Sustainable Ecotourism Development in South Coast Area in Malang District, East Java Province

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Abstract: The development of sustainable ecotourism in the southern coast region of Malang Regency should be based on the concept of sustainable tourism in this case ecotourism. This is intended so that the development of ecotourism is able to provide value benefits in the present while maintaining the preservation of existing resources for the benefit of the benefits in the future. Related to this, a further study will be carried out on a number of southern coastal tourism attractions in Malang based on the conception of sustainable ecotourism development. This study on the development of sustainable ecotourism in the south coast region in Malang Regency refers to the conception of sustainable tourism development by determining five (five) dimensions, namely: Environmental Dimensions, Economic Dimensions, Social and Cultural Dimensions, Dimensions of Accessibility and Utilities; and Institutional Dimensions.

Keyword: Ecotourism Development, Rap-Eco Beach

1 INTRODUCTION

Development is a conscious and continuous effort aimed at achieving the welfare of Indonesian people, both materially and spiritually. Development activities are activities that cannot be stopped in order to improve human welfare. However, considering that development itself is an effort to combine the potential of natural resources and human resources, it is almost certain that this development process will have an impact on disrupting environmental balance. Therefore, the existence of environmentally sound development is the only choice in an effort to reduce the negative impact of the development process itself. Environmentally sound development is a development policy by prioritizing environmental sustainability by integrating natural resources into the development process to ensure the ability, welfare, and quality of life of the present and future generations. The management of the environment is an integrated effort to preserve the function of the environment which includes policies on the arrangement, utilization, development, maintenance, recovery, supervision and control of the environment. Environmentally sound development is often referred to as sustainable development (Sugandhy, et al., 2009). Explanations related to ecotourism provide an understanding that conceptually ecotourism is a concept of developing sustainable tourism with the aim of supporting environmental (natural and cultural) conservation efforts and increasing community participation in management, thus providing economic benefits to the local community. If viewed in terms of management, ecotourism can be defined as the organization of responsible tourism activities in natural places and / or regions created based on natural principles and economically sustainable that supports efforts to preserve the environment (natural and cultural) and improve welfare local community.

2 LITERATURE REVIEW

2.1 Sustainable Development

The concept of sustainable development initially emerged because of attention to the environment. Especially natural resources that cannot be renewed while exploitation is carried out continuously. On the other hand, the concept of sustainable development was born based on the fact that human needs continue to increase. Sustainable development is a new development paradigm that agrees on an integrated / integrated approach to development that combines at the same time the pillars of economic development, social development, and environmental protection. The term sustainable development has entered the vocabulary of experts and the public after the publication of a report on development and the environment and natural resources. This report was published by the World Commission on Environment and Development - UN (UN World Commission on Environment and Development - WCED) chaired by Harlem Brundtland, in the report defined the term sustainable development, which is development that can meet the needs of the current generation without sacrificing future generations to be able to meet their needs (Siregar, 2004).

2.2 Sustainable Development Goals

Sutamihardja (2004), states that sustainable development targets include efforts to realize the occurrence of:

1) Equal distribution of benefits of inter-generational development results (inter-generation equity) which means that the use of natural resources for growth needs to pay attention to reasonable limits in the control of ecosystems or environmental systems and directed at natural resources that are replaceable and emphasize the lowest possible exploitation of natural resources which is unreplaceable.

2) Safeguarding or protecting the preservation of natural resources and the existing environment and preventing the disruption of ecosystems in order to ensure the quality of life remains good for future generations.

3) Utilization and management of natural resources only for the sake of pursuing economic growth in the interest of equitable distribution of sustainable use of natural resources between generations.

4) Maintaining the welfare of the people (community) which is sustainable both now and in the future (inter-temporal).

5) Maintaining the benefits of development or the management of natural and environmental resources that have long-term or sustainable long-term benefit impacts between generations.

6) Maintaining the quality or quality of human life between generations in accordance with their habitat.

2.3 Principles of Sustainable Development

The concept of sustainable development is based on 4 (four)
four basic principles (Angelevska-Najdeska & Rakicev 2012), namely:
1) The principle of environmental preservation, whereby the development should be adjusted to maintain ecology, biodiversity and biological resources.
2) The principle of social sustainability, is a development that is adapted to traditional values and strengthening the identity of the community.
3) The principle of cultural sustainability, provides cultural development that is adapted to the cultural values of the community.
4) The principle of economic sustainability, economic development using cost and effective resources to be managed with the goals of current and future generations.

2.4 Tourism
The etymology of the word "tourism" is identified with the word "travel" in English which is defined as a trip that is made many times from one place to another. On the basis of that also by looking at the current situation and conditions of tourism can be interpreted as a planned trip carried out individually or in groups from one place to another with the aim to get satisfaction and pleasure (Sinaga, 2010: 12).

2.4.1 Sustainable Tourism Development
The development of tourism management raises a lot of thoughts, including the thought of developing sustainable tourism, which begins with thinking about mistakes in the past and creating awareness for future conditions. The idea of sustainable tourism development was first coined by the International Union for the Conservation of Nature and Natural Resources (IUCN 1980) with its World Conservation Strategy. Sustainable tourism development meets the needs of tourists and receiving areas today while maintaining and increasing opportunities for the future. All of this is considered as a guide for managing all sources in such a way that economic, social, cultural, and aesthetic value needs are met while maintaining cultural integrity, basic ecological processes, biological diversity and life support systems (Liu, 2003).

2.5 Ecotourism
One part of sustainable tourism development as a derivative of the concept of sustainable tourism development is the concept of ecotourism development. Ecotourism is more than just a dedicated group of nature lovers, as a combination of various interests that arise from a concern for social, economic and environmental issues. How to get foreign exchange back so that nature conservation can finance itself is at the core of this new branch of green economics of sustainable development. The term new ecotourism emerged and began to be widely discussed by tourism actors based on reflections of past travel activities, such as Darwin to Galapagos, Humbolt, Bates, Wallace. The journey of Marcopolo, Tomi Pires, Weber, Junghuhn and Van Steenis which is inter-island and inter-continent which is full of challenges to study natural conditions at a macro level, but the trip is still categorized as adventure tourism and is commonly carried out by researchers and other adventurers, so that it is the same as other terms such as nature based tourism, cultural tourism, back to nature tourism, without conservation values, respect for nature, endangered species (Chafid, 1994). There are several previous studies related to this study. There are Andronicus et Andronicus (2016), Simon Suddin (2017), Muhsoni (2017).

3 METHODOLOGY

3.1 Data and Methodology
The data used in this study include primary data and secondary data. Data analysis was carried out according to sequences of research objectives so that the determination of data analysis methods was adjusted to those needs. Multi-Dimensional Scaling (MDS) Rap-EcoBeach approach (Modified RAPFISH), Leverage Analysis (Sensitivity Analysis) and Methods for the Formulation of Sustainable Ecotourism Development Strategies for the South Coast Region in Malang Regency.

4 RESULT

4.1 Index and Status of Sustainable Ecotourism Development in the South Coast Region in Malang Regency
The measurement of the index and the status of sustainable ecotourism development in the three locations, namely Ngliyep beach, Ungapan beach and Balaikambang beach is done by first determining the sustainability dimensions along with their attributes to then be analyzed using the Multidimensional Scaling (MDS) Rap-approach method EcoBeach (Modified RAPFISH). The dimensions and attributes of sustainability itself are as follows: (1) Environmental dimensions, the number of attributes is 10; (2) Economic dimensions, the number of attributes is 8; (3) Social and Cultural Dimensions, the number of attributes is 10; (4) Accessibility and Utility Dimensions, the number of attributes is 10; and (5) Institutional Dimensions with 8 attributes.

4.2 Index and Status of Sustainable Ecotourism Development Environmental Dimensions
Seen from an environmental point of view, ecotourism activities in coastal areas must meet the requirements of coastal geomorphology, coastal processes related to sea waves, coastal erosion, distribution of suspended solids, distribution of surface bottom sediments, ground water and the extent of coastal plains (Susana et al. 2004). Tourism activities to be developed must be adjusted to the potential of existing resources. Each tourism activity has its own resources and environmental requirements according to the tourism object to be developed. Resource and environmental requirements are grouped by type of tourism activity. The parameters that are a prerequisite in the suitability of marine ecotourism are physical parameters and biological parameters. The physical parameters of the beach and waters are the more dominant prerequisites for beach tourism, while for marine tourism based on ecosystem biological parameters are also considered. Physical parameters considered in the suitability of tourism, namely beach sand, base substrate, sea water brightness, depth, current speed, beach width, beach slope, tides, waves, and fresh water. Biological parameters considered in the suitability of tourism, namely coastal vegetation, coral, reef fish, mangrove, seagrass, and other marine biota (Yulius et al, 2018).

4.3 Index and Status of Sustainable Ecotourism Development in Economic Dimensions
The economic dimension refers to the understanding of the
development of the southern coast region that has sustainable economic activities with a fair value of long-term benefits and is able to provide economic benefits to stakeholders fairly and equally. The attributes of this dimension, namely: (1) Increase in family income; (2) Contribution of the regional economy; (3) Job opportunities; (4) business diversification; (5) Development of local products; (6) Development of other tourism services; (7) tourist charges; and (8) increasing the purchasing power of tourists. The results of the Monte Carlo statistical and simulation parameters provide an understanding that the quantitative and rapid Rap-EcoBeach analysis (rapid appraisal) is good enough to be used as an evaluation tool in determining the status of the economic dimension in the development of sustainable ecotourism in the southern coast region of Malang Regency.

4.4 Index and Status of Sustainable Ecotourism Development Social and Cultural Dimensions

The socio-cultural dimension refers to the understanding that the development of the south coast region will continue to maintain and respect the authenticity of the social and cultural values of local communities, preserve the values of existing cultural and cultural heritage, and contribute to increasing tolerance and understanding between cultures. The attributes of this dimension, namely: (1) The level of public education; (2) unemployment rate; (3) Cultural preservation; (4) Educational content; (5) Community participation; (6) Application of science and technology; (7) Tourism education and training; (8) Environmental cleanliness; (9) social conflicts; and (10) Security level. Rap-EcoBeach analysis results show that Ngliyep Beach has a fairly sustainable status (53.91), Balaikambang Beach has a fairly sustainable status (53.91), and Ungapan Beach has a fairly sustainable status (56.61). Statistical parameters shown by a stress value (S) of 15.4% stated goodness of fit (S <25%) and a coefficient of determination (R2) = 94.6% giving a confirmation of good conditions (close to 1). This gives an understanding that all attributes are quite accurate and provide better and accountable analysis results in assessing the status of the Accessibility and Utility dimension in the development of sustainable ecotourism in the southern coast region of Malang Regency.

4.5 Index and Status of Sustainable Ecotourism Development Dimensions of Accessibility and Utilities

The accessibility and utility dimensions provide an understanding that the development of the southern coast region has the support of easy access, both access to information, infrastructure, facilities and other infrastructure so as to provide convenience and comfort for tourists. Utility refers to the understanding that the development of the southern coast region can provide direct benefits to users of coastal recreation tourism services, such as lighting, clean water, waste management, and so on. The attributes of this dimension, namely: (1) Tourism facilities and infrastructure; (2) Access to transportation; (3) Access to information; (4) Access to communication; (5) Accommodation; (6) Clean water; (7) Electricity; (8) Health facilities; (9) travel promotion; and (10) tourism marketing. Rap-EcoBeach analysis results show that Ngliyep Beach has a less sustainable status (49.54), Balaikambang Beach has a fairly sustainable status (55.21), and Ungapan Beach has a fairly sustainable status (54.61). Statistical parameters shown by a stress value (S) of 15.4% stated goodness of fit (S <25%) and a coefficient of determination (R2) = 93.8% giving a confirmation of good conditions (close to 1). This gives an understanding that all attributes are quite accurate and provide better and more accountable analysis results in assessing the status of the Institutional dimension in the development of sustainable ecotourism in the southern coast region of Malang Regency.

4.6 Index and Status of Sustainable Ecotourism Development Institutional Dimensions

The institutional dimension refers to the understanding that the development of the south coast area is supported by regulations or legal umbrella and the participation of institutions / institutions including its human resources. Support is also related to the management of tourism in a destination, both from government, private or community elements (Sunaryo, 2013). The attributes of this dimension are as follows: (1) Central government regulations; (2) Local government regulations (PERDA); (3) Customary norms / law; (4) The role of government institutions; (5) The role of the private sector; (6) Role of Research and Development; (7) The Role of NGOs / Academics; and (8) The role of local community institutions. Rap-EcoBeach analysis results show that Ngliyep Beach has a less sustainable status (46.59), Balaikambang Beach has a fairly sustainable status (52.90), and Ungapan Beach has a fairly sustainable status (50.21). Statistical parameters shown by a stress value (S) of 17.3% stated goodness of fit (S <25%) and a coefficient of determination (R2) = 93.8% giving a confirmation of good conditions (close to 1). This gives an understanding that all attributes are quite accurate and provide better and more accountable analysis results in assessing the status of the Institutional Dimension in the development of sustainable ecotourism in the southern coast region of Malang Regency. The results of the Monte Carlo statistical and simulation parameters provide an understanding that the quantitative and rapid Rap-EcoBeach analysis (rapid appraisal) is good enough to be used as an evaluation tool in determining the status of the Institutional dimension in the development of sustainable ecotourism in the southern coast region of Malang Regency.

4.7 Index and Status of Multidimensional Sustainable Ecotourism Development

Measurement of multidimensional sustainability status is a measurement carried out on multidimensional sustainability in the development of sustainable ecotourism in the southern coast region in Malang Regency. The intended multidimensional is a combination of all dimensions of sustainability, namely the Environmental Dimension, the Economic Dimension, the Social and Cultural Dimensions, the
Accessibility and Utility Dimensions and the Institutional Dimensions. Rap-EcoBeach analysis results show that Ngliyep Beach has a less sustainable status (51.17), Balaikambang Beach has a fairly sustainable status (60.21), and Ungapan Beach has a fairly sustainable status (56.42). Statistical parameters shown by the stress value (S) of 13.6% stated goodness of fit (S < 25%) and the coefficient of determination (R²) = 95.6% gave a confirmation of good conditions (close to 1). This gives an understanding that all attributes are quite accurate and provide better and accountable analysis results in assessing the multidimensional status in the development of sustainable ecotourism in the south coast region in Malang Regency. The results of the Monte Carlo statistical and simulation parameters provide an understanding that the quantitative and rapid Rap-EcoBeach analysis (rapid appraisal) is good enough to be used as an evaluation tool in determining the multidimensional status in the development of sustainable ecotourism in the south coast region in Malang Regency.

5 CONCLUSION

On the basis of the explanations made in the previous chapter, conclusions can be drawn as follows.

1. The status of sustainable ecotourism development for each dimension is as follows:
   a. The status of sustainable ecotourism development in the environmental dimension shows that Ngliyep Beach is quite sustainable (62.91), Balaikambang Beach is sustainable (77.73), and Ungapan Beach is quite sustainable (57.68). b. The status of sustainable ecotourism development in the economic dimension, Ngliyep Beach has a less sustainable status (33.64); Balaikambang Beach is quite sustainable (51.73), and Ungapan Beach is less sustainable (45.03). c. Status of sustainable ecotourism development in social and cultural dimensions, Ngliyep Beach has a fairly sustainable status (53.91), Balaikambang Beach is quite sustainable (64.76), and Ungapan Beach is less sustainable (45.45). d. The status of sustainable ecotourism development in the dimensions of accessibility and utility, Ngliyep Beach has a less sustainable status (49.54), Balaikambang Beach is quite sustainable (53.21), and Ungapan Beach is quite sustainable (56.61). e. The status of sustainable ecotourism development in the institutional dimension, Ngliyep Beach has a less sustainable status (46.59), Balaikambang Beach is quite sustainable (52.90), and Ungapan Beach is quite sustainable (50.21). f. The status of multidimensional sustainable ecotourism development shows that Ngliyep Beach has a less sustainable status (51.17), Balaikambang Beach has a fairly sustainable status (60.21), and Ungapan Beach has a moderately sustainable status (56.42).

2. Sensitive attributes as a lever factor in the development of Ngliyep beach ecotourism, Ungapan beach, and Balaikambang beach in Malang Regency are as follows:
   a. The attributes of sensitive dimensions of the environment in sequence are: beach slope (2.35), beach width (1.87), hazardous biota (1.86), and current speed (1.69).
   b. The sensitive attributes of the economic dimension are: local product development (2.05), development of other tourism services (2.04), business diversification (1.95), and employment opportunities (1.37).
   c. Sensitive attributes of social and cultural dimensions, namely: environmental cleanliness (2.95), educational content (2.82), and application of science and technology (2.81).
   d. The sensitive attributes of accessibility and utility dimensions, namely: clean water (3.95), communication access (2.72), health facilities (2.48), access to information (2.40), tourism marketing (2.24), and transportation access (2.25).
   e. The sensitive attributes of the institutional dimension, namely: District PERDA (0.92), role of LITBANG (0.77), central government regulation (0.74), Provincial PERDA (0.73), role of government institutions (0.72), and the role of the private sector (0.67).

3. The strategy to improve the status of sustainable ecotourism development in the southern coast of Malang can be done by making improvements to the sensitive attributes of each dimension, namely; environmental dimensions, economic dimensions, social and cultural dimensions, accessibility and utility dimensions, and institutional dimensions. The strategy of developing sustainable ecotourism in the environment dimension of the southern coast region in Malang Regency is carried out by improving aspects of the beach slope, the width of the coast, the dangerous biota, and the speed of the current. Improvements to the economic dimension include aspects of local product development, development of other tourism services, business diversification, and employment opportunities. Improvements to the Social and Cultural Dimensions, including aspects of environmental hygiene, educational content, and the application of science and technology. Meanwhile, improvements to the Accessibility and Utility Dimensions can be carried out in the aspects of clean water, communication access, health facilities, information access, tourism marketing, and transportation access. Furthermore, for the Institutional Dimension, improvements can be made to District Regulations, Role of Research and Development Institutions, Central Government Regulation, Provincial Regulations, Role of Government Institutions, and Role of private parties.

6 REFERENCES
