

Low level of community participation in community forest (HKm) based on a case study from Polewali Mandar, Sulawesi, Indonesia

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Abstract. Sukran M, Sadapotto A, Arif A. 2026. Low level of community participation in community forest (HKm) based on a case study from Polewali Mandar, Sulawesi, Indonesia. *Asian J For* 10 (1): r100140. <https://doi.org/10.13057/asianjfor/r100140>. Community participation is a key determinant of the effectiveness of social forestry programs, particularly under the community forest (*Hutan Kemasyarakatan*/HKm) scheme in Indonesia. Meaningful involvement of local communities across all stages of forest management is essential to ensure ecological sustainability while improving livelihoods. This study aims to assess the level of community participation in HKm management, identify factors influencing participation, and formulate priority strategies to enhance community involvement. The study was conducted in Barumbung Village, Matakali Sub-district, Polewali Mandar District, West Sulawesi, Indonesia. Data were collected from 62 members of the Ujung Karondang forest farmer group through field observations, structured interviews, focus group discussions, and document review. Community participation was assessed across three principal stages of HKm management: planning, implementation, and evaluation. Participation was measured using eight participation criteria distributed across these three stages. Each criterion was operationalized into eight questionnaire statements, yielding a total of 64 indicators evaluated on a five-point Likert scale. Participation levels were analyzed using Arnstein's ladder of participation, while force field analysis was applied to identify key driving and constraining factors and to determine priority improvement strategies. The results indicate that community participation in HKm management is predominantly classified as non-participation, accounting for 96.77% of respondents. The term overall participation refers to the aggregated participation score derived from all three management stages (planning, implementation, and evaluation), which was subsequently classified into participation categories based on Arnstein's framework. Despite the provision of legal access rights, substantive community involvement in decision-making remains limited. Based on force field analysis results, two highest-priority strategies were identified: strengthening the role and capacity of group facilitators, and enhancing access to tangible production support, particularly seed assistance, to increase community motivation and engagement. These strategies are critical for promoting a transition from non-participation toward more active and meaningful community engagement in HKm management.

Keywords: Community forest management (HKm), forest farmer group, force field analysis, participation, social forestry

INTRODUCTION

Social forestry in Indonesia has been developed as a strategic policy instrument to improve community welfare, reduce inequality in forest tenure and utilization, and promote sustainable forest management from ecological, social, and economic perspectives (Sahide et al. 2020; Ramadhan et al. 2025; Toumbourou et al. 2025; Ardyanto et al. 2026). This policy emerged in response to long-standing structural challenges in the forestry sector, including tenure conflicts, persistent poverty among forest-dependent communities, and limited community involvement in forest governance. Normatively, social forestry seeks to shift forest management from centralized approaches toward participatory models that position local communities as key actors.

The legal foundation of social forestry in Indonesia is stipulated in Law Number 41 of 1999, Article 3(d), which emphasizes equitable and sustainable public welfare through participatory, community-based, and environmentally sound forest management. Within this legal framework, community forests (*Hutan Kemasyarakatan*/HKm) constitute one of the main social

forestry schemes that grant communities legal access to manage forest areas while maintaining ecological sustainability and improving socio-economic conditions. However, despite formal legal access, community participation in HKm management has not always been optimal. Rakatama and Pandit (2020) identified a gap between the objectives of social forestry policy and its implementation at the local level, where community participation, institutional capacity, and access to decision-making remain constrained.

The success of social forestry programs largely depends on active community involvement at all stages of forest management, including planning, implementation, and evaluation. Previous studies have shown that high levels of participation in Community-Based Forest Management (CBFM) contribute to sustainable resource management and generate positive impacts on household income, economic resilience, and community welfare (Hajjar et al. 2021; Muluneh and Sime 2024). Conversely, low participation may undermine program effectiveness, weaken local ownership, and increase the risk of conflict and management failure.

Community participation is therefore crucial, as forest-adjacent communities are primary stakeholders with intensive interactions with forest resources (Tirkaamiana et al. 2023). Participatory processes also facilitate the formulation of contextual and adaptive policies and strengthen community trust and ownership of development programs (Conyers 1991).

Despite the growing body of literature on social forestry implementation in Indonesia, empirical studies that explicitly examine community participation across all management stages of community forests at the local level remain limited. In Polewali Mandar District, West Sulawesi Province, Barumbung Village with the Ujung Karondang Forest Farmer Group represents a critical and typical case of HKm implementation, as legal access to forest management has been formally granted, yet community participation remains uneven and largely symbolic. This case reflects common challenges faced by many HKm sites in Indonesia, including limited institutional capacity, dependence on external facilitation, and weak community involvement in planning and evaluation processes. These challenges resonate with broader governance issues in participatory forest management, as highlighted by Friedman et al. (2020), who emphasize the importance of governance networks beyond the community level to strengthen participation and sustainability. Examining participation dynamics in this context is therefore important to better understand why legal access does not automatically translate into meaningful participation.

Based on this research gap, the study is guided by the following research questions, such as (i) What is the level of community participation in HKm management at the planning, implementation, and evaluation stages? (ii) What key factors drive and constrain community participation in

HKm management? (iii) What priority strategies can be formulated to enhance community participation toward more meaningful involvement in HKm management? This study is expected to contribute to the scientific discourse on community empowerment in the forestry sector, while also providing evidence-based insights for central and local governments as well as relevant stakeholders in designing policies aimed at strengthening community roles in sustainable forest management.

MATERIALS AND METHODS

Study area and period

This study was conducted from August to October 2025 in Barumbung Village, Matakali Sub-district, Polewali Mandar District, West Sulawesi Province, Indonesia. The research site is located within a community forest (HKm) area designated under the Ministerial Decree No. SK.10748/MENLHK-PSKL/PKPS/PSL.0/9/2023, covering approximately 389 ha and managed by the Ujung Karondang Forest Farmer Group. Barumbung Village covers an area of about 880.95 ha, consisting of three hamlets (Lemo Gamba, Katumbangan, and Nene Bece), and is bordered by Tapango Sub-district (north), Tonrolima Village and Matakali Urban Village (south), Indu Makkombong Village (west), and Pasiang Village (east). The study area map is presented in Figure 1. Land use within the HKm area of Barumbung Village is predominantly characterized by agroforestry systems, particularly in the form of agrisilvicultural model that integrates forest tree species with agricultural crops through both systematic and randomly distributed planting patterns.

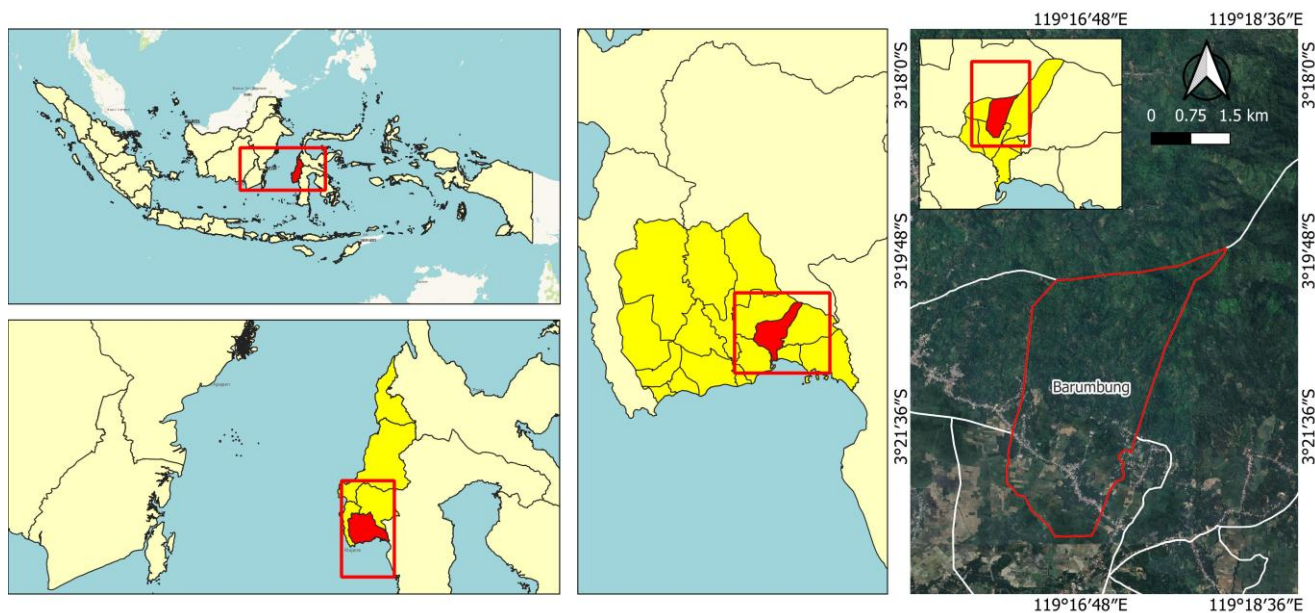


Figure 1. Map of study area in Barumbung Village, Matakali Sub-district, Polewali Mandar District, West Sulawesi, Indonesia

The main commodities cultivated include commercial crops such as *Theobroma cacao* (cocoa), *Syzygium aromaticum* (clove), and *Arenga pinnata* (sugar palm), as well as multipurpose tree species such as *Swietenia mahagoni*, *Aleurites moluccana* (candle nut), and various fruit trees including *Durio zibethinus* (durian), *Nephelium lappaceum* (rambutan), and *Cocos nucifera* (coconut). This agroforestry practice reflects a livelihood-oriented management approach commonly found in community forest areas in Indonesia, where ecological functions are integrated with income-generating activities. The site is therefore representative for HKm studies, as it illustrates a common condition in which formal legal access to forest land has been granted, yet community participation in decision-making and evaluation processes remains limited.

Procedures

The study population comprised 62 forest-adjacent community members who are registered as the members of the Ujung Karondang Forest Farmer Group. A census approach was applied, whereby all group members were included as respondents, resulting in a total of 62 participants. Primary data were collected through direct field observations, structured face-to-face interviews, and one Focus Group Discussions (FGDs). Secondary data were obtained from a review of relevant literature and official documents.

Field observations were conducted to directly examine the level of community participation and the nature of local activities in community forest management. Structured interviews were carried out to capture information not identified through observation, using face-to-face questionnaires containing items related to the forms and levels of community participation across the planning, implementation, and evaluation stages of HKm management.

In addition, one Focus Group Discussions (FGDs) was conducted to obtain in-depth qualitative insights. The FGDs was attended by 23 participants, comprising key stakeholders, including the leader of the Forest Farmer Group, the group secretary, the HKm facilitator, and several group members. The discussion lasted approximately two hours. The main topics of the FGDs focused on identifying and validating the driving and constraining factors influencing community participation that had been previously inventoried through interviews. Participants were jointly involved in scoring each factor to assess its relative influence on participation levels. Furthermore, the FGDs facilitated collective deliberation to formulate strategies for strengthening driving factors, weakening constraining factors, and developing concrete action plans that can be practically implemented to enhance community participation in HKm management. Then, Secondary data were collected through a literature review of official government documents, forest farmer group administrative records, and relevant scientific publications to support and contextualize the primary data findings.

Research instruments and data analysis

Data analysis in this study employed a mixed methods approach by integrating Arnstein's typology of participation, Force Field Analysis (FFA), and quantitative measurement based on a Likert scale. Quantitative findings determined the focus of qualitative exploration; qualitative results were used to explain statistical patterns and deepen the identification of influencing factors, while strategic recommendations were formulated through convergence between participation scores and FFA results. This procedure ensured complementarity between measurement and explanation, thereby strengthening the internal coherence and inferential validity of the mixed methods approach.

The conceptual framework of participation refers to the ladder of participation developed by Sherry Arnstein (Ntwana and Naidoo 2024; Hayati et al. 2025). FFA was applied to identify and assess the driving and constraining factors of participation, and to provide a basis for strategy formulation (Muluk and Nashihah 2021; Pavloudakis et al. 2023; Wijayanti et al. 2025). A five-point Likert scale (1-5) was used to measure respondents' perceptions of participation indicators (Maleknia 2024; Maleknia and ChamCham 2024) and to assess the relative influence of driving and constraining factors (Arab-Zozani et al. 2019). In the implementation of the FFA, each identified driving and restraining factor was scored using a Likert scale through a Focus Group Discussions (FGDs) involving key stakeholders. The assessment was conducted collectively to determine the relative influence of each factor on participation. The resulting scores were then aggregated at each management stage to generate the total values of the driving and restraining forces. Factors with the highest scores were categorised as dominant and served as the basis for determining strategic priorities. The assessment criteria are presented in Table 1.

The analysis was conducted systematically by first measuring participation levels across three stages of community forest (HKm) management: planning, implementation, and evaluation (Roslinda et al. 2022). These three stages comprised eight criteria operationalised into 64 questionnaire statements (8 criteria × 8 statements). The planning stage consisted of delineation of the working area boundary and preparation of the management plan; the implementation stage included planting, maintenance, protection, harvesting, and marketing; while the evaluation stage encompassed the preparation and submission of reports. All statements were assessed using a five-point Likert scale.

Table 1. Criteria for assessing community participation and the evaluation of driving and constraining factors

Criteria	Score
Strongly Agree / Very Influential	5
Agree / Influential	4
Neutral	3
Disagree / Not Influential	2
Strongly Disagree / Not Influential at All	1

The score range per criterion was 8-40. The total score for the planning stage ranged from 16-80, implementation from 40-200, and evaluation from 8-40, while the overall participation score ranged from 64-320. Participation levels were then classified into three categories adapted from the eight rungs of Arnstein's (1969) ladder of participation, namely non-participation, tokenism, and citizen power. Score intervals were calculated by dividing the score range into three equal categories for each stage and for the overall score (Ajijah et al. 2022). This approach enables the identification of power distribution patterns in decision-making at the forest farmer group level and provides a basis for formulating strategies to enhance participation. The hierarchy of participation levels is presented in Table 2 and the criteria for drawing conclusions are presented in Table 3. Based on the total scores obtained from 64 questionnaire statements, overall community participation levels were categorized into non-participation with score 64-149, tokenism with score 150-235 and citizen power with score 236-320.

The subsequent stage involved analyzing the driving and constraining factors influencing community participation using the force field analysis method. This analysis was complemented by focus group discussions and Likert scale assessments to identify the most influential

factors in achieving program objectives, as well as to evaluate the relative strength of each factor. Based on the identification of dominant driving and constraining factors, strategies were then formulated to strengthen enabling factors and minimize inhibiting factors. Furthermore, operational and practical action plans were developed to enhance community participation in community forest management in Barumbung Village.

RESULTS AND DISCUSSION

Ujung Karondang Forest Farmer Group

Barumbung Village consists of state forest land (*kawasan hutan*) designated for protection functions (*Hutan Lindung*), part of which has been approved for social forestry under the community forest scheme through the Ministerial Decree No. SK.10748/MENLHK-PSKL/PKPS/PSL.0/9/2023 dated 29 September 2023. The approved HKm area covers approximately 389 ha and is managed by the Ujung Karondang forest farmer group, established on 9 August 2021 and located in Katumbangan Hamlet, Barumbung Village, Matakali Sub-district, Polewali Mandar District.

Table 2. Levels of community participation adapted from Arnstein (1969)

Ladder/Level of participation	Rung of participation	Explanation
Non-participation (No Power)	Manipulation	Participation is merely procedural or symbolic
	Therapy	Participation aimed only at appeasing the community or basic socialization
Tokenism (Counterfeit Power)	Informing	One way information delivery or socialization
	Consultation	Community opinions are heard but not necessarily considered
	Placation	Community suggestions are accepted but not consistently implemented
Citizen Power (Actual Power)	Partnership	Mutual negotiation between stakeholders
	Delegated Power	Communities are granted partial or full decision-making authority
	Citizen Control	Full control exercised by the community

Table 3. Variables, criteria, and indicators for achieving participation categories

Variable	Criteria	Indicators
Planning	Delineation of the working area boundary	Each criterion comprises eight statements assessed using a five-point Likert scale (1-5) according to the level of agreement. The cumulative scores for the eight criteria were subsequently classified into three categories of participation, based on predetermined score intervals. Planning stage: 1. Non-participation: 16-37 2. Tokenism: 38-59 3. Citizen Power: 60-80
Implementation	Preparation of the management plan	
	Planting	
	Maintenance	
	Protection	
	Harvesting	
	Marketing	
Evaluation	Preparation and submission of reports	Implementation stage: 1. Non-participation: 40-93 2. Tokenism: 94-147 3. Citizen Power: 148-200 Evaluation stage: 1. Non-participation: 8-18 2. Tokenism: 19-29 3. Citizen Power: 30-40

Based on field observations, HKm management by the Ujung Karondang forest farmer group applies agroforestry systems. This system improves land use efficiency and provides key ecosystem services, including soil and water conservation, microclimate regulation, and biodiversity enhancement (Yang et al. 2024; Yusuf and Astiko 2025), while also supporting food security and carbon sequestration for climate change mitigation (Dmuchowski et al. 2024; Worku 2024; Tranchina et al. 2024; Jung and Vendrametto 2025). Vegetation components identified at the study site include *T. cacao*, *A. pinnata*, *S. aromaticum*, *Gmelina arborea*, *Vitex cofassus*, *S. mahagoni*, *A. moluccana*, *D. zibethinus*, *N. lappaceum*, *Lansium domesticum*, *Persea americana*, and *C. nucifera*.

The livelihood products managed under the HKm scheme in Barumbung Village such as *T. cacao*, *S. aromaticum*, and other agroforestry commodities play an important role in shaping community participation dynamics. These products represent the primary sources of household income for forest-adjacent communities and thus function as key participation drivers, particularly at the implementation stage. Access to productive inputs, such as seedlings, and the expectation of economic benefits motivate community members to engage in planting and maintenance activities. However, participation is simultaneously constrained by market-related challenges, most notably price instability and limited collective marketing mechanisms, which reduce incentives for sustained engagement. When livelihood benefits are uncertain or perceived as inequitable, community participation tends to remain instrumental and short-term rather than evolving into more meaningful involvement.

In addition, the low level of participation observed at the evaluation stage can be better understood by considering the formal obligations associated with HKm management. Under the HKm scheme, community groups are required to engage in structured planning processes and to prepare periodic reports documenting management activities and outcomes. However, limited technical capacity, low familiarity with administrative procedures, and the perception that reporting is primarily an external requirement rather than a collective learning process contribute to minimal community involvement in evaluation activities. This context helps explain why participation remains particularly low at the evaluation stage, despite relatively higher engagement during livelihood-related implementation activities.

Level of community participation in HKm management

Participation is defined as comprehensive individual involvement encompassing mental, cognitive, emotional, and affective dimensions that promotes active contributions toward goal achievement and shared responsibility for both processes and outcomes (Runtuboi et al. 2021). In this study, community participation was analyzed across three key stages of community forest management: planning, implementation, and evaluation.

The planning stage reflects community involvement in delineating management boundaries and formulating the HKm management plan. The implementation stage

represents participation in operational activities, including planting, maintenance, protection, harvesting, and marketing of forest products (Ajjiah et al. 2022). The evaluation stage plays a strategic role in identifying implementation constraints and informing future improvements in HKm management (Roslinda et al. 2022).

Community participation at the planning stage

Community participation at the planning stage was measured using a Likert scale reflecting respondents' agreement with statements on their involvement in boundary delineation and management plan formulation. Higher scores indicate greater participation, while lower scores reflect limited participation. The results are presented in Table 4.

Table 4 presents the distribution of community participation levels at the planning stage of HKm management. The majority of respondents fall within the non-participation category, totaling 54 individuals or 87.10%. Respondents classified under the tokenism category account for 7 individuals or 11.29%, while only one respondent (1.61%) reached the citizen power category. The respondent classified within the citizen power category was the head of the forest farmer group, who was directly involved in the preparation of the Social Forestry Management Plan (RKPS) and actively participated in group decision-making processes. This prominent role provided greater access to information, planning activities, and decision-making authority compared to other group members. These findings indicate that the level of community participation at the planning stage of HKm management remains very low.

Community participation at the implementation stage

The implementation stage involves coordinated activities in resource management and task allocation to achieve objectives efficiently. Community participation at this stage was assessed through scores reflecting involvement in planting, maintenance, protection, harvesting, and marketing activities. The results are presented in Table 5 with higher scores indicate greater participation, while lower scores reflect limited participation.

Table 5 presents the distribution of community participation levels at the implementation stage of HKm management. The analysis shows that the majority of respondents fall within the non-participation category, totaling 60 individuals or 96.77%. Respondents classified under the tokenism category account for only 2 individuals or 3.23%, while no respondents reached the citizen power category (0.00%). The two respondents classified within the tokenism category were the group leader and a member of the management board, both of whom demonstrated a relatively good understanding of HKm implementation and had been involved in government-supported tree seedling assistance programs. These findings indicate that the level of community participation at the implementation stage of HKm management remains very low.

Community participation at the evaluation stage

In community forest management, the evaluation stage is essential for monitoring program progress and performance (Ilfa et al. 2021). Community participation at this stage was assessed based on scores reflecting involvement in report preparation and submission. The results are presented in Table 6 with higher scores indicate greater participation, while lower scores reflect limited participation.

Table 6 shows the distribution of community participation levels at the evaluation stage of HKm management, where all respondents (62 individuals or 100.00%) fall within the non-participation category. No respondents were classified under the tokenism or citizen power categories (0.00%). These findings indicate that the level of community participation at the evaluation stage of HKm management remains very low.

Overall level of community participation in HKm management

The overall level of community participation was analyzed based on scores from three stages of community forest management planning, implementation, and evaluation. The results show that most community members fall into the non-participation category (96.77%). A summary of the overall participation assessment is presented in Table 7.

Table 7 shows that community participation across all stages of HKm management is predominantly classified as non-participation, accounting for 60 respondents (96.77%). Only 2 respondents (3.23%) fall under the tokenism category, and none reached the citizen power level (0.00%). Overall, these results indicate a very low level of community participation in HKm management.

Driving and constraining factors of community participation

To formulate strategies for enhancing community participation in community forest management, factors that drive and constrain participation were identified and

analyzed using force field analysis. These factors were then scored using a Likert scale to determine their relative influence. The results of this analysis are presented in Table 8.

Table 8 shows variations in factor scores within each analyzed variable. Factors with higher scores indicate stronger influence on enhancing community participation in community forest (HKm) management and may be leveraged to reinforce driving forces while weakening constraining factors of participation.

The analysis identifies two dominant driving factors with the highest scores (5), namely the presence of group facilitators and the availability of seed assistance, indicating their critical role in promoting community participation in HKm management. Group facilitators function as facilitators, educators, mediators, and motivators who enhance group capacity and self-reliance while supporting effective program implementation. This finding is consistent with Ilfa et al. (2021), who reported that facilitators improve community understanding of programs and foster collaborative conditions for achieving program objectives.

Field observations indicate that facilitator particularly those affiliated with the West Sulawesi Provincial Forestry Office have played an active role in strengthening forest farmer groups, especially during the planning stage. Their support includes facilitating the preparation of the Annual Work Plan (RKT) and the Social Forestry Management Plan (RKPS) for the 2024-2034 period, as well as motivating groups to complete management boundary delineation.

Seed assistance also significantly enhances community participation by motivating engagement in planting and maintenance activities. Support provided by governmental and non-governmental institutions serves as a tangible stimulus that improves access to essential inputs for sustaining HKm activities. This finding aligns with Gunawan et al. (2022), who found that seed provision under social forestry programs increases community involvement in planting activities.

Table 4. Level of community participation at the HKm planning stage

Score interval	Participation category	Number of respondents	Percentage (%)
16-37	Non-participation	54	87.10
38-58	Tokenism	7	11.29
59-80	Citizen Power	1	1.61
Total		62	100.00

Table 6. Level of community participation at the HKm evaluation stage

Score interval	Participation category	Number of respondents	Percentage (%)
8-18	Non-participation	62	100.00
19-29	Tokenism	0	0.00
30-40	Citizen Power	0	0.00
Total		62	100.00

Table 5. Level of community participation at the HKm implementation stage

Score interval	Participation category	Number of respondents	Percentage (%)
40-93	Non-participation	60	96.77
94-147	Tokenism	2	3.23
148-200	Citizen Power	0	0.00
Total		62	100.00

Table 7. Overall level of community participation in HKm management

Score interval	Participation category	Number of respondents	Percentage (%)
64-149	Non-participation	60	96.77
150-235	Tokenism	2	3.23
236-320	Citizen Power	0	0.00
Total		62	100.00

Table 8. Results of the analysis and scoring of driving and constraining factors of community participation

Stage	Criteria	Driving factors	Score	Constraining factors	Score
Planning	Delineation of management area boundaries and formulation of management plans	Presence of group facilitators	5	Limited members who understand HKm planning	4
		Regular group meetings	4	Incomplete boundary delineation	3
		Group motivation to complete boundary delineation	4	Not all members involved in plan formulation	3
		Availability of Annual Work Plan (RKT) and Social Forestry Management Plan (RKPS) 2024-2034	3	-	-
			16		10
Implementation	Planting, maintenance, protection, harvesting, and marketing	Presence of group facilitators	5	HKm implementation still conducted individually	3
		Farming experience	4	Limited members who understand of HKm implementation processes	5
		Availability of seed assistance	5	Lack of support in productive economic equipments	4
		Existence of social forestry business groups	4	Social forestry business groups not functioning	4
				Unstable product market prices	4
Total			18		20
Evaluation	Preparation and submission of reports	Members' willingness to participate in evaluation activities	3	Limited members who understand evaluation activities	4
				Evaluation reports are not prepared	3
Total			3		7

In contrast, the strongest constraining factor, also scoring 5, is the limited understanding of group members regarding HKm implementation. This constraint substantially inhibits participation by increasing dependency on group leaders and facilitators, potentially undermining long-term empowerment processes and resulting in suboptimal HKm management outcomes.

Strategies for enhancing community participation in HKm management

The findings of this study reveal the presence of several driving and constraining factors that exert dominant influences on the enhancement of community participation. These factors subsequently served as the basis for conducting Focus Group Discussions (FGDs) to formulate strategies and action plans aimed at strengthening community participation. The strategies developed in this study are oriented toward reinforcing driving factors while weakening, or providing alternative solutions to mitigate, the influence of constraining factors.

Following the formulation of strategies, the subsequent stage involved the development of operational and implementable action plans designed to enhance community participation in community forest management in Barumbung Village. The strategies and action plans for enhancing community participation in HKm management are presented in Table 9.

Discussion

Community participation in HKm planning based on Arnstein's ladder of participation

The findings of this study indicate not only low levels of participation at each stage, but also a consistent structural pattern throughout the management cycle. Rather than demonstrating a progressive shift from planning to implementation and evaluation, participation remains concentrated at the level of non-participation across all stages. This pattern reflects stagnation and the absence of a participatory progression dynamic within HKm governance in Barumbung Village. At the planning stage, 87.10% of respondents were classified within the non-participation category, indicating minimal community involvement in planning and decision-making processes. Within Arnstein's (1969) framework, this condition reflects communities being positioned as policy objects with limited influence over decisions. The tokenism category accounts for 11.29% of respondents, indicating limited participation through access to information or consultation without substantive decision-making authority. Only one respondent (1.61%) reached the citizen power category, highlighting that efforts to grant communities full authority in HKm planning remain extremely limited. These findings indicate that community participation at the planning stage is still far from the ideal condition of full community control over resource management.

Table 9. Strategies and action plans for enhancing community participation in HKm management

Priority rank	Key action / Strategy	Responsible party	Timeframe	Required resources	Success indicators
1	Regular meetings to complete management area boundary delineation and socialize RKPS and RKT documents	Forest Farmer Group (KTH), Facilitator, Local Forestry Office	Short term (0-6 months)	Facilitation support, meeting logistics, boundary maps, planning documents	≥70% of KTH members attend meetings; management boundary delineation completed
2	Capacity building for facilitators and KTH members on HKm planning and implementation	Facilitator, Local Forestry Office	Short-medium term (6-12 months)	Training modules, trainers, budget for workshops	≥60% of members demonstrate improved understanding (post-training evaluation)
3	Strengthening the role of Social Forestry Business Groups (KUPS)	KTH leaders, Facilitator	Medium term (6-12 months)	Organizational support, mentoring, coordination meetings	KUPS operational; regular group activities conducted
4	Establish internal regulations on product pricing to address market instability	KTH, KUPS	Medium term (6-12 months)	Facilitation support, market information, internal meetings	Internal pricing rules agreed and applied; reduced price variability at group level
5	Collaboration with governmental and non-governmental institutions to provide productive economic equipment	Local Forestry Office, Facilitator, KTH	Medium-long term (12-24 months)	Equipment support, partnership agreements, funding	At least one productive equipment package provided; increased participation in production activities
6	Training participation organized by governmental or non-governmental institutions	KTH, Facilitator	Ongoing	Training access, transportation costs	≥50% of members attend at least one external training program
7	Socialization and involvement of members in evaluation procedures and report preparation	KTH, Facilitator	Ongoing (annual)	Reporting templates, facilitation, administrative support	Annual HKm reports prepared and submitted; ≥50% member involvement in reporting

Document review shows that the Social Forestry Management Plan (RKPS) for the 2024-2034 approval period has been formally endorsed by the Head of Forest Management Unit (UPTD KPH) Mapilli; however, its formulation was facilitated primarily by group facilitators and core administrators, with limited involvement of general members. This practice is inconsistent with the core principles of social forestry, which emphasize broad community engagement at all management stages (Ilfa et al. 2021).

Overall, community participation at the planning stage remains low, influenced by limited socialization, low community understanding of HKm planning processes, and the exclusion of members from work plan formulation. This finding aligns with Kailola (2023), who reported similarly low participation in HKm and Village Forest planning in North Halmahera District due to planning processes involving only selected individuals.

Community participation in HKm implementation based on Arnstein's ladder of participation

Contrary to common expectations in community-based natural resource management, participation did not increase at the implementation stage. Although implementation theoretically offers more tangible engagement through livelihood activities (planting, harvesting, and marketing) that directly affect household income, the data indicate that participation remained dominated by the non-participation category. This suggests that involvement in economic

activities does not automatically translate into governance participation. The results indicate that 96.77% of respondents fall within the non-participation category, demonstrating that most community members are not actively involved in HKm implementation and have limited opportunities to contribute to decision-making.

The proportion of respondents categorized under tokenism is only 3.23%, suggesting that a small segment of the community is involved through consultation or information sharing related to implementation activities. However, such involvement remains largely symbolic, as it is not accompanied by meaningful influence over decision-making. In Arnstein's (1969) participation model, tokenism represents the stages of informing, consultation, and placation, wherein communities are given opportunities to express their views without any assurance that these views will be incorporated into HKm implementation. The absence of respondents in the citizen power category (0.00%) indicates that communities have not yet been granted decision-making authority at the implementation stage. Yet, citizen power represents the highest level of participation according to Arnstein (1969), characterized by full community authority in decision-making processes.

Overall, community participation at the implementation stage remains very low, consistent with findings by Witno et al. (2020) in HKm management in Tandung Bila. This low participation reflects limited community power in shaping activities, resulting in predominantly passive roles. Contributing factors include individual-based

implementation practices, limited understanding of HKm processes, lack of productive equipment support, non-functioning social forestry business groups, and unstable market prices.

Community participation in HKm evaluation based on Arnstein's ladder of participation

The most critical participation gap emerged at the evaluation stage, where participation declined to absolute non-participation (100%). All respondents were classified within the non-participation category, with none in tokenism or citizen power (0.00% each). These findings indicate that the community has not been involved in HKm program evaluation activities. This condition is consistent with the findings of Ajijah et al. (2022), who reported low levels of community participation in monitoring and evaluation activities within the Harapan Sentosa HKm group.

Within the forest resource management cycle, the evaluation stage represents a critical component for assessing program performance, identifying constraints, and formulating improvements for future management (Roslinda et al. 2022). Evaluative participation provides opportunities for communities to collaboratively develop recommendations for improvement. However, the absence of participation at this stage indicates that communities lack access to evaluation outcomes and that no formal mechanisms are in place to gather community feedback or grievances. This condition is influenced by several factors, including limited community understanding of the importance of evaluation activities and the absence of participatory report preparation processes.

Community participation across all HKm management stages based on Arnstein's ladder of participation

The results on community participation across all stages of HKm management planning, implementation, and evaluation showed that most respondents (60 individuals, 96.77%) fall into the non-participation category, 2 respondents (3.23%) in tokenism, and none (0.00%) in citizen power, indicating very low overall participation.

The dominance of non-participation suggests that communities lack constructive spaces for engagement and have not reached empowerment or citizen power, consistent with Yuniastoeti and Rahmafitria (2024), who reported that local development participation often fails to achieve citizen power. Arnstein (1969) emphasized that low participation reflects limited power redistribution in natural resource management. Conversely, Baldessari et al. (2024) emphasized that community empowerment through participation is essential for the successful management of natural resources. Superficial or tokenistic involvement leads to suboptimal outcomes and weak ownership. Similarly, common-pool resource principles (as cited in Chawla et al. 2024) emphasize that effective common-pool resource management requires the active participation of local communities, particularly those directly affected, in the formulation of management rules. From a common pool resource perspective, sustainable forest management requires clearly defined roles, shared norms, monitoring

mechanisms, and collective decision-making arrangements. When authority remains concentrated among group elites or facilitators, incentives for collective action weaken, and members tend to perceive HKm as an externally driven program rather than a collectively governed institution. These findings reinforce the presence of a “flat participation curve” across stages. Rather than progressing upward towards citizen power, participation remains structurally confined to the lowest level throughout the management cycle, indicating that the constraint is systemic rather than stage-specific.

Factors influencing community participation in HKm management

Based on the analysis of driving and constraining factors across HKm management stages, community participation is influenced by individual capacity, motivation, and group institutional structure. At the planning stage, driving factors such as the presence of group facilitators, group meeting forums, and community motivation to complete boundary delineation indicate an initial readiness to engage in HKm management. Group facilitators play a key role in increasing awareness and understanding of planning processes. Arnstein (1969) emphasized that information provision, consultation, and facilitation represent initial capital enabling communities to progress from symbolic toward more meaningful participation. This finding aligns with Ramadhani et al. (2023), who found that facilitators significantly influence participation levels in forest management.

However, constraints including limited member understanding of the HKm planning process and uneven involvement indicate that community technical capacity still requires strengthening. This is consistent with Maros et al. (2020), who identified limited awareness of the importance of participation as a major barrier to active engagement at the planning stage.

At the implementation stage, driving factors such as seed availability, farming experience, and group-based business opportunities suggest that direct benefits from HKm programs enhance participation. Oakley (1991) noted that communities tend to participate more actively when tangible benefits are perceived. Conversely, continued individual-based implementation reflects weak group coordination and institutional structure. Lawasi (2024) similarly highlighted weak group institutions as a key constraint in social forestry implementation. Likewise, Rahayu et al. (2024) reported that limited resource availability remains a critical challenge that needs to be addressed to improve the effectiveness of social forestry implementation.

At the evaluation stage, community willingness to participate reflects awareness of evaluation as a collective learning process. Nevertheless, limited technical capacity and the absence of compiled evaluation reports indicate weak administrative and documentation practices. This finding aligns with Sirimorok et al. (2024), who reported that several factors contributed to the unsatisfactory outcomes of social forestry schemes, including administrative and managerial aspects.

An additional factor that may explain the low level of community participation is the relatively recent establishment of the HKm. At the time of the study, the HKm had been operating for only about two years, indicating that community members and institutional actors were still in the early stages of learning, adaptation, and organizational development. In newly established social forestry schemes, participation often takes time to develop as members gain experience, strengthen organizational capacity, and become familiar with management procedures. Therefore, the predominance of non-participation observed in this study may reflect not only institutional weaknesses but also the transitional nature of a relatively young HKm institution. This finding highlights the importance of considering the temporal dimension of HKm development when assessing participation outcomes. Future research could adopt a longitudinal approach by revisiting the study area within the next three to five years to examine changes in participation as institutional maturity, community capacity, and management experience increase.

Implications for community participation in HKm management

The findings of this study underscore that the provision of legal access through community forest management approval does not automatically lead to optimal community participation. Low participation levels are influenced by limited community capacity and understanding of HKm management, inadequate supporting facilities and infrastructure, and weak group institutional structures. The role of facilitators, which emerged as the primary driving factor across all stages of HKm management, further emphasizes the strategic importance of facilitation in promoting and sustaining active community engagement.

Overall, these findings imply that enhancing community participation in HKm management requires an empowerment-based approach that integrates community capacity building, sustained facilitation, and strengthened group institutions to shift participation from non-participation toward citizen power.

Power and decision-making structure in the KTH/HKm context

Community participation in HKm management is largely shaped by local power and decision-making structures within the Forest Farmer Group (KTH), where authority remains concentrated among group leaders and external facilitators, particularly at the planning and evaluation stages. Although formal participation mechanisms exist, most members have limited influence over key decisions, resulting in predominantly procedural participation that aligns with the non-participation and tokenism levels of Arnstein's ladder. The dominant role of facilitators in technical and administrative processes may inadvertently reinforce dependency and hinder collective decision-making, contributing to the consistently low participation observed, especially at the evaluation stage.

These findings should be interpreted with caution due to several limitations, including the focus on a single

village and KTH, reliance on self-reported data, a short study period, and potential facilitator influence on respondents' perceptions. Future studies should employ comparative and longitudinal approaches across multiple HKm sites, incorporate objective ecological and livelihood indicators, and further examine how facilitation models and internal governance structures affect power redistribution and the transition toward citizen power in social forestry.

In conclusion, this study demonstrates that community participation in HKm management in Barumbung Village remains predominantly at the non-participation level, reflecting limited substantive involvement in decision-making and forest resource management. Although formal legal access has been granted under the HKm scheme, meaningful participation across the planning, implementation, and evaluation stages remains low, particularly in terms of authority and accountability. Low participation is largely influenced by capacity and structural constraints, including limited understanding of HKm procedures, weak internal institutional capacity of the Forest Farmer Group, and the absence of inclusive planning and evaluation mechanisms. In contrast, the presence of group facilitators and support such as seedling assistance function as key driving factors by enhancing motivation, technical readiness, and engagement in livelihood-related activities. Force field analysis identified three priority strategies: strengthening community capacity through targeted facilitation, reinforcing internal institutional structures and group decision-making mechanisms, and improving access to productive support and market arrangements; when implemented simultaneously, these strategies can reduce constraining factors while strengthening participation drivers. Practically, these findings imply that effective HKm governance requires repositioning participation from an administrative formality to a core governance principle, as progress towards citizen power depends on deliberate empowerment, clear power-sharing within the Forest Farmer Group, and sustained institutional support to ensure inclusive, accountable, and sustainable forest management alongside legal access and livelihood improvement.

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