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## FARMERS' PARTICIPATION IN THE DEMONSTRATION OF HEALTHY RICE CULTIVATION AREA IN LABUAPI, WEST LOMBOK DISTRICT

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### ABSTRACT

This study analyzes farmer participation and the relationship between factors influencing farmer participation in a demonstration program for healthy rice cultivation areas in Labuapi District, West Lombok Regency. The research method used is descriptive with survey techniques. Location determination was taken from rooms recorded as implementing the program covering seven villages in Labuapi District. Samples were taken from as many as 38 respondents using a proportional random sampling technique. Data analysis used the Spearman rank correlation test ( $r_s$ ) with the help of the IBM SPSS 25.0 program. The results showed that farmer participation in the program was generally in the high and very high categories. There is a significant relationship between factors of non-formal education, income, cosmopolitan, experience, access to information, and relations between officers and farmers on farmer participation in programs that have been implemented with all of these factors having positive or unidirectional correlation values, which means that the higher the value of these factors, the higher farmer participation.

**Keywords** : Demonstration Areas; Farmer Participation; Healthy plant cultivation; rice

### ABSTRAK

*Penelitian ini bertujuan untuk menganalisa tingkat partisipasi petani, dan hubungan faktor yang mempengaruhi terhadap partisipasi petani dalam program demonstrasi area budidaya tanaman sehat padi di Kecamatan Labuapi Kabupaten Lombok Barat. Metode penelitian yang digunakan adalah deskriptif dengan teknik survei. Penentuan lokasi diambil dari daerah yang tercatat telah melaksanakan program yang meliputi 7 desa di Kecamatan Labuapi. Sampel diambil sebanyak 38 responden menggunakan teknik proportional random sampling. Analisa data digunakan uji korelasi rank spearman ( $r_s$ ) dengan bantuan program IBM SPSS 25.0. Hasil penelitian menunjukkan partisipasi petani dalam program umumnya berada pada kategori tinggi dan sangat tinggi. Terdapat hubungan yang signifikan antara factor pendidikan nonformal, pendapatan, kosmopolitan, pengalaman, akses informasi dan hubungan petugas dengan petani terhadap partisipasi petani dalam program yang telah dilaksanakan dengan keseluruhan factor tersebut memiliki nilai korelasi positif atau searah yang artinya semakin tinggi nilai faktor tersebut maka semakin tinggi partisipasi petani.*

**Kata kunci:** *Budidaya Tanaman Sehat; Demonstrasi Area, Padi, Partisipasi Petani*

## INTRODUCTION

Rice is one commodity material food with level very high consumption in this world, particularly in the Asian region. One producer of rice, the biggest in the world, is Indonesian. Besides earning rice with high quantity in the world, Indonesia is also a country with level consumes rice largest in the world (Safitri & Sihaloho, 2020). Based on data from the Food and Agriculture Organization (FAO) (2017), Indonesia is the third producer of rice biggest in the world, Where 74.5 million tons were produced in 2016. Rice became need staple consumed by residents almost throughout the region and will keep increasing with the increase of residents. Population growth is due to the increasing need for rice consumption, which needs to be balanced with the increase in rice production, which will result in a food crisis (Padilah & Adam, 2019).

To achieve stability, local commodity food, specifically paddy, make the government provide programs to strengthen food security (Vintarno et al., 2019). Need high rice \_ creating opportunities for rice cultivation is the more intensive the

activity is planting increasing rice often from usually Can until 2-3 times a year. Rice planting activities that are too intense will reduce land quality due to ecosystem imbalances if not appropriately managed (Fiantis, 2019). Appropriate rice cultivation techniques will increase production yields so that food security remains can wake up.

One of the government programs through the Directorate Protection Food Crops is a cultivation program called plant healthy, which is a technique of cultivating planting paddy in a manner friendly, sustainability environment. Cultivation of plants of Healthy is done by maximizing the role of whole available agroecosystems as good or which is enemy natural to work. The same with plants so that healthy plant land and environment can awake (Aisha, 2019). Based on the matter, the expected use of ingredients in chemistry synthesis can be reduced Because it defames the environment and leaves residue on land agriculture. Integrated Pest Management (IPM) is also becoming aligned with activity. So that is expected later and can be adopted by society broadly. So from That pilot application Cultivation of Healthy Plants in the form demonstration area

(Dem Area) with the use of material friendly environment like fixing organic soil, fertilizer biology, and pesticides biology (Ardhianta et al., 2020).

Cultivation Area Dem Program Healthy Plants started being held in 2018 in some provinces in Indonesia. In the province of West Nusa Tenggara sub-district Pumpkin West Lombok Regency is one of the location activities carried out. Activity is done with the hope that farmers can plant rice without pests and guard productive land to produce healthy paddy (Directorate of Food Crop Protection 2022).

Participation of farmers has become the main factor in rejecting measuring the success of the implemented cultivation program. Activity cultivation implemented rice \_ must Already fulfill instruction given technical. \_ study will participate farmers in carrying out activity Cultivation Area Demonstration Rice Healthy Plants in the District Pumpkin West Lombok district yet Once done. This research can later be used in a framework to improve future programs.

## RESEARCH METHODS

The research used descriptive research with t-technique data collection

using surveys and questionnaires. The research was carried out in 7 villages located in the Labuapi sub-district, West Lombok Regency. The village that became location study included the villages of Kuranji, Karang Bongkot, Perampuan, Terong Tawah, Bajur, Merembu, and Labuapi. Research location taken based on location data demonstration program recipients Paddy Healthy Plant Cultivation Area, where the data was obtained from BPP Kec. Pumpkin.

All farmers who have implemented the Demonstration of Healthy Paddy Plant Cultivation Area program in the pumpkin district became the study population which consisted of 15 farmer groups with a total population of 378 farmers. The total area of the activity area cultivation is an area of 210 Ha. The sample used in the study This totaling 38 farmers which. Is the sample taken using techniques of *proportional random sampling* with each village taken in Kuranji 3 people; Karang Bongkot, 5 people, Perampuan 8 people, Eggplant Tawah 7 people, Bajur 5 people, Merembu 3 people and Labuapi 7 people.

Factors influencing participation among farmers include age, formal

education, non-education formal, income, cosmopolitan, experience, access to information, and officer relations with farmers (Ardhianta et al., 2020). T-level participation is categorized using the formula for the interval width, which is categorized into four scores: high, high, low, and very low.

Interval width formula:

$$i = \frac{\text{Measurement distance (R)}}{\text{Number of Interval (k)}} \dots\dots\dots (1)$$

Where :

i = Interval width

R = Measurement distance

K = Number of Intervals

For data collection, observation techniques were used through direct observation to get an overview of the research location; then, interview techniques were used to obtain data and information, and recording to record data obtained by Suliyanto (2011). data that has been obtained and then analyzed using nonparametric statistical methods. To find out the relationship between age, formal

## RESULTS AND DISCUSSION

Farmer Participation Level in the Program

According to Wahyuni (2021), participation means an individual's

education, non-formal education, income, cosmopolitan, experience, access information, and the relationship between officers and farmers against the level of participation farmers in activity in use analysis Spearman's rank correlation (rs). According to Spearman Rank Formula :

$$rs = 1 - \frac{\sum_{i=1}^N d_i^2}{N^3 - N} \dots\dots\dots (2)$$

Description :

Rs = Coefficient Spearman rank correlation

N = Amount sample

di = Difference in ranking between variables

For test level significance connection, used comparison Sig (2-tailed) value with a level of 95% confidence, tolerable error  $\alpha = 0.05$  (Suliyanto & Suyantoro, 2011 ).

Criteria for making a decision :

If the value of Sig. (2-tailed)  $\leq \alpha = 0.05$ , then Ho is rejected and H1 is accepted, which means there is significant relationship. If the value of Sig. (2-tailed)  $> \alpha = 0.05$ , then Ho is accepted, and H1 is rejected, which means there is no significant relationship.

participation in an activity, from planning, implementing, monitoring, and evaluating to not continuing the activity. If there is a problem, he will start analyzing it and thinking about a solution, then decide to overcome it. Farmers' participation in this

research is measured about how much considerable frequency of involvement of farmers in the program which has been carried out. Here is the distribution percentage of the average participation of respondents in the Plant Cultivation Area Demonstration Program Healthy Paddy in the district Pumpkin West Lombok Regency, which can be seen in Table 1.

Table 1. Farmer Participation Level in Area Demonstration Program

Participati on Level	Amount (Person)	Percentage (%)
Very high	17	45
Tall	15	39
Low	4	11
Very Low	2	5
Amount	38	100

Table 1 shows that the average percentage of farmer participation is located in categories very high (45%) and high (39%), which inform that almost all farmers responded to this program well with participation and in the activity. There are four stages that farmers go through in the Dem Area Cultivation program for healthy plant rice, namely the planning stage, the implementation stage, the monitoring and evaluation stage, and the results utilization stage. The participation rate of farmers in each stage of activity can see in Table 2.

Based on Table 2, the level of Farmer participation is a very high moment of implementation and monitoring, while at

the time, planning and utilization results are high.

Table 2. Level of Participation at Each Stage Program Activities

Stage Participation	Level Participati on	Score	Number (person)
Planning	Tall	2.90	17
Implementation	Very high	3.65	31
Monitoring	Very High	3.56	33
Evaluation			
Results	Tall	2.80	15
Utilization			

Participation planning stage farmer taken from how much great engagement direct farmers to activities planning program Where as many as 17 people get an average score of 2.90 on planning. Involvement of direct farmer in stage planning seen from intensity farmer donates form energy and mind in program planning accordingly with instruction implementation. A total of 31 people got an average score of 3.65 on implementation. At the implementation stage, farmers must participate and participate in order to achieve the objectives of the program, namely to pilot healthy crop cultivation techniques so that they can motivate other farmers.

Farmers' participation at the monitoring stage is activeness farmer on stage pre-plant, plant, until post-plant. In contrast, stage evaluation is implemented at the end of the program. The goal is to get suggestions and input from farmers and all the parties involved. At stages obtained

participation of farmers of very high categories. It is shown by a gain score valued at 3.56 by 33 people on monitoring and evaluation. On utilization results obtained participation farmers with category high shown by the gain score worth 2.80 by 15 farmers. Utilization results are stages activity farmer accepts benefit or assesses program outcomes through satisfaction farmer in activity sell results production.

**Related Factors with Participation Level Farmer**

Factors influencing the interest somebody to participate shared become internal and external factors. The internal

factor is originating factor from an individual or group; meanwhile, the external factor originates from outside an individual or group (Marphy & Priminingtyas, 2019). The research used some related factors to the participation of farmers in the demonstration Cultivation activities of Rice Healthy Plants, such as internal factors that include age, formal education, informal education, income, cosmopolitanism, and experience. Whereas factor external covering access to information and relationships between officers with farmers (Syifa et al., 2020). Following the distribution of respondents based on influencing factors participation of farmers is presented in Table 3.

**Table 3.** Related Factors with Participation Level Farmers in Dem Cultivation Area Activities Healthy Plants in the District Pumpkin

Participation Factors	Category	Number (person)	Percentage (%)
Age	Height (between 48-60 years)	25	65,79
Formal education	Low (junior high school equivalent)	16	41,10
Non-Formal Education	Low (1-2 times a month)	15	39,47
Income	High (> IDR 20,000,000/1 season plant)	26	68,42
Cosmopolitan	Very Low (1-2 times a month)	17	44,73
Experience	Height (20 -30 years)	28	73,68
Information Access	High (3 -4 times a month)	23	60,05
Connection Officer with Farmer	High (2-3 times a month)	27	71,05

Table 3 show respondent in a group aged 48-58 years dominant group age respondent as the recipient of the demonstration in cultivation program. Healthy Plants are a group age elderly still early productive. Age can be used as a

reject measure To evaluate somebody in an activity, Where they determine remain productive in work and possibilities can work with sound and max (Susanti et al., 2016).

The tendency of a person as they get older, their productivity will decrease. However, farmers at an advanced age tend to be loyal to their work, so their activities will adjust to their physical abilities and economic conditions. Farmers' respondents aged old on-site study more inclined actively follow as well as take part in the program, whereas farmer respondents aged young tend to make farmer work side and have another job as their priority.

Respondent's formal education was dominated by 16 people (41.10%) respondents with a level of formal education in the category low, i.e., junior high school equivalent. The low majority of educated farmers caused several factors, such as social and economic. According to Puspitasari (2020), farmers' influence level of competence in doing activity agriculture needs to catch up to their education. Competence is embodiment behavior in plan activity To hit the target.

Non-formal education of farmers as the respondents is low, Where farmers number 15 people or 39.47%. It shows that more Lots farmers only moderately follow non-formal education before the activity. The results showed that the average farmer follows activity training or counseling as much as 1-2 times in one month. Good schedule or self-help. Kuntariningsih

(2013) states that activity training and counseling will increase mark resources, for one, increase ability knowledge, and skills power Work in farming. Based on the matter, the latter will see to what extent the factors followed by non-formal education farmers will influence the level of participation farmers of or no in activity Dem Area cultivation from the research results.

Revenue value respondent is at in category tall For one planting season. Based on the data obtained seen as many as 16 people or 50% of respondents can get income as big more from IDR 20,000,000/1 season plant. One of the influencing factors interests someone in look for living is sufficient income (Suwali & Mukti, 2021). Rice farming is one of the strategic business sectors in Indonesia, along with the population growth rate. The mandate of the agricultural sector to realize self-sufficiency in food faces complex challenges, such as the impact of natural phenomena, limited land, and attacks by plant-disturbing organisms (OPT). So far, the Integrated Pest Management Field School program has played a proactive role in controlling pests and diseases to improve the economy of rice farmers. This study aims to determine: 1). The difference in the net income of SLPHT and non-FSLP rice farming, the effect of production

facilities (in the form of seed, fertilizer, pesticide costs) and labor on the income of SLPHT and non-SLPHT rice farmers and the level of feasibility of rice farming on SLPHT and non-FSLP farmers. This research method is a survey with discriminatory analysis. Sampling was taken using the census method for FFS farmers and stratified random sampling for non-SLPHT farmers based on the area of land ownership so that the number of respondents was 25 SLPHT farmers and 31 non-SLPHT farmers.

Data analysis used the t-test, multiple linear regression analysis, and analysis of Return Cost Revenue (RCR) and Break Event Point (BEP), including BEPPK, BEPQ, and BEP. The research results show that there is a difference in net income between SLPHT and Non-SLPHT rice farming; Simultaneously, production facilities (in the form of seeds, fertilizers, and pesticides) and labor affect the income of SLPHT and Non-SLPHT rice farming. Majority farmer respondent Still own motivation look for high income. Income level farmer belonging to respondents tall become motivation big farmer For make farming as opportunity undertaken effort with hope can repair economy family they in a manner financial.

Cosmopolitan level respondents to the program carried out based on the data

obtained seen low Where as many as 17 respondents, or (44.73%) do it 1-2 times a month on average. Cosmopolitan is a frequent farmer traveling out of domicile To do something activity with others outside the area to follow activities like counseling training or meeting figure innovators To increase knowledge and skills (Fariz et al., 2017).

Experience farmer counted based on amount years ever do activity business he asked. Experience farmer respondent is in category tall where 28 people (73.6%) has tickled business farmer during not enough over 20-30 years. Because farmers are already hereditary business farmers, and some are active in activity development skills and knowledge. Experience will influence the perception of somebody in doing an action or taking a decision. Experience obtained through Suite event ever faced (Rais & Darwanto, 2016).

Information access is a search process information, convenience access information, and benefits information specifically For Dem area cultivation activities plant healthy. Obtained information farmers sourced from media such as TV, radio, internet, newspapers, leaflets, extension workers, other farmers, and families. Based on the data obtained is known that for access information, the



respondent is in the category tall, Where about 23 people (60.05% of respondents access information about 3-4 times a month. For now, the Dem Cultivation area program plant Healthy rice. The highest access to information originates from extension workers, farmers, others, and families. Meanwhile, other media, such as television and the internet, are rarely accessed.

Based on survey results, the connection officer with farmers in this program is in category tall. Twenty-seven people, or 71.05% of respondents, often consult with an officer with an average frequency of 2-3 times a month before and when program implementation. POPT Officer (Controller Organism Damage Plants) and extension agents agriculture at BPP (Counseling et al.) in the Districat

Pumpkin become executor activity. Connection officers and farmers on-site study lready intertwined. When supported with attitude officer organizers are positive and appropriate, then Farmer would not hesitate to participate in a program. It is also visible in interaction to both sides enough party Good so that problems farmers in the field can search for the solution.

**Relationship of Internal and External Factors with Participation Level Farmer**

The connection between related factors with level participation farmers has been analyzed with Rank Spearman correlation (rs) with SPSS 25 program assistance with results analysis shown in Table 4. The 95% αconfidence level (: 0.05) was used for test significance.

**Table 4.** The connection between internal factors and external factors with the level of participation of farmers in the program

Participation Factors	r <sub>s</sub>	Sig. (2-Tailed)	information
Age	0.094	0.574	Not Significant
Formal education	0.174	0.295	Not Significant
Non-Formal Education	0.738**	0.000	Significant
Income	0.480**	0.002	Significant
Cosmopolitan	0.458**	0.004	Significant
Experience	0.547**	0.000	Significant
Information Access	0.419*	0.009	Significant
Connection Officer with Farmer	0.552**	0.000	Significant

Based on Table 4, it can be seen that the level of participation of the farmers has No own significant relationship with the aging farmer that, indicates that the aging

farmer is high among respondents (old) and the low (young) has no own significant influence on the participation of the farmer in the existing program carried out. Old

farmer old is also actively known for participation, with their average becoming administrator group peasants, and the young more Lots become members. An old farmer is in line with the opinion of Ardhianta (2020) that owned farmers are older and need more to respond to the dem area cultivation program to plant Healthy paddy, so No participants follow stages activity. Farmers with age-old are more inclined to be active in activity and search for information, which is Good for extension workers and groups.

Based on Table 4, the result is also shown that a farmer's formal education is also not own connection significant to participation farmers, meaning a tall or low farmer's formal education has No impact on participation farmers. It is in accordance with the results study. Wuri (2021) stated that high formal education is inclined to make somebody more open about something new, so that easy For invited work. The same is something in which activities can increase knowledge and abilities while those with an educational background low inclined to do harder. Several research results conducted by Syifa (2020) and Ardhianta (2020) state that in activity demonstration of cultivation areas, plants Healthy show that the farmer's enthusiasm follows stages activity both have a background behind low education

nor high. Based on field data, there are several levels of formal education owned by farmers, starting from elementary school, junior high school, senior high school, and tertiary education.

Table 4 also shows that non-formal education is significantly related to farmer participation in demonstration programs in plant-healthy cultivation areas. Connection the including in category strong relationship. Because the mark coefficient correlation (rs) of 0.738 with direction connection positive, the more Lots followed non-formal education, so the level of participation, the higher. It follows the opinion of Budi (2017) that activities attended by non-formal education farmers, like counseling, training, and comparative studies, can increase the liveliness farmers follow the program of activities and easier accept innovations to offer.

The connection between income and farmers' participation level is significant, with a level of connection strong Enough. Category the obtained from mark coefficient correlation (rs) of 0.480 with direction connection positive (+) or the same way which means the more tall income so the more tall participation farmer in the program. It follows the opinion of Descartes (2021) that an additional income farmer, although worth Rp. 1, will be capable of increasing the

interest participation of farmers in some activities/programs.

The connection between cosmopolitan to level participation farmers is significant, with level connection strong. It showed with coefficient correlation ( $r_s$ ) obtained worth 0.458 with direction connection positive (+) or the same way, which means the more tall level cosmopolitan, the more tall participation farmer in the program. It follows the opinion of Suharyani (2018) that cosmopolitan influential significant to decision management. Farming is done often searches information for activities to be done, making it easier to accept innovation.

The connection between experience and participation level is significant, with level connection strong. Category the obtained from mark correlation ( $r_s$ ) worth 0.547 with direction connection positive (+) or in the same direction. It means the longer the experience in farming, the higher the participation level. It follows the opinion of Munawaroh (2020) that experience is the process that will form knowledge and skills about something activity an individual so naturally based on good experience so the farmers can accept innovation and do programmed activities.

The connection between access information and farmers' participation

level is significant, with a strong connection level. The mark correlation of 0.419 with a direction connection positive (+) or in the same direction signifies that the more tall access information farmer participation will have, the more tall in following the program. Information in implementation of the dem cultivation area program plant Healthy paddy can farmer search from various media sources; however, based on a farmer survey more Lots obtain direct information from extension worker agriculture Karan easier For access.

The connection between an officer with a farmer with a level of participation farmer is significant with a level strong relationship can see in Table 4 that the mark correlation ( $r_s$ ) is at a value of 0.552 with direction positive (+) or the same way, which means the more tall connection officer with the farmer so participation farmer the higher. It follows the opinion of Hassan (2020) that the more nearby connection between officers and farmers is formed by activity communication between farmers and officers, especially related to activity business between the farmer and the farmer, Because of effective communication.

## CONCLUSION

Based on the level of farmer participation in the Healthy Paddy Cultivation Area Demonstration program (study cases in Labuapi, West Lombok District) are generally excellent. The category obtained based on the average value of participation are in very high (45%) and high (39%) categories, which is informative that almost all farmers responded to this program well with participation and activity until done. Factors significantly related to farmers' participation level in the implemented program are non-formal education, income, experience, cosmopolitanism, access to information, and relationships officers with farmers. The correlation value of every factor showed direction positive or the same way, which means the taller the factor value so the tall participation farmer. Factors that do not own a significant relationship with the farmer's participation level are age and formal education.

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