Analysis of the Development of Coffee Farmers on Economic Improvement Post Eruption of Mount Sinabung in Payung Sub-District, Karo Regency

Bintang Hartini Nataria[1], Sirojuzilam[2], Agus Purwoko[3]

[1,2,3]*Department of Regional and Rural Development Planning, University of Sumatera Utara, North Sumatra, Indonesia*

Abstract: **This study aims to analyze the effect of coffee farmer development on improving the economy in the Payung Sub-district. The results of data analysis indicate that the development of coffee farmers has a significant and positive effect on improving the economy in Payung District. The research findings show that the results of hypothesis testing through the t-test say that the development of coffee farmers has a significant and positive effect on improving the economy in Payung District. Therefore, it was decided that Ha was accepted.**

Keywords: **Pengembangan petani kopi, peningkatan perekonomian**

I. INTRODUCTION

Sutopo Purwo Nugroho, Head of the Data Information and Public Relations Center for the National Disaster Management Agency (BNPB), stated that the losses due to the eruption of Mount Sinabung from 15 September 2013 to the end of 2014 were estimated at IDR 1.49 trillion. These losses include losses from agriculture, plantations, livestock, trade, tourism, fisheries, SMEs, and industry. Furthermore, he also explained that the total losses and damage in the agricultural and plantation sectors reached IDR 817 billion. This shows the deterioration of the harvest conditions of farmers and the loss of various plants as a source of income for farmers. Agricultural land and 46,935-hectare plantations have been severely damaged. Chili plants have suffered the greatest damage, reaching 1,701 hectares and orange fruits of 1,177 hectares, the most planted by farmers around Mount Sinabung.

Table 1:Coffee Plantation in Karo Regency

No	Sub-district	Area (Ha)	Production (Ton)	Production Average (Kg/Ha/Yr)	Farmer
1	Barus Jahe	465.00	525.00	1,187.78	1.215
2	Berastagi	129.00	87.40	1,150.00	275
3	Dolat Raya	218.00	176.70	950.00	424
4	Juhar	401.00	195.49	1,051,02	620
5	Kaban Jahe	120.00	103.80	1,038.00	400
6	Kuta Buluh	312.00	358.80	1,150.00	423
7	Lau Balang	104.00	55.80	1,116.00	225
8	Mardingding	122.00	111.70	1,117.00	272
9	Merdeka	189.00	198.09	1,145.00	360
10	Merek	1,199.00	822.71	1,127.00	2,100
11	Munthe	299.00	247.17	1,155.00	570
12	Namanteran	441.00	176.40	1,050.00	525
13	Payung	400.00	417.40	1,216.91	765
14	Simpang Empat	1,037.00	814.24	1,120.00	1,724
15	Tiga Binanga	12.00	1.14	1,140.00	450
16	Tiga Panah	651.00	460.00	871.21	850
17	Tiganderket	137.00	75.00	646.55	250
	Total	6,236.00	4,826.84	1,084.20	11.448

Source: BPS Karo Regency, 2014

From the data above, it is known that Karo Regency has 6,236 hectares of coffee land spread across 17 districts. The most extensive plantations are in Brand District with 1,195.00 hectares, Simpang Empat with 1,037.00 hectares, Tiga Panah 651.00 hectares, and Barus Jahe with 465.00 hectares. Where the 4 sub-districts have produced coffee an average of 1000 kilograms/hectare/year. This shows that coffee is already a source of livelihood for farmers in Karo District.

Table 2: Coffee Production 2015-2017 in Karo Regency

No	Year	Coffee Production (Ton)	Coffee Farmer
1	2014	4,826.84	11.448
2	2015	4, 808.05	11.076
3	2016	5,270.00	11.076
4	2017	8,877.02	11.165

Source: BPS Karo Regency, 2017

It is defined in Table 2 that coffee production in Karo Regency in 2014 was 4,826.84 tons, while coffee production in 2015 decreased by 18.79 tons, which is 4,808.05 tons. This is indicated by the number of coffee farmers, who were 11,448.00 families to 11,076.00 in 2014.

Payung sub-district is known for producing seasonal crops (horticulture) and annual crops such as cocoa, tobacco, candlenut, cloves, and coffee. In general, people in Karo Regency live from vegetable farming. The coffee plant is only

a complement to those planted in the periphery of their agricultural land

After the eruption of Mount Sinabung, farmers in Payung Sub-district tried to get up by planting coffee because this plant has resistance to volcanic ash. Junaidi and Yamin (2010) state that the potential for developing coffee in the regions is very much needed to support the improvement of farmers' welfare. In line with this opinion, then with the help of an international coffee beverage company, create a social program that guides nursery strategies, training and teaching, planting and care, and production processes.

Coffee growth in the Payung sub-district has been increasing from year to year, which is characterized by area development and varieties of production and coffee. The varieties currently being produced include Gayo, Komasti, andungsari, and Sigararutang. But this production is still not capable of meeting all market demands. That's because of the high demand for coffee but not balanced by coffee production.

Efforts to advance the people's economy through the development of coffee farmers in the Payung sub-district are a regional development strategy where changes in the economic structure and social institutions that occurred due to the eruption of Mount Sinabung.

II. RESEARCH METHODOLOGY

The location of the research was carried out in the Payung District, which is part of the coffee farmer development program area. The location selection was due to human resources (coffee farmers) that could be developed to become a source of livelihood for the community in coffee farming, where this sub-district has a large coffee area of 400 hectares with an average coffee production of 1,216.9 tons per year. (BPS Payung, 2014). This type of research is field research, which is conducted by extracting data from the location or field of research using a quantitative descriptive approach. Syaodih (2006) states that research uses descriptive quantitative because the description uses size, number, or frequency.

The population of this research is coffee farmers who own coffee farming in the Payung sub-district. Based on data from BPS Karo Regency 2014, it is known that there are around 765 people known as coffee farmers in Payung District. In 2018 there was an increase of around 30% so that in 2018 there were around 995 people known as coffee farmers. The increase in the number of coffee farmers is due to horticultural farmers turning to coffee farmers after the eruption of Mount Sinabung.

To develop coffee farmers in Payung sub-district, 95 coffee farmers are participating in coffee farmer development programs organized by private and government providers. This program helps coffee farmers in developing coffee farming. However, only 31 (33%) of coffee farmers were taken as samples purposively on the condition that the farmers sampled (respondents) are members of farmer groups and actively participate in all coffee farmer development program activities and have mature coffee plants.

III. LITERATURE REVIEW

Syamsul (2005) notes that in a particular context, regional development is implied by development. Regional planning is intended to support a region experience unbalanced growth.

In general, regional development is characterized as an effort to formulate and apply a theoretical framework to economic policies and development programs that consider regional aspects by integrating social and environmental aspects towards achieving optimal and sustainable welfare (Nugroho and Dahuri, 2004).

Regional planning is not the same in different countries, depending on economic life and the problems at hand. Historically at least three regional planning methods were developed (Jayadinata 1999), namely:

1. Regional planning which focuses on social urban issues.
2. Regional planning which focuses its attention on areas where the population is highly unemployed and in a state of industrial (special areas) stagnation.
3. Regional planning which takes into account rural areas, with agricultural and recreational sector land development (rural and territorial planning).

Based on data from the International Coffee Organization (ICO) in 2012, Indonesia is the third-largest coffee producer in the world after Brazil and Vietnam with coffee export volume reaching 10,620,000 bags, 748 thousand tons, or 6.6% of world coffee production. Of this amount, Robusta coffee production reached more than 601 thousand tons (80.4%) and Arabica coffee production reached more than 147 thousand tons (19.6%). Saragih (2011) notes that coffee becomes an important commodity in the regional economy and directly affects farmers' welfare. This is because almost all of the coffee region (96 percent) is managed nationally by the people. Coffee plantation commodities in 2010 contributed 23.21% (12,847 tonnes) to North Sumatra coffee (North Sumatra Plantation Statistics Data, 2012)

Rostow (2009) notes that economic growth can be viewed as a mechanism that induces changes in the lives of people, namely changes in policies, social structures, social values, and the nature of their economic activities. In the meantime, Kuznets (2017) notes that economic growth is characterized as a long-term increase in a country's ability to provide its population with more types of economic goods to its population where this capacity grows by technological advances, and the institutional and ideological adjustments it requires.

Adisasmita (2013) states that there are several indicators that can be used as benchmarks to see the economic growth of a region, including income imbalance, changes in economic structure, growth in employment opportunities, level, and distribution of convenience.

According to the Central Statistics Agency (BPS), there are three ways to calculate GRDP that can be obtained through three approaches, namely the production approach, the income approach, and the expenditure approach. Sukatjo (1998) states that productivity is a concept that describes the relationship between results (the number of goods and services produced) and the sources (labor, capital, raw materials, energy, etc.) used to produce these goods.

Furthermore, Sinungan (1985) states that productivity can be defined as the ratio between the amount of expenditure divided by the number of inputs in a certain period. In agriculture, productivity is the ability of a production factor (such as land area) to obtain production per unit area of land. Production and productivity are determined by many factors, such as soil fertility, planted seed varieties, the use of adequate fertilizers (both type and dose), availability of sufficient water, appropriate farming techniques, use of adequate agricultural tools, and availability of labor.

Kroef (in Collier, 1984) states that there are 4 (four) ways or mechanisms for production that are generally carried out by farmers, namely (1) *maro*, which requires the cultivator to buy his own seeds, fertilizers, and pay for farm laborers, and hand over half of the harvest yields to the landowner, meanwhile the tax on the land is paid by the owner, (2) *mertelu*, which is a method of sharing the results with the same conditions as maro, but in this case, the rice cultivator only receives a third of the result. (3) *merempat*, namely, the cultivator only gets a quarter of the share of the harvest, but he only pays the farm laborer, and (4) *marolima* is a production sharing system in which the landowner receives two-fifths of the harvest, while the cultivator bears the production cost of three fifth.

Husin (2009) suggests that the factors that affect the productivity of agricultural products include the area of arable land, the cosmopolitan level of farmers, education, business capital, age, and farming experience.

Research Hypothesis:

H_a : There is a significant influence between the development of coffee farmers on the improvement of the economy in the Payung Sub-district.

H_0 : There is no significant influence between the development of coffee farmers on the improvement of the economy in the Payung Sub-district.

IV. RESULT

Payung is one of the sub-districts included in the development of the North Sumatra Bukit Barisan Plateau Agropolitan Area (KADTBB). Coffee plantation commodities in 2010 contributed 23.21% (12,847 tonnes) to North Sumatra coffee (North Sumatra Plantation Statistics Data, 2012).

Payung sub-district has an area of 47.24 km^2. This district is located between 20 5 "north latitude and 970 55" which borders:

North : Tiganderket and Naman Teran sub-district
South : Munte sub-district
West : Tiganderket sub-district
East : Simpang Empat sub-district

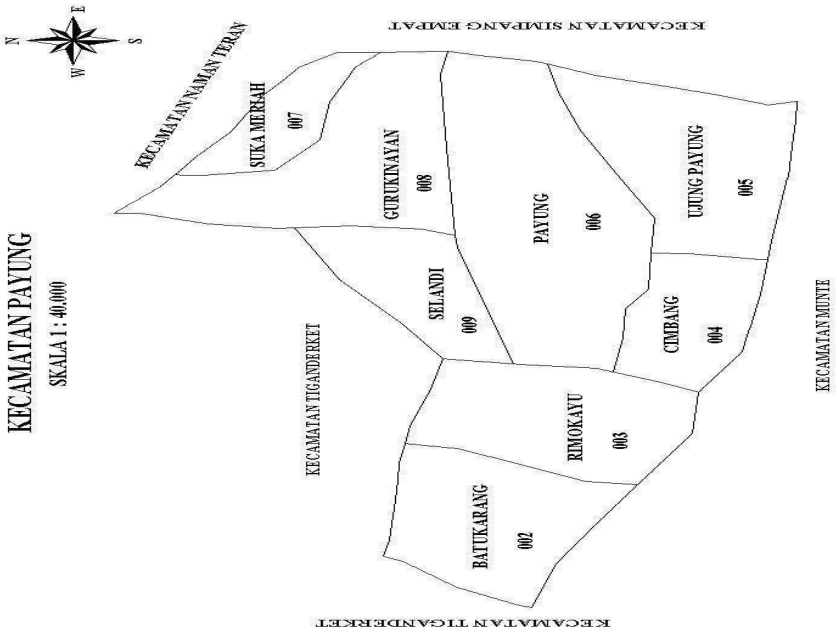

Figure 1. Map of the Payung Sub-district area

Payung sub-district has an area of 47.24 km² with a population of 12,224 people. Payung sub-district has 8 villages namely Batu Karang, Rimo Kayu, Cimbang, Ujung Payung, Payung, Suka Meriah, Guru Kinayan, and Selandi. The total area of Payung sub-district and the total population can be seen in Table 3 below.

Table 3: Payung Sub-district area

No	Village	Area (Km^2)	Total Population (person)
1	Batu Karang	13,70	5.467
2	Rimo Kayu	2,60	722
3	Cimbang	2,10	259
4	Ujung Payung	2,10	344
5	Payung	8,80	1.974
6	Suka Meriah	2,50	461
7	Guru Kinayan	11,30	2.271
8	Selandi	4,14	7.26
Total		47,24	12.224

Source: Central Bureau of Statistics, Payung Sub-district 2018

From Table 3 it is known that the area of Payung Sub-district is 47.24 km2, which consists of 8 villages, namely Batu Karang (13.70 Km2), Rimo Kayu (2.60 Km2), Cimbang (2.10 Km2), Ujung Payung (2, 10 Km2), Umbrella (8.80 Km2), Festive (2.50 Km2), Guru Kinayan (11.30 Km2), and Selandi (4.14 Km2).

Tabel 4: Workforce in the Sub-district of Payung

No	Sub-district	Farming	Home industry	Service	Civil Servants/ Military/Police	Other	Total
1	Batu Karang	2346	0	15	315	0	2676
2	Rimo Kayu	375	0	6	52	14	447
3	Cimbang	172	0	0	3	0	175
4	Ujung Payung	201	0	0	3	11	215
5	Payung	1173	0	2	26	0	1201
6	Suka Meriah	299	0	0	5	0	304
7	Guru Kinayan	1023	5	14	38	205	1285
8	Selandi	372	0	3	25	0	400
	Total	5961	5	40	467	230	6703

Source: Central Bureau of Statistics, Payung Sub-district 2018

From Table 4 it can be seen that out of 6703 people listed as productive, 5961 people are known to work in agricultural land (farmers), 5 people work in the domestic industries, 40 people work as service providers, 467 people work as Civil Servants/ Military/Police and 230 people work in other jobs. This shows that most Payung Subdistrict residents benefit from farming their household economy.

Table 5: Plantation in Payung Sub-district

No	Village	Planting area (Hectare)					
		Coconut	Cloves	Coffe	Chocolate	Candlenut	Tobaco
1	Batu Karang	5	45	66,89	6,03	3,33	28,40
2	Rimo Kayu	0	0	48,13	78,7	1,67	13,59
3	Cimbang	0	0	91,96	2,5	0,00	0,00
4	Ujung Payung	0	0	93,63	3,85	0,00	0,00
5	Payung	1	0	103,71	32,62	1,67	25,59
6	Suka Meriah	0	0	0,00	6,12	0,83	0,00
7	Guru Kinayan	0	0	0,00	33,35	0,83	41,19
8	Selandi	0	0	53,68	14,86	1,67	11,22
	Total	6	45	458,00	178	10	120,00

Source: Central Bureau of Statistics, Payung Sub-district 2018

Table 5 explains that of the six types of community plantation products in the Payung sub-district, namely coconut, cloves, coffee, chocolate, candlenut, and tobacco. The coffee plant is a plant that has the largest area, namely 458.00 Ha. This illustrates that coffee plants are mostly planted by farmers in Payung sub-district.

Table 6: Respondent Characteristics

Variabel	Category	Frequency	Precentage
Level of education	Primary school	4	12.69
	Secondary school	5	16.1
	High school	13	41.9
	Diploma	6	19.4
	Undergraduate	3	9.7
Usia	<20	2	6.5
	21-30	25	80.6
	31-40	-	-
	41-50	-	-
	>51	4	12.9
Pengalaman bertani	5-20	8	25.8
	21-36	21	67.7
	≥37	2	6.5
Tenaga kerja	1-2	6	19.4
	3-4	24	77.4
	>5	1	3.22
Luas lahan	< 1 ha	9	29
	1-3 ha	20	64.5
	>3 ha	2	6.5
Jumlah tanggungan keluarga	1-2	4	12.9
	3-4	10	32.3
	5-6	15	48.4
	>7	2	6.5

Source: Primary data processed, 2020

These findings can be concluded that it is the high school that distributes respondents according to the highest education level. This indicates that the level of education of the coffee farmers sampled in the study was already at the intermediate level, where the coffee farmers were able to understand the

development program for coffee farmers. Coffee farmers who are respondents are classified into productive age, where the productive age is 30-59 years. The distribution of respondents according to farming experience is mostly at intervals of 21-36 years, with 21 respondents or 67.7% of 31 respondents. As for the distribution of respondents according to farming experience, the lowest is at an interval of ≥ 37 years with 2 respondents or 6.5%.

At intervals of 3-4 people, with 24 respondents or 77.4% of 31 respondents, the distribution of respondents according to the largest number of employees is. In the meantime, the distribution of respondents by the lowest number of workers is at intervals of around five people of 1 or 3.2 percent of respondents. This shows that the amount of labor used in coffee farming is the work of the family, both the wife and the children of the farmer, this is done to save farmers' expenses because there is no need to provide wages for family labor.

It can be seen that the distribution of respondents is at intervals of 1-3 hectares according to the largest land area, with the number of respondents being as many as 20 or 64.5 percent of the 31 respondents. Whereas at intervals of ≥ 3 hectares with 2 respondents or 6.5%, the distribution of respondents according to the lowest land area is. This means that the coffee land area owned by coffee farmer

Distribution of respondents by the highest number of family dependents is 5-6 people at intervals of 15 respondents or 48.4 percent of 31 respondents. Whereas for the distribution of respondents by the number of family dependents, the lowest is 2 persons (6.5 percent) in the interval between ≥ 7 persons with the number of respondents. This shows that the bigger the number of families dependent the more dynamic a person is in doing business because it is driven by a sense of responsibility towards family members.

The Influence of Coffee Farmer Development on Economic Improvement

Table 7: Respondents' Responses to Coffee Farmer Development

No	Statement	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Score
		F	%	F	%	F	%	F	%	F	%	
1	Providing nursery techniques to me gave a lot of knowledge about good coffee seeds	31	100	0	0	0	0	0	0	0	0	155
2	The training given by the facilitator made me more skilled in coffee farming	31	100	0	0	0	0	0	0	0	0	155
3	The coffee planting technique helps me to achieve good coffee production	30	97	1	3	0	0	0	0	0	0	154
4	Procedures of coffee treatment allow me to better understand coffee growth	30	97	0	0	1	3	0	0	0	0	153
5	The knowledge to manage production gave me ideas to innovate	30	97	1	3	0	0	0	0	0	0	154
	Average											154,2

Source: Processed from primary data (questionnaire) 2020

Based on Table 7, it can be seen that all or 100% of the respondents stated that they strongly agreed that the nursery technique provision provided by the companion gave a lot of knowledge about good and high-quality coffee seeds. The response to the second statement, namely training, illustrated that 100% of the respondents strongly agreed that the training provided by the mentor made coffee farmers more skilled in coffee farming. Meanwhile, the responses to the third statement, namely coffee planting techniques, showed that 97% of respondents strongly agreed that good coffee planting techniques would help coffee farmers to achieve good and satisfying coffee production results and only 3% of respondents agreed.

In the fourth statement, namely coffee treatment techniques, it appears that 97% of respondents strongly agree and 3% of respondents say they are neutral if coffee treatment techniques are associated with understanding coffee growth. This means that in general, we can see that respondents can accept and strongly agree with the coffee treatment techniques provided by the companion based on the expertise of the coffee farmers.

The fifth statement is knowledge to manage production so that coffee farmers can maintain coffee prices. There are 97% of respondents who strongly agree and 3% of respondents agree with this and we can see that in general respondents can accept and strongly agree with the knowledge to manage coffee production in various forms such as cakes, ice cream, cappuccino, latte, and other.

Table 8:Respondents' Responses to Economic Improvement

No	Statement	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Score
		F	%	F	%	F	%	F	%	F	%	
1	The income from coffee farming allows me to support my family	30	97	1	3	0	0	0	0	0	0	154
2	The coffee harvest provided many opportunities for me to improve children's education	30	97	1	3	0	0	0	0	0	0	154
3	Working on the coffee farm doesn't take up my time in planting horticulture	30	97	1	3	0	0	0	0	0	0	154
4	A large number of workers in the farming business makes it easy for me	30	97	1	3	0	0	0	0	0	0	154
5	The increase in the amount of coffee produced each year has made me focus on coffee farming	31	100	0	0	0	0	0	0	0	0	154
6	I can manage coffee into a product that has a high selling price and is in demand by many people	30	97	1	3	0	0	0	0	0	0	154
	Average											154

Source: Processed from primary data (questionnaire) 2020

Based on Table 8, it can be concluded that, generally, the availability of adequate manpower to assist coffee farmers in their coffee farming promotes earnings growth not only for farmers but also for workers.

Table 9: Results of the Validity Test for the Development of Coffee Farmers and Economic Improvement Items

Variabel	Indicator	Corrected item-total correlation	Description
Coffee Farmer Development	X-1	0,452	Valid
	X-2	0,502	Valid
	X-3	0,681	Valid
	X-4	0,784	Valid
	X-5	0,865	Valid
Economic Improvement	Y-1	0,630	Valid
	Y-2	0,558	Valid
	Y-3	0,431	Valid
	Y-4	0,338	Valid
	Y-5	0,452	Valid
	Y-6	0,438	Valid

Source: Processed from primary data, 2020

Berdasarkan hasil pengujian validitas pada Tabel 9 diketahui seluruh butir pernyataan variabel pengembangan petani kopi menunjukan nilai lebih besar dari 0,237 dengan nilai terendah 0,338 dan nilai tertinggi 0,784. Dengan demikian keseluruhan butir pernyataan variabel di atas dinyatakan valid dan memenuhi syarat sebagai alat ukur variabel pengembangan petani kopi dan peningkatan perekonomian.

Tabel 10: Hasil Uji ReliabilitasVariabel Penelitian

Variabel	*Cronbach Alph*	Standar	Description
Coffee Farmer Development	0.781	0,60	Reliabel
Economic Improvement	0.960	0,60	Reliabel

Source: Processed from primary data, 2020

Based on the results of the reliability test on the coffee farmer development variable and the economic improvement variable, all of them show that the Cronbach alpha value is above 0.60. This result means the measuring instrument used meets the requirements and is reliable. In this case, if the reliability coefficient (alpha) is> 0.60, the variables and items being measured can be trusted or relied on (Sunyoto, 2007)

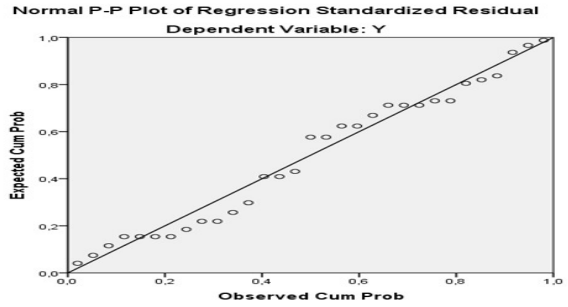

Figure 2. P-Plot Graph

It can be shown that a normal plot of points spreads around the diagonal line based on the P-Plot Graph, whose distribution follows the diagonal line's direction. The two diagrams demonstrate that it is possible to use the regression model since it meets the normality assumptions.

Table 11:Simple Linear Regression Equation Coefficient Analysis

Model	Unstandized Coeofficients		Standized Coefficients
	B	Std. Error	
Constan	8,245	3,414	
Coffee Farmer Development	0,861	0,141	0,750

Source: Processed from primary data, 2020

The simple regression equation formula is used to determine the effect of coffee farmer development on economic improvement in the Payung District by analyzing the regression coefficient. The results are as follows: regression constant: 8,245, coffee farmer development variable regression coefficient (X): 0.861. The results of the regression coefficient analysis are:

$$Y = 8,245 + 0,861X$$

This simple linear regression equation can be interpreted as follows:

a. The constant value is 8.245, which means that the economy of coffee farmers in the Payung sub-district is 8.245 units, so the assumption for the development of coffee farmers is constant
b. The coefficient of coffee farmer development regression (X) 0.861 states that every 1% of coffee farmer development will promote an economic increase of IDR 86.1 in the Payung Sub-district.

Table 12: Result of the coefficient of determination

Model	R	R Square	Adjust R Square	Std. Error of the Estimate
1	0,750	0,563	0,548	0,76369

Source: Processed from primary data, 2020

Based on Table 12 above, the R coefficient of 0.750 means that the development of coffee farmers has a close relationship with the improvement of the economy in the Payung Sub-district, while R^2 (coefficient of determination) is 0.563 or 56.3%. This means that the independent variable (X) has an influence on the dependent variable (Y). In other words, the development of coffee farmers affects the improvement of the economy in Payung District with an impact contribution of 56.3% while the remaining 43.7% is influenced by other variables such as the ease with which farmers obtain fertilizers, the growth of the ready-to-serve coffee industry and others.

Table 13:Regression Coefficient T-Test

Model	Unstandized Coeofficients		Standized Coefficients	t	Sig.
	B	Std. Error			
Constan	8,245	3,414		2,415	,022
Coffee Farmer Development	0,861	0,141	0,750	6,113	2,699

Source: Processed from primary data, 2020

Based on Table 13, it can be seen that the results of the hypothesis test through the t-test state that whether there is an influence of X on Y which can be interpreted based on statistical calculations where t count (6,113) where t table is n-2 at a significance level of 0.05, namely 2,699. Where $t_{statisic}$ (6,113) > t_{table} (2,699). The development of coffee farmers has a significant and positive effect on improving the economy in Payung Sub-district, so H_a is accepted.

V. DISCUSSION

The production of coffee farmers has a very important role to play in advancing the people's economy in the process of regional development in the Karo Regency, especially the Payung Sub-district. The development program for coffee farmers in the Payung District is a regional development strategy where changes in the economic system and social structures caused by the eruption of Mount Sinabung have occurred, they must be overcome by providing coffee farmers with training and expertise to solve the problems faced after the eruption of Mount Sinabung. Various efforts and training provided to coffee farmers would be able to improve the economy of the people towards effective and sustainable prosperity.

The development program for coffee farmers makes a significant contribution to the improvement of the Karo regency economy, especially the Payung sub-district, as this region has a natural resource base with a broad and fertile agricultural sector. Similarly, one of the sub-sectors experiencing the most consistent growth, both in terms of area and production, is the coffee plantation sub-sector. The effects of coffee farming, as one of the main sub-sectors in the agricultural sector, contribute significantly to income, job development, and product productivity.

There's a great opportunity to grow coffee farmers as a generator of the regional economy, particularly for coffee production centers such as Karo. This opportunity is growing, especially after several coffee business organizations are set up to accommodate the products of coffee farmers so that they can improve the economy of the community, in particular coffee farmers in Payung Sub-district. Rizani (2017) said that two main factors need to be considered in identifying the potential for regional economic activity, namely superior economic sector factors that have competitiveness in recent years and economic sectors that have the potential to be

developed in the future. In this case, Payung Sub-district has two potential factors for economic activity, namely the extent of coffee fields and the availability of experienced coffee farmers.

Based on the questionnaire distributed to coffee farmers in Payung Sub-district, it is known that the independent variable (X) is the development of coffee farmers with items of nursery techniques, training and teaching, maintenance, and the production process has a significant and partially positive effect on improving the economy in Payung District. With R square of 0.563 (56.3%) and the simple regression equation is Y = 8,245 + 0,861X. Earlier research also concluded that the findings of their research showed that the cost of land, labor, and pesticides partially had a significant and positive impact on the income of coffee farmers (Ammar, 2019). It was found, however, that the R square was 0.563 (56.3%) while the remaining 43.7% was affected by other factors, such as the ease with which farmers obtained fertilizers, the growth of the ready-to-eat coffee industry, and others..

VI. CONCLUSION

The development of coffee farmers has a significant and positive effect on improving the economy in Payung Sub-district.

REFERENCE

[1] Albina, G, Nainggolan, H, Ginting, M. 2018. Analisis Efesiensi dan Identifikasi Faktor Sosial, Ekonomi dan Teknis yang Mempengaruhi Konversi Usahatani Jeruk ke Usahatani Kopi di Kecamatan Barusjahe Kabupaten Karo. Jurnal AGRIFO, Vol. 3, No. 1. April 2018. Medan. Universitas HKBP Nommensen

[2] Ginting, E, Afifuddin, S, Rahmanta. 2014. Pengaruh Program Pengembangan Infrastruktur Sosial Ekonomi Wilayah (Pisew) terhadap Pengembangan Wilayah di Kecamatan Naman Teran Kabupaten Karo. Jurnal Pasca Sarjana PWD, Vol 17, No 4, Oktober 2014. Medan.Universitas Sumatera Utara.

[3] Herawaty, R. 2018. Analisis Sektor Ekonomi Potensial dalam Pembangunan Wilayah Kabupaten Karo. Jurnal Konsep Bisnis dan Managemen, Vol 5, No.39, November 2018. Medan. Fungsional Statistis BPS Provinsi Sumatera Utara.

[4] ----------2018. Badan Pusat Statistik Kabupaten Karo. Medan. E' Karya.

[5] ----------2018. Badan Pusat Statistik Kecamatan Payung. Medan. E'Karya.

[6] Jayadinata, J. 1999. Tata Guna Tanah dalam Perencanaan Pedesaan Perkotaan dan Wilayah. Bandung. Institute Teknologi Bandung.

[7] Junaidi, Y, Yamin, M. 2010. Faktor-faktor yang Mempengaruhi Pola Usahatani Diversifikasi dan Hubungannya dengan Pendapatan Usahatani Kopi di Sumatera Selatan. Pembangunan Manusia (4) : 1-9.

[8] Nugroho, I, Dahuri, R. 2004. Pembangunan Wilayah: Perspektif Ekonomi, Social, dan Lingkungan. Jakarta. Pustaka LP3ES.

[9] Saragih JR. 2011. Kopi dan Pengembangan Wilayah. http://www.analisadaily.com/newsead/2011/06/06/2856/kopi_dan_pengemban gan_wilayah/#.UQ46avL_mSp. [15 Juni 2011].

[10] Sembiring, A, Sitanggang, D, Purnasari, N, Budiman, I. Peningkatan Kesejahteraan Petani Kopi melalui Pengolahan Pasca Panen Di Desa Lingga Kabupaten Karo, dalam wahana Inovasi Universitas Prima Indonesia, Vol 8, No.2, Juli 2019. Medan. Universitas Prima Indonesia

[11] Sugiyono, 2017. Metode Penelitian Kuantitatif, Kualitaif. Bandung. Alfabeta.

[12] Sumaryanto, B, Sudaryanto. 2009. Perubahan Pendapatan Rumah Tangga Perdesaan: Analisis Data Patanas Tahun 1995 dan 2007. Prosiding Seminar Nasional Dinamika Pembangunan Pertanian dan Perdesaan: Tantangan dan Peluang bagi Peningkatan Kesejahteraan Petani. Pusat Analisis Sosial Ekonomi dan Kebijakan Pertanian. Bogor.

[13] Syamsul, M. 2005. Model-Model Kuantitatif Untuk Perencanaan Pembangunan Ekonomi Daerah: Konsep dan Aplikasi. Bogor. IPB Press.

[14] Syatori, T, Ghozali, N. 2012. Metode Penelitian Kuantitatif. Bandung. Pustaka Setia.

[15] Zulkarnain, B. 2003. Membangun Ekonomi Rakyat : Persepsi Tentang Pemberdayaan Ekonomi Rakyat. Yogyakarta. Adicita Karya Nusa.