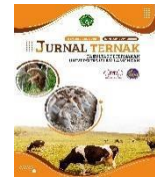


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Potentials and Problems of The Agriculture and Livestock Sector

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ABSTRACT

The research was conducted with quantitative and qualitative analysis. Quantitative analysis was done by recording the amount of production and land use in each sector owned by each village in two sub-districts. Qualitative analysis was carried out by using questionnaires and recording the problems that existed in each village in these two sub-districts. Jerebuu district consists of 12 villages, namely Dariwali, Naruwolo, Tiworiwu, Watumanu, Nenowea, Naruwolo I, Naruwolo II, Dariwali I, Niowela, Tiworiwu I, Tiworiwu II, and Batajawa. Agricultural development aims to increase production to stabilize food.

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1. Introduction

Jerebuu district is a sub-district that is characterized by its cultural tourism in Ngada Regency [1]. The area of 82.26 KM² with a population of 7,789 people has high potential for plantation commodities with superior commodities such as cocoa, candlenut, ampupu, and kepok [2]. The agricultural sector in plantation commodities and the tourism sector are aspects that affect the development of this area. The Bena Traditional Village, which is the hallmark of cultural tourism from Ngada Regency, is able to attract the attention of local and foreign tourists directly and has a positive impact on the welfare of the people in Jerebuu district. The traditional villages of Gurusina and Tololela also play a role in the tourism sector in this area.[4]

Successful rural development in general has many very different challenges. These challenges consist of external and internal factors. External factors such as international developments related to the liberalization of investment flows and global trade. Internal factors are related to changes in macro and micro conditions in the country, spatial and sectoral migration problems, food security, problems with the availability of agricultural land, investment and capital problems, science and technology, human resources, the environment, etc. [3]. Support from local governments, the tourism sector and growing and developing community aspirations are needed in creating regional development that prosper the community [5].

Research purposes

The purpose of this research was to identify and map the potential of regional sectors in recognizing regional development based on equitable distribution of local community welfare in Ngada Regency, especially in Jerebuu district.

Benefits of research

This research expected to be able to provide information and contribute to the local government and the people of Ngada Regency in developing regional development.

2. Method

Research Time and Place

The research was conducted from 8 to 11 February 2021 in Jerebuu district.

Materials and tools

The research material used was a questionnaire that included questions about the potential that existed in villages in the Districts of West Golewa and Jerebuu. The tools used were pens, voice recorders, and smartphones.

Research sites

The areas used as research locations were West Golewa District and Jerebuu district. Jerebuu district consists of 12 villages, namely Dariwali, Naruwolo, Tiworiwu, Watumanu, Nenowea, Naruwolo I, Naruwolo II, Dariwali I, Niowela, Tiworiwu I, Tiworiwu II, and Batajawa.

Analysis Techniques

The research was conducted with quantitative and qualitative analysis. Quantitative analysis was done by recording the amount of production and land use in each sector owned by each village in two sub-districts. Qualitative analysis was carried out by using questionnaires and recording the problems that exist in each village in these two sub-districts.

Data analysis

The data obtained from the survey results in the research field were presented in the form of tables and graphs.

3. Results and Discussion

Region Description

a) Borderline

Based on BPS Ngada [2], Jerebuu district has the following regional boundaries:

- North : Bordered by Golewa District and Bajawa District
- South : Savu Sea
- East : Bordered by Golewa District
- West : Bordered by District Aimere

b) Area by village in sub-district

Based on the data obtained from the research results, Desa Dariwali has the largest area compared to other villages in the Jerebuu sub-district. The Jerebuu is an area with a medium altitude so that plantations are very supportive of the economic results in the Jerebuu sub-district.

Table 1 Area of Jerebuu district

No	Village Name	Village Area (Km2)
1	Dariwali	63
2	Naruwolo	8
3	Tiworiwu	4
4	Watumanu	6
5	Nenowea	4,1743
6	Naruwolo I	63
7	Naruwolo II	4,6
8	Dariwali I	6
9	Niowela	0,12
10	Tiworiwu I	4,5
11	Tiworiwu II	3,5
12	Batajawa	3,1
Amount		169,99

c) Number of inhabitants per village

Jerebuu district is one of the sub-districts in Ngada Regency which has the population of 7,789 people (6). Table 2 is the total population by gender, total KK and poor KK. The female population is more than the male population. This can be seen in the table below.

Table 2 Total population

No	Village Name	Gender			Poor KK
		Male	Female	Head of family	
1	Dariwali	327	353	129	
2	Naruwolo	330	331	163	32
3	Tiworiwu	283	395	159	66
4	Watumanu	384	479	197	123
5	Nenowea	235	264	137	145
6	Naruwolo I	327	310	137	73
7	Naruwolo II	194	189	75	
8	Dariwali I	493	558	176	
9	Niowela	185	181	70	59
10	Tiworiwu I	287	280	120	
11	Tiworiwu II	180	157	71	
12	Batajawa	246	274	107	
Amount		3471	3771	1541	498

d) Agricultural land use area

The area in Jerebuu district is mostly used as agricultural land. Therefore the majority of people have livelihood as farmers. The land area for plantation crops is very large when compared to the land area for other crop commodities, as of 15917.77 Ha (Table 2). There are several villages that do not have the abovementioned plants, this is due to the topography of the village which is around the hills.

Table 3 Area of agricultural commodity land

No	Village Name	Land Area			
		Horticulture	Food	Plantation	Forestry
1	Naruwolo	2,49	5,1	131,65	
2	Tiworiwu	6,5	5	4,5	
3	Watumanu		2,7	10385,9	
4	Nenowea	10,5	5,6	4946,46	0,099
5	Niowela	44,1	14,03	449,26	
Amount		63,59	32,43	15917,77	0,092

The high yields production of plantation crops in Jerebuu district is Cocoa with a production rate of 2061.3 tons/ha (Table 4). Cocoa is one of the important plantation commodities for farming communities in NTT Province, although nationally it has only reached 2% (9th place nationally).

Table 4 Production of agricultural commodities

No	Village Name	Production (Tons/ha)			
		Horticulture	Food	Plantation	Forestry
1	Naruwolo	21	7,5	10,9	
2	Tiworiwu	17		5500	300
3	Watumanu		1,4	134,6	
4	Nenowea	5		1406,29	
5	Niowela	158,9	14,03	85	380,77
Jumlah		201,9	22,93	7136,79	680,77

e) Total livestock population per village

The livestock sector in Jerebuu district is a part-time livelihood carried out by farmers in each village. The types of livestock that are farmed by the community are large livestock such as pigs, beef cattle, horses, buffalo, and goats, and small livestock comprised of free-range chickens and ducks/ducks. Based on the data obtained, pigs and native chickens are the most dominant livestock with a population of 750 and 702 tails, respectively [7]. Because it is located around the mountains and the land is mostly used for plantation land, there are some villages that do not raise livestock.

Table 5 Total livestock population

No	NameVillage	Livestock Population						
		Cow Cut	Horse	Buffalo	Pig	Chicken Village	Goat	Duck
1	Naruwolo	8	2	5	258	496	8	
2	Tiworiwu	6	5		160	100		
3	Nenowea		3	1	200		2	500
4	Niowela	5	7	5	132	106		
Jumlah		19	17	11	750	702	10	500

f) Number of tourist destinations per village

Jerebuu district is one of the sub-districts in Ngada Regency which has the potential for the tourism sector from its cultural tourism. Based on the village profile data in each village of Jerebuu district, there are two cultural tours, namely Bena Traditional Village and Guru Sina Village. There is also nature tourism named Nage Hot Springs and Mount Inerie.

Table 6 Number of attractions

Number	Name of Village	Type of Tourism				Name of Tourist Object
		Nature	Made	Cultural	Religion	
1	Dariwali	1				Hot Springs Nage
2	Naruwolo					
3	Tiworiwu			1		Bena Traditional Village Guru Sina Traditional
4	Watumanu			1		Village
5	Tiworiwu II	1				Mount Inerie
Jumlah		2		2		

Agricultural Sector Potential

a) Types of plant commodities

The production of high yields of plantation crops in Jerebuu district is Cocoa. Cocoa is one of the important plantation commodities for farming communities in NTT Province, although nationally it has merely reached 2% (9th place nationally).

Table 7 Types of plantation crop commodities

Number	Name of Commodity	Plant Amount of Production (Ton/ha)
1	Kakao	2061,3
2	Kelapa	1928,11
3	Kemiri	1511,8
4	Cengkeh	1079,77
5	Kopi	513,3
6	Pala	12,1
7	Kapuk	10
8	Pinang	2,28
9	Vanili	1,028
10	Lada	0,8
Amount		7120,49

Types of forestry plant commodities that have high production are bamboo and firewood with production figures of 226 and 223 tons/ha, (Table 5). The use of bamboo and firewood in Jerebuu district is commonly used as material in building houses, cattle pens, and as fuel.

Table 8 Types of forestry plant commodities

No	Name of Commodity	Plant Amount of Production (Ton/ha)
1	Kayu bakar	223
2	Bambu	226
3	Kayu sengon	100
4	Jati	53,53
5	Gula enau	50
6	Mahoni	17,65
Amount		680,77

Avocado plant is a type of horticultural plant from the fruit group which has the highest production rate of 124 tons/ha. Avocado is a typical fruit for the people of Ngada Regency, usually avocados are consumed together with coffee. Avocado is also a leading fruit crop commodity in NTT Province.

Table 9 Types of horticultural crop commodities

No	Name of Commodity	Plant Amount of Production (Ton/ha)
1	Avocado	124
2	Cashew	1
3	Mango	1,5
4	Pineapple	8
5	Banana	26
6	Turmeric	1,05
7	Lemongrass	2
8	Ginger	12
9	Cinnamon	4
10	Papaya	1
11	Durian	2
12	Jackfruit	2
13	Soursop	0,5
14	Galangal	3,5
15	Curcuma	1,5
16	Betel Leaves	1
17	Rambutan	1
18	Snakefruit	1
19	Sapodilla	1
20	Jackfruit	2
21	Soursop	0,5
22	Chilli	0,3
23	Eggplant	0,2
24	Galangal	1
Amount		198.05

The types of food crop commodities that have high production are cassava and lowland rice with production figures of 8.5 and 7 tons/ha, respectively. This type of plant commodity is a leading commodity in NTT province. The production of food commodities is quite low in Jerebuu district. The local government needs to take action to increase food production in Jerebuu district. This condition may be caused by land conversion based on the results of interviews with farmers in each village.

Table 10 Types of food crop commodities

No	Name of Commodity	Plant Amount of Production (Ton/ha)
1	Cassava	8,5
2	Lowland Rice	7
3	Corn	3,2
4	Tubers	0,6
5	Sweet Potato	0,23
6	Field Rice	0,2
Amount		19,73

b. Potential availability of fertilizer

Plantation commodities are commodities that are mostly farmed by farmers in the villages of Jerebuu district. Farmers still rely on conventional cultivation techniques. The fertilizer used by farmers is organic fertilizer derived from the leaf litter of useful plants. The use of the leaf litter of this plant is first carried out by the fermentation process and then it is ready to be used. This condition causes farmers to overlook subsidized fertilizer provided by the local government through farmer groups.

c. Potential availability of capital

The capital needed by farmers in the villages of Jerebuu district is through their own capital. The capital obtained comes from the sale of harvested crop commodities that are farmed. Another source of capital available in the villages of Jerebuu district comes from loan provided by KUR BRI.

Agricultural Sector Problems

a. Land availability

Based on the results of interviews about the availability of land, the District of Jerebuu is used for the cultivation of plantation crops. The results of interviews with respondents showed that there are two villages that have low fertility rates listed as Tiwuriwu Village and Nenowea Village.

b. Problems using technology

The obstacle that almost occurs in every village in Jerebuu district is the lack of socialization of cultivation innovations, especially on cocoa plants because this commodity is a leading commodity. The technology that is only known to farmers in Jerebuu district is pruning tools. The impact on the farming community is the increase of cocoa productivity of cocoa. Farming communities who still apply traditional cocoa cultivation need in-depth technical guidance so that their plant productivity continues to increase. The guidance is needed because cocoa plants are susceptible to pests and diseases.

c. Skill problem

Cultivation innovation is very limited in the villages of Jerebuu district due to the role of agricultural extension agents. The condition of outreach socialization is only done once a year. This means that farmers do not know how to make good decisions about crop cultivation [8]. The problem that is often found by farmers in the cultivation process is the presence of pests and diseases. This problem must be addressed quickly by the local government by increasing the number of extension workers and socializing agricultural cultivation technology innovations.

Livestock Sector Potential

a. Livestock potential

The types of livestock that are farmed by the community are large livestock, namely pigs, beef cattle, horses, buffalo, and goats, and small livestock, namely free-range chickens and ducks/ducks. Based on the data obtained, pigs and native chickens are the most dominant livestock farming by the community. Pigs are usually used in traditional ritual events in Jerebuu district, while free-range chickens are only for separate consumption. If there are consumers who want to buy, then there is a sale and purchase transaction [8].

b. Availability of tillers / sires

Pigs are the leading livestock commodity in the villages of Jerebuu district. Breeders that have the most dominant availability obtained from males in Jerebuu district are pigs. Pigs in Ngada Regency still have the original breed of pigs.

Livestock Sector Problems

a. Maintenance technical

Maintenance of cages for each type of livestock owned by the community in the villages of Jerebuu district is very rarely cleaned. The factor that causes this condition is that some of the constructions of cattle pens are not permanent (unloading and installing). Construction of permanent pens only for pigs. Maintenance of pig pens is also very rare; this condition is due to the limited availability of water in the villages of Jerebuu district.

b. Animal health services

This problem is most complained by people who farm livestock. Most of the handling carried out by farmers is calling livestock caretakers to inject their livestock when they are sick. Different financial conditions of each breeder, causing livestock to die [9]. This is because the cost of health care is not affordable and farmers choose to leave the condition of sick cattle without giving treatment. This inadequate condition of animal health services can be seen from the absence of veterinarians or animal hospitals in Jerebuu district [10].

c. Use of technology

Feed technology innovation has not been applied in livestock business in the villages of Jerebuu district. This condition is due to the infrequent and almost never socialization of counseling and technical guidance factors. The community still conducts livestock business conventionally by utilizing feed derived from natural resources in the Jerebuu district area [11].

d. Farmer skills

Extension activities and BIMTEK in the villages of Jerebuu district which are rarely carried out have an impact on the farming community [12]. This condition can be seen from the provision of feed and livestock maintenance carried out by the farming community. The condition of raising livestock is not good, causing the livestock that are kept to be infected by diseases. Sick cattle are mostly die. This condition causes a decrease in livestock production in the villages of Jerebuu district.

Tourism Sector Potential

a. Tourism potential

The tourist objects in the Jerebuu district are natural and cultural tourism. Cultural tourism in the form of traditional houses is very attractive to tourists. The architecture of the buildings owned by each traditional village obtained from natural resources in this region has added value for the tourism sector in Jerebuu District [14].

Natural attractions in Jerebuu district are Nage Hot Springs and Mount Inerie. Mount Inerie is a natural tourist attraction that is most often visited by tourists who want to experience climbing and enjoy the atmosphere of the sunrise above the peak of Mount Inerie. Tourists who often visit come from out of town to foreign countries.

b. Development of facilities and infrastructure

The high number of tourists interested in tourism objects in NTT, especially Flores, has an impact on the development of facilities and infrastructure in the tourist attraction area [15]. The regional government provides assistance for the development of facilities and infrastructure, because proper facilities and infrastructure will support the progress of tourism objects.

c. Skill development

The presence of the tourism sector in Jerebuu district has very positive impact on the people in this region. The presence of tourism locations also increases the promotion of Ngada Regency culture through the sale of traditional fabrics and handicrafts [16]. The artistic skills possessed by the community can be an added value in attracting tourist visits. Existing cultural arts can add to the education of tourists.

Tourism Sector Problems

a. HR quality problems

Inadequate human resources (HR) are an obstacle in the progress of the tourism sector in this region. Tour guides of productive age are quite limited. The understanding and mastery of foreign languages possessed by tour guides in tourist attraction areas is very limited, so it is necessary to take

quick action to overcome this problem due to the large number of foreign tourists visiting. Foreign language training needs to be done.

4. Conclusions

The conclusions that can be obtained from the results of research on village potential in Jerebue district are as follows: Jerebue district has 12 villages with an area of 169.99 KM² and the number of poor people is 498 poor families. Potential resources in regional development in West Golewa District consists of the agricultural sector, the livestock sector and the tourism sector, Main agricultural commodities from West Golewa District are plants horticulture with the highest production rate is carrots. The highest livestock farmings are pigs and cattle. The tourism sector in Jerebue district are cultural tourism and natural tourisms

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