

## **THE ROLE OF FARMER TO FARMER EXTENSION FOR RICE FARMER INDEPENDENCE IN BOGOR**

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### **Abstract**

Farmer to farmer extension has considerable potential role in growing rice farmer independence because it has a strong social capital. The purpose of this study is to analyze the role of farmer to farmer extension in improving rice farmer independence, analyze the factors that influence the farmer perception on the role of farmer to farmer extension and formulate strategies to strengthen the role of farmer to farmer extension to be more involved in counseling activities. The design of this study was a survey of 75 respondents representing rice farmers which become self-help agricultural extension. Data collection was conducted from September to November 2016. Data processing used descriptive technique and Path Analysis. Based on the study result, it concludes that overall, the role of farmer to farmer extension in medium category is to enhance rice farmer independence in Pasir Madang Village, Sukajaya Subdistrict, Bogor. Factors which have a strong influence on the implementation to the role of farmer to farmer extension in increasing rice farmer independence of the internal characteristic of the farmer to farmer extension itself, that is the position in the farmer community groups, counseling, ability to communicate/counsel, ability to motivate and have a business in agriculture. Strategies to strengthen the role of farmer to farmer extension are conducted through capacity building in extension methodology.

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### **Keywords:**

The Role;

Farmer to Farmer Extension;

Farmer independence.

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## 1. Introduction

Along with the demand of a new paradigm of counseling, that is participatory counseling, the agent should be able to be involved and present around farmers to build the farmer independence. Currently, the role of farmer to farmer extension is considered merely as a disseminator of information and technology. Whereas, agricultural extension agent is demanded more as a motivator, dynamist, facilitator and consultant for farmers (Tjitropranoto 2003; Subejo 2009). Lippitt et al. (1958) and Rogers (2003) even added that agricultural extension agents should be able to diagnose the problems faced by client (farmer), build and maintain relationships with client systems (farmer), establish adoption, and prevent the adoption termination.

Therefore, farmers today do not need just an extension agent, but a faithful, sincere companion providing knowledge, and want to get involved and live together in this community of farmers (Syahyuti, 2014). The extension agent figure that fits those criteria are currently on farmer to farmer extension. Farmer to farmer extension is part of a farmer community that have higher empathy, primarily to help others. Other advantage of the extension agent is the higher belief of the community (Lukuyu et al., 2012; Samuel et al., 2012; Kiptot et al., 2015).

Currently, despite the perception of farmer to farmer extension by the farmers only as a helper of the farmer to farmer extension in delivering innovations (Riana et al., 2015), but if given the opportunity to demonstrate its role in building communities, especially in rural areas, it is expected to help farmers to have a competitiveness, filter power and coupled power. This is supported by the results of study by Indraningsih et al. (2013), that farmer to farmer extension can act as a farmer technical assistant, community driving, especially in the development of farmers' organizations, innovator by introducing various commodities and new business to the surrounding farmers, and as a business actor.

The role that can be carried out by farmer to farmer extension is expected to encourage the farmer independence. Until now, the farmer condition, especially rice farmers still depend on a variety of assistances and the role of stakeholders in managing their farming. In fact, farmers should no longer rely solely on self-help protection and subsidies, they are required to have aspirations, be

creative, able to take profitable decisions, innovative, and resilient in doing the agribusiness (Sumardjo, 1999).

Related to the condition, farmer to farmer extension should be involved more intensively in the organization of counseling, so that farmers can be independent in their farming, does not depend entirely by the self-help and free from other pressures from outsiders. This is because farmer to farmer extension is convergent for both self-help and private extension agents (Selener et al.1997; Syahyuti 2014), because they conduct counseling activities with social motivation, services and as a farmer business partner. Farmer to farmer extension also has the advantage of creating participatory counseling because the farmer to farmer extension lived among farmers, capable of organizing society because generally they are directly involved as a board member in many farmer organizations and become more powerful liaison (change agent) because it has social capital, the potential business agent and able to teach technology and more appropriate farming skills because it has the technical knowledge of direct experience as a farmer in the field (Syahyuti, 2014).

In addition, counseling organized by fellow farmers have the potential to spread innovation well, cost-effective and generally sustained beyond the lifetime of a project (Lukuyu et al. 2012), so that the farmer independence is achieved because of the efforts and cooperation amongst farmers. Accordingly, this study is focused on the role of farmer to farmer extension in carrying out its role in working to improve the rice farmer independence supported by empirical data and theoretical studies related to the development of society. The purpose of this study is to analyze the role of farmer to farmer extension in improving rice farmer independence, and analyze the factors that influence the farmer perception on the role of extension agents to analyze the factors that affect the role of farmer to farmer extensions and farmer independence.

## **2. Research Method**

The study was conducted in Pasir Madang Village, Sukajaya Subdistrict, Bogor, West Java, on September-November 2016. This study is a quantitative study with survey method. The populations in this study are rice farmers who are assisted by farmer to farmer extension. The

samples conducted by using Slovin formula (Sevilla, 1993), so from 243 people, sample of 75 people is selected.

Instrument in this study is a questionnaire containing a statement list. The characteristic variable of farmer to farmer extension ( $X_1$ ) was measured using four indicators, they are: position in farmer society ( $X_{11}$ ), communication skills ( $X_{12}$ ), motivation skills ( $X_{13}$ ), and have a business in agriculture ( $X_{14}$ ). Farmer internal factor variable ( $X_2$ ) was measured using four indicators, ie the information needs ( $X_{21}$ ), developed farming work field ( $X_{22}$ ), agribusiness insight ( $X_{23}$ ) and the level of decision-making in carrying out farming ( $X_{24}$ ). Farmer to farmer extension role variable ( $Y_1$ ) was measured using four indicators including role as: technical assistant ( $Y_{11}$ ), farmer organization community driving ( $Y_{12}$ ), Transfer of Information Technology ( $Y_{13}$ ), and farmer trainers ( $Y_{14}$ ). Farmer independence rate variable is measured by three indicators, ie competitiveness ( $Y_{21}$ ), capacity ( $Y_{22}$ ) and farming ( $Y_{23}$ ). The study instrument has passed the validity and reliability tests with *alpha cronbach* of 0.956. Data analysis technique used is descriptive analysis and path analysis.

### 3. Results and Analysis

#### The Role of Farmer to Farmer Extension in Improving Rice Farmer Independence

Farmer to farmer extension has some roles in this study, ie as a technical assistant, farmers' organization community driver, trainer, and the transfer of technology and information. Those four roles of farmer to farmer extension is a routinely activity carried out by farmer to farmer extension agents in Pasir Madang, because beside being farmer to farmer extension, they also have business or farming in the agricultural sector which is quite good. More about the data analysis of respondents to the role of agricultural extension agents is shown in Table 1.

Table 1. The Role of farmer to farmer extension

No	Description	Modus	Category
1	Technical advisor	4.0	High
2	Farmers organization community driver	3.0	Moderate
3	Trainer	2.0	Low
4	Transfer of technology and information	3.0	Moderate

The data analysis results of respondents note that a role as a technical assistant in high category in accompanying farmer in applying innovations related to the process of rice cultivation. The result of this study supports Indraningsih et al. study (2013), which revealed that the role of farmer to farmer extension has a high determination, ie on a technical assistant. Its success in conducting farming becomes one of farming problem-solving ability so being a technical assistant who can understand the condition of farmers and things that should be carried out by the farmer to solve problems related to their farming.

Another factor that causes the only role of technical assistant who has a role well is the low education of farmers in Pasir Madang so they are more interested in innovation related to farming. The lack of farmer education also has constraints on farmer to farmer extension's efforts there to provide training related to the application of new technologies in rice farming.

It also has implications for two other roles of farmer to farmer extension agents, they are farmer organization community and transfer of technology/information in moderate category in agricultural counseling activities. Those roles of farmer to farmer extension agents can be played well enough because self-help agents has the ability to communicate well to farmers in explaining about any information obtained in advance from both the governmental agricultural extension agents and the offices that provide various information about farming activities.

Another role as a farmer trainer is still in the low category. Low role as farmer trainee due to the low capacity of farmer to farmer extension in improvisation of every innovation and technological information that has been gained first from researchers, civil servant extension agents and other stakeholders. The other factors that cause low role as a trainer is the absence of scheduled activities by farmer to farmer extension agents in giving counseling because during all this time, farmer to farmer extension agents in Cigudeg extension agency just follow the instructions/orders from civil servant agricultural extension agents. The absence of self-help institutions for the training place of farmers also becomes one of the lack of a functioning roles as trainee of the farmer to farmer extension.

This study result is different with Lukuyu et al. study (2012) which indicates that the farmer to farmer extension plays an important role as a farmer trainer so that the successful activity is longer and not limited to government programs/projects. Therefore, farmer to farmer extension needs to improve the capacity in order to act as a good farmer trainer so that farmers can be independent and do not depend continuously on the various government programs and assistances.

Indraningsih et al. study (2013) in three provinces, informed that capability of farmer to farmer extension is relatively diverse, but the mastery of the technical aspects has been adequate. Mostly community earned it by attending training from the government, and some earned it by independently learning from decades experience in the rice paddies and fields. This condition is similar to farmer to farmer extension agents in Pasir Madang, technically their farmings have the average ability compared with other farmers since they frequent attend training organized by the government.

However, the farmer to farmer extension technical ability has not been able to pass it to other farmers in Pasir Madang so that the role of farmer to farmer extension has not been optimal. It is also caused by unclear counseling role division in the field between farmer to farmer extension with government agricultural extension agent. Generally, the role of farmer to farmer extension is limited to farmers in farmer group and most remote farmers in the same village.

Under this condition, the farmer to farmer extension should improve their capacity simultaneously so that other roles can be carried out well by farmer to farmer extension so that they can contribute more in increasing the farmer independence. It is also revealed by Syahyuti (2014) in which the advantage of farmer to farmer extension compared with the government extension agent is able more to create a participatory counseling. This is because the life farmer to farmer extension among farmers, experience the feelings directly and farmer problems become part of the farmer enthusias and participatory involved in agricultural activity in the community. Farmer to farmer extension is the "insiders" who no longer need to learn the farmer psychology and rural sociology.

## Characteristics of farmer to farmer and Farmer Internal Factor who Influence the role of farmer to farmer

Farmer to farmer extension is rated highly strategic because it has many advantages, one of them is the knowledge and stronger but specific technological skills since they are agricultural direct actors in the field. Syahyuti (2014), because he lived daily in the middle of the community, then farmer to farmer extension is more able to create participatory counseling, more capable to organize the community (community-organizing role), able to bridge (change agent) which is more powerful, and has more value to the ownership of social capital.

Based on Forestry Minister Rule No. 61/2008 that farmer to farmer extension is the principal actors who are succesful in their businesses and other community members who by his own conscience are willing and able to become an extension agent. Farmer to farmer extension position is civil servant extension agent partners in conducting counseling, both individually and integrated cooperation in the agricultural sector. The fact in the field shows that although farmer to farmer extension is known by its partner farmers, but the perception of farmer to farmer extension is diverse. The diversity of the perceptions arises because of a lack of clear position of farmer to farmer extension in carrying out its duties and functions.

Based on proficiency level, the following is the results of the factor analysis affecting the role of farmer to farmer extension among farmers who conduct data processing using SPSS to get R<sup>2</sup> value (R square) and  $\rho$  (Standardized Coefficients/path coefficient). More information is as in Table 2.

Table 2. The factor statistical analysis result affecting the role of farmer to farmer extension among farmers

Description	Value	p-value	Description
R square	0.404	-	Residual 0.77 or 77%
Coefficient between X <sub>1</sub> and Y <sub>1</sub>	0.183	0.012	Because p-value is smaller than $\alpha$ (0.05), coefficient of this path is significant
Coefficient between X <sub>2</sub> and Y <sub>1</sub>	0.086	0.046	because p-value is smaller than $\alpha$

			(0.05), coefficient of this path is significant
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Remark:

X1 : Characteristic of farmer to farmer extension

X2 : Farmer Internal Factor

Y1 : The role of farmer to farmer extension

The result of Table 2 shows that Model  $Y_1 = 0.183X_1 + 0.086X_2 + \varepsilon_1$  is significant because p-value is smaller than  $\alpha$  which means that the hypothesis about the characteristics of farmer to farmer extension and farmer internal factors influence significantly and simultaneously on the role of agricultural extension agent is proven. This proves that actually, the actual perception of farmer on the existence and the role of farmer to farmer extension in providing information, technical assistant and driver of farmers' groups have been well. Farmers have been able to understand the difference of roles carried out by someone who becomes a farmer to farmer extension to play its role as a head of farmer groups or public figures or when it becomes farmer to farmer extension agent.

This contrasts with the results of Riana et al. study (2015) which considers farmer to farmer extension is only limited self as the group leader who can solve problems faced by farmers as members of the farming group despite the role played at the time is as a farmer to farmer extension. Farmer group leader who become farmer to farmer extension is often interpreted by his members of farming group, especially when farmer to farmer extension and government conduct counseling together.

However, farmer to farmer extension coming from farmer group leader is recognized to have advantage in organizing and mobilizing their community members to implement innovations in farming. This is consistent with the results of Indraningsih et al. study (2010), that is a farmer group leader appointed as farmer to farmer extension generally has higher education, social status in society is higher, has an intensive interaction with the environment and able to bring new initiatives in their communities.



The role of farmer to farmer extension in the study site in general shows its role in assisting the farmer technique (farming), while other roles are in the moderate and low category, as described in the previous section. Its high role in accompanying farming technique for farmer to farmer extension has a long farming experience and relatively high social status compared with other farmers, while for other things, farmer to farmer extensions in the study site is still low, especially in education and understanding of counseling.

Therefore, efforts to increase the farmer to farmer extension capacity is one of the alternative solutions to problems so that other roles can be optimized for farmers to become more independent. This was confirmed from the results of interviews to some respondents also indicate that farmer to farmer extension agents are given a larger role than existing agricultural extension agent and continually improve its capacity in counseling methodology (primarily to be reliable when becoming the farmer learner), believe that farmer independence can be achieved because farmers have a companion and partner who understands the needs and the problems it faces. Furthermore, to see how much characteristic influences of farmer to farmer extension agent, farmer internal factors and farmer to farmer extension role to the farmer independence is presented in Table 3.

Table 3. Analysis Result of Characteristic Path of Farmer to farmer extension( $X_1$ ), Farmer Internal Factor ( $X_2$ ) and the Role of Farmer to farmer extension( $Y_1$ ) to the Farmer Independence( $Y_2$ )

Description	Value	p-value	Description
R square	0.802	-	Residual 0.44 or 44%
Coefficient of $X_1$ and $Y_2$	0.034	0.032	because p-value is smaller than $\alpha$ (0.05), coefficient of this path is significant
Coefficient of $X_2$ and $Y_2$	0.157	0.176	because p-value is bigger than $\alpha$ (0.05), coefficient of this path is not significant
Coefficient of $Y_1$ and $Y_2$	0.258	0.030	because p-value is smaller than $\alpha$ (0.05), coefficient of this path is significant

Remark:

X1 : Characteristic of farmer to farmer extension , X2 : Farmer Internal Factor

Y1 : The Role of Farmer to farmer extension, Y2 : Farmer Independence

Result of Table 3, shoes that Model  $Y_2=0.034X_1 + 0.157X_2 + 0.258Y_1 + \varepsilon_2$  is not significant because there is one variable having greater p-value than  $\alpha$ . The result also shows that only farmer internal factors who do not have a direct influence on the farmer independence, but to foster that process, farmer internal factors can be through farmer to farmer extension role as an indirect influence path. This means that in order to foster farmer independence, it requires a strong role of farmer to farmer extension. Those roles are primarily in providing market information, expanding agribusiness horizons and farmers access which can't be obtained by the farmer in the study location. Furthermore to see the direct and indirect effects of each variable on farmer independence is shown in Figure 1

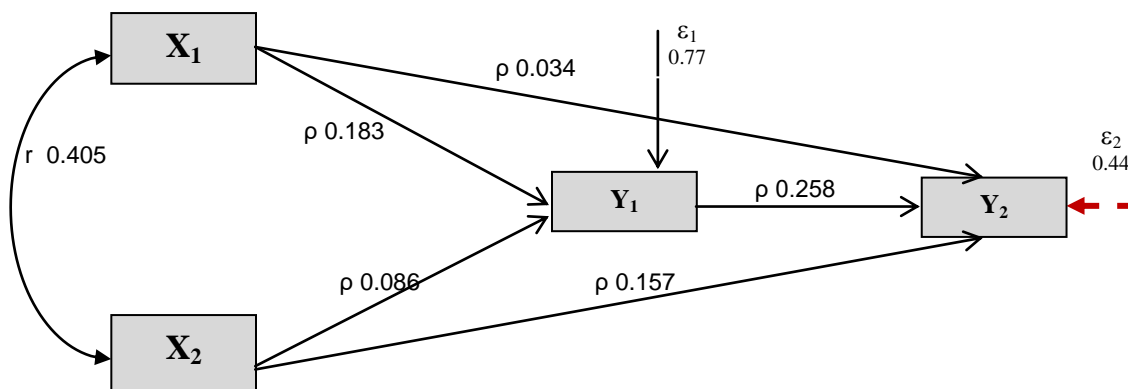


Figure 1. Statistical analysis result path diagram

Based on the Figure 1, to determine the influence of each variable to the farmer independence is as in Table 4.

Table 4. The number of direct and indirect influences of each variable

Description	Direct influence	Indirect influence	Total Influences
Influence from X <sub>1</sub> to Y <sub>2</sub>	0.034	Through Y <sub>1</sub> 0.183 + 0.258 = 0.441	0.475

Influence from $X_2$ to $Y_2$	-	Through $Y_1$ $0.086 + 0.258 =$ 0.344	0.344
Influence from $Y_1$ to $Y_2$	0.258	-	0.258

The results of path analysis found that farmer internal factor ( $X_2$ ) has no direct influence (path) to increased farmer independence ( $Y_2$ ). Meanwhile, the two other variables influence each other and possess a direct path to a farmer independence increase. This is consistent with the first study result in which the role of farmer to farmer extension has a good strength in encouraging farmers to be independent due to the limited competitiveness of the farmers themselves.

The internal characteristic ( $X_1$ ) of farmer to farmer extension (position in farmer society group, education, ability to communicate/counsel, the ability to motivate and have a business in agriculture) is strong enough to give direct influence to increase the farmer independence in this study. This strengthens the study result of Lukuyu et al. (2012); Samuel et al. (2012); and Kiptot et al. (2014) they are the advantage of the farmer to farmer extension is on the more trusts from the community because of the figure as a community figure who is always imitated and every attitude and decision are respected; to the dissemination process of technological innovation and farmer to farmer learning systems tend to be smooth and continuous (Lukuyu *et al.* 2012).

The strong of internal characteristics of the farmer to farmer extension is actually not enough to increase the farmer independence, but it needs adequate ability/capacity of farmer to farmer extension agents themselves in their role as agent of change in rural areas. Increased capacity is a requirement in order to farmer to farmer extension can run all of its roles so the farmers have the ability to farm well, have the prosperous quality of life and a competitive products with other stakeholders, so that the farmer independence as a tip of the success of the role of self-help agricultural extension. Therefore, the farmer to farmer extension is instrumental in giving counseling to farmers, breeders and others in the surrounding community, especially on aspects related to the business/farmer business.

#### 4. Conclusion

The role of farmer to farmer extension overall in the moderate category to enhance rice farmer independence in Pasir Madang village, Sukajaya subdistrict, Bogor. That role includes four components: a technical assistant, trainer farmer organization community driving, and transfer of information technology, of the four components that show there is a high role in its role as a technical assistant of farming in the community. Factor that has a strong influence on the implementation of the role of farmer to farmer extension in enhancing the rice farmer independence is on the internal characteristics of self-help, that is the position in the farming community, education, ability to communicate/counsel, the ability to motivate and have a business in agriculture.

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