed raw materials to increase production by irrigation channels), product processing sub-system (warehouses, industrial facilities, including food services), product marketing subsystem (market), support service subsystem (public service facilities such as trade centers, banking offices, and cooperatives).

This encourages the central region to provide various facilities so as to encourage the development of the surrounding areas (hinterland). Hierarchy determination is based on the service capacity that can be provided by a subdistrict. This hierarchical level is used in determining the capacity of an area, whether a region is a central / core region or a hinterland region. The higher the centrality value, the higher the service capacity of a village and the level of development. In accordance with Sitohang's (2015) opinion that the indicator of an area categorized as the center of economic activity is that it has the advantage of regional concentration. The urban concentration includes: having commercial, banking and financial facilities, the existence of social facilities, entertainment and the existence of a scale advantage in public services from the government.

2. Main Animal Husbandry Commodities in Pasaman Regency

The LQ value for the leading livestock commodities in Pasaman Regency shows a high number, except for broilers and layer chickens which have a value below 1. As can be seen in Table 2.

Table 2. LQ Value of Animal Husbandry Commodities in Pasaman Regency 2015-2019

Komoditas	LQ
Cattle	2,083
Buffalo	2,699
Goat	3,711
Local chicken	2,767
Broilers	0,489
Layer Chicken	0,265
Duck	6,831

Table 2 indicates the superior or basic commodity that can meet the needs of the Pasaman Regency area. This is because the area of Pasaman Regency is dominated by agricultural areas and is an area that is abundant with plantation products. Several areas have the potential as a source of animal feed ingredients so that they have great potential for livestock development, especially ruminants (Department of Agriculture and Animal Husbandry, Pasaman Regency, 2020).

In developing the ruminant livestock business, feed is the most important thing, if the feed is already available, the development of the ruminant livestock business can be developed. Sumarjono (2008) states that development for ruminants can be done by increasing the potential for land, human resources, and feed. Meanwhile, for commodities identified in the category not included as superior commodities (non-basis) or LQ value <1, namely Layer Chicken and Broiler Chicken. This means that these commodities are not able to meet the regional needs of the Pasaman Regency. This is because production is still low, breeders are constrained by the cost of purchasing and relatively expensive feed, the use of simple technology, and the weak performance of the supply of feed raw materials in Pasaman Regency (Department of Agriculture and Livestock, Pasaman Regency 2020) This is supported by Triyuwono and Yustika (2010) who state that commodities that have an LQ value > 1 are commodities that have the potential to be developed and will increase people's income in Pasaman Regency and have high production. According to Nainggolan (2011), the livestock sub-sector plays an important role in the Indonesian economy in the form of GDP (Gross Domestic Product) contributions, contributors to employment opportunities, sources of income, foreign exchange earnings, and sources of animal food for the population.

3. Growth of Leading Animal Husbandry Commodities that are Prioritized for Development in Pasaman Regency

The economic activity of the livestock sub-sector which has experienced growth in leading commodities is indicated by an increase in livestock production with several factors that influence it, namely the influence of the structure of economic growth and the effect of competitive advantage in the Pasaman Regency area. As can be seen in Table 3.

Table 3. Growth of Leading Commodities that are prioritized in Pasaman Regency

No.	Commodities	LQ Average	Proportional Shift (PS)	Differential Shift (DS)	Priority
1	Cattle	2,083	52.547.971.244	-64.472.702.786	II
2	Buffalo	2,699	-7.616.928.766	20.490.078.766	II
3	Goat	3,711	-5.700.840.085	35.456.420.081	II
4	Local Chicken	2,767	1.788.958.803	-8.911.639.927	II
5	Duck	6,831	550.838.544	166.356.313	I

Research Results, 2021

Based on Table 3, it is explained that in the development of the livestock sub-sector in Pasaman Regency, the commodity that can be the first priority that can be developed is a duck. The positive value of Proportional Shift indicates that the commodity of ducks is more concentrated in Pasaman Regency compared to other areas in West Sumatra Province. This shows that the duck commodity in Pasaman Regency has a comparative advantage which is influenced by the topography of the region, climate, and weather as well as the conditions of cultivated land which can increase the competitiveness of duck commodities at the level of West Sumatra Province. According to Saragih (2011), one of the livestock sub-sectors with the highest achievement in national development is poultry farming and almost no other agricultural sub-sector is nearly equal to its achievement.

The support the increase in the added value of the livestock economy in the regional economy, livestock commodities not only have to produce products but must produce products that are competitive both in quantity and quality. The basic sector must be linked to the form of comparison on an international, national and regional scale. In the international sphere, a sector is said to be superior if it can compete with the same sectors as other countries, while in the national scope a sector can be said to be superior if the sector can compete with the same sectors produced by other regions in the national and domestic markets.

4. Linkages Between Growth Centers and Surrounding Areas (Hinterland).

The gravity analysis shows the relationship between the growth center district and the surrounding sub-district as a hinterland. Panti District has the highest interaction rate compared to other sub-districts in Pasaman Regency.

Table 4. Relationship between the Growth Center and the (Hinterland) in 2019

Growth Center District	Hinterland District	Interaction Figures
Lubuk Sikaping	Tigo Nagari	1.110.613,23
	Simpang Alahan Mati	1.219.444,04
	Bonjol	1.994.128,66
	Panti	3.624.863,54
	Duo Koto	605.455,90
	Padang Gelugur	996.145,07
	Rao Selatan	432.563,88
	Rao	229.622,75
	Rao Utara	193.852,35
	Mapat Tunggul	55.283,34
	Mapat Tunggul Selatan	213.732,69

Research Results, 2021

In Table 4, it can be seen that Lubuk Sikaping District as the center of growth has the closest interaction relationship with Panti District as its surrounding area (hinterland). The high attractiveness of Panti District is because it is close to Lubuk Sikaping District as a growth center. The distance between the two sub-districts is 22 km. This results in a decrease in production costs such as freight costs for exporting raw materials. Panti District is an area that has the second-highest population after Lubuk Sikaping District with 38,493 inhabitants. In addition, in terms of the types of facilities available, Panti District has a high level of facility availability when compared to other sub-districts. It can be seen from the types of facilities in the animal husbandry sector, Lubuk Sikaping District has 10 types of facilities and infrastructure that support livestock development.

The linkage of Lubuk Sikaping District and Mapat Tunggul District has the weakest linkage value because Mapat Tunggul District has quite a distance from Lubuk Sikaping District, which is 88 Km and the

lowest population is 9,393 people. In addition, in terms of the types of facilities available, Mapat Tunggul District has a fairly low type of facility availability when compared to other sub-districts. In a territorial system, the interaction between the growth center and the surrounding area is a relationship and dependence that needs each other. The relationship in the economic relationship between the regional growth center sub-districts and the sub-district as its hinterland is the area as the center for the distribution of staple goods, the center for marketing and production products, the center for education, for absorbing labor, the center for trade, and the development of agriculture and animal husbandry. This is stated by Imelda (2013) that there is a harmonious relationship between the growth center and the area behind it. The growth center areas need raw materials from the areas behind them and provide various needs for the areas behind them to develop themselves.

IV. CONCLUSION

The center of growth in Pasaman Regency is Lubuk Sikaping District. The main commodities of the livestock subsector in Pasaman Regency are beef cattle, buffalo, goats, domestic chickens, and ducks. Commodities that can be a priority for the livestock sub-sector developed in Pasaman Regency are ducks. The Hinterland district that is most closely related to the growth center is the Panti District.

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