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Participation of forest farmer groups and the success of forest and land rehabilitation: case study of Sidorejo Village, Sekampung Udik District, and Pematang Tahalo Village, Jabung District, East Lampung Regency, Indonesia

Uyat Ruhyat¹, Rahmat Safe'i¹, Hari Kaskoyo², Slamet Budi Yuwono¹, Ceng Asmarahman³

¹Master of Forestry, Postgraduate, University of Lampung, Indonesia

²Master of Environmental Science, Postgraduate, University of Lampung, Indonesia

³Department of Soil Science and Land Resources, Faculty of Agriculture, Andalas University, Indonesia

Corresponding Author: Rahmat Safe'i; Email: rahmat.safei@fp.unila.ac.id

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ABSTRACT

Participation of Forest Farmer Groups (KTH) is a very important factor in the implementation of Forest and Land Rehabilitation (RHL) activities in the registered forest area of 38 Gunung Balak, which has a very high, protracted, and long-standing tenurial conflict. This study aims to analyze the participation of KTH and its relationship to the success of the percentage of plant growth of Type IV Self-Managed RHL. Perception data collection was carried out using a questionnaire with a saturated sampling technique, or census, where all members of the population were used as samples. The collected data were analyzed descriptively to assess the perception of the level of KTH participation in relation to the success of the percentage of plant growth of Type IV Self-Managed RHL. Assessment of the percentage of plant growth was carried out using a purposive sampling method by counting the number of healthy living plants in a 25 x 40 m plot. The level of KTH participation in Type IV Self-Managed RHL activities was included in the high category, with as many as 72.2% of respondents (value range 42- 51), and in the very high category, with as many as 27.8% of respondents with a value range of 52-60. Success percentage of RHL Swakelola Type IV growth: The success percentage of plant growth is in the successful category >75%, with as many as 62.96% of respondents, and very successful >90% as many as 37.03% of respondents. Based on the Spearman rank correlation analysis, the relationship between the level of KTH participation and the success percentage of RHL plant growth shows a strong relationship category with a correlation coefficient value of 0.623 ($p = 0.000$; $p < 0.05$).

INTRODUCTION

The importance of forest and land rehabilitation (RHL) is inextricably linked to the increasing rate of deforestation, which has resulted in the decline in the ecological function of forest areas. Deforestation occurs due to the conversion of forests to other uses, such as agricultural land and plantations (Zulfaeda et al., 2024). Globally, Indonesia ranks fourth among countries with the greatest tropical forest loss after Brazil, Congo, and Bolivia (Global Forest Watch, 2024). In 2024, the net deforestation area in Indonesia was recorded at 175,400 hectares (Ministry of Forestry, 2025).

Deforestation occurred in nearly all forest areas in Indonesia, including Lampung Province. The total forest area in Lampung Province reached 1,004,735 hectares. Based on land cover data, approximately 535,909 hectares, or 53.34% of this forest area, were damaged and degraded (Aina, 2024). This situation has resulted in an increase in the area of critical land, reaching approximately 389,323 hectares, with approximately 282,871 hectares located within forest areas and approximately 106,452 hectares outside (BPDAS WSS, 2024). This high level of forest destruction is inextricably linked to the community's dependence

on forest areas for their livelihoods. This is evident in the fact that approximately 86% of the forest area under the authority of Lampung Province has been utilized by smallholder farmers, including protected forest areas, production forests, and conservation forests (Aina, 2024).

One protected forest area in Lampung Province that has experienced significant deforestation is Register 38 Gunung Balak. According to available data, almost all forest areas in this register have undergone land use changes from protected forest to plantations, rice fields, and other uses. Of the initial area of approximately 22,292 hectares, only approximately 10% of the area still has forest cover. Register 38 is also an area with long-standing land tenure conflicts. Forest encroachment, which has been ongoing since 1963, remains unresolved, creating increasingly complex and difficult-to-manage problems. This situation also contributed to the ineffectiveness of reforestation activities undertaken in the 1980s (Purwanto, 2024).

The failure of forest and land rehabilitation policies is not only due to technical factors but is also influenced by various non-technical factors. One cause is the suboptimal implementation of preconditioning activities, such as land conflict resolution, social engineering, strengthening social capital, and strengthening community institutions. These preconditioning activities are crucial factors in determining the success of forest and land rehabilitation policies (Sulastiyo et al., 2016).

In response to this situation, the RHL implementation policy, facilitated by the Way Seputih Way Sekampung Watershed Management Center (BPDAS WSS), has been implemented in recent years under a Type IV Swakelola scheme, with Forest Farmer Groups (KTH) as the implementing agencies. The Type IV Self-Managed RHL mechanism is planned by the budget-responsible agency, prepared, implemented, and supervised by the community groups implementing the self-management (Fajri et al., 2024).

This scheme is not solely oriented toward restoring the biophysical condition of the land, but is also intended to address social conflict through local community empowerment instruments, including strengthening group institutions, mentoring, policy support, and implementing agroforestry innovations based on locally superior

plants (Ministerial Regulation of the Environment and Forestry No. 23 of 2021).

Reflecting on the failures of past RHL implementations and the shift in the RHL approach to a scheme that combines biophysical land restoration efforts and local community empowerment, this study was conducted to determine the effectiveness of Type IV Self-Managed RHL implementation with a superior seed scheme on the level of participation of forest farmer groups (KTH) and its relationship to the success rate of RHL plant growth.

MATERIALS AND METHODS

This research was conducted from February to March 2026 in Sidorejo Village, Sekampung Udik District, and Pematang Tahalo Village, Jabung District, East Lampung Regency, Lampung Province, as shown in Figure 1. Perception data were collected using a questionnaire. The respondents were 28 members of the Sido Makmur Community Forest Management Group (KTH) and 26 members of the Pematang Lestari II Agro Community Forest Management Group (KTH). The sampling technique used in this study was total sampling, or census, which involves selecting all members of the population. The census method allows for generalizations with relatively low error. The questionnaire included three aspects of participation: participation in planning, participation in implementation, and participation in monitoring and evaluation.

The RHL success variable was determined by the percentage of plant growth using a 25 m x 40 m assessment plot (PU), or 0.1 ha, using a purposive sampling method on each planting plot of all respondents. The sampling intensity was 15.75% for the Agro Pematang Lestari II Community Forest Management Unit (KTH), covering 16.5 hectares, while for the Sido Makmur IS Community Forest Management Unit (KTH), it was 20.36% for 13.75 hectares. The percentage of plant growth was obtained by calculating the number of surviving plants compared to the initial number of plants during planting within the assessment plot (Ministerial Regulation of the Environment and Forestry No. 23 of 2021).

Data processing used a Likert scale to assess respondents' responses. The data were analyzed using quantitative descriptive analysis using SPSS

to determine the level of community participation (KTH) and its correlation to the success of RHL. This is reinforced by Sugiyono (2026), who stated that descriptive analysis is able to describe research data as it is without the intention of drawing general conclusions.

The tools used in this study were GPS, stationery, an Android/digital camera, and a laptop. The materials used were a map of the RHL location and a questionnaire.

RESULTS AND DISCUSSION

Level of participation of forest farmer groups

Active community participation is a crucial factor in determining the success and sustainability of RHL. Success is not solely determined by technical factors but also by social factors, such as community acceptance of RHL activities. Other factors, such as mentoring, also play a crucial role in encouraging ongoing active community involvement in RHL activities (Priyanto et al., 2025).

In line with this, Wambwa et al. (2023) argue that to ensure public participation and accountability in environmental rehabilitation, strong and targeted policies are needed. In forest rehabilitation, this participatory policy principle must be implemented to increase community involvement and empowerment in a sustainable manner.

Furthermore, Widada (2024) explains that active community involvement and participation,

supported by sound institutional structures and policies, significantly influence the success of forest reclamation. Relatedly, Ghosh et al. (2015) emphasize that seedling planting activities without strong institutional support and community participation often result in low success rates and long-term failure. Therefore, a community-based approach needs to be combined with an analysis of geographic conditions and site characteristics.

Furthermore, according to Asmuruf et al. (2017), the involvement and active participation of communities surrounding forest and land rehabilitation sites play a crucial role in determining the success of RHL activities because they understand the regional conditions and the types of plants suitable for planting in the area.

KTH participation refers to the active involvement of the community/KTH members in RHL activities, from the preparation stage through implementation, to monitoring and evaluation of RHL activities. The level of KTH participation in RHL activities is one of the impacts of selecting the Type IV Self-Managed RHL mechanism, which is also reflected in the successful growth percentage of RHL plants implemented. KTH participation in Type IV Self-Managed RHL activities consists of participation in planning, participation in implementation, and participation in monitoring and evaluation (Regulation of the Head of LKPP Number 3 of 2021). The following is a summary of KTH participation in Type IV Self-Managed RHL planting activities:

Table 1. KTH Participation in the Implementation of Type IV Self-Managed RHL Activities

No	Sub Variables	Category	Village Location				Total	
			Sidorejo		P Tahalo			
			Σ	Percent	Σ	Percent	Σ	Percent
1.	Planning Participation	Very Low	-	-	-	-	-	-
		Low	-	-	-	-	-	-
		Medium	-	-	-	-	-	-
		Height	9	32,1	8	30,8	17	31,5
		Very High	19	67,9	18	69,2	32	68,5
2.	Implementation Participation	Very Low	-	-	-	-	-	-
		Low	-	-	-	-	-	-
		Medium	-	-	2	7,7	2	3,7
		Height	14	50,0	10	38,5	24	44,4
		Very High	14	50,0	14	53,8	28	51,9

3.	Participation Monitoring Evaluation	Very Low	-	-	-	-	-	-
		Low	-	-	-	-	-	-
		Medium	-	-	-	-	-	-
		Height	11	39,3	10	38,5	21	38,9
		Very High	17	60,7	16	61,5	36	61,1

Source: Primary Data, 2026.

1. Planning participation

Community participation in the planning stage is a key factor in determining the success of Type IV Self-Managed RHL. The implementation of community-based RHL activities has been proven to improve community welfare. Active community involvement in the planning, implementation, and utilization processes is a primary requirement in this approach (Abidin, 2023).

Based on Table 1 above, in general, for total planning participation in Type IV Self-Managed RHL activities, the research results show that 31.5% of respondents gave a high category assessment and 68.5% gave a very high category assessment. Based on the research location, planning participation in Sidorejo Village was assessed with a high category reaching 32.1% and a very high category assessment reaching 67.9%. Meanwhile, in Pematang Tahalo Village, the assessment with a high category reached 50%, and a very high category assessment reached 50%. This shows that the community plays an active role in planning, which includes participating in proposing the types of seeds to be planted and indicating the boundaries of potential RHL planting locations.

The above research findings align with those of Muarif et al. (2025), who suggest that participatory RHL activity planning involves providing opportunities for the community to participate in the entire planning process. This active community involvement in planning includes selecting plant species based on their aspirations and site suitability, proposing planting locations, assigning tasks, maintaining plants, and monitoring them.

Furthermore, Hadawiah et al. (2023) also revealed that RHL activity planning that accommodates community desires by selecting seedling types appropriate to the growing conditions significantly impacts RHL success, as indicated by good plant growth rates.

Research by Hayati et al. (2025) confirms that the success of forest and land rehabilitation is

highly dependent on community involvement from the outset of the program, particularly when selecting plant species. Community involvement in determining plant species that align with their preferences and needs has been shown to increase community willingness to care for and maintain the plants, ultimately supporting sustainability and prosperity.

Furthermore, Lestariningsih et al. (2021) stated that high community participation can be seen from their active involvement in the rehabilitation planning process, particularly through providing ideas and participating in planting processes, such as in the rehabilitation of mangrove ecosystems. Community involvement is considered crucial in development for the restoration and sustainable restoration of ecosystem functions.

2. Implementation participation

Community participation is defined as the active participation of residents in various activities, including participation in decision-making, program implementation, and evaluation of implemented activities (Hutagalung, 2022). Furthermore, Uphoff & Cohen (1979) and Suaib (2023) suggest that community participation encompasses decision-making, implementation, utilization of results, and evaluation of activities. This demonstrates that the community is fully involved in every phase of development implementation, from planning to evaluating results.

In line with the aforementioned theories, community participation during the implementation stage is a crucial factor determining the success of Type IV Swakelola RHL planting. Research findings generally categorize participation in Type IV Swakelola RHL activities as moderate, with 44.4% of respondents rating it as high and 51.9% of respondents rating it as very high. Based on the research location, participation in implementation in Sidorejo Village was categorized as high, reaching 50%, and 50.0% rated it as very high. Meanwhile, for Pematang Tahalo Village, the average rating reached 7.7%, the high rating reached 38.5%, and

the very high rating reached 53.8%. The research data generally indicate that the community plays an active role in planting, maintaining RHL plants, and managing the land to support plant growth and development.

These research results align with the opinion of Mukhtiya et al. (2023), who stated that community participation in agroforestry planting in this study was categorized as high, with a percentage of 41.51%. This participation included digging planting holes according to the specified spacing, planting, fertilizing, watering plants, pest and disease control, weeding, and replanting dead or poorly growing plants.

Consistent with this view, Permana et al. (2022) stated that community participation can be realized through contributions of labor, materials, and ideas, as well as direct involvement in the implementation and utilization of activities. Therefore, the implementation of development programs is not solely the responsibility of the government but also requires active community involvement in every stage of the activity.

Furthermore, the research findings are supported by Lestariningsih et al. (2021), who argued that community involvement as key actors is a crucial strategy in mangrove rehabilitation and conservation. High levels of community participation are evident through the contribution of ideas, concepts, and active involvement in mangrove planting activities, which have been proven to support the success of mangrove rehabilitation.

In line with this opinion, Zamani et al. (2025) stated that mangrove rehabilitation carried out by Forest Farmer Groups (KTH) is a key factor in maintaining the sustainability of mangrove ecosystems. Participatory mangrove planting activities not only play a role in rehabilitation and conservation but also increase community awareness and active participation in protecting and preserving coastal mangrove ecosystems.

3. Participation in Monitoring and Evaluation

The purpose of participation in monitoring and evaluation is to identify discrepancies or inconsistencies between program implementation and established plans. Evaluation can be conducted more clearly and responsibly with community participation (Uphoff & Cohen, 1979; Suaib, 2023). In line with this theory, May et al. (2024) stated that

active community involvement in monitoring plays a crucial role in fostering a sense of ownership and ongoing commitment to RHL activities. This encourages the community to maintain and care for the plants, which will directly impact the RHL's chances of success.

Based on research data, community participation in the monitoring and evaluation stage is a key factor in determining the success of Type IV Self-Managed RHL planting. The results showed that 38.9% of respondents gave a high rating, and 61.1% gave a very high rating. Based on the research location, participation in monitoring and evaluation in Sidorejo Village was rated high at 39.3% and very high at 60.7%. Meanwhile, in Pematang Tahalo Village, the high rating reached 38.5%, and the very high rating reached 61.5%. The results of this study generally indicate that the community plays an active role in monitoring and evaluation, which includes monitoring the growth and development of RHL plants, independently counting the number of dead plants, and actively proposing seedlings for replanting.

In line with these findings, Ridwan et al. (2025) revealed that active community involvement not only contributes to increased knowledge and experience but also encourages active participation in plant care, increasing plant growth and development, and increasing the success rate. Furthermore, this active participation also contributes to fostering collective awareness of the importance of preserving forests as a shared resource. Furthermore, Nuraida et al. (2023) emphasized that direct community involvement in monitoring activities is crucial for providing comprehensive data and information regarding steps to protect and improve forest and land areas, particularly regarding maintenance and management activities carried out by community members.

Success percentage of plant growth

Plant germination percentage is the ratio of the number of surviving plants to the number of initial plants at planting. Assessment of plant germination success is carried out in a 25 x 40 m assessment plot. Successful plant germination is determined by at least 75% (seventy-five percent) of the initial plants at planting (Ministerial Regulation of the Environment and Forestry No. 23/2021).

Based on the research data in Table 2 below, 62.96% of respondents had a high/successful plant germination percentage, with a plant germination percentage range of 75 - <90%. Meanwhile, 37.03% of respondents had a very high/very successful plant germination percentage, with a plant germination percentage range of 90 - 100%. Based on the study location, 60.71% of respondents in Sidorejo Village had a high/successful plant germination percentage, with a plant germination percentage range of 75 - <90%. Meanwhile, respondents with a very

high/very successful plant growth percentage reached 39.29%, with a range of plant growth percentage values of 90 - 100%. Meanwhile, for Pematang Tahalo Village, 65.38% of respondents had a high/successful plant growth percentage, with a range of plant growth percentage values of 75 - <90%. Meanwhile, respondents with a very high/very successful plant growth percentage reached 34.61%, with a range of plant growth percentage values of 90 - 100%.

Table 2. Percentage of Successful Plant Growth in Type IV Self-Managed RHL Plants

No.	Sub Variables	Category	Value Interval	Village Location				Total Σ percent	
				Sidorejo		P Tahalo			
				Σ	percent	Σ	percent		
1.	Plant Growth Percentage	Very Low	< 40	-	-	-	-	-	-
		Low	40 - 60	-	-	-	-	-	-
		Medium	60 - < 75	-	-	-	-	-	-
		Height	75 – 90	17	60,71	17	65,38	34	62,96
		Very High	90 - 100	11	39,29	9	34,61	20	37,03

Sources: Yogyakarta Province Forestry and Plantation Agency, Anonymous, 2004; Putra & Kuncahyo, 2023; Ministerial Regulation No. 39/2016; Ministerial Regulation No. 105/2018; Ministerial Regulation No. 23/2021.

The success of the Type IV Self-Managed RHL (RHL) above aligns with the research findings of Kusuma et al. (2024), who stated that, based on the evaluation of the success rate of plant growth in all measurement plots, the plant population was 2,193 stems. Therefore, the plant growth rate in the Sukowono LMDH was 84.92%, exceeding the minimum success threshold of 75% as stipulated by Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 23 of 2021.

Furthermore, other research also revealed that, based on the results of the RHL plant assessment in Butang Hamlet, Mappak District, Tana Toraja Regency, the success rate was 79.54%. This research proves that this achievement is categorized as successful because it exceeds the minimum success threshold of 75% as stipulated by the Ministry of Environment and Forestry. The success of RHL is influenced by various aspects, including the selection of local plant species suited to local conditions and the application of agroforestry planting procedures. Furthermore, the high success rate is also supported by relatively suitable soil conditions and optimal management of the RHL area by the management. As a result, the planted

plants thrived and grew very well (Barrung et al., 2025).

In line with the findings of this study, Aliajanah et al. (2024) also confirmed that the success of forest rehabilitation planting was evident in the 2.44% achievement rate. This achievement was achieved thanks to the active support of the local village government, particularly the village head, who demonstrated his role in forest rehabilitation with a high rating of 2.36%. This success was achieved through the satisfaction of the community, who actively participated in the activities, demonstrated by their enthusiasm and strong commitment to forest conservation efforts, which are part of efforts to meet sustainable economic needs.

Relationship between KTH participation level and percentage of successful plant growth

To determine the correlation or relationship between the variable of KTH participation level and the percentage of successful plant growth, Spearman rank correlation analysis was used. Spearman rank correlation analysis is used to test hypotheses about the relationship between two variables when the data is ordinal. In the context of implementing Type IV Self-Managed RHL, the variable of KTH participation level is suspected to

be related to the percentage of successful plant growth, including participation in planning, participation in implementation, and participation in monitoring and evaluation.

The results of the Spearman correlation analysis indicate a strong positive and significant

relationship between the variable of KTH participation level and the percentage of successful plant growth. The results of the correlation analysis of KTH participation level and the percentage of successful plant growth are presented in the following table:

Table 3 Relationship between KTH Participation Level and Percentage of Successful Plant Growth

No	Variables/Sub Variables	Plant Growth Percentage		
		Spearman's Coefficient Correlations		
		Sidorejo Village	Pematang Tahalo Village	Total
	Partisipasi KTH	.604**	.637**	.623**
a.	Partisipasi Perencanaan	.575**	.412*	.489**
b.	Partisipasi Pelaksanaan	.536**	.711**	.631**
c.	Partisipasi Monitoring dan Evaluasi	.437*	.650**	.542**

*Correlation is significant at the 0.05 (2-tailed).

**Correlation is significant at the 0.01 (2-tailed).

Based on Table 3 above, referring to Nurhalijah et al. (2024), the correlation analysis results show that the total KTH participation level variable has a positive and significant relationship with the success rate of plant growth, with a correlation coefficient of 0.623 ($p = 0.000$; $p < 0.05$), indicating a strong relationship.

Meanwhile, KTH participation in Sidorejo Village has a positive and significant relationship with the success rate of plant growth, with a correlation coefficient of 0.604 ($p = 0.001$; $p < 0.05$), indicating a strong relationship. For the Pematang Tahalo Village research location, KTH participation has a positive and significant relationship with the success rate of plant growth, with a correlation coefficient of 0.637 ($p = 0.000$; $p < 0.05$), indicating a strong relationship.

The results of this study confirm that the higher the level of community forestry group participation, the higher the success rate of RHL plant growth. Success is not solely determined by technical factors but is also influenced by social factors, namely the active participation of community forestry group members. This finding aligns with Hikmat's (2010) theory, which states that participation is a crucial element in the community empowerment process. High participation reflects community awareness, willingness, and active involvement in development.

Furthermore, this finding aligns with the research of Pratama et al. (2022), which states that

the higher the level of community participation in forest area management, the better the forest health. This view is reinforced by the opinion of Purwanti et al. (2022), who asserted that community participation provides positive support for forest rehabilitation activities, encompassing both ecological and social aspects.

These findings are also consistent with the research of Lestariningsih et al. (2021) and Zamani et al. (2025), which show that active community involvement in forest rehabilitation directly impacts plant success. From a relationship analysis perspective, participation influences success by improving the quality of implementation in the field. People who are involved will be more careful in planting, maintain it more regularly, and deal with problems more quickly.

The Relationship between Planning Participation and Crop Growth Percentage

The relationship between the total planning participation sub-variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.489 ($p = 0.000$; $p < 0.05$), indicating a moderate relationship. Partially, in the Sidorejo Village study location, the relationship between the planning participation sub-variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.575 ($p = 0.001$; $p < 0.05$), indicating a moderate relationship. Meanwhile, in the Pematang Tahalo Village study location, the relationship between the planning participation sub-

variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.412 ($p = 0.036$; $p < 0.05$), indicating a moderate relationship.

These results indicate that the active involvement of KTH members in conveying their aspirations regarding seedling types and prospective planting locations contributes to the success of plant growth. This moderate level of relationship strength is attributed to the fact that KTH members' active participation in planning is limited to submitting seedling proposals and identifying potential locations, but not yet reaching the stage of jointly preparing and planning the RHL program.

These findings align with research by Ajijah et al. (2022), which found that the average participation level of members of the Harapan Sentosa HKm farmer group (Gapoktan) fell into the moderate category, with a score ranging from 40-55. This indicates that not all members of the group are actively involved in all HKm activities, from planning to monitoring and evaluation.

These findings are reinforced by Hayati et al. (2025), who stated that the success of RHL is largely determined by active community participation from the outset, particularly during the planning and selection stage of plant species. Involving the community in selecting plant species that align with their aspirations/desires has been shown to increase enthusiasm for caring for, maintaining, and safeguarding the plants, which ultimately leads to maximum support for the success and sustainability of RHL activities. Meanwhile, Aziz and Islam (2025) also stated that community participation in forest rehabilitation planning is evident through the use of participatory geospatial maps as a reference for determining planting locations. These maps help communities and support teams openly and collaboratively agree on target work locations. Direct community involvement in the process reflects inclusive and transparent planning, while also increasing awareness and a sense of responsibility for sustainable village forest management.

Conversely, the failure of forest and land rehabilitation programs is usually attributed to a lack of community involvement in activity planning and a lack of ongoing monitoring. This is demonstrated by the research findings of Syahputra et al. (2022), which showed that the percentage of

plant growth reached only 37.85%, with a total of 757 plants from all observation plots.

Relationship between Implementation Participation and Plant Growth Percentage

The relationship between the total implementation participation sub-variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.631 ($p = 0.000$; $p < 0.05$), indicating a strong relationship. Partially, the relationship between the implementation participation sub-variable and the percentage of plant growth in Sidorejo Village was positive and significant, with a correlation coefficient of 0.536 ($p = 0.003$; $p < 0.05$), indicating a moderate relationship. Meanwhile, in Pematang Tahalo Village, the relationship between the implementation participation sub-variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.711 ($p = 0.000$; $p < 0.05$), indicating a strong relationship.

These results indicate that the active involvement of KTH members in planting, replanting, maintenance, and protection against pests and diseases is crucial for successful plant growth. Furthermore, in the implementation of the Type IV Self-Managed RHL mechanism, KTH members are the primary subjects or direct implementers of RHL implementation, unlike other RHL mechanisms that tend to position the community as an object in RHL implementation. This contributes to the success of plant growth rates (Regulation of the Head of LKPP No. 3 of 2021).

These findings are reinforced by Harahad et al. (2026), who stated that at the participation stage of implementation, group member participation was high, indicating active involvement of group members in the implementation of activities, including nurseries, planting, and maintenance.

In line with these research findings, Juk et al. (2024) stated that community participation in the implementation of an activity ensures that the program aligns with local wisdom, thus addressing local aspirations and ultimately increasing the effectiveness and efficiency of the activity.

Meanwhile, the success of conservation activities, including mangrove restoration and rehabilitation in Bali Province, is heavily influenced by active community involvement. Furthermore, local institutional support, NGO assistance, and spatial planning policies that support the

sustainability of coastal areas are also important factors in contributing to the success of these activities.

This provides the community with the opportunity to actively participate in forest rehabilitation activities. This involvement aims to support more transparent, effective, accountable, and high-quality implementation, while simultaneously improving the quality and success of forest rehabilitation (Manik & Robuwan, 2022).

The Relationship between Monitoring and Evaluation Participation and Plant Growth Percentage

The relationship between the total monitoring and evaluation participation sub-variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.542 ($p = 0.000$; $p < 0.05$), indicating a moderate relationship. Partially, the relationship between the monitoring and evaluation participation sub-variable and the percentage of plant growth in Sidorejo Village was positive and significant, with a correlation coefficient of 0.437 ($p = 0.020$; $p < 0.05$), indicating a moderate relationship. Meanwhile, in Pematang Tahalo Village, the relationship between the monitoring and evaluation participation sub-variable and the percentage of plant growth was positive and significant, with a correlation coefficient of 0.650 ($p = 0.000$; $p < 0.05$), indicating a strong relationship.

According to Sudrajat et al. (2023), in forest management initiated through rehabilitation activities, local community involvement is a crucial factor in determining the program's success. Community knowledge of field conditions, regional characteristics, and local needs is invaluable in forest rehabilitation implementation. Furthermore, rehabilitation activities are carried out in stages and sustainably over a long period of time, requiring the genuine support and participation of local communities to effectively achieve rehabilitation goals. Conversely, low community involvement is often a contributing factor to the underperformance of government-initiated rehabilitation programs.

In this regard, the results of this study indicate that the active involvement of KTH members in monitoring plant growth, reporting plant deaths, and proposing replanting, carried out in stages and continuously throughout the forest and land rehabilitation (RHL) process, significantly

determines the success rate of plant growth. This involvement allows for early prevention and response efforts, allowing communities to promptly propose replanting seedlings and initiate replanting if plant death occurs. This significantly impacts the success rate of plant growth.

In line with these research findings, Iskandar et al. (2026) reported that community participation in Gayo Lues Regency in forest and land rehabilitation implementation was high across all aspects, particularly in evaluation. The community believes that participation in planning, implementation, utilization, and evaluation has been well-executed and optimal. Specifically, the participation aspect of utilization and evaluation obtained an average score ranging from 66.00 to 76.44.

Furthermore, Harahad et al. (2026) also stated that the level of community participation in community forest development in Jonggon Village, Loa Kulu District, Kutai Kartanegara Regency, particularly in the monitoring and evaluation aspect, reached a score of 93.1, categorized as very high. This high level of participation indicates that community involvement in monitoring and evaluation activities is a crucial factor in supporting the success of sustainable forest rehabilitation and management.

Furthermore, research by Astuti & Muzayyin (2024) on community forest development in Buara Village indicated that the level of farmer participation in monitoring activities was categorized as high, with a score of 11.07, or 92.26%. Meanwhile, farmer participation in the evaluation stage was also categorized as high, with a score of 9.11, or 75.89%. These results demonstrate a significant relationship between the level of farmer participation and the success of community forest development. In other words, the higher the involvement of farmers in monitoring and evaluation activities, the greater the opportunity for successful community forest development that can be achieved.

CONCLUSION

Based on the research results, the level of participation of Forest Farmer Groups (KTH) in the implementation of Type IV Self-Managed Forest and Land Rehabilitation (RHL) in Sidorejo Village and Pematang Tahalo Village ranged from high to very high, particularly in the implementation,

monitoring, and evaluation stages. The success rate of plant growth was also considered successful, as most plants achieved growth rates above 75%, according to the RHL success standard.

The Spearman rank correlation analysis showed that the level of KTH participation had a positive and significant relationship with the success rate of plant growth, with a correlation coefficient of 0.623, which is considered a strong relationship. This indicates that the greater the involvement of KTH members in planning, implementation, and monitoring and evaluation, the higher the success rate of RHL plant growth.

This research confirms that the success of forest and land rehabilitation is not solely determined by technical factors but is also significantly influenced by active community participation, institutional strengthening, and the empowerment of KTH as the primary implementers of rehabilitation activities.

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