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Sustainable nature-based tourism development: A feasibility assessment of a coastal tourism area

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ABSTRACT

Baground: Coastal tourism areas should be developed with an environmentally sound approach to achieving sustainable tourism, which safeguards the environment while providing a decent livelihood for surrounding communities. This study aims to assess the feasibility level of Taipa Beach tourism in Taipa Village, Lembo District, North Konawe Regency. Unlike previous studies that focus primarily on promotion or visitor statistics, this research applies a comprehensive feasibility framework, offering broader insights into sustainable coastal tourism development. **Methods:** Fieldwork was conducted from September to November 2024, applying the Guidelines for Analyzing the Area of Operation of Natural Tourism Objects and Attractions (ADO-ODTWA) issued by the Director General of PHKA (2003). **Findings:** The results show that Taipa Beach is feasible as an alternative natural tourism area, with an overall feasibility index value of 81.6%. Of the eight criteria assessed, six were declared feasible (attractiveness, accessibility, facilities and infrastructure, security, conditions around the area, and relationships with other tourist attractions), while two criteria were not yet feasible (climate and accommodation). Strategic interventions are therefore required to improve accommodation facilities and develop adaptation measures for non-ideal climatic conditions, such as supporting infrastructure to manage extreme weather. **Conclusion:** Overall, Taipa Beach is considered feasible for sustainable nature-based tourism development, with a high feasibility index of 81.6%. However, improvements in accommodation facilities and climate adaptation measures are essential to enhance its sustainability and resilience as an eco-tourism destination in North Konawe Regency. **Novelty/Originality of this Article:** This study contributes not only to local tourism planning but also to the broader discourse on sustainable tourism and ecotourism feasibility. By integrating multi-dimensional criteria into the feasibility assessment, the research provides a replicable model for coastal tourism development in other regions facing similar challenges.

KEYWORDS: ADO-ODTWA; nature-based tourism; sustainable coastal tourism; Taipa Beach; tourism feasibility assessment.

1. Introduction

Southeast Sulawesi is one of the provinces that has various types of tourist attractions. The types of tourism objects in Southeast Sulawesi are divided into four categories, namely heritage, culture, marine, and ecotourism. However, only a few attractions are widely known because the lack of information available about other tourism objects is considered one of the factors causing tourism objects in Southeast Sulawesi to be less known. Many ways have been taken to advance the tourism industry. One of the ways used is to utilize information technology to increase tourism potential in an area (Ariva et al., 2023).

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At the same time, coastal tourism in Indonesia faces complex challenges, ranging from coastal erosion, pollution, and habitat degradation to weak community involvement in planning and benefit-sharing (Hengky & Kikvidze, 2020). These issues highlight the need for a stronger theoretical and practical foundation in planning coastal tourism development. Butler's Tourism Area Life Cycle (TALC) Model provides a useful framework for understanding how destinations evolve from exploration to potential decline if not managed sustainably. Integrating such models into feasibility assessments ensures that coastal tourism planning is not only descriptive but also anticipatory, capable of identifying risks and opportunities across different stages of destination development.

Coastal tourism areas must therefore be developed with an environmentally sound approach to producing sustainable tourism, which does not damage the environment and provides a decent life for the surrounding community. The basic principles of sustainable tourism are utilizing natural resources optimally while maintaining ecology and conservation, respecting the authenticity of culture and society, and ensuring the long-term sustainability of stakeholders (Insani et al., 2019).

North Konawe is a district that has a high percentage of interest in beach tourism, including Taipa Beach, which is very popular in North Konawe. Not only tourists from Southeast Sulawesi, but also local tourists from Indonesia and abroad choose Taipa Beach as one of the choices to enjoy the beauty of the beach and its environment. Traveling activities, such as beach tourism, have a positive effect because they can create an active and healthy lifestyle physically and mentally. Taipa Beach, located in Taipa Village, Lembo Subdistrict, is a very valuable tourism asset for the people of Southeast Sulawesi, especially for the residents of Kendari City, Konawe, South Konawe, and North Konawe (Fatmawati et al., 2022). Despite the ecological and tourism significance of Taipa Beach, little academic attention has been given to its feasibility as a sustainable ecotourism site. Most existing studies focus on promotion and visitor numbers, rather than integrated feasibility assessments. This highlights the need for scientific contributions that evaluate natural attractions comprehensively using multi-dimensional criteria (Yusnikusumah & Sulistyawati, 2016).

Unregulated tourism activities along coastal areas, including Taipa Beach, may lead to coastal erosion, pollution, and habitat degradation, if not managed with a sustainable framework. Without appropriate planning, the natural features that attract tourists may become degraded, undermining long-term tourism potential and environmental resilience. Tourism development can improve local livelihoods, but requires careful planning to ensure equitable benefit-sharing and community involvement in decision-making. Local communities must be positioned not only as recipients of tourism benefits but also as active participants in the governance of sustainable tourism models.

This study aligns with Indonesia's national tourism strategic plan and the UN Sustainable Development Goals, particularly in promoting inclusive economic growth (SDG 8) and sustainable consumption and production (SDG 12). It also reflects the vision of the 2020–2024 RPJMN, which emphasizes environmental sustainability and inclusive regional development. Reliable feasibility assessments are essential for guiding local government strategies in coastal area planning and tourism zoning. Objective data on physical, social, economic, and environmental aspects of tourism sites are needed to inform evidence-based decisions, minimize risks, and maximize the long-term value of tourism development. Based on this background, it is necessary to conduct research on the feasibility analysis of Taipa Beach natural tourism in Taipa Village, Lembo District, North Konawe Regency. This research needs to be done to provide information about the feasibility of the beach as a tourist destination based on the level of beach feasibility that can be used as a reference in developing Taipa Beach as a tourist spot in North Konawe Regency.

2. Methods

2.1 Place and time

This research was conducted in the area of Taipa Beach, Taipa Village, Lembo District, North Konawe Regency, which is geographically located at 03°43'45'' LS and 122°23'32'' BT. Based on the administrative area, Taipa Village has the following boundaries: To the west, Taipa Village is bordered by Puusiambu Village; to the east, it is bordered by the open ocean; to the south, it shares a boundary with Laimeo Village; and to the north, it is bordered by Labengki Village. Taipa Village lies on the boundary between the Sawa and Lembo sub-districts, forming part of the coastal and marine area of North Konawe Regency. The location is relatively accessible, with a distance of approximately 7 kilometers from the village center to the sub-district capital, 74 kilometers to the regency capital (Wanggudu), and 85 kilometers to the provincial capital of Southeast Sulawesi (Kendari). The total area of the village spans 417 hectares, comprising a mix of coastal ecosystems, residential areas, and small-scale agricultural land.

This site was selected due to its ecological significance and strategic location adjacent to both terrestrial and marine habitats. Taipa Beach is known for its natural beauty, potential for ecotourism, and its role as a habitat for various coastal and marine biodiversity, making it an important location for conservation-focused research. The field research was carried out during the dry season, specifically from September to November 2024, to coincide with optimal weather conditions and to facilitate consistent sampling of environmental data.

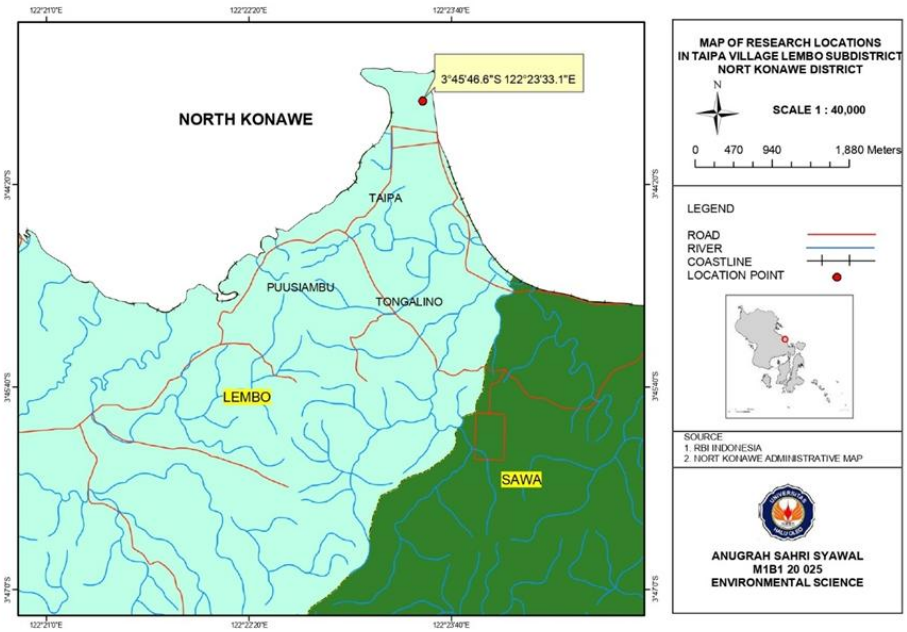

Fig. 1. Map of the research location

2.2 Tools and materials

The material used in this research is a questionnaire, which serves as the primary instrument for data collection. The questionnaire is designed to capture responses from selected informants or respondents, focusing on key variables relevant to the study objectives. It contains both structured (closed-ended) and semi-structured (open-ended) questions to allow for both quantitative and qualitative analysis.

Several tools were utilized to support the research process. Stationery supplies, including notebooks, pens, and forms, were used to manually record questionnaire

responses, field observations, and additional notes. In addition, a digital camera was employed for documentation purposes to capture visual evidence of the research implementation process, such as environmental conditions, respondent interactions, and general field activities. Furthermore, a voice recorder was used to accurately document verbal responses during questionnaire-based interviews, particularly for open-ended questions, thereby minimizing the risk of data loss or misinterpretation during manual transcription. Finally, a Global Positioning System (GPS) device was utilized to record precise geographical coordinates of the research location and specific points of interest, which were essential for mapping the study area and supporting geographic data analysis.

2.3 Population and sample

The population in this study refers to the entire group of individuals or elements that are the focus of the research. It includes all relevant subjects from which data can be collected in relation to the research objectives. Specifically, the population in this study consists of three main groups: visitors to Taipa Beach, tourism managers involved in managing the site, and residents of Taipa Village who are directly or indirectly affected by tourism activities. From this population, a sample was drawn to represent the broader group, enabling focused data collection without surveying the entire population. The research sample functions as a representative subset, selected to provide insights that can be generalized to the larger population within acceptable limits of accuracy.

For the community sample, 27 household heads (KK) from Taipa Village were selected based on the sample size determination guidelines proposed by Arikunto (2006). Arikunto suggests that when the population size is fewer than 100, all members should be included as the sample. However, when the population exceeds 100, a representative sample of 10%–25% may be selected, depending on the required level of precision. In this study, the selection of 27 household heads was considered sufficient to represent community perspectives on tourism development and its impacts. Meanwhile, the visitor sample was determined using accidental sampling, a non-probability sampling technique in which respondents are selected based on chance encounters during the research period. This method is particularly suitable in tourist areas where visitors vary each day. A total of 30 respondents were obtained using this technique, which allowed the researcher to gather real-time perceptions, experiences, and satisfaction levels from actual visitors present at the site. This combination of sampling techniques enabled the research to gather data from different perspectives — local residents, tourism stakeholders, and tourists — thereby providing a comprehensive understanding of the dynamics surrounding tourism activities in Taipa Village.

2.4 Research variables

The operationalization of these indicators is based on the Guidelines for the Analysis of Operational Areas of Natural Objects and Attractions (ADOODTWA) issued by the Ministry of Forestry (2003). Each criterion is assigned a specific weight according to its level of importance. Attractiveness and accessibility receive higher weights as they have a direct influence on visitor choices and destination competitiveness, whereas accommodation and climate are given relatively lower weights because they function as supporting, though still important, components. This weighting approach allows the resulting feasibility index to reflect both primary tourism attributes and enabling factors. Nevertheless, the weighting rationale is context-dependent and may require adjustment when applied to coastal tourism areas with different ecological or socio-economic characteristics. The variables examined in this study include attractiveness, accessibility, climate, accommodation, supporting facilities and infrastructure, security, surrounding environmental conditions, and linkages with other tourist attractions. A description of these research variables related to the potential of Taipa Beach as an alternative tourism destination is presented in table 1.

Table 1. Explanation of variables related to beach potential as an alternative tourism object

Variables	Indicator/criteria	Data source
Attractiveness (weight 6)	Beauty; Safety; Sand type and color; Variety of activities; Comfort; Hygiene.	Observation, questionnaire.
Accessibility (weight 5)	Road conditions; Distance; Road type; Travel time from city center.	Observation, documentation, maps, clock.
Climate (weight 4)	Air temperature in dry season (oC); Number of dry months on average per year; Average humidity per year (%).	Data secondary.
Accommodation (weight 3)	Number of accommodations; Number of rooms.	Observation, documentation.
Means and infrastructure (weight 3)	Supporting facilities; Supporting infrastructure.	Observation, documentation.
Security (weight 5)	Security	Observation, questionnaire.
Conditions around the area (weight 5)	Regional layout; Unemployment rate; People's livelihoods; Education; Community attitudes.	Observation, questionnaire.
Relationship with other attractions (weight 1)	Similar tours; Non-similar tourism.	Observation, questionnaire.

Source: Guidelines for the Analysis of Operation Areas of Natural Objects and Attractions (ADOODTWA) Ministry of Forestry (2003)

2.5 Data types and sources

Quantitative data refer to information that can be directly measured or calculated and expressed numerically, such as age, the number of accommodation units, the unemployment rate (%), and travel distance or time (km). In contrast, qualitative data consist of descriptive information presented in verbal or categorical form rather than numerical values. In this study, qualitative data were collected through questionnaires administered to respondents and focused on eight variables of natural tourism attractions: attractiveness, accessibility, climate, accommodation, security, supporting facilities and infrastructure, surrounding environmental conditions, and linkages with other tourist attractions.

The data sources used in this research comprise primary and secondary data. Primary data were obtained directly from field activities, including interviews or questionnaires with respondents and direct physical observations of the Taipa Beach tourism area, which were subsequently processed by the researchers. Secondary data were gathered from relevant agencies or institutions related to the study, encompassing information on the geographical characteristics of the research area, climate and weather, topography, and socio-economic conditions, as well as supporting documents such as regional regulations of North Konawe Regency, spatial planning documents (RTRW), and regional tourism development master plans (RIPPDA).

2.6 Data analysis

Data analysis was carried out using the method of assessing the feasibility of tourist areas with assessment criteria according to the Guidelines for the Analysis of the Area of

Operation of Natural Tourism Objects and Attractions (ADOODTWA) of the Ministry of Forestry in 2003 in accordance with the predetermined values for each criterion.

$$S = N \times B \quad \text{(Eq. 1)}$$

First, S represents the score or value of a criterion; next, N refers to the sum of the values of the elements within the criteria; while B denotes the weight value. Subsequently, the score or value obtained is compared with the maximum score of the corresponding criterion. The feasibility index value of a tourist attraction can be calculated using the formula:

$$I = \frac{ST}{SM} \times 100 \quad \text{(Eq. 2)}$$

Furthermore, ST refers to the total score of the criteria, while SM denotes the maximum possible score of the criteria. According to Karsudi *et al.,* 2010, after the comparison, the feasibility index in percentage is obtained. The feasibility index in a natural tourism area is classified as follows. First, a feasibility index greater than 66.6% indicates that the area is worth developing; meanwhile, an index ranging from 33.3% to 66.6% suggests that the area is not worth developing; finally, a feasibility index of less than 33.3% indicates that the area is not feasible to develop.

3. Results and Discussion

3.1 Attractiveness

In this assessment, the attractiveness criterion is assigned a weight of 6. Attractiveness represents the factor that motivates people to visit and experience a location directly due to its appealing features. A summary of the weighting for the attractiveness indicators is presented in table 2.

Table 2. Results of assessment of natural tourism attraction indicators at Taipa Beach

Element/sub-element	Weight	Value	Total score
Beauty	6	20	120
Safety/security	6	25	150
Sand type and color	6	25	150
Variety of activities	6	20	120
Hygiene	6	30	180
Beach width	6	15	90
Comfort	6	25	150
Total		160	960

Accessibility assessment is an important factor that needs to be considered to make it easier for visitors to travel from their place of residence to the location of the tourist attraction. This aligns with the statement of Trihatmodjo (2017), who emphasizes that accessibility refers to the ease of reaching tourist destinations, whether in terms of geographical distance, travel time, or the availability and quality of transportation facilities leading to the destination. High accessibility can enhance visitor comfort and efficiency, thereby becoming a supporting factor in the development of a tourist area. In this study, the assessment criteria for accessibility are categorized as feasible to develop, based on observations of the existing infrastructure. The road leading to the tourist site is in good condition, dominated by paved (asphalt) roads that allow smooth vehicular access. However, despite the good road conditions, the location still poses a challenge due to its considerable distance from the provincial capital, which is approximately 61 kilometers. This distance typically requires a travel time of around 1 to 2 hours, depending on traffic conditions and transportation mode used.

This situation illustrates that although infrastructure may be supportive, geographical distance and travel duration remain limiting factors that could influence the frequency and volume of tourist visits. Budiarti et al., (2021) highlight that ease of accessibility significantly influences tourist visitation patterns, especially when compared to destinations with lower accessibility levels, which may be less attractive despite having natural or cultural appeal. Thus, improving or maintaining good accessibility—both in terms of road quality and travel efficiency—plays a critical role in supporting the sustainable development and attractiveness of tourist destinations such as Taipa Beach.

3.2 Climate

Based on the assessment of climatic condition criteria, including dry-season air temperature, average number of dry months per year, and average annual humidity, the overall climatic suitability score reached 240. The dry-season temperature parameter scored 20, as air temperatures in Konawe Regency range from 25–27 °C, whereas the ideal temperature for tourism activities is around 20–21 °C. The average number of dry months per year scored 10, with intense sunshine in northern Konawe Regency lasting approximately five months, namely from September to November 2023 and from April to August 2024. The average annual humidity parameter scored 30, since the mean relative humidity in Konawe Regency is approximately 78.6%. The climate criteria in this assessment are weighted 4. A recapitulation of the weighting of climate indicators is presented in table 3.

Table 3. Climate indicator assessment results

Element/sub-element	Weight	Value	Total score
Air temperature in the dry season	4	20	80
Average number of dry months per year	4	10	40
Average humidity per year	4	30	120
Total		60	240

The impact of climate change on sustainable nature-based tourism development, particularly concerning beaches, is profound and multifaceted. Coastal areas are increasingly vulnerable to erosion, rising sea levels, and extreme weather events, which threaten both the natural environment and tourism infrastructure. This necessitates a comprehensive assessment of feasibility for sustainable beach tourism, focusing on resilience and adaptation strategies. Studies indicate significant coastline retreat due to climate change, affecting beach area and quality, as seen in Portugal's Ofir beach (Silva et al., 2024). Coastal tourism infrastructure is at risk from flooding and erosion, particularly in developing countries like Ghana, where resorts face destruction from sea erosion (Aikins, 2024). Implementing integrated coastal development planning and building sea defense walls are crucial for protecting beach resorts (Aikins, 2024). Transitioning to green infrastructure and promoting ecosystem conservation can enhance resilience against climate impacts (Tanrısever et al., 2024). Assessing the carrying capacity of beaches, as demonstrated in Wedi Ireng, is essential to ensure that tourism does not disrupt local ecosystems (Ariani et al., 2019). While the challenges posed by climate change are significant, they also present opportunities for innovation in sustainable tourism practices. By prioritizing resilience and adaptive strategies, the tourism sector can continue to thrive in harmony with the environment.

3.3 Accommodation

Accommodation criteria in this assessment are given a weight of 3. Accommodation is a facility in the form of the number of accommodations and the number of rooms available at a tourist location within a radius of 15 km from the tourist location. So that tourists are

interested in visiting because they have a place to rest or stay overnight. A recapitulation of the weighting of accommodation indicators is presented in table 4.

Table 4. Assessment results of accommodation indicators in Taipa Beach nature tourism area

Element/sub-element	Weight	Value	Total score
Number of accommodations	3	30	90
Number of rooms	3	10	30
Total		40	120

Accommodation is one of the criteria needed in tourism activities, especially for tourists from distant areas. If the hotel/homestay is poor quality, tourists will be uncomfortable and will reduce the number of visits to the area, resulting in a decrease in the number of tourists (Ahmad, 2014). Based on information obtained from the manager and those encountered directly, there are three inns around the location of the tourist area with a radius of 15 km, including a pittza shop that offers three bedrooms, and one inn not far from the tourist location that has one bedroom. In addition, there is one in that is 13 km or about 19 minutes from Taipa Beach, this inn is called Sawa Beach Resort with 17 rooms. The limited types of accommodation often make visitors confused about finding a place to stay so that the local community provides houses to stay if there is a request from visitors. From the results of observations to the community, 2 houses are usually used as homestays by the community. According to Chusmeru and Noegroho (2010), a homestay is based on the concept of living together with local residents, allowing tourists to directly experience and learn about the daily life of the village community during their stay.

Accommodation in beach nature tourism plays a vital role in enhancing visitor experiences while promoting environmental sustainability. The proximity of accommodations to coastal areas significantly affects their financial performance, with seaside hotels reporting higher revenues due to their attractive and strategic locations (Wang et al., 2024). Moreover, the post-pandemic shift in traveler preferences has increased the demand for safe and health-conscious lodging near natural attractions such as beaches ("A tourism accommodation perspective in a post-pandemic nature-based tourism development context", 2023). In this context, accessibility to beach environments becomes a key factor in attracting tourists and enhancing the competitive advantage of coastal accommodations.

The Island and Beach-Based Model emphasizes the therapeutic benefits of coastal environments by promoting health tourism linked to nature-based experiences (Agarwal & Parashar, 2024). This model supports wellness practices that draw upon the natural beauty and tranquility of beach settings for holistic healing and rejuvenation. While beach accommodations may thrive economically, they also face risks associated with environmental degradation and over-tourism. Hence, a balanced development strategy that harmonizes economic growth with ecological preservation is crucial to ensure the long-term sustainability of beach destinations.

3.4 Supporting infrastructure

The criteria for facilities and infrastructure in this assessment are given a weight of 3. Facilities and infrastructure in the Taipa Beach natural tourism area that are assessed are supporting facilities and infrastructure along the road to the tourist attraction area. A recapitulation of the weighting of facilities and infrastructure indicators is presented in table 5.

Table 5. Assessment results of Taipa Beach nature tourism facilities and infrastructure

Element/sub-element	Weight	Value	Total score
Means	3	30	90
Infrastructure	3	30	90
Total		60	180

Assessment of the facilities and infrastructure component which is one of the supports that makes it easier for visitors to be able to enjoy the location of tourist attractions in general directly or indirectly. The criteria for facilities and infrastructure in the assessment of the criteria elements have a high enough value and are categorized as feasible to develop because they can support the convenience and comfort of visitors in traveling. Supporting facilities in the tourist area include accommodation, restaurants / drinks, gazebos, places of worship, bathrooms. While the available supporting infrastructure includes roads, parking areas, electricity networks, drinking water networks, telephone networks. Supporting infrastructure plays a critical role in enhancing the quality and sustainability of beach tourism, as it directly affects visitor satisfaction and contributes to the economic development of local communities. Key components of effective infrastructure include accessibility, amenities, and attractions, all of which collectively improve the tourist experience while fostering sustainable growth. In terms of accessibility, transportation infrastructure is fundamental. Upgrading road networks, as seen in the Pasir Kencana Beach project, helps improve connectivity and facilitates easier tourist access (Santoso & Mahendriya, 2024). Similarly, the availability of reliable public transportation can significantly boost tourist numbers, as evidenced in various well-managed coastal destinations.

Amenities also hold substantial importance. Basic facilities such as clean restrooms, adequate parking, and food stalls are essential in meeting visitor needs. For example, research at Glagah Wangi Beach indicated that 75% of respondents rated its basic facilities as very good, underscoring their role in attracting and retaining tourists (Zulfa & Sudrajat, 2023). However, complementary services—such as equipment rentals or guided tours—are often underdeveloped, limiting the full potential of beach destinations (Zulfa & Sudrajat, 2023). Furthermore, the quality and sustainability of beach attractions are vital. The implementation of environmental management strategies, such as assessing tourist carrying capacity, is necessary to prevent overexploitation and maintain ecological integrity (Diniz et al., 2023; Diniz et al., 2024). Sustainable beach management practices, exemplified by initiatives like the Blue Flag certification, also demonstrate the long-term benefits of prioritizing environmental standards (Diniz et al., 2023).Nevertheless, while infrastructure development is necessary, it must be carefully balanced with environmental sustainability. Overdevelopment can lead to habitat destruction and resource depletion, undermining the natural appeal of beach destinations and compromising their long-term viability (Diniz et al., 2024). Therefore, a strategic approach that integrates infrastructure enhancement with ecological stewardship is essential for the sustainable future of beach tourism.

3.5 Security

The security assessment of the beach natural attractions shows that for the sub-element of disturbing animals based on the results of the questionnaire found at the research location, not a few visitors who came later felt disturbed by the presence of farm animals roaming around the beach, especially in the morning visitors who were camping were often approached by animals such as cows which made them a little uncomfortable being in the beach area, there are no dangerous sites and unstable land, there is rarely a disturbance of public security, there is no illegal logging that occurs around the tourist area. Security criteria in this assessment are given a weight of 5. A recapitulation of the weighting of tourist attraction security indicators is presented in table 6.

Table 6. Assessment results of security indicators of Taipa Beach natural tourism area

Element/sub-element	Weight	Value	Total score
Security	5	60	180
Total		60	180

Tourist site security is a multidimensional issue involving the physical and psychological safety of tourists, service providers, and local communities. Security has

become a critical factor in determining the attractiveness and competitiveness of tourist destinations, particularly in response to global challenges such as terrorism, natural disasters, and the COVID-19 pandemic. Research increasingly highlights that ensuring tourist safety not only prevents harmful incidents but also enhances the destination's image, contributes to visitor satisfaction, and encourages repeat visits (Pérez-Labrada et al., 2023; Amaro et al, 2023). Recent trends show a growing scholarly interest in this topic, with 445 academic records analyzed from 1989 to 2021, emphasizing key areas such as risk perception, safety engineering, and the impact of the pandemic on tourist behavior (Pérez-Labrada et al., 2023; Amaro et al, 2023). The effective implementation of security strategies requires a comprehensive understanding of potential threats and risks, supported by strong political commitment from stakeholders (World Tourism Organization, AUDA–NEPAD, & UEMOA, 2024). Furthermore, investment in safety initiatives is essential for building a resilient tourism sector, especially in regions vulnerable to crises (World Tourism Organization, AUDA–NEPAD, & UEMOA, 2024). Conversely, some critics argue that the focus on tourist security may perpetuate inequalities and reinforce colonial power dynamics, particularly in the Global South. This perspective suggests that security practices can sometimes prioritize the fears of international tourists over the needs of local communities, complicating the narrative of tourism as a universally beneficial practice (Becklake, 2023).

3.6 Conditions around the area

The evaluation of the conditions surrounding the tourist attraction indicates that the area is suitable for development. Six elements were considered in assessing the criteria for the surrounding conditions of the Taipa Beach natural tourism area. These include the spatial arrangement of the site within Taipa Village, which is appropriate as it complies with the established spatial plan (RTRW). This is evidenced by the availability of supporting infrastructure such as roads, clean water supply, and pedestrian sidewalks along the beach. In addition, the primary livelihoods of the Taipa Village community are farming and fishing, with an unemployment rate of 26%. The average educational attainment of the local population is predominantly at the senior high school level or higher. Furthermore, the local community shows strong support for the development of this natural tourism attraction, viewing it as a potential source of income and economic improvement. The criteria for conditions around the area in this assessment are given a weight of 5. A recapitulation of the weighting of indicators of conditions around the area is presented in table 7.

Table 7. Results of the assessment of indicators of conditions surrounding the Taipa Beach natural tourism area

Element/sub-element	Weight	Value	Total score
Object area layout	5	30	150
Unemployment rate	5	30	150
People's livelihoods	5	20	100
Education	5	30	150
Community response	5	30	150
Total		140	700

Community-Based Tourism (CBT) development emphasizes the active participation of local communities in tourism activities, fostering sustainable practices that benefit both the economy and the environment. This approach not only enhances local cultural identity but also promotes conservation of natural resources. The success of CBT relies on community engagement, effective planning, and the establishment of tourism awareness groups. Active participation from residents is crucial. For instance, in Kampung Anyaman, community members participate in educational tours, enhancing their skills and knowledge while preserving local crafts (Nurwahyuliningsih et al., 2024). CBT promotes sustainable tourism by conserving natural resources and protecting cultural heritage. This is evident in medical

tourism initiatives that leverage local resources while ensuring community benefits (Monika et al., 2024). The development of tourism in areas like Pading Lake relies on social capital, where trust and community networks facilitate collaboration among residents to achieve common goals (Anggrainy et al., 2023). CBT can significantly improve local economies by creating jobs and business opportunities, as seen in Ngadas Village, where tourism development is linked to local cultural attractions (Prasetyo et al., 2024).

3.7 Relationship with other attractions

Assessment criteria on relationships with other tourist attractions are categorized as feasible to develop. This criterion is something that needs to be considered so that visitors can get information about other tourist attractions around it, which can increase the satisfaction of visitors traveling around the region, this is in line with the opinion of Yuniarti et al, (2018) asserts that the development of tourist areas needs to pay attention to the existence of other similar / non-similar attractions in the vicinity up to a radius of 50 km, so that they can be packaged as a tour package so that they support each other's visits. From the results of the study, there are two similar attractions, including Punggulawu Beach, which is 11 km away, and Wale Beach, which is 12.2 km away, while for non-similar tourism, there is one tour, namely the Wawolesea Hot Springs, which is 19 km away. The three tours are found at a radius of 50 km. From the table, similar tours get a value of 60 because there are only two similar tours with the research location, while nonsimilar tours get a value of 95 because they have one non-similar tour. The elements assessed in the criteria of relationships with other tourist attractions are based on the existence and number of other tourist attractions within a radius of 50 km from the assessed tourist attraction. A recapitulation of the weighting of indicators of relationships with other tourist attractions is presented in table 8.

Table 8. Assessment of relationship indicators with other tourism objects Taipa Beach nature tourism

Element/sub-element	Weight	Value	Total score
Similar	1	60	60
Not similar	1	95	95
Total		155	155

The clustering and development of tourism attractions represent a strategic approach to enhancing the competitiveness and long-term sustainability of tourism destinations. By grouping tourism-related enterprises and institutions within a specific geographic area, this model fosters synergy, encourages innovation, and drives economic development. Such clustering not only improves service efficiency but also enables shared resource use, collaborative marketing, and integrated tourism offerings that benefit the broader region. Tourism clusters are characterized by the geographical concentration of interrelated businesses and institutions that operate nearby, enabling them to create operational efficiencies and mutual benefits (Livandovschi & Iordache, 2024). These clusters play a significant economic role by stimulating local economies, attracting investment, and generating employment opportunities in the tourism sector (Kuchumov et al., 2018). Globally, the cluster-based approach to tourism is gaining prominence and is increasingly integrated into national and regional development agendas. Its influence can be observed in the shaping of economic and social policies in diverse regions (Kuchumov et al., 2018). Various countries have implemented cluster initiatives to enhance destination competitiveness and better position themselves within global tourism value chains (Niyazbayeva & Yessengeldina, 2016). Despite its promise, the development of tourism clusters often faces significant hurdles, including weak infrastructure, limited institutional support, and fragmented stakeholder collaboration (Niyazbayeva & Yessengeldina, 2016). Therefore, strong policy support is crucial to ensure effective coordination between public and private actors.

3.8 Recapitulation of Taipa Beach nature tourism feasibility assessment

This research was carried out through direct field observations at Taipa Beach to determine the site's feasibility. The assessment covered several components, including attractiveness, accessibility, climate, accommodation, supporting facilities and infrastructure, security, surrounding area conditions, and linkages with other tourist attractions. The results of these evaluations were subsequently analyzed to determine whether the Taipa Beach area is feasible, less feasible, or not feasible for development. The outcomes of the Taipa Beach tourism area feasibility assessment are presented in table 9.

Table 9. Assessment results of objects and attractions of Taipa Beach natural tourism area

Element/sub-element	Weight	Value	Total score	Max score	Index value	Feasibility level
Attractiveness	6	160	960	1230	78.0	Worth
Accessibility	5	105	525	600	87.5	Worth
Climate	4	60	240	360	66.6	Not yet feasible
Accommodation	3	40	120	180	66.6	Not yet feasible
Infrastructure	3	60	180	180	100	Worth
Security	5	25	125	150	83.3	Worth
Conditions around the area	5	140	700	750	93.3	Worth
Relationship with other objects	1	155	155	200	77.5	Worth
Eligibility level				3650	81.6	Worth developed

From the assessment results, facilities and infrastructure obtained the highest index value (100%), indicating that the supporting facilities in this tourist area have met eligibility standards optimally. Conditions around the area also have a high index (93.3%), indicating an environment that supports tourism development. In addition, accessibility (87.5%) and security (83.3%) are also considered feasible, indicating that this location is quite easy to reach and has a good level of security for visitors.

However, there is one aspect that has not met the eligibility standards, namely, accommodation and climate, with the same index value (66.6%), which is included in the unfit category. This indicates that lodging facilities or places to stay for tourists still need to be improved to support the overall development of the Taipa Beach natural tourism area, and adaptation strategies need to be developed to deal with non-ideal climate conditions, such as providing supporting facilities to deal with extreme weather. Overall, the assessment results show that this beach has high potential to be developed as a nature tourism destination, with a note that the climate and accommodation aspects need more attention to increase the overall attractiveness of the area.

Infrastructure plays a crucial role in shaping tourism competitiveness, as it directly influences both visitor perceptions and economic outcomes. The integration of hard infrastructure, such as transportation networks and accommodation facilities, and soft infrastructure, including government policies and healthcare services, is essential to enhance a destination's appeal. Efficient transportation systems by land, air, and sea significantly improve accessibility to tourist sites, thereby increasing visitor numbers and satisfaction (Costea et al., 2017). Similarly, the availability and quality of lodging options are closely linked to the tourist experience and the overall competitiveness of a destination, as demonstrated in Southeast Europe, where an expansion in hotel capacity has positively impacted tourism development (Jovanović & Ilić, 2016). Moreover, sound tourism policies and effective safety measures contribute to a secure and welcoming environment, which is a key factor in attracting tourists (Chan et al., 2023). In today's context, access to reliable healthcare services is also becoming increasingly important in influencing tourists' destination choices (Chan et al., 2023). While infrastructure remains a foundational element of tourism competitiveness, other factors such as cultural heritage and communication technologies also play a vital role in enhancing destination attractiveness and overall performance (Grassini & Magrini, 2018; Purwono et al., 2024).

Based on the results of the feasibility assessment, Taipa Beach in Taipa Village, Lembo District, North Konawe Regency demonstrates a high potential to be developed as a sustainable natural tourism destination, with an overall feasibility index value of 81.6%. Six of the eight criteria—attractiveness, accessibility, facilities and infrastructure, security, surrounding conditions, and linkages with other attractions—were rated as feasible, while two aspects, climate and accommodation, remain not yet feasible. The relatively high scores for attractiveness, accessibility, and supporting infrastructure indicate that Taipa Beach already possesses strong foundations to attract visitors. Improvements in these areas are likely to positively influence visitor behaviour by increasing the frequency of visits, length of stay, and repeat visitation, all of which are critical to sustaining tourism demand. However, gaps in accommodation and climate-related adaptation need urgent attention. Without adequate lodging, visitors may limit their stay, reducing potential economic benefits for local businesses. By investing in environmentally friendly accommodations and strengthening resilience to climate variability, the area can foster longer stays, higher visitor satisfaction, and improved competitiveness.

From a community perspective, strengthening tourism infrastructure and services can enhance local livelihoods through job creation, homestay programs, and opportunities for small businesses such as local food stalls or craft markets. Integrating Community-Based Tourism (CBT) approaches ensures that local residents directly benefit from tourism, which can reduce unemployment, increase household incomes, and build social capital. This, in turn, creates a stronger sense of ownership among the community, which is essential for maintaining cultural authenticity and supporting environmental stewardship. In terms of conservation, improvements in facilities, security, and governance also reduce risks of environmental degradation, over-tourism, and visitor-related disturbances. For instance, proper waste management, monitoring visitor capacity, and implementing eco-certification standards can ensure that increased visitation does not compromise the natural beauty and ecological functions of the coastal environment. Linking Taipa Beach with nearby attractions further diversifies tourism flows, reducing pressure on a single site while fostering regional tourism clustering that promotes shared conservation and sustainable growth.

Overall, the findings not only confirm Taipa Beach's feasibility for tourism development but also highlight clear policy implications. Local governments and tourism managers should prioritize: Investment in climate-resilient and sustainable accommodation facilities; Integration of community livelihoods into tourism planning and; Implementation of conservation-oriented infrastructure and visitor management strategies. By doing so, Taipa Beach can evolve into a leading eco-tourism destination that balances economic growth, community well-being, and environmental conservation, in alignment with broader sustainable tourism development goals at the regional and national levels.

4. Conclusions

Based on the research findings, Taipa Beach in Taipa Village, Lembo District, North Konawe Regency shows strong potential as an alternative natural tourism destination and is categorized as feasible for development, with an overall feasibility index of 81.6%. Of the eight criteria evaluated, six were assessed as feasible, namely attractiveness, accessibility, facilities and infrastructure, security, surrounding environmental conditions, and linkages with other tourist destinations. In contrast, the climate and accommodation criteria were found to be not yet feasible. To improve these aspects, strategic interventions are required from local authorities and tourism managers, particularly in enhancing and expanding accommodation facilities and implementing adaptive measures to address less favorable climatic conditions, such as providing supporting infrastructure for extreme weather events.

Strengthening these aspects is not only essential for enhancing the overall attractiveness of Taipa Beach, but also aligns with broader sustainable tourism goals. By

improving accommodation quality, ensuring climate resilience, and integrating local community participation, Taipa Beach can support long-term economic benefits, environmental protection, and cultural preservation. In policy terms, these findings highlight the need for targeted investment in infrastructure, the integration of climate adaptation into tourism planning, and the promotion of sustainable practices to position Taipa Beach as a leading and resilient eco-tourism destination in North Konawe Regency.

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Informed Consent Statement
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Data Availability Statement
The data presented in this study are available from the corresponding author upon reasonable request.

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The authors declare no conflict of interest.

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