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Perceptions of farmers, Effectiveness of Farmers Group, and Diffusion of Innovation of Organic Farming System in Lampung Province

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SUMMARY

The use of pesticides and chemical fertilizers in improving crop productivity has effected on soil fertility and environmental pollution and the loss of natural predators that actually play a role in creating a balance of ecosystems. This research aims to find out: 1) farmer perception on organic farming system, 2) farmer group effectiveness in diffusion of organic farming system, 3) relationship farmer perception and farmer group effectivity with diffusion of innovation organic farming system, 4) factors most related to diffusion of innovation organic farming system, and 5) advantages of organic farming system and nonorganic farming system in rice cultivation. This research was conducted in Central Lampung District and Pringsewu District. The research method used was census and survey method. The results showed that: 1) The perception of farmers on organic rice is very profitable, easy to apply, produce healthy products for the body, can restore soil fertility, environmentally friendly, and can produce the same level of production non organic rice (2) Farmer group is very effective to disseminate new innovation of organic rice system to farmer society, 3) farmer perception, farmer fulfillment requirement, farmer group effectively have relation with diffusion of innovation of organic rice cultivation system 4) Organic rice cultivation is currently more profitable than non-organic rice because high productivity, high production prices, total farming costs are lower than non-organic rice farming and marketing of organic rice yields are easy.

Introduction

Lampung Province as one of the provinces in Indonesia has developed organic farming. One of the commodities being developed is organic rice. Based on data obtained from the Agriculture, Food and Horticulture Agency of Lampung Province in 2015, organic rice cultivation has been done in seven districts in Lampung Province, Tanggamus Regency, Pringsewu Regency, Lampung Tengah Regency, South Lampung Regency, West Tulang Bawang Regency, East Lampung Regency and West Lampung Regency. Organic rice cultivation prioritizes local potential and environmentally friendly so it will greatly support the restoration of soil health and health of its product users and has a high selling value and benefit farmers.

One of the areas currently developing organic farming system (paddy) is in Untoro Village, Trimurjo Sub-district, Central Lampung District and Fajar Esuk Village and Pujodadi Village in Pringsewu Sub-district, Pringsewu District. Although some farmers in these three regions have demonstrated success in organically cultivating rice, the innovation of organic rice cultivation is still not widely distributed to farmers in these three areas. Therefore, knowing the perception of farmers on innovation of organic farming system and the effectiveness of farmer groups in dissemination of innovation is interesting to be studied because the introduction of organic farming system in the region has been long enough.

Research Methods

This research was conducted in Untoro Village, Trimurjo Sub-district, Central Lampung and in Pajaresuk and Pujodadi Village, Pringsewu Sub-district, Pringsewu. The consideration of the location of the research is based on the three villages is a village that develops organic farming system and has been certified. The study time begins in July - December 2017. The research methods used in this study is survey method. The population in this study are organic rice farmers in Untoro, Fajaresuk, and Pujodadi Village. The total population of organic rice farmers in the three villages is as many as 35 people. Because the population is relatively small and relatively easy to reach, the sampling method used is the census method.

Primary data were collected through observation and direct interviews to farmers who planted organic rice using a questionnaire. Data processing used in this research using descriptive method, tabulation and statistic. Data analysis is done quantitatively. Hypothesis testing is done by using nonparametric statistic with Parsial of Kendall test (Siegel, 1997) with SPSS 17 program.

Result And Discussion

The perception of farmers of respondents on organic rice cultivation in the three villages studied in general is almost the same. Perceptions of production inputs, production processes, outputs, processing and marketing of produce all gained attention from farmers before they planted organic rice. In terms of inputs in the organic materials, farmers generally have difficulty in supply and still get help from government agencies such as organic fertilizers and pesticides. One of the obstacles by farmers in providing the above production facilities is the availability of livestock manure which is used as material for making organic fertilizer less available. In addition, the smell of livestock manure when processed into organic fertilizer and brought to farmland is also a separate problem.

In terms of aspects of the production process, farmers also face some of the fact that in organic rice cultivation it turns out the number of grass / weeds that grow on farm land is so much that it requires extra power to clean it. In addition, the type and number of pests encountered at the time of organic rice cultivation is also very diverse and many although it is not too adverse impact as found in non-organic rice cultivation. One cause of widespread plant pests encountered at the time of organic rice cultivation seems to be caused by the "natural enemies" of the pest itself on the farmland of organic rice cultivation. Thus, although the cultivation of organic rice is considered more "complicated" in its implementation compared with non-organic / conventional rice cultivation, but the satisfaction obtained in the above has made farmers want to keep planting organic rice.

If viewed from the aspect of output / yield produced in the cultivation of organic rice, then the output resulting from organic rice cultivation is lower when compared with the output of non-organic rice cultivation. The average productivity level of non-organic rice cultivation obtained by farmers is 6.03 ton / ha per season, while the average productivity of organic rice at first planted reaches 3.0 ton / ha per season. Nevertheless, with the longer time (more than 3 years), the current level of organic rice productivity (2017) has almost equaled the level of non-organic rice productivity (6 tons / ha). The impact of using organic materials used in organic rice cultivation can not seem to provide a high level of productivity, but it takes a long time to be absorbed in the soil and improve the soil structure.

It appears that many factors related to the perception of farmers on the easiness of organic rice farming innovation are accepted by farmers, both internal factors within the farmers themselves (such as the fulfillment of farmers' needs, healthy food demand, family encouragement, which come from outside the farmers (external) such as market availability, selling price of production, availability of input for organic rice cultivation and others. One of the decisive factors to the acceptance of organic rice cultivation innovation is the improved productivity level achieved from organic rice cultivation and easy marketing of products accompanied by high prices and the impact on increasing soil fertility owned by farmers.Thus, the perception of farmers as a result of sensing farmers against existing objects (organic rice cultivation) is instrumental to the ease of an innovation accepted by farmers. A good perception that is supported by the fact that the object is in accordance with the perception of the perception will largely determine the rapidity of an innovation accepted by the farming community. This is in accordance with Rachmat (2001) which say that experience greatly affects a person's perception of an object. The experience gained by farmers in the villages studied on improved organic rice cultivation has attracted other farmers who have not implemented organic cultivation to apply organic rice cultivation and strengthen the farmers who have grown organic rice to continue this type of rice farming. This fact is evident from the growing number of farmers who participated in planting organic rice in 2017.

The courage of a farmer to grow organic rice is considered by local farmers to risk failure if the cultivation of organic rice is not successful. However, based on the development of the level of production obtained from the recent cultivation of organic rice that almost equaled the level of non-organic rice production has reduced the doubt about the advantages of organic rice cultivation. Based on calculations made by organic rice farmers obtained the results that organic rice farming is currently more profitable compared with non-organic rice farming. Support from government agencies to farmers who grow organic rice also helps the pride of organic rice farmers, as well as the local community's appreciation of farmers who grow organic rice. In addition, training on organic rice

cultivation also opened the farmers awareness that the return of soil fertility is needed so that agricultural activities can continue. In other that organic rice farming can meet the needs of organic farmers, both in terms of physiological needs, safety, social, appreciation and self-actualization. The ease of marketing the products, the high price of organic rice production and the increasing level of organic rice productivity has made organic farmers more confident and more disseminate to other farmers that organic rice cultivation is very profitable both economically, socially and environmentally friendly.

The role of farmer groups in increasing farming production has been found. Hasanuddin (2015) found that the role of farmer groups as a place of learning for farmers, as a means of cooperation between farmers and as a container business has proven effective in improving farmers 'productivity and farmers' income.In relation to the effectiveness of organic rice farming groups, the above can also be seen. This is evident from the growing number of farmers in the studied areas that grow the growing organic rice. The growing number of farmers who grow organic rice in the region can not be separated from the role of farmer groups (especially the board) in inviting and disseminating innovation of organic rice cultivation to the farmers of its members. The figures of the farmers 'group, the seriousness of the farmers' group, and the persistent invitations of the farmer group members to their members by showing the advantages and benefits of organic rice cultivation have gradually yielded results with the participation of other farmers for organic rice cultivation. Thus in this study it has been shown that the large role of farmer groups in spreading a new innovation to the farming community has a very big role, let alone the reality in the field supported by the advantages shown by the innovation. In addition, farmer groups have also been instrumental in developing marketing networks of production products and obtaining the necessary production facilities in organic rice cultivation. Thus the results of this study also supports the results of research Hasanuddin (2015) that the farmers are effective in spreading new innovations to the farmers and improve farmers' farm productivity, while in terms of increasing farm income there are factors that determine the price of the production, the total cost of farming, and the level of production obtained from the innovations introduced.

The diffusion of innovation and the adoption of new innovations to farming communities, including innovative organic rice cultivation, is not easy and fast to obtain. This can be seen from the fact that although in 2001 the Indonesian government has launched the program "Go Organic 2010", but until 2017 organic cultivation for agricultural commodities has not been done. The acceptance of a new innovation by the peasant community is determined by many factors. In addition to internal factors contained in the new innovation itself, external factors also affect the rapid slowness of an innovation accepted by the peasant community, including the role of farmer groups in disseminating the innovation.

Innovation organic rice cultivation in the area studied was first known in 2010 (Untoro Village), even in Fajar Esuk Village only known in 2013 and in Pujodadi Village in 2015 ago. The first initiative on organic rice cultivation was first introduced by the Public Works Department by introducing SRI system rice (System Rice Intensification) which is efficient in water use. The next stage is the involvement of the local Agriculture Department in accompanying and disseminating the innovation (organic rice cultivation) to the wider farmer's community through field agricultural extension activities conducted by the Field Agricultural Extension (PPL). Based on observations in the field it appears that the intensity of interaction between farmers is very influential on the acceptability or not a new innovation by the farming community. In addition, support from government agencies and local village government and community leaders are also very influential on the slow pace of an innovation to be accepted by the farmer's community. If the related to acceptance of organic rice innovation in the area study is closely related to all the items. The intrinsic properties contained in organic rice innovation and the extrinsic properties contained in organic rice innovation have proven to be highly related to the rapid slowing of organic rice innovations being accepted by farming communities. The first experience experienced by unsuccessful farmers in organic rice cultivation (producing only 1.5 tons / ha) affects the duration of organic rice innovation received by farmers, on the other hand the increase of organic rice productivity recently (5.9 tons / ha) accompanied by high product prices and a smaller total cost of organic rice farming resulted in the number of farmers willing to implement innovative

organic rice cultivation is increasing. In addition, the availability of production markets, family support and government agencies as well as farmers' satisfaction with the performances of organic rice crops and their effects on the increase of soil fertility of farmland is another factor that causes more farmers in the area studied to apply organic rice cultivation. Thus the speed of an innovation accepted by the farmers is also determined by the security subsistence farmers if they accept a new innovation. The safer the "subsistence security" of the farmer when applying a new innovation, the more likely the new innovation is applied by the farmer. On the other hand, because farmers live in their communities and the local natural environment, the social environment and the ecological niche of farmers also determine the acceptance of a new innovation by the peasant community, including the perception of farmers towards the new innovation and the role of farmer groups. Table 1 below shows the relationship between farmers 'perceptions, the level of farmers' needs, the effectiveness of farmer groups, and the diffusion of organic rice cultivation innovations in the area under study.

Based on Table 1 it appears that perception variables of farmers, the level of farmers' fulfillment, and the effectiveness of farmer groups have a related (at 99% level) with the diffusion of innovation organic rice cultivation. Thus the results of this study indicate that the role of farmers' perceptions of an innovation, the role of farmer groups in the process of diffusion of an innovation, and the level of fulfillment of the needs of farmers by an innovation is crucial to the acceptability of an innovation by the farming community.

Table 1. Perceptions of Farmers', Farmer Group Effectiveness, and Diffusion Innovation of Organic farming system in Lampung Province,

Variable	Variable	Significance value	α	Decision
Perceptions of farmers	Diffusion of Innovation in Organic Rice Farming	0,000	0,05	Significant
Effectiveness of Organic Rice Farmer Group		0,000		
Level of Fulfillment Requirement of organic rice farmers		0,001		Significant
				Significant

Conclusions

Based on the results of research that has been done can be concluded as follows:1) Farmers' perception of organic rice is very profitable, easy to apply, produce healthy products for the body, can restore soil fertility, environmentally friendly, and can produce production level equal to non-organic rice production level, 2) Farmer groups are very effective in disseminating new innovations of organic rice cultivation system to farming communities, 3) Perceptions of farmers, the level of farmers' needs, the effectiveness of farmer groups has a related with the diffusion of innovation organic rice cultivation system, 4) Organic rice cultivation is currently more profitable compared to non-organic rice cultivation because in addition to high productivity is also supported by high production prices, total farming costs lower than non-organic rice farming and marketing of organic rice yield is relatively easy, and 5) Factors that are closely related to the perception of farmers and the effectiveness of farmer groups on organic rice cultivation are the factors of production of farming products, the provision of production facilities, marketing of production, and the benefits of organic rice farming.

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