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(RESEARCH ARTICLE)



The relationship between farmer participation and the effectiveness of the people's palm oil rejuvenation program (PSR) in Tebo District, Jambi Province, Indonesia

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Abstract

The aims of this research are: (1) to analyze the level of participation of farmers in the People's Oil Palm Rejuvenation Program (PSR), (2) to analyze the effectiveness of the People's Oil Palm Rejuvenation program, and (3) to analyze the relationship between the level of participation and the effectiveness of the PSR program. The research was conducted in Tebo District, particularly in the Rimbo Ulu and Muara Tabir Districts. with the survey method. Sampling technique with Random Cluster Sampling of 182 farmers, and obtained a sample of 65 respondents consisting of 44 farmers in Muara Tabir District and 21 respondents in Rimbo Ulu District. Data were analyzed descriptively and Rank Spearman correlation test. The results showed that the level of farmer participation in Muara Tabir and Rimbo Ulu Districts was high with an index of 74.03% for Muara Tabir District and 74.15% for Rimbo Ulu District. The effectiveness of the PSR program is in the high category with an achievement of 79.73% for Rimbo Ulu District, and for Muara Tabir District an achievement of 75.11%. The relationship between farmer participation and the effectiveness of the PSR program in the two sub-districts shows no significant correlation, with a value of $R_s = 0.243$, and $R_s = 0.445$, for Muara Tabir and for Rimbo Ulu, respectively. The direction of the relationship is positive, which means that the higher the level of farmer participation, the more the goals of the people's oil palm rejuvenation program are achieved.

Keywords: Effectiveness; Participation; People's Oil Palm Rejuvenation Program; Relationship

1. Introduction

Rejuvenation of smallholder oil palm is a program that helps smallholders to make oil palm more sustainable and of better quality and reduce the risk of illegal land clearing. The program is expected to increase the productivity of farmers' land through the opening of new land. The government's target for the PSR program in 2021 is 180,000 hectares and can be supported by a grant provided by BDPKPS of Rp. 30,000,000 per hectare and a maximum of 4 hectares for one family card. This is different from research [1] which states that related to the achievements of community assistance, namely the Plantations Service and the South Labuhanbatu Animal Husbandry Service held a social dialogue on the people's oil palm rejuvenation program for oil palm smallholders. There is also a subsidy of Rp. 50,000,000 per plot. Oil palm rejuvenation must consider plantations that have exceeded their economic age, namely more or less 25 years, old plants with low productivity or less than 10 tons/ha/year to generate income for farmers.

The cost factor is the main factor influencing farmers to postpone their oil palm rejuvenation activities. This opinion is in line with research [2] which states that cost is the factor behind farmers delaying oil palm rejuvenation activities. However, after receiving grants from the BDPKPS, the farmers were very enthusiastic about carrying out the

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rejuvenation activities. The oil palm plantation fund management agency is tasked with collecting, managing and distributing funds for rejuvenation activities to improve the performance of the palm oil sector in Indonesia.

According to [3] effectiveness is a measure of success or failure in achieving organizational goals. If the organization achieves its goals, then the organization has been operating effectively. Performance indicators describe the scope of measurement and the impact of program results on the achievement of program objectives. The greater the portion of the output produced in achieving the set goals, the more effective the work process of the organizational unit.

According to [4], one of the most important factors determining the success of rejuvenation efforts is the involvement of farmers in these rejuvenation efforts. Without the involvement of farmers, replanting activities will not be successful because farmers are the main actors in agricultural development programs. The involvement of farmers is emphasized so that farmers feel responsible for rejuvenation activities, starting from planning, implementing and evaluating to enjoying the harvest. In addition, participation encourages a sense of independence among farmers who are actively involved in replanting activities.

2. Material and methods

This research was conducted in Rimbo Ulu District, namely Sumber Sari Village and Muara Tabir District, namely Sungai Jernih Village, Tebo District, Jambi Province. The object of research is independent smallholders who receive grants from the Oil Palm Plantation Fund Management Agency (BPDPKS). The research method used in this research is a survey method, with cluster random sampling technique. The total population currently carrying out rejuvenation activities for the two villages is 182 farmers. A sample of 65 farmers consisted of 44 samples in Muara Tabir District and 21 samples in Rimbo Ulu District.

The level of participation is measured through 4 sub-variables, namely planning, implementation, monitoring and utilization of the results. Each sub-variable is measured through 6 questions so there are 24 questions. Each question is measured by 5 categories with a score of 1,2,3,4,5, each for very low (VL), low (L), moderate (M), high (H) and very high (VH) levels. Then the total score is categorized into 5 categories with the class interval formula. The results of the class interval values for the participation variables and their indicators are presented in Table 1:

Table 1 Class Interval Value of Farmer Participation

No	Class Interval Value (Total Score)	Class Intervals (Per Indicator)	Class Intervals (Per Question)	Criteria
1	$24.00 \leq x \leq 43.20$	$6.00 \leq x \leq 10.80$	$1.00 \leq x \leq 1.80$	Very low
2	$43.20 < x \leq 62.40$	$10.80 < x \leq 15.60$	$1.80 < x \leq 2.60$	Low
3	$62.40 < x \leq 81.60$	$15.60 < x \leq 20.40$	$2.60 < x \leq 3.40$	Medium
4	$81.60 < x \leq 100.80$	$20.40 < x \leq 25.20$	$3.40 < x \leq 4.20$	High
5	$100.80 < x \leq 120.00$	$25.20 < x \leq 30.00$	$4.20 < x \leq 5.00$	Very high

Source: Results of Primary Data Processing, 2022

Table 2 PSR Program Effectiveness Interval Value

No	Class Interval Value (Total Score)	Class Intervals (Per Indicator)	Class Intervals (Per Question)	Criteria
1	$80.00 \leq x \leq 144.00$	$5.00 \leq x \leq 9.00$	$1.00 \leq x \leq 1.80$	Very low
2	$144.00 < x \leq 208.00$	$9.00 < x \leq 13.00$	$1.80 < x \leq 2.60$	Low
3	$208.00 < x \leq 272.00$	$13.00 < x \leq 17.00$	$2.60 < x \leq 3.40$	Moderate
4	$272.00 < x \leq 336.00$	$17.00 < x \leq 21.00$	$3.40 < x \leq 4.20$	High
5	$336.00 < x \leq 400.00$	$21.00 < x \leq 25.00$	$4.20 < x \leq 5.00$	Very high

Source: Results of Primary Data Processing, 2022

The effectiveness of the rejuvenation program (PSR) is measured through the sub-indicators that have been determined by BPSPKS in the oil palm rejuvenation handbook, namely land, smallholders receiving replanting funds, farmer groups/gapoktan/cooperatives, pre-rejuvenation, replanting implementation, submission mechanism, monitoring. Each sub-indicator is measured through 5 questions so there are 80 questions. Each question is measured by 5 assessment categories with 1.2.3.4.5 each for very low (VL), low (L), moderate (M), high (H), very high (VH). Then the total score is categorized into 5 categories with the class interval formula. The results of the class interval values for the effectiveness variable and its indicators are presented in Table 2. To analyze the relationship between farmer participation and the effectiveness of the PSR program, the Rank Spearman correlation test was used with the SPSS application.

3. Results and discussion

3.1. Socioeconomic Characteristics of Respondents

The socio-economic characteristics of the respondents include age, education, length of farming and number of family members. Table 3 presents the characteristics of respondents in Muara Tabir and Rimbo Ulu Districts. The results of data collection show that the average respondent in this study belongs to the productive age range between 37-79 years. The highest age of respondent farmers in Rimbo Ulu District is at the age of 37-58 years with a value of 76.18% while in Muara Tabir District the highest age of respondent farmers is at the age of 48-58 years with a value of 43.18%. Based on the education level of the respondent farmers, the education level in Rimbo Ulu District was mostly junior high school, namely 38.09%, while in Muara Tabir District, it was elementary school, namely 40.91%. Education is an investment in human resources in order to get a better life. Education with higher levels can reduce poverty [6]. Based on the length of farming in Rimbo Ulu District, namely 22-27 years with a total achievement of 28.57%, while in Muara Tabir District it is 10-15 years with an achievement of 34.09%. Based on the number of family members, it can be seen that the number of dependents in Rimbo Ulu District is 3-5 people, namely 57.14%, while in Muara Tabir District it is 70.45%.

Table 3 Characteristics of Respondents

No	Characteristics	Rimbo Ulu		Estuary of the Veil	
		Amount	Index (%)	Amount	Index(%)
1.	Age (years)				
	37-47	8	38.09	11	25.00
	48-58	8	38.09	19	43.18
	59-69	4	19.05	10	22.73
	70-79	1	4.76	4	9.09
	Amount	21	100	44	100
2.	Education				
	SD	7	33.33	18	40.91
	Junior High School	8	38.09	11	25.00
	Senior High School	4	19.05	13	29.54
	S1	2	9.52	2	4.54
	Amount	21	100	44	100
3.	Length of time in business				
	10-15	5	23.81	15	34.09
	16-21	5	23.81	14	31.82
	22-27	6	28.57	6	13.64
	28-33	5	23.81	9	20.45

	Amount	21	100	44	100
4.	Number of Family Members				
	0-2	7	33.33	12	27.27
	3-5	12	57.14	31	70.45
	6-8	2	9.52	1	2.27
	Amount	21	100	44	100

Source: Results of Primary Data Processing, 2022

3.2. The Level of Participation of Farmers in the People's Palm Rejuvenation Program (PSR) in Muara Tabir and Rimbo Ulu Districts, Tebo District, Jambi Province

Farmers' participation in the people's oil palm rejuvenation program (PSR) is measured into sub-indicators, namely planning, implementation, monitoring and utilization of the results in Muara Tabir and Rimbo Ulu Districts which are presented in Table 4. Participation farmer in activity rejuvenation palm people (PSR) in region estuary veil show that involvement farmer on the stages of planning, implementation, monitoring and the stage of utilization of the results obtained an achievement of 74.15% in the high category. Farmers' participation in conducting community oil palm rejuvenation (PSR) activities in Rimbo Ulu District is in the high category with an achievement of 74.03%. This is only a 0.12% difference, but overall the two sub-districts have farmers who are very enthusiastic and have very good participation in the success of the people's oil palm rejuvenation program (PSR).

Table 4 Participation of Farmers in the People's Palm Oil Rejuvenation Program (PSR)

No.	Measurements / Indicators	Estuary of the Veil			Rimbo Ulu		
		Score	Achievements (%)	Criteria	Score	Achievements (%)	Criteria
1.	Planning Stage	22.73	75.67	High	20.23	67.43	High
2.	Implementation Stage	21.86	72.86	High	21.61	72.03	High
3.	Supervision Stage	22.76	75.87	High	23.33	77.76	High
4.	Results Utilization Stage	21.63	72.10	High	23.67	78.90	High
Total		88.98	74.15	High	88.84	74.03	High

Source: Results of Processed Primary Data, 2022

The planning and implementation sub-variables in Muara Tabir District are superior to those in the Rimbo Ulu District, while the monitoring and results utilization sub-variables in the Rimbo Ulu District are superior to those in the Muara Tabir District. The first sub variable is the planning stage. The planning stage in Sungai Jernih Village, Muara Tabir District, was included in the high category with an achievement of 75.67%. The achievement in Rimbo Ulu District was 67.43% in the high category. The planning stage in this case consists of preparing steps to design the People's Palm Oil Rejuvenation Program (PSR). Preparing PSR is very important because if it is not prepared properly, the PSR program will not run smoothly. This is in accordance with research findings [6] that the implementation of oil palm rejuvenation planning activities starts from an agreed plan in terms of regeneration time, field work systems and the selection of financing banks for oil palm rejuvenation activities.

The implementation of PSR activities must be carried out in accordance with the plans that have been prepared, so that the program is structured and aligned with the initial objectives. The implementation stage in Muara Tabir District obtained an achievement of 72.86% in the high category, while the implementation stage in Rimbo Ulu District obtained an achievement of 72.03% in the high category. In contrast to the results of the study [7] regarding the participation of farmers in the implementation of IR activities, a percentage of 70% is associated with the middle class. This means that peers encourage IR actors to participate in the activities carried out, but there are still IR actors who still have a positive attitude towards these activities. The implementation of these activities began with felling and felling of oil palm plants to be replanted with heavy equipment. This study agrees with research [8] which shows that the implementation phase consists of weeding, spraying weeds on the planting path, stacking planting points, building and covering planting soil, making planting holes and propagating.

Supervision in Muara Tabir District is classified as high with an achievement of 75.87%, different from that in Rimbo Ulu District with an achievement of 72.03% in the high category. Supervision of the PSR program consists of giving warnings if there are deviations, conducting direct monitoring at the location and providing solutions to problems. The involvement of farmers in the monitoring stage is very important for the smooth running of the People's Oil Palm Rejuvenation (PSR) program because if farmers are silent and do not offer solutions to problems, then these problems cannot be resolved and no solutions will be found. This is in line with research [9] which calls for strengthening the group's institutional capacity, better structured training, and ongoing monitoring and evaluation. The farmers in the two sub-districts are very compact, although there are some farmers who cannot visit the replanting site because the farmers have other jobs. Other farmers want to see other farmers' locations and will discuss their land. Even though there are many obstacles that must be overcome, such as very slippery roads and quite long distances, farmers always hold deliberations to discuss the results of land monitoring. This is different from research [10] regarding the supervision of replanting in Rantau Ikil Village, Bungo Regency, it did not involve farmer associations where the process of monitoring the rejuvenation of people's oil palm was given to the Department of Transportation and farmer groups in Rantau Ikil Village were not involved in this monitoring process. The results utilization stage obtained a score of 78.90%, which is included in the high category

The results utilization stage in Muara Tabir District obtained an achievement of 72.10% , including in the high category , while in Rimbo Ulu District, it obtained an achievement of 78.90%. Utilization of the results here means the involvement of farmers in maintaining the results of the project implementing the smallholder oil palm rejuvenation program (PSR) in terms of energy, time, mind and cost. Maintaining results in oil palm rejuvenation can be done such as fertilization and pest control. Fertilization and weed control are carried out using personal costs because the fees that have been granted previously are only up to P₀ fertilization , then fertilizing and weed control for maintenance from the first year to the third year uses personal costs. These results are expected to increase the productivity of smallholder oil palm plantations and strengthen farmers' income. Farmers are very enthusiastic in carrying out the use of these results so that the resulting palm oil products can be classified as high quality, this is in line with research [11] concerning the participation of women's groups with ecological interests in waste management consisting of the stages of planning, implementing and controlling the results and classified as high quality.

3.3. The Effectiveness of the PSR Program in Muara Tabir District and Rimbo Ulu District, Tebo District, Jambi Province

The effectiveness of the PSR program is intended to see the level of success of the program. The success rate of the people's oil palm rejuvenation program that has been launched by BDPKKS is measured through 8 sub-variables and 16 indicators in Muara Tabir and Rimbo Ulu Districts which are presented in Table 5.

Table 5 The Effectiveness Score of the PSR Program in Muara Tabir and Rimbo Ulu Districts

No	Measurements Indicators /	Estuary of the Veil			Rimbo Ulu		
		Average score	Index (%)	Criteria	Average score	Index (%)	Criteria
1.	Land Criteria						
	overlay approach	20.88	83.52	High	20.14	80.56	High
	Land ownership	19.15	76.60	High	20.28	81.12	High
	STDB	20.95	83.80	High	20.04	80.16	High
2.	Criteria for Planters Receiving Rejuvenation Funds						
	Meet the requirements	20.93	83.72	High	17.95	71.80	High
3.	Criteria for farmer groups / gapoktan / cooperatives						
	Meet the requirements	20.59	82.36	High	22.14	88.56	Very high
	Agreement or Agreement	17.10	68.40	High	21.67	86.56	Very high

4.	Pre-Rejuvenation Criteria						
	Administration Preparation	19.61	78.44	High	21.03	84.12	Very high
	Land Certification	19.36	77.44	High	20.95	83.80	High
5.	Rejuvenation Implementation Criteria						
	Rejuvenation Technique	20.73	83.00	High	19.33	77.32	high
	Seed Availability	21.36	85.44	Very high	21.36	85.44	Very High
	Rejuvenation	20.17	80.68	High	20.33		High
6.	Submission Mechanism Criteria						
	Submission of Rejuvenation Proposals	20.36	81.44	High	18.66	74.64	High
7.	Funding Criteria						
	Pre Rejuvenation	20.19	80.76	High	18.91	75.64	High
	Implementation of Initial Rejuvenation	19.27	77.08	High	20.76	83.04	High
8.	Monitoring, Evaluation and Reporting Criteria						
	Monitoring and Evaluation	20.23	80.92	High	17.62	70.48	High
	Reporting	20.48	81.92	High	18.15	72.60	High
Total		321.35	80.33	High	319.32	79.83	High

Source: Processed primary data, 2022

Based on Table 5 the effectiveness of the people's oil palm rejuvenation program (PSR) in Muara Tabir District obtained a score of 80.33% included in the high category, while in Rimbo Ulu District, an achievement of 79.83% was included in the high category. The criteria for land with three indicators include (1) an expanse approach, (2) land ownership, (3) cultivation registration certificate (STDB). The stretch approach obtained an achievement of 83.52% for Muara Tabir District and 80.56% for Rimbo Ulu District and the two sub-districts are included in the high category. One of the conditions that must be met in the stretch approach indicator is that the land to be replanted does not include a protected forest area. This is motivated by the fact that protected forests are forest areas that have been designated by the government or certain community groups to be protected so that their ecological functions, especially those related to water management and soil fertility, are maintained. It has been defined in [12] concerning forest administration and preparation of forest management plans, as well as forest utilization which contains a prohibition on carrying out plantation activities in protected forest areas.

The criteria for farmer groups/cooperatives/gapoktan have two indicators, namely fulfilling the requirements and agreements or cooperation agreements in Muara Tabir Sub-District obtaining an achievement of 82.36% for indicators of fulfilling the requirements, while in Rimbo Ulu District obtaining an achievement of 88.56%. One of the requirements that must be met is that farmers must be affiliated with an institution, which can be farmer groups/gapoktan/cooperatives. Farmer groups are one of the important factors for the PSR program to run effectively. This is in accordance with research [13] where the central role of Gapoktan lies in the head of the farmer group. The head of the farmer group must convince the smallholders that the PSR program can run well. In addition, in the PSR program, each activity/problem is carried out through Gapoktan deliberations. Communication and coordination carried out by Gapoktan also went well with the related agencies.

The criteria for implementing the rejuvenation of the seed availability indicator in Muara Tabir and Rimbo Ulu Districts had an achievement of 85.44% in the high category. The availability of seeds in the people's oil palm rejuvenation program in Muara Tabir and Rimbo Ulu Districts is well available, all farmers have easy access to seeds and fertilizers. The seeds used in the program in the two sub-districts have used superior seeds which are expected to increase production and income of oil palm farmers in the study area. This is in line with research [14] which stated that the

availability of production facilities (seeds, fertilizers, pesticides, herbicides) in the implementation of rejuvenation was 85% which showed complete suitability. The availability of certified seeds has been provided from PTPN V in collaboration with the Siak Regency Plantation Office. Fertilizers, pesticides and herbicides are managed by KUD Tunas Muda in collaboration with fertilizer suppliers from Pekanbaru.

Criteria for monitoring, evaluation and reporting in Muara Tabir and Rimbo Ulu sub-districts received high categories for each indicator. Monitoring, evaluation and reporting have been carried out well in the two sub-districts, the farmers conduct site visits almost every day to ensure that their oil palm is in good condition. This is inversely proportional to research [15] which states that optimal supervision will have a positive impact on the implementation of an activity. Without a supervisory process will cause destruction for an activity. Supervision can be done directly or monitored remotely. Mr. Wahdi, S.IP, as the sub-district head of Kampung Rakyat, said that under supervision he does not directly control budget issues and the planting process until they produce fruit again, because this is directly related to the South Labuhanbatu District Plantation and Livestock Service. His job is only to supervise if there is any socialization or provision of assistance from the Plantation and Animal Husbandry Service of Labuhanbatu Regency.

3.4. The Relationship between Farmer Participation and the Effectiveness of the People's Palm Oil Rejuvenation Program (PSR) in Muara Tabir and Rimbo Ulu Districts

The relationship between farmer participation and the effectiveness of smallholder oil palm rejuvenation (PSR) was analyzed using the Spearman rank with the help of the SPSS application. The level of participation is measured through 4 sub-variables, namely planning, implementation, monitoring and utilization of the results. Each sub-variable is measured through 6 questions so there are 24 questions. The effectiveness of the rejuvenation program (PSR) is measured through the sub-indicators that have been determined by BPSPKS in the oil palm rejuvenation handbook, namely land, smallholders receiving replanting funds, farmer groups/gapoktan/cooperatives, pre-rejuvenation, replanting implementation, submission mechanism, monitoring. Each sub-indicator is measured through 5 questions so there are 80 questions. Each question is measured by 5 assessment categories with 1,2,3,4,5, each for very high (ST), high (T), undecided (R), disagree (TS), strongly disagree (STS). The relationship between farmer participation and the effectiveness of the people's oil palm rejuvenation program (PSR) in Muara Tabir District is presented in Table 6.

Table 6 The Relationship between Farmer Participation and PSR Effectiveness in Muara Tabir District

	Variables / Indicators of Farmer Participation					E
	P	P.1	P.2	P.3	P.4	
PSR effectiveness	0.243	0.612	0.340	0.567	0.201	1,000
Land	0.539	0.867	0.681	0.008	0.085	0.371*
Planters Recipient of Rejuvenation Fund	0.394	0.469	0.124	0.367	0.857	0.318
Farmer groups / cooperatives /Gapoktan	0.250	0.809	0.891	0.082	0.603	0.254
Pre Rejuvenation	0.436	0.522	0.867	0.740	0.624	0.058
Rejuvenation Implementation	0.222	0.395	0.253	0.285	0.166	0.521
Submission Mechanism	0.780	0.808	0.954	0.890	0.385	0.435
Funding	0.961	0.271	0.759	0.204	0.829	0.520**
Monitoring evaluation and reporting	0.646	0.584	0.246	0.890	0.777	0.439
Farmer Participation	1,000	0.500**	0.655**	0.456**	0.263	0.243

Source: Processed primary data, 2022

Information:

* = Significant at α 0.05

** = Significant at α 0.01

P = Farmer Participation

E = Effectiveness

P.1 = Planning Stage

P.2 = Implementation Stage

P.3 = Supervision Stage

P.4 = Results Utilization Stage

Based on Table 6 shows that the relationship between farmer participation and the effectiveness of the PSR program ($R_s = 0.243$). If analyzed per participation indicator, the farmer participation indicator and planning indicator have a significant positive correlation with $R_s = 0.500^{**}$ and for implementation indicators with $R_s = 0.655^{**}$, for monitoring indicators with $R_s = 0.456^{**}$.

The land criterion associated with the effectiveness of the smallholder oil palm rejuvenation program is $R_s = 0.371^*$ with a significant value of $\alpha = 0.01$ which means a positive correlation. The wider the oil palm planting area, the more effective the PSR program will be. The average farmer's land ownership in Muara Tabir District is 3 hectares per farmer. The criteria for land included in the performance indicators of the PSR program are tightening access and land ownership. Farmers' land must have a certificate of ownership (SHM), land is not protected forest, land is not disputed, the PSR program limits the proposed land to 4 hectares per farmer.

There is a significant correlation between the funding criteria and the effectiveness of the PSR program, which is equal to $R_s = 0.520^{**}$ with a significant value of $\alpha = 0.01$. This means that the relationship is positive, the higher the funds provided by the government, the more effective the people's oil palm rejuvenation program will be. Funding is an important factor for carrying out oil palm rejuvenation activities because the funds needed by farmers are not cheap, around IDR 30,000,000 per hectare, and the process is not easy because they rent heavy equipment. The relationship between farmer participation and the effectiveness of the people's oil palm rejuvenation program in Rimbo Ulu District is presented in Table 7.

Table 7 Relationship between Farmer Participation and PSR Effectiveness in Rimbo Ulu District

	Variables / Indicators of Farmer Participation					E
	P	P.1	P.2	P.3	P.4	
PSR effectiveness	0.445	0.672	0.655	0.273	0.832	1,000
Land	0.838	0.094	0.236	0.344	0.643	0.269
Planters Recipient of Rejuvenation Fund	0.765	0.363	0.830	0.723	0.382	0.009
Farmer groups / cooperatives / Gapoktan	0.646 ^{**}	0.437 [*]	0.308	0.477	0.534	0.154
Pre Rejuvenation	0.093	0.599	0.709	0.998	0.873	0.415
Rejuvenation Implementation	0.658 ^{**}	0.569	0.290	0.292	0.939	0.314
Submission Mechanism	0.130	0.534	0.893	0.702	0.473 [*]	0.534
Funding	0.634	0.913	0.515	0.263	0.413	0.722
Monitoring evaluation and reporting	0.083	0.676	0.093	0.801	0.396	0.122
Farmer Participation	1,000	0.184	0.087	0.121	0.438 [*]	0.445

Source: Processed primary data, 2022

Information:

* = Significant at $\alpha 0.05$

** = Significant at $\alpha 0.01$

P = Farmer Participation

E = Effectiveness

P.1 = Planning Stage

P.2 = Implementation Stage

P.3 = Supervision Stage

P.4 = Results Utilization Stage

Based on Table 7 it can be shown that the participation of farmers with the effectiveness of the smallholder oil palm rejuvenation program is not significant ($R_s = 0.445$). If analyzed per indicator of the effectiveness of the PSR program, the indicator of farmer groups/cooperatives/gapoktan and participation indicators has a significant positive correlation, namely with the value of $R_s = 0.646^{**}$, for the indicator of farmer groups and indicators of the

implementation of the PSR program has a significant positive correlation, namely the value of $R_s = 0.437^*$. The effectiveness indicator, namely the implementation of rejuvenation with the participation indicator is positively correlated with the value of $R_s = 0.658^{**}$. Indicators of the effectiveness of the people's oil palm rejuvenation program, namely the submission mechanism with the indicator of participation in the utilization of the results, have a positive correlation with the value of $R_s = 0.473^*$. Indicators of farmer participation with indicators of yield utilization have a positive correlation with $R_s = 0.438^*$.

Farmers' participation in community-based oil palm rejuvenation activities carried out with the effectiveness of the PSR program obtained a Spearman rank correlation $R_s = 0.445$. This means that there is no correlation between the involvement of farmers in the implementation of CPO activities and the efficiency of CPO, but if explained with all the indicators, there are several correlations. When interviewing farmers who were interviewed in the field, almost all farmers stated that they did not know the results of the rejuvenation carried out, so they still did not know whether the program was effective or not, so that farmer participation in these activities was high, because farmers knew that regeneration must be carried out as quickly as possible because of its productivity. always decreasing every year.

The indicator for farmer groups/gapokta/cooperatives followed by farmers obtained a Spearman rank correlation $R_s = 0.646^{**}$ with a significant level of significance $\alpha = 0.01$. This means that there is a positive relationship between the level of farmer participation and farmer groups/gapoktan/cooperatives. The more farmers involved in implementing the national oil palm regeneration program, the more effective the PSR program is compared to the indicators of farmer groups/cooperatives/Gapoktan. This is because all the farmers managing the people's oil palm rejuvenation program are affiliated with the institution and one of them must be a legal entity to participate in the program.

Farmer participation with the effectiveness of the PSR program as an indicator of rejuvenation implementation obtained a significant value of $R_s = 0.658^{**}$ at a significant level of $\alpha = 0.01$. This means that there is a positive relationship between indicators of farmer involvement and the implementation of regeneration. Because the farmers are very enthusiastic about the regeneration of their oil palm plants, because their oil palm plants cannot be maintained because their productivity has decreased.

The stage of using the results with the delivery mechanism gets a value of $R_s = 0.473^*$ which is significant at the significant level $\alpha = 0.05$. That is, there is a positive relationship between the stages of exploitation of the results and the delivery mechanism. The delivery mechanism consists of presenting indicators of rejuvenation proposals, while the step of using the proceeds involves farmers in maintaining the results of the implementation of the oil palm rejuvenation program (PSR) project both in terms of energy, time, mind and energy. thoughts to publish the result of the relevant program is the planting of high yield oil palm in smallholders. Maintenance activities referred to in this study include fertilization, pest and disease control and soil improvement.

4. Conclusion

One important factor that determines the success of replanting activities is the participation of farmers who take part in these replanting activities. The level of participation of farmers in the Muara Tabir District achieved 74.15%, including the high category, while in the Rimbo Ulu District, 74.03% was included in the high category. The effectiveness of the PSR program in Muara Tabir and Rimbo Ulu Districts is in the high category with an achievement of 80.33% for Muara Tabir District and 79.83% for Rimbo Ulu District. The relationship between farmer participation and the effectiveness of the PSR program in the two sub-districts shows no significant correlation, with a value of $R_s = 0.243$, and $R_s = 0.445$, for Muara Tabir and for Rimbo Ulu, respectively.

Compliance with ethical standards

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Disclosure of conflict of interest

There is no conflict of interest.

Statement of ethical approval

The present research work does not contain any studies performed on animals/humans subjects by any of the authors.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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