

# Coastal Ecosystem Characteristics and Their Sustainable Utilization in the Context of Good Tourism Governance: Evidence from Bubohu Religious Tourism Village, Indonesia

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**Abstract.** The Bubohu Religious Tourism Village in Bongo Village, Gorontalo Regency, is a coastal destination where religious practices, local culture, and marine landscapes intersect. Tourism growth has expanded livelihood opportunities for residents but has also increased pressure on the fragile coastal ecosystem of Tomini Bay. This study aims (1) to identify key coastal ecosystem characteristics that support tourism in Bubohu and (2) to examine how their use aligns with principles of sustainable resource management and Good Tourism Governance. A qualitative descriptive case study was conducted through field observations, in-depth interviews with village leaders, tourism managers, business actors, and coastal residents, and analysis of local regulations and planning documents. The results indicate that four main ecosystem characteristics underpin tourism: sandy-rocky beaches, coastal vegetation that provides shade and ecological functions, religious and cultural spaces near the shoreline, and shallow coastal waters that enable marine-based activities. These features support the development of beach attractions, coastal culinary clusters, marine transport and tour services, and religious tourism events, which together generate income, diversify livelihoods, and strengthen Bubohu's image as a religious-coastal destination. However, the findings also reveal persistent waste management problems, the absence of explicit limits on environmental carrying capacity, and weak monitoring of coastal conditions. Community participation and collaboration among local actors are relatively strong, yet environmental safeguards remain limited. Overall, the study concludes that the current use of Bubohu's coastal ecosystems is moving toward sustainable tourism, but governance innovations and stronger environmental regulation are needed to secure the long-term integrity of these ecosystems.

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## 1. Introduction

Coastal ecosystems provide a wide range of ecological functions and services that are essential for human wellbeing, including shoreline protection, nutrient cycling, habitat provision for marine species, and spaces for recreation and cultural practices. In many countries, these ecosystems have become important bases for tourism development, particularly in the form of beach tourism, marine ecotourism, and coastal cultural tourism. However, rapid, often poorly regulated tourism growth has intensified pressures on coastal environments through land conversion, infrastructure development, pollution, and the overexploitation of natural resources. Balancing the economic benefits of tourism with the conservation of coastal ecosystem integrity therefore remains a major challenge in debates on environmental governance and sustainable development.

Indonesia, as an archipelagic country with extensive coastal and marine areas, faces similar tensions. Coastal regions are promoted as key engines of regional economic growth, yet they are also highly vulnerable to environmental degradation and climate-related risks. In this context, tourism villages have emerged as an important policy instrument to promote community-based tourism, diversify local livelihoods, and strengthen cultural identity. At the same time, the success and sustainability of tourism villages depend heavily on how local actors manage and govern the coastal ecosystems that underpin these destinations' attractiveness.

Bubohu Religious Tourism Village in Bongo Village, Gorontalo Regency, is a distinctive example of a coastal tourism village where religious activities, local culture, and marine landscapes are closely intertwined. The village has gained recognition as a religious coastal destination, attracting visitors for its spiritual atmosphere, traditional architecture, and unique coastal scenery. Previous studies on Bongo Village and Bubohu Religious Tourism Village have highlighted the roles of local institutions, social capital, and collaborative management in developing the tourism villages, as well as their resilience during external shocks such as the COVID-19 pandemic. These studies underline the importance of governance and community participation in sustaining tourism development.

Nevertheless, much less attention has been paid to the ecological foundations of the destination, particularly the specific characteristics of the coastal ecosystem and how these are utilized and governed in the context of tourism village development. Existing research tends to focus on tourism potential, institutional arrangements, and socio-economic outcomes, while the links between physical ecosystem features, patterns of tourism use, and environmental management practices remain underexplored. As a result, there is limited understanding of whether the current use of Bubohu's coastal ecosystems aligns with the principles of sustainable natural resource management and Good Tourism Governance.

This study seeks to address this gap by examining Bubohu Religious Tourism Village as a socio-ecological system in which coastal ecosystem characteristics, tourism activities, and governance practices are closely interconnected. Specifically, the research has two main objectives: (1) to identify the key characteristics of the coastal ecosystem that support tourism development in Bubohu Religious Tourism Village; and (2) to analyse how the utilization of these ecosystems reflects principles of sustainable resource use within the framework of Good Tourism Governance. By linking ecological attributes

with governance dimensions in a single analytical framework, the study contributes to broader discussions on sustainable coastal tourism and provides empirical insights for policy and practice in tourism village development.

## 2. Literature Review

### 2.1. Coastal Ecosystems and Environmental Services

Coastal ecosystems are transitional zones between land and sea, encompassing sandy beaches, rocky shores, lagoons, coral reefs, mangroves, and seagrass beds. These ecosystems provide a variety of environmental services, including habitat for marine life, natural protection against abrasion, carbon sequestration, and recreational and tourism spaces [5]. These ecological values often serve as the basis for developing tourism destinations, particularly marine and coastal nature tourism.

Utilization of coastal ecosystems without regard for carrying capacity can lead to environmental degradation, reduce the quality of tourist attractions, and ultimately threaten the sustainability of local economies. Therefore, the principle of sustainable resource utilization is crucial in managing coastal destinations.

### 2.2. Good Tourism Governance *and* Utilization of Natural Resources

Good Tourism Governance applies the concepts of good governance to tourism. According to Sunaryo, it requires coordinated tourism development, active stakeholder involvement, and the application of sustainability principles at every management stage.

The sustainable use of natural resources in Good Tourism Governance covers key aspects:

- Wise use of environmental resources,
- Controlling negative impacts on the ecosystem,
- Maintaining environmental quality, and
- Assurance that tourism activities do not damage the ability of future generations to utilize the same resources [1], [6].

In the coastal context, sustainable use includes regulating the use of coastal space, managing waste and garbage, protecting sensitive areas, and regulating the intensity of tourist visits.

### 2.3. Bubohu Religious Tourism Village as a Coastal Destination

Several studies show that Bongo Village has complementary natural and religious tourism potential. The coastal landscape and local culture have been developed into a tourism village with support from foundations, government agencies, and tourism awareness groups [2], [3], [7]. Rahayu et al. [2] emphasize the spatial distribution and potential of coastal nature tourism in Bongo Village, while Suharto et al. [3] analyse the management model of the Bubohu Religious Tourism Village, highlighting collaboration among local actors and institutional arrangements.

Talib [4] further demonstrates that during the COVID-19 pandemic, the Bubohu Religious Tourism Village maintained its resilience by strengthening social networks and innovating its tourism experiences. These studies collectively underline the importance of religious values, local culture, and community-based governance in sustaining the village as a tourism destination.

However, the ecological basis of the destination, particularly the characteristics of the coastal ecosystem and how they are utilized and governed, has not been systematically examined. Existing research tends to focus on tourism potential, governance models, and social resilience, without explicitly analysing how specific coastal ecosystem features (such as shoreline morphology, shallow waters, and coastal

vegetation) are mobilized in tourism development and whether their current use aligns with principles of sustainable natural resource management.

This study addresses this gap by evaluating the coastal ecosystem characteristics that underpin the development of the Bubohu Religious Tourism Village and by assessing the extent to which their utilization reflects sustainable resource use within the framework of Good Tourism Governance. In doing so, the research links ecological attributes, patterns of tourism use, and governance practices within a single analytical framework, a framework that remains underdeveloped in the existing literature on Bongo Village and similar coastal religious tourism destinations.

### 3. Research Methods

#### 3.1. Research Approach

This research employs a qualitative descriptive approach with a single case study design, focusing on the Bubohu Religious Tourism Village. The qualitative case study design is appropriate because the research aims to obtain an in-depth understanding of how coastal ecosystem characteristics are used and governed in a specific socio-ecological and institutional context. Rather than testing hypotheses statistically, the study seeks to explore the meanings, practices, and interactions among actors involved in the utilization of coastal ecosystems for tourism village development.

The case study design enables the integration of multiple data sources, field observations, interviews, and documents, so that the links between physical ecosystem characteristics, tourism activities, and governance arrangements can be analysed holistically. This approach is particularly relevant for tourism destinations that combine ecological, socio-cultural, and religious dimensions, as in the case of Bubohu Religious Tourism Village.

#### 3.2. Research Location

The research location is Bubohu Religious Tourism Village, Bongo Village, Batudaa Pantai District, Gorontalo Regency, Gorontalo Province. Situated on the coast of Tomini Bay, this village boasts several key tourist destinations, including Bubohu Tourism Park, Walima Emas Mosque, Dulangga Beach, and a coastal culinary tourism area.

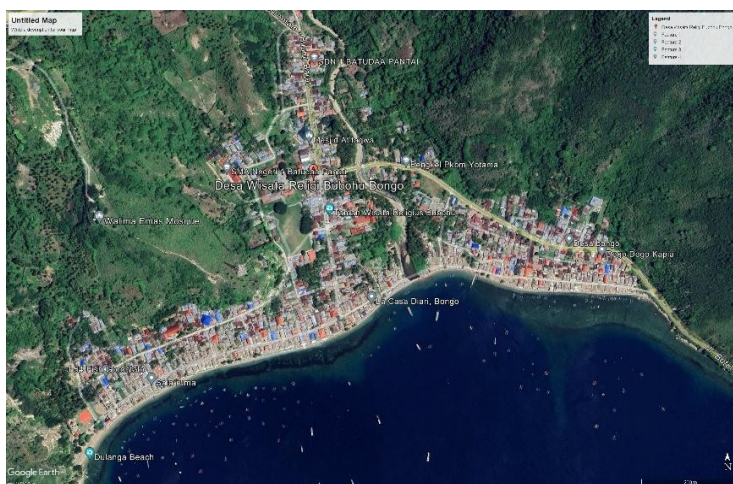


Figure 1. Location Map of Bubohu Religious Tourism Village.

Source: Google Earth, 2025

### 3.3. Data Collection Sources and Techniques

Data for this study were obtained from both primary and secondary sources. Primary data were collected through:

1. Field observations, focusing on the physical and ecological conditions of the coastal ecosystem, including shoreline characteristics, shallow waters, cleanliness and waste conditions, and tourism facilities along Dulangga Beach and the coastal culinary area. Observations were recorded in field notes and supported by photographs documenting key ecosystem features and their use.
2. In-depth, semi-structured interviews with key stakeholders who are directly involved in the management and use of coastal ecosystems. These included the village head, representatives of the foundation managing the Bubohu Tourism Park, members of the tourism awareness group (Pokdarwis), coastal culinary MSME actors, providers of sea transportation and marine tourism services, and coastal community members who work as fishermen. Informants were selected purposively based on their knowledge of coastal conditions and their roles in tourism governance, with additional informants identified through snowball techniques when needed. The interview guide covered themes such as perceptions of coastal ecosystem characteristics, patterns of tourism use, environmental management practices, and collaboration among stakeholders.
3. Documentation, consisting of photos, maps, and field notes related to the coastal ecosystem and tourism activities in the Dulangga Beach area and the coastal culinary zone.

Secondary data were collected from:

1. Official documents of the tourism village, including tourism village profiles, activity reports, local development and spatial planning documents, and village regulations relevant to tourism and environmental management.
2. Previous research and scientific publications on the Bubohu Religious Tourism Village and coastal tourism governance [2–4], [7]. These documents were used to contextualize the case, identify existing knowledge on tourism development and governance in Bongo Village, and clarify the specific contribution of this study in relation to earlier work.

### 3.4. Data Analysis Techniques

Data analysis followed an interactive and iterative process that included data reduction, data display, and conclusion drawing. First, all field notes, interview transcripts, and documents were organized and read repeatedly to obtain an overall understanding of the case. Initial open coding was then applied to identify meaningful units of information related to coastal ecosystem characteristics, tourism utilization forms, and governance practices affecting environmental management.

Second, related codes were grouped into broader categories and themes. Three main analytical themes were developed: (1) physical and ecological features of coastal ecosystems in Bubohu Religious Tourism Village, (2) ways in which these ecosystem features are utilized in tourism village development (beach tourism, culinary tourism, marine transportation, religious-based tourism), and (3) sustainable resource use within the framework of Good Tourism Governance, including participation, regulation, and environmental accountability. Thematic matrices and narrative summaries were prepared to compare information across different informants and data sources.

Third, conclusions were drawn by relating the empirical themes to the conceptual framework of sustainable coastal resource utilization and Good Tourism Governance. Throughout the process, data from observations, interviews, and documents were triangulated to enhance the credibility of the findings and ensure that interpretations of the sustainability of coastal ecosystem utilization were supported by multiple pieces of evidence.

#### 4. Results and Discussion

##### 4.1. Characteristics of Coastal Ecosystems in Bubohu Religious Tourism Village

The results of the observations show that the coastal ecosystem in the Bubohu Religious Tourism Village has several main characteristics as follows:

a. Sandy and Rocky Coastline

Dulangga Beach is dominated by stretches of sand interspersed with clusters of natural rocks in several spots. These rocks are a significant element of the landscape and are often used as photo spots by tourists.



**Figure 1. Natural rocks on part of the shore of Dulangga Beach**

*Source: Researcher Observations, 2025*

b. The existence of rare trees in shallow waters

One of Dulangga Beach's distinctive features is the presence of trees growing in the shallow waters several meters from the shoreline. These trees have become a visual icon, often photographed by tourists, demonstrating the calm and stable shallow waters that support vegetation.



**Figure 2. Rare Tree in the Middle of the Sea as a Tourist Photo Spot**  
*Source: Researcher Observations, 2025*

c. Coastal waters as a space for economic activity

The waters surrounding the village are used by fishermen and by marine tourism providers, such as those providing sea transportation to specific points in Tomini Bay. This demonstrates that coastal ecosystems serve a vital economic function for local communities.



**Figure 3. Utilization of Dulangga Beach as a livelihood for fishermen**  
*Source: Researcher Observations, 2025*



**Figure 4. Boat Facilities for Fishermen**

*Source: Tribun Gorontalo, 2025*

d. Social and religious space

Coastal areas also serve as family gathering spaces, locations for certain religious activities, and stages for several village festivals. This reinforces the socio-cultural role of coastal ecosystems in community life.

Thus, the coastal ecosystem in Bubohu Religious Tourism Village is a multi-functional ecosystem that combines ecological, economic, social, and cultural functions.

#### **4.2. Utilization of Coastal Ecosystems for Tourism Village Development**

The characteristics of the coastal ecosystem are utilized in several forms of tourism village development, including:

a. Development of Dulangga Beach destination

Dulangga Beach has become a prime coastal destination, leveraging its beautiful shoreline, rocks, and iconic rare trees as its main attractions. Several gazebos and simple facilities have been built along the beach to enhance tourist comfort. Most of the gazebos are managed by local communities, providing direct income for their owners.



**Figure 5. Dulangga Beach as a Bubohu Religious Tourism Destination**

*Source: Researcher Observations, 2025*



**Figure 6. Making Gajebo around Dulangga Beach**

*Source: Researcher Observations, 2025*

b. Development of coastal culinary tourism

Culinary tourism areas have been established in coastal areas, leveraging their proximity to the sea as an added value. MSMEs offer seafood-based dishes and other locally produced products. Village governments and tourism village managers provide support through venues and promotional activities, enabling coastal areas to function as dynamic economic hubs.



**Figure 7. Culinary Tourism Facilities of Polota'a, Bubohu Religious Tourism Village**

*Source: Jabesta.com, 2025*

c. Marine transportation and marine tourism services

The coastal ecosystem supports the development of maritime transportation services such as sea taxis and tour boats. These services facilitate tourist mobility and expand the reach of destinations connected to the Bubohu Religious Tourism Village.

d. Potential for environmental and religious educational tourism

The interconnectedness of religious values, local traditions, and proximity to the sea offers opportunities for developing educational tourism that combines spiritual narratives, culture, and coastal environmental conservation. This

potential can strengthen the image of tourist villages that not only "sell views" but also convey a message of sustainability.

These forms of utilization demonstrate that coastal ecosystems have been optimized as the primary resource for the development of tourist villages, with local communities involved in various tourism value chains.

#### **4.3. Dimensions of Sustainability and Implications for *Good Tourism Governance***

From the perspective of sustainable use of natural resources, research findings indicate both positive achievements and challenges.

Positive achievements related to the principle of sustainable use include:

- Local community involvement in the management of coastal facilities, the provision of tourism services and products, and the development of coastal MSMEs. This aligns with the principles of local ownership and benefits in Good Tourism Governance [1], [6], [7].
- Diversification of coastal space functions, which are utilized not only for fishing but also for tourism and socio-religious activities, thus expanding economic benefits without completely eliminating the traditional coastal functions.

However, there are several sustainability challenges:

- Waste and garbage problems: piles of plastic waste are still found around beaches and in food preparation areas. Waste management systems, particularly sorting, collection, and processing, are not yet optimal. This indicates that the utilization of natural resources is not fully accompanied by adequate environmental impact management practices.
- There is a lack of clear environmental carrying capacity regulations: the intensity of tourist visits and the management of activities in coastal zones are not detailed in planning documents or village regulations. This lack of technical boundaries and guidelines could place excessive long-term pressure on coastal ecosystems.
- Environmental accountability remains weak: monitoring and evaluation mechanisms focus more on the number of visits and financial aspects, while coastal environmental quality indicators have not yet become an important part of managers' reporting and accountability systems.

From the point of view of Good Tourism Governance, this condition shows that the Bubohu Religious Tourism Village has begun implementing the principle of sustainable use of natural resources through community involvement and strengthening the local economy, but aspects of environmental accountability and carrying capacity management still need to be strengthened [1], [6], [8], [9].

### **5. Conclusion and Recommendations**

#### **5.1. Conclusion**

This study addressed two interrelated research objectives: to identify the main characteristics of the coastal ecosystems that support tourism development in Bubohu Religious Tourism Village, and to assess whether their utilization reflects sustainable resource use within the framework of Good Tourism Governance. The analysis shows that Bubohu's tourism development is strongly anchored in the physical and ecological features of its coastal environment, including sandy–rocky shorelines, vegetated beach areas, shallow coastal waters, and religious–cultural spaces situated near the coast. These characteristics provide the ecological and spatial basis for a range of tourism activities, such as beach recreation, coastal culinary tourism, marine transportation and tour services, and religious-based tourism events.

The utilization of these coastal ecosystems has generated important socio-economic benefits. Tourism has diversified local livelihoods, created new business opportunities for residents, and strengthened Bubohu's identity as a religious-coastal destination. At the same time, the findings indicate that the sustainability dimension of this utilization remains only partially achieved. Persistent waste problems, the lack of a clearly defined environmental carrying capacity, and limited integration of environmental indicators into planning and reporting demonstrate that ecological considerations are not yet fully embedded in destination governance.

Overall, the study concludes that the use of coastal ecosystems in Bubohu Religious Tourism Village is moving towards sustainable tourism, particularly through community involvement and collaborative management practices. However, to fully align with Good Tourism Governance principles, environmental management and accountability need to be significantly strengthened. This includes clearer regulatory frameworks, more systematic monitoring of coastal conditions, and stronger institutional mechanisms to ensure that economic gains from tourism do not come at the expense of long-term coastal ecosystem integrity.

## 5.2. Recommendations

Building on the above conclusions, several recommendations are proposed to strengthen sustainable tourism trajectories in the Bubohu Religious Tourism Village. First, local government and village authorities should refine the regulatory and planning framework for coastal tourism. This includes integrating clear environmental indicators and coastal ecosystem protection measures into village regulations, spatial plans, and tourism development documents, and establishing practical guidelines for waste management and shoreline protection.

Second, explicit limits on environmental carrying capacity should be formulated for key tourism sites, particularly along sandy-rocky beaches and shallow coastal waters. These limits need to be supported by routine monitoring of coastal conditions, simple environmental reporting mechanisms at the village level, and transparent information-sharing among stakeholders. Such measures would help ensure that visitor numbers and tourism activities remain within the ecological thresholds of the coastal ecosystem.

Third, community participation which is already relatively strong—should be further deepened through capacity-building programmes on environmental governance, eco-friendly business practices, and risk awareness related to coastal degradation. Strengthening local institutions, including tourism village management bodies and religious leaders' forums, can enhance coordination and accountability in implementing sustainable tourism initiatives.

Finally, product development in Bubohu should more deliberately link religious tourism, local culture, and environmental education. Packages that combine worship activities, cultural performances, and coastal conservation campaigns can reinforce Bubohu's identity as a religious-coastal destination while cultivating pro-environmental attitudes among visitors. Future research is recommended to explore quantitative assessments of ecosystem services and long-term socio-ecological impacts of tourism, providing a stronger evidence base for policy and governance innovations.

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