

Original Article

Economic regional of beef cattle development Ciamis Regency

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Abstrak

Tujuan: 1) Untuk mengidentifikasi daerah prioritas dengan Kabupaten Ciamis yang memiliki keunggulan komparatif dan kompetitif 2) Ketersediaan hijauan di daerah prioritas unggulan.

Metode: Materi yang digunakan data populasi ternak sapi yang berasal dari BPS Kabupaten Ciamis Dalam Angka dari tahun 2016-2020. Data penelitian ini menggunakan data panel dimana perpaduan antara data sekunder dan data cross section. Analisis data untuk menjawab tujuan I menggunakan analisis LQ dan Shift share, tujuan ke-2 menggunakan daya dukung ketersediaan hijauan dan indeks daya dukung ketersediaan hijauan.

Hasil: Hasil penelitian ekonomi regional menunjukkan bahwa ada enam kecamatan sebagai Basis komoditas unggulan secara komparatif dan kompetitif adalah Banjarsari, Lakbok, Cijeunjing, Cisaga, Rajadesa, dan Baregbeg. Lima kecamatan ini adalah (Cimaragas, Sukadana, Panjalu, Panumbangan, dan Sindangkasih) tidak bisa menjadi basis untuk komoditas ternak sapi akan tetapi dapat sebagai basis dari ternak yang lainnya. Hasil penelitian yang memiliki ketersediaan hijauan dan indeks daya dukung ketersediaan hijauan dengan nilai $IDD > 2$ Aman yang artinya Kabupaten Ciamis memiliki ketersediaan hijauan yang Aman untuk perkembangan populasi ternak sapi dan bahkan dapat mengekspor ke daerah lain.

Kesimpulan: Pemerintah daerah Kabupaten Ciamis harus memfokuskan 6 kecamatan ini sebagai basis komoditas unggulan secara komparatif dan kompetitif dengan daya dukung hijauan dalam kondisi aman. Pemerintah Daerah Kabupaten Ciamis untuk meningkatkan jumlah populasi ternak tidak hanya dalam produksi tetapi juga harus mulai membuka lahan yang potensial dan konservatif dalam pengembangan budidaya rumput, misalnya dengan memanfaatkan lahan hutan untuk budidaya rumput.

Kata Kunci: Ekonomi regional; Ketersediaan hijauan; Sapi potong

Abstract

Objective: 1) To identify priority areas with Ciamis Regency that have comparative and competitive advantages 2) Availability of forages in prime priority areas.

Methods: The material used cattle population data from BPS Ciamis Regency from 2016–2020. Panel data, which combines secondary data and cross-section data, were employed in this study. First, data analysis uses LQ and shift-share analysis, and two, it uses the carrying capacity of forage availability and the carrying capacity index.

Results: Regional economic research results show that six sub-districts provide a comparative and competitive basis for superior commodities, namely Banjarsari, Lakbok, Cijeunjing, Cisaga, Rajadesa, and Baregbeg. These five sub-districts (Cimaragas, Sukadana, Panjalu, Panumbangan, and Sindangkasih) cannot be a base for cattle commodities but can be used as a base for other livestock. The study's findings indicate that forage is available, and the carrying capacity index forage availability has an IDD value of >2 SAFE. The Ciamis Regency has a secure green supply for expanding herds of beef cattle and can even export to other areas.

Conclusions: The local government of Ciamis Regency must consider these six sub-districts an excellent commodity base, comparatively and competitively, with the carrying capacity of forage in safe conditions. The local government of Ciamis Regency must increase the number of livestock populations not only in production but also start opening up potential and conservative land for the development of grass cultivation, for example, by utilizing forest land for grass cultivation.

Keywords: Regional economy; Availability of forage; Beef cattle

INTRODUCTION

The increased demand for livestock products has resulted in population expansion, urbanization, economic improvement, and changes in consumer tastes. Indonesia is a developing country, with significant population expansion and economic improvement being the main drivers of increasing demand for meat. Small-scale farming practices account for 90% of Indonesia's livestock output, with more than 6.5 million rural farmers providing the bulk of the nation's livestock. The remaining 10% is produced by large beef cattle businesses concentrating on the island of Java and more commercial farmers, which only account for 1% of all farmers [1,2]. For Indonesia to meet the people's need for beef, the output of beef cattle still needs to be increased. The Indonesian government has imported feeder cattle from Australia, beef importers, and frozen beef to meet the country's meat needs. Beef imports were higher than other meat imports, namely 21.44 per cent. The total value of cattle imports is 18.29 per cent of agricultural products imported nationally [3].

Building beef cattle farms in potential locations is an effort to increase domestic beef production. Thorough research in the area and potential base can support the implementation of beef cattle fattening business development [1]. Land suitability, geographical conditions, availability of pasture fodder, agricultural waste, and competent human resources in exploiting current resources are all factors to consider when considering an area's livestock

growth potential [4]. The first step towards the effective growth of the livestock industry is the identification of superior commodities distinguished by comparative and competitive advantages. The policy of economic development in a region based on the principle of competitive advantage can be carried out by developing only commodities [5]. This policy is carried out by developing primary commodities with high competitiveness supported by the region's competitive advantages [6].

By optimizing the feed carrying capacity and carrying capacity index and evaluating the suitability of the land where livestock is reared, the regional capacity to support the growth of beef cattle farming is determined. Land suitability for beef cattle farming using intensive production techniques is determined by considering several environmental factors that affect the growth of these animals [7].

Ciamis Regency is part of the province of West Java which has base areas for beef cattle, sheep, goats, native chickens, laying hens, broilers and ducks [5]. This research is different from previous studies, looking at the area as a livestock base and specifically for beef cattle by combining shift-share analysis and analysis of the carrying capacity of forage availability. Due to the development of the beef cattle fattening business in an area, especially in areas with comparative and competitive advantages, it is necessary to identify the area's potential by analyzing the availability of carrying capacity and carrying capacity index. Since ruminants cannot be separated from the need for forage, this study

aims to analyze an area with superior commodities comparatively and competitively, 2. To determine the availability of forage in an area.

MATERIALS AND METHODS

The growth of a superior commodity (base) in beef cattle represents the regional economic potential of the beef cow farming industry in the Ciamis Regency. Economic expansion has been facilitated by the identification of feed availability through the estimation of the carrying capacity and carrying capacity index of agricultural waste, as well as through the projection of the population growth of beef cattle. Each analysis step will be presented in detail, including the research method used. This secondary research data, which spans the five years from 2016 to 2020, was obtained from BPS Ciamis Regency. Agricultural production (rice, corn, soybeans, peanuts, green beans, cassava, and sweet potatoes), a land-use area, community and state forests, the size of grass grazing fields, and other land areas are all covered by the secondary data. The secondary data covers ruminant populations (beef, dairy, buffalo, sheep, and goats).

Shift share (SS) analysis

The most popular animal commodities in a particular location were identified using shift-share (SS). The economic foundation hypothesis supported the two strategies. The structure of economic activity in the beef cattle industry may be assessed using shift-sharing (SS) to ascertain if it is improving or deteriorating. Shift Share (SS) analysis is an analysis to compare the growth rate of various sectors/sub-sectors in the region with the nation from one period to the next [8]. Shift Share analysis has three growth components as follows 1) Regional Growth component (PR), 2) Proportional Growth component (PP), and 3) Regional Share Growth component (PPW) [9]. The formula has explained below.

$$1. r_i = \frac{(Y'_{ij} - Y_{ij})}{Y_{ij}}$$

Explanation:

r_i = the ratio of the population of beef cattle in the sub district j

Y_{ij} = beef cattle population in sub district j in the base year of analysis

Y'_{ij} = beef cattle population in sub district j in the final year of analysis

$$2. R_i = \frac{(Y'_i - Y_i)}{Y_i}$$

Explanation:

R_i = beef cattle population in Regency

Y'_i = the number of beef cattle population in the Regency at the end of the analysis

Y_i = the number of beef cattle population in the Regency at the beginning of the analysis

$$3. R_a = \frac{(Y'_{..} - Y_{..})}{Y_{..}}$$

Explanation:

R_a = livestock population in the Regency

$Y'_{..}$ = Number of Livestock Populations in the Regency at the end of the analysis

$Y_{..}$ = the number of livestock population in the Regency at the beginning of the analysis

$$4. PN_{ij} = (R_a) \times Y_{ij}$$

Explanation:

R_a = livestock population in the Regency

Y_{ij} = beef cattle population in sub district j in the base year of analysis

5. Proportional Growth component (PP)

The proportional Growth component (PP) is a formula to determine the cattle population in the region has a comparative advantage where the growth rate of the cattle population grows fast or slow.

$$\text{Formula: } PP_{ij} = (R_i - R_a) Y_{ij}$$

Explanation:

R_i = beef cattle population in Regency

R_a = livestock population in the Regency

Y_{ij} = beef cattle population in sub district j in the base year of analysis

when

$PP_{ij} > 0$ this means beef cattle population growth fast in sub-district j;

$PP_{ij} < 0$ this means beef cattle population growth is slow in sub-district j

6. Regional Share Growth component (PPW)

Regional Share Growth component (PPW) is a formula to determine the cattle population in the region that has a competitive advantage which can be competitive with other livestock.

Table 1. Indicator LQ dan Shift Share

No	Beef cattle	LQ	Shift share		Explanation
			PP	PW	
1		LQ > 1	+	+	Beef cattle is a leading commodity, developing and competitive
			+	-	Beef cattle is a leading commodity, developing and not yet competitive
			-	+	Beef cattle is a leading commodity, not developing but competitive
			-	-	Beef cattle is a leading commodity, not developed and competitive
2		LQ < 1	+	+	Beef Cattle is a mainstay commodity, growing and competitive
			+	-	Beef Cattle is a mainstay commodity, developing and not yet competitive
			-	+	Beef Cattle is a mainstay commodity, not developing but competitive
			-	-	Beef Cattle is a mainstay commodity, not developing and competitive

According to Klavon *et al.* [1]

Formula: $PPW_{ij} = (r_i - R_i) Y_{ij}$

Explanation:

r_i = the ratio of the population of beef cattle in the sub district

R_i = beef cattle population in Regency

Y_{ij} = beef cattle population in sub district j in the base year of analysis

when

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

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

Criteria Value:

$LQ > 1$ Indicates the amount of economic activity concentrated in a specific location for beef cattle commodities relative to other livestock commodities in the same region.

$LQ = 1$ That means that the economic activity associated with cattle is equivalent to the economic activity associated with other farm commodities.

$LQ < 1$ Indicates that the economic activity surrounding the commodity cow is proportionate to other animal commodities.

Location Quotient (LQ) analysis

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 analyses [9,10].

$$LQ_{ij} = \frac{\frac{x_{ij}}{x_i}}{\frac{x_{.j}}{x_{..}}} \quad (1)$$

Description:

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

x_i = Total economic value of all type livestock commodities in sub-district i

$x_{.j}$ = The total economic value (j) of the beef cattle in Ciamis Regency

$x_{..}$ = Total economic value of all livestock commodities in Ciamis Regency

Carrying capacity and carrying capacity index

The capacity of forage to produce adequate fodder to support and fulfil forage for livestock in an area is based on the number of livestock present. Fresh forage comes from (grass and agricultural waste) which is then converted into dry matter. The forage carrying capacity index is used to assess the accessibility of fodder in a location and determine whether it is considered safe, vulnerable, critical or very critical.

Comparing forage dry matter output to cattle's annual minimum feed requirements (1AU) allowed researchers to determine the carrying capacity of beef cattle. The number of ruminant cattle multiplied by the conversion factor is the animal unit (AU), which is a unit of measurement. Using formulae from [4,11,12] forage dry matter production was

estimated using the amount of potential agricultural waste and natural forage potential.

$$\text{Agricultural waste potential(ton)} = \left\{ (\text{wr} \times 0.4) + (\text{fr} \times 3 \times 0.4) + (\text{cn} \times 3 \times 0.5) + (\text{sb} \times 3 \times 0.55) + (\text{pt} \times 2 \times 0.55) + \left(\text{sp} \times \frac{0.25}{6} \right) + \left(\text{cs} \times \frac{0.25}{4} \right) \right\} \times 0.65$$

where wr is wetland rice, fr is field rice, cn is corn, sb is soybean, pt is peanuts, sp is sweet potatoes, cs is cassava.

$$\text{Natural forage potential(kg)} = \{ (\text{pkarang} \times 0.53 \times 2) + (\text{teg.} + \text{huma} + \text{lad} + \text{kebun} + \text{l.bera}) \times 2,875 + (\text{penggem} \times 0.75) + (\text{Hryt} \times 0.6) + (\text{lain} \times 0.75) + (\text{Lkld} \times 10) + (\text{Lkrt} \times 2) \} \times 0.5$$

Description:

(pkarang: yard; teg: moor, huma; lad: field, garden; L.fallow: fallow land, grazing; Hryt: people's forest, miscellaneous; Lkld: the area of the coconut plant is deep; Lkrt: rubber plant area; the numbers in the formula are an assumption of the potential forage produced per hectare of land use area).

$$\text{Minimum cattle feed requirements (R)} = 2.5\% \times 50\% \times 365 \times 400 \text{ kg} = 1.83 \text{ ton DDM/year/AU (Equation 3)}$$

Where R is the annual minimum requirement for cattle feed (1 AU) in tons of digestible dry matter, 2.5% is the minimum requirement for the number of forage rations (dry matter) on livestock weight, 50% is the average value of the digestibility power of various types of plants, 365 days in the year,

Table 2. Status criteria capability based (CCI)

No	Carrying capacity indeks	Criteria	Explanation
1	≤ 1	Very critical	Means that you have no choice in utilizing the available resources. There is resource depletion in the agroecosystem. There is no natural forage and waste re-doing the cycle
2	> 1 – 1,5	Critical	Livestock have had the option to use resources but unmet conservation aspects
3	>1,5 – 2	Prone	Development of organic matter into mediocrity
4	> 2	Safe	The availability of feed resources functionally meets the environmental needs efficiently

According to Santoso dan Prasetyono [7].

or 400 kg is the live weight of 1 AU of beef cattle in Ciamis Regency [4,13] were used in the equations were used in the equations.

The following equations, the result assessment of forage dry matter production was utilized to compute the carrying capacity of beef cattle farms [4,13].

$$\text{CCI} = \frac{X}{Y} \text{ (Exercise 4)}$$

X = Forage dry matter production (tons of DDM per year)

Y = Minimum cattle feed requirement (tons of DDM/year/AU)

RESULTS

Shift share and LQ analysis

The shift-share and LQ analysis results are divided into four regions: 1. Comparatively and competitively superior regions, 2. prospective regions, 3. Progressive regions, 4. Non-featured region. In Region I "Excellent", there are six sub-districts which have LQ> 1, PP (+), and PPW (+) values, we can see detail Table 3. Which means that the cattle commodity has the advantage of being able to develop and have competitiveness where the population growth of these six sub-districts experienced rapid development.

In Region II, "Prospective", there are six sub-districts which have LQ> 1, PP (+) and PPW (-) values, which means that the beef cattle commodity has advantages but is not yet competitive where the growth of the beef cattle population in the six districts is slow. The results of the research in Ciamis Regency show that six sub-districts can be used to develop beef cattle but do not yet have the

competitiveness of Tambaksari, Rancah, Ciamis, Cikoneng, Sadanaya and Sukamantri.

In Region III "Progressive", there are nine sub-districts which have LQ <1, PP (+), and PPW (+), which means that the beef cattle commodity is a reliable and competitive commodity where the population is moving fast in 9 sub-districts. Beef cattle population development and forage availability in 9 districts can still increase the beef cattle population.

In Region IV, "non-superior", there are five sub-districts that have LQ <1, PP (+) and PPW (-), which means that cattle are the mainstay commodity and are not competitive where the growth of the cattle population in the five sub-districts grows slowly compared to other sub-districts. Districts with beef cattle as the primary commodity and not competitive are Cimaragas, Sukadana, Panjalu, Panumbangan and Sindangkasih, we can see more detail in Table 3. That means that the five sub-districts cannot become the basis for the cattle commodity but can be used as the basis for other livestock, so the local government of Ciamis Regency must rely on something other than the five sub-districts to develop beef cattle business.

Carrying capacity and carrying capacity indeks

The results of the analysis of carrying capacity and the Bearing Capacity Index produced in the sub-districts in Ciamis Regency with SLI > 2, which means that the sub-districts in Ciamis Regency for the availability of forage from grass and utilization of agricultural waste are in SAFE. The area and use of land in an area will determine the availability of forage needed by livestock. Based on this formula, forage production comes from agricultural waste and grass around the converted land. According to [14], natural resources in an area in the animal feed supply come from the production of grass and agricultural waste.

Although the Lakkok sub-district produces more rice straw than other sub-districts, it can be seen that the area of land used for growing rice is more extensive, resulting in higher yields. Farmers often feed beef cattle with rice straw because the availability of rice straw is abundant every

year and can be used as animal feed. [15]. Because rice straw: 1) is available all year round, 2) is free of charge, and 3) is available in large quantities when the harvest arrives, and rice straw can be stored for use later in the dry season [16]. Plant wastes (agricultural by-products) that are less than 55% digestible, low in natural protein, and deficient in nitrogen and minerals are classified as low-quality foods [17].

DISCUSSION

A positive SSA value means that the commodity is produced efficiently and effectively so that it has competitiveness in terms of quality, quantity, continuity and price and has a competitive advantage [10]. The value of LQ > 1 and the importance of PP and PPW (+) means that goats can breed well [9]. According to the findings of the analysis above, the six sub-districts in Ciamis Regency can serve as cattle and livestock bases, with the district government prioritizing the development of the beef cattle industry in the competitive sub-districts of Banjarsari, Lakkok, Cijeunjing, Rajadesa, and Baregbeg.

Negative SS values indicate that undeveloped (stagnant) sub-districts may even experience a decline [7]. The potential of regions with superior livestock commodities supported by their natural resources is closely related to the availability of forage needed by ruminants, geographical conditions and government policies [10]. A negative value indicates that beef cattle is a slow progressive commodity. As a result, they do not have a regional comparative advantage, less supportive institutions, lack of social infrastructure and supportive policies [18].

The results of the research in Ciamis Regency show that six sub-districts can be utilized to develop beef cattle but still need to be competitive, namely Tambaksari, Rancah, Ciamis, Cikoneng, Sadanaya and Sukamantri Districts. These six sub-districts still have to be competitive because the growth of the cattle population in the six sub-districts has decreased. Meanwhile, the availability of forage and land is in a safe condition and can

Table 3. Ekonomy regional analysis

No	Sub-district	LQ	PP	PPW	Explanation
1	Banjarsari	1,25	+	+	Basis, comparative and competitive sub-sector beef cattle
2	Lakbok	1,09	+	+	Basis, comparative and competitive sub-sector beef cattle
3	Cijeungjing	2,57	+	+	Basis, comparative and competitive sub-sector beef cattle
4	Cisaga	1,50	+	+	Basis, comparative and competitive sub-sector beef cattle
5	Rajadesa	1,21	+	+	Basis, comparative and competitive sub-sector beef cattle
6	Baregbeg	1,17	+	+	Basis, comparative and competitive sub-sector beef cattle
7	Tambaksari	2,32	+	-	Basis, Comparative and uncompetitive subsector beef cattle
8	Rancah	1,00	+	-	Basis, Comparative and uncompetitive subsector beef cattle
9	Ciamis	1,27	+	-	Basis, Comparative and uncompetitive subsector beef cattle
10	Cikoneng	1,22	+	-	Basis, Comparative and uncompetitive subsector beef cattle
11	Sadananya	1,14	+	-	Basis, Comparative and uncompetitive subsector beef cattle
12	Sukamantri	1,28	+	-	Basis, Comparative and uncompetitive subsector beef cattle
13	Pamarican	0,80	+	+	Mainstay, comparative and competitive sub-sector beef cattle
14	Cidolog	0,65	+	+	Mainstay, comparative and competitive sub-sector beef cattle
15	Cihaurbeuti	0,33	+	+	Mainstay, comparative and competitive sub-sector beef cattle
16	Cipaku	0,27	+	+	Mainstay, comparative and competitive sub-sector beef cattle
17	Jatinegara	0,23	+	+	Mainstay, comparative and competitive sub-sector beef cattle
18	Panawangan	0,53	+	+	Mainstay, comparative and competitive sub-sector beef cattle
19	Kawali	0,16	+	+	Mainstay, comparative and competitive sub-sector beef cattle
20	lumbung	0,39	+	+	Mainstay, comparative and competitive sub-sector beef cattle
21	Purwadadi	0,16	+	+	Mainstay, comparative and competitive sub-sector beef cattle
22	Cimaragas	0,85	+	-	Mainstay, comparative and uncompetitive sub-sector beef cattle
23	Sukadana	0,81	+	-	Mainstay, comparative and uncompetitive sub-sector beef cattle
24	Panjalu	0,77	+	-	Mainstay, comparative and uncompetitive sub-sector beef cattle
25	Panumbangan	0,79	+	-	Mainstay, comparative and uncompetitive sub-sector beef cattle
26	Sindangkasih	0,71	+	-	Mainstay, comparative and uncompetitive sub-sector beef cattle

Source of data processed by BPS Ciamis Regency in 2016-2020 years

Table 4. Carrying capacity and carrying capacity indeks in the Ciamis Regency

Sub district	Production	Feed	Average	average	Average	average	Category
	waste +	Needs for	livestock	DD	Increase	IDD	
	forage	Adult	populatin		livestock		
	TON	Cows					
	BK/Ton	AU					
	/Th/AU						
	A	B	C	$((A)/B)=D$	$(D-C)=E$	$D/C=F$	
Banjarsari	10.448,79	1.83	1.060,68	5.709,72	4.649,04	5,38	SAFE
Banjaranyar	1.925,08	1.83	255,88	1.051,96	796,08	4,11	SAFE
Lakbok	11.559,63	1.83	701,86	6.316,74	5.614,88	9,00	SAFE
Pamarican	11.664,37	1.83	2.653,83	6.373,97	3.720,14	2,40	SAFE
Cidolog	5.355,09	1.83	1.534,15	2.926,28	1.392,13	1,91	PRONE
Cimaragas	1.515,89	1.83	396,75	828,36	431,61	2,09	SAFE
Cijeungjing	4.084,80	1.83	758,91	2.232,13	1.473,22	2,94	SAFE
Cisaga	5.568,07	1.83	812,70	3.042,66	2.229,96	3,74	SAFE
Tambaksari	12.884,03	1.83	2.831,70	7.040,45	4.208,76	2,49	SAFE
Rancah	9.239,23	1.83	4.805,11	5.048,76	243,65	1,05	Kritis
Rajadesa	6.506,62	1.83	1.169,74	3.555,53	2.385,79	3,04	SAFE
Sukadana	7.447,22	1.83	600,61	4.069,52	3.468,91	6,78	SAFE
Ciamis	3.275,10	1.83	1.107,53	1.789,67	682,15	1,62	PRONE
Cikoneng	3.839,54	1.83	857,03	2.098,11	1.241,08	2,45	SAFE
Cihaurbeuti	5.210,55	1.83	1.095,43	2.847,30	1.751,87	2,60	SAFE
Sadananya	3.486,33	1.83	335,14	1.905,10	1.569,96	5,68	SAFE
Cipaku	5.764,77	1.83	908,34	3.150,15	2.241,81	3,47	SAFE
Jatinegara	4.172,38	1.83	971,31	2.279,99	1.308,68	2,35	SAFE
Panawangan	9.538,44	1.83	2.585,89	5.212,26	2.626,37	2,02	SAFE
Kawali	3.795,73	1.83	934,50	2.074,17	1.139,67	2,22	SAFE
Panjalu	6.661,95	1.83	2.073,25	3.640,41	1.567,17	1,76	PRONE
Panumbangan	7.075,15	1.83	1.804,78	3.866,20	2.061,42	2,14	SAFE
Sindangkasih	3.210,69	1.83	634,58	1.754,48	1.119,90	2,76	SAFE
Baregbeg	3.512,41	1.83	433,56	1.919,35	1.485,79	4,43	SAFE
Lumbung	3.753,71	1.83	215,43	2.051,21	1.835,78	9,52	SAFE
Purwadadi	9.755,15	1.83	1.552,55	5.330,68	3.778,13	3,43	SAFE
Sukamantri	4.881,63	1.83	1.124,27	2.667,56	1.543,28	2,37	SAFE

Source of data processed by BPS Ciamis Regency in 2016-2020 years

still accommodate livestock populations. Increasing the livestock population is not only a matter of feed but rather a technical improvement, knowledge and technology of human resources, provision of feeders, and marketing facilities.

In the "Progressive" area, there are nine sub-districts with beef cattle as a mainstay and competitive commodity, namely Pamarican, Cidolog, Cihaurbeti, Cipaku, Jatinegara, Panawangan, Kawali, Lumbung and Purwadadi. Expanding the livestock industry in Ciamis Regency can utilize these sub-districts as reserve areas, meaning that this area can still be developed for beef cattle because it has competitive and comparative advantages, even though it is not a basis.

Subdistricts with beef cattle as non-leading are Cimaragas, Sukadana, Panjalu, Panumbangan and Sindangkasih, we can see more detail in Table 4. These five districts cannot become the basis for livestock commodities. However, it can be used as a basis for other livestock so that the local government of Ciamis Regency cannot rely on the five sub-districts to develop a beef cattle business. The opinion to [5] stated that Cimaragas, Panumbangan, and Sindangkasih are not the bases for beef cattle but are the bases for broiler livestock, the Panjalu sub-district is the base for ducks, and the Sukadana sub-district is the base for free-range chickens.

Beef cattle populations are significantly and profitably affected by pasture. As pasture provides a food source for beef cattle, the area planted with grass is expanding, increasing the number of beef cattle. Feed availability throughout the year in quantity and quality must support livestock growth. The number of livestock a farmer can manage will depend on their ability to offer food. Therefore the more livestock a farmer can handle, the more food they can provide for the animals [19]. For the area to have more livestock, it is crucial to have access to and utilize prospective land for planting superior grass [20]. The results of the explanation above lead to the conclusion that Ciamis Regency, developing its livestock population, must have extraordinary land for growing grass types in terms of quality and quantity.

The forests in Sadanaya, Cihaurbeti, Panumbangan, and Panjalu are in Ciamis District. Although the number of beef cattle in the other four sub-districts is decreasing yearly, this sub-district is larger than the others. On the other hand, the local authorities of Ciamis Regency have started cultivating grass on forest land to boost the number of beef cattle. That is opinion six confirms that the forest negatively and severely impacts the beef cattle population. Therefore, the cattle and other livestock populations will decrease as the forest cover increases. As this forest area has yet to be utilized for grass cultivation, expanding the forest could reduce the area used for grass cultivation, affecting grass production and beef cattle numbers.

CONCLUSION

The Ciamis Regency area must pay attention to these six sub-districts as a superior commodity basis, comparatively and competitively, with the carrying capacity of forage in safe conditions. The Regional Government of Ciamis Regency must increase the livestock population not only in terms of production but also by opening potential and conservative land for the development of grass cultivation, for example, by utilizing forest land for superior grass cultivation, increasing production by prioritizing increasing farmer knowledge and technology (feed technology, digital marketing technology) and marketing infrastructure facilities.

CONFLICT OF INTEREST

The authors claim to have no financial conflicts of interest regarding the information in the book. "Any personal circumstances or interests that can be perceived as having a disproportionate impact on the representation or interpretation of the study findings submitted are identified and confirmed by the authors." "The study's design, data collection, analysis, and interpretation; the creation of the paper; and the choice to publish the results did not involve the funders in any way."

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