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DEVELOPMENT OF AGRICULTURE SECTOR IN POVERTY REDUCTION IN EAST JAVA

(Study of GKS Plus-GERBANGKERTASUSILA Plus Period 2010-2017)

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ABSTRACT

Gerbangkertasusila Plus (GKS Plus). The Government sees the need for a new support area of GKS PLUS to increase the carrying capacity of the core city. The purpose of this research is to realize the idea of Spatial Information System in East Java. The method used in this research is the regression model that will be estimated. The data used in this research is panel data of 2010-2017 period based on GKS Plus area of Surabaya City to regency / city of Gresik, Bangkalan, Mojokerto, Sidoarjo, Lamongan, Bojonegoro, Tuban, Jombang and Pasuruan. The results showed that the area of land, labor and irrigation have a positive impact on poverty. It shows that the agricultural sector provides very small value added, thus affecting the increase of poverty in Gerbangkertasusila Plus (GKS Plus).

Keyword : Land Area, Labor, Irrigation, Poverty, Gerbangkertasusila.

INTRODUCTION

The rapid development, which includes the population and economy, from the metropolitan urban area of Gerbangkertosusila Plus (GKS Plus), there are various discourses to develop its own territory into the Special Area of Metro Surabaya, on the same level as the province and separated from the East Java Province, by a governor. This separation aims to reduce the gap between Gerbangkertosusilo and other areas in East Java, especially supported by the Suramadu Bridge connecting Surabaya with Bangkalan (Madura), more and more parties want the metropolitan area of Gerbangkertosusila as their own province immediately. However, this discourse is still a lot of debate, especially among the East Java people's representative council, because there has never been in-depth and accurate research in the field of socio-economic and societies that require enormous funds. So, Palde Karwo as governor of East Java period 2009 - 2014 considers division of the region has no strong reason and will only increase the burden of the people for government expenses alone.

In drafting the spatial plan (RTR), the government gets help from the Japanese government through JICA Study Team K. led

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by Nagayama. At the meeting to prepare spatial planning Gerbangkertosusila Deputy Head of Bappenas regional development and regional autonomy, Max Pohan, suggests how important to do the role and function distribution of satellite cities in Gerbangkertosusila Area and need to be made a green belt between the core city of Surabaya with the city - its satellite city. This is very important in order to prevent conurbation as it is now happening in Jabodetabek. In performing the division of roles and functions, the government is still trying to pay attention to the conformity of Gerbangkertosusila Area with provinces / districts / municipalities that existed the region, especially those that have been considered, as well as institutional issues. As well as Surabaya which has become a business center, trade, industry, education area of East Indonesia and have referral hospitals of dr. Soetomo

Now, in response to changes, developments and demands of the times, make the government began to think again the ability of Gerbangkertosusila region in fulfilling the tasks that aims equitable development among regions, especially in East Java and generally Eastern Indonesia. In order to increase the capability of the region, in 2011, the government is in the process of initiating Gerbangkertasusila Plus (GKS Plus). The Government considers the need for new support areas that is GKS PLUS in order to increase the carrying capacity or support the needs of the core city. In an effort to realize this idea, the process of this idea has been published by East Java Spatial Information System. (Wikipedia, 2017).

Land makes an important means in the agricultural sector both intensification and extensification of agricultural management. The problem of land use experts becomes an issue that currently exists. The large number of agricultural land that has been transformed into a service or residential sector has created a new problem for the government: reduced production and poverty (Subroto et al. 2016). According to Fahimuddin, et.al .2016 The results showed that from the total area of 29,313.96 ha Baubau City, the physical carrying capacity of the land is relatively good, where 21,890.80 ha (74.68%) is suitable and 7,423.13 ha (25.32%) is not appropriate, while economically feasible to do. live Rp8.750.000 per year, meet the carrying capacity of 442,083 people or 3.1 times the total population of Baubau City. This study recommends that land management in Baubau city should be directed to control the land being built and the protection of agricultural land and forestry.

The agricultural sector is a sector that rides the number of East Java labor in the area of GKS Plus. The abundance of manpower absorbed in the agricultural sector makes its own problems for the GKS plus which makes the social and cultural economy in the region of East Java. The existence of a new phenomenon according to Susilowati, 2016 with the results of his research shows that in general the phenomenon of aging of farmers and the decrease of young farmers in Indonesia is increasing. Conditions like this not only happen in Indonesia, but also in

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other countries in Asia, Europe, and America. Various factors contributing to the declining interest of young workers in the agricultural sector, among others the image of the less prestigious agricultural sector, high risk, lack of guarantee level, stability, and continuity of income; average of narrow land tenure; diversification of non-agricultural and agricultural industries in rural / underdeveloped villages; succession of low farm management; there is no specific incentive policy for young farmers / beginners; and changing the way youth view in today's postmodern era. Strategies that need to be done to attract youth to work on agriculture include changing the perception of the young generation that the agricultural sector is an interesting and promising sector if managed diligently and earnestly. This also poses a major problem for the agricultural sector, where there is a problem of the number of productive farmers who continue to decline in East Java. According to Adhitya, et al, 2013 explains the labor factor and the use of fertilizers does not give a significant effect to the productivity of agricultural land of food crop sub-sector, while capital factor, agricultural research and development, human resource quality, and irrigation give positive effect to the productivity of land agriculture sub-sector of food crops. Java is also known as the region with the highest productivity level and Maluku has the lowest productivity level.

Good irrigation makes something important in the creation of good agricultural products in the GKS Plus area. Infrastructure that is done both in the construction of roads or waterways make it mandatory for the government to be a good agricultural development program in the GKS plus area. According to Hutauruk (1996) research which confirms that the policy of increasing irrigation area will increase domestic production and impact on the decrease of rice import. Also supported by the results of research Sitepu (2002) which says that the increase of irrigation area will increase the number of grain production and farmer income.

According to Septiadi, et al. 2016, Poverty in Indonesia is affected by economic growth, government spending on infrastructure, and per capita income of Indonesians with opposite signs. The variables of fuel price (premium), inflation, the amount of rice imports, the price of Indonesian retail rice and the poverty of the previous year had a positive impact on poverty in Indonesia. This makes the picture that factors supporting agricultural sector poverty can be seen from the area of land, the number of labor and also irrigation. Poverty alleviation is a serious problem and should be reduced in the agricultural sector. The difference is what makes the author base to create a new picture in the agricultural problem in the area of GKS Plus in East Java.

MATERIAL AND METHOD

The method used in this research is econometric analysis model there are 4 regression models that will be estimated. This study uses panel data from 2010 to 2017, GKS Plus (Gerbangkertasusila Plus) area of Surabaya City to the districts of Gresik,

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Bangkalan, Mojokerto, Sidoarjo, Lamongan, Bojonegoro, Tuban, Jombang and Pasuruan. The panel data model for each regression technique is as follows (Gujarati, 2003):

a. Pooled Least Square

$$Y_{it} = \beta_1 + \beta_2 + \beta_3 X_{3it} + \ldots + \beta_n X_{nit} + u_{it} \quad (1)$$

b. Fixed Effect

$$Y_{it} = \alpha_1 + \alpha_2 D_2 + \ldots + \alpha_n D_n + \beta_2 X_{2it} + \ldots + \beta_n X_{nit} + u_{it} \quad (2)$$

c. Random Effect

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \ldots + \beta_n X_{nit} + \varepsilon_{it} + u_{it} \quad (3)$$

From function (1) it can be modified into linear model by using log is as follows:

$$PRV = x_0 + x_1 LogLDN + x_2 LogLBR + x_3 LogIRG ++ \varepsilon_1 \quad (4)$$

Where: PRV = Number of Poor People (Individuals), LDN = Area of Agricultural Land, LBR = Total Labor Agricultural Sector, IRG = Irrigation in the agricultural sector

RESULT AND DISCUSSION

Simultaneous Test Results (F-statistics)

The simultaneous test results (F-test), is intended to test the effect of independent variables together on the dependent variable. The simultaneous statistical test results (F-test) of Land Area (LAND), Total Labor (LABOR), and Irrigation (IRRIGATION) to poverty (PROVERTY) variables in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017 can be seen in the table below.

Table 1
Statistical Test Result Panel Data Using Common Effect Model

R-squared	0.413658	Mean dependent var	174117.7
Adjusted R-squared	0.390513	S.D. dependent var	34607.31
S.E. of regression	27017.80	Akaike info criterion	23.29509
Sum squared resid	5.55E+10	Schwarz criterion	23.41419
Log likelihood	-927.8034	Hannan-Quinn criter.	23.34284
F-statistic	17.87242	Durbin-Watson stat	0.090129

Based on the table 1, it is known that the F- value is equal to 17.87242, greater than the F-table 2.49 with 99% confidence level, or 1% error rate (α = 0.01). This means showing that simultaneously the independent variables; Land Area (LAND), Total Labor (LABOR), and Irrigation (IRRIGATION) on poverty (PROVERTY) in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017

Partial Test Results (t-test)

Partial test is also called the test of significance (test of significance), which is used to determine the influence of each independent variable to the dependent variable. The result of the t-count value of each independent variable is presented in the table below.

a. The LAND variable P-value value of 0.0000 is still smaller when compared to the error rate of 0.01. Thus the variable of Land Area (LAND) partially has a significant effect on poverty

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(PROVERTY) in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017.

b. The LABOR variable P-value value of 0.0002 is still smaller when compared to the error rate of 0.01. Thus the variable Number of Labor (LABOR) partially has a significant effect on poverty (PROVERTY) in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017.
c. The value of P-value of the IRRIGATION variable of 0.0000 is still smaller when compared to the error rate of 0.01. Thus Irrational variables (IRRIGATION) partially have a significant effect on poverty (PROVERTY) in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017.

1. Effect of Land Area (LAND) on poverty (PROVERTY) in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017.

Table 2
Panel Data Statistical Test Results Using Common Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	68826.56	18109.61	3.800554	0.0003
LAND	0.837094	0.164252	5.096410	0.0000
LABOR	0.031747	0.007986	3.975532	0.0002
IRRIGATION	0.875090	0.157917	5.541460	0.0000

The regression coefficient of Land Area (LAND) is 0.837094. The LAND variable coefficient value is positive (+), so that every increase of Land Area (LAND) will positively influence to the increase of poverty (PROVERTY) in GERBANGKERTASUSILA Plus in the research period. This indicates that if Land Area (LAND) increase 1%, then poverty (PROVERTY) will increase also equal to 83,7094%. The effect of Land Expenditure (LAND) on poverty (PROVERTY) is significant at 99% confidence level (α = 0.01).

Increasing land area makes a positive impact on poverty, this is not separated because the agricultural sector makes the main factor in the absorption of labor but if the agricultural land plus also make the level of poverty that increases because the source of income per capital society in this sector is very small so it can affect increased poverty in GERBANGKERTASUSILA Plus. Subroto, et.al.2016 describes land to be an important means in the agricultural sector both in intensification and extensification of agricultural management. The problem of land use experts becomes an issue that currently exists. The abundance of agricultural land that is transformed into a service or residential sector makes a new problem for the government of reduced production and increased poverty.

2. The Effect of Number of Workers (LABOR) on poverty (PROVERTY) in GKS Plus

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GERBANGKERTASUSILA Plus Period 2010-2017.

The regression coefficient of variable Labor Amount (LABOR) is 0.031747. The LABOR variable coefficient value is positive (+), so any increase of Labor Amount (LABOR) will positively influence to the increase of poverty (PROVERTY) in GERBANGKERTASUSILA Plus in the research period. This indicates that when Land Area (LAND) increased 1%, then poverty (PROVERTY) will also increase by 3.1747%. The influence of spending of Labor (LABOR) on poverty (PROVERTY) is significant at 99% confidence level (α = 0.01).

The results of this study are different from the research of Adhitya, et al., 2013 that labor factor and fertilizer use do not give significant effect to productivity of agricultural land of food crop sub-sector; while capital factor, agricultural research and development, human resource quality, and irrigation give positive effect to productivity of agricultural land of food crop sub-sector. Java is also known as the region with the highest productivity level and Maluku has the lowest productivity level. The existence of a significant and positive influence illustrates that labor greatly affects poverty, because if a large workforce then the amount of poverty will increase. this is due in the region GERBANGKERTASUSILA Plus high population, but inversely with the field of business in the agricultural sector is reduced or a little growth.

3. Effect of Irrigation (IRRIGATION) on poverty (PROVERTY) in GKS Plus GERBANGKERTASUSILA Plus Period 2010-2017.

Irrigation variable regression coefficient (IRRIGATION) is equal to 0.875090. The value of the IRRIGATION variable coefficient is positive (+), so that any irrigation increase (IRRIGATION) will positively affect the increase of poverty (PROVERTY) in GERBANGKERTASUSILA Plus in the study period. This indicates that if Land Area (LAND) increased 1%, then poverty (PROVERTY) will also increase by 87,5090%. The influence of expenditure of IRRIGATION on poverty (PROVERTY) is significant at 99% confidence level (α = 0.01).

Research Hutauruk (1996) which asserts that the policy of increasing irrigation area will increase domestic production and impact on the decrease of rice imports. Also supported by the results of research Sitepu (2002) which says that the increase of irrigation area will increase the number of grain production and farmer income. Broadly speaking, agriculture is very dependent on the irrigation of GKS Plus area to make irrigation variables become important enough in the agricultural sector either directly impact (productivity) of agriculture or not directly reducing poverty.

CONCLUSION

1. Increasing land area makes a positive impact on poverty, this is not separated because the agricultural sector makes the main factor in the absorption of labor but if the agricultural land plus also makes the level of poverty that increases because the source of income per capital society in this

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sector is so small that can affect the increase in poverty in GERBANGKERTASUSILA Plus.

2. There is a significant and positive influence that the labor force greatly affects poverty, because if the labor force is large then the amount of poverty will increase. this is due in the region GERBANGKERTASUSILA Plus a high population, but inversely proportional to the field of business in the agricultural sector is reduced or less growth.
3. Broadly, agriculture is very dependent on the irrigation of GKS Plus area to make irrigation variables become important enough in the agricultural sector either directly impact (productivity) of agriculture or not directly reducing poverty.

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