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## **Role of Institutional Factor to Increasing Revenue of Recipients Rural Agribusiness Development Program (PUAP) in Swamp Land South Sumatra**

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### **Abstract:**

*The broad objective of community empowerment programs is to eradicate poverty. In general, the image of the poor lives in rural areas and mostly farmers. Similarly, the farmers in South Sumatra province which mostly managed wetlands as their livelihood are poor, especially in the districts of Ogan Ilir (OI) and Ogan Komering Ilir (OKI). In fact, the targets of programs which have been done by the government in order to improve the economic development of rural communities mostly were not achieved; therefore, the programs were not unsustainable. The solution proposed to solve the above problem is to improve institutional capacity building of farmers and farmer groups aimed at improving the competitiveness of farmers in developing agribusiness system. In 2008, The Government of Indonesia through the Ministry of Agriculture launched the Rural Agribusiness Development Program (PUAP). PUAP is a community empowerment which is realized in the form of venture capital strengthening assistance for farmer group's members. Operationally, distribution of PUAP fund is done by giving authority to the farmer group association that was selected to the implement the PUAP program. The purpose of this study is to analyze the role of farmer group institution in increasing the income percentage of wetland-based farmers who used the PUAP funds in South Sumatera. This study used survey method and purposive sampling method. Samples of 200 farmers who received PUAP funds were taken systematically and randomly. Data collected were analyzed by using the SPSS Multiple Linear Regression Analysis. The results showed that the institution influenced in increasing the percentage of revenue due to PUAP/Main Revenue (IPRP/MR). The income of 45% of PUAP fund recipients increased by 100%-200%; as much as 41.5% increased less 100%; and as much as 13.5% increased by 200%-316%. There are three types of financial management involved, namely Farmers Group Association (49.5%), Micro-Finance Institutions (25.5%) and Farmer Group (25%). The multiple correlation values obtained at 0.783, these values indicate a close positive relationship between the independent variable to IPRP/MR. The value of the coefficient of determination (Adjusted R<sup>2</sup>) is 0.600. The adjusted R<sup>2</sup> of 0.600 indicates that the model can explain the variation of existing data by 60% due to IPRP/MR. The result of F-test (simultaneously) showed a positive and significant influence of institutional factors on IP2R/MR Results of t-test (partially) indicated that the institutional factors Duration of Joining Farmer Groups and Finance Institution (Micro-Finance Ins.) and (Famer's Group Association) gave a positive and significant influence, while the Finance Institution (Farmer Group) and Farmer Organization gave negative and significant influence to IPRP/MR.*

**Keywords:** *Farmer institution, farmer group, farmer group association, micro-finance institution, swamp land, PUAP*

## **1. Introduction**

### *1.1. Background*

The broad objective of community empowerment program that has been widely implemented, especially by the government, is to eradicate poverty. Generally, the image of the poor lives in rural areas and most of them are farmers. Similarly, the farmers in South Sumatra which manages wetlands as their livelihood are poor, especially in the districts of OI and OKI. Farmers have not managed swampland efficiently as indicated by still large areas of uncultivated swampland and low labor productivity. A quarter century ago, Pasandaran, *et al.* (1991), have suggested that low productivity caused by motivation of subsistence farming system; low availability of capital and labor compared to land size; and the efforts of farmers to reduce the risk of failure due to the uncertainty.

Although, problems about inefficient use of swampland are well-known, the issue is still unresolved until now. In order to increase the income of farmers, some efforts were made, i.e.: developing appropriate farming technology on the basis of agro-ecosystems; and increasing the productivity of agricultural resources by considering the principles of natural resources conservation, environmental sustainability, and local wisdom.

Many partial sectoral programs have already been done by the government to encourage the economic development of rural communities. However, most of the projects did not achieve their potential targets; and therefore, the projects are unsustainable. According to Elfindri (2005) some aspects that cause the poverty alleviation programs are not effective, are: a. The low ability of central and local governments in implementing any program, so that they have difficulty in determining the appropriate goals and sequential-time processes or steps in achieving program targets; b. Limited poverty database, so it is difficult to make precise program targets and good monitoring programs; c. Most notably poverty alleviation program funded by the government and donor institutions based on a project to project basis; therefore, the projects are difficult to be sustainable; d. a lot of corruption problems; e. less-prepared co-worker assistants; f. Lack of Public participation in poverty alleviation efforts. Meanwhile, according to Rahayu, 2006 *in* Darwis and Rusastra (2011), factors that caused the failure of programs are: the inappropriateness between the needs of society and the programs provided by government; project package is not equipped with technologies and skills needed; there are no well-planned monitoring activities; and there are no institutions in the community to support the sustainability of the projects. The similar issues are also expressed by Bahrein (2010). Programs and activities of community empowerment are implemented partially and sectorally with establishing new institutional sector. This new institution is formed "top down" so it is destructive to the existing institutional and generally, this new formed institution sustainability is very low.

Villages and communities are positioned as objects of development; therefore, community participation is very low. It causes apathy of rural communities because they are considered to be less competent to manage their own communities.

Based on the experience of some experts in the process of rural development and poverty alleviation programs in the Asian and African countries, it is concluded that the factors causing the failure of poverty alleviation programs are: 'target' and 'top-down' approach; neglect of local values and bias 'outsiders'; lack of participation; no holistic approach; and the illusion of investment (Chambers,1983; Harrison ,1995; Burkey,1993; and Esman and Uphoff,1986; *in* Muktasam, 2001).Lesson-Learned from the failure of various programs to empower farmers and rural communities that are not participatory, then use of participatory approach by involving beneficiaries (poor farmers) and stakeholders is a necessity.

Despite a lot of evidence of the failure of poverty alleviation programs, there are not a few facts about the successful programs to fight against poverty in developing countries such as countries in Asia and Africa. Experience shows that the community participation factor becomes an important and dominant factor for to be succeed and sustainable. Participation of the poor should be involved in the whole process of poverty reduction, i.e. from the identification of problems and needs to usage of the fruits of development. Some other factors that determine the success of poverty alleviation programs are: awareness of local values; integrated and comprehensive approach; and human resource development. Starting in 2006, the government has formulated an integrated poverty reduction on the basis of community empowerment called the National Program for Community Empowerment (PNPM) and in 2008 launched Rural Agribusiness Development Program (PUAP).

Development of capacity building for farmers and farmer groups is needed in order to improve the competitiveness of farmers in developing agribusiness system in Indonesia. The capacity of the farmers can increase in line with their participation in the farmer institutions; consequently, it will promote the institutional capacity to become more effective. According to Anantanyu (2011), institutional farmers should be placed as a means to realize hopes, desires, and fulfillment of farmers' needs. Effective farmer institutions are expected to contribute significantly in improving farmers' self-reliance and dignity.

In the life of the farmer community, the position and function of farmer institution is a part of social institutions that facilitate social interaction or social interplay in a community. Agricultural institutions also have a strategic point (entry point) in running the agribusiness system in rural areas. For the reasons mentioned above, all the existing resources in rural areas need to be prioritized in order to increase the professionalism and bargaining position of farmers (farmer groups). Currently, the portraits of farmers and farmer institutions in Indonesia are still not recognized as expected (Suradisastra, 2008).

In the province of South Sumatra, PUAP program has been run since 2008 in almost all districts/cities (Table 1). The existence of groups of farmers (*poktan*) in Farmers Group Association (*Gapoktan*) is a requirement that must be met in order to receive funding through the PUAP program in rural areas. This study was conducted in district of OKI and OI. Hopefully, this research can be assessed the effectiveness of empowerment program through the PUAP program especially economic activities by exploiting comparative advantages of development of agriculture as subsistence agribusiness.

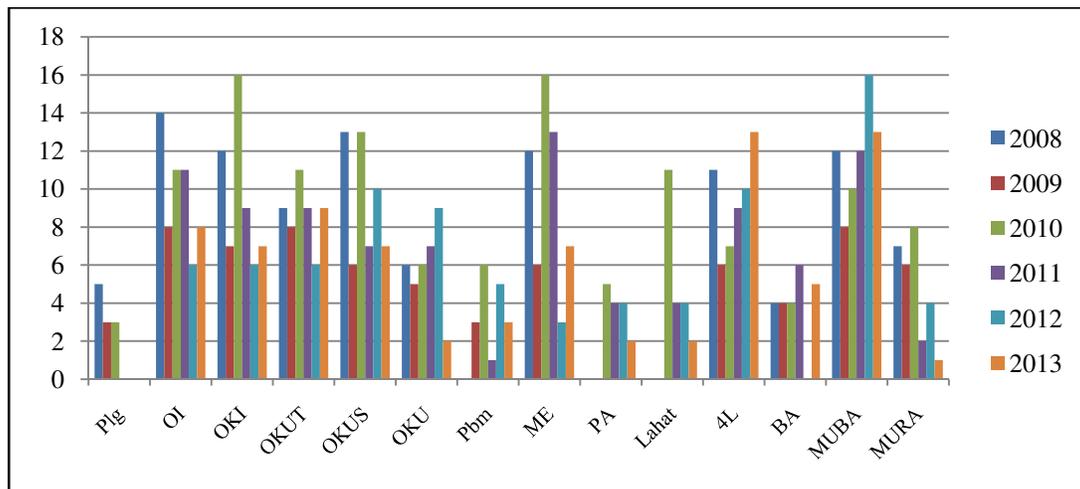


Figure 1: Data of District / Municipal Fund Recipient PUAP program in South Sumatra (2008-2013)

### 1.2. Purpose

This paper is part of research on the analysis of the effect of successful independent direct grants through PUAP programs in wetlands South Sumatra province. The specific objective of this study is to analyze the role of institutional factors to the increase of swampland farmer's income in South Sumatra Province.

### 1.3. Hypothesis

Allegedly, institutional factors influence the percentage increase in income of farmers who receive funding from PUAP program.

## 2. Method of Research

### 2.1. Scope of Study

The study was conducted in OKI and OI Districts, South Sumatra Province Indonesia. These two Districts were selected based on the fact that they have received funds through PUAP program every year from the beginning of the program in 2008 to 2013. Research location was chosen purposively from several sub-districts that grow rice and rubber as their main livelihood in OKI and OI Districts, South Sumatra Province. Other considerations refer to the targets of PUAP program namely rolling condition of PUAP funds, liveliness of Farmer Group Association (*Gapoktan*) and Farmer Group (*Poktan*), as well as the establishment of Microfinance Institutions of Agribusiness (*LKMA*). Based on these considerations, then after survey conducted, four representative districts were chosen, namely Tanjung Batu Sub district represented by 100 rubber farmers; Indralaya Subdistrict represented by 96 rubber farmers; Tanjung Raja Subdistrict represented by 103 rice farmers; and Lempuing Sub district represented by 102 rice farmers. Therefore, total samples in this research are 401 farmers consisted of 196 rubber farmers and 205 rice farmers. Current research has been conducted from January to December 2015, for preliminary and main surveys by interviews with structured questions in the field to collect primary data and secondary data.

The number of minimum samples drawn from this study population was determined by using the Slovin formula (Sevilla et.al, 1993). The criteria for the determination of sample number taken from the population are as follows: if the population is less than 100, then all population used as samples; if population is more than 100, the looseness of accuracy can be taken 5-10% (Riduwan and Kuncoro, 2008). Looseness of inaccuracy 5 % means that the level of accuracy or precision is 95%. Therefore, based on the Slovin formulae, number of samples in this study was 200 farmers of PUAP recipients. Samples were taken systematically random.

The study was designed as a survey research in order to obtain the existing facts or data and to seek factual information. According to Hasan (2006), survey research is the study with no changes (no special treatment) to the variables under studied. In this current study, the observed data or facts are analyzed and explained with quantitative analytical approach and descriptive analysis.

Variable	Definition	Category Measurements
X <sub>1</sub> Duration Join Farmer Group (DJFG)	The time that has been passed together with other members as farmers' groups	→ Year
X <sub>2</sub> Extension (E)	Mentoring activeness done in the field	→ 0 Not Active → 1 Active
X <sub>3</sub> Training (T)	Non-formal learning activities followed by members of farmers in the implementation of the PUAP Program	→ Times of training
X <sub>4</sub> Farmer Organization (FO)	Institutions involved in the implementation of PUAP (farmer groups (FG) and farmer' groups association	→ 0 Farmer Group (FG) → 1 Farmer Group Association (FGA)
X <sub>5</sub> Finance Institution (FI)	Agencies involved in managing PUAP fund	→ 1. Farmer Group → 2. Farmer Group Association → 3. Micro Finance Institution
Y IP2R/MR	the Increasing of percentage of revenue due to PUAP fund as compared to Main Revenue	→ Percent (%)

Table 2: Operational Definition

The data used in this research were the primary and secondary data. Primary data were collected from rice farmers and rubber farmers who were beneficiaries PUAP program, as respondent samples. Data was collected through interviews based on questions that have been designed specifically for this study. In addition to primary data, secondary data were also collected to support this research. Secondary data were obtained through a search of documents, reports of previous studies and observations in the field and literature related to this study.

The research variables consist of independent variable (X) and the dependent variable (Y). Variable X consisted of: Duration Join Farmer Group (DJFG) (X<sub>1</sub>); Extension (E) (X<sub>2</sub>); Training (T) (X<sub>3</sub>); Farmer Organization (FO) (X<sub>4</sub>) and Financial Institutions (FI) (X<sub>5</sub>). While the variable Y is the Increasing Percentage of PUAP Revenue/Main Revenue (IPRP/MR) obtained by the following formula:  

$$\text{IPRP/MR} = (\text{PUAP Revenue/Main Revenue}) \times 100\%$$

Where:

IPRP/MR = The Increasing of Percentage of PUAP Revenue/Main Revenue

PUAP Revenue = Net revenue generated by utilizing direct grants of PUAP program

Main Income = Net Income of respondents generated by primary means of livelihood (rice or rubber)

## 2.2. Data Quality Testing

Model of Multiple linear regressions called a good model, if it meets the normality assumptions of data and independence of classical statistical assumptions, namely multicollinearity and heteroscedasticity.

### 2.2.1. Classic Assumption Test

The requirement in the regression analysis is the classical assumption test. This test determines whether the results of regression estimation done are completely independent from any symptoms of multicollinearity and heteroscedasticity, and whether the data were normally distributed. Regression model can be used as the as unbiased estimation tool if it meets the BLUE (Best Linear Unbiased Estimator) requirements, i.e. there are no heteroscedasticity and no multicollinearity, and normal distribution (Ghozali, 2012).

### 2.2.2. Hypothesis test

Research hypothesis test used multiple linear regression analysis in order to see the influence of independent variables to dependent variable. The hypothesis on the correlation is formulated with the null hypothesis (H<sub>0</sub>) and alternate hypothesis (H<sub>a</sub>) as follows:

For simultaneous test:

→ H<sub>0</sub>:  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \leq 0$ ; indicates that X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub> simultaneously do not significantly affect Y

→ H<sub>a</sub>:  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$ ; indicates that X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub> simultaneously significantly affect Y

For Partial test:

→ H<sub>0</sub>:  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \leq 0$ ; indicates that X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub> partially not significantly affect Y

→ H<sub>a</sub>:  $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 > 0$ ; indicates that X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub> partially significantly affect Y.

### 2.2.3. Coefficient of Determination (R<sup>2</sup>) Test

Coefficient of determination (R<sup>2</sup>) Test was conducted in order to find out how much the ability of all the independent variables in explaining the variance of the dependent variable. For simple determination coefficient, it is calculated by squaring the correlation coefficient (Ghozali, 2012).

**2.2.4. F Test (Simultaneous Test)**

This test was conducted to determine the effect of independent variables to dependent variables simultaneously. This test is performed to determine whether all the independent variables as whole (simultaneously) can affect the dependent variable. Method used is to compare the value of calculated-F to value of Table F (Riduwan and Kuncoro, 2008)

**2.2.5. T test (Partial Test)**

The t-test was conducted to determine the effect of each independent variable to the dependent

**2.2.6. Data Analysis**

Data were analyzed by using multiple regression analysis, which is based on the functional relationship or causal relationship between independent variables ( $X_1, X_2, X_3, X_4, X_5$ ) and the dependent variables ( $Y$ ). This analysis can be used as a predictive model or to seek influence over one dependent variable with several independent variables (Riduwan & Kuncoro, 2008). The model of multiple regression analysis is as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon$$

Where:

$Y$  = IPRP/MR

$X_1$  = Duration of Joining Farmer Group (DJFG)

$X_2$  = Extension (E)

$X_3$  = Training (T)

$X_4$  = Farmer Organization (FO)

$X_5$  = Micro Financial Institution (MFI)

$\varepsilon$  = error

$\beta_0$  = Constant

$\beta_1$  = Regression Coefficient of Variable  $X_1$

$\beta_2$  = Regression Coefficient of Variable  $X_2$

$\beta_3$  = Variable Regression Coefficient of Variable  $X_3$

$\beta_4$  = Variable Regression Coefficient of Variable

$\beta_5$  = Variable Regression Coefficient of Variable  $X_5$

**3. Results and Discussion**

**3.1. Characteristics of Respondents**

Respondents in this study were farmers who worked on wetland farms. The respondents grew rice and rubber as their main livelihoods. Based on the research results, the distribution of age characteristics of farmers is as much as 89% of farmers aged from 24 to 55 years, which is categorized as productive age. This is in accordance with the criteria set by BPS (2012), that the population composition can be grouped into three age classes, namely class of age between 0 and 14 years (not productive), 15-64 years (productive) and older than 64 (unproductive). According Soekartawi (2005), the younger the farmers more eager to know the unknown knowledge; therefore, they try to adopt the new innovation quicker, although they have not experienced in such matters.

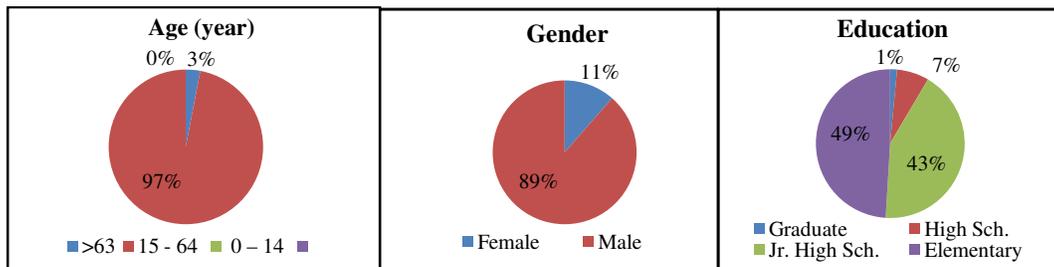


Figure 2: Diagram of Age, Gender and Education of Respondents

Gender of respondents was 88.5% male and 11.5% female. Women are still not involved in agricultural activities, even though they are potential both as manager and executive in agricultural activities. Female has not gained equal attention as the male. Based on observations in the field showed that women are actually get fully involved in the PUAP activities but most borrowing funds from PUAP program on behalf of her husband.

Education composition of respondents was 49% as elementary, 42.5% as Junior High School, 7% as Senior High School and, 1.5% as undergraduates, whereas education will affect the behavior and the adoption rate of an innovation. Someone who is highly educated tend to be more open to accept and to try new innovations. According Saridewi (2010), the education level of a person can change the mindset and the thinking ability to be better; therefore, the higher the education level of a person, the more rational he is. Based on the data, there are as many as 1.5% of respondents were graduated from undergraduate program. They are usually in charge as chairman of farmer group and act as driving force for farmer group and farmer group association.

Based on the results of this study and interview in the field, the role of chairman of farmer group association greatly affected the implementation of the PUAP program because the chairman of farmer group association is a coach and a companion in any activity.

3.2. Descriptive Analysis

According to Dimiyati (2007), the problems that the farmers and farmer institutions encountered in Indonesia was dealt with the un-optimal role and function of farmer institution as a farmer organization.

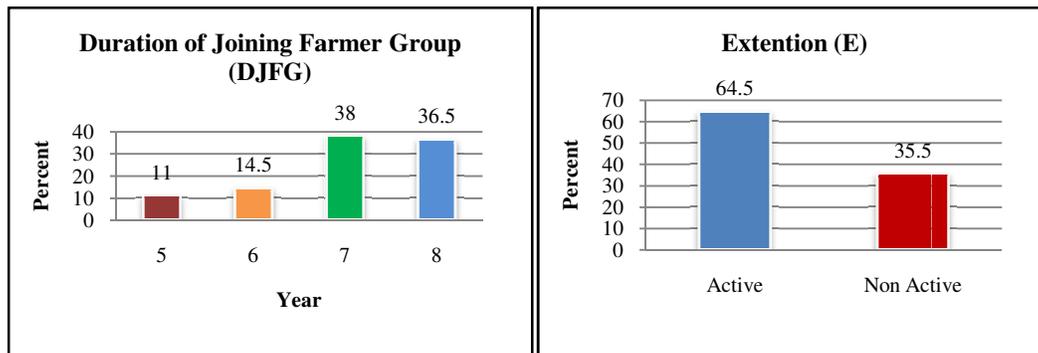


Figure 3: Duration of Joining Farmer Group (DJFG)

3.2.1. Duration of Joining Farmer Group

Duration of Joining Farmer Group referred to how long the farmers have been merged into an organization called farmer groups. Data on Table 3 indicated that the duration of farmers became members of farmer group ranging from 5-8 years. There were 38 %, 36.5 %, 14.5 %, and 11 % of farmers that have been joined the farmer group for 7 years, 8 years, 6 years and 5 years, respectively. Because the farmer group has been established for such long period, not for the interests of securing funding from PUAP program only, PUAP program can be implemented well; therefore, group dynamics has evolved towards a more advanced.

3.2.2. Extension

Instructors of Extension program are officials appointed by the related department to assist members of farmer group in implementing the PUAP program. Based on the results of research and interviews with respondents, the role of extension activity in the location on successful implementation of PUAP program is as much as 64.5% for active extension and 35.5% for inactive intention. Extension instructors in PUAP program are only 4 people for each district. Constraints often met in agricultural extension are the diversity of agro-ecological zones, which are often only suitable for specific commodities and technologies, and the diversity in ability to provide the necessary resources (knowledge, skills, funding, institution).

3.2.3. Training

The training is the guidance provided by the related department to members of farmer groups in the implementation of the PUAP program. Training can be given to the chairman farmer group association or farmer group. Then, the chairman farmer group association or farmer group has responsibility to pass on to members of farmer group or farmer group association. The results of this current field research and interviews of respondents showed that the respondent experiences in training ranged from 1 to 4 times. The training could be held at farmers' own village or other locations. If the training was done at farmer own village, it is included as farmer group or farmer group association program. The rice-farmer group and rice-farmer group association are quite active because they carry out the rice planting in groups by using the land together.

3.2.4. Farmer Organization

In this paper, Farmer Organization is defined as a group of farmers and farmer group association. Based on the results of this current research, the role of farmer group is 50.5%, while farmer organization is 49.5% for the success of PUAP program. This result indicated that farmer group has a little bit bigger role than farmer group association. Actually, the direct management by farmer group association is more expected by the government since the purpose of the PUAP program is to strengthen the capital managed by farmer group association.

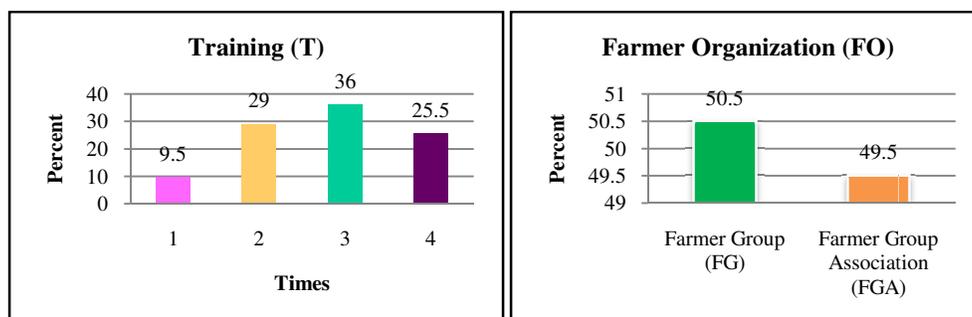


Figure 4: Percentage of Institutional Factor (Training and Farmers Organization)

**3.2.5. Finance Institution**

Finance Institution referred to the institution in charge of finance. Same as farmer organization, the financial institution at villages that got PUAP program was managed by Farmer Group or Farmer Group Association for the first and second year of PUAP program. Furthermore, if the implementation of the program and circulation of PUAP Fund run well for first two years, then, Micro-Finance Institutions (MFI) has to be formed in the third year of PUAP program. Based on the results of this research on the role of finance institutions (FG, FGA and MFI), it found that the role of Finance institutions was 25%, 49.5%, and 25.5%, respectively for Farmer Group, Farmer Group Association, and Micro Finance Institution. Seen from this percentage, the farmer group association plays a bigger role on the success of PUAP program at research sites. Direct Management of PUAP Capital by Farmer Group Association is more expected by the government because the purpose of the PUAP program is to strengthen the PUAP capital PUAP until the establishment of Micro Finance Institution. Although only 25.5% of respondents from selected villages forming MFI, it is an improvement that should be appreciated considering the number of beneficiary villages fail in implementing the PUAP program.

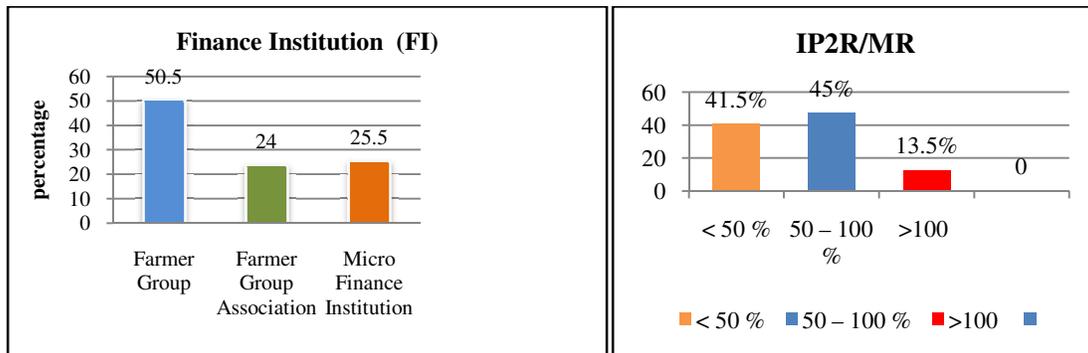


Figure 5: Percentage of Finance Institution and Increasing of Percentage of PUAP Revenue/Main Revenue

**3.2.6. Revenue Improvement due to PUAP Program**

The respondents' revenue increased ranged from 30% - 316%. As much as 45%, 41.5 %, and 13.5 % of respondents increased their revenues by 100% - 200%, less than 100% and > 200% - 316%, respectively (Table 3). This research result showed that the implementation of the PUAP program was successful at research location because IPRP/MR of respondents increased up to 316%.

**3.3. Classic Assumption Test**

**3.3.1. Normality test**

Data in Table 4 show that the data is normal because it has a Kolomogorv-Smirnov Test-statistic value greater than 0.05; therefore, the data are eligible to run a statistical regression test.

		DJFG	E	T	FO	FI	IPRP/MR
N		200	200	200	200	200	200
Normal Parameters <sup>a,b</sup>	Mean	7.0000	0.5000	2.7750	0.4950	2.0050	1.0802
	Std. Deviation	0.97713	0.50125	0.93743	0.50123	0.71240	0.81969
Most Extreme Differences	Absolute	0.245	0.341	0.210	0.343	0.248	0.274
	Positive	0.153	0.341	0.181	0.343	0.248	0.274
	Negative	-0.245	-0.341	-0.210	-0.338	-0.247	-0.171
Test Statistic		0.245	0.341	0.210	0.343	0.248	0.274
Asymp. Sig. (2-tailed)		0.000 <sup>c</sup>					

Table 4: Normality Test Results of independent variables and the dependent variable

**3.3.2. Multicollinearity Test**

Multicollinearity test for data collected in this current research were carried out by calculating the value of Variance Inflation Factor (VIF) by the equation  $VIF = 1 / \text{tolerance}$ . If VIF is less than 10 then it is concluded that there is no multicollinearity (Table 7).

**3.3.3. Heteroscedasticity Test**

Based on Scatterplot as shown at Figure 1, it was concluded that the data represented by dots are spread out and did not form a specific and clear pattern. Therefore, the data can be concluded that there was no heteroscedasticity problem.

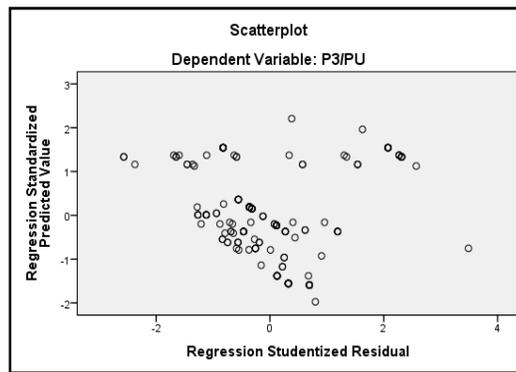


Figure 6: Heteroscedasticity Test of Independent Variables to Dependent Variable

3.4. Hypothesis Test with Multiple Regression Analysis

3.4.1. The Coefficient of Determination (R<sup>2</sup>) Test

Based on Table 6, The multiple correlation values obtained was 0.783. This value indicated that there was a close positive relationship between the independent variable and IPRP/MR. The value of determination coefficient (Adjusted R<sup>2</sup>) was 0.600. The adjusted R<sup>2</sup> of 0.600 indicates that the model can explain the variation of existing data by 60% due to IPRP/MR.

Model	R	R Square	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0,783 <sup>a</sup>	0,612	0,600	0.51830

Table 5: Summary of the Multiple Linear Regression Model

- a. Predictors: (Constant), Duration Join Farmer Group (DJFG), Extension (E), Training (T), Farmer Institution (FT) and Finance Institution (FT)
- b. Dependent Variable: IPRP/MR

3.4.2. Test F (Simultaneously)

The result of F test on Table 7 showed that the value of calculated F was 50.819 and p value was 0.000. The p-value was less than 0.05; therefore, Ho was rejected. This means that at the significant level of 5% there was a positive influence positive and significant correlation between institutional factors (Duration Join Group Farmer, Extension, Training, Farmer Organization, and Finance Institution) and IPRP/MR. This showed that based on F Test, there was a positive and significant influence of institutional factors to IPRP/MR.

Model	Sum of Squares	df	Mean Square	F	Sig. p-value	
1	Regression	81.879	6	13.647	50.819	.000 <sup>b</sup>
	Residual	51.827	193	.269		
	Total	133.706	199			

Table 6: Table Anova

- a. Predictors: (Constant), DurationJoin Farmer Group (DJFG), Extension (E), Training (T), Farmer Institution (FT) and Finance Institution (FT)
- b. Dependent Variable: IPRP/MR

3.4.3. t Test (Partial Test)

Multiple regression equation was as follow:

$$IPRP/MR = 1.725 + 0.164 (DJFG) + 0.015 (E) - 0.112 (T) - 0.398 (FT) - 1.935 (FG) - 1.387(FGA) + \epsilon$$

From the equation obtained, the constant value was 1.725. This means, if the variable of IPRP/MR is not affected by the independent variables, the amount of IPRP/MR will be 1,725. Sign of free variable coefficients indicated the direction of the relationship between independent variables and dependent variables. DJFG has a regression coefficient value of positive 0.146 and significant effect; therefore, the DJFG variable has a direct relationship to IPRP/MR. While FT variable has a regression coefficient value of negative - 0.398; FG and FGA have regression coefficients -1.935 and -1.387, respectively.

3.5. Result of t Test

3.5.1. Duration Join Farmer Group

Based on the analysis, DJFG has positive and significant effect on the IPRP/MR, meaning that each additional unit of variable DJFG will increase the IPRP/MR as much as 0.146. Results of research and interviews in the study site showed that DJFG of respondents

selected in this study has been become members for 5 to 8 years at the time of the initial distribution of PUAP fund. Farmer groups and farmer group association have been established before PUAP program initiated by government; therefore, the farmer group and farmer group association were not formed because of the interest of PUAP fund. Respondents are already used to work together in a group of farmers, so that they easily immersed themselves into farmer group association. Prerequisite for obtaining PUAP funds is their FGA, because the funds are distributed through FGA accounts. For villages that have already had FGA, usually succeed to implement the PUAP program because the relevant government office will be easier to build and to coach the FG and FGA. Eventhough fostering activity is often done through only the chairman of FG or FGA.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.725	0.562		3.069	0.002**	
	X <sub>1</sub> DJFG	0.146	0.044	0.175	3.346	0.001**	0.743
	X <sub>2</sub> E	0.015	0.078	0.009	0.198	0.843	0.986
	X <sub>3</sub> T	-0.112	0.080	-0.128	-1.388	0.167	0.271
	X <sub>4</sub> FT	-.398	.205	-.244	-1.944	0.053*	0.142
	X <sub>5</sub> FI						0.146
	FG	-1.935	.285	-1.025	-6.799	0.000**	
	FGA	-1.387	.140	-.848	-9.894	0.000**	

Table 7: Regression Coefficients Values  
Dependent Variable: IPRP/MR

### 3.5.2. Farmer Organization

The analysis showed that farmer organizations has a significant negative effect on the IPRP/MR. This means that any increase in the variable of farmer institutions will lower IPRP/MR by 1/585. Farmer institutions that must exist at villages during the implementation of the PUAP program were farmer group and farmer group association. The analysis showed that the influence FG was better than FGA. Whereas, the government hopes that in the implementation of PUAP, FGA has a bigger role. Based on the analysis and interviews on the field, farmer groups have long-established so that the dynamics of farmer groups have already run well; therefore, the implementation of PUAP program was conducted more by FG than FGA. The condition of being worked together for long period as a member of FG drive them to choose the same commodity or activity to run their agribusiness. Most of the respondents chose rice crop in the use of PUAP funds. PUAP program required a revolving fund; therefore, FG and FGA should consider agribusiness activities that could generate daily, weekly and monthly incomes. In this case the role of the farmer group is crucial in mentoring and coaching member of FG so that PUAP program goals and objectives can be achieved.

### 3.5.3. Finance Institutions

The analysis result showed that FGA and MFI are better finance institutions than FG. FG has a significant and negative effect on IPRP/MR. It means that FG has an inverse relationship to IPRP/MR. Meanwhile, MFI and FGA have a positive and significant effect on IPRP/MR, which means they have direct relationships to IPRP/MR.

The role of financial institutions in increasing the income of farmers through PUAP program is needed because the policy of the Department of Agriculture for the community empowerment is realized by the application of facilitation form for assistance of venture capital reinforcement for farmer member, either as owner farmers, tenant farmers, farm workers and farm households. Operational PUAP fund distribution is done by providing authority to selected FGA as PUAP implementation in terms of capital strengthening fund distribution to their members. Stages of PUAP coaching process was done in the first year of utilization of PUAP fund; the second year was the formation of MFI; and the third year was the establishment MFI.

PUAP program is part of the implementation of community development programs through the venture capital aid in order to develop agribusiness in accordance with the agricultural potential of the target villages. This is done by the government based on feedback from the bottom. The main problem in running economic enterprises, especially for agribusiness is low or weak society capital, especially for poor category society.

Experience has shown that fund aid has been difficult to roll over and even tend to be unproductive due to the absence of finance management institution. Therefore, PUAP funds serve as the strengthening of capital or initial funding for the growth of Microfinance Institutions for Agribusiness (MFI-A) on FGA. PUAP program was implemented by the farmers (owners or tenants), farm laborers, agricultural products manager and marketer, especially for poor families in the villages, through FGA as an institution that is owned and managed by farmers.

Based on the results of research and field interviews showed that the finance management done by MFI, FGA, and FG were 25.5%, 49.5%, and 25%, respectively.

Based on the results of descriptive analysis and quantitative analysis, the role of institutions greatly affects the implementation of the program PUAP. The success of PUAP program at the locations although the success rate is only occurred in some villages, but it was very interesting to be discussed. The success of PUAP program happened because the PUAP fund allocation was on target for livestock, plantation, food crops, horticulture, and off farm. Farming is done on wetlands; therefore, farmers should have specific knowledge and experience regarding farming on wetland called local wisdom. Local knowledge is the best practice knowledge gained from generation to generation so that the farmers are very familiar with the knowledge and know what to do. In addition, FG members

already have a high awareness to repay the provided capital in certain period corresponding to member business plan/group business plan. This awareness arises because farmer groups have been long-established, not formed suddenly just for PUAP capital aid, so the relationship among the farmer groups has been established well, and program has well planned and directed. Assistance by the board to members of farmer groups was done in accordance with procedures. The role of FGA chairman is very important for the success of PUAP program. Financial problems have already been managed dominantly by FGA (49.5%), FG (25%) and MFI (25.5%). While the percentage of revenue improvement (IPRP/MR) were 100% - 200% for 45% of respondents, less than 100% for 41.5% of respondents, 200% - 316% for 13.5% of respondents.

#### 4. Conclusion

1. The role of institutions highly influenced the increasing percentage of revenue (IPRP/MR) of PUAS users. As many as 45%; 41.5 %, and 13.5 % of PUAP fund users increased by 100% -200%; less than 100%; and 200% - 316%, respectively.
2. Financial management done by Farmer Group Association, Micro Finance Institution, and Farmer Group was 49.5%, 25.5%, and 25% of PUAP fund users, respectively.
3. The value of multiple correlations had a close and positive relationship at 0.783. The coefficient of determination (adjusted  $R^2$ ) of 0.600 indicated that the model could explain the variation of existing data by 60% to IPRP/MR
4. The result of F test (simultaneously) showed a positive and significant influence of institutional factors on the IPRP/MR.
5. The result of t test (partially) indicated that institutional factors (Duration Join Farmer Group and Finance Institution (Micro Finance Institution and Farmer Group Association) had positive and significant impact, while the Finance Institution (Farmer Group) and Farmer Organization had significant negative effect to the dependent variable IPRP/MR.

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