

Analisis Ekonomi Regional Usaha Ternak Sapi Potong di Provinsi Jawa Barat in *IOP: Conference Series*

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Abstract. Prioritizing the development of a commodity base will facilitate local governments in planning and making regional development policies. therefore, the purpose of this study is to identify priority areas that have comparative and competitive advantages. This research method uses surveys and secondary data, the data used in this study are secondary data from BPS Ciamis Regency, Majalengka Regency, Cirebon Regency, and Indramayu Regency in figures for 5 years from 2015 to 2019. Location selection by purposive sampling. Analyze the data using shift-share analysis and LQ (Location Question) analysis. The results of this research suggest that beef cattle have comparative advantages and competitive advantages found in 11 districts (Banjasari, Lakbok, Cijeunjing, Cisaga, Rajadesa, Baregbeg, Majalengka, Ciledug, Sedong, Greged, and Gunung Jati districts). The planning of beef cattle development is focused on eleven sub-districts by paying attention to several factors, namely 1) regional conditions, especially the use of the agricultural land area for the availability of feed forage or the area of grazing land or secondary forests for quality grass planting, 2) facilities and infrastructure, especially animal markets for the eastern region of West Java province, 3) improvement of reproduction and IB, especially for the addition of IB venterinary officer, 4) the provision of livestock farming groups.

Keyword: beef cattle, leading comodity, Shift Share analysis, LQ analysis,

1. Introduction

The development of the livestock sector has based on the development of the potential and advantages of local commodities. Regions have their superior commodities, depending on the local resources they have. Beef cattle is a strategic and attractive livestock sector commodity with the issue of increasing production and guaranteeing its availability. The need for animal food every year has increased in line with the increase in population. The development of the livestock sub-sector must be adapted to geographical conditions and natural resources that support the livestock business[1]. The livestock subsector as the main driving subsector of the national economy, the livestock product that is the priority of the government is meat. Beef is an internationally traded product [2].

The selection of superior commodities according to the agroecological zone is intended to reduce the cost of farming, increase the productivity and income of farmers, and have competitiveness, both in the regional market itself, in other regions of the national scope, as well as in the international market. Agroecological zones are the grouping of an area based on almost the same physical conditions of the environment, where the diversity of plants and animals is expected not to differ markedly. Strong, high productivity, efficient, highly competitive, and sustainable agricultural builders are needed to organize agricultural systems and determine superior commodities in each development area [3] and [4].

Research on basic commodities has been widely carried out but limited to determining basis commodities using Location Quotient (LQ) or IDD or Shift Share Analysis (SSA) analysis alone has not been linked. Location Quotient (LQ) analysis and Shift Share Analysis (SSA) in the livestock sub-sector, especially beef cattle in the eastern region of West Java province. [5] conducting research on the identification and economic potential of the development of superior and potential goat commodities in West Lombok Regency based on LQ, shift share and SWOT analysis.[6] conduct research on actual facts and information related to the spread and development of livestock commodities based on agro-ecosystem conditions (local feed resources). Data based on carrying capacity and carrying capacity index[7] determine the priority area for the development of beef cattle farming in Semarang Regency based on the concept of sustainability. Sustainability based on superior criteria and competitiveness analysis. Sustainability is analyzed through the determination of superior commodities (Location Quotient and Shift Share analysis), optimization of regional potential (analysis of carrying capacity and forage carrying capacity index, and assessment of the suitability of the ecological environment of beef cattle). Spatial analysis process using GIS software. The comprehensive development planning of beef cattle farming is directed in three sub-districts, namely: Bringin, Bancak, and Banyubiru.[8] conducting research on ruminant livestock commodities that can be favored based on the support of regional resources owned by Lamongan Regency; and (2) identify micro-areas that can be used as a basis for livestock development. based on the criteria of (a) LQ (Location Quotient) analysis, (b) estimation of feed source availability, (c) calculation of regional capacity, (d) specialization index of Agricultural Households.

West Java Province is one of the provinces in Indonesia that has a strategic area where it is located adjacent to the area (Jabodetabek) as the center of beef consumption and the central Java province as a beef cattle production area. West Java Province has 18 regencies and 9 cities. Economic development in the agricultural sector is very important to realize the national development goals in agriculture, namely increasing food production, especially towards achieving a rice surplus, stabilizing food prices, strengthening food diversity based on local resources, protection and empowerment of farmers; and improving the welfare of farmers. The potential of livestock areas in West Java for large ruminated livestock (beef cattle, dairy cows, and buffaloes) with an IDD value of > 2 , has the highest development potential for ruminant livestock is Indramayu Regency, Garut Regency, Karawang, Subang, Indramayu and Majalengka, b) IDD value > 1 , has relatively sufficient potential in Cianjur, Sukabumi and Cirebon Regencies, and c) IDD value ≤ 1 , Areas that are very critical for the development of large ruminant livestock areas are in urban areas and sub-urban areas (Purwakarta Regency and Bekasi Regency)[6]. Development of regional-based livestock in West Java province which has regional and community characteristics in cultivating beef cattle commodities, by identifying comparative and competitive advantages, especially in the face of competition for livestock products in the ASEAN Economic Community (AEC) market. Therefore, this study aims to determine the comparative advantages and competitive advantages in West Java Province.

2. Material and Methods

2.1 Materi

The material used in this study is the livestock population. The study was conducted from July to August 2021 in four districts (Ciamis Regency, Majalengka Regency, Cirebon Regency and Indramayu Regency) in the eastern region of West Java Province.

2.2. Metode

The method in this study is a survey approach combined with the use of time series data analysis from 2015 - 2019. The data used in this study are secondary data from BPS Ciamis Regency, Majalengka Regency, Cirebon Regency and Indramayu Regency in figures for 5 years from 2015 to 2019. The parameters taken from secondary data are related to the population of ruminants (beef cattle, dairy cows, buffaloes, sheep and goats), agricultural production, namely paddy rice, corn, soybeans, peanuts, ijo beans, cassava, sweet potatoes. Data Analysis in this study is Shift Share (SS) and Location Quotient (LQ).

Location Quotient (LQ) and Share (SS) analyses were used to determine the top livestock commodities in a given location. The economic foundation hypothesis was used to justify the two approaches. Shift Share is being used to assess the shift in the structure of economic activity in the beef cattle industry, whether it was growing or reducing (SS). SS analysis may be used to look at the expansion of a region's economic sectors over two time periods. The LQ analysis was straightforward, but the advantages were sufficient for determining a sector's capacity to contribute to regional development. The following equations were utilized in the LQ and SS analyses. [3] dan [5]

$$LQ_{ij} = \frac{X_{ij}/X_i}{\bar{X}_j/X..} \quad (3)$$

Description:

X_{ij} = The economic value of (j) the beef cattle commodity in the (i) sub-district

X_i = total economic value of all types livestock commodities in sub-district i

$\bar{X}_j$ = the total economic value (j) of the beef cattle in Ciamis Regency

$X..$ = total economic value of all livestock commodities in Ciamis Regency

Criteria Value:

$LQ > 1$ means that the concentration of the economic activity of beef cattle commodity in a region compared to other livestock commodities in the region.

$LQ = 1$ means that economic activity in the commodity cattle area is equivalent to the economic activity of other farm commodities.

$LQ < 1$ means indicate that economic activity in the area of commodity cow is smaller proportion compared to other livestock commodities.

Shift Share (SS) analysis is an analysis to compare the growth rate of various sectors/sub-sectors in the region with the national territory from one period of time to the next [9]. Shift Share analysis there are three growth components as follows 1) Regional Growth (PR) component, 2) Proportional Growth (PP) component, and 3) Regional Share Growth (PPW) component [5]. The formula will be explained below. The variables needed in shift share analysis are (4):

1. $r_i = (Y'_{ij} - Y_{ij})/Y_{ij}$
2. $R_i = (Y'_i - Y_i)/Y_i$
3. $R_a = (Y'.. - Y..)/Y..$
4. $PN_{ij} = (R_a) \times Y_{ij}$
5. $PP_{ij} = (R_i - R_a) Y_{ij}$

Description :

r_i = the ratio of cattle population to the subdistrict area j

Y_{ij} = cow population in subdistrict j in the base year of the analysis

Y'_{ij} = cow population in subdistrict j in the final year of the analysis

R_i = beef Cattle Population Regency
 Y'_i = number of Cattle populations in the District at the end of the analysis year
 Y_i = number of Cattle populations in the District in the initial year of the analysis
 R_a = livestock population in the regency
 $Y'_{..}$ = number of Livestock Populations in the Regency in the final year of the analysis
 $Y_{..}$ = number of Livestock populations in the Regency in the initial year of the analysis

If

the $PP_{ij} > 0$ means that the cattle population in sub district j is experiencing rapid growth;

$PP_{ij} < 0$ means that the cattle population in sub district j is experiencing slow growth

$$6. PPW_{ij} = (r_i - R_i) Y_{ij}$$

Keterangan

r_i = the ratio of cattle population in the subdistrict j area

R_i = Cattle Population District

Y_{ij} = cow population in subdistrict j in the base year of the analysis

Apabila

$PPW_{ij} > 0$ this means that the cattle population in j district has good competitiveness;

$PPW_{ij} < 0$ this means that the cattle population in district j does not have good competitiveness

Table 1. LQ and Shift Share indicators [9]

No	Ternak sapi	LQ	Shift Share		Kesimpulan
			PP	PW	
1		LQ >1	+	+	Cattle is a superior, developed and competitive commodity
			+	-	Cattle is a superior commodity, developed and not yet competitive
			-	+	Cattle is a superior commodity, not developed but competitive
			-	-	Cattle is a superior commodity, undeveloped and not yet competitive
2		LQ <1	+	+	Cattle is a mainstay commodity, developed and competitive
			+	-	Cattle is a mainstay commodity, developed and not yet competitive
			-	+	Cattle is a mainstay commodity, not developed but competitive
			-	-	Cattle is a mainstay commodity, undeveloped and not yet competitive

3. Result and discussion

3.1 Analisis Location Question

The superior commodity of beef cattle in the eastern region of West Java province has based on several criteria. The first criterion is to use the comparative advantages possessed by the region in producing livestock population growth using LQ analysis. This location question analysis uses data on the number of ruminant populations (cattle, dairy cows, buffaloes, sheep, and goats) of denominations and districts converted to livestock units. The results of this study resulted in an LQ value of > 1 , there are 31 sub-districts from the four Regency in West Java Province, which can see in table 2 below. The

value of $LQ > 1$ means that these 31 sub-districts are the basis for superior commodities for beef cattle. The value of Lq comes from the indicator of the suitability of each region to the growth of the livestock population. Beef cattle have a much wider range (variation) of indices compared to (sheep or goats). Livestock that has the potential to become a leading commodity can be indicated by an index greater than one[8].

3.2 Analisis shift share

The second criterion uses the competitive advantage possessed by a region in producing competitive livestock population growth using shift-share analysis. There are two conditions for this criterion, namely 1) PP value to see the development of livestock populations and 2) PPW value to see whether it has competitiveness.

Indramayu Regency produces a negative PP value, meaning that the beef cattle population in sub-districts in Indramayu Regency tends to move slowly even though the availability of forage feed from agricultural waste in Indramayu Regency is abundant. The low level of concentration of the livestock population accompanied by the potential for abundant utilization of feed resources can be caused by institutional factors that cause the non-utilization of available resources. Obstacles for beef cattle farmers in gaining access to feed sources and specific resource tenure structure in the region (land tenure). Certain areas with a high level of land tenure per individual cause communal land use to be very limited[8].

Areas that have comparative advantages and comparative advantages where the LQ value > 1 , PP (+) and PPW (+) values for the development base of beef cattle there are 11 districts (Banjasari, Lakbok, Cijeunjing, Cisaga, Rajadesa, Baregbeg, Majalengka, Ciledug, Sedong, Greged, and Gunung Jati districts). The districts that are suggested as mainstays with LQ values > 1 , PP values (+) and PPW values (-) are Tambaksari, Cikoneng, Sadanaya, Sukamantri, Pabadilan, Babakan, Palimanan, Kaliwedi, Hargelis, Gantar, Kertasemaya, Juntiyuat, Sliyeg and Patrol Districts. Districts that are less recommended for development as a basis for the development of beef cattle, LQ value > 1 , PP value (-), and PPW value (-) are Gabuswetan, Cikidung, Terisi, Bongdua, Kedokanbunder, and Sindang Districts. The value of each component can be positive or negative, but the total amount (shift-share) will always be positive if the economic growth of the region is positive, and vice versa[7]. The LQ value of the goat > 1 and its PP and PPW values are positive. This means that goats have the ability to grow well and excel if they are developed in the four sub-districts [5].

The planning of beef cattle development is focused on eleven sub-districts that have competitive advantages and comparative advantages, taking into account several factors, 1) regional conditions, especially the use of the agricultural land area for the availability of forage or the area of grazing land or secondary forests for quality grass planting, 2) facilities and infrastructure, especially animal markets for the eastern region of West Java province, 3) improvement of reproduction and IB, especially for the addition of IB personnel, 4) the provision of livestock farming groups. Planning for the development of the beef cattle business development planning in West Java must be more targeted and can be carried out in several potential areas. The approach is not enough with physical assistance in the form of cattle assistance and infrastructure, but also the need for assistive approaches in building the character of resilient and resilient farmers. [6].

Table 2. LQ Value and Shift Share Value Results in 2015 and 2019

No	Kecamatan	LQ	PP	PPW	Keterangan
Kab Ciamis					
1	Banjasari	1,25	+	+	Cattle is a superior, developed and competitive commodity
2	Lakbok	1,09	+	+	Cattle is a superior, developed and competitive

					commodity
3	Cijeungjing	2,57	+	+	Cattle is a superior, developed and competitive commodity
4	Cisaga	1,50	+	+	Cattle is a superior, developed and competitive commodity
5	Tambaksari	2,32	+	-	Cattle is a superior commodity, developed and not yet competitive
6	Rajadesa	1,21	+	+	Cattle is a superior, developed and competitive commodity
7	Cikoneng	1,22	+	-	Cattle is a superior commodity, developed and not yet competitive
8	Sadananya	1,14	+	-	Cattle is a superior commodity, developed and not yet competitive
9	Baregbeg	1,17	+	+	Cattle is a superior, developed and competitive commodity
10	Sukamantri	1,28	+	-	Cattle is a superior commodity, developed and not yet competitive
Kab Majalengka					
1	Majalengka	2,51	+	+	Cattle is a superior, developed and competitive commodity
Kab Cirebon					
1	Ciledug	1,31	+	+	Cattle is a superior, developed and competitive commodity
2	Pabedilan	1,63	+	-	Cattle is a superior commodity, developed and not yet competitive
3	Babakan	2,71	+	-	Cattle is a superior commodity, developed and not yet competitive
4	Sedong	1,33	+	+	Cattle is a superior, developed and competitive commodity
5	Greged	1,03	+	+	Cattle is a superior, developed and competitive commodity
6	Palimanan	1,07	+	-	Cattle is a superior commodity, developed and not yet competitive
7	Gunung Jati	2,47	+	+	Cattle is a superior, developed and competitive commodity
8	Kaliwedi	1,11	+	-	Cattle is a superior commodity, developed and not yet competitive
Kab Indramayu					
1	Haurgeulis	1,69	-	+	Cattle is a superior commodity, not developed but competitive
2	Gantar	2,36	-	+	Cattle is a superior commodity, not developed but competitive
3	Gabuswetan	1,62	-	-	Cattle is a superior commodity, undeveloped and not yet competitive
4	Cikedung	1,00	-	-	Cattle is a superior commodity, undeveloped and not yet competitive
5	Terisi	3,08	-	-	Cattle is a superior commodity, undeveloped and not yet competitive
6	Bangodua	1,17	-	-	Cattle is a superior commodity, undeveloped and not yet competitive
7	Kertasemaya	1,38	-	+	Cattle is a superior commodity, not developed but competitive
8	kedokanbunder	1,82	-	-	Cattle is a superior commodity, undeveloped and

					not yet competitive
9	Juntinyuat	2,45	-	+	Cattle is a superior commodity, not developed but competitive
10	Sliyeg	1,81	-	+	Cattle is a superior commodity, not developed but competitive
11	Sindang	1,36	-	-	Cattle is a superior commodity, undeveloped and not yet competitive
12	Patrol	1,88	-	+	Cattle is a superior commodity, not developed but competitive

Processed Data for 2021: sources from BPS Ciamis Regency, Majalengka Regency, Cirebon Regency and Indramayu Regency

4. Conclusion

Beef cattle has comparative advantages and comparative advantages are found in eleven sub districts (Banjasari, Lakbok, Cijeunjing, Cisaga, Rajadesa, Baregbeg, Majalengka, Ciledug, Sedong, Greged and Gunung Jati districts). The planning of beef cattle development is focused on eleven sub-districts by paying attention to several factors 1) regional conditions, especially the use of the agricultural land area for the availability of feed forage or the area of grazing land or secondary forests for quality grass planting, 2) facilities and infrastructure, especially animal markets for the eastern region of West Java province, 3) improvement of reproduction and IB, especially for the addition of IB venterinary officer, 4) the provision of livestock farming groups. There are six sub-districts that are not recommended for development as a basis for the development of beef cattle (Gabuswetan, Cikedung, Terisi, Bongdua, Kedokanbunder, and Sindang).

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