Strengthening Local Community in Mangrove Ecotourism at Pangandaran, West Java Province, Indonesia.

ABSTRACT

This research aims to analyze Strengthening Local Community in Mangrove Ecotourism at Pangandaran, West Java Province, Indonesia. This research period was conducted in June - November 2022 Local Community in Mangrove Ecotourism at Pangandaran, West Java Province, Indonesia. The data used in this research are primary and secondary data. This research used a case study method with direct interviews using a questionnaire with ranting to scale. The sampling method used is purposive sampling method. The number of respondents in this research were 40 respondents. Analysis tool used SWOT (Strengths, Weaknesses, Opportunities and Threat). Based on research results strengthening local community in mangrove ecotourism at Pangandaran, West Java Province, Indonesia in quadrant I, then produces a strategy of strengths – opportunities (S-O), strategy showed that strength can take advantage of existing opportunities; (1) increasing public awareness of the importance of mangrove ecosystems as habitats and producers in the food chain for fish, shrimp and mollusk species; (2) mangroves are able to withstand and slow down currents and waves; (3) the marine ecosystem will be protected so that it does not mix with the mud, this is because mangrove plants have the ability to deposit mud; (4) it has an economic function as a natural tourist attraction which attracts tourists; (5) education is needed for the surrounding community and tourists who come to visit regarding the role of mangrove ecosystems in coastal areas. Based on the results of the research can be recommended Mangrove ecotourism is seen as synergizing with the conservation of fisheries and marine resource ecosystems by applying local wisdom in the community. The development of mangrove ecotourism is an effort to utilize environmental services from coastal areas sustainable by involving local institutions that aim to have socio-economic and cultural values for the community.

Keywords: ecotourism, mangrove, coastal, local community

1. INTRODUCTION

The mangrove ecosystem is an ecosystem in the coastal area that has a variety of habitats that interact with each other and can be used by the community. Mangrove ecosystems range from the highest tide levels to levels around or above mean sea level in protected coastal areas. Mangrove ecosystems have ecological and economic functions that are very beneficial for local communities. (Supriharyono, 2007; Wijayanti 2011; Kustanti, 2011; Donato 2012). The use of mangrove ecotourism is in line with the preferences of tourists who are looking for specific natural tourist destinations that have biodiversity.

The attractiveness of tourism has shifted from mass tourism to the concept of ecotourism caused the saturation of tourists to visit artificial tourism objects. Ecotourism is a tourism activity based on environmental conservation, minimizing the environmental impact of tourism activities and involving local communities in its management. Ecotourism is the fastest growing market share in the tourism industry. In ecotourism, linking tourism with the interests of the environment and local communities a practice that has become an important movement given the global climate challenges and sustainable development goal. (Nurhayati., A.2019; UNWTO, 2002; TIES, 2015].

Tourism in general is a service industry that is growing very rapidly. Tourism activities involve many sectors, ranging from construction of lodging or hotels, to suppliers of food and beverage commodities, souvenirs, micro, small and medium enterprises, this can be a driver of regional economic growth. Ecotourism is expected to be able to overcome climate change and maximize tourism potential for economic growth, social development, and poverty alleviation. Blue tourism for poverty alleviation and strengthening local communities and economies, well-designed ecotourism can provide an effective financing mechanism for sustaining the well-being of people, the economy and the natural environment.Nurhayati., A.2019; UNWTO, 2002)

Management of ecotourism by involving the community is in line with community-based management which involves the knowledge and awareness of the local community as the basis. Ecotourism is also an alternative in tourism that is consistent in managing environmental, social, community values and makes hosts and guests enjoy positive, beneficial interactions and experience sharing. (Triwibowo, 2015; Nurhayati.,A. 2019)

Based on this research mangrove ecotourism model shows activities that integrate tourism, conservation, education, local wisdom and local community empowerment, so that local people can participate in enjoying the benefits of these tourism activities through developing their local potential and continuing to participate in preserving the mangrove ecosystem. (Bengen, 2004; Mukaryanti, 2005; Yulianda, 2007; Ketjulan, 2011).

Mangrove vegetation that is common in Indonesia's coastal areas includes: *Avicennia, Xylocarpus, Rhizophora, Sonneratia, Bruguiera, Ceriops dan Excoecaria.* The composition of mangrove species in an area is determined by several environmental factors, especially soil type, tidal inundation, and salinity. Mangrove zoning is formed by topographical conditions, frequency of tides, duration of inundation, composition and stability of sediments where it grows or type of substrate, water and soil salinity, dynamics of propagules and the dynamics of the process of eating mangrove seeds by organisms associated with mangroves. (Bahar, 2004; Kusaeri, Putro, S.P., and Wasiq, J., 2015).

The mangrove ecosystem zoning is divided into the area closest to the sea with a slightly sandy substrate, in this area there are mangroves from the genusiAvicennia, while on the edge of this area there are narrow, thick muddy and shady areas whe[illegible]vicennia cannot grow well in such conditions, so social in this muddy zone is the genus Sonneratia. The zone that leads to land is generally dominated by the genus Rhizophora. Mangrove ecosystems with lowland ecosystems are usually overgrown by Nypa fruticans. The mangrove zoning pattern from the front is generally Avicennia or Sonneratia, Rhizophora, Bruguiera, and Nypa (Bengen 2004; Kusmana 2003).

2. METHODOLOGY

2.1. Research Location

This research was conducted at Pangandaran, West Java Province, Indonesia. Geographically, Pangandaran Regency is located at 108°30' to 108°40' East Longitude and 7°40'20" to 7050'20" South Latitude. This research was conducted in June - November 2022. The data used in this research are primary and secondary data. This research uses a case study method with direct interviews using a questionnaire. The sampling method used is purposive sampling method. The number of respondents in this

research were 40 respondents consisting of 2 mangrove management respondents, 2 respondents from the Department of Maritime Affairs, Fisheries and Food Security of Pangandaran Regency, 36 respondents from tourists visiting mangrove ecotourism. Analysis tool used SWOT (Strengths, Weaknesses, Opportunities and Threat).

2.2. SWOT Analysis for Ecotourism Mangrove

SWOT analysis looks at strengths and weaknesses, as well as opportunities and threats in managing mangrove ecotourism. SWOT analysis compares external factors, namely opportunities and threats with internal factors, namely strengths and weaknesses. The analysis tool used to develop competitive strategic factors is using the SWOT matrix. The matrix provides an explanation of external opportunities and threats faced in managing mangrove ecotourism

Table 1 SWOT Matrix For Ecotourism Mangrove

Internal Strategic Factors Analysis Summary (IFAS) / External Strategic Factors Analysis Summary (EFAS)	Strengths (S) Determine 5–10 internal strength factors for ecotourism mangrove	Weaknesses (W) Determine 5–10 internal weaknesses factors for ecotourism mangrove
Opportunities (O) Determine 5–10 external threat factors for ecotourism mangrove	S-O Strategy create strategies that utilize strengths to take advantage of opportunities factors for ecotourism mangrove	W-O Strategy create strategies that minimize weaknesses to take advantage of opportunities factors for ecotourism mangrove
Threats (T) Determine 5–10 external threat factors for ecotourism mangrove	S-T Strategy create strategies that utilize strength to overcome threats factors for ecotourism mangrove	W-T Strategy create strategies that minimize weaknesses and avoid threats factors for ecotourism mangrove

Source: Freddy Rangkuti (2004) Modifications

This SWOT analysis will produce a SWOT matrix. This matrix can generate 4 sets of alternative possibilities. The four strategies are: (1) S-O, that is by utilizing all strengths to take advantage of the maximum opportunities; (2) S-T, which is a strategy in using the strengths possessed to overcome threats; (3) W-O, which is a strategy based on the utilization of existing opportunities by minimizing existing weaknesses; (4) W- T, namely a strategy based on defensive activities and trying to minimize existing weaknesses and avoid threats. The framework using the SWOT analysis approach is as follows: (1) Analysis and creation of the IFE (Internal Factor Evaluation) matrix; (2) Analysis and creation of the EFE (External Factor Evaluation) matrix; (3) Preparation of the SWOT matrix; (4) Preparation of alternative strategy ranking tables, giving a rating for each factor based on the effect/response of these factors on the management of ecotourism mangrove. The weighting

of the value is : 4 = very important, 3 = important, 2 = quite important, 1 = not very important. Then multiplying the weight by the rating value of each factor to determine the score.

3. RESULTS AND DISCUSSION

3.1. The general condition of the research location

The area of Pangandaran Regency reaches 101,092 Ha and is divided into ten sub-districts. The southern region of Pangandaran Regency is directly adjacent to the coastline of the Indonesian Ocean. Pangandaran waters are one of the areas included in the Indian Ocean Fisheries Management Area IX zone which covers the waters of the western tip of the island of Sumatra and the south coast of Java (Nurhayati., A. 2013). This area is a mainstay area for the marine tourism and capture fisheries sectors, which make a major contribution to the regional economy and the people in the Pangandaran region.

Figure 1 Research Location
Source: https://earth.google.com/web/@-7.72994953,108.58793941,5.90216703a,26877.46216691d,35y,0h,0t,0r

Pangandaran Regency, like the East Priangan region, has a tropical climate, the average temperature ranges fro. m 26 - 27 °C with a minimum temperature of 24 °C and a maximum temperature of 30 °C. Based on the spatial management plan for the coastal and marine areas of Pangandaran contained in the Management Plan for Coastal Zone and Small Islands West Java province The management plan for the Pangandaran waters area is included in the spatial planning plan in the form of management of a Marine Protected Area covering an area of 38,856.12 Ha, a Public Utilization Area and a Marine Nature Reserve. (Department of Fisheries and Maritime Affairs, West Java Province.,

Coastal vegetation can be interpreted as a combination of several plants with different types and live together in one place. The types of mangroves found and classified as tree species are *Rhizopora mucronata*, *Rhizopora apiculata*, *Avicennia marina*, *Avicennia alba*, *Sonneratia alba*, *Sonneratia caseolaris*, *Aegicras corniculatum*, *Bruguiera gymnorhiza*,

Ceriops tagal, *Nypa fruticans*. The mangrove groups included in the sapling category are *Avicennia marina*, *Avicennia alba*, *Rhizopora mucronata*, *Rhizopora apiculata*, *Nypa frutican*, Acanthus ebrecteatus, *Acanthu ilicifolius* and *Derris trifoliate*. While those included in the seedling category are *Rhizopora mucronata*, *Acanthus ebrecteatus*, *Acanthus ilicifolius* and *Derris trifoliata*

The mangrove ecotourism area at Pangandaran Regency at Bulaksetra area in the coastal area of East Pangandaran Beac and Cijulang mangrove ecotourism area. The use of mangrove ecotourism as a tourist attraction can help preserve mangrove forests in coastal areas such as in Cijulang Village, both now and in the future. Mangrove ecotourism is an alternative that combines conservation efforts and community empowerment, especially in planning and managing areas that apply co-ownership, co-operation, responsibility and sustainability.

3.2. Characteristics of Respondents

The sampling method used is purposive sampling. The number of respondents in this research were 40 respondents consisting of 2 mangrove management respondents, 2 respondents from the Department of Maritime Affairs, Fisheries and Food Security of Pangandaran Regency, 36 respondents from tourists visiting mangrove ecotourism.

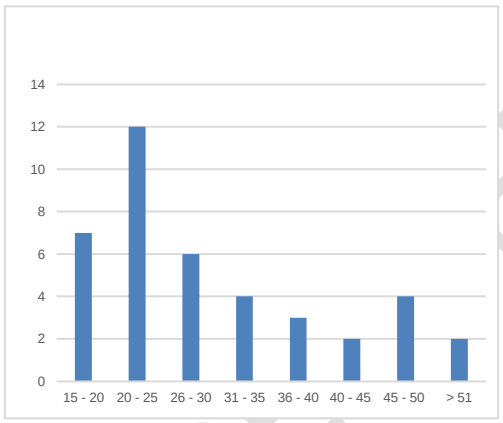

Figure 2 Characteristics of Respondents Based on Age

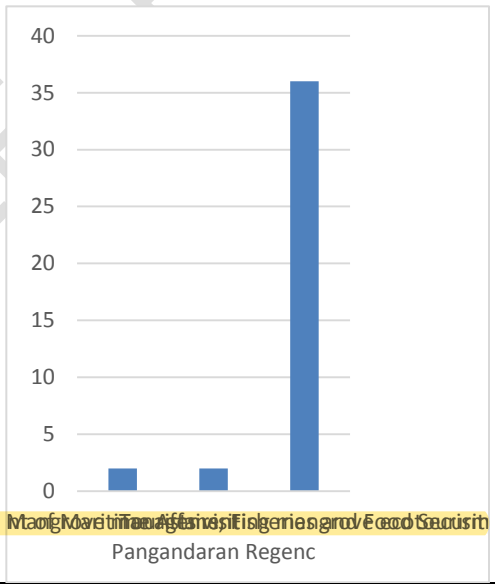

Figure 3 Characteristics of Respondents Based on Criteria

The characteristics of respondents based on age are dominated by productive age. During the productive age the level of knowledge and experience of a person will increase, including the level of awareness of the environment. The characteristics of respondents based on gender, which is dominated by male and tourist visiting mangrove ecotourism, determine the type of tourist destination and tourist attraction. Ecotourism mangrove dominated by male tourists compared to female.

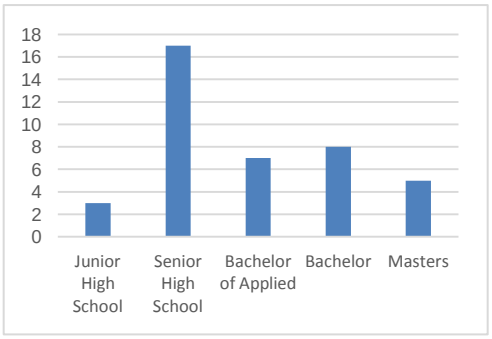

Figure 4 Characteristics of Respondents Based on Educations

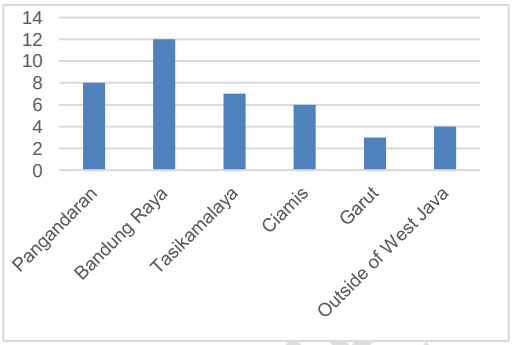

Figure 5 Characteristics of Respondents Based on Regional Origin of Tourists

The characteristics of respondents based on education were dominated by senior high schools. Tourists visiting the mangrove ecotourism area are dominated by millennials generations and productive, through an educational process about mangrove conservation. The area of origin of tourists visiting the mangrove ecotourism area is dominated by Bandung Raya, Pangandaran dan Tasikmalaya. The distance traveled from the origin of tourists to the destination of mangrove ecotourism is a consideration for tourists in collaborating on mangrove planting.

3.3. Strengthening Local Institutions in Mangrove Ecotourism at Pangandaran,West Java Province, Indonesia.

Strengthening local institutions to determine various alternative actions or policies in the context of mangrove ecotourism sustainability requires a logical framework that can be operationalized. The existing conditions are mapped in divided into internal factors and external factors.

Table 2 Internal Strategic Factors For Strengthening Local Institutions in Mangrove Ecotourism at Pangandaran,West Java Province, Indonesia

Internal Strategic Factors	Weight	Ranting	Score
Strength			
Biodiversity of mangrove ecosystems at Pangandaran area	0.21	4	0.84
The ecological function of mangrove ecotourism	0.28	4	1.12
The socio-cultural function of mangrove ecotourism	0.16	4	0.64
The economic function of mangrove ecotourism	0.19	4	0.76
Strategic mangrove ecotourism location with other tourist attractions	0.16	3	0.48

Total Strength	1.00		3.84
Weakness			
Lack of infrastructure to support tourism needs in mangrove ecotourism	0.18	3	0.54
Lack of attention from local government in managing mangroves	0.28	4	1.12
Lack of synergy between business actors, managers and local government regarding the management of mangrove ecotourism	0.21	3	0.63
Lack of types of supporting tourist attractions in the mangrove ecotourism area	0.17	3	0.51
Unavailability of information boards or instructions for tourists regarding the types of mangroves or the layout of mangrove ecotourism areas	0.16	3	0.48
Total Weakness	1.00		3.28

Based on the weighting of internal and external factors, a comparative score is obtained from internal factors namely total strength 3.84 the total weakness 3.28 which results in internal strategic factors for strengthening local institutions in mangrove ecotourism at Pangandaran,West Java Province, Indonesia 7.12.

Tabel 3 External Strategic Factors Analysis For Strengthening Local Institutions in Mangrove Ecotourism at Pangandaran,West Java Province, Indonesia

External Strategic Factors Analysis	Weight	Ranting	Score
Opportunity			
Increasing public interest in visiting tourist attractions that have the concept of ecotourism	0.13	4	0.52
Increasing public awareness of nature tourism, especially mangrove ecotourism	0.15	3	0.45
Mangrove ecotourism activities that can increase local revenue	0.17	4	0.68
Empowering local communities to participate in managing Mangrove Ecotourism locations	0.29	3	0.87
Mangrove ecotourism activities are expected to increase local revenue	0.26	3	0.78
Total Opportunity	1.00		3.30
Threat			
Competition with other tourist attractions	0.17	4	0.68
The layout of mangrove ecotourism that pays	0.15	3	0.45

less attention to aesthetics			
Security at tourist sites must get more attention from the management so that tourists who come feel safe and comfortable.	0.19	3	0.57
Lack of community awareness to manage mangrove ecotourism	0.23	3	0.69
Opportunities for environmental pollution that can damage the sustainability of mangrove ecosystems	0.26	3	0.78
Total Threat	1.00		3.17

Based on the weighting of internal and external factors, a comparative score is obtained from external factors namely total opportunity 3.30 the total Treats 3.17 which results in external strategic factors for strengthening local institutions in mangrove ecotourism at Pangandaran,West Java Province, Indonesia 6.47. Internal factors have a higher value compared to external factors, meaning that internal factors need to strengthen local community institutions and local governments for the sustainable development of mangrove ecotourism.

From these two strategic factors, calculations are then carried out which produce a Cartesian diagram, total strength 3.84 total weaknesses 3.28 and total opportunities 3.30 total threats 3.17 which produces cartesian diagram coordinates (0.56: 0.43) namely in quadrant I.

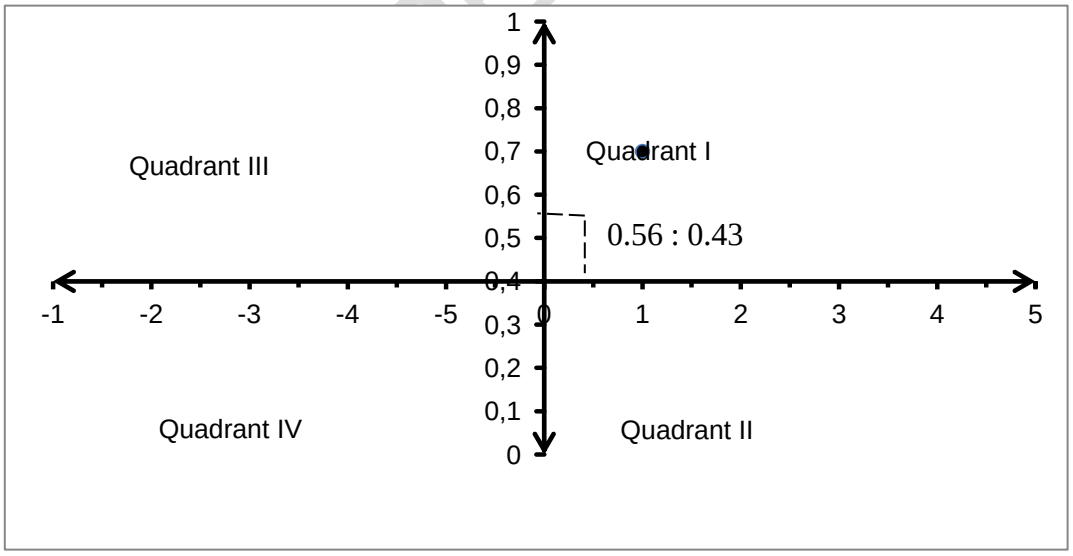

Figure 6 Cartesian diagram

Quadrant 1 is a Strength - Opportunity strategy or an aggressive strategy which illustrates that the situation is very good because there are strengths that are used to seize

opportunities that can be profitable. Development of Mangrove Ecotourism, namely increasing the collaboration of business actors between local institutions, local governments, and the community on the importance of mangrove ecosystems. Based on the research results, (1) necessary to review the location of mangroves by improving the infrastructure and facilities for tourist visitors; (2) necessary to control the entrance ticket to the mangrove ecotourism location; (3) there needs to be a mangrove ecotourism tour guide by offering to plant mangrove seedlings[(4) there needs to be collaboration with schools to work together in protecting the mangrove ecosystem, through educational processes and field demonstrations for planting mangroves; (5) necessary to develop micro, small and medium enterprises for souvenir products which are characteristic of tourists visiting mangrove ecotourism.

4. CONCLUSION

Based on the research results analysis for strengthening local institutions in mangrove ecotourism at Pangandaran,West Java Province, Indonesia, internal and external factors, a comparative score is obtained from internal factors namely total strength 3.84 the total weakness 3.28 which results in internal strategic factors for strengthening local institutions in mangrove ecotourism at Pangandaran,West Java Province, Indonesia 7.12. External factors namely total opportunity 3.30 the total Treats 3.17. which results in external strategic factors for strengthening local institutions in mangrove ecotourism at Pangandaran, West Java Province, Indonesia 6.47. Internal factors have a higher value compared to external factors, meaning that internal factors need to strengthen local community institutions and local governments for the sustainable development of mangrove ecotourism.

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