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Mangrove area development strategy wonorejo as ecotourism in surabaya

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Abstract. Wonorejo mangrove ecotourism is a natural attraction that is increasingly in demand by the community. From year to year, this mangrove ecotourism shows an increase in the number of visitors so it is necessary to know the carrying capacity and development strategy to keep visitors comfortable in the location of tourism. The purpose of this research is to determine development strategies undertaken by the government. The research approach is descriptive quantitative by using survey method. The subject of research is the management of ecotourism area while the object of research includes mangrove, biota object and wide of an area. Sources of data obtained from interviews with parties related to the management of mangrove eco-tourism Wonorejo. Development strategy by using SWOT analysis. The results showed that the collation of the I-EFAS value indicates the position of P (2,35: 2,61) in quadrant I or growth, it's the right strategy for the development of Wonorejo mangrove ecotourism area is an aggressive strategy.

1. Introduction

Mangrove ecosystems are scattered throughout the tropical and subtropical oceans [[1], [2] with vegetation which grows only on the beach sheltered from wave motion. Indonesian state has the most extensive mangrove forest in the world, reaching 25% (4.2 million ha) and 75% are in Southeast Asia. Extensive mangrove ecosystems, among others, are in Sumatra, Kalimantan and Papua [3]. Meanwhile, the mangrove ecosystem in small amounts spread out along the beach in Indonesia.

Mangrove forests that serve as resources in coastal areas have a vital role as a catalyst for a zone of shallow water ecosystems and the land zone. The existence of mangrove forests that can produce nutrients that nourish marine waters, helping carbon cycles, as a breeding ground and the magnification for some species of fish, as well as the place of supply of seeds (spawning, nursery, and feeding of food) for coastal communities fish processing. Another function is a natural protected area of land from the threat of a tsunami and tidal wave. [4]

The development of mangrove functions not only fulfill the basic functions but has increased to conservation, education, and rehabilitation to the improvement of public welfare. Mangrove forest is a renewable resource that has a double benefit, namely bio-ecological and socio-economic. Bio-ecological benefits are related to the function output environment and habitat for many species of fauna. Meanwhile, the socio-economic benefits are output directly related to economic activity in the utilization of such sites [5].

Ecotourism is an activity that utilizes natural resources in the form of tourism which aims to education, research, and conservation of the environment and aims to lift the local economy.



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Ecotourism as a tool of sustainable development and provide social benefits, as well as future economic environment and the right to be a priority in the economic development of the country [6].

Ecotourism is an effort to promote travel that is responsible and contributing positively to the environment and improve the welfare of local communities [7]. Ecotourism provides an opportunity for tourists to enjoy the natural beauty and local culture as well as learn more about the importance of a wide variety of living things in it. In addition, ecotourism activities can increase revenues for nature conservation and generate economic benefits for local communities. [8]

Some research indicates the existence of mangrove forests so provide benefits in coastal communities such goods obtained through an increase in the catch and the acquisition of mangrove wood that has a higher economic value. In addition, mangrove areas also provide a great environment in the form of coastal protection from storms and erosion as well as provide additional revenue to the community [2] [1]

Surabaya, which is located on the east coast of the island of Java has some scattered mangrove areas in the north and east. Wonorejo Urban Village District Rungkut one area that has the most developed mangrove ecosystem in the city of Surabaya. Mangrove Wonorejo were originally cultivated by the local community with the aim of further expanding resist abrasion. Wonorejo mangrove areas in the current area of 64.83 ha of the total area of 133.98 ha area in Surabaya [9]

Ecotourism Mangrove Wonorejo established as one of the strategic areas Beach

East Surabaya (Pamurbaya), because it has the potential biodiversity, ranging from mangrove forests, the diversity of fish resources, to the ability of ecosystems as a buffer zone for its land territory. Determination of Ecotourism Mangrove Wonorejo (EMW) as one of the strategic region based on four aspects, namely the economy, function and carrying capacity of the environment, social, cultural, and high technology [10].

Wonorejo utilization of mangrove ecosystem for ecotourism in line with the shift in the interest of tourists from tourism are old tourists who come do the tour without any elements of education and conservation as a new tourism which the tourists who come to conduct tours in which there is an element of education and conservation. Therefore, needs a serious effort to manage and search for specific ecotourism destination natural and rich in biodiversity and to preserve the environment [11]

In addition to these reasons, in the city of Surabaya has a limited tourist area, while the trend of higher demand for ecotourism. The number of visitors in the mangrove areas Wonorejo from year to year showed an increase. 2015 Wonorejo mangrove areas visited by as many as 29 294 visitors and 2016 as many as 50 137 visitors [12]

The increasing number of visitors to ecotourism mangrove Wonorejo allows the reduction in comfort for visitors. Convenience is an important factor for visitors who are in a location of attractions that need to be known supportability. By calculating the carrying capacity, managers can limit the number of visitors and visitors to guarantee comfort in travel place. Comfort is a priority in every visit in order to give a positive impression for visitors. The carrying capacity of mangrove areas is the ability of mangrove resources in maintaining the function and quality without compromising the ability to provide services in the form of outdoor recreation facilities [13]

Based on these problems, hence the need for a strategy to develop ecotourism mangrove Wonorejo the right so that visitors gain comfort in a tourist spot. The strategy carried out as planned development efforts without losing its function as a protection and preservation of the environment. Therefore, to be able to fulfill these functions it is necessary to study the carrying capacity and mangrove tourism development strategy Wonorejo.

2. Methods

The approach used in this research is descriptive. Type of research is a survey. Type of data collected comes from primary and secondary data. Primary data were collected through direct interviews with managers of the development strategy. To determine the development strategy by using SWOT analysis through I-EFAS values calculated by looking at the opportunities, threats, strengths, and weaknesses. SWOT analysis is the identification of several factors that can systematically be used to formulate strategies of an organization [14]. In general, the SWOT analysis is used to compare the

external factors and internal factors. Where external factors consist of opportunities and threats, while internal factors consist of strengths and weaknesses. How to determine the I-EFE to 1) develop a column consisting of internal and external factors, 2) give weight to each factor by methods paired comparison, David [15], 3) seek a position at the point x, y on quadrant.

3. Results and Discussion

Wonorejo mangrove Ecotourism is a form of nature that the public interest because the public is saturated with mass tourism forms which destructive. Lately, ecotourism is a form of travel that has a high interest especially Surabaya city with a large population and limited natural tourist types allow mangrove ecotourism Wonorejo be a new alternative for the community sites.

Wonorejo mangrove ecosystems located in the Village District Rungkut Wonorejo. Wonorejo mangrove ecosystem precisely located at Jln. East Wonorejo no.1, Wonorejo, Rungkut Surabaya. Mangrove ecotourism is easily accessible by visitors. Fairly good road access easier for visitors to get to the region by using various types of vehicles. A relatively short distance, approximately 10 km from the city center or 30 minutes in moderate traffic conditions.

Ecotourism Mangrove is one of the few forms of nature that is owned by the city of Surabaya. Wonorejo mangrove ecosystems currently have a 64.83 ha area [16], and the city government will substantially increase to meet the needs of green open space (RTH) Surabaya by 35%. [10]

Table 1. Internal Factors Ecotourism Mangrove Wonorejo

No.	Internal Factors											Total	Weight	Rating	Score	
1	The extent of mangrove	2	2	2	2	3	2	2	3	2	2	2	22	0.1	4	0.4
2	Infrastructure	2	2	3	3	1	3	1	1	1	2	3	20	0.09091	3	0.27
3	accessibility	2	1	2	1	1	1	1	1	1	1	1	11	0.05	3	0.15
4	jogging track	2	1	3	2	1	1	1	1	3	1	1	15	0.06818	4	0.27
5	Ecotourism bloomer	1	3	3	3	2	1	3	3	3	1	1	22	0.1	3	0.3
6	HR weak	2	1	3	3	3	2	2	2	3	1	3	23	0.10455	2	0.21
7	visitors unstable	1	3	3	3	1	2	2	2	3	1	3	22	0.1	2	0.2
8	lots of rubbish	2	3	3	3	1	2	2	2	3	2	2	23	0.10455	2	0.21
9	Processed mangrove less	2	3	3	1	1	1	1	1	2	3	3	19	0.08636	2	0.17
10	Souvenir no	2	2	3	3	3	3	3	2	1	2	3	25	0.11364	2	0.23
11	Korlap less	2	1	3	3	3	1	1	2	1	1	2	18	0.08182	2	0.16
Total												220	1		2.35	

Table 2. External Factors Ecotourism Mangrove Wonorejo

No.	External factors	A	B	C	D	E	F	G	Total	Weight	rating	Score

1	government policy								13	0.1547619	2	0.3
2	Citizen's awareness	1							11	0.1309524	3	0.39
3	job opportunities	1	2						8	0.0952381	4	0.4
4	Income	2	2	2					12	0.1428571	4	0.56
5	Environmental damage	1	2	3	2				12	0.1428571	2	0.28
6	Coordination between sectors	3	2	3	2	2			14	0.1666667	2	0.34
7	visitor behavior	3	2	3	2	2	2		14	0.1666667	2	0.34
Total									84	1	2.61	

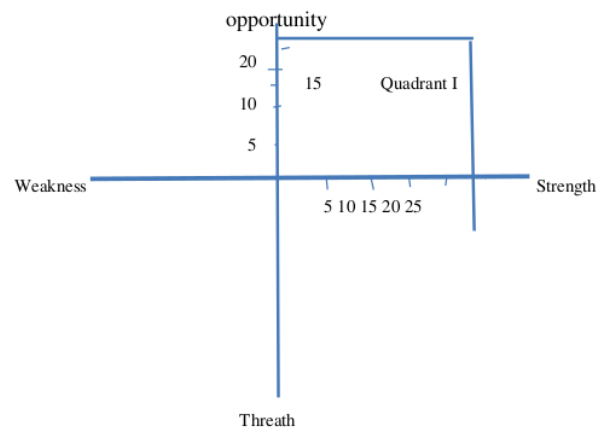


Figure 1. Quadrant SWOT Ecotourism Mangrove Wonorejo

Based on the calculation of the value of I-EFAS show the location of the point positions P (2.35: 2.61), which is located in the first quadrant position 6 means that mangrove tourism development or growth Wonorejo are in a strong position where the right strategy for the development of ecotourism is mangrove Wonorejo aggressive strategy. The aggressive strategy is a position where the power that can be used to take advantage of existing opportunities. Realization aggressive strategy (growth 3) that can be achieved by implementing a number of alternatives.

Based on the calculation of the value of I-EFAS can be seen that the development of ecotourism mangrove Wonorejo is in quadrant 1. Quadrant 1 means their growth or is in a strong position where Wonorejo mangrove ecotourism area currently attracting visitors that need attention relevant government to increase the appeal but remains ecotourism provide optimum functionality and benefits without damaging the ecosystem.

The mangrove ecotourism Wonorejo showed quadrant position or is there an aggressive strategy. In total, the score. In total strength is higher than the weaknesses, meaning mangrove tourism

development strategy in Wonorejo can rely on strength. Based on external analyzes, mangrove tourism development strategy in Wonorejo geared to take advantage of opportunities to face the threat [3]

Strategy development of ecotourism mangrove Wonorejo are 1) the development of tourism promotion mangrove, 2) empowering communities, 3) improve the quality and quantity of human resources, 4) increase the budget to improve services, and 5) the role of government should be improved, 6) government policy, 7) enhanced cooperation inter-related sectors, 8) The increase in the budget, et.

Develop ecotourism mangroves in Pulau Pramuka with priority coordination between the public and stakeholders, spatial planning for ecotourism activities, providing knowledge to the public regarding ecotourism management and effective management training, improvement of infrastructure, perform environmental impact and explore the potential of nature and charming with guidance to the public. [4]

4. Conclusions

Based on the SWOT matrix analysis of internal and external factors and weighting the results can be graphed with the axes X and Y. After seeing the results chart the proper development strategy carried out by the government is in the position of the first quadrant, ie P (2.35, 2.61) meaning that mangrove tourism development or growth Wonorejo are in a strong position where the right strategy for the development of ecotourism mangrove Wonorejo is an aggressive strategy.

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