



Strategies To Build Pentahelix Partnerships In The Development Of Mangrove Ecotourism As A Tourist Destination In Batam City

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Abstract

The Pentahelix model integrates five main elements, namely the government, society, academics, businesspeople, and the media, each of which has an important role in strengthening local tourism potential and maximizing community resources in Kampung Tua Bakau Serip. Through this PKM, it will be able to optimize the existence of mangrove forests and local culture, increase the economic empowerment of local communities through fishermen's catches and handicrafts. Through the involvement of the business sector, such as companies or MSME actors, the development of village economic potential can be more directed and sustainable, the fishermen's catch in the form of clams or barks can be managed into culinary specialties and clam shells and barks can be managed into handicrafts in the form of frames, key toys, bags, and wall decorations. This collaboration can help overcome challenges such as budget constraints, training needs for residents of Kampung Tua Bakau Serip, and become an example of a tourist village in Indonesia. From the description above, innovation is needed with the creation of the Pentahelix collaboration model in Kampung Tua Bakau Serip Tourism Village so that concerns about changes in forest function and the potential that has existed so far such as the development of handicraft sales centers, culinary, halfway houses, and mangrove touring tourist destinations which have been a strong support for the community's economy in Kampung Tua Bakau Serip will continue to develop as an attractive tourist destination. sustainable, and have a positive impact on the local community as well as examples of tourist villages in Indonesia.

Keywords: Pentahelix Partnership, Tourism Village, Collaboration Model

INTRODUCTION

In the Strategic Plan (Renstra) of the Riau Islands Provincial Tourism Office for 2021 – 2026, there are 22 important problems that will be used as a priority scale in the development of the tourism sector in Batam. Of the 22 problems in the tourism sector, some of them are related to non-optimal management of tourist attractions, facility development, health, community readiness, synergy, promotion, human resources, creative economy, and government policies in supporting the development of the tourism sector (Rencana Strategis Dinas Pariwisata Provinsi Kepulauan Riau, 2021). Tourism cannot function without the interest and motivation of tourists to visit tourist sites and attractions.

Tourism cannot be separated from technological advances that allow automation in almost all fields, especially tourism. New technologies and approaches that integrate the physical, digital, and biological worlds will fundamentally change the patterns of human life and interaction. Kampung Tua Bakau Serip in Batam, Riau Islands, is a village rich in local culture and traditions. The people here carry out a variety of activities that reflect their lives in harmony with nature and rich cultural heritage (Joko et al., 2023). Here are some of the activities carried out by the community Kampung Tua Bakau Serip

- a. Agriculture and Fisheries; Locals often farm in traditional ways, growing rice, vegetables, and other crops that are suitable for the tropical climate. And also fisheries: As a coastal area, many residents



work as fishermen. They catch fish, crabs, and other marine products that are the main source of livelihood.

- b. Mangrove Forest Management can be carried out Mangrove Planting and Maintenance, the community is active in planting and maintaining mangrove forests. Mangroves are important for coastal ecosystems because they protect coastlines from erosion and provide habitat for a variety of species. Natural Resource Management: In addition to taking care of mangroves, they also utilize natural resources in a sustainable manner, such as collecting shellfish and crabs.
- c. Crafts from Natural Materials: Residents make various handicrafts from natural materials available around them, such as woven pandan leaves or rattan. Souvenir Making: This craft is often used as a souvenir for tourists who visit the village.
- d. Community-Based Tourism. Ecotourism: Kampung Tua Bakau Serip is becoming known as an ecotourism destination, where tourists can enjoy the beauty of nature and learn about the mangrove ecosystem and the traditional life of the local community. Educational Tours: Tourists can also take educational tours about the way of life of the local people, including traditional agricultural and fishing practices.
- e. Local Culture and Traditions. Traditional Ceremonies: People often hold traditional ceremonies related to the life cycle, such as marriage, birth, and death, as well as ceremonies related to nature and harvesting. Traditional Arts: Art performances such as traditional dance, music, and theater are often held to preserve culture and entertain communities and tourists.
- f. Social and Communal Activities. Gotong Royong: Residents often carry out mutual cooperation to clean the village environment, improve infrastructure, and other activities that require community cooperation. Cooperatives and Business Groups: There are cooperatives or joint business groups that help improve the local economy by managing resources collectively.
- g. Education and Training. Formal and Non-formal Education: There are primary schools in the village, and the community also conducts non-formal education such as skills training for teenagers and adults. Environmental Training: Training on the importance of environmental conservation and natural resource management is often held to increase community awareness and skills.

These activities not only support the daily life of the community Kampung Tua Bakau Serip but also helps in preserving their culture and environment, while opening up opportunities to improve welfare through tourism and local businesses. This activity reflects the dynamic and diverse life of the Pandang Tak Jemu Mangrove community, with strong values of togetherness and mutual cooperation as well as growing economic potential. The combination of lecturers and students carries out Student Community Service and Lecturers of the Batam Paraiwasata Polytechnic in accordance with the PKM report, the goal is to raise campus accreditation (Silitonga, 2023). Continuing the needs requested by the Chairman of the Pandang Tak Jemu Mangrove Management, namely Mr. Gary, he needs a helping hand from anyone who can help the sustainability of the Old Mangrove Village, so this visit is to hold a Focus Group Discussion and provide Strategies to Build Pentahelix Partnerships in the Development of Mangrove Ecotourism Looks Tireless as a Tourist Destination in Batam City.

COMMUNITY OVERVIEW

The Serip Pandang Tak Jemu Mangrove Community is a community that lives around the coastal area in the Barao Serip area, which is located in Batam City, Riau Islands. The region is famous for its well-preserved mangrove ecosystem, as well as its beautiful natural scenery (Joko et al., 2023). Here is an overview of the community in the area:

Social and Economic Life. Most of the population relies on the fisheries sector, both through fishing and aquaculture. In addition, some are also involved in local agricultural and tourism activities. Serip Mangroves are beginning to be known as ecotourism destinations, especially mangrove tourism. Tourists come to enjoy nature, walk on wooden bridges that cross mangroves, and see biodiversity. Women in these societies are often involved in home-based economic activities, such as making handicrafts from seafood or processed local foods. The community has a high awareness of the importance of maintaining mangrove ecosystems. Mangrove forests are the main source for them in maintaining a healthy marine ecosystem and becoming a natural fortress against abrasion and flooding. There are several local initiatives supported by the government and NGOs to preserve mangrove areas, educate the community on the importance of conservation, and create eco-friendly areas for tourists.



The life of the people in Bakau Serip is very thick with maritime culture. They have various traditions related to the sea, such as the thanksgiving ceremony for seafood or folk feasts held during the fish harvest season. Gotong Royong activities are still an important value in people's daily lives, especially in local infrastructure development activities or environmental conservation. With Batam's increasing popularity as an industrial and tourism city, there are challenges in maintaining a balance between infrastructure development and environmental conservation. The communities in Bakau Serip also face the impacts of climate change, such as rising sea levels and extreme weather, which affect the lives of those who depend on nature.

Overall, the Berib Pandang Tak Jemu community is a vibrant coastal community, which is increasingly open to tourism while maintaining a close relationship with nature and marine culture (Nasution et al., 2024) Pandang Tak Jemu Ecotourism is also equipped with supporting facilities such as toilets, prayer rooms, souvenir shops, cafes, and of course typical food outlets of tourist villages. The existing mangrove tourism has only been carried out by non-governmental organizations in Teluk Tering sub-district as shown in the picture below:



Remark:

1. The head of community service activities made observations on the types of souvenirs sold in Pandang Tak Jemu
2. BTP's Students become members of community service activities with the Pandang Tak Jemu manager
3. BTP's lecturer and master's students are conducting a survey of the location of service activities in the Mangrove Pandang Tak Jemu

METHOD OF IMPLEMENTATION OF SERVICE

In this PKM activity, it is divided into two major parts, lectures, meaning that in this first method all service members and the community sit together to provide each other with views related to the Development of Tourist Attractions as Community Investment in Mangrove Pandang Tak Tireless Batam. Using this activity method, we explore more documents that have been produced so far as to support the partnership in Pandang Tak Jemu, a descriptive qualitative approach. a qualitative descriptive approach presents and analyzes EFAS and IFAS SWOT in the potential and efforts to develop Pandang Tak Tiremu Mangrove natural tourism in Batam City (Silitonga et al., 2024) The results of the analyst produced strengths, weaknesses, opportunities, and threats for the management of the Pandang Tak Jemu Mangrove natural tourism and also for the visitor community. Further results will be used as input in policy-making carried out by the government.

Data Collection

The following is the data collection method in this study:

1. Observation

After observation, the environmental situation at the location has a well-maintained condition, as well as the condition of the mangroves which are seen to be still preserved. Tourism management is also very well done.

2. Documentation





After doing the documentation, there are shared facilities provided including art and cultural stages, restaurants around the location, photo areas, souvenir shops, and gazebos. In addition, there are also facilities such as public bathrooms and prayer rooms.

3. Interview

After conducting an interview with the manager. The author found a lot of relevant information related to the 4A of sustainable tourism, namely attraction, amenity, accessibility, and ancillary. And assist researchers in determining the potential and efforts to develop the Tireless Sight Mangrove.

4. Questionnaire

The research used a questionnaire through googleform to collect data from the community about the 4A of sustainable tourism, namely attraction, amenity, accessibility, and ancillary. Where there are 12 statements that have been filled out by respondents in the questionnaire.

Form of Activity

First of all, the host read the Program Agenda, namely: Presentation of data that has been owned by the service team. Introduction of Lecturers and Students Involved in Community Service to Kampung Tua Bakau Serip. Focusing activities in PKM program assistance Opening Speech by Frangky Silitonga, S.Pd., M.SI as the Head of Community Service Host from the beginning and end of PKM activities by Kartika Cahayani, S.E., M.Tr.Par. Data Submission by Okta Sapitri and Jubil

RESULTS AND DISCUSSION

Result

The mangrove ecosystem in Pandang Tak Jemu shows a fairly high diversity of flora and fauna, including several typical mangrove species such as *Rhizophora apiculata*, *Avicennia marina*, and *Sonneratia alba*. There is also habitat for aquatic birds and marine life such as mangrove crabs and small ecologically important fish. Mangrove Biodiversity in Pandang Tak Jemu has a fairly good diversity of flora and fauna, although there are several areas that have been degraded due to human activities such as illegal logging and plastic waste.

Social Aspects and Community Involvement

The level of awareness of local communities about the importance of mangroves has begun to increase, especially after the existence of environmental education programs. However, there are still segments of society that are involved in destructive activities such as illegal timber harvesting. Several community groups are active in conservation activities such as mangrove replanting. However, overall involvement is still limited due to a lack of training and mentoring. This ecosystem balance causes a decrease in soil and water quality to be found in several locations, potentially disrupting mangrove regeneration.

Partisipas Stakeholder

1. Government: There have been policies to protect mangrove areas, but implementation on the ground is still limited.
2. Academics: Research and education have been carried out, but they are less integrated with practical management programs.
3. Community: Local community awareness is increasing, especially through community-based conservation programs, but still needs assistance.
4. Business: Some companies support Corporate Social Responsibility (CSR) programs, but contributions are still sporadic.
5. Media: Promotions and campaigns about the importance of mangroves are still minimal and need to be strengthened.

Ecotourism Potential

The potential of Mangrove Ecotourism has an attraction as an ecotourism destination, but supporting infrastructure such as trekking trails, information boards, and visitor facilities are inadequate. Pandang Tak Jemu mangrove supervision has great potential to be developed into a sustainable ecotourism destination. Here are some of its key potentials:

1. Natural Attraction



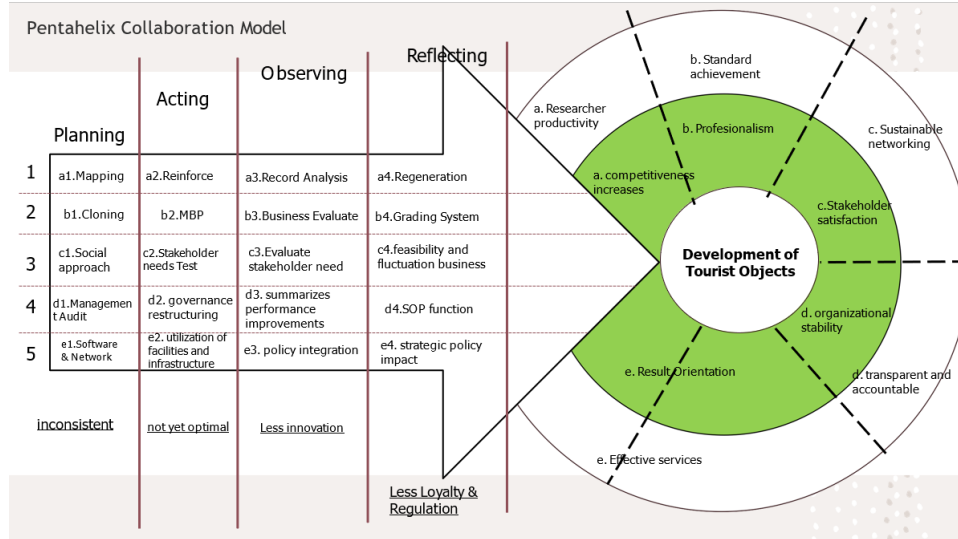


This area has an attraction as a natural tourism destination because of the beauty of the mangrove ecosystem, the existence of unique species, and the potential for activities such as mangrove trekking, bird watching, and boat tourism.

2. Tourism Infrastructure

Tourism support infrastructure such as trekking trails, information boards, and rest areas are still minimal and need to be upgraded to support the visitor experience.

Figure 1. Model Pentahelix



Source: (Sianipar et al., 2024)

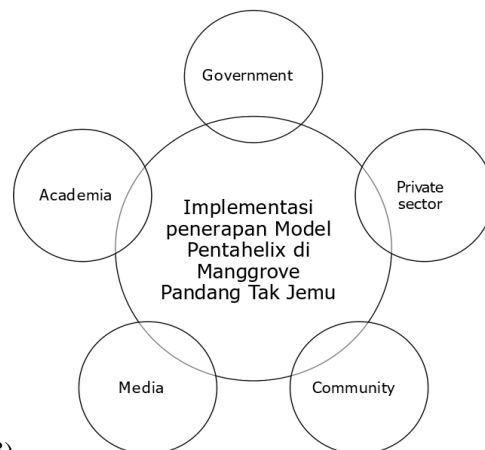
Key Challenges

Lack of coordination between stakeholders. Lack of funds for the maintenance and development of the area. Low public awareness of the importance of maintaining mangrove ecosystems.

Discussion

Strengthening collaboration through the Pentahelix model is needed to ensure the effectiveness, sustainability, and success of mangrove area management. By uniting the strengths of the five elements, existing challenges can be overcome in a more holistic, efficient, and positive impact on the environment, communities, and local economies.

Figure 2. Strengthening Collaboration through Pentahelix



Source: (Silitonga et al., 2023)

From the figure above, it is explained that the role that must be played in these five important components so as to produce a mutually supportive model for sustainable tourism development, including



1. Government: Firmer policies and adequate budget allocation are needed for mangrove area management.
2. Academics: Applied research that focuses on mangrove rehabilitation and the impact of ecotourism needs to be improved, and research results must be easily applied in the field.
3. Community: Empowering the surrounding community through locally-based training and conservation programs is essential for the sustainability of the region.
4. Business: There is a need for increased private sector involvement, particularly through structured and sustainable CSR programs.
5. Media: Communication strategies should be enhanced with the use of digital platforms to increase public awareness and attract visitors.

Strategy for Strengthening Mangrove Ecosystems

Rehabilitate damaged areas by replanting mangroves using techniques that are appropriate to local soil and water conditions. Handling plastic waste by involving the community in recycling programs or integrated waste management. In periodic monitoring of the quality of mangrove ecosystems and the development of Environment-Based Ecotourism, there will be great opportunities for the construction of environmentally friendly ecotourism facilities such as trekking trails, bird observation towers, and mangrove information centers. This can have an impact on the development of educational tour packages that involve local communities as guides or instructors and digital-based tourism promotion to attract visitors from various market segments(Cahayani & Silitonga, 2024).

CONCLUSION

Conclusion

The Pandang Tak Jemu Mangrove has great potential to become a sustainable conservation and ecotourism area. However, the success of strengthening this area is highly dependent on the synergy of all parties through the implementation of the pentahelix model, with a focus on ecosystem rehabilitation, community empowerment, ecotourism infrastructure development, and effective promotion. Pandang Tak Jemu has a uniqueness that lies not only in its natural beauty, but also in the combination of ecological, cultural, and educational values. This potential makes it a special ecotourism destination with an attraction that is difficult for other regions to imitate.

Recommendations

Preparation of a long-term plan for mangrove area management by involving all pentahelix elements so that it can increase the capacity of human resources through conservation and ecotourism management training, as well as encouraging technological innovation for monitoring and promotion of mangrove areas. That is why it is necessary to recommend some important things

1. Mangrove Ecosystem Rehabilitation
2. Raising Awareness and Community Empowerment
3. Sustainable Ecotourism Development
4. Strengthening Stakeholder Synergy through Pentahelix
5. Waste and Plastic Waste Management

With the implementation of a collaborative-based and sustainable strategy, the Pandang Tak Jemu mangrove area can become a model for mangrove ecosystem management that not only preserves the environment but also provides economic and social benefits for the surrounding community.



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