



HOW RICE SEED FARMERS PARTICIPATE IN ADDITIONAL PARTNERSHIP PROGRAM: EXPERIENCE FROM ACEH-INDONESIA

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Abstract

This study aims to determine the level of farmer participation in the agricultural extension partnership program in North Aceh and Pidie Jaya districts, Aceh-Indonesia. This is a case study involving 187 rice seed farmers as research samples. Data was measured and analyzed using a Likert Scale. The results showed that the level of farmer participation in the agricultural extension partnership program was good with an index value of 79.16%. Sequentially the response of farmers' involvement in agricultural activities (87.37%), provision of production facilities (84.24%) and program planning (80.14) were in very good category. The involvement of farmers in product processing (76.26%), program evaluation (74.69%) and product marketing (72.24%) is included in the good category.

Keywords: *Farmers, Participation, Extension Partnerships, Rice Seed, Agricultural Extension.*

1. INTRODUCTION

The change in the paradigm of agricultural development that prioritizes human development has resulted in the role of agricultural extension agents becoming increasingly important. A paradigm shift is needed considering the various methods that have been applied in the history of extension development in Indonesia. Agussabti (2002) emphasized that a new paradigm is needed, not to change extension principles but to be able to respond to new challenges that arise from new situations.

One of the paradigms that must be changed in agricultural development is counseling. This is reasonable because agricultural extension faces several crucial problems. Indraningsih, Sugihen, Tjiptopranoto and Ansgari (2010) and Sapar,Jahi, Asngari, Amiruddin and Purnaba (2012) for example found that the role of agricultural extension workers can only be felt by farmer group administrators. More time is also spent on administrative activities than on extension activities, and the target area burden reaches three to six villages for each extension agent. This is also similar to Baloch & Thapa (2018) found this farmers in the study area have very poor access to extension services due to the combined effect of several factors such as the very limited number of extension workers and farmers' lack of knowledge about some specific agricultural issues. Baloch & Thapa (2018) also reported that extension officials make visits to farmers only at the request of the farmers themselves.

Facing these problems, it is important to strengthen participation and the existence of agricultural extension partnerships with various parties. According to Aref (2011), participation in extension is a process of communication between men, women farmers and extension workers where farmers take the main role to analyze their situation, plan, implement and evaluate development activities. World Bank (2014) as quoted in Nenna and Efobi (2018) define Participation as a process by which stakeholders influence and share control over priority setting, policy making, resource allocation and access to public goods and services.

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Farmer participation is very important in agricultural development. Aref (2011) argues that the participation of farmers in agriculture planning is considered as an important tool for successful sustainable agricultural development. Benjamin (2013) as quoted in Baloch & Thapa (2018) believes that participatory extension has had a positive impact on farmers' knowledge and skills as well as on production. Furthermore Douglass (1997) in Nxumalo and Oladele (2013) confirmed that bad adoption and failure agricultural projects are the result of a lack of participation of the target group at all stages project.

Participation and partnerships can lighten the burden and synergy between innovators and those who will distribute innovations to farmers. Ojha and Morin (2001) believes that partnerships increase the effectiveness of community empowerment. Nancy (2003) also stated that partnerships can increase individual and hierarchical achievements through more appropriate critical thinking and increased adjustment to change. Being involved in agricultural organizations is one of the factors that influence the knowledge and skills of the farmer bureaucracy (Gungor, Esen and Esra, 2017). Aref (2011) emphasized that without community participation there is clearly no partnership, no development and no program.

However, efforts to realize the pattern of participation and partnership in agricultural extension are faced with several challenges. This is in line with Aref (2011) who reported that there are several reasons why active participation is difficult to achieve in practice. The challenges are: the low human resources of farmers, the low interest of entrepreneurs to partner with farmers and the lack of the role of universities to generate innovation for farmers as a form of community service.

The most significant weakness in current agricultural extension is the low participation of farmers in the process of agricultural extension activities. The World Bank (1993) as quoted in Aref (2011) emphasizes that lack of participation is the cause of the failure of many development efforts in developing countries. Nenna and Efobi (2018) also believe that low farmer participation may be one of the factors responsible for the failure of several projects initiated by the government.

Facing this problem, Nahayo, Omondi, Xu-Hui, Lian-Qing, Gen-Xing, and Joseph (2017) suggest closing partnerships between farmers, community leaders, extension workers and agricultural service providers and farmers' practical skills in irrigation and mechanization that can increase farmer participation in agricultural programs. Regarding farmer participation, Sharaunga and Mudhara (2018) also found that the economic incentives of farmers, the opportunity cost of labor, the level of satisfaction and factors that affect cohesion in collective action are factors that influence farmer participation in the management of irrigation infrastructure collectively.

According to Ban and Hawkins (1999), there are several important reasons for farmers to get involved in extension programs. They are (1) farmers have very important information to plan successful programs, (2) they will be more motivated to collaborate in extension programs if they take responsibility for them, (3) democratic societies generally accept that the people involved have rights to participate in decisions about the goals they want to achieve and (4) many agricultural development problems urgently require the participation of target groups in reaching collective decisions because it is no longer possible to solve individual decision-making.

The involvement of farmers in counseling in their farming activities starting from the involvement of planning extension programs, providing production facilities, cultivation activities, post-harvest processing, marketing of production results and program evaluation is very important. Based on this, this study aims to determine the response of farmers to their involvement in the agricultural extension partnership program for rice seed farmers.



2. IMPLEMENTATION METHOD

This research was conducted in North Aceh District and Pidie Jaya District, Aceh Province, Indonesia. The sample in this study were rice seed farmers receiving the agricultural extension partnership program in North Aceh and Pidie Jaya districts involving Malikussaleh University (Unimal), the private sector and farmer organizations. This study used a qualitative method in the form of a case study involving 187 rice seed farmers as the research sample. The data obtained from this study were measured and analyzed using a Likert Scale.

The scope of the study is limited to farmers' responses to their involvement in the extension partnership program at the stages of: (1) program planning, (2) provision of production facilities, (3) cultivation activities, (4) product production processing, (5) product marketing, and (6) evaluation of the agricultural extension partnership program.

3. RESULTS AND DISCUSSION

Overview of the Partnership for Agricultural Extension

The parties involved in the agricultural extension partnership activities include (1) North Aceh and Pidie Jaya District Governments, (2) universities (Universitas Malikussaleh), (3) the private sector and (4) farmer organizations. Each party plays a role in the agricultural extension partnership in accordance with the agreement in cooperation with seed farmers.

The government through its apparatus at the Food and Agriculture Security Agency (BKPPP) of North Aceh Regency and the North Aceh Agricultural Extension Center and the Pidie Jaya Agricultural Extension Center, which provided agricultural extension workers to be involved in this partnership.

Universities as seed producers of innovative superior varieties are equipped with technology packages to introduce and train agricultural farmers as members of seed farmer groups. In addition to training for rice seed farmers, Malikussaleh University also assigns students to provide assistance to farmers in implementing the variety technology packages introduced by partner universities.

The private sector plays a role in accommodating the results and marketing the superior seeds produced by seed farmers. The private sector assesses that if the seed cultivation and processing process is supervised by extension workers and universities, they have the courage to accommodate farmers' seed production at a higher price than the selling price of farmers who do not participate in this partnership program. This supports Swanson and Samy (2002) who believe that private sector companies, including multinational seed and chemical companies, have become important contributors to the transfer of agricultural technology, especially to the commercial agriculture sector.

Farmer institutions consist of a combination of farmer groups (Gapoktan) and customary institutions related to the implementation of seed breeding business activities. Tolno, Kobayashi, Ichizen, Esham and Balde (2015) emphasized that farmer groups can become important institutions for transforming smallholder agriculture, increasing productivity and income, thereby reducing poverty. Omotesho and Ogundele (2016) in Nenna and Efobi (2018) toostated that being a member of a farmer group helps small-scale farmers enjoy economies of scale in the production, processing, transportation and marketing of their products.

Farmers' institutions are committed to implementing innovations offered by extension workers and universities and agreeing with the private sector in terms of production processing and marketing of products produced by seed farmers. Support from customary institutions at the farmer

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level also plays a major role in the distribution of irrigation water regulated by the Keujruen Blang institution. This customary institution has roots in the community and has the main task of regulating the distribution of water to all farmers who cultivate rice fields in Aceh Province.

Characteristics of Rice Seed Farmers

Characteristics of rice seed farmers participating in agricultural extension partnerships observed in this study include (1) age, (2) formal education, (3) rice farming experience, (4) number of family dependents and (5) more land area managed for growing rice. An overview of the average characteristics can be seen in Table 1 :

Table 1. Characteristic Average Distribution of Rice Seed Farmers

No	Characteristics of Rice Seed Farmers	Unit	Reach		Average
			Low	Tall	
1	Age	Year	28	76	48.30
2	formal education	Year	0	16	8.48
3	Field Farming Experience	Year	3	38	18.73
4	Total Lifetime Family Dependents	Person	0	8	3.37
5	Land Area for Seed Cultivation in Hectares	Hectares (ha)	0.04	1.5	0.28

Table 1 shows that the average age of rice seed farmers is at a productive age. At a productive age, farmers generally absorb information quickly and still have strong physical abilities to carry out rice farming. Meanwhile, unproductive farmers usually cannot work optimally in managing their farming business. Antriandarti (2015) explains that young farmers can easily implement technological innovations but prefer to work in cities rather than in the agricultural sector. Kan et al (2018) also confirmed that due to rural migration, young people do not want to stay in the countryside for too long, resulting in an aging population in agriculture.

On average, rice seed farmers have a junior high school level of education and are classified as low-educated. Basically a farmer who is highly educated will adopt innovation and technology more quickly and be more dynamic and efficient in his work. However, their low formal education is offset by relatively long farming experience. The longer the experience, the easier it will be for them to overcome farming constraints based on the experience gained. Nxumalo and Oladele (2013) believe that the higher the age, the level of education of the farmers and an increase in the number of headed males households in the project, the higher the participation in the project.

The average number of dependents of seed farmer families in the medium category is more than 3 people. The number of dependents greatly affects farming activities, especially paddy rice, because members of a farmer group who have a large number of dependents will reduce production costs incurred by farmers.

The majority of rice seed farmers have small plots of land designated for rice seed farming. This is influenced by the technical stretch of the rice seed farming area which was agreed upon in this agricultural extension partnership program. In essence, farmers do not only own land that is incorporated in rice seed farming activities, but most of them own land in other lands for rice cultivation.



Responses to Farmer Participation in the Extension Partnership Program

This study views that the participation of farmers in the extension partnership program includes the following stages: (1) program planning, (2) provision of production facilities, (3) cultivation activities, (4) processing of production results, (5) marketing of the results, and (6) evaluation of the agricultural extension partnership program. The distribution of index values and categories of farmer involvement in agricultural extension partnership program activities can be seen in Table 2 :

Table 2. Participation of Farmers in The Agricultural Extension Partnership Program

No	Activity Stages	Index (%)
1	Program Planning	80.14*
2	Provision of production facilities	84,24*
3	Cultivation Activities	87,37*
4	Processing of Production Results	76.26
5	Marketing products	72.28
6	Program Evaluation	74.69
	Average	79.16

Overall the response of farmers' involvement in the extension partnership program is considered good at every stage of the agricultural extension partnership process. The planning of the agricultural extension partnership program has actively involved farmers, starting from planning to determine the location of the overlay, identifying obstacles, socializing the program and deliberating with partners. Farmers feel they have the opportunity to provide input and suggestions for the planned agricultural extension partnership program that will be implemented.

Farmers' participation begins with program socialization activities carried out by the Malikussaleh University research team as the party that initiated the partnership program with the local government and Gapoktan managers. Farmers get the opportunity to be involved in the planning process either directly or through representation.

In the process of providing production facilities, the farmers involved are very active. This is also driven by demands for applied technology packages for high-yielding rice varieties that require large amounts of organic fertilizers and vegetable pesticides to be produced. To meet this need, university partners conduct training on making organic fertilizers and government extension partners conduct training on making vegetable pesticides using materials that are easily available in their environment.

At the cultivation stage, most farmers apply a cultivation technology package presented by government extension agencies and universities, starting from the seedling process with a faster seed incubation period. At the land preparation stage, farmers also make straw and apply large volumes of organic fertilizer (280 Kg/Ha) according to the recommended technology package agreed upon by the rice seed farmers. During the planting process, recommendations for the technology package for planting quality seeds aged 12-14 days and the application of the *jajar legowo* 2:1 cropping pattern with a spacing of 18 x 35 x 15 cm were also carried out by the rice seed farmers. However, not all farmers apply Bio-Organic soil processing technology.

The involvement of farmers in implementing irrigation systems does not experience significant obstacles. This is due to the availability of good irrigation facilities and the university has also introduced intermittent irrigation techniques and draining water ten days before harvest.

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Significant constraints were also not found in the fertilization process. The majority of seed growers apply fertilization according to the recommended technology packages offered in the partnership program. Only a small number of farmers do not apply the time-consuming and volume-consuming fertilization recommended. Based on the farmer's statement, there was only one type of fertilizer recommended by the Optimal Production Technology, namely 1 liter/Ha of silica fertilizer which was sprayed at 12 and 25 HST (Day after Planting) because farmers had difficulty getting agricultural stalls in their environment.

At the processing stage, the results show that not all farmers are involved, but they also see and support the management of the rice produced to be used as seed according to the criteria required to produce superior stocking seeds. This form of support includes selling products that will be processed by Gapoktans into rice seeds which are distributed to the quality seeds variety.

Processing activities include the drying process, seed cleaning using a seed clear machine, storage and measurement of moisture content as well as packaging and labeling of the resulting seeds.

Farmers are also involved in deliberations regarding the marketing of their products, especially the clarity of price information that they will get from private parties who will withhold their crops at harvest. Farmers get market certainty about prospective rice production which is accommodated by Gapoktan at a price of Rp. 750,- higher than the price of rice that applies at harvest if farmers follow all the agreements on the application of cultivation technology offered by partners.

Another agreement obtained from the deliberation is related to product marketing where 80% of the total yield of breeder seeds is ready to be accommodated by Gapoktan which is financed by the private sector. The average price received by farmers is Rp. 5.400,-/Kg. This price is higher than the prevailing price at harvest, which is around Rp. 4,750-4,900/kg, - for rice farmers who are not involved in extension partnership program activities. Based on the farmer's statement, even though there was an increase in price, the price received by the farmer was slightly different from the result of deliberations with the beneficiary regarding the implementation of this extension partnership program.

Another advantage received directly by farmers through seed processing activities carried out by Gapoktans is the increased capital of Gapoktan Owned Enterprises (BUMG) which can be reused to help provide agricultural production facilities and business capital that can be learned by Gapoktan member farmers.

The involvement of farmers in the program evaluation process is also considered good. However, based on information from several respondents, the partnership program evaluation process did not involve all participating farmers because the samples taken were only representatives of seed farmers and partners who were involved in agricultural extension partnership activities. As a result, some farmers did not receive complete information regarding the results of program evaluation activities and follow-up evaluation of the implemented agricultural extension partnership program.

4. CONCLUSION

The majority of farmers participating in the agricultural extension program are of productive age with a low level of formal education. However, they have long farming experience. The number of dependents is included in the moderate category and the area of land cultivated for paddy rice seeds is included in the narrow category. It is similar to Nxumalo and Oladele



(2013) who found that the majority of farmers are over 60 years old, have no formal education, are headed by men household, has a minimum household size of 6 people, and a garden size of less than 10 ha.

Farmers' participation in the agricultural extension partnership program is considered good with an index value of 79.16%. Sequentially the involvement of cultivators in cultivation activities (87.37%), provision of production facilities (84.24%) and program planning (80.14) were considered very good. While the involvement of farmers in production processing (76.26%), program evaluation (74.69%) and marketing (72.24%) is good.

This study recommends increasing the participation of rice seed farmers at each stage of the agricultural extension partnership program. This supports Ajani, Mgbenka and Onah (2015) who suggest that village youth be involved in the preparation, implementation, monitoring and evaluation of policies and programs related to agriculture. This is also in line with Nxumalo and Oladele (2013) who concluded that participation in agricultural projects is meaningful empower farmers and give them responsibility so they feel they own the project.

Through participation, farmers will have a sense of ownership and more responsibility for the extension partnership program from the planning stage to program evaluation. Through participation and partnerships, farmers will also feel the impact of implementing agricultural extension partnerships and be able to develop agriculture as a key sector in economic growth.

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