

## The Economy of Communities around Forest Area in Dairi Regency

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### Abstract

The aim of the study is to find out the economy of communities around forest area in Dairi Regency. The result of the study shows that The direction of utilization of the Dairi Regency forest area that can be developed to improve the community's economy through social forestry permits in each function of protected forest area of  $\pm 20,138.70$  ha. The area of limited production forest that can be utilized is  $\pm 14,068.86$  ha. The area of production forest is  $\pm 4,974.84$  ha. The area of conservation forest of Gunung Leuser National Park which will be utilized  $\pm 86.24$  ha is located in Tanah Pinem District. The area of conservation forest of Sicike-Cike Nature Tourism Park which will be utilized  $\pm 0.16$  ha is located in Sitinjo District. The area covered by water in the forest area that can be utilized is  $\pm 127.31$  ha. The total area of forest area to be utilized based on the function of the area and its area is  $\pm 39,396.10$  ha.

### Keywords

economy communities;  
forest area; Dairi  
Regency



## I. Introduction

Preparation of district spatial plans is in line with long-term forest area management plans. The formulation of a forest area management plan using satellite imagery technology is an inexpensive and implementable method. (Puntodewo, A., et al., 2003 in Silitogo Pollen 2011) said that the remote sensing method with a geographic information system (GIS) to find out adequate information about changes in forest cover caused by forest degradation and deforestation so that information can be used for planning, structuring, managing forest resources and carrying out rehabilitation, then spatial information can be used. Spatial information on land cover and land use conditions is an option in the preparation of long-term forest management plans.

GIS technology and remote sensing are instruments used in preparing a long-term forest management plan. By knowing the land cover and the pattern of land cover change in a certain time span, a decision can be made in managing the forest area. In order to produce accurate information in making social policies in the management of forest areas, an analysis of changes in land cover and extent of cover changes needs to be carried out so that it can then be used for areas managing community economic development.

The impact of forest area management for the community in accordance with the mandate of Law No. 41 of 1999 concerning Forestry is to realize community welfare and ensure forest sustainability. Minister of Environment and Forestry Regulation No. 83 of 2017 concerning Social Forestry is a guarantee for people who live in forest areas to have access to manage forest areas sustainably so that their standard of living increases. The involvement of the community inside the forest area and around the forest area in managing the forest area in a participatory manner with the mechanism regulated and agreed on in government

regulations LHK No. 83/2017 between the government and the community, the government and entrepreneurs and the community and entrepreneurs. This is expected to improve the welfare of the people of Dairi Regency.

## II. Review of Literature

### 2.1 Forest Degradation

Forest degradation is a decrease in the quantity of forest cover and carbon stock over a certain period. A decrease in canopy cover can cause sunlight to touch the forest floor directly. This causes very high evaporation. Forest degradation is a condition where the forest area changes its function to another function but the cover is still there. Degradation of functions from one hundred percent canopy changes to less due to activities underneath it into agriculture, plantations, fisheries and other uses.

According to Lamb (1994) that forest degradation has different meanings depending on a group of people. Foresters have varied perceptions of the meaning of degradation. Some say that degraded forests are forests that have been damaged to the point where logging or non-timber logging in the future period will be delayed or obstructed altogether. While others define degraded forest as a condition where the ecological, economic and social functions of the forest are not fulfilled.

Oldeman (1992) said that degradation is a process in which there is a decrease in capacity both now and in the future in providing results (product). Arbitrary deforestation is land degradation. In addition, uncontrolled and unplanned deforestation is the greatest ecological danger. Damage to land or land will affect the habitat of all living things in it and habitat damage is very influential on the survival of the living creature it supports.

### 2.2 Deforestation

Deforestation is a permanent change from forested to non-forested areas. Usually changes in land cover become settlements, and other functions that occur permanently and continuously. This area is difficult to return back to a forested area. This tends to cause critical land conditions, prone to landslides, floods, erosion and very high run-off rates.

According to Nawir, A.A., et al. (2008) that permanent or temporary loss of forest covers is deforestation. Simply stated, deforestation is a term to refer to changes in the cover of an area from forested to non-forested, meaning from an area that was previously covered by a forest (tree vegetation with a certain density) to non-forest (not tree vegetation or even vegetation). Still according to Nawir that the factors causing deforestation in Indonesia are not much different from the causes of forest degradation. There are 2 causes of deforestation, namely direct causes and indirect causes. Immediate causes include: 1) forest fires, 2) floods, 3) morphological conditions and high rainfall, 4) logging for plantation land clearing, 5) forest encroachment, 6) transmigration programs, 7) land management with soil conservation techniques and inappropriate water, and 8) mining and oil drilling.

While indirect causes include: 1) market failures due to the price of wood products which are too low, 2) failure of policies in granting permits for forest exploitation and transmigration programs, 3) government weaknesses in law enforcement, 4) more socio-economic and political causes widespread, such as: the economic crisis, the era of reform, high population density and growth, and uneven distribution of economic and political power.

Deforestation has a significant impact on society and the environment. Logging activities that override forest conservation result in a decrease in environmental quality and will increase natural disasters, such as landslides and floods. Another impact due to forest destruction is the threat to the preservation of endemic animals and flora. As the issue of climate change avoided deforestation becomes the main alternative with the intention to reduce gas emissions that can reduce global warming

### **2.3 Population and Community Economic Development**

Population and Economic Development have a linear correlation. Todaro (2003) in Sirojuzilam (2008) said that population growth is not a problem, but an important element that will spur economic development. The larger population is a potential market that is a source of demand for various kinds of goods and services which will then drive a variety of economic activities so as to create economies of scale for products that benefit all parties, reduce production costs, and create a source of supply or supply of cheap labor in sufficient quantities, which in turn stimulates even higher levels of aggregate output or aggregate production.

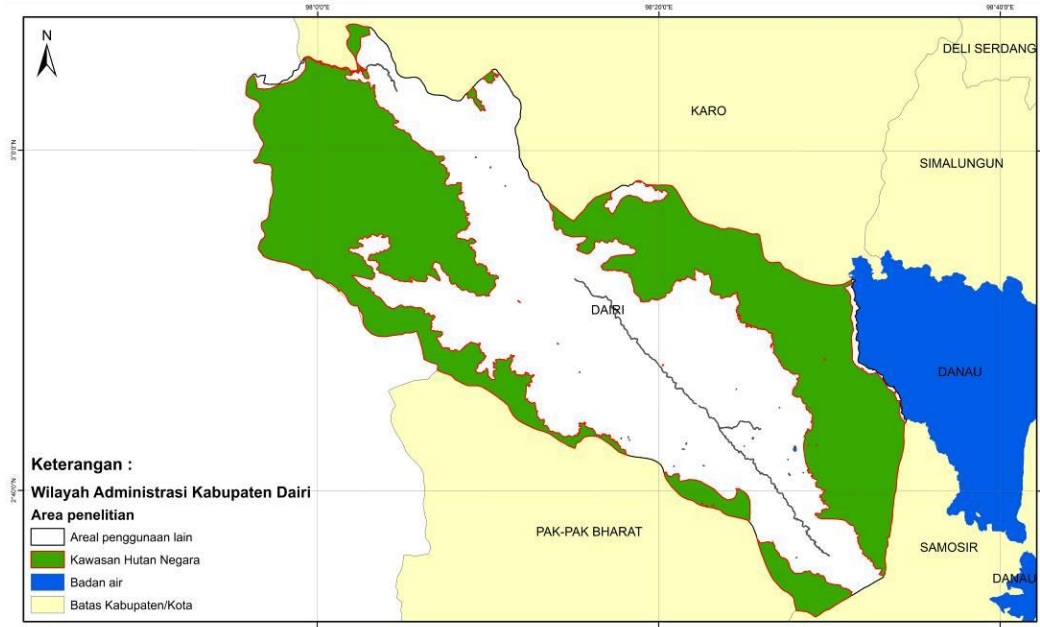
Starting with the problem of population and labor force both quantitatively and qualitatively must be given primary attention in the development economy, because an increase in population will automatically increase the number of the workforce. Population growth and labor force growth have traditionally been considered one of the positive factors that spur economic growth, a greater number of workers means that the size of the domestic market will be greater (Sirojuzilam, 2008).

Experts put forward the relationship between population growth and economic growth. There are two groups debating the relationship between population growth and economic growth. Conceptually, the total population influences economic output. Economic output is usually measured by Gross Domestic Product (GDP). Gross Domestic Product shows the total value of final goods and services produced by all economic units. Economic growth occurs when an economy is able to increase GDP from the previous period. Increased demand for goods and services will expand the market for goods produced by the corporate sector. So that population growth will encourage an increase in national production and the level of economic activity (Sukirno, 2000).

The community economy (the people's economy) is the economic activity of the middle to lower class and is a family activity, it is not a formal legal business entity, it is not officially recognized as an economic sector that plays an important role in the national economy. In the literature of development economics is called the informal sector (underground economy) or (extralegal sector). Community economics is all economic activities and community efforts to fulfill the necessity of life (basic need) namely clothing, food, shelter, health and education. Therefore, it can be understood that the economic empowerment of the community is an effort to increase the ability or potential of the community in economic activities to meet the needs of life and improve their welfare and can be potential in national development.

### III. Research Method

The location of the study focused on state forest areas in Dairi District such as



**Figure 1.** Green Area is a Research Location (Region of Interest)

Dairi Regency is located in five regencies: in the east it is bordered by Karo Regency, in the southeast it is bordered by Samosir Regency, in the south it is bordered by Pak-Pak Bharat Regency, in the west it is bordered by Nangroe Aceh Darusallam Province.

### IV. Discussion

Community businesses that are in the forest area and around the forest area are dominated by agriculture, forestry, animal husbandry and fisheries to support the household economy. Caroline (2017) argues that agriculture, forestry, animal husbandry and fisheries are the leading sectors with a LQ value of  $> 1$  which is 1.96 which means that the agriculture, forestry, animal husbandry and fisheries sectors are the base sector. Agriculture, forestry, animal husbandry and fishery products in Dairi Regency vary in each district. The following are agricultural, forestry, livestock and fishery commodities for each sub-district in Dairi Regency (Dairi Data Source in Figures 2018).

**Table 1.** Harvest Area and Avocado and Mango Fruit Production by District in Dairi Regency 2017

District	Avocados		Mangoes	
	Harvested Area (ha)	Production (ton)	Harvested Area (ha)	Production (ton)
Sidikalang	500,00	99,66	86,00	15,76
Berampu	687,00	136,93	186,00	34,08
Sitinjo	560,00	111,62	246,00	45,07

Parbuluan	870,00	173,41	-	-
Sumbul	-	-	-	-
Silahasabungan	823,00	164,04	220,00	40,31
Silima Punggapungga	535,00	106,64	-	-
Lae Parira	621,00	123,78	-	-
Siempat Nempu	887,00	176,80	158,00	28,95
Siempat Nempu Hulu	-	-	-	-
Siempat Nempu Hilir	-	-	-	-
Tiga Lingga	-	-	-	-
Gunung Sitember	950,00	189,35	182,00	33,35
Pegagan Hilir	878,00	175,00	-	-
Tanah Pinem	956,00	190,55	150,00	27,48
Total	8.267,00	1.647,78	1.228,00	224,99

Data Source: BPS in 2018

**Table 2.** Harvested Area and Durian and Jackfruit Production by District in Dairi Regency 2017

District	Durian		Jack Fruits	
	Harvested Area (ha)	Production (ton)	Harvested Area (ha)	Production (ton)
Sidikalang	166,00	33,95	-	-
Berampu	250,00	51,13	235,00	12,12
Sitinjo	334,00	68,31	86,00	4,44
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahasabungan	-	-	-	-
Silima Punggapungga	1.450,00	296,57	120,00	6,19
Lae Parira	3.400,00	695,40	-	-
Siempat Nempu	8.300,00	1.697,60	-	-
Siempat Nempu Hulu	-	-	-	-
Siempat Nempu Hilir	21.600,00	4.417,85	230,00	11,86
Tiga Lingga	28.500,00	5.829,11	-	-
Gunung Sitember	7.800,00	1.595,33	31,00	1,60
Pegagan Hilir	500,00	102,27	120,00	6,19
Tanah Pinem	9.300,00	1.902,13	-	-
Total	81.600,00	16.689,65	822,00	42,40

Data Source: BPS in 2018

**Table 3.** Harvested Area and Soursop and Duku Production by District in Dairi Regency 2017

District	Soursop		Duku	
	Harvested Area (ha)	Production (ton)	Harvested Area (ha)	Production (ton)
Sidikalang	-	-	-	-
Berampu	-	-	-	-
Sitinjo	-	-	-	-
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	190,00	3,72	420,00	44,40
Lae Parira	-	-	540,00	57,08
Siempat Nempu	225,00	4,40	320,00	33,83
Siempat Nempu Hulu	-	-	-	-
Siempat Nempu Hilir	200,00	3,91	500,00	52,86
Tiga Lingga	-	-	1.000,00	105,71
Gunung Sitember	330,00	6,46	1.117,00	118,08
Pegagan Hilir	-	-	603,00	63,74
Tanah Pinem	-	-	-	-
Total	945,00	18,49	4.500,00	475,70

Data Source: BPS in 2018

**Table 4.** Harvested Area and Production of Water Guava and Mangosteen by District in Dairi Regency 2017

District	Water Apple		Mangosteen	
	Harvested Area (ha)	Production (ton)	Harvested Area (ha)	Production (ton)
Sidikalang	60,00	1,66	-	-
Berampu	65,00	1,80	-	-
Sitinjo	100,00	2,76	-	-
Parbuluan	215,00	5,94	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	-	-	1.200,00	129,68
Lae Parira	-	-	-	-
Siempat Nempu	120,00	3,32	300,00	-
Siempat Nempu Hulu	-	-	1.200,00	-
Siempat Nempu Hilir	-	-	20,00	-

Tiga Lingga	-	-	-	-
Gunung Sitember	5,00	0,14	800,00	-
Pegagan Hilir	68,00	1,88	380,00	-
Tanah Pinem	87,00	2,40	-	-
Total	720,00	19,90	3.900,00	129,68

Data Source: BPS in 2018

**Table 5.** Harvested Area and Production of Rambutan Fruits and Petai by District in Dairi Regency 2017

District	Rambutan		Petai	
	Harvested Area (ha)	Production (ton)	Harvested Area (ha)	Production (ton)
Sidikalang	-	-	-	-
Berampu	-	-	15,00	-
Sitinjo	-	-	-	-
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	56,00	9,06	100,00	5,07
Lae Parira	-	-	-	-
Siempat Nempu	-	-	35,00	1,77
Siempat Nempu Hulu	-	-	-	-
Siempat Nempu Hilir	75,00	12,14	115,00	5,83
Tiga Lingga	-	-	-	-
Gunung Sitember	58,00	9,39	250,00	12,68
Pegagan Hilir	46,00	7,45	500,00	25,35
Tanah Pinem	35,00	5,66	50,00	2,54
Total	270,00	43,70	1.065,00	53,24

Data Source: BPS in 2018

**Table 6.** Area, Production, Productivity, and Number of Farmers of Robusta Coffee Plants 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	335,50	-	-	-
Berampu	399,70	-	-	-
Sitinjo	280,00	27,25	533,33	105,00
Parbuluan	2 627,90	-	-	-
Sumbul	7 044,30	136,27	615,38	800,00
Silahisabungan	5,31	-	-	-

Silima Punggapungga	63,00	780,30	1.054,46	1.050,00
Lae Parira	119,20	3306,61	654,55	900,00
Siempat Nempu	98,50	451,40	662,50	980,00
Siempat Nempu Hulu	222,10	354,31	640,00	875,00
Siempat Nempu Hilir	-	332,35	1.142,10	925,00
Tiga Lingga	-	195,89	671,82	980,00
Gunung Sitember	-	395,19	618,67	700,00
Pegagan Hilir	186,00	407,96	622,08	730,00
Tanah Pinem	-	289,58	641,51	125,00
Total	1.709,31	3.677,12	728,93	8.170,00

Data Source: BPS in 2018

**Table 7.** Area, Production, Productivity, and Number of Farmers of Arabica Coffee Plants 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	335,50	240,48	999,09	890,00
Berampu	399,70	295,59	1.084,34	980,00
Sitinjo	280,00	207,11	1.020,77	418,00
Parbuluan	2.627,90	1.823,64	978,35	2.665,00
Sumbul	7.044,30	5.400,78	1.064,40	8,35
Silahisabungan	5,31	0,80	615,38	34,00
Silima Punggapungga	63,00	21,04	532,71	76,00
Lae Parira	119,20	75,15	961,00	205,00
Siempat Nempu	98,50	62,12	881,19	98,00
Siempat Nempu Hulu	222,10	156,31	847,68	376,00
Siempat Nempu Hilir	-	-	-	-
Tiga Lingga	-	-	-	-
Gunung Sitember	-	-	-	-
Pegagan Hilir	186,00	126,25	956,45	296,00
Tanah Pinem	-	-	-	-
Total	11.381,51	8.409,27	9.941,36	6.046,35

Data Source: BPS in 2018

**Table 8.** Area, Production, Productivity, and Number of Rubber Plant Farmers 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	-	-	-	-



Berampu	-	-	-	-
Sitinjo	2,51	-	-	3,00
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	21,40	8,02	703,16	28,00
Lae Parira	21,01	3,01	334,00	26,00
Siempat Nempu	40,00	13,03	501,00	35,00
Siempat Nempu Hulu	85,00	27,05	575,62	55,00
Siempat Nempu Hilir	30,00	7,01	467,60	36,00
Tiga Lingga	101,30	31,06	620,00	86,00
Gunung Sitember	74,00	15,03	455,45	46,00
Pegagan Hilir	13,00	1,20	171,77	14,00
Tanah Pinem	105,10	28,06	482,89	57,00
Total	493,32	133,47	4.311,49	386,00

Data Source: BPS in 2018

**Table 9.** Area, Production, Productivity, and Number of Farmer Area 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	3,50	1,32	440,00	15
Berampu	-	-	-	-
Sitinjo	5,05	2,54	627,16	11
Parbuluan	-	-	-	-
Sumbul	5,00	3,60	720,00	24
Silahisabungan	-	-	-	-
Silima Punggapungga	11,00	2,00	400,00	14
Lae Parira	1,55	0,90	857,14	12
Siempat Nempu	4,50	3,00	857,14	18
Siempat Nempu Hulu	8,90	4,60	686,57	38
Siempat Nempu Hilir	14,50	7,50	937,50	50
Tiga Lingga	19,00	7,20	480,00	38
Gunung Sitember	12,50	5,60	658,82	21
Pegagan Hilir	6,00	1,40	466,67	15
Tanah Pinem	12,00	5,60	622,22	21
Total	103,50	45,26	7.753,22	277,00

Data Source: BPS in 2018

**Table 10.** Area, Production, Productivity, and Number of 2017 Sugar Palm Farmers

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	13,65	4,41	604,11	54,00
Berampu	6,10	1,37	332,93	24,00
Sitinjo	4,20	1,89	600,00	81,00
Parbuluan	4,20	1,79	566,67	11,00
Sumbul	8,50	4,20	525,00	68,00
Silahisabungan	-	-	-	-
Silima Punggapungga	4,20	1,26	600,00	18,00
Lae Parira	4,20	2,31	733,33	18,00
Siempat Nempu	1,05	0,32	600,00	6,00
Siempat Nempu Hulu	7,35	2,65	630,00	9,00
Siempat Nempu Hilir	2,10	1,37	866,67	12,00
Tiga Lingga	0,53	0,68	1.300,00	8,00
Gunung Sitember	2,10	0,63	600,00	12,00
Pegagan Hilir	8,40	4,10	650,00	34,00
Tanah Pinem	2,63	0,42	266,67	10,00
Total	69,21	27,40	7.575,38	365,00

Data Source: BPS in 2018

**Table 11.** Area, Production, Productivity, and Number of Gambir Farmers 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	-	-	-	-
Berampu	-	-	-	-
Sitinjo	-	-	-	-
Parbuluan	-	-	-	-
Sumbul	80,00	50,00	769,23	355,00
Silahisabungan	-	-	-	-
Silima Punggapungga	76,70	49,00	890,91	250,00
Lae Parira	117,10	57,00	527,78	232,00
Siempat Nempu	16,30	1,40	116,67	30,00
Siempat Nempu Hulu	119,50	80,40	793,68	241,00
Siempat Nempu Hilir	33,40	15,60	530,61	76,00
Tiga Lingga	-	-	-	-
Gunung Sitember	-	-	-	-
Pegagan Hilir	12,00	1,00	111,11	30,00
Tanah Pinem	-	-	-	-

Total	455,00	254,40	3.739,99	1.214,00
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Data Source: BPS in 2018

**Table 12.** Area, Production, Productivity, and Number of Candlenut Farmers 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	-	-	-	-
Berampu	-	-	-	-
Sitinjo	-	-	-	-
Parbuluan	-	-	-	-
Sumbul	15,00	12,00	1.200,00	185,00
Silahisabungan	6,00	4,00	666,67	68,00
Silima Punggapungga	25,00	25,00	1.086,96	115,00
Lae Parira	23,00	21,00	1.050,00	63,00
Siempat Nempu	21,00	18,00	900,00	63,00
Siempat Nempu Hulu	26,00	30,00	1.500,00	152,00
Siempat Nempu Hilir	39,00	96,00	2.526,32	102,00
Tiga Lingga	103,00	205,00	2.009,80	132,00
Gunung Sitember	71,60	105,00	1.576,58	430,00
Pegagan Hilir	25,80	45,00	2.137,77	69,00
Tanah Pinem	3.050,50	6.113,00	2.034,28	3.373,00
Total	3.405,90	6.674,00	16.688,38	4.752,00

Data Source: BPS in 2018

**Table 13.** Area, Production, Productivity, and Number of Patchouli Farmers 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	-	-	-	-
Berampu	-	-	-	-
Sitinjo	4,20	0,21	50,00	30,00
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	31,50	0,84	26,67	72,00
Lae Parira	2,10	0,42	200,00	40,00
Siempat Nempu	21,00	0,32	15,00	20,00
Siempat Nempu Hulu	21,00	0,53	25,00	18,00
Siempat Nempu Hilir	-	-	-	-

Tiga Lingga	-	-	-	-
Gunung Sitember	-	-	-	-
Pegagan Hilir	-	-	-	-
Tanah Pinem	-	-	-	-
Total	79,80	2,32	316,67	180,00

Data Source: BPS in 2018

**Table 14.** Area, Production, Productivity, and Number of Farmers of Cinnamon Plant 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	5,00	7,20	1.440,00	32,00
Berampu	4,00	4,00	-	18,00
Sitinjo	11,00	7,00	1.166,67	48,00
Parbuluan	20,00	14,50	-	58,00
Sumbul	36,00	32,00	1.280,00	306,00
Silahisabungan	5,00	3,90	-	21,00
Silima Punggapungga	26,00	16,00	1.600,00	140,00
Lae Parira	5,00	2,60	1.300,00	52,00
Siempat Nempu	37,00	32,00	1.523,81	143,00
Siempat Nempu Hulu	7,00	3,00	428,57	78,00
Siempat Nempu Hilir	25,00	26,00	1.368,42	48,00
Tiga Lingga	9,00	10,00	1.666,67	28,00
Gunung Sitember	12,00	12,80	1.280,00	48,00
Pegagan Hilir	26,00	24,50	1.531,25	79,00
Tanah Pinem	22,00	14,00	1.400,00	53,00
Total	250,00	209,50	15.985,39	1.152,00

Data Source: BPS in 2018

**Table 15.** Area, Production, Productivity, and Number of Plant Farmers at Kemenyan 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	37,00	6,00	260,87	244,00
Berampu	-	-	-	-
Sitinjo	54,00	12,00	266,67	84,00
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	31,00	12,75	510,00	96,00

Lae Parira	12,00	8,64	720,00	62,00
Siempat Nempu	10,00	2,40	300,00	20,00
Siempat Nempu Hulu	-	-	-	-
Siempat Nempu Hilir	-	-	-	-
Tiga Lingga	-	-	-	-
Gunung Sitember	-	-	-	-
Pegagan Hilir	-	-	-	-
Tanah Pinem	-	-	-	-
<b>Total</b>	<b>144,00</b>	<b>41,79</b>	<b>2.057,54</b>	<b>506,00</b>

Data Source: BPS in 2018

**Table 16.** Area, Production, Productivity, and Number of Clove Plant Farmers 2017

District	(ha)	Production (ton)	Productivity (kg/ha/Year)	Number of Farmers (households)
Sidikalang	-	-	-	-
Berampu	-	-	-	-
Sitinjo	-	-	-	-
Parbuluan	-	-	-	-
Sumbul	-	-	-	-
Silahisabungan	-	-	-	-
Silima Punggapungga	1,00	0,20	200,00	4,00
Lae Parira	-	-	-	-
Siempat Nempu	-	-	-	-
Siempat Nempu Hulu	-	-	-	-
Siempat Nempu Hilir	-	-	-	-
Tiga Lingga	1,00	0,20	200,00	6,00
Gunung Sitember	2,00	0,20	100,00	18,00
Pegagan Hilir	-	-	-	-
Tanah Pinem	16,00	2,50	192,31	50,00
<b>Total</b>	<b>20,00</b>	<b>3,10</b>	<b>692,31</b>	<b>78,00</b>

Data Source: BPS in 2018

**Table 17.** Population of Large Livestock by District and Type of Livestock in 2017 Dairi Regency

District	Cow	Buffalo	Horse	Goat	Pig
Sidikalang	14	158	-	192	14.398
Berampu	28	648	-	935	2.106
Sitinjo	3	36	-	89	4.017
Parbuluan	61	277	36	196	12.322
Sumbul	178	158	9	280	12.377

Silahisabungan	-	108	7	132	2.533
Silima Punggapungga	6	114	4	2.212	14.082
Lae Parira	6	311	-	454	3.354
Siempat Nempu	161	258	4	845	5.848
Siempat Nempu Hulu	1.091	110	15	1.198	6.220
Siempat Nempu Hilir	114	252	10	1.066	2.914
Tiga Lingga	579	145	6	562	11.794
Gunung Sitember	169	26	4	705	4.723
Pegagan Hilir	495	283	4	1.528	8.307
Tanah Pinem	243	62	5	1.172	3.020
Total	3.148	2.946	104	11.566	108.015

Data Source: BPS in 2018

**Table 18.** Area of Fish Cultivation Land Area by District and Type in Dairi Regency (ha) 2017

District	Pond	field	Floating Nets	Seeding	Total
Sidikalang	35,50	20,00	-	2,20	57,70
Berampu	8,50	11,00	-	1,50	21,00
Sitinjo	10,25	5,00	-	1,50	16,75
Parbuluan	22,50	9,50	-	1,50	33,50
Sumbul	62,50	40,00	-	4,10	106,60
Silahisabungan	8,50	1,50	1.530,00	-	1.540,00
Silima Punggapungga	65,50	36,00	-	4,20	105,70
Lae Parira	16,50	8,00	-	2,50	27,00
Siempat Nempu	20,25	8,20	-	-	28,45
Siempat Nempu Hulu	13,20	8,40	-	-	21,60
Siempat Nempu Hilir	15,50	6,10	-	-	21,60
Tiga Lingga	7,20	6,50	-	-	13,70
Gunung Sitember	6,20	5,10	-	-	11,30
Pegagan Hilir	12,50	13,20	-	-	25,70
Tanah Pinem	14,50	5,00	-	-	19,50
Total	319,10	183,50	1.530,00	17,50	2.050,10

Data Source: BPS in 2018

Utilization of degraded and deforested forest areas is directed based on the area's potential and the function status of the forest area. Tanah Pinem Subdistrict is a corn cultivation center in Dairi Regency so that the direction for the utilization of the area for this region is Agroforestry based on Corn Plants and can be integrated with the agrosilvopastoral system. Silima Pungga Subdistrict is the center of Gambir and Durian Cultivation, so the direction of the utilization of the area is agroforestry with Gambir Plants as a cultivation base while for Agrisiliviculture can rely on Durian Plants. Silima Pungga Subdistrict also has a lot

of medium and large livestock potential, so based on land suitability class, it can be plotted as a center for animal husbandry with agrosilvopastoral system Sumbul Subdistrict, Sidikalang Subdistrict, Sitinjo Subdistrict is a sub-district with superior commodity of Arabica Coffee, so its utilization will be directed to coffee agroforestry. Silahi Sabungan District is a sub-district with a source of fish suppliers in this region so that the direction of the utilization of the area will be directed by silvofishery and Ecotourism. While Berampu Subdistrict and Lae Parira Subdistrict are producers of Kemenyan, Arabica Coffee, Robusta Coffee, the directives for the use of the area are Kemenyan Agroforestry, Robusta Coffee Agroforestry and Arabica Agroforestry. Siempat Nempu District and Siempat Nempu Hilir District have very diverse commodities so that the utilization of the area will be directed to the Durian Agroforestry System with other agricultural crops. Tanah Pinem District has a very diverse commodity where this district is a region producing Candlenut, Areca nut, and Fruits in this region so that the utilization of the area will be directed by Cultivation with the Agroforestry System of Candlenut, Areca nut and Fruit (MPTs). Parbuluan District has the function of a production forest area and has a potential area to be directed to community timber-producing areas originating from the People's Plantation Forest (HTR). Utilization of the production forest area in Parbuluan District will be directed by the pattern of environmental partnership (Dairi in figures, 2018).

## V. Conclusion

The direction of utilization of the Dairi Regency forest area that can be developed to improve the community's economy through social forestry permits in each function of protected forest area of  $\pm 20,138.70$  ha. The area of limited production forest that can be utilized is  $\pm 14,068.86$  ha. The area of production forest is  $\pm 4,974.84$  ha. The area of conservation forest of Gunung Leuser National Park which will be utilized  $\pm 86.24$  ha is located in Tanah Pinem District. The area of conservation forest of Sicike-Cike Nature Tourism Park which will be utilized  $\pm 0.16$  ha is located in Sitinjo District. The area covered by water in the forest area that can be utilized is  $\pm 127.31$  ha. The total area of forest area to be utilized based on the function of the area and its area is  $\pm 39,396.10$  ha.

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