



Community Participation Program in Forest and Land Rehabilitation in the Batutegi Forest Management Unit

Leo Muhammad Widodo¹, Rahmat Safe'i^{1}, Gunardi Djoko Winarno¹, and Slamet Budi Yuwono¹*

¹Jurusan Kehutanan, Fakultas Pertanian, Universitas Lampung, 35141

Abstract. Restoration of critical land so that its products can increase and contribute to the community's welfare is a special challenge at this time. One of the efforts made by the government in overcoming this problem is by carrying out Forest and Land Rehabilitation activities by involving farmers as local workers. This study analyses community participation in forest and land rehabilitation programs in Datar Lebuay Village, Air Nanningan District, Tanggamus Regency. The research was conducted in June 2021. Data collection was carried out through interviews, observation, and documentation techniques. Respondents were determined using the Slovin formula with an error limit of 10%. The interview process uses a proportional simple random sampling technique. The data obtained were then analyzed descriptively quantitatively using a Likert scale. The results showed that there was several activities rehabilitation forest, namely: the planning subsystem with field technical design activities had a final value of 3, the implementation subsystem with a seedling, planting, and plant maintenance activities, with each final value of 3, except for plants which had a final value of 4 Monitoring and evaluation subsystem with monitoring and evaluation activities, with a final score of 3. The Forest and Land Rehabilitation (FLR) activities with community participation levels have Ordinary criteria (B). This shows that forest rehabilitation activities involving farmers are implemented correctly so that the land on which farmers are involved in rehabilitation activities is expected to be more sustainable.

Keyword: Assessment, Critical Land, Maintenance, Nursery, Planting, Rehabilitation

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1 Introduction

Forest deterioration and the loss of many vital areas have a variety of negative consequences, necessitating recovery measures [2]. Current worldwide challenges, such as global climate change, forest fires, floods, and population growth are linked to the condition and status of forests [19]. KPH Batutegi is one of the Lampung Province's KPH units, established in 2010 and has a management area of 58,162 hectares. The vegetation cover is dominated by non-forest

*Corresponding author at: Jurusan Kehutanan, Fakultas Pertanian, Universitas Lampung, Bandar Lampung, 35141, Indonesia

E-mail address: rahmat.safei@fp.unila.ac.id

vegetation with 76 %, according to the results of landscape image interpretation in 2010. This is in response to the physical conditions in the field, which are dominated by farmer's fields, one of which is the coffee tree, and are undergoing a land problem.

Efforts to improve crisis land are difficult to achieve in the short term for things to return to normal, but products that can increase the welfare of communities around the forest will be attained [13]. The government's attempts to overcome critical land and extend important land, including land conservation and reforestation, are described in [9]. Forest and Land Rehabilitation (FLR) is one of the government's programs. FLR Activities are carried out on two types of land, namely state-owned and privately held [24]. FLR is carried out in Datar Lebuay Village on state-owned land in a cultivated area known as a communal forest.

According to [18], community member engagement is described as community members' involvement in development, which includes developing and implementing (implementing) development programs/projects in local areas. Communal participation in the FLR program, according to [14], is an active community effort reflected in the community's behaviour. Internal and external pressures will influence people's behaviour, causing the group to become dynamic, according to [29]. This strength will allow farmer groups to participate in as many activities as possible to meet the FLR program's objectives [6]. After all stages of forest management have been completed, monitoring or assessment is carried out to track the progress of forest management and ensure that undesirable outcomes do not occur. An evaluation aims to determine the efficacy of the forest management measures implemented [21]. To examine community engagement in forest and land rehabilitation initiatives, research on community participation in the FLR program in Datar Lebuay Village, Air Nanningan District, Tanggamus Regency is required. The findings of this study are predicted to impact the success of land and forest rehabilitation projects, including farmers.

2 Research Method

This study took place in June 2021 at the Mandiri Lestari Farmers Group Association (Gapoktan) in the Protected Forest region of KPH Batutegi, Datar Lebuay Village, Air Nanningan District, Tanggamus Regency, Lampung Province (Figure 1).

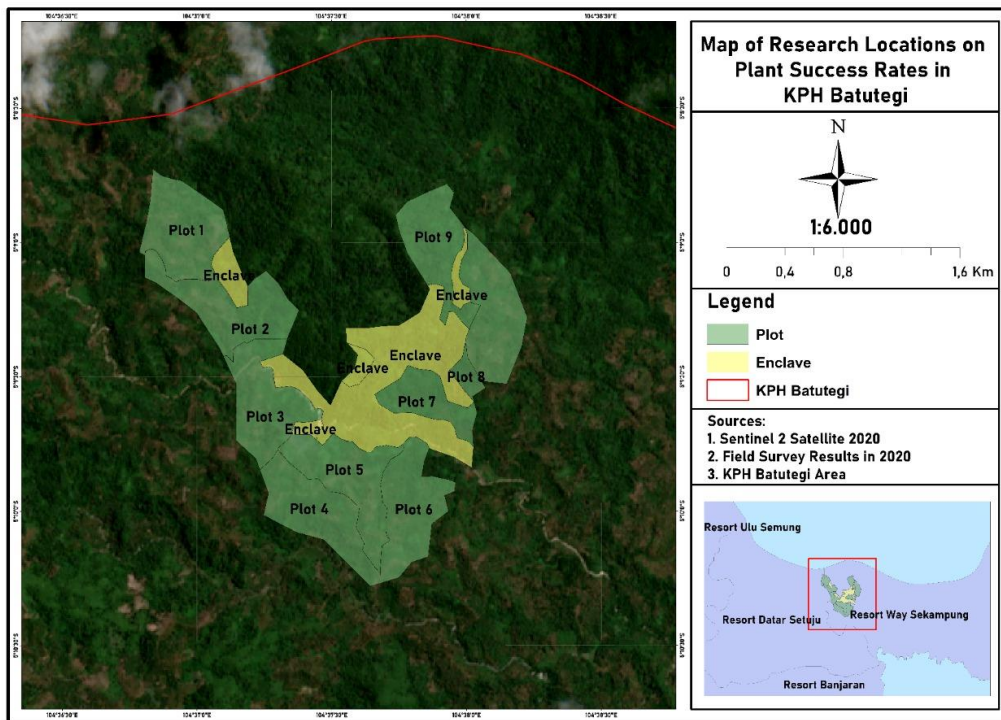


Figure 1 The research location is in the forest area of KPH Batutegi

Stationery, camera, laptop, recording device/mobile phone, zinc, compass, permanent marker, roll meter (50 m), tape meter (1.5 m), and Global Positioning System (GPS) were utilized in this study. The forest area of KPH Batutegi and Gapoktan Mandiri Lestari in Datar Lebuay Village, Air Naningan District, Tanggamus Regency, Lampung Province, which is part of the Forest and Land Rehabilitation program, is the subject of this study.

2.1 Farmer Characteristics

The descriptive quantitative method was employed in this study. The quantitative descriptive method was utilized to collect primary data from respondents via interviews. This study focuses on the forest area of KPH Batutegi and the farmers who maintain the land in the Gapoktan Mandiri Lestari area. The population of farmers in the Mandiri Lestari Gapoktan is 235 people, according to the results of a research survey contained in the Gapoktan Membership Book (having received IUPPHkm).

The Slovin Formula [26] was used, with a 10 % point error limit and a total sample size of 70 people. Interviews were done directly with respondents selected using a questionnaire and the proportional simple random sample technique. Interviews were conducted to acquire external data and determine its relationship with plant success. The data is then examined using the Likert Scale algorithm [25].

The Likert scale calculation formula uses five alternative answers.

$$NL = \Sigma(n_1 \times 1) + (n_2 \times 2) + (n_3 \times 3) + (n_4 \times 4) + (n_5 \times 5) \quad (1)$$

Description: NL : Likert scale scoring value

n : Number of answer scores (alternative Likert score 1 to 5).

The formula for calculating the average of each aspect of the question

$$Q = \frac{NL}{x} \quad (2)$$

Description: Q : average of each aspect of the question

NL : Likert scale scoring value

x : number of respondent samples

The formula for the final value of each aspect.

$$NA = \frac{Q_1 + Q_2 + Q_3 + Q_4 + Q_5}{\text{Skala Likert}} \quad (3)$$

Description: NA : Final score

Q : The average of each aspect of the question (Likert uses a scale of 5).

The five criteria for the Likert scale score to answer the questions presented in the form of a questionnaire are as follows:

Score 1 for strongly disagree (STS).

Score 2 for the answer disagree (TS).

Score 3 for the usual answer (B).

Score 4 for the answer agree (S).

Score 5 for the answer strongly agree (SS).

3 Results and Discussion

3.1 Farmer Identity

Farmers of productive age are primarily responsible for land management tasks such as weeding, fertilizing, caring for plants on their land and pruning tree limbs. According to [27], farmers of productive age are still capable of working. Furthermore, [4] stated that the age and expertise of the farmer have an impact on the yield and productivity of a plant. The higher the wealth of farmers, the larger the area of land management and the more trees or plants that produce [15].

Table 1 Farmer Characteristics

No	Characteristics	Number of Respondents (People)	Presentation (%)
1	Farmer's Age (Year)	0-16 Year	0
		17-64 Year	69
		>64 Year	1
	Total	70	100
2	Farmer Education	Elementary School	12
		Junior High School	20
		Senior High School	24
		Vocational School/ Islamic Senior High School	14
	Total	70	100
3	Area (Ha)	<0.5 Ha	0
		0.5-2 Ha	21
		>2 Ha	49
	Total	70	100

Source: field data for 2021.

Table 1 shows that farmers in the Mandiri Lestari Gapoktan have a high school education level, with 34.3 % having completed it. As a result, farmers are well-versed in land management. One aspect that determines respondents' ability to receive, integrate, and apply technology, information, and knowledge in the context of good land management is their educational level [8]. This is in line with [7], which claims that people with little education are less open to capturing and trying new ideas, making adoption and innovation more difficult to implement.

The respondents in this study were of a wide range of ages. According to [22], the diversity of age groups is a beneficial composition of society for cooperating to conserve the environment. Farmers in the Mandiri Lestari Gapoktan are dominated by 17 to 64, who account for 98.6% of all farmers. This demonstrates that most farmers who participate in Forest and Land Rehabilitation initiatives are of productive age. Three determining variables govern participation's growth and development: opportunity, aptitude, and willingness. These three factors are predictors of community participation success. It is the participation of the farmer group members in this circumstance [10].

Farmers hold land ranging from 0.5 hectares to more than 2 hectares per individual. Farmers with land with an area of 0.5-2 ha account for 21 people (30% of the total). In contrast, farmers with land larger than 2 ha account for 49 people (70% of the total). Farmers' land ownership significantly impacts the planting process during FLR activities, starting with the number of seeds they get [23]. According to [29], the disparity in land cultivated by the local people was due to land that their parents had previously possessed. People still regard this land as a family heirloom today.

3.2 Community Participation

According to [5], participation is community participation in identifying problems and potentials in the community, selecting and making decisions about alternative solutions to deal with problems. Table 2 shows community participation in the FLR program in Datar Lebuay Village, Gapoktan Mandiri Lestari's operating area.

Table 2 Community Participation Rate

Planning Subsystem									
Technical design									
Question	Perception Assessment					Total	Value	Average	Final score
	1	2	3	4	5				
1	22	1	9	21	17	70	220	3	
2	25	2	10	16	17	70	208	3	
3	18	1	11	14	26	70	239	3	3
4	15	1	8	18	28	70	253	4	
5	14	4	5	17	30	70	255	4	
Implementation Subsystem									
Question									
Question	Perception Assessment					Total	Value	Average	Final score
	1	2	3	4	5				
1	32	1	9	14	14	70	187	3	
2	31	1	13	12	13	70	185	3	
3	27	2	10	15	16	70	201	3	3
4	30	2	9	14	15	70	192	3	
5	15	1	12	16	26	70	247	4	
6	25	1	6	14	24	70	221	3	

Source: field data for 2021.

Table 3 Advanced (Community Participation Rate)

Planting									
Question	Perception Assessment					Total	Value	Average	Final score
	1	2	3	4	5				
1	18	1	4	18	29	70	249	4	
2	12	2	4	18	34	70	270	4	
3	11	1	8	18	32	70	269	4	4
4	12	4	7	22	25	70	254	4	
5	20	2	15	15	18	70	219	3	
6	8	0	0	4	58	70	314	4	
Maintenance									
Question	Perception Assessment					Total	Value	Average	Final score
	1	2	3	4	5				
1	13	0	11	22	24	70	254	4	
2	15	1	18	16	20	70	235	3	
3	25	1	14	11	19	70	208	3	
4	13	2	7	20	28	70	258	4	3
5	26	1	10	16	17	70	207	3	
6	15	3	9	21	22	70	242	3	
7	15	1	10	18	26	70	249	4	

Monitoring and Evaluation Subsystem									
Supervision									
Question	Perception Assessment					Total	Value	Average	Final score
	1	2	3	4	5				
1	32	2	5	15	16	70	191	3	3
2	27	1	7	14	21	70	211	3	
3	22	1	12	19	16	70	216	3	
4	20	1	13	10	26	70	231	3	
Evaluation									
Question	Perception Assessment					Total	Value	Average	Final score
	1	2	3	4	5				
1	26	3	12	13	16	70	200	3	3
2	30	1	8	16	15	70	195	3	
3	15	0	16	16	23	70	242	3	
4	16	1	8	10	35	70	257	4	

Source: field data for 2021.

Several variables analyzed from the planning, implementation, evaluation, and enjoyment of the results can determine the success or failure of community engagement [3]. Residents' participation in meetings and counselling prior to planting activities and their activeness in presenting various suggestions and queries in meetings are used to assess this planning activity [10]. If the socialization from a Watershed Management Center (BPDAS) is related to rehabilitation, the planning stage of the activity is judged appropriate. The community's interest is relatively high, as seen by the many community members who attend and comment on the government-run program [20],[28].

Forest and land rehabilitation aims to repair, maintain and improve forest and land functions to preserve carrying capacity, productivity, and role in life support systems [1]. Community participation is apparent in planting activities at the implementation stage, both for individuals and groups [16]. The indicators employed in this implementation include the frequency with which activities are implemented, activity initiatives, and willingness to succeed. It can also be regarded as successful at the implementation stage because the community's enthusiasm remains strong from the beginning of socialization to the end [11],[17].

According to Table 2, the process of implementing FLR activities is divided into three stages: the planning subsystem, which includes activities such as preparing a technical field design with five questions and a final score of 3, the implementation subsystem, which includes activities such as seeding, planting, and maintaining plants in the field, with the amount of each question, and maintenance has seven questions and a final score of 3, and the nursery, which includes plants, has a final score of 3. Table 3 shows how to monitor planting operations with the monitoring and evaluation subsystem with monitoring and assessment activities, with four questions each with a final score of 3. Each value has its own set of criteria, with an average final score of 3 for each activity, as determined by the community's participation rate in this

FLR activity, namely Ordinary (B). Farmers did not comprehend how the forest rehabilitation efforts worked, and the number of farmers who participated was tiny. Government agencies should conduct counselling aimed at Gapoktan or farmer groups to accommodate farmers' aspirations. So that farmers can determine more actions to understand how forest rehabilitation activities are carried out and what is required so that farmers are aware of the steps taken to carry out forest rehabilitation activities with the help of the government.

4 Conclusion

The age ranges of the respondents in this survey are relatively diverse, indicating that society is well-composed to collaborate in environmental preservation. However, not everyone in the community took part in the government-sponsored efforts to reclaim important land. Gapoktan followed as local employees to show the government that the community around the forest approves of FLR activities. The results were gathered and assessed using the Likert Scale method, yielding a final value of 3, indicating that community participation in FLR activities meets the Ordinary criterion (B).

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