
HARMONIZING TRADITIONS AND SUSTAINABLE ECOTOURISM DEVELOPMENT ON BUNGIN ISLAND

By

Dora Betari¹, Khairil Anwar², Akhmad Saufi³, Mahyuni⁴, Dwi Putra Buana⁵
^{1,2,3,4,5}Universitas Mataram

Email: ¹dora@ppl.ac.id, ²hairil_a@unram.ac.id, ³akh.saufi72@gmail.com, ⁴mahyuni@unram.ac.id,
⁵dwiputrabs@unram.ac.id

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ABSTRACT

Bungin Island, located in Alas District, Sumbawa Regency, NTB, is known as one of the most populous islands in the world with a unique tradition, namely the practice of building coral to expand the land. This tradition, which has been going on for generations, provides challenges in efforts to develop sustainable ecotourism. This research aims to understand the status of sustainable ecotourism development on Bungin Island and formulate a harmonization strategy between preserving local traditions and environmental conservation needs. This research uses a qualitative approach with in-depth interviews, observation and literature study methods. The research results show that although Bungin Island's cultural and ecotourism potential is enormous, there is a conflict between traditional practices that risk damaging marine ecosystems and environmental conservation efforts. The proposed strategy involves empowering local communities, environmental education, and implementing environmentally friendly technologies to maintain a balance between preserving traditions and developing ecotourism. With a holistic approach, it is hoped that Bungin Island ecotourism can become a model for sustainable tourism management in Indonesia's coastal areas

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Corresponding Author:

Dora Betari

Universitas Mataram

Email: dora@ppl.ac.id

1. INTRODUCTION

The development of coastal areas is one of the priorities in efforts to develop sustainable tourism in Indonesia. Tourism development

Sustainable development is a transformation process that aims to increase added value in various aspects of the tourism sector, such as facilities, infrastructure and tourist attractions. In this regard, according to (Awalia *et al.*, 2023; Fajriah and Mussadun 2014) that "The development of coastal tourism essentially focuses on the natural landscape, ecological characteristics, unique arts and culture, as well as community characteristics as the fundamental strengths of each region". (Pattaray, 2023) that "as coastal tourist areas develop, the tourism industry will increasingly develop. This region will experience a positive impact, leading to job creation and increased demand for marine products, handicrafts and education for tourists."

On the other hand, tourism development can have negative impacts, such as degradation of the coastal environment due to resource exploitation for tourism activities. Therefore, sustainable management and development of coastal tourism is needed, which takes into account the needs of the current generation as well as the needs of future generations. The Ministry of Tourism and Creative Economy/ Tourism and Creative Economy Agency has issued Decree Number 9 of 2021 which was signed by the Minister of Tourism and Creative Economy/ Head of the Tourism and Creative Economy Agency Number 9 of 2021, discussing Guidelines for Sustainable Tourism Destinations. This regulation sets standards and guidelines for the management of tourism destinations so that they can develop

sustainably, taking into account environmental, economic and socio-cultural aspects. The aim is to ensure that tourism activities provide long-term benefits without damaging local natural and cultural resources.

The development of domestic tourist destinations, whether local, regional or national, is closely related to the economic development of a region or country. In other words, the development of coastal tourist destinations always involves the interests of the wider community. According to (Dani Rahu & Suprayitno, 2021; Wazni *et al.*, 2020) argues that "Tourism development is a measurement of the success of a tourist attraction in being able to exist over a long period of time or sustainably". One area in NTB that has ecotourism potential is the Bungin Island Tourism Village (Susanty *et al.*, 2021)

Bungin Island Village was designated as a tourist village in 2019 by the Governor NTB at that time, Dr. H. Zulkieflimansyah, SE., M.Sc (Aziza *et al.* 2023) Bungin Island Tourism Village is located in Alas District, Sumbawa Regency, West Nusa Tenggara Province. With nature as a tourist attraction which has the main tourist attraction of marine nature, marine resources, culinary and culture. Bungin Island is inhabited by 3467 residents (Bungin Island Village Profile, 2023).

The geographical condition of Bungin Island is quite unique because almost the entire land is formed from piles of coral rocks as a foundation laid by local residents to expand their residential area. This is a tradition passed down from generation to generation from the Bungin people. Bungin Island, which is known as the most populous island in the world, has a unique culture that is deeply rooted among its people. The people on Bungin Island are mostly the Bajo tribe, who are known for their maritime life. Their culture is reflected in various aspects of life, such as traditional stilt houses built on water, manual shipbuilding, seafaring traditions, and the customs they maintain and pass on.

Integrating local traditions with sustainable ecotourism initiatives on Bungin Island raises various complex problems and challenges. Some of the main challenges that need to be identified are the conflict between environmental conservation and economic needs. Bungin Island, which has a local tradition of expanding land with using coral and other materials from the sea, facing challenges in maintaining a balance between these practices and environmental conservation efforts. On the other hand, the economic and social needs of local communities encourage practices that can damage the ecosystem, such as taking coral for land reclamation. This conflict demands innovative solutions to ensure the continuity of marine ecosystems while still meeting local economic needs and traditions.

According to (Chandler 1962) that "Strategy is the determination of long-term goals and objectives length of the organization, as well as the implementation of actions and allocation of resources necessary for achieve that goal". (Wheelen *et al.* 2018) describes strategy as "Plan comprehensive statement that states how the company will achieve its mission and goals, maximize its competitive advantage". (Weaver 2001) stated that "Strategy ecotourism should include a holistic approach that considers the balance between environmental preservation, economic needs, and local cultural values".

Harmonization in the context of tourism management, especially ecotourism sustainable, refers to efforts to create a balance between various elements which is potentially contradictory. According to Saefuddin (2019), "Harmonization can be interpreted as a process of creating harmony between different elements to achieve greater common goal." Harmonization of culture and tourism, such as that conveyed by Richards (2020), is "A dynamic process involving adaptation of tradition local to be in harmony with tourism development, without losing essence and values bthat power."

In previous research conducted by Farah (2014) in this study the results The analysis carried out by the coastal tourist area of Wonokerto Beach has a lot of potential However, the facilities and infrastructure supporting tourism activities still need improvement quality and quantity. Development of Coastal Tourism Facilities and Infrastructure sustainability must be guided by four important elements which are a reference in theory sustainability.

Widiastuti (2014) in his research on ecotourism development in the West Bali National Park emphasized the importance of local community involvement in tourism management, which has proven effective in preserving the environment and increasing economic prosperity. This principle of community involvement is also found in Utami's (2015) research in the Mount Rinjani Area, Lombok, which shows that collaboration between the community, government and the private sector is the key to success in ecotourism development.

International research such as that conducted by Kim and Cho (2016) and Lee and Park (2018) on Jeju Island, South Korea, provides insight into how government support and active participation of local communities are the keys to the success of ecotourism. They emphasized the importance of educational programs for tourists and local communities to maintain a balance between cultural and environmental preservation.

Kusumastuti and Ismanto (2018) and Arifin and Rachmawati (2017) found that the involvement of local communities in ecotourism planning can strengthen local traditions, but often this strategy is not detailed for small islands with strong traditional communities such as Bungin Island.

Hartati and Nugroho (2019) and Sari and Ramadhan (2020) show that ecotourism can provide economic

benefits and support cultural preservation, but undesirable social changes often occur without planning that specifically involves local traditions.

Research by Dewi and Santoso (2021) and Junaidi and Arini (2018) suggests that developing ecotourism strategies that involve local communities and respect traditions can support cultural preservation, but does not discuss the details of its implementation for small islands.

2. METHODS

This research using qualitative research methods. Qualitative research is a research approach that focuses on in-depth understanding of social and cultural phenomena in their original context. A contextual approach is one of the main reasons why qualitative research was chosen. Flexibility in data collection is also another important reason for choosing qualitative methods. The researcher applies a qualitative epistemological approach that views knowledge as something that is socially constructed and interactive. This method allows researchers to collect data through various methods such as in-depth interviews, participant observation, and documentation.

The research was conducted on Bungin Island, Alas District, Sumbawa Regency, West Nusa Tenggara. Bungin Island sub-district or village has 3 hamlets, 06 RWs and 15 RTs. Bungin Island is surrounded by sea and has an area of 8 hectares with a height of 2.5 meters above sea level. It has a tropical climate, average rainfall of 2000 mm per year, average air temperature of 28^o C up to 30thC. Participants will be recruited using an approach *Purposive Sampling*, where participants are selected based on their relevance to the research topic. This research involved around 9 participants, including traditional leaders, local communities, tourism actors and government officials.

This research uses SWOT analysis carried out using the SWOT matrix. Through this matrix, there are four types of strategies that can be implemented to improve destination quality, namely:

- a. SO strategy (utilizing strengths to capture opportunities);
- b. WO strategy (improving weaknesses by exploiting opportunities);
- c. ST strategy (using force to avoid or reduce threats), and;
- d. WT strategy (suppressing weaknesses and avoiding threats).

In the process, SWOT analysis considers both groups of factors, namely external factors (opportunities and threats) and internal factors (strengths and weaknesses). IFAS (*Internal Factor Analysis Summary*) and EFAS (*External Factor Analysis Summary*) plays a role in the initial stages of SWOT Analysis to assess internal and external factors that influence a tourist destination.

3. RESULT AND DISCUSSION

Bungin Island is inhabited by the Bajo tribe, who are known as a maritime society with high dependence on marine resources, especially fisheries and coral reefs. The lives of the Bajo people on this island are greatly influenced by the coastal environment, where they use marine products to support their economy. Administratively, Bungin Island Village is divided into 3 hamlets, 6 RWs and 15 RTs. The geographical location of this island is at coordinates 08°28'39" South Latitude and 116°59'42" East Longitude. Bungin Island is bordered by Pulau Kaung Village to the East, Labuhan Alas Village to the South, and the Alas Strait to the West and North.

The process of forming these atolls is similar to coral islands, where the seabed undergoes a sinking and uplifting process. This makes Bungin Island have a dynamic seabed, with coral reef structures that are an important part of its coastal ecosystem. This island was formed from a buildup of dead coral which was gradually added to by local people as a method of land reclamation, which is part of their local tradition to expand residential areas.

As a tourist destination that attracts attention because of its unique ecosystem and population density, Bungin Island offers great potential in developing ecotourism based on culture and nature conservation. However, high population density and the practice of piling coral to add land is a challenge in preserving the marine ecosystem around the island.

Identification of Governance on Bungin Island

Interviews with the Bungin Island Village Head show that there is community-based governance involving local stakeholders, including the Village Head, BPD Chair, traditional elders and community leaders. Decision making through deliberation reflects the values of participatory democracy, respect for local wisdom, and collaboration which are at the core of inclusive governance. Governance on Bungin Island, which is based on deliberation involving various stakeholders, is in line with community-based ecotourism theory.

The deliberation process carried out by the Bungin Island community is in line with community-based ecotourism theory, where the involvement of local communities is the key to successful resource management and environmental conservation. This practice not only reflects the values of participatory democracy but also strengthens ecotourism principles that emphasize collaboration, local empowerment and sustainability.

As a community pesisir, the people of Bungin Island rely on the sea as their main source of livelihood. They apply

local wisdom in fishing practices to ensure the sustainability of marine resources. They (Bungin Island fishermen) use nets to catch fish, use traditional boats, dive and target fish directly without using explosives or materials and tools that damage the natural environment.

Space and Land Arrangements

Rapid population growth in an area is often not kept pace with with the increase in land area, population density becomes unavoidable. This condition has a direct impact on the availability of land as a basic need, especially to provide adequate housing or settlements for residents. The reclamation approach taken by the people of Bungin Island is in line with ecotourism theory which emphasizes sustainability and environmental preservation in managing natural resources. Research (Seto *et al.* 2011) shows that land reclamation can be a solution to land pressure if carried out sustainably.

By encouraging environmentally friendly reclamation, the people and government of Bungin Island are not only responding to the challenge of limited land but also ensuring long-term sustainability for their settlement and ecosystem. The community reclamation process works together to excavate coral reefs around Bungin Island. The coral reefs are then transported and piled along the shoreline. This process is carried out by following rituals based on local wisdom inherited from their ancestors, such as praying together and determining days and hours that are considered good.

Reclamation practices using coral reefs can be contrary to principle ecotourism, which prioritizes environmental conservation, including marine ecosystems such as Coral reefs. Research (Moberg and Folke 1999) shows that "Coral reef damage has broad ecological impacts, including loss of marine biodiversity and decline in coastal ecosystem function. Although this method is not completely in line with ecotourism principles, limited options often force them to take it

this step." So that reclamation like this does not completely conflict with ecotourism principles, a solution-based approach is needed. For example, reclamation can be carried out using other materials that do not damage the coral reef ecosystem, such as soil that has been approved by environmental studies, or by creating artificial structures that can replace the function of lost coral reefs.

Research (Edwards and Gomez 2007) shows that coral reef rehabilitation is an effective strategy for restoring the function of coastal ecosystems. This can reduce environmental impacts and support sustainable ecotourism efforts. In this way, the people of Bungin Island can continue to meet their needs while preserving the marine ecosystem which is an important part of ecotourism principles. Reclamation practices with coral reefs on Bungin Island reflect the adaptive needs of the community to meet residential needs, but are ecologically contradictory to ecotourism principles. To harmonize this, it is necessary to adopt a solutions-based approach that includes the use of alternative materials, coral reef rehabilitation and environmental studies.

Social and Economic Identification of Bungin Island

Researchers obtained information related to data from the Bungin Island Village Office. Data We got the related information from the Bungin Island Village Profile. Bungin Island Village Profile Data is in the data in 2023. Based on village profile data for 2023 obtained from the Bungin Island village office, the population on Bungin Island shows an increase compared to the previous year. Data on the number of family heads (KK) also reflects dynamics. In 2023, the total number of heads of families will be recorded at 1,032 families.

Based on 2023 data from the Bungin Island Village profile, the education level of the Bungin Island community shows mixed achievements, with the majority of residents completing basic education, although there are still challenges at higher levels of education. According to (Sari *et al.*, 2024) says that "In Indonesia, differences between urban and rural education, insufficient funding, and Unequal quality between institutions further exacerbates this challenge, highlighting pthe need for targeted interventions to improve access and quality of education."

From the 2023 Bungin Island Village Profile, it is explained that the fisheries sector plays a dominant role in the economic structure of the Bungin Island community. Based on profile data from Bungin Island Village in 2023, as many as 680 out of 1,030 families or around 66% of households in this village are fishing households. Meanwhile, the average per capita income from the fisheries sector was recorded at IDR 500,000.00 per household. This figure shows a significant contribution from the fisheries sector to community income, even though this income is relatively small to support the family's economic needs on an ongoing basis. In addition, real family income shows that the head of the family earns an average of IDR 500,000.00 per month, while family members who work only contribute an average income of IDR 350,000.00 per month. This income reflects economic challenges that need to be overcome through empowerment strategies that are integrated with local wisdom and ecotourism potential.

These results show that even though the fisheries sector is the mainstay of the Bungin Island community's economy, the level of income obtained is still far from ideal. Thus, the development of ecotourism based on traditions and local potential can be a strategic solution to improve people's living standards. As a village that relies on the fisheries sector, the facilities and infrastructure available on Bungin Island are: a) Fishing port or pier ttraditional, b)

Traditional boats and fishing machines and equipment, c) Sea product processing facilities, d) Machine facilities conversion of waste materials.

Identification of Bungin Island Culture

Identification of Bungin Island culture, as revealed through interviews with key informants, highlighting the unique tradition of land expansion driven by The island's initial land limitation was 2.5 hectares. This practice is facilitated by topography shallow around the island, allowing expansion to the east, north, and west. Cultural aspects What is significant about this tradition is the preparation of coral stones by young men as a condition social for marriage, which is often confused with dowry. These practices are parallel with other cultural traditions, such as the Haria people in Maluku, where weddings are customary integrates the individual into the social order and signals readiness for responsibility jawab family (Titaley *et al.*, 2024). Use of coral rock in land preparation, especially for foundation construction, subject to the rules of the ancestors which are emphasized prohibition on using live coral, with a focus on dead coral. This is especially so due to the ecological importance of live coral and the structural benefits of using it dead coral. Dead coral, often found in sand, is considered more suitable for foundations due to its stability and availability.

The tradition of expanding land on Bungin Island is the result of community adaptation to territorial limitations. This tradition is closely related to the mental preparation of young people before marriage, as well as being a way for society to maintain independence and social responsibility. Although this tradition was initially carried out independently, it has now changed due to the role of the collector and government regulations that limit the collection of coral stones to protect the ecosystem.

Continuous Status

Sustainability status has an important role in reflecting the extent a destination able to maintain its appeal without damaging the environment, culture or welfare of local communities. (Sharpley 2000) in *Tourism and Sustainable Development: Exploring the Theoretical Divide* also emphasized that destinations with good sustainability status are more competitive in the global market, because modern tourists tend to choose destinations that are environmentally and socially responsible.

Tourism destination governance is a key element in ensuring sustainable and competitive destination development. Strategic planning and development are important initial steps, as explained by (Inskeep 1991) in *Tourism Planning: An Integrated and Sustainable Development Approach*. He stressed that planning tourism infrastructure and services, such as resorts and cultural attractions, plays a vital role in increasing the attractiveness of destinations and supporting the local economy. This is also reinforced by (Gunn 1993) who states that management based on the development of cultural facilities and attractions is the foundation for successful tourism. In addition, destination governance must integrate sustainability principles. The condition of the sustainability status of governance aspects on Bungin Island is based on kite charts obtained by researchers from processed Desti.id data

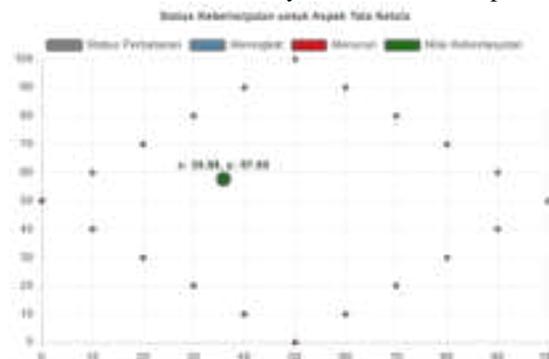


Figure 1 Overlay Chart of Sustainability Status of Governance Aspects

This graph shows the sustainability value of governance aspects on Bungin Island, which overall is at a less than sustainable level, with an average score of 35.88 on a horizontal scale. The position of this value is marked by a large green dot at coordinates (35.88, 57.69).

Influencing Factors (*Leverage Sensitivity*) and Priority Scale for Governance Aspects

In analysis *Leverage Sensitivity* For the governance aspect, there are three main components explained. *Maximum Sensitivity* (shown in green) refers to the maximum potential of an indicator to influence governance sustainability if optimized. The higher the maximum sensitivity value, the greater the influence of the indicator on the overall sustainability of the governance aspect. Meanwhile, the Sensitivity Value (shown in yellow) represents the actual sensitivity level of each variable under current conditions. This value reflects how the indicator has an impact

on the sustainability of governance based on implementation and existing conditions. Apart from that, there are components *Uncertainty Error* (shown in blue), which depicts the level of uncertainty or *error* from the variable sensitivity assessment. The lower the value *Uncertainty Error*, the more reliable the data is for use in analysis and decision making.

Cultural aspects are an important element in the sustainability of tourism destinations because they play a role in maintaining local identity, supporting the preservation of traditions, and being a unique attraction that cannot be found anywhere else. Local culture can provide direct economic benefits through performing arts, handicrafts and culinary specialties which are part of the tourist attraction. Previous research by (Richards *et al.*, 2007) emphasizes the importance of integrating local culture into destination development strategies to increase attractiveness and sustainability.

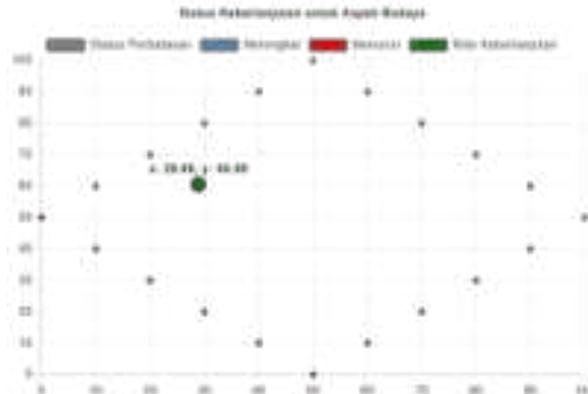


Figure 2 Flyover graph of Cultural Aspects' Sustainability Status

This graph shows the sustainability status for cultural aspects on Bungin Island, with the average sustainability value at coordinates x: 28.85, y: 60.58, which is marked by the large green dot. This value places the cultural aspect in the less sustainable category, which shows that there is still much room for improvement in the management and preservation of local culture on Bungin Island. To increase the sustainability of cultural aspects, strategic steps need to be focused on several things. First, develop clear behavioral guidelines for visitors to cultural sites, complete with information facilities in strategic locations. Second, implementing regular programs to socialize cultural regulations to local communities, business people and tourists. Third, optimize the process of documenting cultural assets through digitalization and providing wider public access. Fourth, design a fixed annual budget allocation to support the consistent implementation of cultural preservation programs. Lastly, expand the involvement of indigenous communities in festivals and cultural attractions and increase the promotion of local cultural heritage through digital platforms and cultural exhibitions to strengthen the cultural identity of Bungin Island.

Environmental aspects are one of the main pillars in achieving sustainability in tourism destinations. A healthy and sustainable environment is the basis of a destination's appeal, especially in areas such as Bungin Island, which is rich in unique nature and culture.

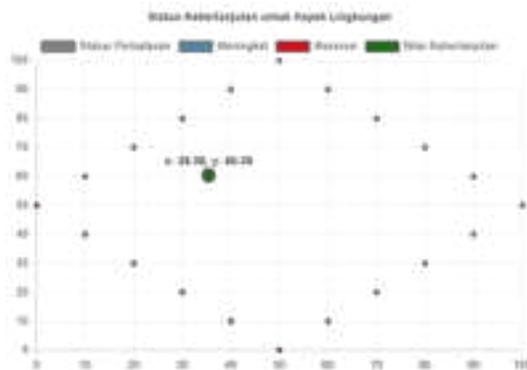


Figure 3. Kite graph of Environmental Aspects Sustainability Status

This graph depicts the sustainability status of environmental aspects on Bungin Island, with the average sustainability value at coordinates x: 35.38, y: 60.39, which is marked with a large green dot. This value shows that the environmental aspect of Bungin Island is in the Less Sustainable category, so it requires various interventions to improve sustainability.

Based on a multidimensional analysis which includes governance, social and economic, cultural and

environmental aspects, the sustainability status on Bungin Island can be concluded to be in the less sustainable category. Even though there are efforts on several indicators that show improvement, the overall average sustainability score is still relatively low. This indicates that Bungin Island requires various strategic interventions to improve its overall sustainability. Based on current data, Bungin Island's sustainability status is rated as being in the "Less Sustainable" category, with an average sustainability score of only 34.4. The four main aspects evaluated, namely Governance (35.88), Social and Economic (37.5), Culture (28.85), and Environment (35.38), show significant needs for improvement in all sectors.

Strategies for Harmonizing Traditional Culture and Sustainable Ecotourism Development on Bungin Island

a. Strength (S)

The Bungin Island destination shows good governance in its existence *Destination Management Organization* (DMO) which is supported by a clear work plan and budget, shows a strong management structure. Compliance with sustainable principles is also a significant advantage, as can be seen from the existence of SOPs, action plans and strategies to support sustainable tourism. In the cultural aspect, destinations have inventories and cultural asset conservation programs that involve evaluation of vulnerabilities, as well as routine budget allocations for cultural preservation. Involving local communities in the development of intangible culture-based experiences increases authenticity and participation. In the environmental aspect, destinations have a list of natural assets accompanied by conservation status, as well as conservation programs that are carried out regularly. Tourism revenues are used to support the conservation of natural assets, demonstrating a commitment to environmental sustainability.

b. Weakness (W)

Bungin Island faces several weaknesses that need to be addressed to increase ecotourism sustainability. One of the main drawbacks is the lack of cultural preservation optimal, where the cultural aspect obtained the lowest score of 28.85. This shows that there is a lack of efforts to preserve and integrate local culture into ecotourism development. The combination of less than optimal cultural preservation, inadequate governance systems, and environmental management that still needs to be improved, are the main weaknesses that must be overcome to ensure that ecotourism development on Bungin Island can run sustainably and provide maximum benefits for local communities and the surrounding environment. .

c. Opportunity (O)

Bungin Island has various strategic opportunities that can be exploited to increase its sustainability and ecotourism appeal. The increasing global trend of sustainable tourism reflects world awareness of the importance of environmental and cultural preservation. Bungin Island presents a great opportunity to be developed as a sustainable coral reef and mangrove conservation area. With its biodiversity, this area can be used as an educational ecotourism destination that not only offers natural beauty, but also provides tourists with an in-depth understanding of the importance of protecting coastal ecosystems. Through programs such as conservative snorkeling, educational tourism on mangrove ecosystems, and community-based coral reef rehabilitation activities, Bungin Island can attract tourists who care about the environment, while increasing awareness of nature conservation efforts.

d. Threats

Bungin Island faces a number of threats that can hinder the development of sustainable ecotourism and have a negative impact on the sustainability of the island's culture and environment. One of the main threats is the degradation of local culture. Without appropriate intervention, there is a significant risk of loss of culture and traditions of the Bajo people due to external influences and lack of conservation efforts. This culture and tradition is at the core of the Bajo people's identity and a major attraction for tourists seeking an authentic cultural experience. This loss of culture not only reduces the ecotourism value of Bungin Island but also threatens the social welfare of the local community.

The existing condition of Bungin Island describes the actual condition of the destination without any additional intervention, which is the starting point for sustainability analysis. The average existing sustainability score is in the Less Sustainable category, reflecting significant challenges in governance, socio-economic, cultural and environmental aspects. In the literature, understanding existing conditions is a critical step to evaluate the gap between current conditions and desired sustainability goals (Miller *et al.*, 2014; Tanguay *et al.*, 2013)).

Analysis Findings

Approach qualitative combining *Multimate aspect of Sustainability Analysis* (MSA) with SWOT analysis can effectively support harmonization between local traditions and sustainable ecotourism development on Bungin Island. Through MSA, various perspectives from stakeholders, such as local communities, government and actors tourism, can be identified, thus facilitating important collaboration to address the island's unique cultural and environmental aspects (Prianto & Purnomo, 2023; Ibrahim and Nizwan Zuhri 2019).

Scenario

Scenarios are needed to provide an overview of strategic steps that can be taken to increase the sustainability of destinations, such as Bungin Island, which is currently in a less sustainable condition. Apart from that, according to (Chermack 2011) that "Scenario offers alternative solutions that can be compared to determine the most effective approach based on the potential outcomes of different interventions." Scenario 1 shows the first step in improving the sustainability of Bungin Island compared to existing conditions. In the governance aspect, the score increased from 35.88 to 45.5, reflecting improvements in management structure, coordination between stakeholders, and implementation of work plans.

Scenario 2 depicts a significant increase in sustainability compared to the previous scenario and existing conditions, with an average value reaching 56.13 which is included in the Fairly Sustainable category. In the governance aspect, the score increased to 53.19, reflecting strengthened coordination between stakeholders, better implementation of strategic planning, and effective supervision.

Scenario 3 is an optimization stage that shows a significant increase in the sustainability of Bungin Island in all aspects, with an average score reaching 69.9 and the overall status is in the Fairly Sustainable category. In the governance aspect, the score increased to 61.85, reflecting strengthened coordination between stakeholders, more effective policy implementation, and data-based management that supports sustainability.

Based on a combined analysis of the existing sustainability values and scenarios 1 to scenario 3 which are visualized in radar charts, a significant increase in sustainability can be seen in every aspect, namely governance, social and economic, culture and environment, along with the implementation of improvement scenarios. The results of the combined analysis show that Bungin Island has a great opportunity to achieve harmonization between the preservation of local traditions and the development of sustainable ecotourism. Optimization in scenario 3 produces the highest sustainability scores, with socio-economic and cultural aspects showing excellent performance, while environmental aspects, despite progress, still require greater attention to achieve optimal sustainability.

Bungin Island faces various challenges in managing natural resources, especially limited land, which forces people to adapt through practice. Traditional reclamation uses dead coral reefs. This tradition reflects wisdom local area with high value, while also offering potential as a tourist attraction. Island Bungin also faces other challenges, such as the low level of community education and economic dependence on the fisheries sector. Wijaya Studies *et al.* (2022) showed that empowering local education can improve the skills of the community tourism management.

4. CONCLUSION & SUGGESTION

This research reveals that the current status of sustainable ecotourism development on Bungin Island is still in the "Less Sustainable" category based on an analysis of existing conditions. In particular, the cultural aspect shows the lowest value, indicating the need to preserve traditions and improve infrastructure and better governance. Through the formulation of several improvement scenarios (Scenarios 1 to 3), it is demonstrated that with the right strategic interventions, Bungin Island has the potential to improve to a "Fairly Sustainable" level. The optimal scenario (Scenario 3) shows significant improvements, especially in socio-economic and cultural aspects, although environmental aspects still require further attention.

REFERENCES

- [1] Arifin, R., & Rachmawati, A. (2017). The impact of ecotourism on cultural preservation in conservation areas. *Journal of Environmental Management*, 203, 45-56.
- [2] <https://doi.org/10.1016/j.jenvman.2017.06.012>
- [3] Azizah, Nur, Subhan Purwadinata, and I. Ismawati. 2023. "The Impact of Establishing a Tourist Village on the Community's Economy (Study in Bungin Village, Alas District, Sumbawa Regency)." *Journal of Economics & Business* 11(2):279–89.
- [4] Chandler, Alfred D. 1962. "Strategy and Structure: Chapters in the History of the Industrial Empire." *Cambridge Mass* 5(1):12–48.
- [5] Chermack, Thomas J. 2011. *Scenario Planning in Organizations: How to Create, Use, and Assess Scenarios*. Berrett-Koehler Publishers.
- [6] Edwards, Alasdair J., and Edgardo D. Gomez. 2007. "Reef Restoration Concepts & Guidelines: Making Sensible Management Choices in the Face of Uncertainty." *Coral Reef Targeted Research & Capacity Building for Management Programme* *Coral Reef Targeted Research & Capacity Building for Management Programme*.
- [7] Fajriah, Syarifah Dina, and Mussadun Mussadun. 2014. "Development of Facilities and Infrastructure to Support Sustainable Beach Tourism (Case Study: Wonokerto Coastal Area, Pekalongan Regency)." *Journal of Regional and City Development* 10(2):218–33.
- [8] Gunn, C. A. 1993. "Tourism Planning: Basics, Concepts, Cases."
- [9] Hartati, M., & Nugroho, A. (2019). Ecotourism and cultural conservation: A review of impact and strategies.

-
- Journal of Tourism Studies*, 12(3), 67-81. <https://doi.org/10.1016/j.jts.2019.03.004>
- [10] Ibrahim, M. Si, and S. E. Nizwan Zukhri. 2019. "Ecotourism among Dilemma Voluntarism and Ecological Commitment (a Review of the Challenges of Community-Based Environmental Tourism Development in Bangka Island)."
- [11] Inskeep, Edward. 1991. "Tourism Planning: An Integrated and Sustainable Development Approach." *Van Nostrano Reinhold*.
- [12] Junaidi, S., & Arini, D. (2018). *The effects of ecotourism on social and cultural dynamics in indigenous communities. Community-Based Tourism Journal*, 10(3), 201-214. <https://doi.org/10.1080/21568316.2018.1497451>
- [13] Kusumastuti, S., & Ismanto, R. (2018). Harmonizing local traditions with ecotourism development in coastal regions. *Journal of Ecotourism*, 9(2), 123-136. <https://doi.org/10.1080/14724049.2018.1441452>
- [14] Lee, K., & Park, J. (2018). Cultural preservation through ecotourism in Jeju Island, Korea. *Journal of Ecotourism and Cultural Heritage*, 12(3), 213-226. <https://doi.org/10.1080/14724049.2018.1994398>
- [15] Moberg, Fredrik, and Carl Folke. 1999. "Ecological Goods and Services of Coral Reef Ecosystems." *Ecological Economics* 29(2):215-33.
- [16] Richards, Corinne L., Bryan C. Carstens, and L. Lacey Knowles. 2007. "Distribution Modelling and Statistical Phylogeography: An Integrative Framework for Generating and Testing Alternative Biogeographical Hypotheses." *Journal of Biogeography* 34(11):1833-45.
- [17] Richards, G. (2020). Cultural tourism: A review of recent research and trends. *Journal of Tourism Studies*, 15(2), 45-61
- [18] Saefuddin, A. (2019). Harmonization and development of sustainable tourism: A theoretical and applied studies. *Ecotourism Journal*, 7(1), 12-25.
- [19] Santoso, P., & Dewi, M. (2021). The role of traditional practices in sustainable tourism development in coastal
- [20] Sari, A., & Ramadhan, I. (2020). The intersection of ecotourism and cultural preservation: A case study in tropical coastal regions. *Tropical Tourism Journal*, 23(3), 187-201. <https://doi.org/10.1080/09669582.2020.1767292>
- [21] Sari, Sari, Renoldy L. Papilaya, and Adnan Affan Akbar Botanri. 2024. "Analysis of the Suitability and Carrying Capacity of the Mangrove Ecotourism Area on Osi Island." *ELASTICITY: Journal of Applied Engineering Science* 1(1):40-53.
- [22] Seto, Karen C., Michail Fragkias, Burak Güneralp, and Michael K. Reilly. 2011. "A Meta Analysis of Global Urban Land Expansion." *PloS One* 6(8):e23777.
- [23] Sharpley, Richard. 2000. "Tourism and Sustainable Development: Exploring the Theoretical Divide." *Journal of Sustainable Tourism* 8(1):1-19.
- [24] Susanty, Sri, Primus Gadu, and I. Ketut Purwata. 2021. "Maritime Tourism Promotion Strategy on Bungin Island, Alas District, Sumbawa Besar Regency, Ntb." *Journal Of Responsible Tourism* 1(2):89-102.
- [25] Tanguay, Georges Antoni, Juste Rajaonson, and Marie-Christine Therrien. 2013. "Sustainable Tourism Indicators: Selection Criteria for Policy Implementation and Scientific Recognition." *Journal of Sustainable Tourism* 21(6):862-79.
- [26] Titaley, Elsina, Syane Matatula, and Christwyn Ruusniel Alfons. 2024. "Local Potential Management for Poverty Alleviation in Maluku." *KnE Social Sciences* 211-26.
- [27] Wazni, Wazni, Zulfa Harirah, and Ramlan Darmansyah. 2020. "Evaluation of Local Wisdom-Based Tourism Development Policy Input in Siak Regency." *Sebatik* 24(2):178-86.
- [28] Weaver, David Bruce. 2001. "Ecotourism as Mass Tourism: Contradiction or Reality?" *Cornell Hotel and Restaurant Administration Quarterly* 42(2):104-12.
- [29] Wheelen, Thomas L., J. David Hunger, Alan N. Hoffman, and Charles E. Bamford. 2018. *Strategic Management and Business Policy: Globalization, Innovation, and Sustainability*. pearson.
- [30] Widiastuti, R. (2014). Community involvement in ecotourism development in Bali Barat National Park. *Journal of Indonesian Tourism and Development Studies*, 5(1), 47-59. <https://doi.org/10.22146/jitds.2038514>
- [31] Wijaya, K., Setiawan, T., & Kusuma, D. (2022). *Educational Development for Enhancing Local Capacities in Tourism: A Case Study of Rural Indonesia*. *Journal of Education and Development*, 15(2), 120-135.
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