

Farmer to Farmer Extension Through Strengthening Progressive Farmers Role

Yoyon Haryanto¹, Sumardjo², Siti Amanah², Prabowo Tjitropranoto²

¹Bogor Agricultural Extension College – Ministry of Agriculture Indonesia

² Department of Communications Science and Community Development,
Faculty of Human Ecology, Bogor Agricultural University Indonesia



Abstract – Farmer empowerment is increasingly marginalized by the reduced number of government extension agents (PNS/Civil servants and THL-TBPP/Freelance-Agricultural Extension Aid) in the rural area. The study aimed to analyze the support of related institutions and strengthening efforts performed for advanced farmers as progressive farmers. This research used survey design of cluster random sampling technique with 224 respondents represented progressive farmers in four districts (Bogor, Karawang, Majalengka, and Sukabumi) in West Java. Data were collected in 2017 through questionnaires and in-depth interviews and analyzed using Structural Equation Model (SEM). The results showed that government extension agency and private agency have a good support to the enhancement of the capacity of progressive farmers. The strengthening of advanced farmers as progressive farmers was done by strengthening their role as extension agents in rural areas by improving their individual capacity and independence.

Keywords – capacity; farmer to farmer extension; interdependence; progressive farmers.

1. INTRODUCTION

The limited number of extension agents causes a gap in conducting extension activities in rural areas. From 2001 to 2016, 25 percent reduction in the number of government extension agents, due to retirement, over-transfer of functions and reduced appointment of extension agents by the government. Agricultural Extension Centre of Ministry of Agriculture Indonesia in 2017 noted that there were 25,332 civil servants, 6,069 Prospective civil servants, and 13,018 freelancers of Agricultural Extension Aid worked as extension agents. However, the number of villages and sub-districts requiring assistance of extension agents for farmers is 74,093 villages and 8,412 urban villages, thus the mandate of Law Number 19 Year 2013 of Republic of Indonesia on Farmers Protection and Empowerment stating that the provision of extension agents at least one extension agent for each village is difficult to meet.

In addition to these conditions, professionalism of agricultural extension is also increasingly required to adapt to the needs and dynamics of a growing community [1]. Ideally, agricultural extension agents should be able to be motivators, dynamics, facilitators and consultants for farmers [2] [3]. Agricultural extension agents should also be able to diagnose problems faced by the client (farmers), build and maintain relationships with the client system, consolidate adoption, and prevent the cessation of adoption

[4]. Therefore, according to Syahyuti [5], the appropriate extension for the moment that is reliable in delivering the message of innovation is extension agents from the farmers themselves. Farmers who play their role as extension agents to other farmers are the peak participation form of a farmer in agricultural development [6]. Such farmers and farmers, who have a good leadership, as well as the role models for key and business actors, are grouped as progressive farmers (regulation of the minister of agriculture of Republic of Indonesia no 68 of 2008). Farmers with advanced character (innovators) are subsequently acted as extension agents/progressive farmers and implement extension from farmer to farmer.

In fact, not all progressive farmers are able to play well in assisting farmers, mobilizing their communities, and becoming agents of change [7]. This is due to differences in educational background, experience, and age, resulting in different capacities in carrying out extension functions. Some research results also revealed that the progressive farmers do not have enough capacity to build effective farmer organizations ([8], [9], [10]).

The low capacity of progressive farmers has not been able to provide good learning to the farmers and is even considered as a government extension assistant in conveying information to the community [11]. This is consistent with that stated by Sumardjo [12] that the limitation of the

quantity and quality of extension agents is a major obstacle in the extension, including the capacity of progressive farmers themselves, which is still low. Thus, it is needed to improve the capacity of progressive farmers in order to enhance its role for farmers and farmer groups in helping them to be more materially and intellectually independent.

However, in the field, not all the progressive farmers have the same capacity in promoting and organizing the farmer group and supervising farmers due to differences in capacity of each individual. Thus, Jatnika [11] stated that the capacity of progressive farmers needs to be improved to perform a more optimum farmer to farmer extension. The difference in capacity among extension agents is due to lack of support from extension, education, training, and research institution affects the role of progressive farmers still depend on other parties (civil servants or freelance extension agents) in organizing their communities (farmers), therefore, most organizations built by progressive farmers is based government grants which always dependent on the duration of program implementation. Although the figure of appropriate extension agents for the current conditions exists in progressive farmers [5], but its capacity building efforts are a requirement to progressive farmers to get excellent capability in implementing its functions and independently managing their organization. Considering the current issues, the aim of this study is to analyse the support of related institutions and its strengthening efforts for advanced farmers as progressive farmers in carrying out farmer to farmer extension.

II. METHOD

The population in this study was advanced farmers acted as progressive farmers which have been registered in the regency and the Ministry of Agriculture. The sampling technique used was cluster random sampling. The first stage was the selection of four districts (Karawang, Majalengka, Sukabumi, and Bogor) based on Sumardjo [13] research results that divide West Java into four zones (North, Central, South and Jabotabek). The four districts are chosen as they have their own extension agents with different characteristics such as the ability to manage farming activity, market the results, the type of work and the performance of progressive farmers in each district.

The number of progressive farmers in the four districts amounted to 482 people. As the large numbers of individuals in the population, the second stage of this study was to determine of number samples using the Slovin formula, then 224 samples were obtained. The third stage was to determine proportionately the sample size of respondents per district. This study also collected data from farmers to verify the role of progressive farmers. 200 farmer respondents were selected from the assisted farmers of progressive farmers in the research sites.

The variables measured were: altruism level, learning process, support of related institutions, social capital of the community, fulfilment of information /innovation needs,

capacity of progressive farmers, independence of progressive farmers and role of progressive farmers. Primary data were collected by interview technique using questionnaires, field observations, and in-depth interviews with assisted farmers of progressive farmers to confirm the results of progressive farmers. The validity and reliability test of the instrument was conducted to 30 progressive farmers in Cianjur District. The results of the trial showed that the questionnaire is feasible to be used with the validity value of 0.349 - 0.895 and the reliability value of 0.881. Technical data analysis using Structural Equation Model (SEM) with LISREL 9.3. Prior to data processing using SEM, the data were transformed from ordinal to interval data [13].

III. RESULT AND DISCUSSION

1. SUPPORT OF RELATED INSTITUTION TO FARMER TO FARMER EXTENSION

Government extension agency and private agency show better support compared to research and education institutions in improving the capacity of advanced farmers to be progressive farmers (Table 1). These conditions indicate that research and education institutions have not contributed adequately to creating an integrated information and innovation that support the progressive farmers to play a better role in the implementation of farmer to farmer extension.

Support of research and education institutions in building the capacity and independence of progressive farmers is still low (Table 1). Based on the information from progressive farmers, this is because researchers generally disseminate their innovations with the low involvement of them, but are more likely to be recipients of innovation. Consequently, progressive farmers cannot practice finding their needed innovation directly.

The government research institutions as a producer of innovations for farmers in conducting assessment and research tends to develop innovation in accordance with the priorities of the government program policies. The impact is not all innovations produced cannot be applied to the specific location. Progressive farmers with better knowledge and skills than other farmers generally try to find out their own local innovations that are more suitable for their location and needs.

Likewise, with agricultural education institutions, community service is a college tri dharma charged to the lecturer. It cannot be optimized in helping farmers and progressive farmers to develop its ability because of a generally small fund for community service and busy for other activities so that less intensive in its empowerment activities. Community service activities are more likely to charity which not to be able to solve the actual problems faced by farmers in general.

TABLE 1. PERCEPTIONS OF PROGRESSIVE FARMERS IN SUPPORT OF RELATED INSTITUTIONS FOR FARMER TO FARMER EXTENSION 2017

Support of Related Institutions	Category	Respondent (n=224)	
		People	%
Research Institutions	Very Low (≤ 25)	43.0	19.2
	Low (26 - 50)	94.0	42.0
	Middle (51 - 75)	59.0	26.3
	High (76 - 100)	28.0	12.5
Education Institutions	Very Low (≤ 25)	71.0	31.7
	Low (26 - 50)	90.0	40.2
	Middle (51 - 75)	50.0	22.3
	High (76 - 100)	13.0	5.8
Extension agencies	Very Low (≤ 25)	5.0	2.2
	Low (26 - 50)	75.0	33.5
	Middle (51 - 75)	110.0	49.1
	High (76 - 100)	34.0	15.2
Private agencies	Very Low (≤ 25)	6.0	2.7
	Low (26 - 50)	40.0	17.9
	Middle (51 - 75)	151.0	67.4
	High (76 - 100)	27.0	12.1

Different support is provided by the private agency to progressive farmers in the form of the assistance of technology testing activities by involving them fully in the implementation of local technology testing. This is reinforced by interviews with progressive farmers and farmer group at the research sites, they are often involved in various technology testing activities that conducted by the private agency. These activities have a positive impact on both progressive farmers and the farmers; they learn each other and are able to choose innovations they need. It also confirms that the presence of farmers with the extension agents characteristic, starting from the era of guide farmers, *swakarsa* (independent) extension agents and now more recognized by the government as progressive farmers. Progressive farmers have been able to provide problem-solving among farmers and develop local technology for their farming.

This condition is in line with the results of Shrestha [14] that the involvement of Progressive farmers in research activities has been able to produce local technology and has proven effective in disseminating the innovation to farmers. Innovations made by progressive farmers also have a potential to be followed by other farmers since the information carried by progressive farmers is more readily accepted by other farmers. The positive impact of the farmer closeness is the formulator in providing opportunities for progressive farmers to try the products to the farmers prior to being marketed. Based on the results of trial or experiments on the products of the formulator, progressive farmers can provide recommendations to their partner farmers. This support impacts the private agency support categorized well, whereas this kind of advantages is not provided by government extension agents.

The close relationship of progressive farmers with those institutions (private agency) makes it easier to obtain

information about the extension, its closeness to researchers making it easier to adapt to the latest innovations and good access to other sources of information. However, the attention of the government, especially education and extension agencies still need to be improved so that the innovation and information produced by both institutions can be applied in accordance with the needs of farmers up to the specific location.

This condition also shows the weak synergy between the related institutions in supporting the extension, whereas the support of institutions from the government, private agency, and society is one of the parties to run extension effectively [13]. This condition also in contrast to the concept of Valera [15] on the linkage between paradigm of agricultural extension research systems which revealed that regardless of the differences in any organization involved in extension activities either researchers, extension agents or farmers themselves, the collaboration among the parties is needed to create effective extension thus affect the better farmer change.

2. STRENGTHENING THE ROLE OF PROGRESSIVE FARMERS IN FARMER TO FARMER EXTENSION

Strengthening the role of progressive farmers was done by strengthening its position as one of the extension agents in rural areas that are able to overcome the problems of farmers, more able to create a good and participative extension as well as capable in organizing the community.

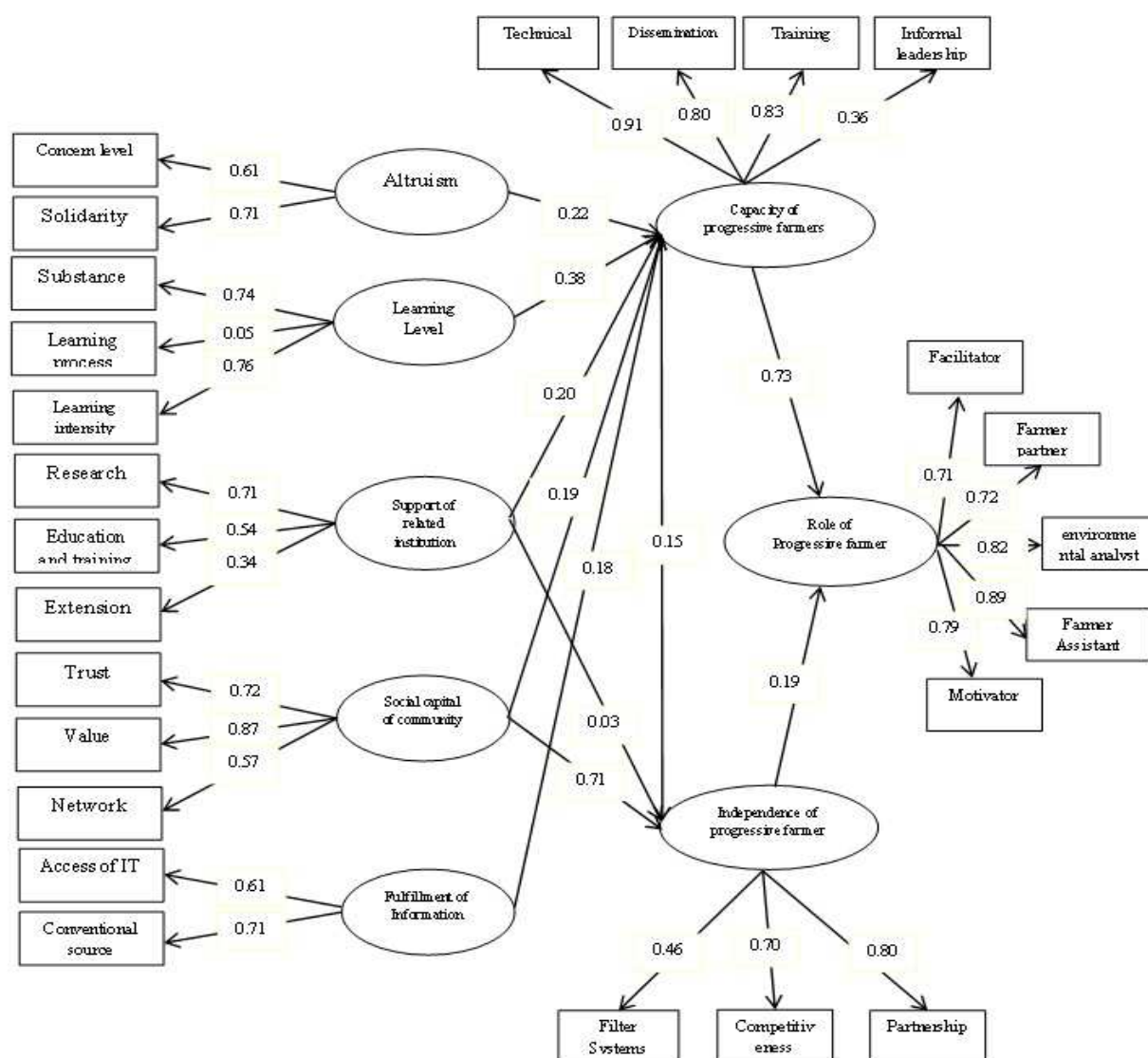
Strengthening the role of progressive farmers is primarily in terms of being a farmer facilitator, farmer's marketing partner, and environmental analyst for the community, farmer's advisor and motivator to encourage farmers in their community (Result of SEM in Figure 1).

So far, these roles are not all done well by progressive farmers due to their limited capacity. This is in line with the results of Jatnika's research [11], it stated that the capacity of progressive farmers needs to be improved to enhance farmer to farmer extension becomes more optimal. Several studies have also revealed that only the role of technical assistant of farmer, motivator, and facilitator is able to be well performed by progressive farmers thus other roles still need to be improved [16], [17], [18].

One effort to strengthen the role of progressive farmers is by increasing the capacity and independence of progressive farmers (result of SEM in Figure 1). This indicates that progressive farmer may play well with supported capacity and independence. Factors that have a

significant positive effect on the capacity building are the level of altruism, the learning process, the support of related institutions, the social capital of society and the fulfilment of information/innovation needs.

This condition also indicates that the capacity of progressive farmers can increase with the learning process activities held by the government both in the form of education and training, internships, seminars, technology testing and others, thus lead the progressive farmers to meet their innovation/information needs, mastering the process and substance of good extension in conducting farmer to farmer extension. This is because the learning process may have a positive effect on individual capacity with various supporting factors [19], [20].



Chi-Square=682.85, df=255, P-value=0.0000, RMSEA=0.087

Figure 1. Structural model (standardized) for strengthening the role of progressive farmers in conducting farmer to farmer extension

Factors that positively affect the progressive farmers are the support of research institutions, educational and training institutions, extension agency, and the social capital of the community and the increased capacity of progressive farmers itself. This means that the capacity of progressive farmers plays a major role in encouraging progressive farmers into independent individuals who are able to perform its role as an extension agent in the rural area.

Independence of progressive farmers is also formed due to the presence of the social capital of the community which consists of the trust, the values of the community and the extent of the networks owned by progressive farmers to facilitate the programs of government agencies and the private agency which accordance with the needs of farmers. These results prove that another characteristic of a truly independent individual is advanced in behaviour (cognitive, affective and psychomotor), efficient and highly competitive so as to be able to think or act quickly and accurately, and able to partner and build mutually reinforcing networks [13]. The efforts that need to be done by related institutions based on the SEM model are as follows:

a. Research Institution

In order to provide capacity building to progressive farmers, research institutions should work in harmony with extension and educational institutions. Compared with current extension agencies, the support of research institutions is perceived ineffective by progressive farmers and farmer groups. Institution for agricultural research and assessment as the extension the government is the Centre for Agricultural Technology Assessment, currently, was considered not optimal in assisting the extension agents to create location-specific technology. Location-specific technology is those technologies resulted based on the local agroecosystem. Currently, the resulting technology tends to be a general technology that is not necessarily can be utilized and suitable for farmer's needs. This is also claimed by Prawiranegara [21], the results of location-specific technology made by research institutions are perceived as expensive (funds, manpower and time are considerable) with a very limited availability.

b. Education and Training Institution

Optimization of the role of educational institutions and training held by the Ministry of Agriculture can be done by preparing a continuous training program for progressive farmers. Training institutions should not be in the form of a building or campus, but the most important instrument is should be a training system [22]. The training system includes: who is the trainee, who is the trainer, what is the training content, when the training will be held, what is the purpose of each training and so on. Training activities for progressive farmers are not enough to increase their capacity, especially for extension methodologies. Therefore, the curriculum developed by education and training institutions within the framework of the training system for progressive farmers is aimed to strengthen the

implementation and daily activities. This is because progressive farmers as part of the farmer community are required to be able to carry out the spread of good innovation which accordance with the needs of farmers, thus they must be prioritized within the implementation of education and training to increase their capacity.

c. Extension Agency

In general, Agricultural Extension is defined as an act of disseminating information and agricultural technology and guiding farmers to be able to apply the technology. Agricultural extension has experienced a period of golden and gloom in line with the dynamics of national social, political and economic change. When national policies give high priority to agricultural development, extension activities develop very dynamically, but when agricultural development priorities are not on the main agenda, agricultural extension experiences a period of gloom and stagnation.

Implementation of Law No 23 of 2014 of the Republic of Indonesia on Regional Government which is substantially out of sync with the implementation of extension regulated by Law No. 16 of 2006 caused weakening of extension force in the region and became one of the causes of limited extension activities, institutional extension and administrative management handed over to the local government. The type and name of extension agency of the region since the implementation of Law No. 16 of 2006 on Extension System of Agricultural, Fishery, and Forestry was uniform, however, the implementation of Law No. 23 of 2014 impacts the extension activities become unclear and very diverse. Whole regulation related extension depends on the will and rules of the leaders in the region. Conditions of extension post the presence of Law No. 23 of 2014 is likely to be in the "Crossroads". Like driving, it has to choose one of the roads that are a straight road or turning road. The straight road seems to be chosen by two ministries, namely the Ministry of Maritime Affairs and Fisheries and the Ministry of Forestry. The Ministry of Maritime Affairs and Fisheries delegated the extension authority to the Central Government, while the Ministry of Forestry handed over its extension authority to the Provincial Government, in this case, the Ministry of Forestry was more fortunate as it still received its extension financing from the Provincial budget.

The choice of turning road is embraced by the Ministry of Agriculture. This ministry still holds Law No. 16 of 2006 with the argument that this law is special so it cannot be replaced by the implementation of law No. 23 of 2014. The consequence of this choice is of course quite risky; particularly two ministries seem to have "withdrawn" from Law No. 16 of 2006. The impact of such policy selection is decreased extension performance; as a result of unclear planning activities that are not supported by the availability of budget, facilities, and infrastructure. The impact for progressive farmers is the diminishing activities and roles given to organizing farmer to farmer extension. Currently, they tend to move independently and activate the

Independent Agricultural and Rural Training Centre, so it is reasonable to argue that the government's attention to them is limited, especially in helping them establish their role as extension agents who have specificity as they come from farmers who deeply understand the farmers perceived.

IV. CONCLUSIONS

Government extension agency and private agency show better support compared to research and education institutions in enhancing the capacity of progressive farmers. The strengthening of advanced farmers as progressive farmers is done by strengthening its role as one of the extension agents in rural areas which is strengthened by efforts to increase individual capacity and independence.

Capacity building and independence enhancement of progressive farmers are done by increasing the intensity of the learning process, strengthening the altruism level and community social capital, as well as increasing support from research, extension and education institutions to meet the information/innovation as the farmers needed.

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