

Policy Analysis and Role of Livestock Subsector in the Development at Purworejo Regency, Central Java

Agus Setiawan*¹⁾, Budi Guntoro²⁾ and F. Trisakti Haryadi²⁾

¹⁾Program Studi Magister Ilmu Peternakan, Universitas Gadjah Mada, Yogyakarta; Dinas Ketahanan dan Pertanian Kabupaten Purworejo

²⁾Fakultas Peternakan Universitas Gadjah Mada, Yogyakarta

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ABSTRACT: This study aims to analyze the livestock subsector policy in Purworejo Regency in the 2016-2021 period and determine the leading subsector in the agricultural sector that can be developed in Purworejo Regency. This study uses descriptive analysis methods and quantitative analysis to determine the role of the livestock sub-sector by calculating Location Question (LQ), Shift Share (SS), and Klassen Typology. The results of this study indicate that policies in the livestock sub-sector, namely optimizing the livestock sub-sector and limiting large-scale livestock business activities in residential areas, are supported by 2 programs, namely the program to increase livestock production and the application of agricultural technology. The second policy is the application of superior agro-input and Agro Farm commodities supported by the Agricultural and Livestock Commodity Agribusiness program. The results of the Location Quotient (LQ) analysis of the livestock sub-sector are 1.24 including the base sector, meaning that the sector plays a more important role in the economy in an area compared to the area above it and is an important sub-sector in Purworejo district. The results of the shift-share analysis showed a negative result (-0.33) which was further analyzed by the Klassen Typology method, the livestock sub-sector is in quadrant III, which means it is a rapidly growing sub-sector but the sector's competitiveness is low compared to other sectors. This sector is included in the base sector, meaning that the sector plays a more important role in the economy in a region compared to the area above it and is an important sub-sector in the Purworejo district. The results of the shift-share analysis showed a negative result (-0.33) which was further analyzed by the Klassen Typology method, the livestock sub-sector is in quadrant III, which means it is a rapidly growing sub-sector but the sector's competitiveness is low compared to other sectors. This sector is included in the base sector, meaning that the sector plays a more important role in the economy in a region compared to the area above it and is an important sub-sector in the Purworejo district. The results of the shift-share analysis showed a negative result (-0.33) which was further analyzed by the Klassen Typology method, the livestock sub-sector is in quadrant III, which means it is a rapidly growing sub-sector but the sector's competitiveness is low compared to other sectors.

Keywords: Policy analysis; Location quotient; Livestock sub-sector; Klassen typology

*Corresponding Author: mampuawan@yahoo.com

INTRODUCTION

Development in the livestock sub-sector can contribute to improving the quality of human resources sustainably through improving nutrition and increasing farmers' income which will have an impact on improving people's welfare. Livestock development is part of a reorientation of agricultural policy that has a new paradigm, namely macro-level siding with the people by delegating responsibilities, changing structures, and empowering the community through a sustainable, modern, and professional business approach by utilizing technological innovations to improve business efficiency (Mayulu et al. , 2018). The development of the livestock sub-sector requires good synergy between the government, the private sector, and the community (small-scale farmers). Problems in the livestock sub-sector in Purworejo district include traditional extensive maintenance patterns and only a small part of semi-intensive. The success of the development of the livestock sub-sector is determined by strategic policy support that includes three main dimensions of agribusiness, namely input market policies, cultivation, and marketing involving the government, the private sector, and the farming community.

The development of the livestock sub-sector is expected to accelerate economic growth by increasing people's income and welfare so that they can make a real contribution to regional development. In addition, the development of the livestock sub-sector is also expected to attract and encourage the development of other sectors, thereby enabling movement and dynamics in regional economic growth. To achieve this target, the government seeks to implement a series of policies and programs. The development of the livestock sub-sector requires close synergy between the government, the private sector, and the community (small-scale farmers). Establishing rules, organizing, fostering, controlling, and supervising the availability

of livestock products that are sufficient, quantity and quality to meet the requirements of halal, safe, nutritious, diverse, and evenly distributed are the government's role, while the private sector and the community play a role in realizing the adequacy of livestock products, in the form of carrying out production, trade, and distribution of livestock products (Talib et al., 2007).

The policy is a government instrument in the form of rules in the program to be carried out in making changes so that it has an impact on the economy through efficiency, equity, and stability of selling prices. The policy objective is to improve welfare and business sustainability. Building a sustainable livestock agribusiness system through livestock business from upstream to downstream and other supporting services. Policy development is oriented to rules that have been mutually agreed upon from various existing policies (Yusdja and Ilham, 2016).

The purpose of this study is to identify the position of the livestock sub-sector within the framework of agricultural sector development in Purworejo Regency. Furthermore, this study also aims to formulate a strategy for the development of the livestock sub-sector to increase the role of the livestock sub-sector in agricultural development in Purworejo Regency. The benefit of this research is as input data for the development of the livestock sub-sector in Purworejo Regency in making agricultural development policies in a broad sense, especially development of the livestock sub-sector. Besides that, it is also a reference for other related parties who will research the development potential of the livestock sub-sector in increasing the development of the agricultural sector broadly according to the region and the existing potential in determining policies

MATERIALS AND METHODS

This research was conducted in Purworejo Regency, Central Java Province

from February 2022 to July 2022. The regional selection was carried out purposively with the consideration that the agricultural sector in general and the livestock sector, in particular, are the dominant characteristics of the regional economy, where geographical conditions and natural resources support activities. agriculture and livestock sector. The research method used a cross-sectional study design, carried out retrospectively in the form of a review of policy and planning documents for 2016-2021 at the Department of Agriculture, Food, Marine and Fisheries, Purworejo Regency.

The types of data used in this study are primary data and secondary data. Primary data were obtained from direct interviews with agencies directly related to policies in livestock development, namely the head of the Department of Agriculture, Food, Maritime Affairs and Fisheries of Purworejo Regency and the Head of Animal Husbandry of the Service of Agriculture, Food, Maritime Affairs and Fisheries of Purworejo Regency. Secondary data in the form of strategic plan documents of the Department of Agriculture, Food, Marine and Fisheries for 2016-2021, documents for the Regional Medium-Term Development Plan (RPJMD of Purworjeo Regency) for 2016-2021, data from the Central Statistics Agency (BPS), namely data series between 2016 and 2021. Method The analysis used in this calculation consists of Location Question (LQ), Shift Share (SS), and Klassen Tip Typology

RESULT AND DISCUSSION

Policy and Program Analysis

The formulation of policies for the livestock sub-sector in Purworejo district is one of the tasks of the Department of Agriculture, Livestock, Marine and Fisheries, which includes the livestock sub-sector. Based on the Purworejo Regent's Decree Number 180.18/499/2016 concerning the Strategic Plan of the Regional Apparatus of Purworejo Regency 2016-2021 that in Purworejo Regency there are 2 policies in the livestock sub-sector that

have been formulated under applicable regulations. The first policy in the livestock sub-sector is the optimization of the livestock sub-sector and the limitation of large-scale livestock business activities in residential areas. This policy was then followed up with several strategic steps, namely increasing livestock production and productivity, which was supported by 2 programs, namely the livestock production increase program and the agricultural technology application program. These two programs, it is expected to improve the welfare of farmers. The second policy is the application of agro-input and agro-farm for superior commodities, namely Kaligesing goats, which are supported by the Agribusiness Commodities of Agriculture and Livestock. Through this program, it is hoped that it can improve the welfare of the community which is the ultimate goal of the existing policy. One indicator of increasing the welfare of a region can be seen in the level of gross regional domestic product (GRDP) income.

The second policy is to carry out agribusiness businesses by increasing the agro-input and agro-farm sub-systems of superior commodities, including Kaligesing goats. In the context of implementing this policy, a strategy has also been formulated to achieve the goals and objectives of the regional apparatus. The strategy that has been formulated is to develop leading agricultural, livestock, and fishery commodities with the support of the Agribusiness Main Commodity Agriculture and Livestock program which is supported by the procurement of Kaligesing goat breeds. According to Yusdja and Ilham (2006), an efficient and sustainable livestock development policy depends on the condition of the area or area of cultivation and livestock commodities that are cultivated and supported by the availability of adequate natural resources. This is in line with the opinion of Jhingan (2008), that regional development is the key to the progress or failure of a region through regional development planning as a way to increase per capita income, reduce

inequality and increase job opportunities.

Economic Condition

Gross Regional Domestic Product (GRDP)

The GRDP of the agriculture, forestry, and fishery sectors based on current prices is the same as those based on constant prices, which has the highest value compared to other sectors, starting from 2017 to 2021, the agricultural, forestry, and

fishery sectors have been the biggest contributors in GRDP and trends always increase in line with the increasing demand which is linear with the increase in population.

This indicates that the agricultural, forestry, and fisheries sectors in which there is a livestock sub-sector provide an important role in economic development in Purworejo Regency.

Table 1. Gross Regional Domestic Product of Purworejo Regency at Constant Prices

Field of Business / Sector	Based on Constant Price					GRDP rate	% sub-sector
	2017	2018	2019	2020	2021		
Agriculture, Forestry, and Fisheries	2.686.873,96	2.733.644,01	2.757.009,13	2.756.844,17	2.773.546,98	0,80	
1 Agriculture, Livestock, Hunting, and Agricultural Services	2.467.948,42	2.509.639,25	2.531.127,31	2.523.994,21	2.538.060,79	0,71	91,7
2 Forestry and Logging	118.792,33	120.492,06	117.785,05	120.979,87	121.076,65	0,49	4,4
3 Perikanan	100.133,21	103.512,70	108.096,77	111.870,09	114.409,54	3,39	3,9

Source: Purworejo in Figures 2022, BPS (processed data)

GRDP in the categories of agriculture, forestry, and fisheries is the largest proportion that affects GRDP in Purworejo Regency. The agricultural sector that dominates the calculation of GRDP in the category of Agriculture, Forestry, and

Fisheries is an average of 91.7%. Meanwhile, the forestry and logging sector was 4.4% and the fishery sector was 3.9%. This shows that the agricultural sector is the main source of the economy in Purworejo Regency.

Table 2. GRDP Rate for Agriculture Category

Business Field/Subsector	GRDP Rate (%)
Agriculture, Livestock, Hunting, and Agricultural Services	
a. Food plant	-0,97
b. Seasonal Horticultural Plants	1,06
c. Seasonal Plantation	1,10
d. Annual Horticultural Crops and More	3,27
e. Annual Plantation	2,47
f. Animal husbandry	3,76
g. Agricultural and Hunting Services	2,04

Source: Purworejo in Figures 2022, BPS (processed data)

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Regency. Based on the data above, the agricultural sector has the largest contribution to the economic structure in Purworejo Regency, where the agricultural sector includes the sub-sector of food crops, horticultural crops, livestock, plantations, and other agricultural services.

The role of the livestock sub-sector in the GRDP of the agricultural sector is relatively small because most of the people in Purworejo Regency are non-breeders.

The contribution of the livestock sub-sector to the GRDP of the agricultural sector is 16.42% or ranks third after the food crops and horticultural crops and other annual sub-sectors. The livestock sub-sector is mostly farmers with small-scale businesses or even as a side business in addition to their main business, namely planters or other services.

The Role of the Livestock Subsector Potential of Livestock Subsector in Purworejo Regency

The total area of Purworejo Regency is 103,481 ha or about 3.18% of the area of Central Java Province. The area of land in

Purworejo Regency is 103,481 ha, consisting of 87,105 ha (84.18%) agricultural land and 16,375 ha (15.82%) non-agricultural land. The existing agricultural land is used as paddy fields covering an area of 30,225 ha (34.70%) and non-rice fields covering an area of 56,880 ha (65.30%). Meanwhile, the livestock population in Purworejo Regency has increased from year to year. The existing land area is potential enough for livestock development. An overview of the feed potential in Purworejo district is presented in Table 3

Table 3. Feed Potential

Types of Animal Feed	Harvest Area (Ha)	Production (Tons/yr)	Consumed (Tons/yr)	TDN	Carrying Capacity (AU/yr)
Rice Straw	43011	365195.37	109558.61	45466.82	37747,47
Corn Straw	2182	14364.01	7182.01	3231.90	2683,19
Cassava Leaves	1500	27301.37	13650,69	1911,10	1586.63
Sweet Cassava Leaves	34	430.91	172.36	19.65	16.31
Soy Straw	7	11.20	4.48	1.70	1.41
Peanut Leaves	664	861,12	344.45	136.75	113.53

Source: DinPPKP data, 2021 (processed data)

Based on table 3. Products from agricultural waste that can be used as a source of animal feed in Purworejo Regency with a potential of 408,163.9 tons a year, or the equivalent of sufficient for 8175.98 livestock units a year. This potential provides support for the development of the livestock sub-sector in Purworejo district.

Analysis of the Role of the Livestock Subsector

Location Quotient (LQ) Analysis

Location Quotient (LQ) analysis is used to determine the base and non-base sectors in the economy (Sapriadi and Hasbullah, 2015). According to Guimaraes et al (2009), initially, LQ was used to quantify industrial concentration in a region. In its development, LQ is used to estimate the strength of regional economic influence and export activities (based on the economy).

Furthermore, as stated by Widjaya (2012), this analysis can use the labor variable or the Gross Regional Domestic Product (GDP) of a region as an indicator of

regional growth. If the LQ value is worth more than 1 (one), it indicates that the sector is considered superior, whereas if the LQ is worth less than 1 (one) it indicates that the sector is not a leading sector.

The results of the LQ analysis of the livestock sub-sector in Purworejo Regency during the 2017-2021 period were 1.24392, which means the LQ value of $1 <$ (positive/more than 1), thus the livestock sub-sector is included in the base sub-sector. As one of the basic sectors in the economy of a region, the livestock subsector needs to be maintained and developed for regional economic development. However, even though it is a basic economy, it does not mean that it is a guarantee in improving the welfare of the population in Purworejo Regency, because other factors influence it. The agricultural and hunting services sub-sector has the highest LQ value of 1.76534, then the food crops sub-sector has an LQ value of 1.71165. These three sub-sectors are the basic sub-sectors in economic development in Purworejo Regency.

Table 4. LQ Analysis of Livestock Subsector in Purworejo Regency

Agricultural Sector Business Field	LQ value
a. Food plant	1,71165
b. Seasonal Horticultural Plants	0,01647
c. Seasonal Plantation	0,14230
d. Animal husbandry	1,24392
e. Agricultural and Hunting Services	1,76534

Shift Share Analysis

Shift Share analysis is one of the analytical tools to identify economic sources in terms of labor or income in a particular area. al. This analysis uses two data period points, which in this case are analyzed in

terms of regional income, namely taking the average GRDP in 2017 to 2021 in the livestock sub-sector. According to (Nugroho and Dahuri,2012), shift-share analysis is used to analyze regional economic growth compared to national economic growth.

Table 5. Results of Shift Share Analysis of Livestock Subsector in Purworejo Regency

Agricultural Sector Business Field	Shift Share Value
Agriculture, Livestock, Hunting, and Agricultural Services	
a. food plant	0,85825
b. Seasonal Horticultural Plants	-0,41377
c. Seasonal Plantation	-2,44777
d. Animal husbandry	-0,08571
e. Agricultural and Hunting Services	-0,70881

From the results of the analysis using GRDP data for 2017-2021, the value of the Shift Share of the livestock sub-sector is negative (-0.0857) which means that the livestock sub-sector, although as a base sector, is not the leading sector in Purworejo district. Therefore, it becomes an input to make the livestock sub-sector a leading sub-sector by utilizing the existing potential for regional economic development.

Klassen Typological Analysis

After obtaining the results of LQ and Shift Share analysis, the next step is to classify sectors using the Klassen Typology method. According (Sjafrizal, 1997) states that the Klassen typology is divided into 4 quadrants, namely quadrant 1 is a sector that is advanced and growing rapidly, quadrant II is a developed but depressed sector, quadrant III is a fast-growing sector IV is a sector that is lagging. The results of the analysis using Figure 1.

The results of the analysis show that the livestock sub-sector in Purworejo district is included in quadrant III along with the agricultural and agricultural service sectors.

In quadrant III, it means that the livestock sub-sector is included in the category with fast growth, but the competitiveness of this sector is not good compared to other sectors. This sector has a higher sector contribution to regional development, but the sectoral economic growth rate is lower than the regional average

SWOT analysis

The development of the livestock sub-sector in Purworejo Regency is very important for increasing population and livestock productivity as well as improving the welfare of farmers and breeders, for that we need the right strategy.

Through SWOT analysis, steps and strategies can be obtained for the development of the livestock sub-sector in Purworejo district by considering existing internal and external factors.

Internal and External Factors

Internal factors are factors that come from within the Purworejo district in the form of strengths and weaknesses, while external factors are factors that come from outside in the form of opportunities and

threats. Table 5 below shows internal factors and table 6 shows external factors owned by

Purworejo Regency in the livestock sub-sector.

<p>Quadrant II Sector (i) is progressing but depressed (LQ < 1; SS +) --</p>	<p>Quadrant I Sector (i) is developed and growing rapidly - Food plant</p>
<p>Quadrant IV Sector (i) lagging (LQ < 1; SS -) - Seasonal horticultural plants - Seasonal plantation</p>	<p>Quadrant III Sector (i) is growing fast (LQ > 1; SS -) - Animal husbandry - Agricultural and hunting services</p>

Figure 1. Klassen Typology Analysis

Table 6. Internal factors

Strength	Weakness
Some laws and regulations support	The quantity and quality of livestock human resources are still lacking
Availability of personnel in the field of animal husbandry	Inadequate checkpoints and RPH
Availability of technology that supports livestock development	Lack of livestock data and information
Supporting agro-climate and fodder potential	Livestock cultivation is still traditional extensive
There is a policy to increase livestock production	Low livestock productivity, not meeting local needs
The existence of a Technical Implementation Unit animal health post	Farmers' knowledge is still low
There is an established livestock farmer group	Farming infrastructure and facilities are still minimal

Table 7. External Factors

Opportunity	Threat
Product quality control is still lacking	Efforts to enter livestock products from outside Purworejo
The high interest of the community to raise livestock	There is an epidemic of infectious diseases
The growth of the business of buying and selling livestock in the community	Investment in the livestock business is still low.
Sapronak business has the opportunity to grow	Productive female cattle slaughter

Table 8. Matrix of Evaluation of Internal and External Factors

Factor	Weight	Rating	Score
Some laws and regulations support	0.25	4	1
Availability of personnel in the field of animal husbandry	0.30	3	0.9
Availability of technology that supports livestock development	0.10	2	0.2
Supporting agro-climate and fodder potential	0.15	3	0.45
There is a policy to increase livestock production	0.12	2	0.24
The existence of a Technical Implementation Unit animal health post	0.11	3	0.33
There is an established livestock farmer group	0.11	3	0.33
Total Strength Score	1.14		3.45
Factor	Weight	Rating	Score
The quantity and quality of livestock human resources are still lacking	0.14	2	0.28
Inadequate checkpoints and slaughterhouse	0.12	4	0.48
Lack of livestock data and information	0.12	3	0.36
Livestock cultivation is still traditional extensive	0.15	2	0.30
Low livestock productivity, not meeting local needs	0.34	3	1.02
Farmers' knowledge is still low	0.12	3	0.36
Farming infrastructure and facilities are still minimal	0.15	2	0.30
Total Weakness Score			3.10

The next step after mapping internal and external factors is a quantitative approach to SWOT analysis, namely by calculating weights and ratings. The determination of the weight is based on the number 0 - 1, which is the accumulation of strengths with weaknesses and the accumulation of opportunities and threats. The value of the weights is determined from the results of interviews between the author and the leaders of the regional apparatus. Meanwhile, the determination of the rating is based on the level of influence of these

factors on the development of the livestock sub-sector. Ratings from 1-4, the most influential have a rating of 1, while a rating of 4 is the least influential. The determination of the rating is based on discussions with the owners of regional apparatus leaders. The weights and scores of each element are summed. Strengths are added to weaknesses, while opportunities are added to threats (Saragih, 2014). The calculation of the quantitative approach from the SWOT analysis is listed in table 11.

Table 9. Calculation of the Quantitative Approach to SWOT Analysis

Factor	Weight	Rating	Score
Product quality control is still lacking	0.31	4	1.24
The high interest of the community to raise livestock	0.35	2	0.70
The growth of the business of buying and selling livestock in the community	0.45	2	0.90
Sapronak business has the opportunity to grow	0.45	2	0.90
Total Chance Score	1.56		3.75
Factor	Weight	Rating	Score
Efforts to enter livestock products from outside Purworejo	0.50	2	1
There is an epidemic of infectious diseases	0.30	3	0.9
Investment in the livestock business is still low.	0.35	3	1.05
Productive female cattle slaughter	0.15	4	0.6
Total Threat Score	1.15		3.55

Mapping the position of the livestock sub-sector is at the following coordinates: Position on the X axis = strength - weakness = 3.45 – 3.10 = 0.35 Position on the Y axis = opportunity – threat = 3.75 - 3.55 = 0.20 then these coordinates are depicted on the SWOT analysis diagram, obtained a position in quadrant I, which means using an aggressive strategy, namely: using strength to take advantage of opportunities.

Livestock Subsector Development Strategy

The strategies based on the results of the SWOT analysis according to priorities that use strengths to take advantage of opportunities are as follows:

1. Intensification of cultivation of various types of livestock.
2. Optimizing the use of appropriate technology in the livestock sector.
3. Improvement of livestock human resources through training and internships.
4. Empowerment of farmer breeders.
5. Determination of areas and centers for livestock business.
6. Regulation of cultivation, trade, and investment in the livestock sector.
7. Livestock agribusiness development.
8. Encouraging the growth of livestock production facilities business.
9. Facilitate farm business licensing.

CONCLUSIONS

The livestock sub-sector policy in Purworejo district in the 2016-2021 period is correct, as evidenced by the achievement of indicators for each program in the livestock sub-sector that has been achieved at the end of the strategic plan period. The livestock sub-sector in Purworejo Regency has the potential to be developed in terms of the role of the livestock sub-sector in regional economic growth which is calculated from Gross Regional Domestic Product (GRDP) growth based on business fields. The topography of the area supports the development of the livestock sub-sector.

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