

COMMUNITY PERCEPTION AND PARTICIPATION TOWARDS THE JANGKA BENAH PROGRAM IN WEST TANJUNG JABUNG

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ABSTRACT

The existence of expanding oil palm plantations is inevitable, as it has contributed significantly to increasing household incomes. However, the continued practice of monoculture oil palm plantations in forest areas poses a critical challenge to the sustainability of the ecosystem. This study aims to analyze farmers' perceptions and participation in oil palm-based agroforestry management, as well as the relationship. Data collection was conducted through interviews, data were analyzed using a descriptive qualitative approach and a quantitative approach using Chi Square. The variables studied were farmer perception (X) and farmer participation (Y). The study population consisted of members of Forest Farmer Groups (KTH) in the Jangka Benah program a collaborative effort between the Forest Management Unit (KPHP) Unit XVI Tanjung Jabung Barat and the Natural Resources Conservation Agency (BKSDA) of Jambi Province. This program was implemented in Sungai Penoban Village and involved three farmer groups: KTH Anugerah, KTH Bukit Indah, and KTH Tri Jaya Makmur. The results of the study indicate that although farmers generally have positive perceptions, but the farmer participation is very low. The results of the Chi-Square test indicate that there is no significant relationship between perception and participation in Jangka Benah programs (0.406) with a contingency degree of 0.1 (very weak). The main factor influencing this reluctance was concern over potential economic risks, especially the perceived threat of reduced oil palm productivity. In addition, poor growth of intercropped plants three years earlier further hampered participation, ultimately leading most farmers to discontinue agroforestry practices in their oil palm plantations.

Keywords: *Enrichment; Jangka Benah; Palm Oil Continuation; Social Forestry*

INTRODUCTION

Oil palm (*Elaeis guineensis* Jacq.) plantations in Jambi province continue to experience significant expansion. This increase reflects Indonesia's position as the world's largest palm oil producer, contributing approximately 56%, followed by Malaysia at approximately 30%, Papua New Guinea at 3%, and the remainder from African and South American countries. According to data from the Central Statistics Agency (BPS, 2023), the area of oil palm plantations in 2017 was recorded at 497.98 hectares and increased to 1,098.99 hectares in 2023, representing an increase of more than 50% in seven years. West Tanjung Jabung Regency in Jambi province is one of the regencies showing a trend of increasing expansion, from 33.87 hectares in 2017 to 146.92 hectares in 2023 (BPS, 2023)

The massive expansion of monoculture oil palm plantations has frequently extended into forest areas, carried out by both local communities and companies. The conversion of forests into monoculture oil palm plantations has placed significant pressure on the environment, including land degradation (Fathullah *et al.*, 2024), forest deforestation (Juniyanti *et al.*, 2021; Santoro *et al.*, 2023), tenure conflicts, and adverse impacts on biodiversity (Pratama, 2019). The presence of oil palm within forest areas poses a dilemma for the government. On the one hand, the palm oil industry makes a substantial contribution to national revenue and provides

livelihoods for approximately four million households, of which more than 40% are smallholder farmers (Kaoem Telapak, 2017).

In response to these issues, the government enacted Government Regulation No. 23 of 2021 on Forestry Administration, which regulates the resolution of unauthorized oil palm plantation development within forest areas through the Jangka Benah scheme under the framework of Social Forestry (PS). Jangka Benah is an enrichment instrument applied in oil palm plantations, whereby farmers are required to cultivate various tree species within oil palm stands, a practice commonly referred to as agroforestry. This integrative approach takes into account ecological, socio-economic, and technical aspects of implementation. Previous studies have demonstrated that integrating oil palm with timber trees (Muryunika, 2015), fruit trees (Romero *et al.*, 2019), and other agricultural crops (Masure *et al.*, 2023) can effectively address environmental challenges (Zemp *et al.*, 2019), enhance biodiversity (Ghazali *et al.*, 2016), and improve economic outcomes (Masure *et al.*, 2023).

The implementation of oil palm-based agroforestry has been promoted in Tanjung Jabung Barat Regency, particularly within the Forest Management Unit (KPHP) XVI. The primary objective of this program is to restore forest ecosystem functions while simultaneously enhancing farmers' income (Muryunika, 2015). Although socialization efforts and the provision of free seedlings have been carried out to improve community perceptions and encourage participation in agroforestry practices, its implementation still faces various challenges. This situation represents a critical area of study to assess the extent of community understanding, acceptance, and involvement in the management of oil palm through an agroforestry system.

Perceptions are strongly influenced by the information received by communities regarding both the positive and negative impacts of agroforestry, as well as how these impacts can be addressed (Moreno-Peñaranda *et al.*, 2015). In other words, perception constitutes an understanding that is translated into a concrete view, thereby enabling communities to participate and take responsibility in achieving shared goals (Lastiantoro & Cahyono, 2023). Positive community perceptions are expected to encourage greater participation in agroforestry management. Therefore, this study aims to analyze the extent to which farmers hold positive perceptions and their level of participation in the implementation of oil palm-based agroforestry, as well as to examine the relationship between these perceptions and participation.

METHOD

The study was conducted from March to April 2022 in the Forest Management Unit (KPHP) Tanjung Jabung Barat XVI, specifically in Sungai Penoban Village, Batang Asam Subdistrict, Tanjung Jabung Barat Regency, Jambi Province. The research site is located within the community empowerment block of the KPHP. The study population consisted of members of Forest Farmer Groups (Kelompok Tani Hutan, KTH) involved in the Jangka Benah program, namely KTH Anugerah with 11 members, KTH Bukit Indah with 13 members, and KTH Tri Jaya Makmur with 15 members, totaling 39 farmers.

Primary data were collected through interviews using structured questionnaires, as well as observations and documentation. The questionnaire was designed using a Likert scale (Table 1). The results were then classified into perception and participation level indicators (rating scale), where scores > 50% indicated good perception and participation, while scores < 50% indicated poor perception and participation. The measurement of perception covered ecological, socio-economic, and technical implementation aspects, whereas the measurement of participation covered planning and implementation aspects.

Table 1. Likert Scale Scoring for Perception and Participation

Score	Perception	Participation
3	Agree (A)	Always (AL)
2	Neutral (N)	Not Always (NA)
1	Disagree (D)	Never (NV)

This study employed a descriptive qualitative approach alongside a quantitative approach using the Chi-Square test. The variables examined were farmers' perception (X) and farmers' participation (Y). This analysis was applied to determine the strength of the relationship between the two variables, based on observed frequencies.

RESULTS AND DISCUSSION

Social Characteristics of Forest Farmer Groups (KTH) in KPHP Unit XVI, Tanjung Jabung Barat

The social characteristics of KTH members represent an important factor in the success of community-based forest management programs, as they significantly influence farmers' perceptions and participation (Viani *et al.*, 2021). Table 2 presents the combined social characteristics of members from KTH Anugerah, KTH Bukit Indah, and KTH Jaya Makmur.

Table 2. Social characteristics of Forest Farmer Group (KTH) members

Respondent Characteristics	Classification	Number of Respondents	Percentage (%)
Age	20–30 years	1	2,56
	31–40 years	14	35,9
	40–50 years	20	51,28
	> 50 years	4	10,26
Formal education	Elementary School	0	0
	Junior High School	15	38,46
	Senior High School	24	61,54
Main occupation	Farmer	37	94,88
	Driver	1	2,56
	Mechanic	1	2,56
Household size	1–4 persons	23	58,97
	5–8 persons	16	41,03

Source : Researcher Data, 2022

The majority of KTH members fall within the productive age range of 20 to 50 years, indicating the potential for active involvement in forest management. In line with this, (Yang *et al.*, 2013) reported that farmers under the age of 60 are generally more willing to participate in forest management. In terms of education, 61.54% of KTH members were high school graduates, while the remaining were junior high school graduates. (Magugu *et al.*, 2018; Salimath *et al.*, 2024; Timilsina *et al.*, 2024) suggested that farmers with higher educational attainment and larger landholdings are more likely to adopt new technologies in forest resource management. Furthermore, 37 out of 39 members (94.88%) identified farming as their primary occupation, and more than 50% had household sizes ranging from two to four members. These social characteristics reflect a relatively stable family structure, which holds potential for supporting engagement in the program.

Based on the survey results, it was found that agroforestry practices in oil palm plantations have been implemented by KTH members since 2019 through collaboration between the Watershed Management Agency (BPDAS) and the Forest Management Unit (KPHP) Tanjung Jabung Barat XVI. The species cultivated include agarwood (*Aquilaria* sp.), mahogany

(*Swietenia macrophylla*), candlenut (*Aleurites moluccana*), jackfruit (*Artocarpus heterophyllus*), soursop (*Annona muricata*), coffee (*Coffea* sp.), and citronella (*Cymbopogon nardus*). Seedlings were independently sourced by the community with financial assistance facilitated by BPDAS. The agroforestry system applied was an alley cropping pattern, in which two rows of tree species were planted between each row of oil palm, with the aim of enhancing biodiversity and ensuring sustainable land productivity.

Community Perceptions of Oil Palm-Based Agroforestry

The Jangka Benah program, which local communities often refer to as “sekolah lapang,” has contributed to shaping and transforming community perceptions. (Zadra & Clore, 2011) argue that perceptions can systematically change under the influence of emotional and social contexts. The success of agroforestry management is largely determined by an understanding of the benefits of trees for ecosystems, as well as their capacity to enhance the productivity of both oil palm and companion tree species (Budiadi & Supriyanto, 2022). The results of this study indicate that community perceptions of oil palm-based agroforestry across the three dimensions ecological, socio-economic, and technical implementation were generally positive (Table 3).

Table 3. Community Perceptions of Oil Palm Based Agroforestry

Measurement Aspect	Good (%)	Poor (%)
Ecological	92,31	7,69
Socio-economic	91,03	8,98
Technical implementation	97,43	2,57

Source : Researcher Data, 2022

Table 2 shows that 92.31% of respondents had a positive perception of the ecological aspect, indicating that the community understands the importance of trees in ecosystems. They acknowledged that trees can prevent soil erosion and contribute to environmental stability. However, 7.69% of respondents expressed negative perceptions, mostly farmers who were not convinced that trees could improve soil fertility. Their doubts were based on concerns that the presence of trees might interfere with oil palm productivity due to competition for nutrients and growing space (Muryunika, 2015).

In terms of socio-economic aspects, interview results revealed that respondents with positive perceptions (91.03%) believed that crop diversification through agroforestry could increase household income and create opportunities for developing new businesses. One of the most anticipated crops for integration was coffee (*Coffea* sp.), which is considered to have high economic value and a relatively stable market. Conversely, 8.98% of respondents expressed negative perceptions, mainly due to doubts about the ability of other crops to coexist with oil palm. Their primary concerns were related to economic risks, such as crop failure, potential financial losses, and additional costs for plant maintenance. These concerns strongly influenced farmers’ decision-making (Abdul-Salam *et al.*, 2022; Hendrawan & Musshoff, 2024; Romero *et al.*, 2019; Susanti *et al.*, 2020, 2021; Thiesmeier & Zander, 2023).

Community Participation in Oil Palm-Based Agroforestry

Participation is a form of community involvement in the implementation of activities. Pretty, (1995) states that participation is associated with enhancing stakeholder mobilization and improving people’s understanding to learn and take action. Furthermore, Ribot & Peluso, (2003), in the Theory of Access, explain that several types of access influence smallholders’ participation, namely: (a) access to capital (financial), (b) access to markets, (c) access to information and technology, and (d) access to land. In addition, findings from Khatun *et al.* (2020) reveal that smallholder participation in the oil palm system is not only determined by individual willingness and preferences but is also strongly shaped by resources, technical information, and external support. The results of this study show that community participation

in oil palm-based agroforestry, both in the planning and implementation stages, remains low (Table 4).

Table 4. Community Participation in Oil Palm Based Agroforestry

Participation Aspect	Good (%)	Poor (%)
Planning	46,15	53,85
Implementation	0	100

Source : Researcher Data, 2022

The findings on the planning aspect, particularly regarding farmers' attendance at extension and socialization activities, indicate that 53.85% of participating farmers did not attend these sessions. Most respondents reported their absence was due to other commitments or secondary jobs, while some stated that they did not receive adequate information. Similarly, the *sekolah lapang*, which were conducted over three days with different instructors, were not fully attended by several respondents.

Furthermore, field observations on the implementation aspect revealed that farmers did not consistently apply the recommended silvicultural techniques. Several respondents were found to have planted intercrops with irregular spacing, deviating from the recommended 3 × 3 meters planting distance introduced during the *sekolah lapang*. In addition, farmers reported that no further maintenance activities were carried out after the initial planting.

Relationship Between Community Perception and Participation in Oil Palm-Based Agroforestry

Community perceptions were predominantly positive, whereas participation was largely low. Viani *et al.*, (2021) emphasized that positive perceptions do not necessarily guarantee a high level of participation. While favorable perceptions may stem from existing knowledge and acceptance, they do not always translate into higher levels of participation in practice. The Chi-Square test results indicated that the strength of the relationship between perception and participation was very weak (Table 5).

Table 5. Relationship between Community Perception and Participation in Oil Palm Based Agroforestry

X ² Calculated	χ ² Table	Condition	Decision	C	Interpretation
0,406	3,841	χ ² calculated < χ ² table	H ₀ accepted, H ₁ rejected	0,1	Very weak

Source : Researcher Data, 2022

Field observations revealed that the growth of intercrops planted over the past three years did not show satisfactory development, leading farmers to hesitate in adopting agroforestry practices in their oil palm plantations. As a result, most chose not to continue managing oil palm-based agroforestry. Farmers' concerns that the presence of trees could reduce oil palm productivity (Muryunika, 2015) remain the greatest barrier to (Hendrawan & Musshoff, 2024). Community participation is highly dependent on direct economic benefits (Thiesmeier & Zander, 2023), security of yields, and assurance of institutional support (Khatun *et al.*, 2020; Susanti *et al.*, 2021). The adoption of oil palm agroforestry requires substantial external assistance from the government (Madjid *et al.*, 2023). The *sekolah lapang*, which were delivered only over three days, were sufficient to alter community perceptions but not to provide adequate technical access in practice. This indicates the existence of a gap between what the community understands and believes, and what is actually implemented in the field.

CONCLUSION AND RECOMMENDATION

This study revealed that although farmers generally held positive perceptions of oil palm-based agroforestry, their participation in planning and implementation remained low. The Chi-Square test confirmed that there is no significant relationship between perception and participation, with the strength of the relationship categorized as very weak. Field observations further demonstrated that the limited growth performance of intercrops and concerns over reduced oil palm productivity have discouraged farmers from continuing agroforestry practices. Participation was strongly influenced by expectations of direct economic benefits, security of yields, and the presence of institutional support. Short-term interventions, such as the three-day *sekolah lapang*, were effective in shaping perceptions but insufficient to strengthen technical application in the field. This highlights the gap between community understanding and actual practice in agroforestry adoption.

To enhance the success of oil palm-based agroforestry, several measures are recommended:

1. Continuous technical assistance and training should be provided beyond short-term *sekolah lapang*, ensuring farmers acquire practical skills in silvicultural techniques and agroforestry management.
2. Institutional and policy support must be strengthened, particularly in facilitating access to markets, capital, and technology to reduce farmers' dependency on oil palm monocultures.
3. Demonstration plots and long-term monitoring should be established to showcase the economic and ecological benefits of agroforestry, thereby reducing farmers' doubts regarding its profitability and compatibility with oil palm.

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