



THE RELATIONSHIP OF FARMER SOCIAL ECONOMIC CHARACTERISTICS TO THE SUCCESS OF AGRICULTURAL EXPLANATION PROGRAM LEGOWO 4:1 PLANTING SYSTEM AND SRI (System of Rice Intensification) (Case Study: Pematang Setrak Village, Teluk Mengkudu District, Serdang Bedagai Regency)

Muhammad Syahrizal

Agribusiness Study Program

Faculty of Agriculture, University of North Sumatra, Medan 20155, Indonesia

msvahrizall@gmail.com

Abstract

This study aims to determine the socio-economic characteristics of farmers in the research area, determine the success of agricultural extension programs on the Legowo 4:1 planting system and SRI (System Rice of Intenfication) in the research area, determine the success rate of implementing agricultural extension programs on the Legowo 4:1 planting system and SRI (System Rice of Intenfication) in the research area, to find out whether there is a relationship between the socio-economic characteristics of farmers (age, education level, length of farming , number of dependents) on the success of agricultural extension programs on the Legowo 4:1 planting system and SRI (System Rice of Intensification).) in the study area. The analysis method uses descriptive, scoring, and Rank Spearman methods with the help of SPSS 16. The results obtained that the success rates of the extension program on the Legowo 4:1 planting system and SRI (System Rice of Intenfication) were 81.5% and 83.7% respectively. Age and duration of farming have a relationship with the success of the agricultural extension program in the 4:1 legowo planting system. Meanwhile, the level of education and the number of dependents have no relationship to the success of the agricultural extension program in the 4:1 legowo planting system. While the level of education, length of farming and number of dependents have no relationship to the success of the agricultural extension program on the SRI (System Rice of Intenfication) planting system. Age and duration of farming have a relationship with the success of the agricultural extension program in the 4:1 legowo planting system. Meanwhile, the level of education and the number of dependents have no relationship to the success of the agricultural extension program in the 4:1 legowo planting system. While the level of education, length of farming and number of dependents have no relationship to the success of the agricultural extension program on the SRI (System Rice of Intenfication) planting system. Age and duration of farming have a relationship with the success of the agricultural extension program in the 4:1 legowo planting system. Meanwhile, the level of education and the number of dependents have no relationship to the success of the agricultural extension program in the 4:1 legowo planting system. While the level of education, length of farming and number of dependents have no relationship to the success of the agricultural extension program on the SRI (System Rice of Intenfication) planting system.

Keywords: Characteristics, Success Rate, Relationships, legowo 4:1.

1. Introduction

In order to build resilient agriculture, agricultural development actors need to have the ability to optimally utilize all resources, overcome all obstacles and challenges, adapt to production patterns and structures to changes that occur and play an active role in national development and regional development. To realize this resilient agriculture, it is necessary to have strong and strong agricultural apparatus in the field of regulation. Services and counseling are in accordance with the qualifications and specializations needed for the continuity of the resilient agricultural development process (Soedijanto, 1996).

An extension worker assists farmers in their efforts to increase production and the quality of their produce in order to improve their welfare. Extension agents act as reform agents who help farmers identify the problems they face and find the solutions needed (Suhardiyono, 1992).

Extension can not be done just like that without prior introduction of the area and the

extension work program that must be carried out for the agricultural area. The introduction of an agricultural area must result in a survey in the form of a regional monograph and then an adequate extension program with the level and importance of the agricultural area can be determined (Kartasapoetra, 1987).

The agricultural extension work program was created after the extension worker knew the descriptions of the conditions and situation of the farming business being carried out in the village, especially regarding the problems that were being faced by the farmers. A good agricultural extension work program is a work program that is made by taking into account and considering the existing pictures, especially the conditions and situations as well as the problems faced by farmers, the role and capabilities of the extension workers as well as difficulties or obstacles that may arise during its implementation (Kartasapoetra, 1987).

The row planting system is an attempt to manipulate the planting location so that the planting will have a higher number of edge plants with empty rows. It is known that rice plants on the edge have better growth and development than rice plants in the middle row, thus providing higher production yields and grain quality. This is because plants on the edge will get more sunlight intensity (edge plant effect) (Sembiring, 2001).

In 1997, Uphoff gave a presentation on SRI (System of Rice Intensification) in Bogor, Indonesia; for the first time SRI was presented outside Madagascar. In 1999, for the first time SRI was tested outside Madagascar, namely in China and Indonesia. SRI testing in Indonesia is carried out by the Indonesian Agency for Agricultural Research and Development (IAARD) at its research center in Sukamandi, West Java. The test results showed that the harvest with the SRI method was 6.2 tons/ha while the yield from the control plot was 4.1 tons/ha, so that there was an increase in yield of 66.12 percent. Since then, SRI has been tested in more than 25 countries with yields ranging from 7 – 10 tons/ha (Adiratma, 2004).

2. Research methods

The research area was determined purposively based on certain considerations. This research was conducted in Pematang Setrak Village, Teluk Mengkudu District, Serdang Bedagai Regency. Pematang Setrak Village was chosen because the farmers in the village implemented rice cultivation using the Jajar Legowo Planting System and using the SRI (System of Rice Intensification) system.

The population in this study were farmers who planted rice using the legowo system and the SRI system in Pematang Setrak in Teluk Mengkudu District, Serdang Bedagai Regency. Sampling in this study was carried out using simple random sampling where the sampling method was taken from members of the population randomly without regard to the strata in the members of the population. In this study, there were 399 farmers. From this number, 60 samples were taken and the sample consisted of 30 farmers with the 4:1 legowo planting system and 30 farmers with the SRI planting system.

The data collected in this study consisted of primary data and secondary data. Primary data was obtained from observations (observations) and direct interviews with sample farmers in the research area using a questionnaire that had been prepared in advance. Meanwhile, secondary data was obtained from related institutions such as BPS, the office of the head of Pematang Sentrak village, Teluk Mengkudu sub-district, Serdang Bedagai district, the office of the head of the agricultural office of Serdang Bedagai and the head of the Gapoktan of Pematang Setrak village, and other relevant agencies.

For problem identification (1), analyzed using descriptive method, the thing to be analyzed is about the implementation of agricultural extension programs on the Legowo 4:1 planting system and SRI (System of Rice Intensification) in the research area. To complete the hypothesis (1), namely by analyzing the differences in the socio-economic characteristics of farmers between farmers using the Legowo 4:1 cropping system and SRI (System of Rice Intensification), it was analyzed using a comparative method.

3. Results and Discussion

3.1 The Success of the Agricultural Extension Program on the Legowo Planting System 4:1

The CIPP model is a model that is oriented to decision makers. This model divides evaluation into four types, namely: context evaluation (serving planning decisions), input evaluation (to help manage decisions to determine available sources, alternatives taken, and work procedures to achieve the intended goals), process evaluation (assisting decisions on the extent to which the program has been implemented), product evaluation (ie reviewing decisions). The four types of CIPP evaluations (Context, Input, Process, Product) can be visualized into aspects of the assessment of the implementation of the Agricultural Extension Program on the 4:1 legowo planting system in the research area in table 1 below:

Table 1. Assessment of the Implementation of the Agricultural Extension Program on the Legowo 4:1 Planting System in Pematang Setrak Village, Teluk Mengkudu District.

No	Model CIPP	Inikator Kinerja
1	<i>Context</i>	<ol style="list-style-type: none"> 1. Perencanaan program penyuluhan pada sistem tanam legowo 4:1 dapat meningkatkan pengetahuan petani 2. Perencanaan program penyuluhan pada sistem tanam legowo 4:1 dapat meningkatkan hasil produksi petani 3. Perencanaan program penyuluhan pada sistem tanam legowo 4:1 dapat meningkatkan pendapatan petani 4. Perencanaan program penyuluhan pada sistem tanam legowo 4:1 dapat membantu petani dalam berusaha tani
2	<i>Input</i>	<ol style="list-style-type: none"> 1. Pemerintah memberikan bantuan (materil/non materil) dalam pelaksanaan program penyuluhan sistem tanam legowo 4:1 2. Masyarakat memberikan bantuan materil/non materi (swadaya) dalam pelaksanaan program penyuluhan sistem tanam legowo 4:1 3. Penyuluh menyediakan alat yang dibutuhkan dalam melaksanakan program penyuluhan sistem tanam legowo 4:1 4. Penyampaian materi dengan baik oleh penyuluh mengenai program penyuluhan pada sistem tanam legowo 4:1

- 3 *Process*
1. Penyuluh memberikan penyuluhan yang berhubungan dengan program penyuluhan pada sistem tanam legowo 4:1
 2. Penyuluh dapat memenuhi permintaan informasi yang dibutuhkan petani dalam program penyuluhan pada sistem tanam legowo 4:1
 3. Penyuluh memberikan penyuluhan sistem tanam legowo 4:1 secara langsung.
 4. Petani mudah menerapkan apa yang dipelajari pada program penyuluhan pada sistem tanam legowo 4:1
- 4 *Product*
1. Peningkatan produksi setelah adanya program penyuluhan pada sistem tanam legowo 4:1
 2. Peningkatan pendapatan petani setelah adanya program pada sistem tanam legowo 4:1
 3. Perubahan sikap petani setelah adanya penyuluhan pada sistem tanam legowo 4:1
 4. Peningkatan keterampilan petani dalam mengelola usaha tani setelah adanya program penyuluhan pada sistem tanam legowo 4:1

From table 1, it can be seen that the assessment of the implementation of the Agricultural Extension Program on the Legowo 4:1 planting system can be measured according to activity indicators ranging from context, input, process to product. Based on the implementation assessment indicators that have been described previously, it can be seen the results of the transformation of the implementation of the extension program in the research area which can be seen in table 2.

Table 2. Results of the Value Transformation of the Implementation of the Agricultural Extension Program on the Legowo 4:1 Cultivation System in Pematang Setrak Village, Teluk Mengkudu District.

No	Uraian Indikator	Nilai Diharapkan	Nilai Rata-rata	Persen Ketercapaian
1	<i>Context</i> (Konteks)	4 – 20	16,5	82,8%
2	<i>Input</i> (Input)	4 – 20	15,7	78,6%
3	<i>Process</i> (Proses)	4 – 20	16,1	80,5%
4	<i>Product</i> (Produk)	4 – 20	16,8	84,3%

Total expected value: 16 – 80

Total score obtained: 65.1

Total achievement percentage: 81.5%

The ability of farmers to cultivate farming has also changed and with the implementation of the 4:1 legowo planting system technology provided by extension workers, farmers can increase the production of their farms. From table 2 above, it can be seen that the implementation of the agricultural extension program with the 4:1 legowo planting system in Pematang Setrak village, Kec. Mengkudu Bay can be classified in the successful category, with a success value of 65.1 with a percentage of program achievement of 81.5%.

3.2 The success of the Agricultural Extension Program on the SRI Planting System (System of Rice Intensification).

The four types of CIPP evaluations (Context, Input, Process, Product) can be visualized into

Muhammad Syahrizal-**The Relation of Farmers' Socio-Economic Characteristics to the Success Rate of Agricultural Extension Programs Legowo 4:1 Planting System and SRI (System of Rice Intensification)**
(Case Study: Pematang Setrak Village, Teluk Mengkudu District, Serdang Bedagai Regency)

aspects of the assessment of the implementation of the Agricultural Extension Program on the SRI (System of Rice Intensification) planting system in the research area in table 3 below.

Table 3. Assessment of the Implementation of Agricultural Extension Programs on the System of Rice Intensification (SRI) in Pematang Setrak Village, Teluk Mengkudu District.

No	Model CIPP	Indikator Kinerja
1	Context	<ol style="list-style-type: none"> 1. Perencanaan program penyuluhan pada sistem tanam SRI dapat meningkatkan pengetahuan petani 2. Perencanaan program penyuluhan pada sistem tanam SRI dapat meningkatkan hasil produksi petani 3. Perencanaan program penyuluhan pada sistem tanam SRI dapat meningkatkan pendapatan petani 4. Perencanaan program penyuluhan pada sistem tanam SRI dapat membantu petani dalam berusaha tani
2	Input	<ol style="list-style-type: none"> 1. Pemerintah memberikan bantuan (materil/non materil) dalam pelaksanaan program penyuluhan sistem tanam SRI 2. Masyarakat memberikan bantuan materil/non materi (swadaya) dalam pelaksanaan program penyuluhan sistem tanam SRI 3. Penyuluh menyediakan alat yang dibutuhkan dalam melaksanakan program penyuluhan sistem tanam SRI 4. Penyampaian materi dengan baik oleh penyuluh mengenai program penyuluhan pada sistem tanam SRI
3	Process	<ol style="list-style-type: none"> 1. Penyuluh memberikan penyuluhan yang berhubungan dengan program penyuluhan pada sistem tanam SRI 2. Penyuluh dapat memenuhi permintaan informasi yang dibutuhkan petani dalam program penyuluhan pada sistem tanam SRI 3. Penyuluh memberikan penyuluhan sistem tanam SRI secara langsung. 4. Petani mudah menerapkan apa yang dipelajari pada program penyuluhan pada sistem tanam SRI
4	Product	<ol style="list-style-type: none"> 1. Peningkatan produksi setelah adanya program penyuluhan pada sistem tanam legowo 4:1 2. Peningkatan pendapatan petani setelah adanya program pada sistem tanam legowo 4:1 3. Perubahan sikap petani setelah adanya penyuluhan pada sistem tanam legowo 4:1 4. Peningkatan keterampilan petani dalam mengelola usaha tani setelah adanya program penyuluhan pada sistem tanam legowo 4:1

From table 3, it can be seen that the assessment of the implementation of the Agricultural Extension Program on the SRI (System of Rice Intensification) planting system can be measured according to activity indicators ranging from context, input, process to product. Based on the implementation assessment indicators that have been described previously, it can be seen the results of the transformation of the implementation of the agricultural extension program on the SRI (System of Rice Intensification) planting system in the research area which can be seen in table 4.

Table 4. Results of the Value Transformation of the Implementation of the Agricultural Extension Program on the System of Rice Intensification (SRI) in Pematang Setrak Village, Teluk Mengkudu District.

No	Uraian Indikator	Nilai Diharapkan	Nilai Rata-rata	Persen Ketercapaian
1	Context (Konteks)	4 – 20	17,6	88,2%
2	Input (Input)	4 – 20	16,7	83,5%
3	Process (Proses)	4 – 20	15,8	79,2%
4	Product (Produk)	4 – 20	16,8	84,2%

Total expected value : 16 – 80

Total score obtained : 66.9

Total achievement percentage : 83.7%

The ability of farmers to cultivate farming has also changed and with the implementation of the SRI (System of Rice Intensification) planting system technology provided by extension

workers, farmers can increase their farming production. From table 5.4 above, it can be seen that the implementation of the SRI (System of Rice Intensification) agricultural extension program in Pematang Setrak village, Kec. Mengkudu Bay can be classified in the successful category, with a success value of 66.9 with a percentage of program achievement of 83.7%.

4. Conclusion

The successful implementation of the 4:1 legowo planting system extension program in Pematang Setrak Village, Teluk Mengkudu District, Serdang Bedagai Regency has been categorized as successful on each implementation indicator. In the context indicator, the percentage of achievement is 82.8% with an average value of 16.5. In the input indicator, the percentage of achievement obtained is 78.6% with a value of 15.7. In the process indicator, the percentage of achievement is 80.5% with a value of 16.1. In the product indicator, the percentage of achievement is 84.3% with a value of 16.8. The success rate of the 4:1 legowo planting system extension program in the research area is 65.1 with a percentage of 81.5% achieved.

The successful implementation of the SRI (System of Rice Intensification) planting system extension program in Pematang Setrak Village, Teluk Mengkudu District, Serdang Bedagai Regency has been categorized as successful on each implementation indicator. In the context indicator, the percentage of achievement is 88.2% with an average value of 17.6. In the input indicator, the percentage of achievement obtained is 83.5% with a value of 16.7. In the process indicator, the percentage of achievement is 79.2% with a value of 15.8. In the product indicator, the percentage of achievement is 84.2% with a value of 16.8. The value of the success rate of the SRI (System of Rice Intensification) planting system extension program in the research area is 66.9 with a percentage of 83.7% achieved.

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