

Conference Paper

The Role of Mangrove Conservation in Sustainable Tourism

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Abstract

The rapid growth of the tourism industry in Indonesia has encouraged innovation in the sector as each business competes to attract domestic and foreign tourists. At the same time, however, this growth is having a negative impact of environmental damage such as water pollution and soil pollution, and also producing a perceived community loss. One option is to reduce the negative impact of tourism is by encouraging the development of ecotourism activities. For example, nearby communities could be encouraged to participate in the management of mangrove conservation ecotourism areas. This study considers how such communities can work with local governments on these projects. This complements traditional beliefs within the Indonesian culture which held that ancestors entrust natural wealth to their descendants to be guarded and utilized wisely.

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1. Introduction

The human need for relaxation takes longer to occupy an important position that cannot be ruled out. The development of the tourism world encourages the government and business actors to form a tourism concept that is not only interesting but also plays an important role in supporting human life. Nature tourism is one type of tourism that is much in demand by tourists, tourism activities that directly related to nature provide a relaxing experience and tranquility after the body and mind is occupied by the work routine consuming the majority of time in one week.

The rapid growth of tourism industry in Indonesia has made many tourism businesses innovate with products offered to attract domestic and foreign tourists. The growing tourism industry in Indonesia over time not only give a positive impact on the revenue of the country, but also has a negative impact of environmental damage, water pollution, soil pollution and cause losses to be borne by the surrounding community [1].

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According to the negative impacts resulting from the activities and the tourism industry, comes an idea of sustainable tourism based on the world Tourist Code of Ethics [2]. Local community involvement is an important factor in realizing sustainable tourism development. Public perception related to the tourism development plan undertaken in an area with no exclusion of potential social, economic and environmental impacts on the livelihoods of local communities is a benchmark to the extent community involvement in tourism planning [3].

Indonesia which known as a country with dozens of provinces and surround by tropical climates, makes this country rich in nature tourism objects. One of the favorite natural tourism options is maritime tourism, including mangrove tourism area. The mangrove forest ecosystem is the main ecosystem for life support in coastal areas. Mangrove forests have a variety of ecological roles, there are at least three ecological functions of the mangrove ecosystem area. Firstly, the mangrove ecosystem functions as surge and storm absorbers, protecting the beach from abrasion, sludge holders, and sediment traps carried by surface water flow. Secondly, the leaves and branches of the mangrove trees that fall out will be useful as a detritus producer, which can then be utilized as a source of food for detritus feeders water biota, partly outlined by bacteria into mineral nutrients that A role to burial waters. Thirdly, as a spawning ground, a nursery ground, and feeding ground for various biota waters including fish, crustacean, and mollusca either on shore waters or on the offshore area [4]. In addition to the functions that have been mentioned, the mangrove ecosystem area also has functions as a pollutant absorbent, a high number of carbon-feeder, also useful for research and education purposes.

The area of mangrove ecosystem in Indonesia in 2011 is recorded at 3.75 million hectares, and 1.09 million hectares suffer from ecosystem damage [5]. So far, the development of mangrove ecosystem faced many obstacles, including land function, which then used for various interests such as localities, aquaculture, industrial, plantation, coastal infrastructure or harbour. Lack of public understanding regarding the importance of mangrove; related policy overlap that occurred at the local to national level; occurrence of household waste pollution, plastic waste, oil spill; illegal logging; and natural disasters [5]. Mangrove ecosystem that is used as a tourism object is carried out by various parties, namely local governments, private, and the community around. The role of community around to take part in the management of mangrove tourism area can be the key to the sustainability of the tourist area, in addition to the local people's influence.

Conservation of natural resources is one of the efforts to maintain the environment as mention in the Law Number 32 Year 2009 on Environmental Protection and Management [6]. Referring to Law Number 5 Year 1990, natural resource conservation is described as ' the management of natural and biological resources that its utilization is prudent to ensure the continuity of its availability while maintaining and Improve the quality of diversity and its value ' [7]. Mangrove ecosystem developed into a conservation tourism area by involving the surrounding community to participate actively in it is expected not only to provide ecological value, but also economically for progress of the surrounding community

2. Methodology

Research is done with a qualitative descriptive approach. A descriptive method is a method of research on the status of human groups, a subject, condition, system of thought, as well as events that occur at present by using the data collection techniques through literature study sourced from Books, journals, and institution documents related to the topic of research being conducted [8].

3. Result

Here outlined some research that has been done related to mangrove ecosystem, including the following:

1. Research conducted by Manurung and Sunarta in 2016 gives the result that as an object of ecotourism destination, Tahura Ngurah Rai has the physical potential of the panorama of mangrove forest, road tracking approximately 1,400 m, bird tower, shelter, various animals (birds, fish, crabs, and *biawak*). The Government's conservation efforts to support the potential owned by Tahura Ngurah Rai is a joint project between the Directorate General of Regional Watershed Management and Social Forestry (BPDASPS) and Japan International Cooperation Agency (JICA) to 2014 [9].
2. Lugiana et al. in 2017 conducting research with the purpose of determining the management strategy of Tahura Ngurah Rai using SWOT analysis which concluded five strategies of management priority of Tahura Ngurah Rai namely: (a) implementation and enforcement obvious rules regarding to zonation and accompanying

regulations; (b) waste management and pollution control; (c) counseling and environmental education of the community; (d) development planning that considers the carrying capacity and the power of mangrove; and (e) tourism development involving local communities and local wisdom [10].

3. Ananda conducted a study in 2017 related to Benoa port activity on Tahura Ngurah Rai which gave results: (a) Some parameters of water quality at Tahura Ngurah Rai beyond the threshold, (b) Analysis of the level of ecosystem damage mangrove forest, the condition of the mangrove forest ecosystem has been polluting, (c) the strategy of environmental management mangrove forest Tahura Ngurah Rai ecosystem based on the principle of management in the Law of the Republic of Indonesia No. 32 year 2009 about protection and environmental management comprising the planning, utilization, control, maintenance, supervision and enforcement of law involving various parties [11].
4. Friess conducted research in 2017 about ecotourism as a means of conservation of mangrove in south east Asia. The results obtained from the research are with good management, where there is cooperation between the community and the management parties, ecotourism can be used as one way to preserve mangrove [12].
5. Faizal, Hakim, and Harahap in 2017 conducted research on the factors affecting the participation rate in the management of mangrove ecotourism in Cengkong Watulimo, Trenggalek. The research gives the results that the perception, prevailing norms in the community, and belief has a very important role in the management of mangrove ecotourism in the area [13].
6. Utami et al. conducted a study in 2017 about the perception and participation of the community related to the mangrove ecosystem in Tahura Ngurah Rai with the following results:

Based on the results it is known that the average community has understood the importance of the mangrove existence so that the Community supports also have the intention to participate in activities related to mangrove conservation, In addition, the community also has the perception that the mangrove in the area Tahura Bali Ngurah Rai is one of the successful examples of mangrove conservation area. Another important point is that people also have the belief that by the existence of mangrove ecosystem in Tahura Ngurah Rai Bali as one of the tourism objects will have a positive impact on the economy of the surrounding community also help contributes to local income.

Based on the results of the research known that community participation related to the sustainability of mangrove ecosystem is still low, especially for planting mangrove, participating in mangrove conservation activities, or issuing funds for conservation mangrove, but the community has a great enthusiasm to attend activities related to the preservation of mangrove. This is expected to encourage people to be increasingly concerned and participating in a tangible role in any activities related to mangrove conservation efforts [14].

7. Lestari et al. in the year 2018 examine the relationship between the power of the mangrove ecosystem with the catch of fishermen around Tahura Ngurah Rai which results in the conclusion that the higher the mangrove density and area mangrove fishing area then the bigger also the result of fishermen in the mangrove ecosystem Tahura Ngurah Rai, in other words there is a positive relationship between the area and the density of mangrove with fishermen catches [15]
8. Basyuni et al in 2018 researched about the development of community-based mangrove management through ecotourism in North Sumatra, and got the results that based on SWOT analysis, two locations that became the object of research potentially as ecotourism area with various things that support such as different types of mangrove, potential human resources, and easy access [16].
9. Ardhana research in 2018 about the development of four forest areas the development of ecotourism site in conservation forest area that is located in Tahura Ngurah Rai and West Bali National Park shows the best development of ecotourism among other ecotourism development sites. Because it is facilitated by the central and local governments so both in terms of management or facilities and ecotourism infrastructure if there is damage and environmental pollution can immediately be solved [17].

4. Discussion

Reviewing the further research that has been done, as stated earlier that the existence of mangrove tourism area has the potential of attracting both from the ecological side and economical side. It is unfortunate if the area is rated tourists less worthy of its management side. One example is on the mangrove ecosystem Tahura Ngurah Rai Bali, the end of the cooperation of the local government with JICA in 2014 is assumed to be the cause why the management of the area is considered less optimal.

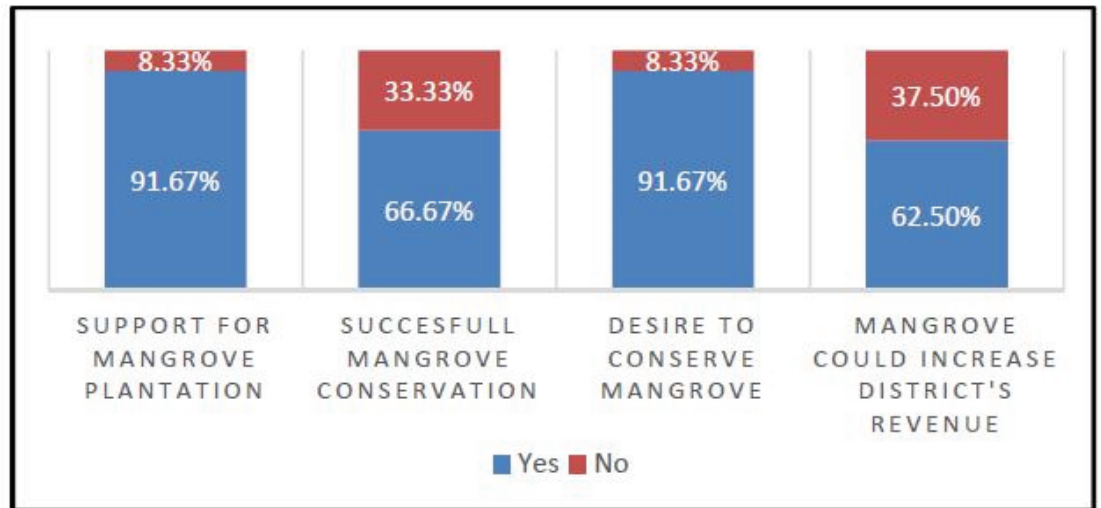


Figure 1: Public perception on mangrove. Source: Utami et al. (2017)

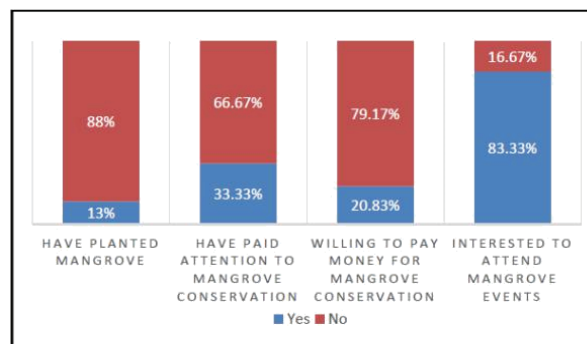


Figure 2: Community participation in the mangrove ecosystem. Source: Utami et al. (2017)

In reference to Law Number 5 of year 1990 conservation centered on life-supporting system protection activities, preserving diversity of plant and animal species and its ecosystem, and the sustainable utilization of natural resources and ecosystem. Tourism in context as part of its true sustainable development is to safeguard the environment so that it can fulfill the needs of society both in the current generation and up to the future generations. The concept of conservation in the eco-tourism area of mangrove that has been running will be more optimal when supported not only from local government, research institute, NGO's engaged in environmental sector, and local communities around the mangrove ecotourism area. Perception, the prevailing norm in society, and belief has a very important role in the management of mangrove ecotourism. Potential human resources, and accessible access is a very support in the sustainability of natural tourism with mangrove objects.

Sustainable mangrove ecosystem management is all the efforts of protection, preservation and sustainable utilization through an integrated process to achieve the sustainability of mangrove ecosystem functions for the welfare of the community as mentioned

in Presidential Regulation Number 73 Year 2012 related to national strategy of the management of mangrove ecosystem to affirmation that the role of surrounding communities to be more involved in the management of mangrove conservation ecotourism area together with the local government aimed at digging up social, economic, and cultural benefits with a special interest in creating jobs is crucial. Factors of culture and belief, for example, believe that ancestors entrust natural wealth to be guarded and utilized wisely, which has been firmly attached to the lives of people in the vicinity of mangrove ecotourism areas to participate in environmental protection activities are one of the positive ways that have been done and can continue until future generations. Based on the explanation, the conservation activities of mangrove areas aimed at preserving the type, habitat, and all the components contained in the mangrove ecosystem can also be used as an ecotourism destination play a positive role for relaxation and leisure activities as well as providing new knowledge. The positive impact of mangrove conservation activities can also have a positive influence on sustainable tourism aimed at preserving nature and enhancing the welfare of the surrounding communities.

5. Conclusion

Sustainable tourism is a tourism activity that is not only centered on the provision of tourism activities but also considers the carrying capacity of the relevant area for the sustainability of nature to stay still until the next generation, but it also actually embraces and develops the potential of the local population to manage the relevant area together with governments and managers. Ecotourism area mangrove as one of the natural tourism objects that provide an origin of the area with a variety of mangrove plants have a lot of potential either as a relaxation tourism object or as an educational tourism object. Natural tourist areas that are developed into a conservation area can provide more value, not only maintain the sustainability of the biological resources in it, when directed towards a sustainable tourism object will also to ensure the lives of the local people to next generations.

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Conflict of Interest

The authors have no conflict of interest to declare

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