

ECOTOURISM MANAGEMENT OF ECO MARINE TOURISM MANGROVE (KOMMA) IN MUARA ANGKE, JAKARTA

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Abstract: *Ecotourism concept is related to natural-based tourism activities with minimum negative impacts on the environment. In order to operate, an eco-tourism site must follow certain principles and accountabilities. This paper discusses the development strategy and sustainable development strategy of eco-tourism of Eco Marine Tourism Mangroves (KOMMA Mangrove Community, Mangrove Community) in Muara Angke, Jakarta. Problems will arise when the tourist and community do not have environmental awareness. Consequently, problems like ocean littering with garbage are arising. These problems hinder the development of eco-tourism in Eco Marine Tourism Mangroves. There are eight principles of eco-tourism developed by Wood (1999), which will later become the indicators of assessing the mangrove forest in this paper. The site is essential to be studied due to its innovation in environmental conservation by planting mangroves in the middle of the coastal waste heap, which becomes a waste destination of twelve rivers and ocean in Jakarta.*

Furthermore, KOMMA is managed by a local community and has a Corporate Social Responsibility (CSR) program with two state-owned enterprises. The study uses qualitative methods with in-depth interviews as primary data collection and literature review as secondary data collection. The study results show that there are still several components of eco-tourism that still need to be taken into consideration by the management of KOMMA and the Government to improve the eco-tourism site. Among others, the components that need to be improved are the carrying capacity of the site, the efforts to minimize the antagonizing impacts of tourism activities, and some essential facilities.

Keywords: *eco-tourism, sustainable, Eco Marine Tourism Mangrove.*

I. PRELIMINARY

a) Background

Eco Marine Tourism Mangrove is located in Muara Angke Jakarta and well known as mangrove conservation, fulfilled with *Avicennia germinans* (frees), *Rhizophora* (mangroves), *Sonneratia* (pidada) and nipa palm. Eco Marine Tourism Mangroves managed by KOMMA (Mangrove Community, also known as Mangrove Community). KOMMA built this site because they were concerned over the loss of mangroves in their neighborhood in the coastal area. Along with the high activities and the construction of settlements in the coastal mangrove area disappeared from the estuary area of Angke. KOMMA's hard work and endless efforts for years

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have approached the Government and various parties to get permission to manage the area to develop mangrove plants. Mangroves acknowledge protecting the coast against natural hazards such as tsunamis, storms, and coastal erosion. Since 2008 until 2013, mangrove planting has experienced problems due to a large amount of mud and garbage. In 2014, with sober assistance from PT Pembebunan Jawa Bali (PJB) UP Muara Karang Corporate Social Responsibility (CSR), planting 500 mangrove trees was successful and continues to grow until now. The total area is 1.5 hectares and is divided into mangrove plantations, silvo fishery ponds, and bamboo huts. Tourists visited the area from communities, schools, and companies to plant mangroves and learn about mangroves.

The increase in the number of tourists coming to the Eco Marine Tourism Mangrove because of the awareness of the importance of mangroves on the coast, also the role of social media and mass media that introduce this area to the public. The development of this area should also be followed by environmental awareness to avoid environmental damage caused by tourism. Problems will arise when the tourist and community do not have environmental awareness. Consequently, problems like ocean littering with garbage are arising. These problems hinder the development of eco-tourism in Eco Marine Tourism Mangroves. We believe that aside from the active participation of the local community and private sector in developing eco-tourism's sustainability, the Government needs to have a big hand in ensuring sustainability and helping to develop environmentally friendly eco-tourism.

Based on our research, tourism on Eco Marine Tourism Mangrove is managed by KOMMA and without provision from the Government. It is also found that Eco Marine Tourism Mangrove requires the role of the Government to be developed in the area to comply with sustainability principles of eco-tourism and easy access to the site. Therefore, eco-tourism strategy should also be constructed to realize the grand design of eco-tourism on Eco Marine Tourism Mangroves.

b) Formulation of the problem

According to the background above, the research question proposed is:

1. What is the strategy for developing mangrove tourism management in environmentally friendly?
2. How to improve the development of sustainable mangrove tourism in Ecomarine Tourism Mangrove (KOMMA) Muara Angke?

II. LITERATURE REVIEW

a. Concept of Eco-tourism

The following eco-tourism concept is a review from a journal from Diamantis (2010). According to Diamantis (2010), the term of eco-tourism is dated back around the 1980s. Natural-based excursion and the raising awareness to eliminate the adverse environmental effects of

tourism contributed to the demand for eco-tourism. Among the continuum of paradigms in the definition of eco-tourism, Steward & Sekartjakrarini (1994) claimed that the concept of eco-tourism is based on two following approaches:

1. Activity-based eco-tourism linger around the "ecotourist" and what they should do to obtain the minimum impact on the environment and local cultural elements,
2. Eco-tourism is an industry that relies heavily on the supply side, making eco-tourism the tool for conservation with the interrelationship between local community and tourism.

Various definitions of eco-tourism have included one term as common understanding, which is a natural-based component. The natural-based component itself, in general, contains three elements:

1. Nature experience, containing the intensity of interactions with nature and social sensitivity,
2. Style of the experience shows that product elements such as willingness to pay, group size and type, and length of stay are considered significant,
3. Location of the experience, such as accessibility, ownership, and fragility of the resources being in utilization.

Sustainable component management is one of the criteria of eco-tourism. As suggested by Figgis (1994), sustainability in eco-tourism means that tourism follows what nature needs and not the other way around. However, this can only go far as the eco-tourism activities still have impacts on the environment, such as improper dumping of waste, untreated waste, vehicle traffic, noise and litter generation, etc. Although Boyed and Butler (1993) testified that the aforementioned adverse effects are still considered as the least demanding form of tourism, it needs to be noted that even the smallest amount of ecological change can cause irreparable damage to the environment.

As the solution to the problem, carrying capacity of technology, environmental control, environmental impact assessment, and environmental auditing is required to be done obediently to prevent the environmental impacts against eco-tourism sites (Diamantis & Westlake, 1997).

b. Ecosystem level management

In order to understand eco-tourism and the concept of its management, we have to take a look at the level of eco-tourism management referenced from the journal by Nugroho et al. (2018). According to Weaver (2002), the eco-tourism hierarchy of management is divided into three levels: macro and national levels, ecosystem levels, and local levels. These three levels have their essential policies surrounding the management of the tourist destination.

Mangrove areas can be classified as ecosystem levels because the scope is limited to the ecosystem of mangroves. The ecosystem area can include one or more local communities in order to support its function. The essential policies of the ecosystem area are:

1. *The vision of eco-tourism destination management.* The vision of eco-tourism destination can be adjusted to the type of ecosystem; for example, in mangroves, the vision of eco-tourism is to conserve the mangrove area by encouraging the plantation of mangrove trees continuously.
2. *Collaboration and synergy.* Even though the ecosystem level has explicit scope limitation, it does not stop to get support from other functional areas, such as fishing, forestry, or agriculture economic sector. Collaboration and synergy between economic sectors can create a wholesome economic development of the area.
3. *The integrated area management.* Integrated area management of eco-tourism includes preventing the unpermitted parties from profiting from the ecosystem by setting boundaries, providing the tourists with sufficient facilities and policies to be followed, and providing dedicated spaces for conservation. The eco-tourism area should be carefully designed with the discussion of many stakeholders to achieve the three goals mentioned above.

c. Principles of Ecotourism

There are eight (8) principles of eco-tourism developed by Wood (1999), which will later become the indicators of assessing the mangrove forest in this paper. The eight principles of eco-tourism are:

1. Mitigating the antagonizing impacts on nature and culture,
2. Environmental conservation education to tourists and travelers,
3. Maintaining good-governed business and benefits directly to the region,
4. Community participation in planning,
5. Community income,
6. Maintaining harmony with nature,
7. Carrying capacity of the environment,
8. Income opportunities in a large portion of the country.

d. State of the Art

Mangrove forests as a tourist location have been developed for a long time (Setyawan, 2006). In this study, it was mentioned that mangrove forests could be the location of conservation education, especially mangrove conservation. Studies on the development opportunities and suitability of mangrove ecosystems as eco-tourism destinations have been carried out in various places. There are several studies relating to mangrove eco-tourism.

Khoiri (2014) conducted a study on the feasibility analysis of developing mangrove eco-tourism on Muara Indah beach, Deli Serdang. The study results are based on the assessment criteria for the feasibility of developing mangrove forest eco-tourism, so it can be classified that the mangrove forest in Muara Indah Beach deserves to be developed an eco-tourism area with a score of 69.5. Sawitri (2014) examined the mangrove ecosystem as a natural tourism object in the Bekantan Mangrove Conservation Area (KKMB) in Tarakan. The suitability assessment of

the KKMB area shows that natural forests (80.26%) and expansion areas (92.10%) are suitable and fulfill criteria as natural tourism objects, supported by the perception of visitors interested in natural beauty, wildlife, and aquatic biotics.

The potential of mangrove forest environmental services as an eco-tourism destination has not been optimized as an alternative to more environmentally friendly forest management. The integrated development of eco-tourism with diverse destinations around it can optimally increase tourism pathways (Mukhlisi, 2017) and simultaneously will also have a positive impact on regional economic growth. The result of the study showed that the mangrove forest area of Tanjung Batu's prospective to be developed as an eco-tourism destination with a total score of natural attractions that were in the high category.

The development of mangrove eco-tourism is one of the efforts to use environmental services from the coastal area in a sustainable manner. Eco-tourism in mangrove forests is seen as being able to synergize with concrete forest ecosystem conservation measures (Mulyadi and Fitriani, 2010). Nevertheless, the development of eco-tourism in mangrove forests must be managed by avoiding risks and negative impacts on the environment, taking into account aspects of suitability and carrying capacity of the environment (Mukhlisi, 2017).

Research conducted by Mensah titled "Benefits and Challenges of Community-based Ecotourism in Park-Fringe Communities: The Case of Mesomakor of Kakum National Park (2017), Ghana revealed that community-based eco-tourism (CBE) proved as a viable model for conservation as well as livelihoods for the Park-Fringe communities. This study employed qualitative methods to analyze the benefits and challenges of CBE in the Mesomakor Community of Kakum National Park. The results showed that although the community has made some modest economic benefits, especially in infrastructure development, the project faces several challenges: apathy towards participation, limited employment opportunities, revenue sharing opportunities, and lack of local capacity to manage the projects destroyed of farms. In short, the studies include that entrusting the management of tourism in the community in the hands of the local community was premature because they lacked the capacity and the structures for marketing and managing the project. In line with this study, our research also aims to ascertain that the government and private sector is recommended to train and mentor community members to play various roles, such as managing environmentally friendly eco-tourism.

III. RESEARCH METHODOLOGY

a. Research Design

This research uses qualitative research methods. Qualitative research is used in studies to explore and understand the meaning of several individuals or groups of people who are deemed to be derived from social or humanitarian issues. (Creswell, 2014).

The approach used in this study is the case study approach. The case study approach is an exploration of "abound system" or "a case/variety of cases" that over time through deep data collection and involving rich sources of information. (Creswell, 1998) The case study approach

was taken because the study focused on a specific case in the management of eco-tourism in the Eco Marine Tourism Mangrove (KOMMA) of Muara Angke Jakarta, on both the development strategy and the sustainable development strategy.

The research draft proposed in this study includes; to determine the purpose of this research is to analyze the development strategy and the sustainable development strategy of eco-tourism in Eco Marine Tourism Mangrove. The subject of research is KOMMA management,

b. Research Instrument

Research The instrument is done by interview, observation, and document study, and the necessary data or information is obtained from a light source. Analysis of qualitative research data will take place along with other parts of qualitative research development, data collection, and writing of findings.

c. Data Analysis Methods

The data collected at the data collection stage is then analyzed using the Miles and Huberman models. Data analysis, according to Miles and Huberman, is done continuously until data saturation (Miles and Huberman (1984) in Sugiyono, 2014). The data above analysis stages are applied in the research to answer the proposed research questions in the problem formulation.

IV. RESULT

Nowadays, tourism is a fast-growing industry and a significant source of income for many developing countries (Wood 2002: 7), including Indonesia. Based on data from BPS (2013: 111), the number of foreign tourist arrivals to Indonesia increased from \pm 6.3 million tourists in 2009 to \pm 8 million tourists in 2012. The abundant potential of resources and demand for environment-based tourism (eco-tourism) in Indonesia is in the position of golden resources in terms of number, variety, quality, and distribution. Specifically, the marine sector has a very high potential, considering Indonesia is the largest archipelagic country that is dominated by sea areas, which reaches 3.25 million km² of ocean and 2.55 million km² of Exclusive Economic Zone (KKP RI, 2017). The vast marine area that exceeds the land area opens broad eco-tourism potential in the marine sector.

The maritime beauty and marine products owned by Indonesia become a unique attraction for domestic and foreign tourists. However, the World Economic Forum (WEF) assesses Indonesia's tourism competitiveness index is still below the world index average and is still inferior to competing countries in Southeast Asia, such as Singapore, Malaysia, and Thailand (DG PDP 2012: 11). There are many tourist objects and attractions (ODTW) that have the potential to increase national income, community welfare, and conservation efforts through the development of eco-tourism. Unfortunately, the potential and luxurious appeal of eco-tourism is not accompanied by good cooperation and synergy between local communities,

Aside from being economically profitable, marine eco-tourism is also useful for maintaining harmony with nature. Eco-tourism is defined as a form of nature-based tourism that seeks to preserve ecologically, socially, and economically by providing opportunities for appreciation and learning about the natural environment or other specific elements (Weaver, 2001). Therefore, to develop this eco-tourism, including the development of facilities and utilities, it is necessary to pay attention to the principle of eco-tourism that is environmentally friendly to maintain harmony with nature. Efforts to disharmonize with nature will damage this ecological tourism product.

Furthermore, it is essential to prevent and mitigate the impacts of tourist activities on nature and culture, prevention, and mitigation according to the character of the local culture and nature. This could be occurred through the existence of eco-tourism with environment-based by providing environmental conservation management knowledge as well as knowledge for visiting tourists. Therefore, in this study, researchers conducted research related to implementation in developing eco-friendly eco-tourism areas with a case study on the Eco Marine Tourism Mangrove, which was initiated by a local community called KOMMA involving Corporate Social Responsibility (CSR).

The Eco Marine Tourism Mangrove is refreshing to be studied because of its innovation in environmental conservation through planting mangroves in the middle of the coastal waste heap, which in certain months becomes a waste destination of 12 rivers in Jakarta.

With the support of the CSR of the PLN subsidiary, the Java-Bali Power Plant (PJB), and the KOMMA local community, the Eco Marine Tourism Mangrove is projected to be an environmentally-based marine eco-tourism area. In analyzing the strategy of developing this eco-tourism area, researchers used eight indicators contained in the principle of eco-tourism development by The Ecotourism Society (Wood, 1999), as follows;

1. Preventing and mitigating the impact of tourist activities on nature and culture. This can be conducted through prevention and mitigation tailored to the character of the local culture and nature. In an interview with the local community's chairman, it was mentioned that educational tours also accompanied this eco-based eco-tourism about the benefits of mangroves in coastal areas by involving tourists in mangrove planting.
2. Environmental conservation education. Educating tourists and local communities about the importance of conservation is conducted through the direct practice of mangrove cultivation in nature. By planting mangroves, it is hoped that people and tourists will have a sense of belonging from the mangrove area. Also, there is a reading corner in the mangrove area filled with exciting activities to educate young children about environmental conservation.
3. Direct income for the region. In addition to involving local communities, levies and conservation taxes are planned to be used directly to foster, preserve, and improve the quality of mangrove areas.
4. Community participation in planning. The development of mangrove eco-tourism has also fulfilled this principle because the local community is the initiator of environmental

conservation. Thus, even though it is funded by 99% by CSR PJB, the community and local communities are invited to plan the development of eco-tourism. Likewise, in supervision, the role of the community is expected to participate actively.

5. Community income. About the initiation of conservation carried out by the local community, all elements involved in this eco-tourism are maximized to increase the income of the local communities, from management to transportation, to souvenirs that are sold will involve local communities such as the community of Folding Houses, Trash Banks, and Sewing Houses. Significant benefits to the community economy from eco-tourism activities encourage the community to preserve the mangrove area.
6. They are maintaining harmony with nature. All development efforts, including the development of facilities and utilities, must maintain harmony with nature. Avoid using oil as far as possible, conserve flora and fauna, and maintain the authenticity of the community's culture. Related to this principle, the local communities need to be equipped with in-depth knowledge about the efforts that can be made in maintaining harmony with nature.
7. They were carrying capacity of the environment. In general, the natural environment has a lower carrying capacity than the carrying capacity of artificial areas. Although there may be many requests, the carrying capacity is limited. This also needs to be a concern of the development of this mangrove area, because this thing has not been a concern of the chairman of Komma's explanation.
8. Income opportunities in a large portion of the country. If a conservation area is developed for eco-tourism, foreign exchange and tourist spending are supported to the maximum extent enjoyed by the state or local Government. This is still an obstacle to the development of environment-based eco-tourism in the mangrove area. Lack of attention and support from the Government caused disappointment for the local communities. The lack of government intervention in eco-tourism is at risk of causing violations of regulations made by the Government.

The fulfillment of the eight principles of eco-tourism could be a guarantee of ecosystems' sustainability and ecological-friendly development. Of the eight principles of eco-tourism, according to Wood, five principles have been fulfilled in the development of Eco Marine Tourism Mangroves, but for the other three principles still need special attention. For this reason, in the development of mangrove eco-tourism, it is necessary to strengthen the provision of in-depth knowledge about the community's efforts in maintaining harmony with nature, considering the carrying capacity of the environment and the involvement of the Government in developing Eco Marine Tourism Mangrove.

The Government's role in developing access to Eco Marine Tourism Mangroves has to be improved because the authority to build roads is in the Government's hands. The Government should communicate this to the community around the Eco Marine Tourism Mangrove about the economic benefits that will be felt by the local community when roads and parking areas are

made, such as food and beverage stall and parking lot service, which will be owned or managed by the local community.

The current problem that must be overcome is the importance of good cooperation between KOMMA and the community around the mangrove area. Information dissemination on the importance of mangrove development in coastal areas to the community must be carried out sustainably. Mangrove acknowledges in protecting the coast against natural hazards such as tsunamis, storms, and coastal erosion must be known. Mangrove, well known on the front line in terms of position, gives some indication of the ability to cope with such hazards, or at least to recover from significant impacts. Mangroves can attenuate waves, capture sediments, and build soil, which makes mangroves important in reducing hazards on landward margins and decreasing exposure.

The researchers researched Eco Marine Tourism Mangroves to know whether or not the existing eco-tourism will give advantages to local communities. Based on the definition, eco-tourism is alternative tourism. It involves visiting natural areas to study, learn, and carry out activities environmentally friendly, which is a tourism-based on nature experience that enables the economic and social development of local communities (Goalkeeper, 2013). According to the definition above, it is clearly stated that the existence of eco-tourism in an area can give social and economic advantages to local communities and the environment around that area.

It can be proved by the results in-depth interview held by the researchers to several respondents, including local communities and Government, that shows the social and economical of the communities living in Eco marine Tourism Mangrove will be improved after having marine eco-tourism, that managed by KOMMA.

The social processes can be explained through social relations and interactions between groups of people, which is cooperation that can be interpreted as working together in order to achieve a common goal. The existence of eco-tourism, a form of cooperation, was carried out in the form of cooperation activities between local communities, companies, and schools, such as road improvements, mangrove planting, fishponds, bamboo hut, and library. Relatively harmonious public relations are a must to improve Eco Marine Tourism Mangroves. There was an increase in social relations between the local community (KOMMA) with the company and school. KOMMA is independently creating facilities for tourism with CSR from PJB. In the beginning, most of the livelihoods were as fishermen; now, they are turning as people behind the Eco Marine Tourism Mangrove, providing catering, beverage sellers, tour guides, and souvenir sellers. Alteration of this type of work can strengthen social relations in Eco Marine Tourism Mangroves; it was proved by the existence of a variety of new ecotourism-based work, the community work together to provide tourism consisting of the availability of tour guides and tourist destinations and other eco-tourism activities.

The collaboration between affects an increase in social relations that are directly related to the community's economic activities. Therefore, the increase in economic activities was also

felt by the community, the results of interviews showed that members of KOMMA and even opened many new livelihoods for the community such as traders of beverages, tour guides, and souvenir sellers. The variety of these new livelihoods can indicate an increase in people's welfare in the economic field.

However, government support is needed to improve this welfare in the form of adequate infrastructure and public services. This support is expected to increase the impact of eco-tourism on the social and economic life of Eco marine Tourism Mangrove communities. The study results indicate that waste development developed in Eco Marine Tourism Mangrove with environmentally friendly technology when a pile of garbage on the coast is used as a base for planting mangroves. This is important to increase the number of tourists because waste management also deals directly with the comfort of tourists. Since it dramatically influences the income of the community from this eco-tourism service.

Tourism in Eco marine Tourism Mangrove is not only an essential component in the local economy but also causes serious environmental, social, and economic problems by the increase of population growth and tourist numbers. When most people think of tourism, they rarely think of tourism as a crisis.

On the other hand, tourism in Eco marine Tourism Mangrove can also bring many positive benefits and improve the sustainability of a community. Some of the potential positive impacts include financial contributions for community development and increasing new employment opportunities and economic development in Eco marine Tourism Mangroves.

There are many examples of what individuals and organizations are doing to improve the environment for tourism and local communities in Eco marine Tourism Mangroves. However, most of them are initiated by citizens. Tourism management in Eco marine Tourism Mangrove is not only the responsibility of the Government but also requires active contributions from all parties such as; local communities, tourists, and private sector:

Based on the observation conducted on Eco Marine Tourism Mangroves, KOMMA fully manages tourism activities. Human resources are one of the critical principles in the management and need to be maximized to obtain successful management. Mazilu (2010), in her paper, stated that the quality of management of tourism is to achieve the maximum level on the fulfillment of customer requirements, society requirements, meet the aspects of consumer protection, and also the environment. Quality management of tourism needs to consider customer requirements in order to attract more visitors. Surveys showed that at least three tourism facilities are not sufficient for tourists. Those facilities are signposts, restrooms, and souvenir shops. The observation shows that tourism in Eco Marine Tourism Mangrove has not met with visitors as costumers demand.

In Indonesia, the Government's role in tourism development is needed in diverse social and economic situations. The Government has the capacity and authority to accommodate and

coordinate planning and programs of diverse interest groups and agendas. In Indonesia, tourism has been one of the most prominent economic sectors; tourism is one of the domestic strategic sectors. The Government should take the tourism sector seriously; the Government should also support the provision of eco-tourism facilities and easy access to Eco Marine Tourism Mangroves.

Therefore, PBJ has already provided support for tourism development through local community training. Adequate and continuous training and education are needed to improve human resources and tourism management in Eco Marine Tourism Mangroves. Training and education to the local community of Eco Marine Tourism Mangroves will contribute to the citizens' capacity to manage sustainable and eco-friendly tourism management.

V. CONCLUSION

Mangroves have ecological and economic functions and benefits for the community. Tourism management in Eco marine Tourism Mangroves has been improved to the principles of eco-tourism. The fulfillment of the eight principles of eco-tourism could be a guarantee of the sustainability of ecosystems, as well as ecological-friendly development. Of the eight principles of eco-tourism, according to Wood, five principles have been fulfilled in the development of Eco Marine Tourism Mangroves. However, the other three principles still need to be improved.

For this reason, in the development of mangrove eco-tourism, it is necessary to strengthen the provision of in-depth knowledge about the efforts that the local community can take part in maintaining harmony with nature, considering the carrying capacity of the environment. Good cooperation between Local Government and Community will enhance the rate of success of eco-tourism. The Government, KOMMA, local community, and also PJB has to cooperate with facilitating the establishment of eco-tourism. Monitoring by the Government and PJB has been taken regularly to ensure eco-tourism is established in Eco Marine Tourism Mangroves. Such as tourist data collection is supposed to be centralized and must be collected so that the number of tourist visits can be monitored, also can building tourists' concern for the environmental sustainability of the region. The authorities have to ensure easy access for tourists to Eco marine Tourism Mangroves. The government resolution involves a resolution between KOMMA and the local community to achieve solutions for both to have the shared vision to develop mangrove plantations protecting the coast against natural hazards and the tourism area.

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