

# The Poverty Of Rural And Role And Development Of Agricultural Sector In East Java

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## ABSTRACT

Agricultural activities mostly rely on rural area, unfortunately the poverty rate in rural areas is still quite high in the period 2010-2016. The number of poverty is 15.26% - 11.77%. Although the poverty rate decreases but is still higher than in the city that is around 10.58% -7.87% (in the same period). The objectives of this study are (1) to estimate the role of the agricultural sector on regional performance and (2) to describe qualitatively the relationship of the agricultural sector to poverty. The research uses Input Output (IO) method with non-survey technique. The data used for the analysis are IO data of 2006 and 2015 originated from Badan Pusat Statistik (BPS) Indonesia. The analysis shows that the role of agriculture sector in terms of demand and supply is still small in the economic development of East Java. On average, the role is still very small compare to the industrial sector and other sectors. Furthermore, poverty still accumulates in rural areas, where rural areas have a high association with the agricultural sector. This shows that the agricultural sector has no strong interconnectedness and connection with the industrial sector. Thus the industry has not relied strongly on the agricultural sector in East Java. This is one reason why poverty is high in rural East Java.

**Keywords:** Poverty, agriculture, rural, economy

## INTRODUCTION

East Java is one of the areas in Indonesia that provides small spillover spawns to other regions but has a spillover impact on economic development in other parts of Indonesia. Despite of that, the influence of feedback from the results of economic interaction is considerable. This shows that economic agglomeration has a double economic effect in East Java. Not only East Java gains an abundance of economic growth, but also gains considerable feedback from other regions (Arman et al, 2016). Furthermore, agglomeration is getting stronger in East Java which is characterized by 13% -14% economic contributions to national.

Agglomeration in East Java is getting stronger because the region has a larger variety of products. Countries or regions that have a very large variety of products have very low or zero trade costs. This is why the price index of goods is so low that it promotes high competitiveness of goods. On the other hand, agglomeration tend to increase the value of wages higher. Such situation leads to large numbers of migrations within a region or country (Krugman and Venables 1995).

There are at least two fundamental theories that can lead to international trade and inter-regional trade. They are comparative advantage and increasing return. Comparative advantage causes trade across geographic units to take advantage of the unique differences in each region or country. Increasing return occurs to gain profits due to specialization (Davis and Weinstein, 1997).

Unfortunately, Comparative Advantage in East Java has not been accompanied by the strong agricultural sector. The agricultural sector is relatively stagnant in terms of productivity along 2012-2016. The area of harvested rice increase from 1.8 Ha-2.02 Ha in 2012-2016 but not accompanied by increased productivity where productivity in vulnerable of the year is relatively stagnant, 62.55-62.15 Ton/Ha. The area of harvested corn decreases from 1.23 Ha-1.21 Ha, where the productivity is relatively stagnant, 50-51 Ton/Ha. In general, the production of harvested area and production of plantation crops such as tobacco, coffee, tea, cocoa and rubber crops have increased but still lack of productivity. (BPS, 2013 and BPS, 2016a)

The low agricultural productivity can delay the development of industrialization. This condition can lead low per capita income. Therefore, increasing agricultural productivity can accelerate the industrialization process as the result it gives positive influence on per capita income of a country. Thus, the increase in productivity becomes a key policy to strengthen the economy of a country (Gollin at.al, 2007).

This is the phenomenon in East Java, where the contribution of national income is highest but the number of rural poverty is very high (BPS, 2016b). This is because the synergies and linkages between the agricultural sector and industry have not gone well. This is because industrialization and agglomeration do not seem to be related to one another, causing the agricultural sector not to become the mainstay of industry and agglomeration. Agricultural products are expected to be distributed directly to domestic demand and exported as raw materials. As a result, the growth of the agricultural sector and the contribution of the agricultural sector to the national income have not had much effect on rural poverty.

Agricultural growth has the hope in reducing poverty. This could have a bigger impact if the productivity of labour is so much greater that it affects poverty. The agricultural sector has the ability to generate jobs and stimulate rural economic activity (Irz et al, 2001).

Furthermore, rural infrastructure and education play an important role in explaining differences in non-agricultural productivity rather than rural agricultural production. This is because rural non-farming economies are the determinants of rural incomes. Rural infrastructure is the key to increasing the income of rural communities. Furthermore, low productivity in rural areas is triggered by low infrastructure, education and science and technology development (Shenggen and Zhang, 2004).

Technological changes can have direct and indirect effects. The immediate effect is the increase in farmer's income while the indirect effect is the fall in prices. When rural households have multiple sources of income, they will have a large impact on income. Application of good technology can encourage better exports. This can supplement the income of rural households. Ultimately technological change has a broad influence on other income, in addition to farm households (De Janvry and Sadoulet, 2002).

The importance of improving the education and skills of farm households are the key in Ghana. The cheaper farmers' wage has a strong relationship with efficiency. Furthermore, education investment in rural area should be considered in the framework of increasing agricultural productivity. This effort can improve economic efficiency (Abdulai, and Huffman, 2000).

Furthermore, agriculture is not only seen as cultivation and production but there are other elements such as environment. Agriculture requires a Multifunctional Agriculture (MFA) approach. The MFA affirms that agriculture has a role not only to produce food and food fibre

producers, but also the management of renewable natural resources, landscape conversion, biodiversity and contribution to economic and social sustainability of the region. Therefore there are several things that need to be paid attention to implement MFA that is market regulation, land-use approach, oriented and actor-based approach and public regulation approach. (Renting et.al, 2008).

Thus, policy changes are required in addressing rural poverty in East Java. One of the steps that needs to be taken is to strengthen the linkage, alignment, harmony between industries and agriculture. Strengthening industry must be sourced and based on agriculture. These structural changes should be contained in government policy and budget allocations.

Several cases in East and Southeast Asia indicate a process of structural change in the national economy and relationships with microeconomics with rural economies providing a unique and superior agricultural role in agricultural development and poverty reduction. Rural growth is most effective in simulating poverty reduction (Dorward et al. 2004).

Furthermore, the government needs to regulate spatially to facilitate the evaluation of land use patterns. Spatial-based policies is easier to control and use of agricultural space. The result is that the government knows in general the utilization of areas for agriculture cultivation following types of commodities. This makes the government easier to formulate regional agricultural policy (Berger, 2001).

Research is expected to provide a quantitative and qualitative description of agricultural developments in East Java. Also, able to provide a description of how the development of agriculture sector with poverty in the countryside. Furthermore, this research is expected to provide policy recommendations for the government in addressing rural poverty.

### RESEARCH METHODS

This research uses quantitative analysis technique with input output method (IO) and description analysis. IO is one linear analysis that aims to estimate the role of each sector in a region. There are 3 things that make Table IO. They are: (1) final demand, (2) primary input and (3) total output (Miller and Blair, 2009). The formula for estimating the added value is the Leonif matrix i.e;

$$[I - A]^{-1}Y = X \quad (4)$$

Furthermore, the analysis uses to determine the average level of the role and development of the agricultural sector is the Backward Linkage Index (IBL) and the Forward Linkage Index (IFL). This analysis aims to find out how the average development of agricultural output in the region of East Java. Furthermore, description analysis is needed to compare and qualitatively compare the roles of agriculture and poverty in rural areas. Pairing is sourced from the Central Bureau of Statistics (BPS) as the official data provider Indonesia. This comparison aims to examine qualitatively the development of industries with poverty conditions in East Java. Indeed the progress of an industry in a region gives a positive effect on the basic input, in this case the agricultural sector. But some conditions show that the industrial sector is still "running alone"

### RESULTS AND DISCUSSION

The results and discussion show that the agricultural sector has a pretty good influence in terms of demand and supply. This reflects in the value of backward linkage (bl) and forward linkage (fl) more than 1. In general this shows good results in the development of the

agricultural sector in general to regional development. Detailed results of the IO analysis are presented in Table 1.

**Table 1. Estimation results of agricultural developments in 2006 and 2015.**

Sector	2006		2015		2006		2015	
	FL	BL	FL	BL	AFL	ABL	AFL	ABL
Rice	2.94	1.32	1.30	2.15	1.88	0.84	0.99	1.64
Corn	1.37	1.33	1.24	1.84	0.88	0.85	0.95	1.40
Soy	1.02	1.35	1.25	1.09	0.65	0.87	0.96	0.83
Other Food Plants	1.30	1.25	1.23	1.55	0.83	0.80	0.94	1.18
Cane	1.79	1.35	1.35	1.19	1.15	0.87	1.03	0.91
Tobacco	1.03	1.39	1.20	1.59	0.66	0.89	0.92	1.21
Coconut	1.54	1.10	1.11	1.03	0.99	0.71	0.85	0.78
Coffee	1.16	1.11	1.23	1.04	0.74	0.71	0.94	0.79
Tea	1.01	1.17	1.16	1.00	0.65	0.75	0.88	0.76
Cacao	1.08	1.11	1.19	1.04	0.69	0.71	0.91	0.80
Rubber	1.15	1.11	1.17	1.18	0.74	0.71	0.89	0.90

**Source: East Java IO data 2006 and 2015 after being processed**

Description: FL (Forward Linkage), BL (Backward Linkage), AFL (Average Forward Linkage) and ABL (Average Backward Linkage).

Although there are some sectors that go up in value added but there are some sectors whose value is down. But overall the results look quite good in terms of added value. The problem is that if the value added is averaged by all sectors in East Java, the average value of the agricultural sector is smaller than 1. There are only 4 sectors that have average value from the demand side whose value has a value of more than 1 is the sector rice, corn, other food crops and the tobacco sector. Meanwhile, the average value of the production side of all sectors is entirely smaller than 1.

This result is not so good for the effects of overall agricultural activity and will also have an impact on the agricultural sector in the village better known as the main agricultural support area. Some possibilities that cause the agricultural sector has not been able to positively affect the development of the region is due to the productivity of some agricultural sectors are relatively constant and unchanged, although in terms of production increased due to expansion of cultivated land. This relatively constant productivity is driven by the low level of technology and innovation at the village level. The education and skills of the farmers that are still low could be the cause of agricultural productivity that has not changed much. If this condition stays long, the hope of reducing village poverty is constrained (Irz et al, 2001). This is one of the reasons why the number of rural poverty, especially in East Java, is much higher than in urban poverty.

An interesting part of the results of this research is the rice, corn, other food crops and tobacco sector has a value of backward linkage index of more than 1. This shows that the sector has an influence on various sectors follow. These results can be stated that the agricultural sector still contributes very well to some other sectors that have direct and indirect linkage with the agricultural sector. This indicates that the role of the agricultural sector is significant to strengthen other sectors.

Unfortunately, the average contribution of the agricultural sector and low productivity can delay the development of industry (Gollin at.al, 2007). The delay is due to the interdependence

of the production process from the raw material sector to the management sector. The breakdown of the linkage causes the economic tobacco in the agricultural sector becomes weak. This is one factor in the higher poverty rate in rural areas. On the other hand, the role of the agricultural sector is still very strategic because some industries need raw materials as the basic input of management.

Furthermore, the absence of linkages and adaptability between basic industries and the agro-industry encourages the value of agricultural production to be lower. This is why the average agricultural output is lower with the industrial sector. Thus the agricultural sector as a whole has an enormous influence on economic healing and income in the countryside. If the number of poor people in rural areas is very high, it means there has been a problem in the agricultural sector. This problem comes because agricultural productivity is still relatively constant, skills and education as well as the influence of infrastructure. Furthermore, there is no strong link between agricultural and industrial sectors.

The government needs to develop policy regulation, especially in the field of science and technology application to support the agricultural sector and the relationship of agriculture sector with the industrial sector. Agglomeration that has been going on in East Java does not make agriculture stronger. Government policies need to put strong pressure on industries to support the development and productivity of the regional agricultural sector in order to become the fundamental power of both sectors.

Furthermore, the government needs to develop regulations so that the private role is expanded to support the agricultural sector. Such roles are to work in groups with village farmer groups with industry. This cooperation is to ensure the linkage of economic activity from rural to city and from agriculture to industry.

The government needs to improve research in the field of agricultural science and technology. The dissemination of education and training to farm households still needs to be improved even though the digital era has been massive. Furthermore, the government needs to make fundamental protection on agricultural products that range invaded by imported products through legislation.

Agriculture is not only a commodity but agriculture also has another role besides that, as the management of renewable resources, preserving biodiversity, landscape conversion and maintaining the socio-economic viability of a region. Therefore, agricultural activities are not only rely on the efficiency and productivity of farming but also must consider as an activity that has a role in maintaining biodiversity and the environment. Agricultural activities require an innovation so that agricultural products can be used as renewable energy to meet regional and national energy needs. Utilization of agriculture as a renewable energy source can have an impact on environmental conservation. Furthermore, the management of agricultural products for energy needs can provide economic added value to farm households.

The role of agriculture as multi-functional will greatly affect the income of rural households and the sustainability of the environment as well as non-destructive resources. In other words, agricultural business not only serves to provide food but also able to support industrial needs, energy independence, biodiversity and environmental sustainability in a sustainable manner. This can only be realized purchasing government provides support in the form of regulation and budget. Local and national governments have had to build strong infrastructure, innovation technology and skilled human resources in the agricultural sector. Planning for the development of the agricultural sector will give a great change for the poor population.

Furthermore, agriculture has become a strategic sector for regional and national development, especially in East Java.

### CONCLUSION

Based on the estimation results, it indicates that the role of the agricultural sector on average is still very small compared to the industrial sector and other sectors. This reflected the average value of ABL and AFL mostly smaller than one. The agricultural sector has no strong industry linkages. In other words, the industry has yet to rely heavily on the agricultural sector in East Java. On the other hand, the activities in some agricultural sectors are relatively changed a little, especially in terms of productivity. Although production increases due to expansion factor of cultivation area but productivity has not changed much in certain commodity.

Furthermore, poverty still accumulates in rural areas, where rural areas have a high association with the agricultural sector. The economic linkage between agricultural sector and the weak industrial sector causes the influence of household opinion of farmers. Indeed the industry must rely on the agricultural sector so that both sectors can grow together. However, the industrial sector is still "self-driven". This is one of the reasons why the number of poor people is very high in rural areas compared to urban areas in East Java. The government has already made regulations for the industrial sector to rely on the agricultural sector in rural areas. Furthermore, the government should expand the agricultural sector through a multi-functional approach. The agricultural sector is not only an activity of producing food commodities but producing renewable energy sources, supporting industrial activities, guarding biodiversity and environmental sustainability.

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