

# Response of Farmers Field Schools (FFS) Participants to Method of Organic System of Rice Intensification (SRI) in Tasikmalaya Regency, Indonesia

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**ABSTRACT:** The population in Indonesia is still very dependent on rice as their staple food. Rice producers are expected to continue to increase their productivity while maintaining environmental sustainability. Rice Intensification System (SRI-Organic) is an intensive and efficient way of cultivating rice plants, by using organic materials without using chemical substances, while maintaining productivity and prioritizing ecological values. The purpose of this research is to determine the response of farmers participating in Farmers Field Schools (FFS) to the SRI-Organic method, and to compare the productivity of farmers participating in FFS with non-FFS farmers. The research was conducted in Tasikmalaya Regency using a quantitative design. The sampling method was cluster random sampling, taking 39 FFS farmers and 39 non-FFS farmers as control, so a total of 78 farmer respondents. The analysis technique used quantitative descriptive and Student's T-test. The results showed that the response of the FFS participant to the SRI-Organic method was that 15.4% of the farmers were classified as less active in responding to the SRI-Organic method; 48.7% of farmers are classified as active in responding to the SRI-Organic method; and 35.8% of farmers were very active in responding to the SRI-Organic method. The productivity of farmers participating in FFS is higher than that of non-FFS. There are farmers who are classified as less active in responding to SRI-Organic because there are several inhibiting factors, namely: capital, land ownership status, procurement of organic fertilizers, community environment, and technical implementation.

**Keywords :** Productivity, Response, Farmers Field Schools (FFS), Organic SRI.

## I. INTRODUCTION

Indonesia as a country with a population the fourth largest in the world (BPS Data 2019: 266 , 9 million), facing the very complex challenges in meeting the food needs of its population. Therefore, the policy to increase rice production is a central issue in development and is a major focus in agricultural development. The Indonesian government strives to increase national rice production in the context of realizing rice self-sufficiency and overcoming the possible rice crisis (scarcity) that occurs.

Paddy production in 2016 increased by 5 , 01 % to reach 79.17 million tons production. Increase in production was due to an increase in harvested area very significantly by 6 , 58 % to reach 15.04 million hectares area, while productivity experienced a decline of 1.48% or achieve 5.26 tons per hectare. (Center for Agricultural Data and Information Systems, 2017 ) . On the one hand, the use of fertilizers still increased by 3.47 percent and the use of pesticides increased by 74.42 percent. This indicates that the paddy fields are no longer responsive to the input of fertilizers and pesticides. This phenomenon shows that the sustainability of land productivity needs to be maintained by applying wiser cultivation methods (Ministry of Agriculture, 2017).

The government policy at that time did not consider the impact of using chemical fertilizers on the soil in the long term. The main consideration is only how to achieve maximum agricultural production in order to be self-sufficient in food. The impact of the application of chemical pesticides does not only occur in agriculture, but

also inhumans, which causes diseases in humans, such as cancer, which is known to be directly related to the use of chemical pesticides. The active ingredients contained in pesticides can be in direct contact with the skin, can be inhaled or swallowed repeatedly so that cancer cannot be avoided (Agus A, 2008). Seeing the negative impact of the use of chemical pesticides and chemical fertilizers, at this time there is hope as a solution for agriculture in Indonesia in increasing production yields and preserving natural resources, namely through the agricultural pattern with the SRI-Organic method (System of Rice Intensification).

In Indonesia, Tasikmalaya Regency is one of the rice production centers which in recent years has shown a significant increase in lowland rice production. Tasikmalaya Regency is also one of the rice production centers which is used as a pilot for SRI-Organic rice by the Indonesian Ministry of Agriculture. In 2014, it has given tangible results in the form of an increase in productivity of 25-50 percent (Department of Agriculture and Food Crops, Tasikmalaya Regency, 2016). The development of the SRI-Organic method in Tasikmalaya Regency has been carried out since 2003, from the area of land that applies SRI continues to increase from year to year, in early 2003 SRI rice cultivation was only 44.77 ha, in 2004 there was an increase of 144.69 ha, and in 2005 it was 346.15 ha. In 2007 the expansion occurs about three times that of 2006 that of 891,05 ha to 2917.00 ha. Likewise with the increasing productivity of SRI-Organic rice, in 2003 productivity only reached 69.56 kw / ha, in 2004 productivity reached 71.31 kw / ha, in 2005 productivity reached 74.77 kw / ha and in 2006 can reach 78.26 kw / ha. (Department of Agriculture and Food Crops, Tasikmalaya Regency, 2017). There are five sub-districts which are SRI-Organic rice production centers which are used as locations for intervention in the application of technology by the Department of Agriculture and Food Crops of Tasikmalaya Regency, namely, Manonjaya District, Cisayong District, Tanjungjaya District, Sukaraja District, and Mangunreja District. Of the five sub-districts, Manonjaya District is one of the first sub-districts to apply the SRI-Organic method in Tasikmalaya Regency, and is followed by Sukaratu District. Introduction and training of the SRI-Organic method in Tasikmalaya Regency through Farmers Field Schools (FFS) provided by local extension agents. With the FFS, the farmers got a lot of information about the SRI-Organic rice planting method. Almost all villages in Tasikmalaya Regency have received counseling

and information about the SRI-Organic method. Farmers' responses to the SRI-Organic method are still mixed. There are farmers who have responded to this method very well and immediately put it into practice, there are farmers who have practiced it then returned to conventional, and, there are also farmers who have not responded to this method well. Royan (2005) research in Tasikmalaya found the case that most of the organic rice farmers who previously received SRI training and had implemented it for two seasons, now mostly return to the conventional approach because technically, SRI is still considered complicated by farmers. Most of these farmers responded well to the SRI-Organic method or not after they tried this method on their own land. In relation with the problems that have been explained, then this study aims to: 1). Identify the characteristics of FFS participating farmers who apply the SRI-Organic method. 2). Analyze the responses of FFS participating farmers to the SRI-Organic method. 3). Analyze the differences in productivity of farmers participating in SRI-Organic methods (FFS) with Non-FFS. 4). Identifying the inhibiting factors for farmers in applying the SRI Organic Method.

## II. LITERATURE REVIEW

SRI (system of rice intensification) was developed in Madagascar 20 years ago by Fr. Henri de Laulanié, SJ, who spent 34 years working with farmers, observing, experimenting, and also having 'luck' in the 1983-1984 period. This method is also known as the Madagascar Method. In 1994 Tefy Saina (a non-governmental organization) and CIIFAD (Cornel International Institute for Food and Agriculture Development) began collaborating in developing SRI. With the help of CIIFAD especially from Prof. Norman Uphoff, SRI spread to other countries. Nanjing Agricultural University in China and AARD (Agency for Agriculture Research and Development) in Indonesia conducted their first trial outside Madagascar in 1999.

The SRI application in Indonesia was tested for the first time at the Rice Research Institute, Sukamandi in 1999 with a yield of 6-9 tonnes / ha (CIIFAD, 2002), the input still uses small amounts of non-organic materials. The SRI program in West Java was implemented in Ciamis in 2001 with yields of up to 12 tons of GKP / ha ("Pikiran Rakyat", 2003). From various studies revealed that the productivity of farmers applying SRI-Organic higher in appeal farmers who do not apply Organic SRI. The SRI method is claimed to be able to increase rice production by more than 50 percent with better quality rice. It was also stated

by the initiators of this method that the use of SRI could reduce input and costs incurred by farmers in the form of efficient use of seeds by 80–90 percent, provision of irrigation water between 25-50 percent and reduce dependence on the use of chemical fertilizers. (Natawidjaya, RS et al. 2008)

System Rice Intensification (SRI) is an intensive and efficient way of cultivating rice plants, with a root system management process based on groundwater and plant management, while maintaining productivity and promoting ecological value. Ecological definition, namely the occurrence of harmony and balance as well as environmental harmony, both biotic and abiotic environments. According to Litbang (2007) SRI (System of Rice Intensification) is an intensive and efficient way of cultivating rice plants with a root system management process based on the management of: soil, plants and water. In practice, the SRI method used in West Java is generally the result of a combination of IPM ideas with SRI ideas and some experiences from previous studies. With this combination, environmentally friendly rice farming is produced, both in the process and in the resulting products. The basic principle of SRI-Organic methods are: 1) .Pengolahan healthy soil with organic matter / compost ant fig 5-7 ton / ha or adjusted to the fertility of the soil. 2). Healthy and quality seeds. 3). The seeds are sown in dry / moist media without being flooded. 4) . Seedlings are planted 5 - 7 days from the seedlings in the nursery. 5) Planted single, shallow with horizontal roots forming the letter L. 6) . A procession of planting width: 30 cm x 30 cm, 40 cm x 40 cm, or 50 cm x 50 cm. 7). Pest control (IPM) that emphasizes ecological principles . 8) Does not use synthetic fertilizers and pesticides.

FFS originated in Asia as a means of improving farmers' analytic and decision-making skills, of which a key objective was to promote use of integrated pest management as an alternative to intensive pesticide spraying, which was severely damaging farm production, the environment and farmers' health. (Waddington, Hugh et al. 2018). Through field schools, it is hoped that farmers will respond well to a new innovation, such as SRI-Organic. Response is a term used by psychology to describe reactions to stimuli received by the five senses. Responses are usually manifested in the form of behavior that appears after stimulation. Behaviorism theory uses the term response paired with stimuli to describe the process of forming behavior. Responses are behaviors that arise due to environmental stimuli. If the stimulation and response are paired or conditioned it will form new behavior towards the conditioned stimuli.

Mar'at (1982) suggests that the response is formed as a result of a motive that arises because someone makes an assessment and affective reaction from a stimulus. Rakhmat (1996) suggests that a person's tendency to act or respond depends on his experience. In addition to the experience factor, psychologically a person will perceive the stimulus (which produces behavior / response) depending on his characteristics. From this opinion, it can be concluded that the response is closely related to the experience and characteristics of the person.

A good response is not necessarily followed by the adoption process, because theoretically, there are stages in the adoption process. Adoption is a process starting from the issuance of ideas from one party, submitted to the second party, until the idea is accepted and utilized by the community as a second party ( Samsudin, 1987). Farmers accepts something new or an idea always through stages. The stages of the adoption process according to Rogers (2003 ) are gradually starting from: a) . The stage of consciousness or the stage of knowing. Farmers begin to become aware of something new, begin to be open to developments in the outside world, become aware of what is already there and what is not there. b). Interest stage or attention stage. Farmers began to take an interest in what they had just learned. This stage is characterized by seeking information about things he just knows. c) . Assessment stage. Farmers feel they are considering the possibility of doing it themselves, whether they are able to do it, whether it is profitable, whether it is suitable for their type of work. d) . Testing stage . Farmers start trying new things that farmers have decided on. Farmers using a small part of their rice field try new methods, and preview the results. e) . Adoption stage. At this final stage the farmers have started to practice new things with the belief that they will succeed. The area for planting is expanded, and even the entire land is used with the new method, because they are confident with the results of their own experiments and are sure that the new method will bring greater benefits.

By looking at the stages of the adoption process, farmers cannot just accept what they have captured from the new method of agriculture. There are farmers who easily apply the new method and there are also farmers who refuse the method to be applied. With the difference in the speed of accepting new things by farmers, it results in a division of farmer groups based on the speed with which the adoption process is delivered. Five

groups of adopters are known (Rogers, 2003, Soekartawi, 2005) :

a). The pioneers or innovators, namely the groups that are the fastest to go through the adoption process in the not too distant future, those who belong to this group will accept and use the new things they receive. b) Early adopter, because their nature in terms of receiving new things is faster than the third, fourth, and fifth groups. A little slow when compared to the first group. c). The early adopters or early majority, namely those who accept something new, are always preceded by the early adopters. They always look at the response of the group above it. d). The late majority, this group who are the slowest to accept something new. After a long period of time, they just want to accept the arrival of new things. e). The laggard group, generally consists of the elderly whose way of thinking cannot be changed. Usually this group immediately rejects all the new things that come in their environment. Farmers respond to changes that take time and will not be accepted immediately. The adoption process plays a big role in farmers responding to a change. In this case, the SRI-Organic method has several changes in the way of farming rice using conventional methods. This change in farming methods cannot be easily accepted by farmers, but they should try from their own experience and get a good impact. After farmers try from their own experience and get a good impact, they can respond well to these

changes by applying the SRI method in organic rice cultivation .

### III. RESEARCH METHODS

The research was conducted in Tasikmalaya Regency, using a quantitative design with a survey approach. While the sampling method was cluster random sampling. The stages in cluster random sampling are as follows: a). From the list of sub-districts that implemented Organic SRI, 2 districts were selected randomly, obtained from Manonjaya and Sukaratu Districts. b) Next, we took 1 village per district randomly, the village MargahayuKec. Manondjaya and Sukagalih Village, Sukaratu District. Respondent farmers were taken by proportional random sampling, obtained 39 farmers participating in Field School (FFS participant) and (not participating in Field School (non-FFS) as control of 39 farmers, so a total of 78 farmer respondents.

The types and sources of data required consist of primary data and secondary data. Primary data were collected directly from the location of the activity with a survey method using a questionnaire and Focus Group Discussion (FGD). Secondary data were obtained from the Agriculture and Food Crops Office , BPS , as well as literature review. The analysis technique used was descriptive analysis ( Likert scale ) and T-test a ). For descriptive analysis , the respondents' answers are given an adjusted score according to the following criteria:

**Table 1.** Score criteria for the application of the SRI-Organic method

SCORE	Criteria
Score 5	When a farmer applies a method, be aware of the method and its benefits, and find out more about the method.
Score 4	When farmers apply the method, and know the benefits.
Score 3	When farmers apply the method, but do not know the method and its benefits.
Score 2	When the farmer knows about the method, but doesn't implement it.
Score 1	If the farmer doesn't know about the method and doesn't implement it.

After calculating the interval scale, the scale range is 19. With this scale range, the Response category can be obtained with the interval scale as follows:

- Interval 14 - 32: farmers are less active in responding to the SRI-Organic method
- Interval 33 - 51 : farmers are active in responding to the SRI-Organic method
- Interval 52 - 70 : farmers are very active in responding to the SRI-Organic method

b). Student T-test analysis to see the differences in productivity of FFS participant and non-FFS. The use of t test match when the kit is a will compare the average of two groups as well as to analyze the

design of experimental posttest two groups were selected randomly (posttest-only two-group randomized experimental design). The hypothesis and formula for Student's T-Test are as follows:

Hypotheses to be tested

$$H_0 : \bar{y}_1 \leq \bar{y}_2$$

$$H_A : \bar{y}_1 > \bar{y}_2$$

$\bar{y}_1$  : FFS farmer productivity with SRI Organic method

$\bar{y}_2$  : productivity of non-FFS farmers

The formula to use:  $t_{cal} = (\bar{y}_1 - \bar{y}_2) / \sqrt{(S_1^2/n_1) + (S_2^2/n_2)}$

#### IV. RESULTS AND DISCUSSION

Farmers who get information about the SRI-Organic method have various educational backgrounds ranging from elementary to tertiary education, but the majority are elementary school (46.15%). Although farmers have received less formal education, they have also received non-formal education such as extension and special

education. Farmers often receive training in the form of Integrated Pest Management (PET) & System of Rice Intensification (SRI) training from extension workers in villages and sub-districts. Whereas past literature does find operator age and education to be important (Tey and Brindal, 2012).

**Table 2 . The Relationship Between Education Level and Response to SRI-Organic Method**

Level of education	Average score	Response Category	Percentage (%) N=78
University	55.8	Very active	12.82
High school	53.7	Very active	23.08
Junior High school	50.5	Active	17.95
Primary school	43.6	Active	46.15

In the education variable, there is a tendency that the higher the level of education of the farmers, the better the farmer's response to the SRI-Organic method is. A person's education level will influence the person's attitude and behavior. It can be seen that at the tertiary education level the average response score is 55.8 in the very active category, while at the elementary education level the average response score is 43.6 in the active category. This occurs because farmers with higher levels of education are easier to understand and implement a new method than farmers with low education (Soekartawi, 1988). Therefore, farmers with higher education have a higher response score than farmers with less education. This result is in line with the study of Oyedele et al. (2018), who

argue that Nigerian farmers' perceptions of organic farming are significantly related to their education.

Farmers' status is seen from the land tenure which greatly influences the farmers' ability to take risks. Farmers who own tenants can make decisions to adopt innovations according to their wishes (Soekartawi, 1988). In the variable of farmer status, there is a tendency that farmers who own tenants tend to get higher scores in responding to the SRI-Organic method compared to farmers who rent land to work on. The status of farmers, seen from the land tenure, greatly influences the farmers' ability to take risks. This happens because farmers who own tenants can make decisions to adopt innovations according to their wishes (Soekartawi, 1988; EkoWati, 2008).

**Table 3. Relationship between Respondent Farmers' Status and Responses to SRI-Organic**

Farmer Status	Average score	Response Category	Percentage (%) N=78
Cultivator owner	54.8	Very active	28.21
Production Sharing Farmers	46.3	Active	71.1

In the variable of land ownership, there is a tendency that the land area is related to the response to SRI-organic. It can be seen that the larger the respondent's land, the better the response of farmers to the SRI-Organic method. It is in

accordance with the opinion of Soekartawi (1988) and Ekowati, NR (2008), farmers with more land will be faster to implement the adoption of innovation, because the risk is smaller when compared to farmers who have a small area.

**Table 4 . Relationship between Respondents' Land Area and Responses to SRI-Organic**

Land (ha)	Ownership	Average score	Response Category	Percentage(%) N=78
≤ 0.1		45.2	Active	46.15
0.11 - 0.2		49.7	Active	25.64
0.21 - 0.3		53.8	Very active	17.95
0.31 - 0.4		54.0	Very active	7.69
0.41 - 0.5		52.0	Very active	2.56

**Farmer's Response to the SRI-Organic Method**

The results of the overall analysis of the SRI-Organic method can be seen by using a Likert scale analysis using 14 indicators in the following table

**Table 5 . Response of Farmers to SRI-Organic Method in Tasikmalaya Regency**

Description	Likert Score	Percentage(%) N=78
Farmers are less active in responding to the SRI-Organic method	14-32	15.4
Farmers are active in responding to the SRI-Organic method	33-51	48.7
Farmers are very active in responding to the SRI-Organic method	52-70	35.8

In the calculation of the Likert scale of 15,4 % of farmers including the less active group in response to SRI-organic methods. Farmers who are less active in responding to the SRI-Organic method are generally farmers who do not implement the methods that are in the basic principles of SRI-Organic. In implementing the SRI-Organic method, there are some farmers who have not implemented the existing SRI-Organic method. Usually they are lazy to implement and try new methods. These farmers need a long time to apply the SRI-Organic method because these farmers first see the results of farmers who have applied the SRI-Organic method , then they want to try to apply the SRI-Organic method. According to Rogers (2003) and Soekartawi (2005) farmers with these characteristics are included in the Late Majority group or slow adherents.

In the calculation of the Likert scale of 48 , 7 % of the farmers included in the active group in response to SRI-organic methods. Farmers who are active in responding to the SRI-Organic method are generally farmers who have implemented the methods contained in SRI-Organic. Not least of these farmers who know will benefit from any method they are doing. And there are also those who only apply the SRI-Organic method according to the basic principles of the method but do not understand the benefits of the method. This group

of farmers usually do not be too hasty in accepting something, if it has not convincingly be good and lucky. According to Rogers (2003) and Soekartawi (2005) farmers with these characteristics are included in the Early Majority group or early adherent group.

Furthermore, farmers who were included in the very active group in responding to the SRI-Organic method were 35.8% . Farmers who are very active in responding to the SRI-Organic method are generally farmers who have implemented the methods contained in SRI-Organic and know the benefits of the method used. There are also these farmers who are looking for more information about the SRI-Organic method. Usually, those who seek more information about the SRI-Organic method are the management of the farmer groups, usually the chairman, secretary, treasurer, and there are also extension workers who are also farmers. Usually these farmers are very easy to get information and from this information they can easily apply it. These farmers are also usually the pioneers of the application of new technology in the village. According to Rogers (2003) and Soekartawi (2005) there are farmers with these characteristics who are included in the Early Adopter group or early adopters and there are also farmers who are included in the Innovator group or the pioneer group.

### Inhibiting Factors in the Application of the SRI-Organic Method

The results of the analysis show that there are 4 inhibiting factors in applying SRI-Organic for

farmers, namely: Procurement of organic fertilizers (82.05%), land ownership status (71.79%), community environment (66.67% and technical implementation of SRI-Organic). (61.54%).

**Table 6.** Inhibiting Factors in the Application of the SRI-Organic Method

Obstacle factor	Yes (%) N=78	No (%) N=78
Procurement of organic fertilizers	82.05	17.95
Land ownership status	71.79	28.21
Community environment	66.67	33.33
Technical implementation of SRI-Organic	61.54	38.46

In the SRI-Organic method, it is necessary to use a large amount of organic fertilizers but the availability of raw materials for making organic fertilizers around their village is still very limited. The main raw materials for making organic fertilizer are forage (straw, banana stalks, grass) and animal manure (kohe), namely cow, goat, rabbit, chicken and buffalo dung. Forage around Margahayu and Sukagalih villages is still easy to find but for animal manure, it is difficult to find. The scarcity of animal manure is because there are no animal farms and farmers rarely raise animals. Many farmers buy animal waste from outside the area, so the price of animal waste is expensive. This causes production costs to increase, and this hinders the adoption of the SRI-Organic method.

Land ownership status is an inhibiting factor because land owners have more complete control over the implementation of their farming, when compared to tenants. Owners can make a decision to apply the SRI-Organic method to their agricultural land, but tenants must obtain permission from the land owner to implement the SRI-Organic method. So in this case the status of land ownership becomes an inhibiting factor because not a few tenant farmers do not get permission to apply SRI rice on the land they rent.

The community environment is an inhibiting factor in the application of the SRI-Organic method, because these farmers feel that they do not receive full support from their families and the surrounding environment. Some farmers even get insult from their families for applying the SRI-Organic method. Lack of support from the surrounding community caused the application of the SRI-Organic method in Margahayu village to be less than optimal. The public is not sure and really

believes that the SRI-Organic method is better than the conventional method.

The conventional method of rice farming and the SRI-Organic method is quite different. Farmers in Margahayu and Sukagalih villages are not familiar with the SRI-Organic method. Farmers are not accustomed to this method, causing farmers to consider the implementation of the SRI-Organic method quite difficult. There are several methods that they think are difficult to implement, such as the method of testing the pithy seeds, the simple method of seeding, the method of using organic fertilizers during soil cultivation, the L horizontal planting method, and the making of MOL.

### Productivity differences between farmers participating in FFS using the SRI-Organic Method and Non-FFS farmers

Test Results-T in Table 7 shows that the productivity of farmer participants FFS applying SRI-Organic methods (74 , 73 kw / ha) is significantly higher than the productivity of non-FFS farmers (51.04 kw / ha), with  $t_{cal} : 215$  is greater than  $t_{table} : 1.67$ . This is in line with the trials of SRI technique was first implemented by the Institute for Research and Development of Agriculture in West Java Sukamandi rice yield an average of 8 , 2 tons / ha (Uphoff , 2002). Also in line with the research results of the Agricultural Research Center in Puyung, NTB, the SRI method gives an average yield of 9 tonnes / ha (Sato 2007), in Fifty Cities District, SRI-based rice farming reaches 8 tonnes / ha (Djinis et al., 2008) , in the city of Padang 10 , 8 tonnes / ha (Anwar et al., 2009), in Sleman Regency 9.6 tonnes / ha (Darmadji 2011), and in the eastern Indonesia region reaching 7.4 tonnes / ha (Sato 2007). The findings above are also reinforced by research by Fitriadi, F and Rita, N (2008), and Pringadi (2009)

who found that rice farming with the application of SRI can increase rice production by around 8 tons / ha.

**Table 7.**T-test for Productivity Differences between FFS farmers with SRI Organic Method and Non-FFS farmers.

	Y <sub>1</sub>	Y <sub>2</sub>
Mean	7473.589744	5104.74359
Variance	3338.14305	1385.458839
Observations	39	39
Pooled Variance	2361.800945	
Hypothesized Mean Difference	0	
df	76	
t Stat	215.2447244	
P (T <= t) one-tail	6.3156E-108	
t Critical one-tail	1.665151353	

Note: Y<sub>1</sub>: productivity of FFS farmers with SRI Organic Method Y<sub>2</sub>: productivity of non-FFS farmers

## V. CONCLUSIONS AND SUGGESTIONS

### Conclusion

1). The characteristics of farmers in Tasikmalaya Regency who participate in Farmers Field School (FFS) who have applied the SRI-Organic method are as follows: the majority are 51-55 years old (41.03%), have an elementary education background (46.15%), farming experience for > 20 years (71.79%), the status of the owner is a cultivator, a sharecropper (71.79%), and has a land area of ≤ 0.1 ha (46.15%).

2). Farmer response in Tasikmalaya Regency can be grouped as follows: Late Majority group or groups that are less active in responding to the SRI-Organic method by 15.4%. The Early Majority farmer group who was active in responding to the SRI-Organic method was 48.7%. Meanwhile, the group of farmers who were very active in responding to the SRI-Organic method was 35.8%. This is called the Early Adopter, there are also farmers who are included in the Innovator group.

3). The productivity of farmers who participate in Farmers Field School (FFS) and apply the SRI-Organic method is significantly higher than conventional farmers (non-FFS).

4). Inhibiting factors for farmers to apply the SRI-Organic method in Tasikmalaya Regency are capital, land ownership status, procurement of organic fertilizers, community environment, and technical implementation.

### Suggestion

1). There needs to be more training and further FFS on the SRI-Organic method in stages for farmers and farming families, so that farmers who are

included in the slow adherent group can easily understand the phasing of the SRI-Organic method.

2). It is necessary to provide easy capital credit for farmers in Tasikmalaya Regency at the beginning of the planting season, so that farmers do not find it difficult to procure production inputs.

3). It is necessary to socialize mixed farming with the maintenance of livestock such as chickens, cows and goats for farmers so that the procurement of organic fertilizers can be done by farmers themselves.

### REFERENCES:

- [1]. Andoko, Agus. 2008. Organic Rice Cultivation. Self-Help Publishers. Jakarta.
- [2]. Barnes, AP., Soto, I., Eory, V., Beck, B., Balafoutis, A., Sanchez, B., Vangeyte, J.,
- [3]. Ekowati, Novi Erma 2008. H an association Status SosialEkonomi P Felling trees trimming logs D ith Level Adopsi I novateBudidayaPadiSintanur. Faculty of Agriculture, UNS. Surakarta
- [4]. Fountas, S., van der Wal, T., & Gomez-Barbero, M. (2019). Exploring the adoption of precision agricultural technologies: a cross regional study of EU farmers. Land Use Policy, 80, 163 - 174
- [5]. Fitriadi, F and Rita, N (2008) . Analysis of Organic Rice Marketing and Income with SRI (System Rice Intensification ) Method , Journal of Agricultural Technology Assessment and Development Vol.11 No.1. March 2008
- [6]. Hakim , T. Farhanul. 2007. Development of Organic SRI (System of Rice Intensification) in TasikmalayaRegency .



- [7]. Mosher, AT 1981. Building and Driving Agriculture .Publisher CV. YasaGuna Jakarta.
- [8]. Natawidjaya, RS, Endah D, Gema WM2008. Study of the Socio-Economic Impact of SRI Rice Cultivation for Farmers and the Community of TasikmalayaRegency . Final Report on Collaboration between LP Unpad and the Department of Food Crop Agriculture, Tasikmalaya Regency.
- [9]. Nazir, Moh. 1998. Research Methods. Publisher Gh alia Indonesia. Jakarta.
- [10]. Oyedele, GT, Wole-Alo, FI, Owolabi, KE, &Okunlola, JO (2018). Small – scale farmers perception on organic farming status in Ondo State, Nigeria. American Journal of Agriculture and Forestry, 6 (6), 186-190
- [11]. Research and Development Agency. 2007. Learning Soil Ecology (PET) and System of Rice Intensification (SRI). TasikmalayaRoad Map of Organic Rice Agriculture 2007.Ministry of Agriculture n.
- [12]. Rochaedi, 2005. Environmentally Friendly Farming : Saving Water, Healthy Soil, Increasing Production through the SRI Method. West Java SRI Development Institute. Arrowroot.
- [13]. Rogers, Everett, M. (2003).Diffusions of Innovations; Fifth Edition. Simon & Schuster Publisher
- [14]. Royan, MY, 2005. Prospects for the Sustainability of Organic Rice Farming Using the Intensive Design System (SRI) Method , Faculty of Agriculture, Unpad
- [15]. Salikin, Karwan. A. 1999. Sustainable Agricultural Systems .Rosdakarya Publisher. Bandung.
- [16]. Samsudin. 1987. Basics of Agricultural Extension and Modernization .Binacipta Publisher. Bandung.
- [17]. Setiajie ,Iwan . 2008. Ideas and Implementation of System of Rice Intensification (SRI) in Ecological Rice Cultivation Activities, through < <http://pse.litbang.deptan.go.id/ind/pdf/files/ART6-1c.pdf> >. access date [29/01/2009 ]
- [18]. Soekartawi. 1986. Farming Science and Research for Smallholder Development .Publisher UI Press. Jakarta.
- [19]. Soekartawi.1988 . Basic Principles of Agricultural Communication .Publisher UI Press. Jakarta.
- [20]. Sugarda, Tarya. 2008. Study on the Development of Agribusiness-Based SRI Rice Farming in Support of Sustainable Food Security , Journal of Agriculture, vol.5 no.2, Faculty of Agriculture, Padjadjaran University.
- [21]. Sugiyono. 2006. Quantitative Research Methods, Qualitative and R &D .AlfabetaPublisher . Bandung.
- [22]. Technical Guidelines for the Development of Paddy Paddy Farming with System of Rice Intenfication Method 2007.Directorate of Land Processing.Agriculture department.
- [23]. Tey Y.S., Brindal, M. 2012. Factors influencing the adoption of precision agricultural technologies: a review for policy implications. Precision Agriculture 13,713–730.
- Rakhmat, Jalaludin. 1996. Psychology of Communication .Rosdakarya Publisher. Bandung.
- [24]. Waddington, Hugh; Snilstveit, BirteHombrados, Jorge Vojtkova, Martina Phillips, Daniel Davies, Philip White, Howard. 2014. Farmer Field Schools for Improving Farming Practices and Farmer Outcomes: A Systematic Review. The Campbell Collaboration. London



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