

## Analysis development of livestock in Wakatobi District Southeast Sulawesi

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**Abstract.** The fulfillment of beef demand still depends on imports. Another target of the 2014 PSDS program as the continuity of PSDS was to increase beef cattle population to 14.2 million head in 2014 with an average growth of 12.48% per year. It is necessary to develop the potential of farming optimally in Southeast Sulawesi. The Wakatobi government as one of the districts in Southeast Sulawesi is trying to conduct a study to participate in developing livestock. This research was conducted to examine the potential of land and human resources in and around the development of animal husbandry areas and obtain objective data on supporting resources (physical and biological) in Wakatobi Regency. The analysis used in this study is LQ (Location Quotient) analysis, and SWOT analysis. Literature study were conducted to complete data and information, then analyzed descriptively. There was potential for the development of cattle and goats in this area, because some people develop these types of livestock for various purposes including savings. With intensive maintenance systems, both types of livestock can be developed population and production. Wakatobi Regency chicken production is higher when compared to broiler production, because native chicken is domestic poultry that can be developed in various locations even in a small area. Animal husbandry development in Wakatobi can implement a livestock development strategy through an integrated center area (cluster) which is directed at a specific area or integrated with other commodities and is concentrated in an area.

### 1. Introduction

The national beef self-sufficiency beef program has been launched since 2001 through the Program Swasembada Daging Sapi/ PSDS (2001-2005). However, the fulfillment of beef demand still depends on imports. Another target of the 2014 PSDS program as the continuity of PSDS was to increase beef cattle population to 14.2 million head in 2014 with an average growth of 12.48% per year [1]. Southeast Sulawesi Province was included in the 20 priority locations of category III in the road map for the Beef Self-Sufficiency Program/ PSDS in 2014. Furthermore, through the Decree of the Minister of Agriculture No. 43 / Kpts / PD.410 / 1/2015 concerning the Determination of Beef, Buffalo, Goat, Dairy Cattle, Sheep and Pork Areas, Southeast Sulawesi Province has again been designated as a beef cattle development area. This designation means that it is necessary to develop the potential of farming optimally in Southeast

Sulawesi. The Wakatobi government as one of the districts in Southeast Sulawesi is trying to conduct a study to participate in developing livestock. This research was conducted to examine the potential of land and human resources in and around the development of animal husbandry areas and obtain objective data on supporting resources (physical and biological) in Wakatobi Regency. Southeast Sulawesi Province.

## 2. Material And Methods

### 2.1 Material

The research material consisted of farmers as respondents.

### 2.2 Methods

2.2.1 General *The method used survey and literature study methods. Survey activities to obtain field data (secondary data), including data on the potential of the area, and the potential of livestock.*

2.2.2 *Statistic* Literature study were conducted to complete data and information, then analyzed descriptively. In this study the LQ analysis was projected based on value added / sectoral income levels the following model [2]:

$$LQ_k = \frac{Y_{sk} / Y_{tk}}{Y_{sp} / Y_{tp}}$$

Explanation:

$LQ_k$  : location quotient Index

$Y_{sk}$  : i sector GRDP on j regency/ city

$Y_{tk}$  : total GRDP of j regency/ city

$Y_{sp}$  : i sector GRDP of province

$Y_{tp}$  : total GRDP of province

Decision criteria:

- LQ index >1, has potential as a base sector and a superior sector
- LQindex =1, able to meet their own needs
- LQindex <1, non base sector.

## 3. Result and Discussion

3.1.1 *Overview of Livestock Business in Wakatobi* The Livestock Sector in Wakatobi Regency is not yet a commodity base, because this region makes tourism a base activity. Statistics on Animal Husbandry in Wakatobi are presented in Table 1.

Based on these data, it is suspected that there was potential for the development of cattle and goats in this area, because some people develop these types of livestock for various purposes including savings. With intensive maintenance systems, both types of livestock can be developed population and production. Wakatobi Regency chicken production is higher when compared to broiler production, because native chicken is domestic poultry that can be developed in various locations even in a small area.

**Table 1.** Statistics on animal husbandry in Wakatobi

Type of Livestock	Year		
	2013	2014	2015
Cattle	2,948	9,883	21,775
Goat	3,564	4,390	3,112
Kampung Chicken	142,893	34,682	35,900
Broiler	64,318	27,620	28,418
Duck	3,339	3,573	3,553
Kampung Chicken Eggs	86,014	20,877	21,610
Laying Chicken	0	3,855	3,765
Egg Duck	33,739	36,134	34,575

Source : BPS Wakatobi, 2016

The average age of farmers is 45.2 years, which means that they are still productive. The higher the age of a person the less dependence on others or more independent. The younger the breeder age (productive age is 20-45 years) the curiosity about something is generally higher and the interest in adopting the technology is higher [2]. This experience is the basic capital for the community before raising it independently. Person's experience in trying to farm affects the acceptance of innovation from outside [3]. Farmer education level is one indicator in the development of livestock businesses in an area. The level of education of farmers in Wakatobi Regency is an average of 9 years. This means that community education is secondary education. This level of education will affect one's knowledge and ability to develop a business and receive the introduction of new technologies aimed at increasing the productivity of the business being run. Therefore, with the higher education of farmers, it is expected that the performance of livestock business will develop [4]. Someone who has the knowledge and skills are able to better utilize the potential inside and outside themselves. The education level of farmers tends to influence the way of thinking and the level of their acceptance of innovation and new technology [5].

Apart from age and education level, another supporting factor in animal husbandry development is the responsibility of the family. Field conditions indicate that the average number of dependents of farmer families who run a livestock business in Wakatobi is 4 people. As for the experience of farmers and ranchers in running this business, it has been quite a long time, an average of 5 years. This long experience has influenced the attitude of farmers in making decisions related to new innovations because to be able to implement new innovations requires courage to bear the risk. Experience will also provide opportunities for farmers to adapt to changing economic conditions and be able to implement the most efficient methods of cultivation.

*3.2.2 LQ Analysis of Livestock Area Development in Wakatobi* Potential development of animal husbandry areas in Wakatobi can be illustrated through analysis of LQ values. The results of the study of the LQ values of several Sub-districts in Wakatobi are presented in Table 2.

Based on the data in Table 2, it can be seen that generally the types of ruminant animals that have great potential to be developed ( $LQ > 1$ ) in all districts are goats, while non-ruminant animals (poultry) are native chicken and duck. Based on this data it is also seen that local livestock are more potential to be developed than non-local animals such as broilers and laying hens. The LQ value of cattle is generally below 1 ( $LQ < 1$ ) which means that this type of livestock is less potential to be developed, although cattle, especially Bali cattle, have very good adaptability. This condition is caused due to the carrying capacity and the availability of forage that is less supportive. Beef cattle breeding areas are areas specifically

designated for beef cattle breeding activities or integrated with other businesses as farming components (based on food crops, plantations and horticulture) and integrated as components of certain ecosystems (protected forest areas or nature reserves) [6].

**Table 2.** Potential of leading sectors based on LQ values of livestock species in the livestock development area in Wakatobi.

Subdistrict	LQ Value						
	Type of livestock						Average
	Cattle	Goat	Kampung chicken	Broiler	Laying	Duck	
Binongko	0.97	1.78	1.43	0.7	0.56	1.65	1.01
Togo Binongko	0.93	1.65	1.23	1.44	0.78	1.79	1.12
Tomia	0.87	1.43	1.66	1.42	0.75	1.77	1.13
East Tomia	0.75	1.89	1.54	0.86	0.77	1.43	1.03
Kaledupa	1.22	1.87	1.34	0.67	0.88	1.23	1.03
South Kaledupa	0.98	1.85	1.32	0.77	0.91	1.56	1.06
Wangi-wangi	0.97	1.67	1.65	0.59	1.23	1.66	1.11
South Wangi-wangi	0.89	1.46	1.43	0.86	0.67	1.79	1.01

Source: Analysis results, 2018

### SWOT Analysis and Strategy for Livestock Area Development in Wakatobi

The main step taken in determining the strategy for animal husbandry development is to identify all potential strengths in animal husbandry development in Wakatobi District through SWOT analysis.

**Table 3.** SWOT Analysis

<b>Internal Factor</b>          <b>External Factor</b>	<b><u>STRENGTH</u></b>	<b><u>WEAKNESS</u></b>
	<ol style="list-style-type: none"> <li>1. There is still land available for livestock development</li> <li>2. Availability of feed and agricultural / fishery waste / household waste</li> <li>3. The existence of agricultural extension workers</li> <li>4. The experience of livestock is quite long</li> <li>5. Livestock business is hereditary</li> </ol>	<ol style="list-style-type: none"> <li>1. Requires substantial capital costs</li> <li>2. The system of packaging and processing of results that have not been optimal</li> <li>3. The use of low technology</li> <li>4. The livestock business system is traditional</li> <li>5. The absence of abattoirs (RPH)</li> </ol>
<b><u>OPORTUNITY</u></b>	<b><u>S-O Strategy</u></b>	<b><u>W-O Strategy</u></b>
<ol style="list-style-type: none"> <li>1. Government policies regarding livestock development</li> <li>2. The existence of a financial institution (bank)</li> <li>3. The demand is quite high</li> </ol>	<ol style="list-style-type: none"> <li>1. Optimizing land use as a center for livestock development, and increasing the quantity and quality of forage</li> <li>2. Collaborating with other agencies and financial institutions in order to help develop livestock businesses</li> <li>3. Training on feed processing and</li> </ol>	<ol style="list-style-type: none"> <li>1. Utilizing the role and cooperation of related agencies in the management of livestock businesses</li> <li>2. Analyzing the potential for procurement of slaughterhouses</li> <li>3. Training and guidance of business</li> </ol>

4. Marketing is not difficult	utilization of agricultural / fishery waste / household residues as feed  4. Maximizing the livestock product marketing system	actors in the livestock sector  4. Utilizing technology and information in supporting livestock business
<b><u>THREAT</u></b> 1. The existence of livestock diseases 2. Cutting productive female 3. Shifting livelihoods 4. The import of livestock and livestock products	<b><u>S-T Strategy</u></b> 1. Procurement of veterinarians and optimizing the main duty of extension workers in each district 2. PERDA/ regulaion and imposing sanctions on slaughtering productive female cows 3. Addition and assistance of superior livestock breeds 4. Improving the livestock business management system through training / counseling	<b><u>W-T Strategy</u></b> 1. Add operational staff or field counselors to conduct supervision 2. Improve the livestock management system 3. Post-harvest training and technology for livestock production 4. Increasing livestock population and productivity

#### 4. Conclusions

Animal husbandry development in Wakatobi can implement a livestock development strategy through an integrated center area (cluster) which is directed at a specific area or integrated with other commodities and is concentrated in an area. This strategy is adjusted to the concept of tourism which is the basis of development in Wakatobi, by directing the development of livestock towards the concept of Agro ecotourism or Agro Edu tourism.

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