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Community Participation in Mangrove Tourism Management at Masani Village, Poso Pesisir District, Poso Regency

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ABSTRACT

Mangrove forests are one of the natural resources found on the coast and function as a buffer for coastal ecosystems. The aim of this research is to describe community participation in managing mangrove tourism in Masani Village, Poso Pesisir District, Poso Regency. This type of research is descriptive qualitative with an ecological approach. The subjects in this research were Masani village officials, tourism managers and the community. The data collection techniques used were observation, interviews and documentation. The research results show that the Masani village community participates in planning activities, implementation activities such as planting and replanting mangroves, building tourist facilities, maintaining and managing mangrove tourism. Forms of community participation are in the form of energy and thought. Overall, community participation in managing mangrove tourism is relatively high.

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Introduction

Indonesia, as an archipelagic country, is endowed with abundant natural resources, including the mangrove forest ecosystem. Mangrove forests are distributed along the coasts of Indonesia, thriving in areas influenced by tidal dynamics (Purwanto et al., 2014). These ecosystems play a crucial ecological role by providing protection against wave action and currents (Tarigan, 2008). Additionally, mangroves' dense and diverse stand structures act as natural sediment traps, contributing to the mitigation of coastal erosion (Imran & Efendi, 2016).

Central Sulawesi has a mangrove forest area of 33,876.29 ha, with 1,824.23 ha categorized as sparse and 1,044.98 ha as dense (Badan Pusat Statistik, 2022). The preservation of the mangrove ecosystem is vital due to its role in maintaining coastal ecosystem stability

and supporting biodiversity. However, human activities such as overharvesting for firewood, land conversion for aquaculture, and industrial expansion have significantly disturbed mangrove ecosystems, often disregarding the importance of sustainable resource management. Specifically in Masani Village, effective management strategies are urgently needed to address the rapid decline of mangrove ecosystems.

Masani Village, located in Poso Pesisir District, Poso Regency, has experienced a substantial reduction in mangrove cover. According to data from the Poso Regency Maritime and Fisheries Service (2011), Poso Regency had a total mangrove area of 683.85 ha, of which 444.5 ha had been converted for other uses across five districts, including Poso Pesisir Utara, Poso Pesisir, Lage, Poso Kota Utara, and Poso City. In the early 2000s, Masani Village had approximately 65 ha of mangroves, which shrank to just 15 ha by 2007. This reduction is primarily attributed to community activities, such as harvesting mangroves for wood and building materials and converting land for agriculture or aquaculture. Such practices have not only diminished the ecological integrity of the mangroves but also reduced their capacity to protect the coastal environment from erosion and other ecological disruptions.

Recognizing the importance of mangroves, the Central Sulawesi Province Maritime and Fisheries Service initiated an education and outreach program in 2012 to raise public awareness about the need for sustainable mangrove conservation. The program urged village governments and communities to participate in mangrove planting and replanting initiatives to mitigate the impacts of resource overexploitation. However, the effectiveness of these initiatives remains underexplored, particularly in terms of how local communities have engaged with and responded to these programs. Understanding these responses is critical for assessing the successes and challenges of such interventions and identifying strategies to enhance community involvement.

Community-based management has been recognized as an effective strategy for sustainable natural resource management, including mangrove ecosystems (Amal & Baharuddin, 2016). The participation of local communities is essential in ensuring the long-term viability of mangrove management initiatives. Such participation varies across regions, influenced by local conditions and cultural practices (Alfandi et al., 2019). Community engagement not only strengthens conservation efforts but also ensures equitable access to the direct and indirect benefits of mangrove ecosystems, thereby contributing to improved community welfare (Amal & Baharuddin, 2016). However, the extent and nature of community

participation in Masani Village's mangrove management remain insufficiently documented and require further exploration.

In 2019, the village government collaborated with local communities to capitalize on the potential of mangroves by developing a mangrove tourism area known as Seribu Bintang Beach Tourism. According to Poso Regency Regional Regulation No. 5 of 2019, this site is designated as part of the Regional Tourism Strategy Area Plan for 2019–2034, categorized as a Marine Tourism Destination Area under Article 23. The mangrove ecosystem in Seribu Bintang Beach supports diverse flora and fauna and contributes significantly to the ecological stability of coastal areas. While the development of mangrove tourism offers potential economic benefits to local communities, it is equally important to consider its ecological impacts. For instance, has tourism development led to increased income for local communities, and what measures are in place to ensure sustainable management of the mangrove ecosystem?

This study examines the dynamics of community participation in managing the mangrove ecosystem in Masani Village, with a specific focus on mangrove tourism development. By analyzing the ecological, economic, and social dimensions of this participation, the research seeks to contribute to a deeper understanding of how local communities can play a pivotal role in sustaining mangrove ecosystems and their associated benefits.

Methodology

This research employs a qualitative descriptive method to explore community participation in managing mangrove tourism in Masani Village, Poso Pesisir District. A qualitative approach was chosen because it enables an in-depth understanding of experiences, perceptions, and engagement of the local community in mangrove conservation and tourism management. The study integrates an ecological approach to analyze the interactions between human activities and the surrounding mangrove environment, particularly in maintaining ecological sustainability at tourism sites.

The variables investigated in this study are defined operationally to ensure clarity and repliability. These variables include:

1. Planning Participation: Community involvement in decision-making processes, contributing ideas, and attending meetings related to mangrove tourism management.
2. Implementation Participation: Active engagement in activities such as mangrove planting, maintenance of tourist facilities, and other initiatives supporting tourism operations.

3. Utilization Participation: The extent to which the community benefits directly or indirectly from mangrove resources, including income generation through tourism activities.
4. Evaluation Participation: The community's role in assessing the outcomes of tourism management and providing feedback for improvement.

Data Collection Techniques

The data collection process utilized three primary methods:

1. Observation: Direct observation was conducted at the mangrove tourism site, focusing on community interactions, environmental conditions, and tourism-related activities. Observations also documented the behavior of stakeholders in maintaining mangrove sustainability.
2. In-depth Interviews: Semi-structured interviews were conducted with key informants, including village officials, tourism managers, and active community members. Interview questions were designed to explore the extent and nature of community participation in each stage of mangrove management.
3. Documentation: Relevant documents were collected and analyzed, such as local government regulations, activity reports, mangrove conservation plans, and tourism performance data.

Sampling Technique

This study employed purposive sampling to select participants who had direct involvement in mangrove tourism management. The sample included 33 individuals comprising village officials, tourism managers, and community members actively engaged in mangrove-related activities. Selection criteria ensured that participants had substantial knowledge or experience relevant to the research objectives.

Data Analysis

The data analysis followed the qualitative framework outlined by Miles and Huberman (1994), involving the following stages:

1. Data Collection: Gathering data through interviews, observations, and document review.
2. Data Reduction: Selecting and simplifying the collected data to focus on information relevant to the research variables.

3. Data Display: Organizing data in a structured manner using thematic narratives and visual representations such as tables or charts.
4. Conclusion Drawing and Verification: Developing conclusions based on the analysis and verifying their validity through data triangulation (e.g., comparing interview results with observations and documentation).

Ethical Considerations

The research adhered to ethical standards by ensuring informed consent from all participants, maintaining the confidentiality of data, and respecting local cultural values. Participants were informed about the purpose of the research, and their voluntary involvement was emphasized.

Research Context and Timeline

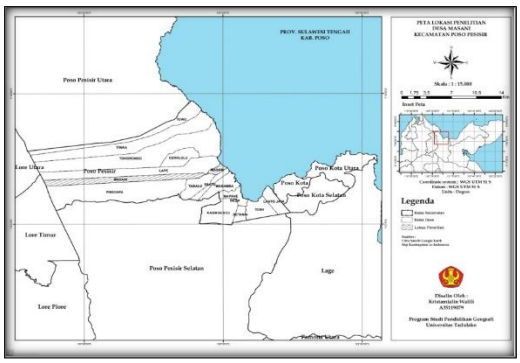
The study was conducted over a three-month period, from January to March 2023, in Masani Village. The village's social and economic dynamics, coupled with its proximity to mangrove ecosystems, were considered in designing the research. Field observations and interviews were scheduled to align with community activities to ensure comprehensive data collection.

Result

Location of Study and Respondent Characteristic

Masani Village is one of the 16 villages located in Poso Pesisir District, Poso Regency. Geographically, it lies at 10°22'21.8" south latitude and 120°38'44.0" east longitude, covering an area of 8.15 km² and consisting of three hamlets. To the north, it borders Tokorondo Village, to the east Tomini Bay, to the south Sa’atu Village, and to the west a production forest.

Figure 1. Map of Research Area



Masani Village’s coastal location and lowland topography make it highly suitable for mangrove tourism development. Since 2019, the Seribu Bintang Beach mangrove tourism area

has been officially recognized as a tourist destination. This area is unique for its combination of beach and mangrove ecosystems, offering ecological and economic opportunities for the community. The mangrove ecosystem supports biodiversity and provides environmental services while attracting visitors to the region. This section discusses community participation in the four key stages of mangrove tourism management: planning, implementation, utilization, and evaluation.

Planning Participation

Community participation in the planning stage involves deliberations and discussions to identify issues and propose development initiatives for the Seribu Bintang Beach tourism area. Table 1 presents the results of interviews with 33 respondents regarding their involvement in the planning process:

Table 1. Community Participation in Planning

Category	*Code*	*Count*	*% Codes*	*Cases*	*% Cases*
Community Participation in Planning	*Participating*	*11*	*33,30%*	*1*	*100,00%*
	Not Participating	*22*	*66,70%*	*1*	*100,00%*

The findings indicate that only 33.30% of respondents participated in planning activities, while 66.70% did not. This low level of engagement may reflect a lack of awareness, communication barriers, or limited interest among community members. Despite these challenges, those who participated contributed ideas and suggestions during deliberations, leading to the planning of essential infrastructure such as bridges, gazebos, and other tourist facilities.

Implementation Participation

The implementation stage involved translating plans into actions, including mangrove planting, maintenance, and the construction of tourist facilities. Table 2 summarizes community participation in implementation activities.

Table 2. Community Participation in Implementation

Category	*Code*	*Count*	*% Codes*	*Cases*	*% Cases*
	Participating	*21*	*63,60%*	*1*	*100,00%*

Community Participation in Implementation	*Not Participating*	*12*	*36,40%*	*1*	*100,00%*

Approximately 63.60% of respondents actively participated in implementation activities, such as the 2012 mangrove planting program initiated by the Provincial Forestry Service. Community members were also involved in mangrove maintenance, ensuring the survival and growth of the plants. In 2019, their efforts contributed to the successful transformation of the area into a tourist destination. These activities demonstrate the community's commitment to improving both the ecological and economic value of the mangrove ecosystem.

Implementation Participation

The utilization stage highlights the benefits the community derives from mangrove tourism. All respondents (100%) reported experiencing positive outcomes, as shown in Table 3:

Table 3. Community Participation in Utilization

Category	*Code*	*Count*	*% Codes*	*Cases*	*% Cases*
Community Participation in Utilization	*Receive Benefits*	*33*	*100,00%*	*1*	*100,00%*
	Do not accept benefit	*0*	*0*	*0*	*0*

The respondents identified various benefits, including job creation, increased income for local residents, and improved village revenue. For example, the mangrove ecosystem supports sustainable fishing, crab harvesting, and shellfish collection, enhancing the livelihoods of community members. Additionally, the development of tourism has attracted local visitors, bringing economic activity to Masani Village. These results demonstrate the community's significant reliance on and appreciation for the economic benefits derived from mangrove tourism.

Community Participation in the Evaluation Stage

Participation in the evaluation stage remains relatively low, as indicated in Table 4:

Table 4. Community participation in Evaluation Stage

Category	*Code*	*Count*	*% Codes*	*Cases*	*% Cases*

Community Participation	*Participating*	*10*	*30,30%*	*1*	*100,00%*
Evaluation Stage	*Not Participating*	*23*	*69,70%*	*1*	*100,00%*

Only 30.30% of respondents participated in evaluation activities, while 69.70% did not. Evaluation efforts included reviewing the implementation of mangrove conservation programs and infrastructure development. Village officials primarily led these efforts, with limited community involvement in providing feedback or suggestions. This lack of engagement could be attributed to insufficient awareness or understanding of the importance of evaluation processes.

Discussion

Planning Participation

The findings reveal that only 33.30% of respondents actively participated in the planning stage, while the majority (66.70%) did not engage in village deliberations. This low level of participation could be attributed to factors such as limited awareness, lack of communication, or socio-economic constraints, which are consistent with the findings of previous studies on barriers to participation in natural resource management (Adger et al., 2003).

Literature suggests that community participation in planning is often influenced by access to information, perceived benefits, and trust in local leadership (Reed, 2008). In the context of Masani Village, limited representation in planning may hinder the inclusion of diverse perspectives and reduce the effectiveness of proposed initiatives. The absence of robust communication channels may further exacerbate these challenges, restricting the community's ability to contribute to tourism development strategies.

Figure 2. Forms of Community Participation in Gazebos at Mangrove Tourism Locations

Implementation Participation

The implementation stage demonstrated higher community participation (63.60%) compared to planning. Activities such as mangrove planting, maintenance, and infrastructure development saw active involvement from the community. This higher engagement may stem

from the tangible and immediate nature of implementation activities, which allow individuals to see direct outcomes of their efforts. Studies by Pretty et al. (1995) highlight that people are more likely to engage in activities where the benefits are visible and aligned with their socio-economic interests. In Masani Village, the community's role in implementing mangrove conservation and tourism infrastructure has contributed to the area's ecological and economic improvements. However, challenges such as inconsistent participation across demographic groups remain unaddressed.

Community Participation in Utilization

All respondents (100%) reported receiving benefits from mangrove tourism. These benefits include job creation, increased household income, and improved village revenue. The utilization stage also supports sustainable fishing practices and resource use, enhancing the community's overall welfare. This aligns with sustainability principles, which emphasize the equitable distribution of benefits to improve socio-economic conditions without compromising ecological integrity (WCED, 1987).

The positive impact of mangrove tourism on Masani Village underscores its potential as a model for sustainable community-based tourism. However, ensuring long-term benefits requires continued community engagement and adaptive management strategies to address challenges such as resource depletion and over-tourism.

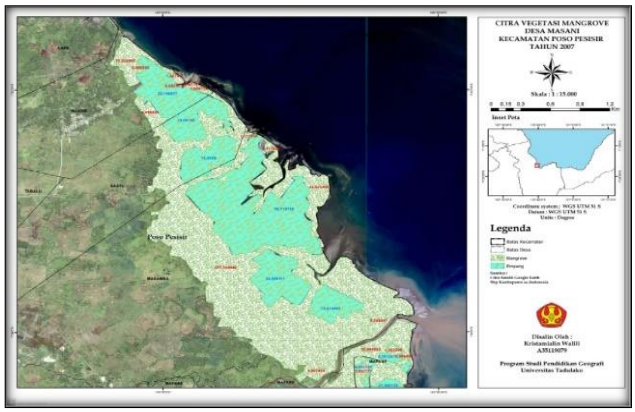
Figure 3. Access to a Thousand Bintang Beach

Community Participation in the Evaluation Stage

The evaluation stage serves as the final phase in the implementation of mangrove tourism and conservation programs, emphasizing the review of outcomes and the sustainability of initiatives. In Masani Village, the evaluation process is primarily managed by village officials who monitor the development and implementation of tourism facilities. However, findings indicate that community participation in this stage is relatively low, with only 30.30% of respondents actively involved, compared to 69.70% who did not participate.

This limited involvement suggests that community members may lack awareness of the importance of evaluation or feel unqualified to contribute to such activities. Although deliberation meetings occasionally include elements of program evaluation, these sessions fail to adequately engage the broader community. As a result, evaluation activities remain top-down, with limited feedback loops from those directly affected by tourism and conservation initiatives.

Figure 4. Image of Mangrove Vegetation in 2007



Despite limited participation in evaluation, significant strides have been made in mangrove conservation since the introduction of the 2012 planting and education programs. Comparative imagery of mangrove vegetation density between 2007 and 2023 reveals that conservation efforts have successfully expanded the mangrove area to approximately 21.2 ha by 2023. This achievement underscores the effectiveness of past initiatives in raising awareness and fostering community understanding of mangrove protection.

However, the balance between conservation and livelihood needs remains a critical challenge. Some areas have been converted into rice fields, reflecting the economic pressures faced by the community. These land-use changes highlight the necessity of periodic evaluation to ensure that conservation goals align with local socio-economic realities. While selective logging practices have replaced unsustainable harvesting methods, ongoing monitoring is essential to maintain this balance.

Field observations reveal that mangrove damage near the bridge and tourist entrance has significantly affected the aesthetic and functional appeal of the Seribu Bintang Beach area. Factors contributing to this damage include pollution, ecosystem conversion without environmental considerations, and excessive logging, often attributed to pond owners from neighboring villages (Salim et al., 2019). This degradation has resulted in a noticeable decline in tourist visits, culminating in the cessation of tourism activities by April 2023.

The iconic bridge, a central feature of the tourist site, was a primary draw for visitors but is now damaged, compounding the loss of tourism appeal. Interviews with former visitors, local officials, and tourism managers confirm that the absence of maintenance and damaged infrastructure has discouraged tourism, leading to significant income losses for local residents who previously depended on tourism for their livelihoods.

Figure 5. Image of Mangrove Vegetation in 2017

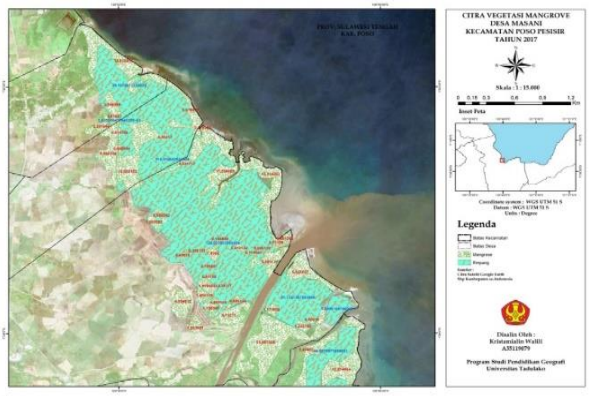
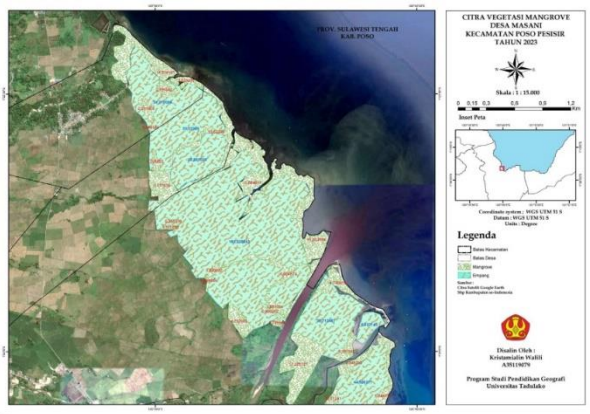


Figure 6. Image of Mangrove Vegetation in 2023



Despite the challenges, the community has demonstrated an understanding of sustainability in their land-use practices. Interviews and field observations confirm that mangrove land along the coastline has been preserved, and conversion to ponds or rice fields is carefully managed to avoid encroachment on critical mangrove areas. The dense vegetation visible in 2023 indicates successful conservation efforts, providing protection against coastal hazards such as strong winds and waves (Budi et al., 2022).

Comparative images from 2007 and 2023 illustrate a significant increase in mangrove density, particularly along the coastline, showcasing the positive impact of conservation programs. The preserved mangroves continue to serve as vital buffers against environmental threats, protecting settlements and community ponds from damage.

Conclusion

Community participation is a cornerstone of successful mangrove tourism management in Masani Village, Poso Pesisir District. The study revealed that community involvement spans various stages, including planning, implementation, utilization, and evaluation. Key contributions include labor for mangrove planting and replanting, the construction of tourism facilities, and maintenance of the mangrove ecosystem. Additionally, community members provide valuable ideas and suggestions during deliberations, fostering collaborative decision-making. Despite these achievements, challenges remain, particularly in the planning and evaluation stages, where participation levels are lower. Addressing these gaps requires targeted efforts, such as community capacity-building programs and more inclusive deliberation processes. These steps will enhance the effectiveness and sustainability of mangrove tourism management.

The findings underscore the potential of community-based tourism to balance ecological conservation with socio-economic development. In Masani Village, mangrove tourism not only supports biodiversity and coastal protection but also provides economic opportunities for local residents. This case study contributes to the growing body of literature on sustainable tourism and highlights the importance of integrating local communities into natural resource management. Future research should explore the long-term impact of community participation on tourism sustainability and identify best practices for scaling similar initiatives to other regions. Collaborative partnerships with external stakeholders, such as government agencies and NGOs, will also be critical in overcoming existing challenges and ensuring the resilience of mangrove ecosystems and the communities that depend on them.

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