Coral Reefs Tourism Development in the Tuing Waters of Bangka Belitung Islands

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Abstract. This study describes the development of coral reef tourism in Tuing Waters. This nature tour is packaged into an educational tour with many lessons. The Tourism Office and the management of the Tuing waters apply three main strategies in developing coral reef tourism. The general strategy applied is maintaining and preserving the potential of the coral reefs. The three main strategies produced are holding Sapta Pesona socialization or tourism benefits awareness for all levels of society sustainably and systematically. This is more about promoting and introducing tourism. The second strategy is the development of community-based tourism. The intention is to make tourism cost-friendly for residents and families to access facilities and security. The third strategy is that tourism Human Resources (HR) must have tourism certification to develop tourism HR who have qualified abilities in their fields.

Keywords: Development, Tourism, Waters, Coral Reefs

1 Introduction

Indonesia is a country that has an abundance of natural resources in biodiversity. These resources can increase economic growth when appropriately managed, following what the community wants. There will be a good use of both time and material due to management failures. Tourism is an alternative to utilizing natural resources with high economic value. The well-managed area turned into a tourist spot can attract visitors from within and outside the country. In addition, tourism can also grow and increase the sense of pride in the country. It can make people care more about the nation's growth. Tourism is something that everybody likes since it can lessen their boredom, develop their creativity, and support their productivity.

Management of coral reef ecosystems is a sustainable use and can be utilized to meet the needs of human life (Selig et al., 2018). When the management runs well, it will threaten the coral reef ecosystem and endanger the community's ecological function and economic value. It was recorded that more than 88% of coral reef ecosystems in Southeast Asia are threatened with high risk due to human activities (Hilmi, Safa, Sumalia & Cinar, 2017).

Coral reef ecosystems function as a support for marine life. Coral reefs provide habitats for breeding, shelter, and large wave barriers. In addition to their ecological function, coral reefs are a tourism attraction, so they have an economic impact on coastal communities. Tourism is an important economic activity as the key to development, prosperity, and welfare (Bayih & Singh, 2020). Coral reef ecosystems are closely related to the tourism industry with economic development, especially for small islands (Kurniawan, Adrianto, Bengen & Prasetyo, 2019). Bangka Belitung Province has reserved 9,809.56 ha of Tuing waters as a regional water

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conservation area. Aside from that, it also functions as a development of sustainable tourism. Sustainable tourism includes ecological sustainability, socially acceptable, culturally adaptive, and economically profitable (Arida, 2016).

The managers of Tuing waters, local governments, tourist operators, and local communities will benefit from this research as it provides an overview of the potential of Tuing waters as a tourist destination. The research problem is the reality of coral reefs in Tuing waters and the development of coral reef tourism there. The research method is an empirical juridical method. Primary data were collected through interviews using questionnaires and observations of tourism activities in Tuing waters. Meanwhile, secondary data were collected from the literature/documentation of previous research results. Primary data includes socio-economic characteristics and the condition of tourism facilities.

2 Literature Review

2.1 Coral Reefs Definition

Coral reefs are an ecosystem in tropical waters built by marine biota that produce lime, especially types of rock corals and calcareous algae, together with other biotas that live on the seabed, such as *Molluscs, Crustaceans, Echinodermata, Polychaeta, Porifera, Tunicata*, and another free-living biota in the surrounding waters, including types of plankton and fish species [1]. Meanwhile, according to Levinton [2] Coral reefs are a collection of compact and solidly composed forms of sedimentary skeletons of benthic organisms that live in warm marine waters with a sufficiently light depth. It is a physio-graphically constructed formation in tropical waters and consists mainly of limestone skeletons formed by hermatypic corals. Coral biota is the main constituent of coral reefs.

Based on their growth, coral reefs are divided into two different groups: hermatypic corals and ahermatypic corals. Hermatypic corals have a symbiotic relationship with zooxanthella and can produce reefs. Meanwhile, ahermatypic corals do not have a symbiotic relationship with zooxanthellae and do not produce reefs. Ahermatypic corals are distributed throughout the world, whereas hermatypic corals are only found in the tropics [3].

2.2 Benefits of Coral Reefs

According to Dahlan [4], coral reefs are essential for protecting a large variety of animals associated with them. Suharsono [5], stated that the natural functions of coral reefs are (a) as a living environment by serving as a place to live and shelter, a place to find food and breed for biota, (b) as a physical protector of the coastal areas by reducing the power of waves hitting the coast, (c) as biological resources by producing several products that have substantial economic value, such as various types of reef fish, algae, sea cucumbers, and pearl shells, and (d) as a source of beauty for their display of beautiful scenery that other ecosystems cannot easily match.

Coral reefs also protect forts from waves, currents, and tides for islands and other coastal ecosystems such as seagrass beds and mangroves [6].

3 Result

3.1 The Reality of Coral Reefs in Tuing Waters

Coral reefs in Tuing Waters, Mapur Village, Riau Silip District, Bangka Regency, and Bangka Belitung Islands blend with the largest squid habitat on Bangka Island. They also provide income for thousands of families in Mapur Village, Pesaren Hamlet, Bedukang Village, and Matras Village—descendants of the Lom Tribe and Maras Tribe. Coral reefs in the Tuing Waters, the only coral still attached to the mainland of Bangka Island, are still in good condition. The coastline of the Tuing Waters, from Tuing Pier to Tengkalet Beach, is about 18.22 kilometers.

The coral reefs tourism sites in the Tuing waters where tourists can catch squid and fish are known by residents as *karang keliding*, *karang kenuse*, *karang pengael*, *karang kayu bulan*, *karang rom*, *karang batu sula*, *karang punggur*, *karang kualo*, *karang batu kebo*, and *karang pelabuhan dalem*. The location is around Tuing Pier, Tanjung Tuing, Punggur Island, to Tengkalet Beach.

Based on the Document Between the Zoning Plan for Coastal Areas and Small Islands [RZWP3K] of Bangka Belitung Islands, the analysis in 2020 showed that live coral reef ecosystems covered an area of 14,471.54 hectares. Meanwhile, the area of dead coral was around 7,272.11 hectares. Arief Febrianto, Secretary of the Department of Marine Affairs and Fisheries of the Bangka Belitung Islands Province said that the current area of coral reefs in Bangka Belitung is around 17,210 hectares.

There are two types of coral reefs in Tuing Waters: fringing reefs and barrier reefs. Indra Ambalika, a member of the UBB Coral Reef Expedition Team [2008-2013], said that the stretch of coral reefs in the Tuing Waters is the only one attached to the mainland of Bangka Island, and they are still in good condition.

M. Rizza Muftiadi, Lecturer of Aquatic Resources Management at Universitas Bangka Belitung, stated that, if we talk about the long term, it is clear that conserving corals is more profitable because we maintain the feeding ground, nursery ground, and spawning ground for fish found in coral reefs. In addition to conserving corals, we help maintain the natural food chain system. This will significantly affect the catches of surrounding fishermen, the distance, and the time to go to sea.

In 2014, Bangka Regency Government established Tuing Waters as a water conservation area. However, after the issuance of the Decree on Conservation Areas by the Bangka Regency Government, Law no. 23 of 2014 on Regional Government, which states that the authority related to the sea within a distance of 0-12 miles becomes the authority of the provincial government, the management of the Tuing Waters was continued by the Provincial Government of the Bangka Belitung Islands, in 2018. The Tuing Waters were designated as a water conservation area [fishery reserve, especially the protection of Bangka squid] with an area of 9,809.56 hectares.

3.2 Development of Tuing Coral Reefs Tourism

The development of the Tuing Waters as a tourism object must pay attention to the socio-economic conditions of the local community, the socio-cultural of the local area, religious values, customs, the environment, and the tourist attraction itself. The development of tourist objects and attractions can be carried out by the Government, Business Entities, or Individuals by involving and collaborating with related parties.

Law no. 10 of 2009 on Tourism states that a tourist attraction is anything that has uniqueness, beauty, and value in the form of a diversity of natural wealth, culture, and manufactured products targeted or visited by tourists. The word tourist refers to people. In general, tourists are a subset or part of travelers and visitors (I Gde Pitana & I Ketut Surya, 2009:35)

In light of that, tourism objects can be classified as a diversity of natural, cultural, and manufactured wealth. Meanwhile, Tuing waters have natural wealth and manufactured products because, in addition to having a beach with its natural beauty, there is also human intervention, including a woody platform and several buildings provided by the community in that area.

Coral reefs, with all the potential for underwater beauty, are the primary capital of tourist attractions. The dominant coral genera in Tuing waters is Acropora coral which is included in the pioneer category and has a higher growth rate than other hard coral genera. (Luthfi & Januarsa, 2018). Besides reef fish, fish in trophic groups such as Caesionidae and Lutjanidae were also found. In line with Yulianto, Mawardi & Purwangka's (2018) research, the fish caught by local fishermen are from the families of Acanthuridae, Epinephelidae, Haemulidae, Lethrinidae, Lutjanidae, Scaridae, and Siganidae.

Marine tourism offered in Tuing Waters is diving, snorkeling, and fishing. The topography of the seabed is challenging to a depth of 20 meters, and the high diversity of coral species and high types of exotic marine life. Tourists can try snorkeling to enjoy the underwater beauty of coral reefs, seagrass beds, ornamental fish, and various other marine biotas at a depth of 2-5 meters. Fishing is done by boat rather than in the tourism utilization zones. It is slightly different from other marine tourism; fishing can only be done in the sustainable fisheries zone. This is regulated in the 2018 Tuing Waters Zoning Management Plan (RPZ).

In general, facilities and infrastructure in Tuing waters are quite good; however, some improvement needs to be done for trash bins, public toilets, and places of worship/*mushola*. Further, this condition does not necessarily indicate that the needs of tourist demand have been fulfilled. It must be included in the eligibility criteria to increase tourist attraction. The condition of tourism facilities and infrastructure is one of the influential elements in developing tourism products (Suwena & Widyatmaja, 2017), especially if they plan to develop tourism products. Improvements that provide 2H (healthy and hygiene) should be guaranteed.

The Bangka Belitung Tourism Office still needs a lot of development, such as lodging, toilets, and the rental of diving equipment. However, improvement in management and supporting infrastructure is slowly being made. One of the efforts made to introduce Tuing beach widely is through the development and strengthening of public relations activities, development and expansion of tourism products, and development of tourism services marketing and tourist attractions. In this case, the Department of Tourism cooperates with several parties, participating in related events and visiting related programs to promote and make improvements for the Tuing waters area. Second, the development and expansion of tourism products; in this case, the Tourism Office has surveyed tourist expectations, audited the tourism potential of Tuing waters, and developed the quality and packaging of Tuing marine products. Third, the development of the marketing of tourism services and tourist attractions; in this case, the Tourism Office has attempted to develop tourist visit materials through video, slate, and brochure. Another effort is to build a regional tourism website.

The management of Tuing waters has utilized the internet to promote and develop technology-based tourism. Currently, tourists can access transportation, tour packages, costs, routes, and distances online. The use of technology can be applied so that Tuing water tourism can be accessed through online reviews.

The Tourism Office and the management of the Tuing waters apply three main strategies in developing coral reef tourism. The general strategy applied is maintaining and preserving the potential of the coral reefs. The three main strategies produced are holding Sapta Pesona socialization or tourism benefits awareness for all levels of society sustainably and systematically. This is more about promoting and introducing tourism. The second strategy is the development of community-based tourism. The intention is to make tourism cost-friendly for residents and families to access facilities and security. The third strategy is that tourism Human Resources (HR) must have tourism certification to develop tourism HR who have qualified abilities in their fields.

The role of the private sector in tourism development in Tuing Waters includes effective communication with local governments and the tourism management community, reliable and professional human resources placed by the private sector, adequate funds, top management support, mutual trust, and good coordination between the two parties. The local government and the private sector always increase creativity and innovation in the development and management of tourism potential, as well as cooperation in providing counselling about improving local culture. Further studies on the influence/impact of existing beach tourism objects and their impact on the surrounding community's economy will be done every semester.

4 Closing

The findings of this study indicate that the tourism development in the Tuing waters in the Bangka Belitung Islands is good, which can be seen from the increase in the tourism sector, the benefits of tourism, and the role of tourism in the protection of natural resources and the environment.

5 Suggestion

1. The government needs to help increase awareness regarding Tuing water tourism by injecting funds to advance tourist attractions.
2. As managers, the private sector and the community can improve various existing facilities and conduct training for officers so that tourism is of higher quality.

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