

*Original article***Ecotourism management strategy of Kampung Blekok, Situbondo in supporting waterbird habitat conservation**Ranti Seta Pratiwi^{1*}, Sri Palupi², Dini Atikawati³¹ Department of Environmental Resource Management and Development Program, Graduate School, Universitas Brawijaya, Malang, Indonesia.² Department of Management, Faculty of Economics and Business, Universitas Brawijaya, Malang, Indonesia.³ Graduate School, Universitas Brawijaya, Malang, Indonesia.**Abstract**

Kampung Blekok is a mangrove and waterbird conservation area in Situbondo Regency. This area is unique in that it is inhabited by thousands of waterbirds that colonise the mangrove area of Kampung Blekok. Tourism activities have an impact on the comfort of waterbirds in the area. The purpose of this study is to analyse the ecotourism management implemented in Kampung Blekok in supporting the conservation of waterbirds and to develop ecotourism management strategies in Kampung Blekok to maintain a balance between tourism development and waterbird habitats. The research method used is a qualitative narrative method, with a SWOT (Strengths, Weaknesses, Opportunities, Threats) approach. The results indicate that Kampung Blekok ecotourism management has implemented key ecotourism principles, supported by high ecological value as a waterbird habitat within a well preserved mangrove ecosystem and strong community participation reflecting Community-Based Tourism (CBT). SWOT analysis using IFAS and EFAS matrices positions the management in Quadrant II (Strength–Threat), demonstrating robust internal strengths such as biodiversity richness, government support, educational value, and community involvement while facing significant external threats, including habitat disturbance, environmental degradation, destination competition, and dependency on government policies. Accordingly, the appropriate strategic orientation is the Strength–Threat (S–T) approach, which emphasizes optimizing internal capacities through zoning systems and visitor carrying-capacity limits, strengthening community-based monitoring, enhancing conservation-based destination differentiation, and developing collaborative governance models to ensure long-term sustainability.

Keywords: Ecotourism, Conservation, Waterbirds, SWOT, Kampung blekok

Received: November 20, 2025 | Revised: February 20, 2026 | Accepted: April 30, 2026

Introduction

Nature-based tourism or ecotourism has become one of the strategic approaches in environmental conservation efforts as well as improving the welfare of local communities. The tourism sector has long been a significant contributor to the global economy, offering a variety of experiences for tourists. Ecotourism is a highly effective instrument for promoting environmental conservation and sustainable rural development in Indonesia (Dumumpe et al. 2025). The ecotourism potential of an area is influenced by a combination of unique natural resources, environmental suitability and carrying capacity, and the active role of local communities in its management. Case studies in Indonesia emphasise that community empowerment and environmental education are important components of sustainable ecotourism (Wiyono et al. 2023). In addition, experience in developing destinations in conservation areas shows that tourism development projects, including those initiated by the government, are often located in ecologically vulnerable areas, so that poor tourism management can have a significant ecological impact on these areas.

Most ecotourism areas in Indonesia are not yet optimally managed due to institutional capacity constraints, low community participation, and weak data-based planning and environmental carrying capacity. An increase in the number of visitors to nature-based tourism, especially in protected areas, can have an impact on declining environmental quality, such as natural pollution and ecosystem disruption (Sabila et al. 2024). The development of non-protective tourism has an impact on the uniqueness of the environment in a destination, which ultimately increases environmental risks.

Situbondo Regency located on the north coast of Java Island, has very rich natural resources, especially in its coastal ecosystems. Geographically, Situbondo Regency covers an area of 1,638.5046 km² or 163,850 ha, stretching approximately 150 km from west to east along the northern coast. This area has a diverse range of coastal ecosystems, such as mangroves, coral reefs, seagrass beds, and estuaries (Dinas Komunikasi dan Informatika Kabupaten Situbondo 2023). This ecosystem diversity not only has important ecological functions, but also economic and recreational value that can be developed through an ecotourism approach.

Coastal areas have great potential for conservation-based ecotourism development. These coastal areas are not only habitats for various marine biota, but also important locations for migratory waterbirds and local birds, which use the Situbondo coast as a stopover or breeding ground. One example is the Kampung Blekok area, a

* Corresponding Author:

Ranti Seta Pratiwi

Graduate school, Universitas Brawijaya

Phone: +62241 571260

E-mail: rantiseta.klh@gmail.com

coastal area with diverse mangroves and known as a habitat for water birds, which is a unique tourist attraction in the coastal region.

Kampung Blekok, located in Klatakan Village, Kendit District, Situbondo Regency, is one of the ecotourism areas with great potential for biodiversity conservation, especially water birds such as cattle egrets, rice field blekoks, and other species (Dewi et al. 2023). This area was originally known as a natural habitat for water birds with abundant populations and became a unique natural tourist attraction in the northern coastal region of East Java. In addition, the presence of mangroves and other coastal ecosystems supports the survival of water birds, both as a place to forage, rest, and breed. However, in its development, the Kampung Blekok ecosystem began to face pressure due to increased tourism activities that did not pay attention to ecological principles. The increase in tourist visits, the construction of tourism support facilities, and other activities around the area have caused habitat degradation (PT Paiton Energy & PSLP UGM 2023). This has had a direct impact on the decline in environmental quality and has disrupted the existence of water birds, which have long been the main icon of the area.

Kampung Blekok is a mangrove area covering approximately 28 hectares. Data analysis shows that the mangroves in Kampung Blekok have a tree density of 802.78/ha on the west side of the river and 812.50/ha on the east side of the river. Based on the classification of mangrove density according to SNI 7717:2011, the mangrove vegetation in Kampung Blekok is classified as "dense mangrove" ($660 \leq KP < 880$) (PT Paiton Energy & PSLP UGM 2024). Kampung Blekok Ecotourism has 12 types of mangroves (Dewi. 2020) and 9 types of water birds (Setiawati et al. 2023). The presence of this waterbird population appears to have shifted to mangroves further east of Kampung Blekok, located behind the ponds in the area near the river mouth. Based on observations and analyses, the cause of the migration of waterbird populations in the Kampung Blekok mangrove area could be due to environmental or ecosystem changes resulting from several tourism development projects that are very close to the birds' habitat around the kampung blekok mangrove, as well as the tourism activities within it (PT Paiton Energy & UNM 2023). According to conservation studies, natural wetlands face global pressure due to increasing anthropogenic activities and environmental changes. Disturbances to the birds' natural habitat can reduce reproduction rates, increase the risk of migration outside the area, and even threaten the long-term sustainability of the population (Wang et al. 2023).

Given these conditions, this study aims to analyse ecotourism management in Kampung Blekok and develop a planned and sustainable ecotourism management strategy to ensure that Kampung Blekok not only becomes a tourist destination but also continues to function as a conservation area that supports the preservation of waterbird habitats. The formulation of this strategy is important to provide direction for management policies that balance ecological, social, economic, and educational aspects. With the right approach, Kampung Blekok can become a model

for conservation-based ecotourism management that is capable of preserving biodiversity while providing sustainable benefits for the local community.

Methods

The research method used is a qualitative narrative method. This method allows for a better understanding and explanation of the phenomena or issues experienced by the research subjects. This approach was chosen to provide a more in-depth and comprehensive understanding of the phenomenon of ecotourism management in Kampung Blekok, Situbondo, particularly in relation to the conservation of waterbird habitats. Each research objective in this study has different characteristics and analytical approaches, which are tailored to the type of data and issues being examined.

In analysing the ecotourism management implemented in Kampung Blekok in support of waterbird conservation, data was obtained through in-depth interviews, field observations, focus group discussions and literature studies. The analysis was based on the principles of ecotourism, namely the principles of ecology, community participation, economics, education, and tourism. Informants for the in-depth interviews were selected using purposive sampling, which took into account the level of involvement and capacity of the informants in providing assessments of alternative management strategies. A total of 15 informants were selected, consisting of: 2 people from the Tourism and/or Environment Agency, 4 experts in the field of environment/ecotourism/environmental communities who play a role in Kampung Blekok, 4 local ecotourism managers (pokdarwis/tourism awareness groups, local guides/ecotourism management assistants), and 5 members of the Kampung Blekok community.

Data validity testing in analysing management was carried out using data triangulation techniques by comparing in-depth interviews, field observations and literature studies. This was done to ensure data consistency. Formulation of an ecotourism management strategy that supports the preservation of waterbird habitats in Kampung Blekok using the SWOT (Strengths, Opportunities, Weaknesses, Threats) analysis method. SWOT analysis is the systematic identification of various factors as input for formulating strategies that can maximise strengths and opportunities, while simultaneously minimising weaknesses and threats.

Results and Discussion

Analysis of Ecotourism Management in Kampung Blekok

Ecotourism management analysis was applied in Kampung Blekok to support the conservation of water birds through field observation techniques, in-depth interviews, and literature studies. The results of this study are based on the following five principles of ecotourism:

Ecological Principle

Tourism development that focuses solely on profit will have a negative impact on social, economic and environmental aspects. Ecotourism development requires an evaluation of the potential diversity of flora and fauna in mangrove ecosystems, taking into account ecological suitability factors (Falih *et al.* 2025). Mangroves are one of the coastal ecosystems that have important ecological functions, especially as a potential habitat for various types of water birds and their prey organisms. The presence of waterbirds in a mangrove area is often used as a vital indicator of ecosystem health. High species diversity and abundance of bird species reflect ecological balance, given that most birds play a role as top consumers in the food chain. Therefore, the presence of a diverse community of waterbirds indicates that the mangrove ecosystem is able to provide food, living space, and stable environmental conditions.

Kampung Blekok, located in Kendit District, Situbondo, is one of the mangrove areas that exhibits superior ecological characteristics (Dewi *et al.* 2023). With a mangrove area of 29.99 hectares, this area has a bird density of 1,004 individuals per hectare, the highest number based on a comparative study of five other mangrove locations in Situbondo. The diversity of water birds is also relatively high, with a diversity index of 1.39 H', placing Kampung Blekok as the location with the second highest diversity after the Baluran National Park's. These conditions make Kampung Blekok a unique ecotourism area and strengthen its position as one of the icons of biodiversity in Situbondo Regency.

Observations in 2023 show that this area is inhabited by 50 bird species from 23 families, with a total of 3,944 individuals. The cattle egret (*Bubulcus ibis*) is the most dominant species, with 3,065 individuals. Meanwhile, the Little Egret (*Ardeola speciosa*) was recorded at 256 individuals. Both 144 species, along with other waterbird species, utilise the mangrove ecosystem in Kampung Blekok as their home base and resting place.

The daily activity patterns of these birds show a strong attachment to the mangrove area. Based on observations, the cattle egret, rice field egret, great egret, red egret, and several other species leave the mangrove area in the morning around 4:30 a.m. to forage in nearby habitats. In the afternoon, they return to the mangrove area to rest until nightfall, and this rhythm of activity is repeated every day. In contrast, the Grey Night Heron is nocturnal; this species goes out to forage at 1 night and returns in the morning to rest in the mangrove area of Kampung Blekok.

The behaviour dynamics of these birds confirm that the mangroves of Kampung Blekok have a very important ecological function as a place of refuge, foraging and breeding for various species of water birds. It is this ecological value that makes Kampung Blekok not just an ecotourism destination, but also a conservation area that contributes greatly to the preservation of biodiversity in Situbondo.

Principle of Community Participation

From interviews with the local community of Kampung Blekok, it appears that the principle of community participation is one of the important pillars in ecotourism management. Tourism management in Kampung Blekok

is based on community-based tourism (Febrian *et al.* 2020). The community plays a role in all aspects of the tourism business. The level of participation is divided into several stages, namely the planning stage, the implementation stage, the enjoyment stage, and the evaluation stage (Qotrunnad *et al.* 2023). The community of Kampung Blekok expresses their role not only as beneficiaries but also as active participants. For example, some community members stated that they participated in village deliberations to convey their aspirations for tourism development and helped with environmental management, such as planting vegetation and monitoring bird habitats.

In the initial planning stage of the establishment of the Kampung Blekok tourist area, community involvement in planning was carried out through a socialisation process. The planning process was not only carried out at the beginning of construction but also after construction. This planning discussed the programmes to be implemented in the future. Programme planning in tourism management was carried out in coordination between the Environmental Agency, the Village Head and Pokdarwis.

The Kampung Blekok community has shown genuine involvement in the implementation phase of ecotourism development. At this stage, their participation plays an active role in line with the principles of Community-Based Tourism (CBT), namely the direct involvement of the community in managing and running tourism activities. The activities carried out by the Kampung Blekok community include: Implementation of tourist attractions (tour guides, managing educational activities), Providing tourism services (UMKM actors, providing homestays, managing parking areas, entrance tickets and cleanliness of tourist sites), Environmental management and protection (routine cleaning of mangrove areas, involvement in monitoring water birds and reporting habitat disturbances, planting mangroves), Regulation of tourism operations (regulating the flow of visits, enforcing visitor rules, supervising tourism activities). Consultation in the implementation of activities (monthly activity evaluations, division of tasks and duties, simple financial management). This broad involvement shows that ecotourism in Kampung Blekok has adopted the main principles of Community-Based Tourism (CBT).

The community of Kampung Blekok has already begun to enjoy the benefits of this initiative. This is an important phase in the implementation of Community-Based Tourism (CBT). The most significant benefits can be categorised into economic benefits (additional income, wages or incentives from activities as tour guides, ticket and parking management), social benefits (a sense of pride because Kampung Blekok is known as a conservation-based ecotourism destination), environmental benefits (better preservation of the mangrove environment, increased awareness of conservation, monitoring of bird habitats and new habits among the community in maintaining cleanliness), and institutional benefits (stronger organisational patterns, training for the community).

Meanwhile, community evaluation is used to ensure that ecotourism activities are carried out in accordance with the objectives of conservation, empowerment, and community welfare. Based on the results of interviews, the Kampung Blekok community has conducted several

forms of routine evaluation, such as regular meetings and performance evaluations of managers.

Economic Principles

Kampung Blekok is not only known as a waterbird conservation area, but also as an economic hub that is beginning to develop in line with the increase in ecotourism activities. The local community is taking advantage of this opportunity by developing various businesses that continue to uphold conservation values as their main foundation. Economic activities growing in this region generally focus on three main areas, namely trade (Micro, Small, and Medium Enterprises), tour guiding services, and sustainable mangrove cultivation and utilisation.

Firstly, the trade sectors have emerged as the most accessible livelihoods for the community. Many residents have opened small businesses such as food stalls, beverage shops, local product sales, and souvenirs themed around water birds and mangroves. The presence of tourists provides a stable market, enabling community income to increase without the need to abandon their cultural roots and local wisdom. These Micro, Small, and Medium Enterprises also develop organically, often collaborating with tourism management communities to maintain product quality and tourist comfort.

Secondly, economic activity has also grown through the profession of tour guiding. Residents who have knowledge about water birds, mangrove ecosystems, and the history of Kampung Blekok utilise this insight to provide environmental interpretation services to visitors. Local guides play an important role in providing education and a more in-depth tourist experience, while ensuring that tourist activities remain controlled so as not to disturb the birds' habitat. The source of income from these guiding services is a promising economic alternative, especially for the younger generation who are actively involved in conservation activities.

Thirdly, farmers or mangrove cultivators also reap economic benefits from managing this area. Residents are involved in planting mangroves to rehabilitate coastal areas while utilising the results in a sustainable manner. Some of them process mangroves into value-added products such as syrup, dodol (sweet food products from Indonesia), or educational tourism materials. In addition to providing additional income, these activities strengthen public awareness of the importance of preserving the mangrove ecosystem as a natural barrier and a primary habitat for water birds.

Overall, economic development in Kampung Blekok shows how conservation and welfare can go hand in hand. Through trade, guiding services, and mangrove cultivation, the local community has been able to create an ecotourism-based economy that not only supports them, but also plays an important role in maintaining the sustainability of the waterbird conservation area in Situbondo. Ecotourism directly provides economic benefits to local communities through various micro-enterprise and service-based activities. These activities not only create employment opportunities but also strengthen community engagement in creative economic initiatives and entrepreneurship based on local natural and cultural resources (Zakia, 2021)

Principles of Education

Based on interviews with residents and managers of Kampung Blekok, it is clear that one of the main foundations for the development of ecotourism in this village is environmental education. Ecotourism operators in Kampung Blekok do not simply offer nature tours, but also turn the village into a "living laboratory" for visitors and the local community. Through activities such as themed educational packages in Kampung Blekok, conservation workshops, and other educational activities, local residents and tourists alike learn about ecosystems, biodiversity, and the importance of preserving the environment. One resident respondent explained, for example, how they explain to visitors about the function of swampland, the birds that come, and the interaction of mangrove vegetation.

On the management side, village administrators stated that educational programmes are not only for visitors, but also to improve the capacity of local residents. This demonstrates a long-term orientation that is not only about selling tourist experiences, but also about strengthening the awareness and capacity of residents so that the village remains sustainable and ecotourism can be managed together.

Local wisdom is also strongly emphasised in education. In interviews, residents mentioned how traditions, ancestral stories and local knowledge (e.g. local bird species, distinctive plants) are incorporated into educational materials when welcoming tourists. They explained that combining local knowledge with modern conservation science builds a sense of pride and responsibility. From this, the principle of "community-based education" is clearly implemented in Kampung Blekok.

Tourism Principle

The development of sustainable tourism in Kampung Blekok refers to the 3A concept (Attraction, Accessibility, and Amenities) as the key elements determining the quality and sustainability of the ecotourism destination. These three components must be managed in an integrated manner to ensure that tourism activities not only generate economic benefits for local communities but also maintain the ecological functions and socio-cultural values of the area.

From the attraction perspective, Kampung Blekok's primary appeal lies in its waterbirds (egrets and herons) and mangrove ecosystem, which function as habitat, nesting grounds, and natural feeding areas. Due to their sensitivity to disturbance, management practices emphasize conservation principles, environmental education, and the regulation of tourism activities. Interview findings indicate that birdwatching opportunities, the relatively well-preserved mangrove conditions, and the natural atmosphere of the conservation area constitute the main motivations for tourist visits.

The development of tourism programs is also oriented toward educational activities, such as mangrove and waterbird interpretation tours, as well as environment-based learning games. This approach aligns with ecotourism studies that highlight the importance of integrating environmental elements to enhance understanding and foster

conservation-oriented attitudes. The interpretation of natural resources plays a crucial role in building public awareness through meaningful tourism experiences (Rachmawati, 2025).

Kampung Blekok Ecotourism Management Strategy

SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) is used to determine the appropriate strategy for managing ecotourism in Kampung Blekok. The strategy is formulated by identifying the actual conditions of ecotourism management in Kampung Blekok Situbondo, taking into account the strengths, weaknesses, opportunities and threats that affect the sustainability of the area, particularly in the context of waterbird conservation.

Strategy formulation is carried out by compiling internal and external factors. The identification of internal factors aims to determine the strengths and weaknesses that arise from previous management practices so that strengths can be optimised and weaknesses minimised. These internal factors are factors that are more controllable. Successful management of Kampung Blekok is considered a strength, while failures experienced and their evaluation are considered weaknesses).

Meanwhile, external factors are identified to explore opportunities and threats. External actors are factors outside the organisation that can influence the development of the organisation and the efforts made to achieve its objectives.

The weighting in the IFAS and EFAS calculations is determined based on the results of the Focus Group Discussion (FGD) that has been conducted with a priority scale. The priority scale is linked to a maximum value or constant of 4. Multiplying the two produces a score for each factor. The use of internal-external matrices is intended to summarise information from external and internal environmental analyses. This information can then be evaluated and used further to develop a SWOT analysis. Based on the results of the IFAS and EFAS analyses, the values obtained in the quadrants (X and Y axes) are as follows:

$$X = \text{Strength score} - \text{weakness score} \quad Y = \text{Opportunity score} - \text{Threat score}$$

The results of the internal and external factor weighting calculations can be seen in the following table:

Table 1. EFAS calculation

No.	(Strengths)	Bobot	Rating	Skor
1	The diversity of waterbirds constitutes the primary attraction of the ecotourism site (S1).	0,15	4	0,60
2	The availability of ecotourism facilities, such as observation towers, tracking trails, information boards, and an education center (S2).	0,12	3	0,36
3	The involvement of local communities and environmental groups in the management of the area (S3).	0,10	4	0,40
4	Kampung Blekok has been recognized as an environmental education center for schools and higher education institutions (S4).	0,08	3	0,24
5	The well-preserved mangrove ecosystem supports and sustains the habitat of waterbirds (S5).	0,10	4	0,40
				2,00
No.	(Weaknesses)	Bobot	Rating	Skor
1	The competency of management personnel and tour guides remains limited, particularly in interpretative skills and tourism service delivery (W1).	0,12	2	0,24
2	Tourism promotion has not been optimized and lacks a well-directed marketing strategy (W2).	0,10	2	0,20
3	Several facilities still require maintenance and quality improvement, including visitor trails and information boards (W3).	0,08	2	0,16
4	Tourism scheduling does not consistently consider sensitive periods for waterbirds (W4).	0,08	2	0,16
5	Financial management has not yet been properly structured and administered (W5).	0,07	2	0,14
				0,90
Total				
Skor S-W (X)		1,00		0,10

The internal analysis shows that the total strength score (2.00) exceeds the weakness score (0.90), resulting in a positive S–W value of +1.10, which indicates that Kampung Blekok’s ecotourism management is internally strong and well-positioned to address external pressures (Rangkuti, 2016). These strengths are reflected in its high waterbird diversity, well-preserved mangrove ecosystem, and active community participation in site management.

Biodiversity forms the core foundation of sustainable ecotourism, serving as the primary attraction while supporting habitat protection and species conservation, alongside socio economic benefits for local communities (Adnan et al., 2026). Moreover, community involvement further enhances management effectiveness and local empowerment, contributing positively to social, economic, and environmental capacity development (Hassan et al., 2026).

Table 2. IFAS Calculation

No.	Opportunities	Value	Rating	Score
1	The trend of nature and educational tourism is increasing among the public. (O1)	0,09	3	0,27
2	Opportunities for collaboration with academics, universities, and environmental communities for research and conservation. (O2)	0,07	3	0,21
3	Government policy support related to mangrove conservation and ecotourism development. (O3)	0,07	2	0,14
4	Potential for developing additional educational tour packages (bird photography, mangrove conservation, environmental workshops). (O4)	0,07	3	0,21
5	Economic improvement for the community through SMEs and other tourism services. (O5)	0,05	3	0,15
6	Opportunities to obtain funding from CSR programmes and conservation agencies. (O6)	0,05	2	0,10
Total				1,08

No.	Threats	Value	Rating	Score
1	Uncontrolled tourism activities may disrupt waterbird behavior and cause habitat displacement (T1).	0,20	4	0,80
2	Competition with other tourism destinations in Situbondo and its surrounding areas (T2).	0,15	3	0,45
3	The threat of estuarine waste accumulation that negatively affects the tourism area (T3).	0,15	4	0,60
4	Dependence on government policies; changes in programs may influence long-term sustainability (T4).	0,10	3	0,30
Total				1,86
Skor O-T (Y)		1,00		-1,07

The external matrix analysis shows that threats (2.15) outweigh opportunities (1.08), resulting in a negative O–T value (–1.07), which indicates that external pressures dominate the development of Kampung Blekok ecotourism. The primary threat stems from uncontrolled tourism activities that may disturb waterbird habitats, supported by risks such as estuarine waste, competition with other destinations, and dependence on government policies. Therefore, sustainable management must prioritize risk mitigation and carrying capacity control to protect ecological integrity.

Based on the calculation results of internal and external factors, the X and Y values were obtained to determine the coordinate points for the Kampung Blekok ecotourism management strategy.

The strategic position of the ecotourism management of Kampung Blekok is located in **Quadrant II of the SWOT Matrix**. Quadrant II indicates that the organization possesses strong internal strengths while simultaneously facing significant external threats. In this position, the appropriate strategic approach is the **ST (Strength–Threat) strategy**, which emphasizes utilizing internal strengths to reduce or overcome external threats. The ecotourism management strategy of Kampung Blekok is oriented toward strengthening conservation governance based on internal capacities. Key measures include regulating tourism activities to minimize disturbance to bird habitats, implementing zoning systems and visitor limitations, enhancing

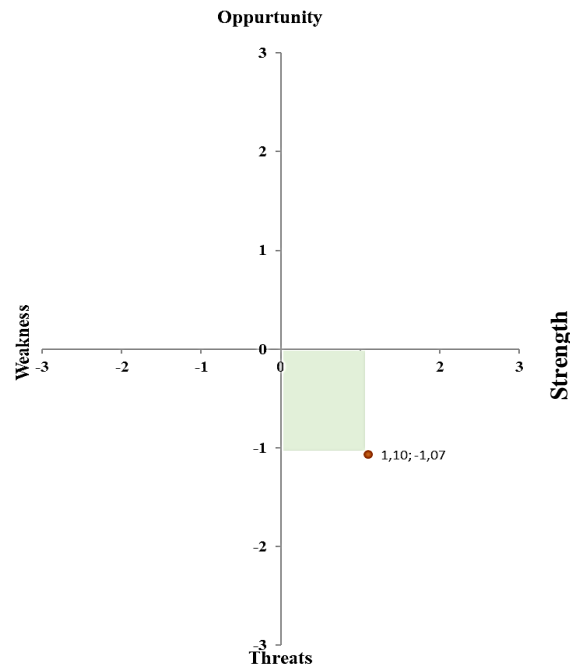


Fig. 1. SWOT Matrix

community participation in site monitoring, and optimizing environmental education as a distinctive value of the destination. education as a core competitive advantage and a primary value proposition for the destination.

Table 3. Alternative Management Strategies for Kampung Blekok

S–O Strategies (Leveraging Strengths to Exploit Opportunities)	W–O Strategies (Minimizing Weaknesses by Utilizing Opportunities)
Develop thematic educational tourism packages to utilize existing facilities and the growing trend of nature-based tourism. Strengthen collaboration with universities and environmental communities in research, internship, and conservation field school programs. Encourage the development of ecotourism-based MSMEs through local community empowerment. Propose CSR funding and government support for waterbird conservation and mangrove management programs.	Conduct capacity-building training for tour guides through partnerships with academics and environmental organizations. Formulate a digital marketing strategy based on educational and conservation content to improve tourism promotion. Optimize CSR funding for repair and improvement of tourism facilities. Establish a community-based financial management system through tourism MSME entrepreneurship training funded by CSR. Develop a visitation schedule based on the bird seasonal calendar with support from government conservation policies and academic involvement.
S–T Strategies (Using Strengths to Mitigate Threats)	W–T Strategies (Minimizing Weaknesses to Avoid Threats)
Implement zoning systems and visitor quotas to protect waterbird habitats from tourism disturbance. Establish a community-based monitoring team to control tourism activities. Strengthen destination differentiation as a conservation area and education center to compete with other destinations. Initiate estuary clean-up and community-based mangrove management programs. Develop collaborative management models to reduce dependency on government policies.	Improve tourism facilities to support destination differentiation. Build destination branding based on conservation uniqueness to enhance competitiveness. Establish an institutionalized community-based financial governance system. Formulate visitation regulations that consider sensitive bird breeding or migration periods. Strengthen managerial human resources to address estuary waste impacts.

Table 4. Programs and/or Activities for the Management of Kampung Blekok Ecotourism

Kampung Blekok Ecotourism Management Strategy	Program Forms	Responsible Stakeholders
S–T Strategy (Utilizing Strengths to Address Threats)		
Implementing zoning systems and visitor limitations to protect waterbird habitats from tourism disturbances.	Conducting research on zoning systems and the ecological carrying capacity of the area.	Environmental Agency, Higher Education Institutions, Environmental Communities.
Establishing community-based monitoring teams to control tourism activities.	Formation of community-based supervisory teams to oversee tourism operations.	Environmental Agency, Kampung Blekok Management Authority.
Strengthening destination differentiation as a conservation area and environmental education center to address competition with other destinations.	Establishment of the Blekok Education Center and development of thematic educational tourism packages.	Environmental Agency, Kampung Blekok Management Authority, Travel Agencies.
Initiating estuary clean-up and community-based mangrove management programs.	Implementation of coastal clean-up initiatives, mangrove nurseries, planting, and periodic monitoring.	Environmental Agency, Kampung Blekok Management Authority, Environmental Communities.
Developing a collaborative management model to reduce dependency on government policies.	Establishment of a semi-autonomous community-based institution.	Situbondo Regency Government, Klatakan Village Government.
	Diversification of funding sources (CSR programs, grants, special-interest tourism packages, paid research collaborations).	Kampung Blekok Management Authority, Corporate CSR Partners.,
	Strengthening asset legality and institutional governance.	Environmental Agency, Kampung Blekok Management Authority.
	Enhancing the area's independent economic value.	Kampung Blekok Management Authority.

The development of the S–T strategy in Kampung Blekok serves not only as an anticipatory response to potential threats but also as a strategic effort to strengthen the institutional framework, conservation governance, and economic self-reliance of the area. This approach emphasizes that internal strength such as natural resource potential, community support, and partnership networks must be systematically optimized to mitigate external pressures and to ensure the long-term sustainability of ecotourism management.

Conclusion

The analysis of Kampung Blekok ecotourism management shows that the area has applied key ecotourism principles, supported by high conservation value as a waterbird habitat within a preserved mangrove ecosystem and strong community participation reflecting Community Based Tourism (CBT), although limitations remain in facilities, ecological visitation scheduling, waste management, and control of tourism activities. SWOT analysis (IFAS and EFAS) places the management in Quadrant II (Strength–Threat), indicating strong internal ecological and social capital but significant external threats such as habitat disturbance, estuary waste, competition, and dependence on government support; therefore the appropriate strategy is the S-T approach, emphasizing conservation governance strengthening, zoning and carrying capacity based visitor limits, community based monitoring, and collaborative management to ensure long term sustainability rather than mass tourism expansion.

Acknowledgment

Thanks are given to all the residents of Kampung Blekok and Situbondo Regency Environmental Service who have worked together to formulate the problems in Kampung Blekok.

References

- Dinas Komunikasi dan Informatika Kabupaten Situbondo. (2023). *Buku profil daerah dan analisis statistik sektoral*.
- Dewi, Y. K., Leksono, A. S., Retnaningdyah, C., & Arisoelaningsih, E. (2023). Evaluating the waterbirds diversity and its preys under different mangrove ecosystems in the Situbondo Coast, East Java. *IOP Conference Series: Earth and Environmental Science*, 1191, 012009. <https://doi.org/10.1088/1755-1315/1191/1/012009>
- Dumumpe, J. H., Pratama, A. P., Saroinsong, F. B., & Langi, M. A. (2025). Penguatan ekowisata melalui keterlibatan masyarakat dan strategi keberlanjutan lingkungan. *Journal of Agribusiness and Rural Development*, 7(3), 295–306. <https://doi.org/10.35791/agrirud.v7i3.64960>
- Falih, G. M., Santosa, L. W., & Harini, R. (2025). Analisis kesesuaian dan daya dukung ekowisata mangrove Telok Bediri, Kabupaten Kubu Raya, Kalimantan Barat. *Jurnal Ilmu Lingkungan*, 23(2), 347–358. <https://doi.org/10.14710/jil.23.2.347-358>
- Febrian, A. W., & Yunita, S. (2020). Pengelolaan wisata Kampung Blekok sebagai upaya peningkatan ekonomi masyarakat berbasis community-based tourism Kabupaten Situbondo. *Jurnal Administrasi Bisnis*, 9(2), 139–148. <https://doi.org/10.14710/jab.v9i2.25308>
- Paiton Energy. (2021). *Laporan survei indeks keanekaragaman hayati Kampung Blekok, Situbondo*. Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Negeri Malang.
- Paiton Energy. (2023). *Biodiversity monitoring and microclimate conditions at Kampung Blekok Situbondo*. Fakultas Matematika dan Ilmu Lingkungan Alam, Universitas Negeri Malang.
- Paiton Energy, & Pusat Studi Lingkungan Hidup UGM. (2024). *Laporan monitoring keanekaragaman hayati dan iklim mikro mangrove Kampung Blekok, Kabupaten Situbondo*. PSLH UGM.

- Qotrunnada, D., & Mukhlas, A. (2023). Analisis hubungan tingkat partisipasi masyarakat dengan ekonomi lokal dalam pengembangan agroeduwisata (Kasus: Kampung Agroeduwisata Organik Mulyaharja, Kecamatan Bogor Selatan, Kota Bogor, Jawa Barat). *Jurnal Sains Komunikasi dan Pengembangan Masyarakat*, 7(1), 53–71. <https://doi.org/10.29244/jskpm.v7i1.1059>
- Rachmawati, E. (2025). Role of stakeholders' knowledge in designing successful interpretation services in conserving natural resources. *Media Konservasi*, 30(3), 458–469. <https://doi.org/10.29244/medkon.30.3.458>
- Sabila, N., & Azaria, I. (2024). Usulan penilaian daya dukung pariwisata pada ekowisata Geopark Ciletuh–Palabuhanratu, Kabupaten Sukabumi, Jawa Barat. *Jurnal Destinasi Pariwisata*, 12(1), 99–110. <https://doi.org/10.24843/JDEPAR.2024.v12.i01.p13>
- Setiawati, R., Watiniasih, N. L., & Wijayanti, N. P. P. (2023). Keekaragaman burung air di Kawasan Mangrove Center Kampung Blekok, Situbondo, Jawa Timur. *Jurnal Simbiosis*. <https://doi.org/10.24843/JSIMBIOSIS.2023.v11.i02.p03>
- Wang, G., Zhao, J., Li, W., Song, X., Zhang, Y., Li, C., & de Boer, W. F. (2023). Responses of breeding waterbird communities to environmental changes in subsidence wetlands in the North China Plain. *Avian Research*, 14, 100110. <https://doi.org/10.1016/j.avrs.2023.100110>
- Wiyono, S. H., Subianto, A., & Nuhman. (2023). Pengembangan ekowisata berkelanjutan dan pemberdayaan masyarakat: Studi kasus Pusat Pendidikan Lingkungan Hidup di Desa Seloliman, Indonesia. *Society*, 11(2), 310–328. <https://doi.org/10.33019/society.v11i2.528>
- Zakia. (2021). Ecotourism in Indonesia: Local community involvement and the affecting factors. *Journal of Governance and Public Policy*, 8(2), 93–105. <https://doi.org/10.18196/jgpp.v8i2.10789>