



## Community-Based Ecotourism Development Strategy on Gili Ketapang Island, Probolinggo Regency

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**Abstract:** The implementation of the Ecotourism Area on Gili Ketapang Island still has obstacles, one of which is the low level of community income, so an appropriate development strategy is needed. In addition, sustainability identification is carried out from existing social, economic and environmental aspects to determine aspects that require improvement and development. This research was conducted in This research is located in Gili Ketapang, Sumberasih District, Probolinggo Regency, East Java. The data analysis used is SWOT analysis. The ecotourism development strategy based on SWOT analysis is to apply the SO strategy in quadrant I. This strategy is that DYST collaborates with ecotourism managers on Gili Ketapang; DYST coordinates with related parties to provide expertise and knowledge development to tourism operators, the community and management; The government together with the management analyzes to determine the potential for developing suitable vehicles; Improving coordination between government and managers to improve ecotourism facilities and infrastructure; Community supervisory Groups involve the community in the management and development process; Create a planning strategy for sustainable ecotourism development.

**Keywords:** Development; Ecotourism; Strategy; SWOT.

### Introduction

Indonesia, as a developing country in Asia, has made significant strides in advancing its tourism sector, which has become a vital component of its economic growth. The tourism sector has shown remarkable growth, contributing approximately 9.5% to Indonesia's Gross Domestic Product (GDP) (Tosun, 2000). This sector not only serves as a source of foreign exchange but also provides rapid income generation opportunities with relatively low capital investment (Azwar et al., 2019). The legal framework established by Law No. 10 of 2009 concerning Tourism has further strengthened the tourism industry by providing a structured environment for stakeholders involved in this sector (Darda & Bhuiyan, 2022).

Ecotourism, a subset of the tourism industry, has emerged as a sustainable alternative that balances economic benefits with environmental conservation. It is characterized by responsible travel to natural areas, aiming to conserve the environment and improve the well-being of local communities (Sucipto, 2020). Ecotourism is particularly advantageous as it promotes minimal resource use while maximizing visitor satisfaction (Myeza et al., 2010). The concept of ecotourism aligns with the principles of sustainable development, which emphasize the importance of preserving natural resources while providing economic benefits to local populations (Adetola & Adediran, 2014).

Research indicates that ecotourism can significantly enhance local economies by creating job opportunities

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and fostering community participation in tourism development (Gezahegn, 2024). For instance, studies have shown that local communities often exhibit positive attitudes towards ecotourism when they are adequately educated about its benefits (Zambrano et al., 2010). Moreover, ecotourism can serve as a catalyst for community empowerment, allowing local residents to take control of tourism initiatives and benefit directly from the economic opportunities generated (Mustain, 2024).

However, the successful implementation of ecotourism requires careful planning and management to mitigate potential negative impacts, such as environmental degradation and cultural erosion (Sisriany & Furuya, 2020). Local community involvement is crucial in this regard, as it ensures that the benefits of ecotourism are equitably distributed and that the cultural integrity of the communities is preserved (Perdana et al., 2021). Furthermore, effective governance and collaboration between governmental bodies and local communities are essential for the sustainable development of ecotourism (Afriasiyah & Watye, 2022).

Probolinggo Regency, located in East Java, Indonesia, is strategically positioned with the Madura Strait to the north, Situbondo Regency to the east, Lumajang Regency to the south, and Pasuruan Regency to the west. This geographical setting provides a unique opportunity for the development of marine tourism, particularly through the promotion of Gili Ketapang Island as a prime tourist destination. The local government has initiated a tourism development program aimed at enhancing the appeal of this island, which boasts stunning coastal landscapes characterized by white sandy beaches and crystal-clear waters, making it an ideal habitat for diverse coral reef species (Rizal et al., 2019). The island is increasingly recognized for its snorkeling opportunities, drawing attention to its underwater beauty (Rizal et al., 2019).

The rapid development of tourism in Probolinggo can be attributed to the emergence of new attractions, with Gili Ketapang Island at the forefront. The government's focus on leveraging the region's natural beauty aligns with broader objectives to boost the local economy and promote environmental sustainability (Idrus, 2024). However, effective management of tourism activities is crucial to ensure that the development of Gili Ketapang Island does not compromise the ecological integrity of the area or the cultural values of the local community (Idrus, 2024). This necessitates a balanced approach that incorporates environmental considerations and encourages community participation in tourism management (Idrus, 2024).

The success of ecotourism development in Gili Ketapang Island hinges on the collaboration and active participation of various stakeholders, including local communities, government entities, and tourism operators. Stakeholder engagement is essential for understanding the unique characteristics of the natural environment and for identifying sustainable development opportunities that can attract tourists while preserving the area's ecological and cultural heritage (Idrus, 2024). The authenticity and beauty of the natural environment serve as significant assets in attracting visitors, making it imperative to maintain these qualities through responsible tourism practices (Idrus, 2024).

Moreover, the development of ecotourism must prioritize the well-being of local communities. This involves creating economic opportunities that allow residents to benefit from tourism while fostering a sense of ownership and pride in their natural resources (Satrya, 2022). Community involvement in ecotourism initiatives has been shown to enhance local livelihoods and promote environmental stewardship, as residents become more invested in the preservation of their surroundings (Pryambodo et al., 2020). Therefore, establishing a shared vision among stakeholders is critical for the sustainable development of Gili Ketapang Island as an ecotourism destination.

Despite the potential for growth, the implementation of ecotourism initiatives on Gili Ketapang Island faces challenges, including low community income levels and inadequate infrastructure (Setiawan & Syah, 2020). Identifying and addressing these barriers is essential for creating a viable ecotourism model that benefits both the environment and the local economy. A comprehensive assessment of the social, economic, and environmental dimensions of ecotourism is necessary to develop targeted strategies that enhance community welfare and promote sustainable practices (Idrus, 2024).

Research has indicated that effective ecotourism strategies should include increasing collaboration with travel agents, enhancing safety measures for tourists, and providing educational resources about ecotourism activities (Sugito et al., 2019). Additionally, fostering local cultural expressions and strengthening ecological protection measures are vital components of a successful ecotourism framework (Idrus, 2024). The novelty of this research lies in its comprehensive approach, utilizing both SWOT analysis and descriptive methods to provide a nuanced understanding of the challenges and opportunities facing Gili Ketapang Island (Sisriany & Furuya, 2020).

## Method

In this study, a qualitative research approach is employed, specifically utilizing a descriptive methodology. This method is particularly effective for capturing and articulating the nuances of existing phenomena, whether they are contemporary or historical. The research is conducted in Gili Ketapang, located in the Sumberasih District of Probolinggo Regency, East Java. The data analysis framework utilized in this study is SWOT analysis (Strengths, Weaknesses, Opportunities, Threats), which allows for a comprehensive evaluation of the internal and external factors affecting the ecotourism potential of the area.

Qualitative research, as noted by Wailmi, is adept at providing detailed descriptions and insights into specific contexts, making it suitable for understanding complex social dynamics within tourism (Wailmi, 2024). This aligns with the findings of Aryaningshyas, who emphasizes the importance of qualitative methods in exploring entrepreneurial practices in sustainable tourism, highlighting the depth of understanding that can be achieved through such approaches (Aryaningshyas, 2023). Similarly, the work of Johari et al. illustrates how descriptive qualitative research can effectively capture the intricacies of tourism service strategies, particularly in response to contemporary challenges such as the Covid-19 pandemic (Johari et al., 2022).

The qualitative approach is further supported by the research of Mason et al., which underscores the value of exploratory qualitative studies in defining concepts

and developing hypotheses within the tourism sector (Mason et al., 2010). This is particularly relevant in the context of Gili Ketapang, where understanding local community perceptions and experiences is crucial for effective ecotourism development. Moreover, the systematic review by Pahlevansharif et al. highlights the growing momentum of qualitative methodologies in tourism research, suggesting that these approaches are increasingly recognized for their ability to provide rich, contextual insights (Pahlevansharif et al., 2019).

In employing SWOT analysis, this study aims to identify the strengths and weaknesses inherent in the Gili Ketapang tourism landscape, as well as the opportunities and threats posed by external factors. This analytical framework is instrumental in formulating strategies that can enhance the viability and sustainability of ecotourism initiatives in the region. The integration of qualitative data allows for a nuanced understanding of stakeholder perspectives, which is essential for fostering community engagement and ensuring that tourism development aligns with local needs and aspirations (Krisnawati, 2021).

## Results And Discussion

From the results of the research carried out, we began to see and understand the current conditions. The IFAS and EFAS test results are used to evaluate the main strengths, weaknesses, opportunities and threats in the functionality area and evaluate the relationship between these areas. Several important internal and external factors (IFAS and EFAS) are as follows.

**Table 1.** Internal and External Factors

Internal factors	External Factors
Strengths	Opportunities
The local government coordinates with tourism managers and acts as a supervisor	The Department of Youth, Sports and Tourism fully supports the development of Gili Ketapang tourism
Gili Ketapang Island is designated as a Conservation Area	The potential for vehicle development is high
There is a coral reef conservation area	The wealth of natural resources is still very natural
Having a Community Supervisory Group as a management institution	High tourist interest
Tour operators have carried out BPBD training	Availability of human resources
Tour operators and communities receive tourism and environmental management training	Improving the community's economy
Development of facilities and infrastructure	Create jobs
Weakness	Threats
The tourism management system is carried out independently by each tour operator	Rejection of community figures and religious figures
The management structure is unclear	Damage to coral reefs and ecosystems
Waste management has not been handled	There is still no consensus regarding the authority of management areas by the government
DYST assistance is still not optimal	
Low community involvement	
Promotion of tourist attractions has not been optimal	
The tourist information center is inadequate	
Limited development and management funds	

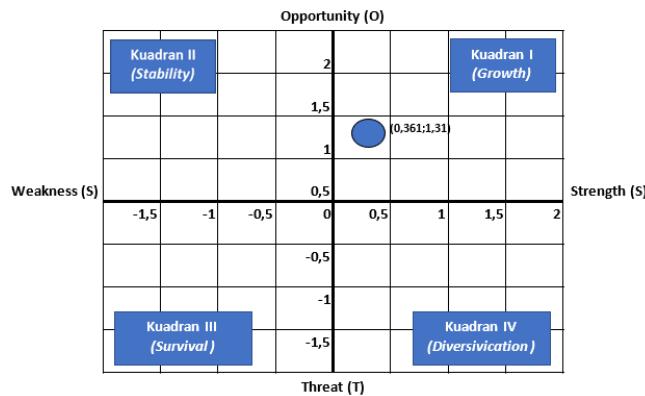
**Table 2. IFAS Table (Strengths and Weaknesses)**

Strength	Weight (B)	Ratings (R)	Score (B x R)
The local government coordinates with tourism managers and acts as a supervisor	0.08	3	0.24
Gili Ketapang Island is designated as a Conservation Area	0.10	4	0.42
There is a coral reef conservation area	0.09	4	0.38
Has the TA GROUP Community Group as a management institution	0.09	4	0.38
Tour operators have carried out BPBD training	0.04	2	0.08
Tour operators and communities receive tourism and environmental management training	0.05	2	0.1
Development of facilities and infrastructure	0.06	2	0.138
Sub Total Strength			1.738
WEAKNESS			
The tourism management system is carried out independently by each tour operator	0.09	4	0.36
The management structure is unclear	0.06	3	0.18
Waste management has not been handled	0.04	3	0.135
DYST assistance is still not optimal	0.03	2	0.074
Low community involvement	0.1	4	0.4
Promotion of tourist attractions has not been optimal	0.04	1	0.04
The tourist information center is inadequate	0.025	2	0.05
Limited development and management funds	0.069	2	0.138
The tourism management system is carried out independently by each tour operator	0.09	4	0.36
The management structure is unclear	0.06	3	0.18
Waste management has not been handled	0.045	3	0.135
			1.377

**Table 3. EFAS Table (Opportunities and Threats)**

Opportunity	Weight (B)	Ratings (R)	Score (B x R)
The Department of Youth, Sports and Tourism fully supports the tourism development of Gili Ketapang	0.08	3	0.25
The potential for vehicle development is high	0.12	4	0.50
The wealth of natural resources is still very natural	0.12	4	0.51
High tourist interest	0.09	3	0.29
Availability of human resources	0.1	3	0.3
Improving the community's economy	0.08	3	0.26
Sub Total Odds			2,38
Threat			
Rejection of community figures and religious figures	0.1	4	0.4
Damage to coral reefs and ecosystems	0.1	4	0.4
There is still no consensus regarding the authority of management areas by the government	0.09	3	0.27
Sub Total Threat			1.07
Total Opportunities and Threats	1.00		1.31

A community-based ecotourism development strategy is needed by tourism managers to increase the existence of Gili Ketapang Island. The development strategy can be seen based on the results of the average calculated score in the IFAS and EFAS matrices which show values of 0.361 and 1.313. This value is then placed in the Internal External Analysis (IE) which is in quadrant I (growth oriented strategy) which can be seen in Figure 1.

**Figure 1. IFAS and EFAS Quadrant Matrix**

Based on the IFAS and EFAS scores in the IE matrix quadrant, an Internal factor value of 0.361 and an External factor value of 1.31 were obtained. This shows that external factors have more influence on the development of community-based ecotourism. Development will occur optimally by considering external factors.

The growth strategy based on the results of internal and external matrix analysis shows that the strategy implemented is an SO (Strength-Opportunity) strategy. This strategy takes advantage of the strengths and opportunities to develop community-based ecotourism on Gili Island Ketapang. The strategic directions that can be taken are as follows:

The collaboration between the Department of Youth, Sports, and Tourism (DYST) and ecotourism managers on Gili Ketapang Island reveals significant gaps in governmental involvement in tourism management. Interviews conducted with DYST officials indicate that there is currently no structured cooperation between the government and the management of tourism activities, which are predominantly handled by the Tourism Awareness Group (TA Group) Zaki et al. (2020). This lack of collaboration may hinder the effective implementation of ecotourism initiatives, as government support is crucial for sustainable development and resource management (Sudirman, 2023). The role of government in ecotourism is essential, particularly in outreach activities related to coral reef conservation and the management of tourist areas. Such initiatives are vital for raising awareness about environmental sustainability and ensuring that tourism practices do not adversely affect the local ecosystem (Wailmi, 2024). The absence of a cohesive strategy between the government and local management can lead to fragmented efforts that fail to address the broader challenges facing ecotourism development on Gili Ketapang Island (Wahyuni & Syamsir, 2021).

Recent studies emphasize the importance of stakeholder collaboration in tourism development. For instance, Wahyuni and Syamsir highlight that local governments must adopt integrative strategies that involve various stakeholders, including community groups and private sector actors, to foster a creative economy within tourism (Bramantyo, 2023). This collaborative approach not only enhances the effectiveness of tourism initiatives but also ensures that the benefits of tourism are equitably distributed among local communities (Wiwekananda et al., 2021).

Furthermore, the qualitative research conducted by Junaid illustrates how community engagement in ecotourism planning can lead to more sustainable outcomes. By understanding community expectations and incorporating their insights into tourism development, stakeholders can create more resilient and

adaptive tourism models (Junaid, 2023). This aligns with the findings of Kurniawati et al., who emphasize the need for community involvement in conservation efforts to ensure the sustainability of ecotourism projects (Kurniawati et al., 2022).

The Department of Youth, Sports, and Tourism (DYST) plays a crucial role in coordinating with various stakeholders to enhance the expertise and knowledge of tourism operators, local communities, and management entities on Gili Ketapang Island. This collaboration is essential to ensure that all parties involved in tourism activities, particularly tour operators who guide snorkeling excursions, are equipped with the necessary skills and knowledge to maintain tourist safety (Ko & Song, 2021). The emphasis on safety is paramount, as it directly influences tourist satisfaction and the overall success of the tourism sector (Ko & Song, 2021).

To effectively manage safety in tourism, particularly in marine activities such as snorkeling, it is vital for tour operators to undergo rigorous training that emphasizes safety protocols and emergency response strategies. Recent studies highlight the importance of developing digital skills among tourism operators to enhance their professionalism and ensure they are well-prepared to handle safety issues (Zaragoza-Sáez et al., 2021). This training not only improves the operators' capabilities but also fosters a culture of safety that is critical in the tourism industry, especially in adventure tourism contexts where risks are inherent (Bilderback, 2024).

Moreover, the integration of advanced technologies, such as Unmanned Aerial Vehicles (UAVs), has been proposed as a means to enhance safety and security at tourism sites. UAVs can provide real-time monitoring and surveillance, which can significantly contribute to the safety of tourists engaged in activities like snorkeling (Ko & Song, 2021). However, the successful implementation of such technologies requires careful planning and investment to ensure they are used effectively and efficiently within the tourism framework (Ko & Song, 2021).

The need for continuous training and development in safety practices is further underscored by the evolving expectations of tourists, who increasingly seek adventure experiences that are both thrilling and safe (Bilderback, 2024). As the marine tourism industry grows, it becomes essential for tour operators to balance the excitement of adventure tourism with robust safety measures to protect both tourists and the natural environment (Bilderback, 2024). This balance is crucial for sustaining the long-term viability of ecotourism initiatives on Gili Ketapang Island.

The collaboration between the government and tourism management on Gili Ketapang Island is essential for identifying and developing suitable

activities that can enhance the tourism experience. Currently, the primary activities available include snorkeling, banana boating, and enjoying local culinary offerings provided by the management Chadel et al. (2023). To expand the range of activities and attract more visitors, a thorough analysis of the island's potential is necessary.

Research indicates that involving local communities in the planning and development of ecotourism activities can significantly enhance economic development and improve infrastructure (Alfiandri et al., 2022). By fostering a sense of ownership and pride among locals, ecotourism can lead to sustainable practices that benefit both the environment and the community (Al-Tokhais & Thapa, 2019). Collaborative governance is crucial in this context, as it encourages partnerships among various stakeholders, including government entities, local communities, and tourism operators (Alfiandri et al., 2022). This collaborative approach can help in formulating and implementing sustainable tourism strategies that are inclusive and beneficial to all parties involved.

Moreover, the development of cultural heritage attractions, such as traditional markets and local handicrafts, can complement existing activities and provide tourists with a more immersive experience (Manowaluilou & Vitheepradit, 2022). This aligns with the findings of Manowaluilou and Vitheepradit, who emphasize the importance of community preparation and competency development in managing ecotourism effectively (Manowaluilou & Vitheepradit, 2022). By integrating cultural elements into the tourism offerings, Gili Ketapang can enhance its appeal as a diverse tourist destination.

Furthermore, the sustainability of ecotourism in ecologically fragile areas, such as Gili Ketapang, requires careful planning and stakeholder collaboration to address the challenges posed by traditional tourism practices (Wang et al., 2021). The government must work closely with local management to ensure that tourism development does not compromise the ecological integrity of the island while simultaneously promoting economic growth (Wang et al., 2021). This is particularly important given the increasing interest in ecotourism as a means to balance human activity with environmental conservation (Nugroho et al., 2022).

Improve coordination between government and managers to improve ecotourism facilities and infrastructure. The available infrastructure is inadequate. The management contributes independently to carry out developments such as rest areas. Some facilities such as trash cans, dive centers, monitoring posts are provided by the authorities. However, some of these facilities are not operational.

Community supervisory Groups involve the community in the management and development process. The problem that occurs is that there are still many pros and cons regarding tourism on Gili Ketapang. So there are still many people who have not participated. TA Group and the government need to introduce ecotourism to local communities so that they are educated and can increase interest in helping develop ecotourism. Create a sustainable ecotourism development planning strategy to ensure management will continue. Some of these development strategies can be used as a reference for improving community-based ecotourism on Gili Ketapang.

## Conclusion

The ecotourism development strategy based on SWOT analysis is to apply the SO (Strength-Opportunity) strategy in quadrant I. This shows that external factors (opportunities) have more influence on community-based ecotourism development. Development will occur optimally by considering external factors.

### Author Contributions

Conceptualization, M.D.P.A and W.W; methodology, W.W and H.R.; software, M.D.P.A.; validation, W.W and H.R.; formal analysis, M.D.P.A.; investigation, M.D.P.A; resources, M.D.P.A; data curation, M.D.P.A and W.W; writing—original draft preparation, M.D.P.A; writing—review and editing, M.D.P.A.; visualization, M.D.P.A; supervision, W.W and H.R; project administration, M.D.P.A.; funding acquisition, M.D.P.A.

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### Conflicts of Interest

The authors declare no conflict of interest.

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