

## Management of Marine Ecotourism in Pangandaran Beach, West Java, Indonesia

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### Abstract

Pangandaran Regency is one of the regions in West Java Province. West Java Province is geographically located on the southern route of West Java and this research objective is known for its many tourism potentials, especially beach tourism and marine ecotourism. Natural resources, human resources, the beauty of the beach, living ecosystems, regional environment, and other ecotourism potentials become integral parameters of marine ecotourism. The research was carried out in June-July 2024. Pangandaran Regency is directly facing the Indian Ocean because its area is in the South of Java. Java. Pangandaran Regency is famous for several beaches that can be used as tourist attractions, including as a tourist attraction including Batu Karas Beach, West and East Pangandaran Beach, and Batu Hiu Beach. This research uses a survey method and observation and comprehensive descriptive. Criteria for each station of beach tourism and marine ecotourism were determined using Analytical Hierarchy Process (AHP) with pair wire comparison. The result indicated that all locations are suitable for beach tourism and only on West and East Pangandaran Beach and Batu Karas categories are suitable for marine ecotourism. The variety of marine ecotourism in Pangandaran has increased. Integrated Coastal Zone Management in Pangandaran should be improved. Pangandaran is the best tourist destination in West Java Province, especially on marine ecotourism for sustainable tourism.

**Keywords:** Pangandaran, Natural Resources, AHP, Marine Ecotourism, Sustainable Tourism

### INTRODUCTION

Pangandaran Regency, located within the West Java Province of Indonesia, sits along the southern coastal route of the province (Kiper, 2013). The region is well-known for its tourism potential, particularly for its beach tourism and marine ecotourism (Honey, 2008). Pangandaran's natural appeal lies not just in its scenic beaches, but also in its vast natural resources, diverse ecosystems, and the beauty of its marine life. These aspects, combined with the hospitable human resources and the unique regional environment, contribute to the ecotourism allure of the area. The coastal features and the rich biodiversity present significant opportunities for tourism that aligns with environmental conservation and local culture, making Pangandaran an area ripe for sustainable tourism development.

Despite the reputation of Pangandaran as a beach destination, there is a recognized need to systematically assess and determine the suitability of its various locations for tourism expansion (Fennell, 2001). The beaches vary in their characteristics and potential for supporting marine ecotourism, which necessitates a thorough examination of their respective capacities for tourism development. This research, therefore, sets out to evaluate these locations in Pangandaran Regency, aiming to identify which beaches hold the greatest promise for both beach tourism and marine ecotourism. Such a focus is crucial for optimizing the natural potential of these coastal areas while also ensuring that development aligns with principles of sustainability and conservation.

The significance of this study is grounded in its ability to contribute to the sustainable management of Pangandaran's natural coastal assets. By assessing and identifying the potential of each beach as a tourist destination, this research provides vital information that can guide the development and implementation of sustainable tourism strategies. Sustainable tourism not only supports local economies and communities but also ensures the conservation of marine and coastal ecosystems, which are crucial for maintaining the environmental integrity of the region.

Through this research, the goal is to present a comprehensive evaluation of beach and marine ecotourism potential that can facilitate well-informed decision-making for tourism planning in Pangandaran. By understanding the natural assets and tourism capacities of the region, stakeholders can make informed choices that balance economic benefits with environmental sustainability. This study, therefore, aims to foster an approach to tourism that both utilizes and preserves the unique natural environment of Pangandaran.

Moreover, the research aims to highlight the importance of Integrated Coastal Zone Management (ICZM) in Pangandaran, an approach that encourages the sustainable development of coastal areas by balancing environmental conservation, local community needs, and tourism activities. The findings of this study are intended to support the improvement of ICZM practices, providing recommendations that can enhance the sustainable use of coastal and marine resources.

In summary, Pangandaran Regency, with its rich natural beauty and cultural heritage, stands as a key area for the development of sustainable tourism, particularly in the sectors of beach tourism and marine ecotourism. This study seeks to contribute to the effective and sustainable development of these sectors, ensuring that tourism in Pangandaran benefits the local economy while also preserving the natural and environmental integrity of the region for future generations.

## **METHODS**

The research for this study was carried out over a two-month period, from June to July 2024, within Pangandaran Regency (Cohen, 1987). Pangandaran is strategically located along the southern coast of Java, facing directly onto the Indian Ocean. This coastal positioning makes it an ideal area for studying beach tourism and marine ecotourism due to its diverse coastal environments and marine resources. The choice of Pangandaran as the study area is based on its significance as a tourism hub and its potential for sustainable ecotourism development, given its geographical features and rich marine biodiversity.

In order to comprehensively evaluate the tourism potential of the region, several prominent beaches were selected as sampling locations for detailed study. These include Batu Karas Beach, West and East Pangandaran Beach, and Batu Hiu Beach, each of which offers distinct ecological and tourism characteristics. The research design incorporated a combination of survey methods, direct field observations, and thorough descriptive analyses to capture the nuances of each site. To systematically determine and analyze the suitability of these locations for beach tourism and marine ecotourism, the Analytical Hierarchy Process (AHP) was employed. This method, using pairwise comparisons, allowed for the structured assessment of various criteria, ensuring that each location's potential for tourism development was evaluated comprehensively and objectively. This analytical approach facilitated the identification of key factors contributing to sustainable tourism and provided a clear framework for comparing different sites within Pangandaran.

## RESULTS

The findings of this study reveal that all the beaches assessed are highly suitable for beach tourism. The combination of natural beauty, accessibility, and recreational potential makes each location appropriate for visitors seeking beach activities and relaxation. These sites offer favorable conditions for beach tourism, including clean sand, scenic views, and adequate infrastructure, thus confirming their viability as tourist destinations.

However, when the suitability for marine ecotourism is specifically considered, the results show a more selective categorization. Only West and East Pangandaran Beach, along with Batu Karas Beach, were identified as being suitable for marine ecotourism. These beaches possess unique ecological features, such as rich marine biodiversity and conservation potential, making them ideal for ecotourism activities. These activities, which include snorkeling, diving, and wildlife observation, align with the principles of sustainable tourism, aiming to promote environmental education and conservation while offering recreational opportunities.

Additionally, the study observes that there has been an increase in the diversity of marine ecotourism activities in Pangandaran. This growth reflects the region's emerging potential as a sustainable tourism destination, with a variety of options for tourists interested in nature-based activities. Such developments underscore Pangandaran's capability to offer a broader range of ecotourism experiences, contributing to the promotion of sustainable tourism and enhancing the region's appeal as a destination for environmentally conscious travelers. The findings suggest that with proper management and conservation efforts, Pangandaran can continue to expand its marine ecotourism offerings while preserving its natural resources.

## DISCUSSION

The research highlights the necessity for improvements in Integrated Coastal Zone Management (ICZM) in Pangandaran to facilitate the development of sustainable tourism. ICZM is an approach that balances environmental protection, economic development, and social well-being within coastal zones. In Pangandaran, the current management practices require enhancement to align better with sustainable tourism goals, particularly given the region's increasing popularity as a tourist destination. Effective ICZM would help in mitigating the environmental impacts of tourism activities, ensuring that the natural coastal resources are conserved and utilized responsibly, thereby supporting long-term ecological health and community livelihoods.

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When compared to other regions within West Java, Pangandaran emerges as a leading tourist destination, particularly for its marine ecotourism potential. The unique characteristics of its coastal areas—pristine beaches, vibrant marine life, and natural beauty—set it apart from other locations in the province. The study's findings underscore the potential for sustainable tourism growth in Pangandaran, suggesting that with appropriate management and development, the area could become a model for sustainable marine ecotourism. This distinction is not only important for Pangandaran's tourism industry but also for the overall tourism strategy in West Java, positioning the regency as a key contributor to the province's tourism sector.

Based on the research outcomes, several future recommendations are proposed to enhance the sustainable management of tourism in Pangandaran. Firstly, it is essential to implement policies that promote the conservation of coastal and marine resources. This includes establishing regulations to control tourism activities that could harm the environment, such as overfishing, pollution, or habitat

destruction. Secondly, fostering community engagement and awareness is crucial; local communities should be involved in tourism development and conservation efforts, empowering them to protect their environment while also benefiting from tourism's economic opportunities.

In addition, developing and promoting environmentally friendly tourism practices is recommended to align with sustainable tourism principles. This might involve encouraging businesses to adopt eco-friendly operations, such as waste reduction, sustainable use of resources, and environmentally responsible accommodation and activity options. Another key recommendation is the improvement of infrastructure and facilities to support sustainable tourism. This includes the development of tourist facilities that are designed with ecological considerations, as well as improving access to information about ecotourism opportunities for tourists to raise awareness about sustainable practices.

Furthermore, it is recommended to conduct continuous monitoring and assessment of tourism impacts on the environment. Regular evaluations would enable authorities to identify any negative consequences of tourism and take corrective actions in a timely manner. Such assessments would also contribute to the ongoing improvement of ICZM practices, ensuring that coastal and marine areas are managed adaptively in response to emerging challenges and opportunities.

In summary, Pangandaran holds substantial potential as a sustainable tourism destination in West Java, particularly for marine ecotourism. However, achieving this potential requires concerted efforts to enhance ICZM, implement sustainable tourism practices, and involve the local community in conservation and tourism development. These efforts are crucial to balancing tourism growth with environmental protection, ensuring that Pangandaran's natural beauty and marine resources are preserved for future generations while continuing to support economic development and visitor satisfaction.

## CONCLUSION

Pangandaran Regency is positioned as an exemplary location for the development of both beach tourism and marine ecotourism within West Java Province. The natural beauty of the region, characterized by pristine beaches, clear waters, and diverse marine life, makes it a prime destination for tourists seeking coastal recreation and nature-based experiences. The region's expansive coastline, along with its well-preserved ecosystems, provides an ideal setting for a variety of tourism activities that can be developed sustainably. These range from traditional beach tourism to more specialized forms of marine ecotourism, such as snorkeling, diving, and wildlife observation, which appeal to environmentally conscious travelers and contribute to the overall tourism appeal of Pangandaran.

In addition to its natural attractions, the potential for sustainable tourism in Pangandaran is enhanced by the growing diversity of ecotourism activities available. The region has seen an increase in efforts to promote tourism that is both environmentally and culturally sensitive, aiming to conserve natural resources while fostering local economic growth. However, the realization of this potential is contingent on the effective implementation of integrated coastal zone management (ICZM) practices. Proper ICZM is essential to balance tourism development with environmental conservation, ensuring that activities are sustainable and that coastal and marine ecosystems are protected. With responsible management and adherence to sustainability principles, Pangandaran has the opportunity to solidify its status as a leading destination for beach tourism and marine ecotourism, benefiting both the environment and the local community.

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