SEESDGJ
Social, Ecology, Economy for Sustainable Development Goals Journal
SEESDGJ 3(2): 101–119
ISSN 3025-3942

Institute for Advanced Science, Social and Sustainable Future
MORALITY BEFORE KNOWLEDGE

Sustainable ecotourism in small island destinations: A strategic planning perspective

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Received Date: September 23, 2025 Revised Date: October 4, 2025 Accepted Date: December 8, 2025

ABSTRACT
Background: The sustainable development of coastal ecotourism requires context-specific strategies that balance economic opportunities with ecological preservation. Sahara Beach in Longa Village, Wangi-Wangi District, Wakatobi Regency, holds significant potential as an ecotourism destination but remains underdeveloped. This study aims to design a strategic development plan to enhance its competitiveness and sustainability. **Methods:** A mixed-method approach was applied, combining qualitative and quantitative descriptive analysis. SWOT analysis served as the primary tool to identify internal strengths and weaknesses as well as external opportunities and threats, thereby guiding the formulation of strategic priorities for sustainable ecotourism planning. **Finding:** The findings reveal that the Strengths–Opportunities (S-O) aggressive strategy offers the most effective pathway for Sahara Beach's development. Key strategic priorities include: (1) strengthening digital-based promotional campaigns to broaden market reach and increase tourist arrivals, and (2) leveraging government support alongside cross-sectoral partnerships to accelerate the improvement of infrastructure and tourism facilities. These strategies are designed to simultaneously enhance ecological conservation, socio-cultural preservation, and economic benefits for local communities. **Conclusion:** This study provides actionable insights for policymakers and stakeholders in Wakatobi, highlighting the value of SWOT-based approaches in ecotourism planning. Beyond its local application, the study contributes to the broader discourse on sustainable coastal tourism across small island regions. Ultimately, Sahara Beach has the potential to emerge as a competitive and resilient ecotourism hub while delivering meaningful socio-economic outcomes for surrounding communities. **Novelty/Originality of this article:** The novelty of this study lies in its application of a SWOT-based mixed-method approach specifically tailored for small-island coastal ecotourism planning in Indonesia.

KEYWORDS: development strategy; ecotourism; Sahara Beach; SWOT; Wakatobi.

1. Introduction

Indonesia possesses enormous tourism potential, particularly from its vast coastal and marine ecosystems, which offer extraordinary natural wealth and beauty. Despite this abundance, the tourism potential has not always been accompanied by commensurate community development and sustainable management. Limited government attention and weak institutional frameworks have often hindered the full realization of these natural advantages. Wakatobi, recognized as one of Indonesia's hidden paradises, remains

Cite This Article:
Puspa, D., Sudia, L. B., Kahirun, Gandri, L., Erif, L. O. M., Indriyani, L., & Tuwu, E. R. (2025). Sustainable ecotourism in small island destinations: A strategic planning perspective. *Social, Ecology, Economy for Sustainable Development Goals Journal*, *3*(2), 101–119. https://doi.org/10.61511/seesdgj.v3i2.2026.2296

relatively unspoiled and thus represents both an opportunity and a challenge for sustainable development.

Ecotourism, as a form of nature-based tourism, seeks not only to conserve ecosystems but also to enhance the welfare of local communities. Its contributions extend across economic, social, and environmental dimensions, with potential to generate equitable benefits through employment, income diversification, and community empowerment (Salsabila et al., 2024; Suroija et al., 2022). Local participation in ecotourism-related activities—such as guiding, homestay management, handicrafts, and culinary services—creates opportunities for the growth of micro, small, and medium enterprises (MSMEs), which are critical drivers of sustainable regional economies. Such participation also fosters a sense of ownership and stewardship among community members, strengthening conservation practices at the grassroots level.

The development of coastal ecotourism, however, is inherently complex. It requires structured planning that integrates environmental conservation with cultural preservation while ensuring active community participation. Comparative international research highlights similar challenges and opportunities: for instance, community-based ecotourism models in Costa Rica and Belize demonstrate how inclusive governance frameworks can align conservation with livelihood improvements (Weaver, 2001; Jones, 2008). Likewise, case studies from Kenya's coastal ecotourism illustrate how co-management approaches between local communities and government agencies enhance resilience against external pressures such as mass tourism (Geoffrey & Jones, 2007). These global lessons provide valuable comparative insights for the Indonesian context, where ecotourism planning remains unevenly implemented across island regions.

Within Indonesia, Wakatobi stands out for its unique natural and cultural endowments. Its four main islands present diverse ecotourism assets, with Wangi-Wangi functioning as the gateway for domestic and international tourists (Suroija et al., 2022). Community-based ecotourism has been widely regarded as appropriate for Wakatobi, given the strong local sense of belonging and potential for participatory conservation (Handayani et al., 2022; Mu'tashim & Indahsari, 2021). Among its sites, Sahara Beach in Longa Village offers distinct attractions, including white sand expanses, pristine coral reefs, and rare marine species such as giant clams and kenari crabs, combined with vibrant cultural traditions (Nawangsari, 2018). These cultural assets—such as traditional dance, weaving, and local culinary practices—can be incorporated into ecotourism packages, creating integrative experiences that reflect both natural and human heritage.

Despite its potential, Sahara Beach faces significant constraints. Insufficient promotion, inadequate facilities, and limited public awareness of environmental stewardship hinder its growth as a sustainable destination. These challenges are consistent with findings in other emerging ecotourism regions globally, where weak institutional support and limited infrastructure often obstruct long-term sustainability (Đurić et al., 2025). Addressing these constraints requires strategic leadership, effective governance, and collaborative partnerships that harness government support, private sector engagement, and community participation (Tanaya, 2015).

From a policy perspective, ecotourism development in Indonesia has been increasingly aligned with national frameworks such as the National Tourism Development Master Plan/*Rencana Induk Pembangunan Kepariwisataan Nasional* (RIPPARNAS) and international commitments, including the Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth), Goal 14 (Life Below Water), and Goal 15 (Life on Land). The blue economy framework also places ecotourism as a strategic sector for enhancing marine-based livelihoods while ensuring ecological resilience (Central Statistics Agency, 2024). These alignments emphasize the need to integrate local initiatives, such as Sahara Beach ecotourism, within broader policy frameworks to ensure coherence and sustainability.

Comparative domestic experiences provide further insights. In Raja Ampat, West Papua, community-based marine tourism has successfully combined biodiversity conservation with local economic empowerment, generating sustainable income streams

while maintaining ecological integrity (Tjilen et al., 2022). Similar approaches in Bunaken (North Sulawesi) and Labengki (Southeast Sulawesi) have highlighted the importance of institutional support, transparent benefit-sharing mechanisms, and continuous capacity building for local communities (Sidangoli et al., 2020). These cases illustrate that strong governance, effective promotion, and adaptive management are essential to achieving long-term sustainability in marine-based ecotourism.

Moreover, the socio-cultural dimension is equally important. Ecotourism must not only generate economic returns but also reinforce local identity and cultural pride. In the Wakatobi context, the Bajo people—often referred to as sea nomads—hold deep ecological knowledge and cultural traditions tied to the marine environment. Incorporating their narratives, practices, and traditional ecological knowledge into ecotourism initiatives can enrich visitor experiences while ensuring cultural preservation. At the same time, careful consideration is needed to prevent cultural commodification, which could erode authenticity if tourism development is not community-led.

Another critical factor is environmental resilience. Coastal ecotourism areas such as Sahara Beach are vulnerable to climate change impacts, including sea-level rise, coral bleaching, and extreme weather events. Integrating climate adaptation strategies into ecotourism planning—such as coral reef restoration, mangrove rehabilitation, and green infrastructure—will be vital to maintaining the ecological foundations upon which tourism depends (Sunkur et al., 2022). Partnerships with universities, NGOs, and research institutions can strengthen local capacity to monitor ecological changes and implement adaptive management strategies.

In response to these challenges, this study employs a qualitative and quantitative descriptive approach to formulate strategic development recommendations for Sahara Beach ecotourism. By applying SWOT analysis, the research systematically identifies strengths, weaknesses, opportunities, and threats to provide actionable strategies that enhance the ecological, socio-cultural, and economic sustainability of the destination. Beyond its local implications, the study contributes to the broader discourse on sustainable ecotourism planning in small island contexts, drawing connections between local realities and international practices.

The findings are expected to inform not only local stakeholders but also regional and national policymakers. In practice, the recommendations can guide the establishment of community-based organizations to manage tourism assets, the design of participatory training programs for local entrepreneurs, and the creation of promotional strategies leveraging digital platforms to reach broader markets. Furthermore, partnerships with the private sector—such as eco-lodges, dive operators, and responsible travel agencies—can help mobilize investment while maintaining sustainability standards through certification.

Ultimately, the success of Sahara Beach ecotourism depends on balancing ecological conservation with socio-economic benefits, ensuring that the natural and cultural capital of Wakatobi is preserved for future generations. By learning from global and domestic experiences, strengthening governance and institutional capacity, and fostering genuine community participation, Sahara Beach can become a model of sustainable coastal ecotourism in Indonesia.

A crucial dimension of sustainable ecotourism development is institutional capacity and governance. In the case of Wakatobi, the integration of Sahara Beach ecotourism into district and provincial development plans is vital to ensure policy alignment and long-term support. The designation of Wakatobi as a UNESCO Biosphere Reserve further emphasizes the need for coordinated management that balances conservation objectives with human development. Strong governance mechanisms—such as community cooperatives, transparent benefit-sharing schemes, and accountability frameworks—are essential to avoid elite capture and ensure that ecotourism revenues genuinely benefit residents.

Equally important are the socio-economic aspects that extend beyond income generation. Ecotourism can empower marginalized groups, particularly women and youth, by providing opportunities in hospitality, creative industries, and environmental education. Women's cooperatives engaged in traditional weaving or culinary services not only

diversify household incomes but also contribute to cultural preservation. For young people, ecotourism opens pathways for skills development in guiding, digital promotion, and environmental stewardship, thereby reducing the risks of urban migration and unemployment.

From an academic and research perspective, Sahara Beach offers a living laboratory for universities and research institutions. Regular ecological monitoring of coral reefs, seagrass beds, and coastal forests can generate scientific evidence that informs adaptive management. At the same time, socio-economic surveys help track community perceptions, equity of benefit distribution, and cultural impacts. These academic contributions strengthen the feedback loop between practice and policy, ensuring that development strategies remain evidence-based and adaptive to changing conditions. By addressing these dimensions—governance, socio-economic inclusivity, and research integration—Sahara Beach ecotourism can evolve into a model of small-island sustainability. Its success would not only enhance Wakatobi's reputation as a premier marine tourism destination but also contribute to Indonesia's broader vision of sustainable tourism within the blue economy framework.

2. Methods

The research was conducted on Sahara Beach, in the village of Longa, Wangi-Wangi district, Wakatobi regency, Southeast Sulawesi province. The research took place in November 2024. The material used in this research was a questionnaire used as a tool in the interview process. The tools used in this research were a GPS (global positioning system) used to determine the coordinates of the data collection points, a camera/cell phone used to document all research activities, and writing tools used to record the research results.

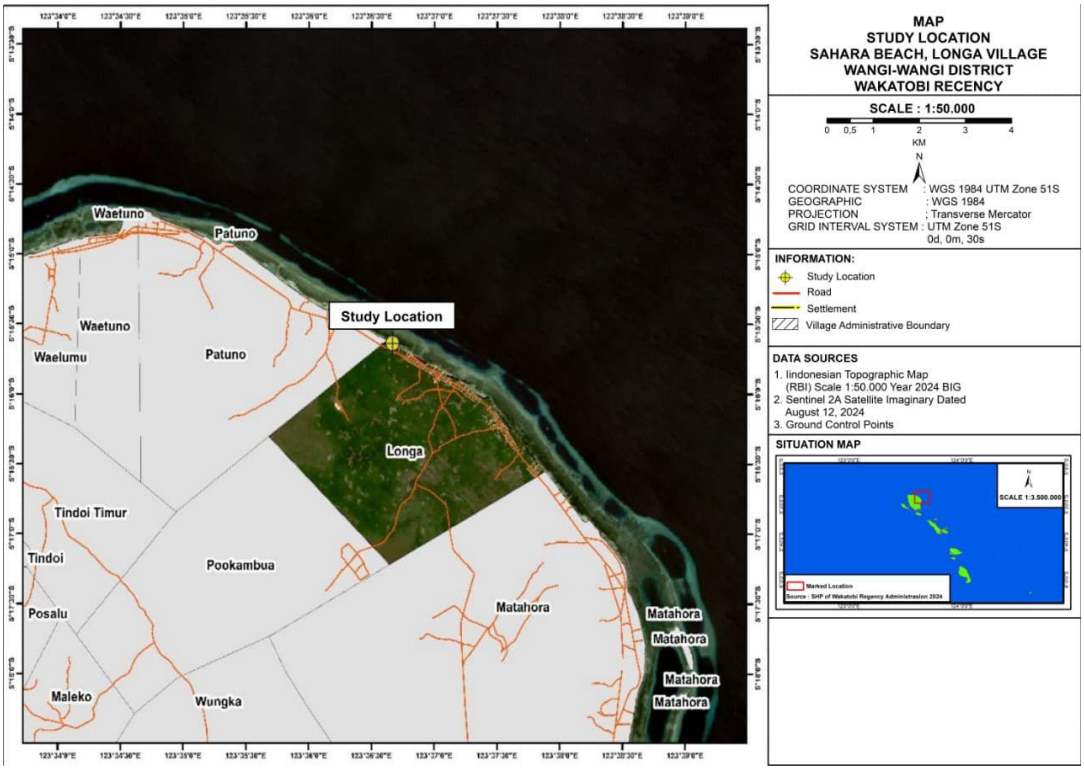

Fig. 1. Location of the research

The study population was the entire community of Longa village, Wangi-Wangi district, Wakatobi regency, totaling 1,191 people, in addition to visitors engaged in activities at Sahara beach, whose population is unknown. The sample used in this study was representative of the population under study, consisting of the community of the village of

Longa, visitors, and interviewed experts (key informants). The community sample was determined using targeted sampling with the following criteria: minimum age of 17, at least 10 years of residence in the local community, and at least a high school diploma. Referring to Arikunto (2006), if the number of subjects is less than 100, the sample is the population. However, if the number of subjects is greater than 100, it is possible to take 10-15%, 15-25%, or more of the population. Based on the number of residents in the village of Longa who met the criteria of 295, this study sampled 25% of the population, or 74 people.

The method used for sampling visitors was random, whereby visitors encountered at Sahara Beach were interviewed. In addition, government experts (key persons) such as the chief of Longa village, traditional leaders, and the tourism manager of Sahara Beach were sampled. The research is descriptive qualitative and descriptive quantitative in nature, i.e., it describes the situation of the subject/object to be studied based on apparent facts or as they are (Boedirachminarni, 2017). The necessary data include primary and secondary data. Primary data in this research includes physical observations such as the flora and fauna of Sahra Beach, in the village of Longa, Wangi-Wangi District, Wakatobi Regency. The secondary data used in this research includes supporting data obtained from existing sources, such as in the case of Longa village, which indicates that out of a total of 1,191 inhabitants, 600 are men and 591 are women. Based on education level, the majority of Longa village inhabitants, or 352 people, do not have an elementary school diploma. The number of inhabitants with an elementary/middle school diploma is 320, followed by 218 with a high school/middle school diploma. Higher levels of education have a much lower number of inhabitants, such as diploma I with 2 people, diploma III with 12 people, bachelor's degree with 60 people, and master's degree with 3 people.

The data collection techniques used in this research are as follows: first, observation is a technique used by researchers that involves going directly into the field to carefully observe the conditions of the research site to obtain relevant research data. A questionnaire is a data collection technique involving face-to-face interviews and direct questions and answers between the researcher and the informant. This method allows data to be obtained in the form of relevant information. Documentation is a technique used to take photos or record images at the research site to obtain data available on the Sahara Beach. Literature review is a technique for collecting data obtained from books, theses, journals, documents, and other sources, used to analyze the topic that the researcher intends to study.

Table 1. SWOT analysis diagram

EFE / IFE	Strength	Weakness
Opportunity	Strategy S-O Exploit all available resources to seize and make the most of opportunities	Strategy W-O Strategy applied based on exploiting existing opportunities, minimizing existing weaknesses
Threat	Strategy S-T Strategy is defined based on available resources to address threats	Strategy W-T Strategy is defined based on defensive activities that seek to minimize existing weaknesses and avoid threats

Determination of external strategic factors: Here are the steps to follow: first, identify the factors that constitute opportunities and threats Second, assign a weight to each factor based on its level of importance. The total weight of all factors is equal to 1.00. Calculate the rating for each factor based on the influence and response of the factor. The scale of values ranges from 1 to 4, where 1 indicates weak, 2 less strong, 3 strong, and 4 very strong. Multiply the weight in column 2 by the rating in column 3 to obtain the weighting factor in column 4. Then, to obtain the external factor value, use the following Equation 1.

$$\text{Weight} = \frac{number\ of\ respondent's\ answers}{total\ number\ of\ respondent's\ answers} \quad \text{(Eq. 1)}$$

$$\text{Evaluation} = \frac{total\ number\ of\ respondent's\ answer}{number\ of\ respondent's\ answers}$$

$$\text{Score} = weighted\ value \times rating\ value$$

3. Results and Discussion

3.1 Analysis of internal and external factors

The analysis of internal and external factors indicates that Sahara Beach exhibits significant strengths, including a pristine coastal environment, clean white sand, absence of industrial disturbances, and opportunities for diverse ecotourism activities, coupled with stable infrastructure such as electricity and communications. These strengths (score 1.71) surpass the documented weaknesses (1.29), which encompass inadequate facilities, limited access, weak promotional efforts, and scarcity of skilled human resources. In the external domain, opportunities (1.59)—such as government backing, community hospitality, and digital media promotion—slightly exceed threats (1.52) like climate change, environmental pollution, and competition from other destinations. The combined profile justifies the selection of a Strengths–Opportunities (S-O) strategy as the preferred pathway, yielding the highest composite score (3.30) compared to alternative options.

This inference aligns with empirical findings from other marine-based ecotourism contexts. In Raja Ampat, Indonesia, NGOs have played a pivotal *bridging* or intermediary role in coordinating governance, mobilizing communities, and facilitating the establishment of marine protected areas integral to tourism management (Atmodjo et al., 2019). The trajectory in Raja Ampat shows how strengthening governance and stakeholder collaboration can leverage natural assets into sustainable tourism development. Furthermore, in studies of marine conservation tourism, the co-governance approach—where local communities, NGOs, and state actors collaborate—has been shown to reconcile conservation objectives with livelihood improvement (Marine conservation tourism case in Raja Ampat). In Indonesia more broadly, spatial analyses of ecotourism distribution confirm that destinations with better promotional visibility and digital presence tend to attract more interest, illustrating the importance of digital marketing for competitive advantage (Sisriany & Furuya, 2024).

In the context of Sahara Beach, these comparative lessons support prioritizing digital-based promotional campaigns and cross-sector stakeholder partnerships. By aligning local strengths with external opportunities—mirroring successful governance and marketing models in Raja Ampat and other Indonesian marine destinations—Sahara Beach can amplify visibility, attract a broader tourist base, and ensure that development supports both ecological conservation and socio-economic empowerment. The consistency between local SWOT outcomes and established international and national cases strengthens our argument that the S-O strategy is a robust and contextually credible route for ecotourism development in Wakatobi. Internal and external factors are listed in Table 2.

Table 2. Internal and external factors of the Sahara beach ecotourism in the village of Longa

Strengths (S)		Weaknesses (W)	
1	Harmony between the coastal landscape	1	No parking available nearby is adequate
2	The breathtaking beauty of the beach	2	Lack of public toilets and a prayer room
3	Clean white sand	3	Accessibility is not adequate
4	Absence of noise	4	Lack of promotion and marketing
5	No influence on housing settlements	5	Lack of awareness of the preserve
6	No effect of the port	6	Lack of coordination between stakeholders

7	No impact from fish auction/factory/market	7	Limitations of qualified human resources (in the management of the Sahara coastal ecotourism area)
8	No interference from dangerous animals	8	Limited accessibility
9	Possibility to enjoy various activities, such as sunbathing, swimming, snorkeling, diving, fishing, enjoying the view, and boating		
10	Stable internet/telephone/electricity network		
Opportunities(O)		Threats(T)	
1	Online media as a support for promoting commercial activities	1	Climate change could damage the coastal ecosystem
2	Friendliness of the local population near tourist attractions	2	Environmental pollution caused by waste
3	Improving collaboration with external parties	3	Conflicts at work
4	Potential collaboration with external parties for investment and management	4	Presence of numerous competitors with the same tourism concept
5	Political support from the government encourages the development of tourism	5	Lack of direct attention to tourist attractions
6	Events organized by PRIVATE entities	6	Decrease in visitor numbers

3.1.1 Internal factors

Internal strategic factors that include strengths and weaknesses based on respondents' results. The results of weighing, evaluation, and calculation of the scores for internal strategic factors are shown in Table 3. Weighting, evaluation, and calculation of scores of internal strategic factors. Internal strategic factors can be seen in Table 3, which includes strengths and weaknesses based on respondents' results. The overall weighting for internal factors is 1.00, with a score of 1.71 for the strengths factor, while the weaknesses factor received a score of 1.29, resulting in a total score of 3.00.

Table 3. Internal strategy factors for calculating weights, ratings, and scores

No.	Internal factors	Weight	Evaluation	Score
	Strength	(a)	(b)	(c = a x b)
1	Harmony of the coastal landscape and the surrounding area	0.06	3	0.17
2	The breathtaking beauty of the beach	0.05	3	0.16
3	Clean white sand	0.06	3	0.17
4	No noise	0.06	3	0.17
5	No port effect	0.06	3	0.17
6	No effect of settlement population	0.06	3	0.17
7	No effect of fish auction/ factory/market	0.06	3	0.17
8	No disturbance caused by animals is dangerous	0.06	3	0.17
9	Can perform various activities such as sunbathing, swimming, snorkeling, diving, fishing, enjoying the view, and boating.	0.06	3	0.17
10	Net stable internet/telephone/electricity	0.06	3	0.17
Subtotal Total power		0.75		1.71
	Weakness			
1	Lack of parking spaces	0.05	3	0.16
2	Adequate Not available, Public toilets and Mosque	0.05	3	0.15
3	Inadequate accessibility	0.05	3	0.16

4	Lack of promotion and marketing	0.05	3	0.15
5	Lack of awareness among the population	0.06	3	0.17
	Regarding environmental protection, the Lack of coordination between			
6	Stakeholders Resource constraints	0.06	3	0.17
7	Human trained (in the management of the Saharan	0.06	3	0.17
8	coast ecotourism area) Limited accessibility	0.05	3	0.16
	Subtotal Weaknesses	0.43		1.29
	Total Strengths and Weaknesses	1.00		3.00

3.1.2 External factors

External strategic factors include opportunities and threats based on respondents' results. The results of the weighting of external strategic factors, evaluation, and score calculations are shown in Table 4. Weighting, evaluation, and score calculations (EFAS): summary of external factor analysis

Table 4. Weighting, evaluation, and score calculation (EFAS): Summary of external factor analysis

No.	Internal factors	Weight	Evaluation	Score
	Opportunity	(a)	(b)	(c = a x b)
1	Online media as support Promotion of commercial activities	0.08	3	0.26
2	Hospitality of the local community tourist area	0.09	3	0.28
3	Improve cooperation with external parties	0.09	3	0.29
4	Potential collaboration with external parties	0.07	3	0.2
5	For investments and management, the Government policy supports promoting tourism development	0.08	3	0.27
6	The presence of events organized by private entities	0.09	3	0.28
	Subtotal Opportunities	0.50		1.59
	Threat			
1	Climate change may damage the coastal ecosystem	0.08	3	0.24
2	Environmental pollution caused by waste	0.08	3	0.25
3	Conflicts at work	0.08	3	0.23
4	There are many competitors with the same concept of tourism	0.09	3	0.26
5	Lack of direct attention towards tourist attractions	0.08	3	0.24
6	Decrease in the number of visitors	0.10	3	0.30
	Subtotal Threat	0.50		1.52
	Opportunities and threats	1.00		3.11

The external strategic factors used in this analysis are detailed in Table 4, which contains various factors from outside the organization. These factors include opportunities to be exploited and threats to be considered, all obtained based on the responses provided by participants through the research tool. In calculating the weight, the total sum of external factors is 1.00. From this value, the opportunity factor scores 1.59, while the threat factor scores 1.52. Therefore, when the two values are added together, the total overall score for external factors is 3.11.

Subsequently, comparing the results of the external factor analysis with those of the internal factor analysis, the following information is obtained. With regard to internal factors, the strength aspect scored 1.71, while the weakness aspect scored 1.29, for a total of 3.00 points. With regard to external factors, as mentioned above, opportunities scored 1.59 and threats scored 1.52, for a total score of 3.11 for external factors. Therefore, the results of the calculation show a difference in score or a gap between internal and external

factors. The gap in scores will be more evident when looking at the calculations presented in the following Equarion 2 and Equation 3.

$$\text{Strengths and weaknesses of} = 1.71 - 1.29 = 0.42 \quad \text{(Eq. 2)}$$

$$\text{Opportunities-threats} = 1.59 - 1.52 = 0.07 \quad \text{(Eq. 3)}$$

The calculation shows that the strengths outweigh the weaknesses by a margin of 0.42, while the opportunities outweigh the threats by a margin of 0.07.

Table 5. Evaluation of SWOT component scores

EFE / IFE	Strength	Weakness
Opportunity	Strategi S-O 1.71+1.59= 3.30	Strategi W-O 1.29+1.59= 2.88
Threat	Strategi S-T 1.71+1.52= 3.23	Strategi W-T 1.29+1.52= 2.81

The SWOT analysis method aims to identify basic problem-solving strategies that can be applied qualitatively by combining two SWOT components, namely: first, strategies/alternatives for solving problems by maximizing strengths (S) to seize opportunities (O). Second, problem-solving strategies/alternatives maximizing strengths (S) to anticipate threats (T) and try to turn them into opportunities (O). Third, alternative solutions that minimize the weak points (W) to seize opportunities (O). Fourth, strategies/alternatives to solve problems by minimizing weaknesses (W) to better avoid threats (T) (Murniati, 2024). Below is the SWOT matrix for the development strategy of the Sahar beach ecotourism area in the village of Longa, Wangi-Wangi district:

Table 6. SWOT matrix of the strategy

EFE / IFE	Strength	Weakness
Opportunity	Strategy S-O Leverage the knowledge of the local population as tourist guides with government support. Raise awareness about beach conservation through the application of environmentally friendly technologies. Promote the participation of the community in developing tourism based on local culture Improve tourism promotion through digital media to attract tourists. Leverage local events to increase tourist appeal. Create synergies with tourist communities and local entrepreneurs to promote sustainable tourism. Increase community involvement in the provision of tourism services. Develop training courses on tourism skills for the local population.	Strategy W-O Use information technology in promotion to overcome the population's lack of skills. Government support in providing training on sustainable tourism management. Provide funding and assistance from stakeholders to improve the entrepreneurial skills of the community The application of environmentally friendly technologies in waste management requires adequate training of the population. Improve support infrastructure, such as road accessibility and public transportation. Establish collaboration with academia and research institutes to develop research-based tourism strategies.

		Improve the availability of public facilities such as toilets and places of worship Improve the transportation system and accessibility to tourist destinations.
Threat	Strategy S-T	Strategy W-T
	Involve the community in managing the area to address tourists' lack of awareness about environmental conservation.	Improve community knowledge of sustainable tourism management to educate tourists.
	Use government policies to improve coastal environmental protection.	Organize training courses for the community on tourism management to address policy changes.
	Promote active community participation in managing the area to avoid social conflicts	Improve the community's entrepreneurial skills to reduce social conflicts related to the economy.
	Implement environmental mitigation programs to reduce the impact of climate change.	Improve environmental conservation efforts through more rigorous education and supervision.
	Strengthen regulations to control waste and prevent environmental pollution.	Develop a more efficient and sustainable waste management system.
	Improve competitiveness with innovative, unique tourism products based on local culture.	Create a tourist loyalty program to increase the number of visits in a sustainable manner.

3.2 Analysis of internal and external factors

The first fundamental step in formulating the development strategy for Sahara Beach ecotourism in Longa Village, Wangi-Wangi District, was to identify comprehensively all internal and external factors that could influence its sustainability. Internal factors, which are essentially controllable by local managers, include an in-depth analysis of strengths and weaknesses within the community that directly affect the success of the strategy. Based on Table 2, Sahara Beach demonstrates notable strengths such as pristine natural landscapes, clean white sand, tranquility free from industrial and settlement disturbances, and a serene atmosphere that enhances its potential as a sustainable ecotourism destination. These characteristics reflect findings that highlight environmental quality and authenticity as key assets in ecotourism competitiveness (Cossengue et al., 2025; Aulia & Siswahyudianto, 2022).

Nevertheless, significant weaknesses remain. Limited infrastructure—such as inadequate parking, insufficient public toilets, and the absence of places of worship—undermines visitor comfort. Equally critical are non-physical weaknesses, including low levels of promotion and marketing, poor coordination among stakeholders, and limited awareness of conservation responsibilities within the community. These weaknesses resemble challenges reported in other emerging destinations, where infrastructural gaps and weak institutional support often constrain long-term development (Zhang & Deng, 2024; Lukoseviciute et al., 2024).

External factors, which lie beyond direct community control, consist of opportunities and threats that strongly shape strategy formulation. On the opportunity side, government support for sustainable tourism development, global shifts toward ecotourism and authentic experiences, and the increasing use of digital technologies for promotion provide important leverage. Such enabling conditions align with international evidence on the role of policy, technology, and value-chain integration in achieving Sustainable Development Goals (Lara-Morales et al., 2024; Wani et al., 2024). On the threat side, climate change, waste-driven pollution, and heightened competition from destinations with similar tourism concepts pose real risks to Sahara Beach. These threats correspond with global research

trends indicating that climate vulnerability and market saturation are critical external risks for coastal and island ecotourism (Jin & Gao, 2025; Weaver, 2001; Jones, 2005). Taken together, the interplay between these internal and external dynamics justifies the formulation of strategic responses grounded in SWOT analysis. Strengths can be leveraged to capture emerging opportunities, while weaknesses must be systematically addressed to prevent long-term decline. Comparative lessons from other ecotourism cases in Indonesia, such as Raja Ampat, demonstrate how strong governance and stakeholder collaboration can convert natural advantages into sustainable competitive strength (Atmodjo et al., 2020). Similarly, studies in global contexts highlight the role of community participation and social capital in ensuring resilience and equitable benefits from ecotourism development (Jones, 2005; Sisriany & Furuya, 2024). These insights affirm that Sahara Beach, if supported by effective institutional frameworks and adaptive strategies, has the potential to evolve into a competitive, sustainable ecotourism hub aligned with both local priorities and global SDGs.

3.2.1 Internal factors

Table 3 strength variables (strengths) are positive internal conditions that offer a competitive advantage in facing competition (Suriono, 2021). Based on observations, it has been identified that Sahara Beach offers captivating beauty with clean white sand that blends in with the surrounding landscape, which is quiet and peaceful because it is free from the noise of the port, residential settlements, fish auctions, factories, markets, dangerous animals, and various activities that can be enjoyed, from sunbathing, swimming, snorkeling, diving, fishing, to boating. It is also possible to enjoy the view with fairly guaranteed connectivity, a stable internet network, telephone, and electricity, with a score of 1.71. The score of 1.71 indicates that the strength factor of Sahara Beach has a significant influence on its competitiveness in the development of ecotourism. This value is higher than the weakness factor score of 1.29, which means that the advantages of Sahara Beach are more dominant than its disadvantages, and can therefore form the basis for developing strategies that make optimal use of its strengths to attract tourists and investors, such as increasing tourism promotion through digital media to attract tourists, exploiting local events to increase tourist appeal, and building synergies with the tourism community and local entrepreneurs to promote sustainable tourism. It can therefore be concluded that the score of 1.71 in the SWOT analysis indicates that the internal strengths of the Sahara Coast are quite good and can be exploited as key capital in the ecotourism development strategy.

The variables of weakness, which in the context of this research refer to Bagaskara (2024), there is a series of internal factors that originate from the organization or management community itself and act as a major obstacle or barrier in the process of achieving success in the development of a tourist destination. Based on the quantitative data presented in Table 3, it can be seen that the final score for all the weaknesses identified in the Sahara Beach ecotourism area is 1.29. The weakness variables that have been identified include some crucial aspects, in particular the limited accessibility to the site and the poor availability of basic tourist support facilities; in particular, this includes the condition of the parking lots, whose capacity and surface area are not adequate to accommodate visitors' vehicles, the lack of adequate and hygienic public toilets, as well as the unavailability of a mosque or place of worship capable of meeting the spiritual needs of tourists.

Furthermore, the lack of intensity and innovation in promotional activities and marketing strategies has had a significant impact on the limited public awareness of this destination, ultimately affecting visitor numbers. On the other hand, non-physical aspects, such as the level of awareness and active participation of the local community in consistently preserving and conserving the environment surrounding the tourist area, still need to be improved more seriously. The same applies to coordination and synergy between the various stakeholders, starting with the village government, the local community, and the private sector, which are not yet optimal. This situation is exacerbated by the availability

of qualified, competent, and professional human resources (HR) in the field of tourist area management, particularly beaches, which are still very scarce, so the aspect of human resource development must also be improved.

Looking at the overall picture in Table 3, the combined score for all internal factors, which is the sum of the scores for strengths and weaknesses, produces a final total score of 3.00. The weakness score of 1.29, when analyzed, reflects the reality that, although Pantai Sahara's weaknesses are quite evident and substantial, their weight is not proportionally greater than the total strengths. Therefore, the strategic implication that can be drawn is that future development strategies will need to focus more on efforts to minimize and cover these weaknesses. Concrete measures that can be taken include aggressively improving the quality and quantity of supporting infrastructure, such as improving overall road access to the site and providing regular public transportation, as well as simultaneously improving the availability and quality of public services that tourists strongly need, such as building clean and representative restrooms and comfortable places of worship.

3.2.2 External factors

Table 4. Opportunity variables are external factors that can be exploited to achieve advantages and success (Zainuri & Setiadi, 2023). The opportunity variables identified consist of the availability of online communication tools for promotion, improved reception by the local community, and collaboration with external parties for investment and management. Government policy support and the organization of events by private entities will also play a very important role in promoting tourism growth in this area, with a score of 1.29.

Threat variables (threats) are the main obstacles to the current or desired position for success (Sari, 2020). Threat variables include climate change that could damage the coastal ecosystem and environmental pollution caused by waste, labor conflicts, competition with similar tourist destinations, lack of attention, and declining visitor numbers, which also pose a threat to the development of coastal ecotourism in the Sahara, with a score of 1.52. These variables are shown in Table 4. Overall, the score of 1.52 in the threat factor confirms that, despite the challenges in developing the Sahara coast as an ecotourism area, the opportunities available still slightly outweigh the threats. Strategic measures that can be taken include strengthening competitiveness through improved facilities, promotion, and better environmental management to reduce the risks of the identified threats. The combined score for external factors (opportunities and threats) produces an overall score of 3.11.

Based on Tables 3 and 4, the difference between internal factors (strengths - weaknesses), i.e., the score for strengths (1.71) minus the score for weaknesses (1.29), is equal to (0.42), while the difference between external factors (opportunities - threats), i.e., the score for opportunities (1.59) minus the score for threats (1.52), is (0.07). Overall, SWOT analysis with the calculation of the difference between internal and external factors plays an important role in the formulation of appropriate strategies for the management of ecotourism areas (Paramita, 2023).

Based on the SWOT analysis shown in Table 4, the difference between internal and external factors indicates that internal factors are more dominant than external factors, with a difference between strengths and weaknesses of 0.42, while the difference between opportunities and threats reaches 0.07. Internal factors are more dominant because most of the obstacles encountered stem from internal aspects that can directly affect the attractiveness and comfort of tourists. The lack of basic services such as parking lots, public toilets, and mosques indicates that the infrastructure supporting visitor comfort is still limited. In addition, inadequate accessibility and a lack of promotion and marketing hinder efforts to attract more tourists. The population's lack of awareness of environmental protection, the lack of coordination among stakeholders, and the limited availability of qualified human resources in ecotourism management at Pantai Sahara indicate that the

main challenges stem from internal factors. These factors are the main obstacles to optimizing the existing ecotourism potential, so the development of ecotourism on Sahara Beach is heavily dependent on external support, such as government policies, funding, environmentally friendly technologies, and online promotion. The hospitality of the local population and collaboration with external parties are also crucial. However, local autonomy remains important for the sustainability of ecotourism on Sahara Beach.

Table 4 shows the results of the SWOT analysis. The evaluation of the component scores shows that the S-O strategy has the highest score, 3.30, as it exploits internal strengths, such as the beauty of the beaches and community support, with a score of 1.71, and external opportunities, such as government support and digital promotion, with a score of 1.59, which means that this strategy creates great potential for sustainable ecotourism management. The W-O strategy has a score of 2.88, indicating that external opportunities, such as training and financial support from the government, with a score of 1.59, can help overcome internal weaknesses, such as a lack of facilities and promotion, with a score of 1.29. The S-T strategy has a score of 3.23, indicating that internal strengths, with a score of 1.71, can be used to address external threats such as environmental pollution and tourism competition, with a score of 1.52. The W-T strategy has the lowest value, 2.81, as internal weaknesses (1.29) are unlikely to counterbalance significant external threats (1.52). Therefore, this strategy is more focused on internal improvement, making the S-O strategy the best choice for sustainable ecotourism management.

The S-O (Strengths-Opportunities) strategy, which leverages internal strengths to seize external opportunities, also includes strategic initiatives aimed at improving and intensifying promotion through the use of various social media channels and existing digital platforms, with the main objective of attracting interest and bringing in more domestic and international tourists. For Sahara Beach to become more widely known to a more diverse and massive target audience, integrated promotional activities through various popular social media platforms such as Instagram for aesthetic visual content, Facebook to reach families and communities, TikTok to attract younger generations with short trending content, and YouTube for in-depth and informative video content, can and should be considered as one of the main marketing strategies.

The S-O strategy also focuses on developing eco-based tourism packages that involve the active participation of the local community. To increase tourist appeal and engage the local population, eco-based tourism packages can be developed, such as underwater exploration tours (snorkeling/diving) with specially trained local guides. In addition, educational tours of the mangroves can be organized, during which tourists can participate in planting mangrove trees as a form of environmental conservation. Tourists can also experience local cultural training, such as making handicrafts from shells or following the Mansa'a and Kabuengaa traditions. In addition, local culinary tourism packages that allow tourists to learn how to cook typical Wakatobi dishes together with the local population can become an attraction in themselves and increase community involvement in ecotourism management.

The W-O strategy consists of overcoming weaknesses by exploiting available opportunities. Some W-O strategies that can be applied based on the research results are: the use of information technology in tourism promotion to overcome the population's lack of skills in tourism marketing; support from the government and academia in educating the population about the importance of sustainable tourism management; the provision of funds and assistance from stakeholders to improve the entrepreneurial skills of the population in ecotourism management; training in the application of environmentally friendly technologies to improve the skills of the population in managing more sustainable tourism.

The S-T strategy consists of leveraging strengths to address existing threats. Based on the results of the analysis, the S-T strategy that can be applied consists of involving the population in the management of ecotourism areas to overcome the lack of Tourists' awareness of the importance of preserving the environment and local culture, the use of

government policies to improve the protection of tourist areas through stricter regulations on coastal environmental protection, the promotion of active community participation in management to reduce the negative impact of climate change and maintain the sustainability of ecotourism's appeal to avoid social conflicts between the community and the government, as well as to create synergies in the development of sustainable tourism and implement environmental mitigation programs. Phadermrod et al. (2019) emphasize that the S-T (Strengths-Threats) strategy is concerned with "utilizing strengths to minimize threats." This constitutes a defensive approach wherein an organization leverages its identified internal advantages as a shield to counteract potentially detrimental external factors. Environmentally sourced factors represent some of the most critical threats, possessing a high potential for causing permanent damage. The tangible impacts of climate change, for instance, not only trigger the gradual phenomenon of rising sea levels but also actively accelerate the process of coastal erosion. This process progressively diminishes land area and may ultimately threaten the very existence of the tourism destination itself in the long term.

Furthermore, the inherent vulnerability of coastal areas to large-scale natural disasters such as seismic earthquakes with the potential to induce tsunami waves, as well as the onslaught of severe storms and typhoons, endows them with the capacity to suddenly and comprehensively destroy existing physical infrastructure. Additional threats stem from external activities beyond the destination's boundaries, manifesting in incidents of marine pollution. Examples include oil spills from tanker ships or leaks of industrial waste from surrounding areas. Such events not only result in the mass mortality of marine biota but also fatally degrade the underwater natural beauty that serves as the primary attraction. Problematic dynamics such as conflicts with local communities arising from wide economic disparities or disputes over land ownership claims, coupled with a high prevalence of criminal activities targeting tourists, including theft and extortion, can collectively foster a negative perception and instill a sense of insecurity. This, in turn, can significantly damage the destination's reputation and deter visitor interest.

The W-T strategy consists of reducing weaknesses in order to address existing threats. Some W-T strategies that can be applied are: applying community knowledge of sustainable tourism management so that tourists can be educated on the importance of environmental and cultural conservation, providing training to the community on tourism management so that they can address changes in government policies related to the tourism sector, improving the community's entrepreneurial skills to reduce potential social conflict by creating new economic opportunities in the ecotourism sector, and developing a more efficient waste management system to prevent environmental pollution in tourist areas.

4. Conclusions

The conclusive findings of this investigative research clearly demonstrate that the most effective and viable strategic framework for the development and enhancement of the Sahara Beach ecotourism area, situated in Longa Village within the jurisdiction of Wangi-Wangi District, Wakatobi Regency, is unequivocally the Strengths-Opportunities (S-O) strategy; this approach fundamentally involves the meticulous exploitation of the area's inherent potential to decisively seize and capitalize upon a wide array of available market opportunities, which specifically entails the strategic utilization of all currently available internal strengths to fully maximize the benefits derived from existing external opportunities, an operationalization that is primarily executed through a multi-faceted action plan including, firstly, the significant intensification and diversification of targeted promotional campaigns across a broad spectrum of social media channels and innovative digital platforms with the explicit objective of expanding market reach, enhancing brand visibility, and ultimately attracting a larger and more diverse influx of tourists, secondly, the proactive leveraging of all forms of government support, including policy incentives and developmental grants, in conjunction with the establishment of robust collaborative

partnerships and synergistic cooperation with various external parties, private investors, and industry stakeholders to urgently accelerate the much-needed development, modernization, and sustainable maintenance of critical tourism infrastructure and essential support facilities, and finally, the thoughtful design, curation, and promotion of unique, authentic, and environmentally sustainable ecology-based tourism packages and experiences that are carefully developed with and depend on the active participation, inclusion, and empowerment of the local community, thereby ensuring equitable economic distribution and fostering a profound sense of local ownership.

Acknowledgement
The authors sincerely thanks the reviewers for their constructive feedback that significantly enchanched the manuscript, and also expresses to colleagues and mentors for their guidance and support during the research.

Author Contribution
D.P., L.B.C., K, L.G., L.O.M.E., L.E., & E.T.R., contributed to the literature search, interpretation, writing, and proofreading of the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding
This research received no external funding.

Ethical Review Board Statement
Not available.

Informed Consent Statement
Not available.

Data Availability Statement
Not available.

Conflicts of Interest
The authors declare no conflicts of interest related to this research.

Declaration of Generative AI Use
During the preparation of this work, the author used Grammarly to assist in improving the grammar, clarity, and academic tone of the manuscript. After using this tool, the author reviewed and edited the content as needed and took full responsibility for the content of the publication.

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