

Analyzing The Ecotourism Impact Of The Mangrove Forest On The Welfare Of Kampung Nelayan In Langsa City

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Abstract – This Research analyzed the impact of mangrove forest ecotourism on the welfare of Kampung Nelayan in Langsa City, Indonesia. Mangrove forests provide ecological and economic benefits, making their preservation crucial. Ecotourism serves as an alternative for utilizing mangrove ecosystems, particularly in the Kuala Langsa Village area. Combining qualitative research and IPA analysis, the study examines the supportive and inhibiting factors in mangrove ecotourism development. Internal factors indicate strengths in sustainable conservation practices and support from the city government and relevant agencies. However, weaknesses such as inadequate tourism facilities and supervision hinder development. Opportunities lie in the availability of new tourist destinations, while threats include inadequate road infrastructure and competition within the tourism sector. Overall, the research highlights the importance of preserving mangrove ecosystems and emphasizes the need for sustainable conservation practices and support from local authorities. Addressing infrastructure challenges can enhance the success of mangrove ecotourism in Langsa City.

Keywords – Mangrove, Tourism, Langsa, and SWOT Analysis

I. INTRODUCTION

The development of tourism can influence the progress in the region where it is located. Some countries rely on the tourism industry as a source of tax and revenue for the government and service-selling companies (Yoeti, 2000). Coastal areas are one of the complex tourist destinations as they serve as a transition zone between terrestrial and marine ecosystems, hosting various types of habitats and high biodiversity (Husamah, 2018).

Coastal areas rich in mangroves can be utilized for ecotourism, catering to the changing interests of tourists who now seek not only recreational experiences but also educational and conservation purposes. Ecotourism directly benefits the environment, local culture, and the economy of the community (Syahid, 2015).

Kuala Langsa Village, located on the coast of West Langsa Sub-district, Langsa City, Aceh, has approximately 400 hectares of mangrove ecosystem resources. Several parties are directly involved in the utilization of the mangrove forest ecosystem, including fishers, crab catchers, shrimp catchers, shellfish gatherers, firewood collectors, culinary providers, and the local community in general. To ensure optimal and sustainable utilization of the mangrove ecosystem in Kuala Langsa Village, planning and management are necessary.

Coastal resource utilization by the community, particularly the fishers, is significant. Fishers come to the coastal areas with the hope of abundant catches, and their activities are closely intertwined with the sea and the coastal environment (Rafiy et al., 2015). The unpredictable natural conditions in coastal areas affect the income of fishers, compelling them to adapt to environmental changes to maximize their earnings from fishing (Rahmad et al., 2017; Sukono, 2021).

The condition of the roads in Kuala Langsa Village is good, and the harbor is bustling with transportation and fishing activities. There is also a river that can be developed for fishing tourism, floating cafes, and the mangrove forest, which has the potential to be developed as a marine ecotourism area. Considering the natural potential in Kuala Langsa Village, the development of ecotourism should be the primary choice for utilizing the mangrove forest ecosystem in the coastal area of Kuala Langsa Village. This way, the utilization can not only be economically beneficial but also ecologically sustainable, preserving the mangrove ecosystem in the village.

Analyzing the potential of the mangrove ecosystem resources, their suitability, and carrying capacity is essential to identify the potential for ecotourism activities to be developed. Therefore, a comprehensive study is needed to analyze and identify the supporting factors and obstacles in the development of mangrove ecotourism, aiming to enhance the well-being of the fishing community in Langsa City. Additionally, analyzing the development of mangrove ecotourism that directly impacts the well-being of fishers in Langsa City is crucial to determine the development strategies for the fishing community in response to the effects of mangrove ecotourism in the city of Langsa.

II. LITERATURE

One of the implementation types of sustainable and environmentally conscious tourism development is the development of ecotourism programs, also known as Nature Tourism, which initially emerged as a concept combining environmental conservation and tourism development approaches (Wheelan, 1991). In the Quebec Declaration, ecotourism is described as a form of tourism that adopts the principles of sustainable tourism, setting it apart from other forms of tourism (Damanik and Weber, 2006). In practice, it can be seen as a form of tourism actively contributing to conservation activities, involving local communities in planning, development, and management, providing positive contributions to their well-being, and conducted either as independent travel or organized in small groups (Heher, 2003).

There are three operational concepts related to ecotourism (Damanik and Weber, 2006), which are as follows:

1. Outdoor activities in natural areas should not cause environmental damage. In this type of tourism, people typically utilize energy-efficient resources such as solar power, wooden structures, recycled materials, and natural water sources. These activities should not harm flora and fauna, alter the landscape or environment by constructing buildings that are incompatible with the local environment and culture.
2. Ecotourism prioritizes the use of transportation facilities created and managed by the local community in the tourism area. Accommodations provided are not sourced from hotels, and the food offered is based on local products. This also includes utilizing local tour guide services. Therefore, ecotourism directly benefits the local community.
3. Activities in ecotourism focus on the natural environment and local culture. Tourists learn from and interact with the local community rather than lecturing them. Tourists do not demand the local community to create additional shows or entertainment, but instead encourage opportunities to witness ceremonies and performances that are already part of the local culture.

Both in definition and principles, ecotourism has direct implications for tourists and tourism service providers. Tourists are required to not only have a high level of environmental awareness and socio-cultural sensitivity but also demonstrate it in their tourism activities. For example, this can involve spending extra for nature conservation, purchasing local products at a higher cost, utilizing local services, and more (Damanik & Weber, *Perencanaan Ekowisata: Dari Teori ke Aplikasi*, 2006).

According to Nastiti and Umilia (2013), the components of ecotourism include (1) Tourist attractions: These are the unique features possessed by the tourist destinations that can attract visitors. Ecotourism attractions have specific criteria such as natural wonders and beauty, biodiversity of flora and fauna, and opportunities to observe wildlife (Damanik & Weber, 2006). And (2) Availability of tourism facilities and infrastructure: This encompasses both supporting and facilitating facilities for tourism, including accommodation and accessibility to the tourist areas. Accessibility in ecotourism has criteria such as proximity to airports or seaports, reasonable travel duration, and comfortable transportation. Ecotourism accommodation criteria include availability of practical and hygienic food menus and the development of accommodations that meet certain standards (Damanik & Weber, 2006).

The success of ecotourism programs and strategies developed by destination managers can be measured by their ability to engage tour operators in supporting the cost and benefits of conservation and increasing community participation (Asmin, 2017). According to Piper and Yeo (2011), to align perceptions regarding the definition, standards, and certification programs of ecotourism, a political process is needed, such as ecolabeling and eco-certification, along with the importance of promotion and marketing activities, especially in the current digital era. Additionally, ecotourism promotion and marketing activities should be based on groups, resources, and economics to minimize gaps (Asmin, 2017).

The research conducted by Manjula Arumugam et al. (2021) titled "The perceptions of stakeholders on current management of mangroves in the Sine-Saloum Delta, Senegal" reveals that despite the ecological and economic importance, mangroves have experienced degradation in West Africa, primarily due to anthropogenic activities. To manage natural resources sustainably and succeed in complex social-ecological systems (SES), it is important to consider different perspectives, values, and knowledge of stakeholders. This allows for informed decision-making by identifying shared views and debated reasons. The researchers applied the Q methodology to identify subjective perceptions of local stakeholders regarding mangrove management in the Sokone and Toubacouta regions of the Sine-Saloum Delta in Senegal.

Three distinct discourses (different perspectives) were identified after applying the Q methodology: (i) the "Official" discourse: "Mangrove management is fragmented; the community needs to bridge the gap for management to work uniformly across all areas"; (ii) the "Happy Village Residents" discourse: "Community-level joint management is successful, but some imbalances need to be addressed"; and (iii) the "Unhappy Village Residents" discourse: "Mangrove management is not working; things need to change, but it's not up to us (village residents) to take action". There is polarization among discourses regarding the effectiveness of current management. There is consensus among discourses that improvements in current management are desired, but there is no agreement on what needs to be changed. This study highlights the importance of establishing clear guidelines regarding the roles of the government and other actors in participatory decentralized resource management. The identified areas of consensus can help create opportunities for sustainable management interventions, and the areas of dissensus highlight critical topics that require further discussion to enhance the current management regime.

In a separate study by Sètondé Constant Gnansounou et al. (2021) titled "Local uses of mangroves and perceived impacts of their degradation in Grand-Popo municipality, a hotspot of mangroves in Benin, West Africa," it is shown that a detailed understanding of the interaction between humans and the surrounding ecosystem is crucial for designing sustainable utilization and management of these ecosystems. Mangroves are one of the most productive ecosystems worldwide but are also among the most threatened. This study (1) explores the main activities of the local community in relation to mangroves and the variation across geographical locations, gender, and age categories, (2) investigates the plants and animals used and collected from the mangrove forest and its surroundings, and (3) assesses the local perceptions of the impacts of their activities on mangrove degradation and the potential effects of this degradation on their livelihood attributes (security, income, health, and culture).

Spaldinga, M., and Parrett, C. L. (2019), conducted a study titled "Global patterns in mangrove recreation and tourism," which reveals that the utilization of mangroves as travel and tourism destinations has received limited attention but holds high value as a low-impact utilization of this important ecosystem. The study quantifies and maps the distribution of mangrove visits on a global scale by using keyword searches on user-generated content from popular travel website TripAdvisor.

Saifullah and Harahap, N. (2013), conducted a study titled "Strategies for the Development of Mangrove Tourism in Bedul Block of Alas Purwo National Park, Banyuwangi Regency, East Java." The study identified the potential of mangroves, cultural potential, and community perceptions of ecotourism, as well as the community's knowledge of ecotourism. The study also assessed the economic valuation and provided strategic development directions for ecotourism, consisting of five strategies: enhancing institutional management of ecotourism, developing ecotourism-based businesses through multi-sectoral cooperation, expanding mangrove tourism by exploring other tourism potentials, creating a five-year action plan for sustainable ecotourism development, and utilizing research as a basis for decision-making.

III. RESEARCH METHOD

The research method employed in this study is a combination of quantitative and qualitative descriptive research. The qualitative aspect aims to understand phenomena such as behavior, perceptions, motivations, actions, and others experienced by the research subjects holistically. It involves describing these phenomena in words and language within a specific, natural context, utilizing various natural methods (Lexy, 2006). One of the attributes of subjective exploration is the information collected from

the fishing village of Langsa City, which serves as the research location, in the form of words, pictures, and non-numerical data. Therefore, the exploration report will include quotations to provide an overview of the report's introduction. The researcher also utilizes field notes as records of perceptions and other sources.

The sample size, determined using the Slovin's formula, was taken from a population of 300 in the research area. Considering that the population is directly related and homogeneous, stratification is not necessary, resulting in a sample of 75 respondents. The data collection technique involved in-depth interviews and observation.

• **Data Analysis**

The analysis methods used in this study are descriptive analysis and SWOT analysis. Descriptive analysis is used to analyze the driving factors and barriers to the development of mangrove forest tourism, as well as the contribution of the tourist attraction to the increase in income for the fishing village community. On the other hand, SWOT analysis is used to analyze the strategies for the development of mangrove forest tourism.

IV. RESULT

The Langsa Mangrove Forest is often chosen by both local and international tourists. It is extremely exotic and can make anyone feel comfortable spending a lot of time there. This tourist location is visited almost every day, especially during holidays. Furthermore, the beauty of this tourist attraction continues to improve due to the support from the government.



Explanation:

Figure (a) Langsa City Mangrove Forest Ecosystem

Figure (b) Kuala Langsa I Mangrove Forest Tourist Spot

Figure (c) Kuala Langsa Mangrove Forest Tourist Spot

Figure (d) Kuala Langsa II Mangrove Forest Tourist Spot

Internal Factors or IFAS (Strengths and Weaknesses)

Table 4.1 Internal Factor Analysis (IFAS)

Strategic Factors	Weight	Rating	Weight x Rating
Strength:	0.14	4.00	0,56
1. Potential for developing the mangrove forest as a tourist attraction			
2. The only existing mangrove forest in Langsa city	0.15	4.00	0,60
3. Strategic location and clean environment	0,13	3,00	0,39
4. Unique natural attractions	0,10	4.00	0,40
5. Hospitality of the local community towards tourists	0,10	3.00	0,30
6. Potential for managing the mangrove forest as souvenirs	0,13	3.00	0,39
7. Presence of salt ponds as additional tourist attraction	0,13	3.00	0,39
Sub Total Strength	0,88		3,03
Weakness :	0,03	2.00	0,06
1. Lack of human resources with tourism background			
2. Limited diversity of mangrove ecosystem types	0,03	3.00	0,09
3. Inadequate supporting infrastructure for ecotourism	0,04	2.00	0,08
4. Lack of tourism awareness	0,01	2.00	0,02
5. Insufficient additional tourist attractions	0,01	3.00	0,03
Sub total weakness	0,12		0,28
Total	1,00		3,31

Source: Result data processed (2023)

To determine the x-axis, we subtract the total strength score from the total weakness score. Therefore, the horizontal axis (x) is calculated as the subtotal of strengths minus the subtotal of weaknesses: $3.03 - 0.28 = 2.75$ (x-axis value). This indicates that the total internal factors show a strong internal position for the mangrove ecotourism

External factors or EFAS (Opportunities and Threats)

Table 4.2 External Factor Analysis (EFAS)

Strategic Factors	Weight	Rating	Weight x Rating
Opportunities:	0.16	4.00	0,64
a) Government support for tourism destination development			
b) Tourism sector growth	0.18	3.00	0,54
c) Awareness campaign by the Langsa tourism office	0,15	3,00	0,45
d) Strategic location that allows for the establishment of tourism businesses	0,19	4.00	0,76
e) Job opportunities created in the tourism sector.	0,18	4.00	0,72
Sub Total Opportunities	0,86		3,11
Threat:	0,03	2.00	0,18
a) Existence of other more attractive and easily			

accessible tourist attractions.			
b) Coastal erosion	0,04	1.00	0,04
c) Lack of community involvement and promotion in tourism activities	0,07	2.00	0,14
Sub total Threat	0,14		0,36
Total	1,00		3,47

Source: Result Data Processed (2023)

The vertical axis (y-axis) is determined by subtracting the subtotal of opportunities from the subtotal of threats, which is $3.11 - 0.36 = 2.75$ (Y-axis value). Therefore, the subtotal of the external factors indicates a strong external position with significant opportunities in the ecotourism of the mangrove forest in the Kuala Langsa area.

SWOT Strategy Analysis

Table 4.3 SWOT Strategy Analysis

Internal Factors	S	W
	<ol style="list-style-type: none"> Potential For Tourism Development Sole existence in Langsa city Strategic location and clean environment Unique natural attractions Friendliness of the local community towards tourists Potential to utilize the mangrove forest for souvenirs Presence of salt ponds as additional tourist attraction 	<ol style="list-style-type: none"> Lack of human resources with a background in tourism Lack of diversity in mangrove ecosystem types Insufficient facilities and infrastructure to support ecotourism activities Lack of tourism awareness Insufficient additional tourist attractions
External Factors	O	W-O
<ol style="list-style-type: none"> Government support for the development of tourism destination areas. Awareness-raising campaigns by the Langsa Tourism Office. Strategic location that enables the establishment of businesses in the tourism sector. Job opportunities created in the tourism industry. 	<ol style="list-style-type: none"> The need for collaboration between the government and tourism organizations. Empowering the local community as managers. Spatial planning for the tourism location. Training on tourism-related businesses for the local workforce. The importance of promoting the area through social media. The need for additional funding to provide necessary facilities and infrastructure. 	<ol style="list-style-type: none"> Planting of new types of mangroves that are not yet present in the area. Increasing the number of tourism facilities, infrastructure, and public transportation access to the tourist location. Utilizing the existing aquaculture areas as additional tourist

		attractions.
T	S-T	W-T
<ol style="list-style-type: none"> 1. Existence of other tourist attractions that are more appealing and easily accessible than the mangrove forest. 2. Coastal erosion. 3. Lack of community awareness and engagement in tourism activities, both in management and promotion. 	<ol style="list-style-type: none"> 1. Uniqueness of the mangrove forest potential compared to other tourist attractions, utilization of salt ponds as an additional attraction. 2. Sustainable planting of mangrove species as erosion control. 3. Need for government support in conducting socialization and training for the local community. 	<ol style="list-style-type: none"> 1. Further develop the existing tourism potential. 2. Raise awareness among the managers and encourage them to engage in mangrove planting. 3. Enhance promotion efforts through print and electronic media, among other channels.

Source: Result Data Processed (2023)

Descriptive Respondent Answers Regarding Development Strategy Indicators

The development of eco-tourism in the mangrove forest of Kuala Langsa requires the involvement of local communities, ranging from young people to the elderly. It is also expected that there will be cooperation between the government and other tourism community organizations, so that the development of tourism, including its potential and other attractions, can be maximized. The development of mangrove eco-tourism aims to become one of the tourist destinations that provide benefits to the community in terms of social, economic, cultural, and agribusiness aspects. In the context of the tourism object, there is a need for strategies to support long-term sustainability, making it an attractive destination for both local and international tourists, with direct benefits for the surrounding communities through the presence of mangrove eco-tourism in Langsa City.

The Role of the Government in Relation to Mangrove Tourism for the Welfare of Kampung Nelayan in Langsa City. The benefits are certain in terms of the economy, as it greatly helps the community's economy. Initially, the community only relied on fishing, shrimp catching, and the like. With the existence of mangrove eco-tourism, some community members have ventured into the business world. Moreover, the income generated by the community does not go to the government; the proceeds from selling goods or managing their own parking areas go directly to them. Furthermore, the government will provide guidance to the community on utilizing mangrove fruit as a food ingredient, emphasizing the importance of preserving the mangrove eco-tourism in Langsa City by not only cutting down trees, burning them, or littering indiscriminately. The aim is to maintain the mangrove eco-tourism site and provide health benefits to the surrounding community. However, an untapped potential is the establishment of processed mangrove fruit houses that can be managed by the local community.

So far, the local government's tourism development has not led to welfare improvement. The government has focused more on developing tourist attractions rather than the welfare of the fishing village community. There are several important factors that should be considered for community involvement in development and community welfare: (1) the need for community involvement in the development of new tourist attractions. The mangrove forest's unique attractions, including local culture, cuisine, artistic performances, and more, should involve the community. (2) The community should be involved in owning businesses or service providers such as restaurants. (3) The development of mangrove eco-tourism infrastructure should involve the local community. (4) Community involvement in providing public transportation services is essential. (5) Improvement and enhancement of the quality of public facilities and infrastructure networks that can be enjoyed by the community.

V. CONCLUSION

The potential of the mangrove forest tourist attraction in the fishing village of Langsa requires further attention and development from both the government and the local community. Stakeholder involvement, quality and quantity of human

resources, and budget limitations are key factors that need to be addressed. The development strategy should involve the local community in decision-making, establish a community forum, and prioritize the benefits for the local community

RECOMMENDATIONS

In order to develop the fishing village as a tourist attraction, there is a need for improvement and enhancement of infrastructure, such as information boards that are currently lacking, and the addition of facilities at the mangrove forest tourist site in Kuala Langsa beach area. Furthermore, it is essential to improve the quality and quantity of skilled human resources in terms of serving tourists by providing education and training in tourism. There should also be an increase in promotion and publicity about the mangrove forest tourist attraction in Kuala Langsa through print and electronic media.

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