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Investigating Mangrove-Based Tourism in Sambelia District: Potentials and Challenges

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Abstract: *In Indonesia, many mangrove-rich regions remain underutilized for tourism, particularly in less-developed coastal districts. Sambelia District in East Lombok represents one such area, where extensive mangrove ecosystems offer significant opportunities but also face complex development challenges. This study aims to examine the economic, social, and environmental potential of mangrove-based tourism in Sambelia District, as well as to identify key challenges that hinder its sustainable development. A mixed-methods approach was employed to provide a comprehensive understanding of these issues. Quantitative data were collected through questionnaires distributed to 36 respondents; local community members and tourism stakeholders, while qualitative data were obtained through focus group discussions and semi-structured interviews with six key informants involved in mangrove management and tourism activities. The data were analyzed descriptively and thematically to capture both measurable trends and in-depth perspectives. The findings indicate that mangrove-based tourism in Sambelia has strong potential to increase local income, create employment opportunities, stimulate small businesses, and support environmental conservation. Social benefits include strengthened community cooperation, increased local pride, and opportunities for knowledge exchange, although participation among youth and women remains limited. Despite these potentials, several challenges persist, including low community awareness and capacity, weak stakeholder collaboration, short-term government programs, environmental degradation, and inadequate infrastructure. This study contributes to the limited literature on mangrove tourism development in emerging destinations by highlighting the conditions required to balance conservation and community-based tourism.*

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INTRODUCTION

Tourism is a development sector that plays a crucial role in improving community welfare, creating jobs, and accelerating regional economic growth (Basalamah & Mawardi, 2022; Maturbongs & Lekatompessy, 2025; Achmad & Wiratmadja, 2024). Furthermore, tourism can serve as a means to strengthen social aspects, promote local culture, and support environmental conservation efforts if managed sustainably (Suriyankietkaew et al., 2025). Within the context of sustainable development, the concept of ecotourism is a form of tourism that balances economic, social, and environmental conservation interests.

One form of ecotourism that is growing rapidly in coastal areas is mangrove-based tourism. Mangrove ecosystems serve crucial ecological functions, such as preventing coastal erosion, protecting coastlines from seawater intrusion, absorbing carbon dioxide, and

providing habitat for various marine life and birds (Efendi et al., 2024; Cahyaningsih et al., 2022; Poedjirahajoe et al., 2025). Furthermore, mangrove areas also have high social and economic value because they can be utilized as a source of livelihoods through fisheries, processed mangrove products, and nature tourism services (Sari et al., 2025). As stated by Krauss et al., (2022), the development of mangrove-based tourism has the potential to support the achievement of the Sustainable Development Goals (SDGs), particularly Goal 8 (decent work and economic growth), Goal 13 (addressing climate change), and Goal 15 (conserving terrestrial ecosystems) .

Sambelia District, located in East Lombok Regency, West Nusa Tenggara Province, is a coastal area with extensive and diverse mangrove forests. Its biodiversity, coastal beauty, and strategic geographic location make this area highly potential for development as a conservation-based tourism destination.



Figure 1. Mangroves sites
Source: Google Map

However, mangrove tourism development in Sambelia faces several challenges that require in-depth analysis. Based on initial observations and the general condition of the East Lombok coastal area, there is low community participation in tourism management, a lack of promotion and information accessibility, and weak coordination between the government, community, and private sector. Furthermore, public awareness of the importance of preserving mangrove ecosystems is still unequal, resulting in sporadic conservation efforts. This situation suggests that developing mangrove tourism in Sambelia requires a comprehensive, participatory approach to ensure its economic, social, and environmental sustainability.

Several previous studies have shown that mangrove-based tourism has significant potential to improve community well-being while preserving the environment. Blanton et al., (2024) stated that mangrove ecotourism serves a dual function: as a conservation tool and an economic resource for coastal communities. Hakim et al., (2017), in their research in East Java, emphasized that developing mangrove tourism can raise public awareness of environmental conservation while simultaneously increasing local incomes. Meanwhile, Sendra et al., (2024) emphasized the importance of local community participation in the successful management of mangrove ecotourism, as strong participation can strengthen social institutions and ensure socio-cultural sustainability. Ramadesta et al., (2022), in their research

in Situbondo, East Java, added that policy support and coordination between stakeholders are key factors in developing sustainable mangrove tourism.

The novelty of this study lies in its integrated and context-specific analysis of mangrove-based tourism in a developing coastal district. Unlike previous studies that primarily examine either the benefits or management of mangrove tourism in established destinations, this research simultaneously assesses economic, social, and environmental potentials alongside institutional, social, and infrastructural challenges using a mixed-methods approach. By focusing on Sambelia District, this study contributes new empirical insights from an underrepresented region and provides practical knowledge for sustainable mangrove tourism development in similar coastal areas.

While these studies have provided important insights into the benefits and potential of mangrove ecotourism, most studies have focused on areas with established tourism development, such as Java, Bali, and Sulawesi. Few studies have in-depth examined the potential and challenges of mangrove tourism development in developing areas like Sambelia District. Therefore, there is a research gap that needs to be addressed.

This study contributes to sustainable tourism literature by providing empirical evidence from an under-researched coastal area, Sambelia District. It addresses gaps in previous studies that mainly focus on well-developed tourism regions by examining mangrove-based tourism in an emerging destination. The findings offer an integrated understanding of economic, social, and environmental potentials alongside key development challenges. Practically, this study provides valuable insights for policymakers, local governments, and communities to design inclusive, community-based, and sustainable mangrove tourism strategies, supporting conservation efforts and local economic development.

Based on this background and gaps, this study aims to investigate the potential and challenges of developing mangrove-based tourism in Sambelia District. Specifically, this study seeks to:

1. Identify the potential for mangrove tourism in Sambelia District from an economic, social, and environmental perspective.
2. Analyze the challenges faced in developing mangrove-based tourism in Sambelia District.

METHOD

This research employed a mixed methods approach to gain a comprehensive understanding of the potential and challenges of mangrove-based tourism development in Sambelia District, East Lombok Regency. This approach was chosen because it allowed researchers to combine the strengths of quantitative and qualitative data to answer complex and multidimensional research questions (Creswell, W. J & Creswell, 2022).

Research Setting

This research was conducted in Sambelia District, East Lombok Regency, West Nusa Tenggara Province. This area is one of the coastal areas in the eastern part of Lombok Island that boasts a fairly extensive mangrove ecosystem, particularly in villages such as Sugian and Labuhan Pandan.

Population and Sample

The population in this study included local communities, tourism operators, and stakeholders directly or indirectly involved in mangrove ecosystem management and tourism activities in Sambelia District. The sampling technique used purposive sampling,

which selects respondents and informants based on specific criteria relevant to the research objectives (Memon et al., 2025). The quantitative phase involved approximately 36 respondents, consisting of coastal communities, small business owners, and members of tourism awareness groups (Pokdarwis). The qualitative phase involved six key informants, consisting of local tour guides or mangrove area managers, coastal community leaders, and members of the Tourism Awareness Group (Pokdarwis).

Data Collection Techniques

To answer the first research question, regarding the potential for mangrove-based tourism in Sambelia, the researchers used observation and questionnaires. Observations were used to identify existing mangrove utilization and ongoing conservation activities. The observation results served as the basis for formulating questionnaire items relevant to field conditions and research needs. Next, a questionnaire was developed to measure community perceptions of mangrove tourism potential from three main aspects: economic, social, and environmental. The questionnaire used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire was distributed using Google Forms. The questionnaire data was used to obtain a general overview of the potential for mangrove-based tourism in Sambelia and community perceptions of its economic, social, and environmental benefits.

To answer the second research question, regarding the challenges of mangrove-based tourism development, the researchers used Focus Group Discussions (FGDs) and semi-structured interviews. The FGDs were conducted to identify various obstacles and challenges faced in the process of developing mangrove tourism. Semi-structured interviews were conducted to deepen the FGD results by exploring individual experiences in more depth. Interviews were conducted using a flexible, open-ended question guide to allow informants to provide answers based on their experiences and perspectives.

Data Analysis

Quantitative data from the questionnaires were processed using IBM SPSS Statistics version 26. The analysis phase included validity and reliability tests to ensure the instruments were appropriate and consistent in measuring the research variables. Descriptive statistical analysis was then conducted to calculate the frequency, percentage, and average value of each indicator of mangrove tourism potential, encompassing economic, social, and environmental aspects. The results of this analysis were used to identify which aspects had the highest potential and were most influential in developing mangrove tourism in Sambelia.

Meanwhile, qualitative data obtained through interviews and focus group discussions (FGDs) were analyzed using thematic analysis methods developed by (Braun & Clarke, 2006). The analysis process involved six stages: reading and understanding the entire data, determining initial coding, identifying key themes, reviewing and verifying the emerging themes, naming and defining each theme, and compiling a report on the analysis results. The researchers employed manual coding in the following technique to code the data:

Table 1. Manual Coding method

Theme	Sub-Theme	Code
A. Low Awareness & Human Resources	1. Lack of community knowledge about the function of mangroves	A-1
	2. low skills in mangrove tourism management	A-2
B. Weak Participation & Collaboration	1. Uneven community involvement	B-1
	2. Lack of coordination between the community, government, and management	B-2
C. Unsustainable Government Support	1. Short-term project-based programs	C-1
	2. No sustainability after project completion	C-2
D. Threat of Environmental Damage	1. Illegal mangrove felling and timber harvesting	D-1
	2. Fishing activities damage mangrove seedlings/ecosystems	D-2
E. Limited Infrastructure & Access	1. No trekking trails or tourist facilities	E-1
	2. Difficult access/irregular transportation	E-2

RESULT AND DISCUSSIONS

This section presents the research results obtained through the distribution of questionnaires to respondents and the data analysis conducted to answer the research objectives. The discussion begins with a quality assessment of the research instrument, including validity and reliability tests to ensure the questionnaire was appropriate and reliable in measuring respondents' perceptions. Next, the research results are presented based on three main aspects: the economic, social, and conservation potential of mangrove-based tourism in Sambelia District. In addition to revealing potential, this research also examines various challenges in developing mangrove tourism. These findings were then analyzed and discussed further to provide an in-depth understanding of the opportunities and challenges in developing sustainable mangrove tourism in Sambelia District.

The validity and reliability of the questionnaire

The validity of the questionnaire was assessed using data processed in SPSS for Windows Version 26.00. Referring to the standard criteria for instrument validity, an item is considered valid if its r-count (Corrected Item-Total Correlation) exceeds the r-table value. In this research, a total of 16 statements were tested: 5 related to economic potential, 5 to social potential, and 6 to conservation potential. The results indicate that all items (1–16) are valid. The r-count values ranged from 0.352 to 0.779, while the r-table value at the significance level used was 0.329. Since all r-count values were higher than the r-table value, it can be concluded that every item in the questionnaire is valid and appropriate for use in this study.

The reliability of the research instrument was measured using the Cronbach's Alpha method. Based on this approach, an instrument is considered reliable if the Cronbach's Alpha value is greater than 0.6. The coefficient ranges from 0 to 1, where values closer to 1 indicate a higher level of reliability. In this study, the reliability test was conducted using the SPSS software. The results are shown in the following table:

Table 2. Case Processing Summary

		N	%
Cases	Valid	36	100.0
	Excluded[a]	0	.0
	Total	36	100.0

Table 3. Reliability Statistics

Cronbach's Alpha	N of Items
.871	16

Based on the results, it is evident that the questionnaire demonstrated strong reliability. This is shown by the Cronbach's Alpha value, which surpassed the predetermined minimum threshold. Therefore, the instrument used in this study can be considered reliable and appropriate for data collection.

Table 4. Economic Potential of Mangrove-based Tourism

No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean score
1.	Mangrove tourism has the potential to increase the household income of local residents.	(0%)	(0%)	(25%)	(61.1%)	(13.9%)	3.88
2.	Mangrove-based tourism creates job opportunities for youth and women	(0%)	(0%)	(13.9%)	(61.1%)	(25%)	4.11
3.	Mangrove-based tourism stimulates the growth of small businesses (food, crafts, services).	(0%)	(0%)	(2.8%)	(61.1%)	(33.3%)	4.30
4.	Mangrove-based tourism generates new business opportunities for boat rentals and guide services.	(0%)	(0%)	11.1%	(61.1%)	(27.8%)	4.16
5.	Mangrove tourism helps attract investment for local communities.	(5.6%)	(0%)	16.7%	52.8%	(25%)	3.91
Total: 100% (36 Participants)							

The findings show that the economic potential of mangrove-based tourism in Sambelia District is high, with an average overall score of 4.07 on a scale of 5. The indicator with the highest score is small business growth (mean = 4.30), reflecting that mangrove tourism activities have encouraged the emergence of various local businesses

such as culinary, craft, and tourism services. This finding suggests that the mangrove tourism sector plays a role in strengthening the economy of coastal communities by increasing entrepreneurial opportunities.

Furthermore, the potential for developing tourism services such as boat rentals and local guides was also rated high (mean = 4.16), indicating direct community involvement in tourism activities. Employment opportunities for youth and women scored 4.11, indicating that mangrove tourism is beginning to create a more inclusive economic space.

Meanwhile, household income increased (mean = 3.88) and local investment attraction (mean = 3.91) showed positive results, although not yet optimal. This indicates that economic benefits are not yet fully distributed and still require support in the form of increased promotion, access to capital, and sustainable tourism development policies.

Overall, these results demonstrate that mangrove tourism in Sambelia has significant economic potential, both through job creation and strengthening local businesses. However, to maximize this economic impact, a more focused and collaborative management strategy is needed between the community, local government, and the private sector to ensure the sustainable development of this potential.

Table 5. Social Potential of Mangrove Tourism in Sambelia District

No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean score
1.	Mangrove tourism encourages stronger cooperation among community members.	(0%)	(2.8%)	(22.2%)	(52.8%)	(22.2%)	3.94
2.	Mangrove tourism strengthens community pride and local identity	(0%)	(0%)	(16.7%)	(61.1%)	(22.2%)	4.05
3.	Mangrove tourism encourages young people to stay and work in their communities instead of migrating.	(0%)	(2.8%)	(38.9%)	(50%)	(8.3%)	3.63
4.	Mangrove-based tourism promotes gender inclusion by creating roles for women in the tourism sector.	(0%)	(0%)	(38.9%)	(50%)	(11.1%)	3.72
5.	Mangrove tourism provides opportunities for knowledge exchange between local residents and visitors.	(0%)	(0%)	(13.9%)	(55.6%)	(30.6%)	4.16
	Total: 100% (36 Participants)						

The research results indicate that mangrove-based tourism in Sambelia District has quite high social potential, with an average overall score of 3.90 on a scale of 5. The highest score was obtained for opportunities for knowledge exchange between the community and tourists (mean = 4.16), indicating that tourism activities provide a means of positive interaction that strengthens social relationships, increases cross-cultural understanding, and enriches local communities' insights into tourism management and conservation practices.

The local pride and identity aspect also showed a high score (mean = 4.05), reflecting that community involvement in mangrove tourism management has fostered a sense of ownership and pride in the natural and cultural potential of their region. This has the potential to strengthen social cohesion and maintain local wisdom values amidst tourism development.

Cooperation among community members received a score of 3.94, indicating that tourism activities have encouraged increased solidarity and mutual cooperation in mangrove management efforts. Meanwhile, youth involvement (mean = 3.63) and women's roles in the tourism sector (mean = 3.72) are still moderate, indicating that participation by these groups is beginning to be seen, but not yet optimal.

Overall, these results indicate that mangrove tourism in Sambelia not only provides economic and ecological benefits but also contributes to strengthening the community's social structure. This potential can be enhanced through youth and women empowerment, community capacity building, and strengthening local institutions to ensure more inclusive and sustainable social participation in tourism management.

Table 6. Conservation Potential of Mangrove-based Tourism

No	Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean score
1.	Tourism revenue can be used to fund mangrove conservation programs.	(0%)	(0%)	(13.9%)	(50%)	(36.1%)	4.22
2.	Tourism activities increase public awareness about the importance of mangroves.	(0%)	(0%)	(13.9%)	(44.4%)	(41.7%)	4.27
3.	Mangrove tourism contributes to coastal protection against erosion and storms.	(0%)	(0%)	(11.1%)	(25%)	(63.9%)	4.52
4.	Mangrove tourism motivates communities to protect natural resources	(0%)	(2.8%)	(5.6%)	(47.2%)	(44.4%)	4.33
5.	Tourism in mangroves increases opportunities for community-based conservation projects.	(0%)	(2.8%)	(13.9%)	(61.1%)	(22.2%)	4.02
6.	Mangrove-based	(0%)	(0%)	(13.9%)	(55.6%)	(30.6%)	4.16

Tourism encourages partnerships between governments, NGOs and communities for conservation.	

Total: 100% (36 Participants)

The table above presents that mangrove-based tourism in Sambelia District has very strong conservation potential, with an average overall score of 4.25 on a scale of 5. The highest score was for the role of mangroves in coastal protection (mean = 4.52), confirming the ecological function of mangrove forests as a natural barrier against coastal abrasion and storms. This indicates that the presence of mangrove areas in Sambelia is not only a tourism asset but also a crucial element in maintaining the balance of the coastal ecosystem.

Furthermore, aspects related to increasing public awareness (mean = 4.27) and motivation to protect natural resources (mean = 4.33) also showed high scores. Both of these results reflect that tourism activities have played a role in fostering environmental awareness and strengthening conservation values among local communities.

The use of tourism revenue to support conservation activities showed a score of 4.22, indicating economic potential that can be channeled to fund conservation programs. Meanwhile, opportunities for developing community-based conservation projects (mean = 4.02) and partnerships between the government, NGOs, and the community (mean = 4.16) were also assessed positively, although stronger coordination and institutional support are still needed for these collaborations to be effective.

Overall, these findings indicate that mangrove tourism in Sambelia significantly contributes to environmental conservation efforts, both through raising awareness, protecting the coast, and strengthening collaboration between stakeholders. For this potential to continue to develop sustainably, an integrated management strategy is needed that balances economic and ecological objectives and strengthens the active role of the community in preserving the mangrove ecosystem.

Challenges of Mangrove Tourism Development

The development of mangrove-based tourism in Sambelia District presents various challenges that hinder its progress toward sustainability. Although the region possesses rich mangrove resources with great tourism potential, several obstacles continue to affect its effective management and development. These challenges arise from social, institutional, environmental, and infrastructural factors that limit community participation, policy continuity, and ecological preservation. Understanding these challenges is crucial to formulating strategies that ensure the balance between tourism growth, environmental conservation, and community welfare.

1. Low Awareness and Capacity of Human Resources

Local communities still lack a thorough understanding of the role, advantages, and significance of mangrove conservation. The growth of mangrove tourism is significantly hampered by this.

"The challenge is how to encourage local communities to care first or increase their awareness of the function of mangroves." (A-1)

"So the challenge there is still a lack of human resources in the community related to mangroves." (A-2)

The main challenge in developing mangrove-based tourism in Sambelia district lies in the low awareness and limited human resources of the local community. Many residents still lack understanding of the ecological and social functions of mangroves, resulting in minimal concern or active involvement in their protection and management. This limited awareness is compounded by insufficient skills and knowledge related to mangrove conservation and tourism practices, making it difficult to mobilize the community to participate effectively in sustainable mangrove development initiatives.

2. Suboptimal Community Engagement and Collaboration

Collaboration between parties has not been going well, and overall community engagement in development is still uneven.

"Overall community involvement is not yet optimal, and collaboration in mangrove development is still lacking." (B-1)

The next challenge in developing mangrove-based tourism in Sambelia district is the limited community participation and weak collaboration among stakeholders. Although some individuals or groups are involved in mangrove activities, overall engagement from the broader community remains low. Many residents have not yet been fully included or motivated to take part in conservation and tourism initiatives. In addition, coordination between the community, local government, and related organizations is still weak, leading to fragmented efforts and a lack of unified strategies for sustainable mangrove management and tourism development.

3. Unsustainable Government Programs

Mangrove development is often seen as a temporary project, without long-term planning or sustainability.

"We still face obstacle. for example, the government sometimes treats mangrove development as a project that will only be completed in a few years, which is not sustainable." (C-1)

A further challenge identified in the development of mangrove-based tourism in Sambelia district is the lack of sustainable government support. Mangrove programs are often treated as short-term projects that end once funding or the project period finishes. This project-based approach results in limited long-term impact, as there is no continued follow-up or maintenance after the project ends. Consequently, initiatives that could strengthen mangrove conservation and tourism development often lose momentum, reducing their effectiveness and sustainability over time.

4. Threat of Mangrove Ecosystem Damage

Destructive activities such as mangrove felling, use of wood for housing and traditional ceremonies, and damage caused by fishing activities are still occurring.

"Challenges certainly remain; illegal logging, and some people still use mangrove trees for housing and cooking wood during traditional ceremonies." (D-1)

"Human activities at sea, such as fishing, sometimes hit mangrove seedlings." (D-2)

Another significant challenge in the development of mangrove-based tourism in Sambelia district is the ongoing environmental degradation caused by human activities. Illegal logging and the unsustainable use of mangrove trees for housing materials and firewood during traditional ceremonies continue to threaten the ecosystem. These practices reduce mangrove density and weaken coastal protection. Additionally, fishing activities near mangrove areas often damage young mangrove seedlings, either accidentally or due to a lack of awareness about their importance. Such human-induced pressures hinder the natural regeneration of mangroves and pose a serious threat to the long-term sustainability of the ecosystem and tourism potential in the area.

5. Limited Infrastructure and Tourism Accessibility

Supporting tourism facilities such as trekking routes, transportation access, and mangrove education facilities are not yet adequately available.

"The infrastructure is also still lacking… for example, we need trekking to study the mangroves themselves, but we don't have any trekking yet." (E-1)

"The road access to the mangrove site is also not fast; we have to coordinate the boat first if we want to go to Gili." (E-2)

The final challenge in developing mangrove-based tourism in Sambelia district concerns the lack of adequate infrastructure and accessibility. Facilities that could support tourism activities, such as trekking paths or boardwalks for observing and studying mangroves, are still unavailable. In addition, the need to coordinate boat transportation to reach certain locations, such as Gili. These infrastructural and logistical barriers hinder the development of tourism activities and reduce the attractiveness of Sugian's mangrove ecosystem as a sustainable tourism destination.

DISCUSSION

This study demonstrates that mangrove-based tourism in Sambelia District possesses substantial economic, social, and environmental potential; however, these dimensions are not yet fully integrated, creating trade-offs that challenge sustainable development. Unlike previous studies conducted in well-established tourism destinations, this research contributes novel empirical evidence from an emerging mangrove tourism area, highlighting how high conservation value does not automatically translate into inclusive economic and social benefits without strong institutional support.

Economically, the findings confirm that mangrove tourism can function as a local growth engine through job creation, small business development, and community-based entrepreneurship, supporting earlier studies (Gunawan et al., 2025; Herawati & Soraya, 2025). However, this study critically reveals that economic gains remain unevenly distributed, suggesting that mangrove tourism in Sambelia is still operating at an early development stage. Without improved market access, investment mechanisms, and value-chain integration, economic benefits risk being captured by a limited group, potentially undermining long-term community support for conservation.

From a social perspective, mangrove tourism strengthens social cohesion, local pride, and knowledge exchange, aligning with community-based tourism theory (Gunawijaya, 2023; Khalid et al., 2019; Handayani & Ridwan, 2025). Nevertheless, the moderate participation of youth and women highlights a structural limitation in inclusivity. This finding extends existing literature by showing that participation alone is insufficient; targeted empowerment, leadership opportunities, and institutional roles are necessary to ensure equitable social outcomes. Without this, social benefits may stagnate despite growing tourism activities.

Environmentally, this study reinforces the role of mangrove tourism as a conservation tool that enhances awareness and coastal protection, consistent with Blanton et al., (2024). However, the coexistence of tourism development and ongoing ecosystem threats such as illegal logging and fishing impacts reveals a critical tension. This indicates that tourism-driven conservation is vulnerable without enforcement mechanisms and community-based monitoring, emphasizing that ecological sustainability cannot rely solely on awareness-based approaches.

Importantly, this study highlights the interdependence of economic, social, and environmental dimensions. Weak governance, short-term government programs, and limited infrastructure constrain the ability of mangrove tourism to generate balanced outcomes. Economic development without social inclusion risks conflict, while conservation without economic incentives weakens community commitment. Therefore, sustainable mangrove tourism in Sambelia requires integrated planning that aligns livelihood creation with conservation enforcement and social empowerment.

From a practical and policy perspective, the findings suggest the need for long-term government commitment beyond project-based interventions, stronger cross-sector collaboration, and investment in basic tourism infrastructure. Policies should prioritize capacity building, inclusive participation of youth and women, and locally driven conservation incentives to ensure the durability and legitimacy of mangrove tourism initiatives.

This study is not without limitations. The relatively small sample size and focus on a single district limit the generalizability of findings. Future research should incorporate longitudinal data, comparative regional studies, and ecological impact assessments to further examine sustainability trade-offs and governance effectiveness. Despite these limitations, this study offers valuable insights into the complexities of developing mangrove-based tourism in emerging destinations and contributes to a more nuanced understanding of sustainable coastal tourism development.

CONCLUSION

This study shows that mangrove-based tourism in Sambelia District has strong economic, social, and environmental potential. Economically, it creates jobs, supports

small businesses, and improves local livelihoods, though the benefits are not yet evenly distributed. Socially, it fosters cooperation, local pride, and cultural exchange, but participation of youth and women remains limited. Environmentally, mangrove tourism raises awareness and supports conservation, helping protect the coast and sustain ecosystems.

However, challenges such as low community awareness, weak collaboration, short-term government programs, ecosystem degradation, and poor infrastructure still hinder development. To achieve sustainable mangrove tourism, stronger community capacity, consistent government support, better stakeholder cooperation, and improved infrastructure are essential.

Overall, mangrove tourism in Sambelia offers a valuable opportunity to balance economic growth, social empowerment, and environmental conservation if managed collaboratively and sustainably.

To ensure sustainable mangrove-based tourism in Sambelia District, it is crucial to enhance community awareness and skills, strengthen collaboration among stakeholders, and implement long-term government policies beyond short-term projects. Conservation efforts should involve stricter law enforcement and active community participation to protect mangrove ecosystems. Additionally, improving infrastructure and accessibility, while empowering youth and women in tourism and conservation activities, will support inclusive and sustainable development.

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