Assessing Bedul Mangrove Ecotourism Using Green and Fair Strategy Empowerment to Fulfill SDGs 2030 Agenda for Tourism

Sumarmi*, Syamsul Bachri, Purwanto, Adellia Wardatus Sholiha
Department of Geography, Universitas Negeri Malang, Jl. Semarang No. 5, East Java, Indonesia

Siti Zubaidah
Department of Biology, Universitas Negeri Malang, Jl. Semarang No. 5, East Java, Indonesia

Rajendra Prasad Shrestha
School of Environment, Resources and Development, Asian Institute of Technology, Thailand

*Corresponding author: sumarmi.fis@um.ac.id

Mangrove management is completely crucial for environmental sustainability. This study aimed (1) to examine the green and fair strategy in developing mangrove ecotourism in Bedul, Banyuwangi Regency, and (2) to examine the economic, social, and cultural improvement of the local community around the mangrove ecotourism area. The research method was qualitative descriptive using Internal Factor Analysis System (IFAS) and External Factor Analysis System (EFAS) matrix analysis from the SWOT approach. Data included primary and secondary data collected in 2020. Primary data were collected through observations and in-depth interviews with key informants and stakeholders around the study site. Secondary data came from literature reviews, documentation of the government institutions, and the local community. Based on IFAS and EFAS analysis, Bedul Mangrove Ecotourism belonged to Quadrant II with a diversification strategy. The diversification strategy in Quadrant II is located between concentric and conglomerate diversification that signifies a strong organization with strong threats. The analysis showed the need to diversify strategies or make modifications by integrating indicators for sustainable tourism in the mangrove ecotourism area of Bedul, Banyuwangi Regency, East Java. According to the identification results of tourism sustainability goals in accordance with the SDGs 2030 agenda, Mangrove Bedul Ecotourism requires the addition or modification of green and fair policies to address the limited aspect of economic development and the lack of guarantees for community welfare and stakeholders.

Keywords: ecotourism, mangrove forest, sustainable tourism, green and fair.

Introduction

Indonesia's geographical conditions have a significant impact on regional development, including in Bedul Mangrove areas. In addition, inappropriate use of abundant resources the country have may causes a major effect on resource utilization in regional development including: (a) damage to the physical environment such as water and air pollution, critical land, and increasing abrasion, (b) decline in biological resources and damage to ecosystems beaches, rivers, and lakes, (c) damage to natural resources due to overexploitation, (d) lack of independence, and (e) development gaps between urban and rural areas or between regions (Sumarmi, 2012). Coastal areas are particularly vulnerable to such problems due to the biodiversity and significant contribution to the environment, so coastal areas are developed into highly populated residential areas with a variety of dynamics (Husamah & Hudha, 2018; Sodikin, 2012).

Economic issues in the community have increased the difficulties in developing coastal areas. The economic problems include: (a) illegal fishing, (b) degradation in coastal areas and small islands (mangroves, coral reefs, sea sand miners, beach reclamation, oil pollution in the sea, abrasion and sedimentation), and (c) global climate change that affects coastal areas and marine resources (Sembiring et al., 2013). The specific problems found in coastal areas in Indonesia include: (a) poverty spread in coastal communities and villages, with 7 million people living in poverty in 10 639 coastal villages, (b) severe damage to coastal resources, (c) lack independence in village social organizations and the loss of local cultural values; and (d) low village infrastructure and environmental health (Tinambunan, 2016).

Since the end of 2011, the Ministry of Maritime Affairs and Fisheries has made efforts to resolve issues in coastal areas, including through the Strong Coastal Village Program (*Program Desa Pesisir Tangguh –* PDPT). The program was launched to solve coastal village problems, including (a) tough natural issues, (b) homogeneous work patterns, (c) limited control of the capital, boats, and fishing gear, (d) socioeconomic activities not supporting environmental sustainability, and (e) the increase in modern tourist attractions (such as Nusa Dua) that need to manage by local community (Arsyad et al., 2011; Madiun, 2010; Sakdiyah, 2015).

The significant loss of coastal resources is the most critical problem to discuss, as it has an economic impact on the local community. Economic development based on tourism is expected to increase tourist visits and job opportunities to reduce poverty (Matarrita-Cascante, 2010). Moreover, decreasing mangrove areas will affect the ecological balance of the coast (Harahab et al., 2021). Rapid changes in coastal areas and anthropogenic activities have also resulted in decreasing the natural environment, water and air pollution (Sumarmi et al., 2021b). Ecological factors are the leading indicators in the sustainability of community livelihoods in anticipating natural challenges (natural disasters) and economic stability (Hernández-Delgado, 2015). Mangrove forests are an important element of the coastal environment, providing critical ecological and economic activities. The ecological functions of mangrove forests include: (a) physical aspects, such as the relationship between components in the mangrove ecosystem and other ecosystems, coast protection, and flood management; (b) chemical aspects, such as pollutants absorption, energy sources for biota, and supply of organic matter in the environment; and (c) biological aspects, including maintaining the availability of aquatic biological resources. The ecological functions make mangrove forests one of the life sources, affecting the community's economy (Barnuevo et al., 2017).

Mangrove ecosystems play critical ecological functions for coastal areas, including mitigating global warming as carbon stores. Mangrove forests store more carbon than almost any other forest on earth (Carson et al., 2016). Indonesia's mangrove ecosystem can absorb carbon as much as 67.7 MtCO per year (Wiens, 2016). Mangrove plants have a biomass potential of 108.66 and a carbon content of 55.35 (Lloyd et al., 2016). The carbon content is influenced by the tree's ability to absorb carbon from the environment through photosynthesis or the sequestration process (Osland et al., 2016; Willemsen et al., 2016).

Conserving mangrove forests and determining sustainability strategies for the future spatial areas, planners need tools to predict land-use dynamics, including predicting land changes that occur as a result of a spatial planning scenario. Land use forecasting is a complex system that requires computer assistance. As Bolstad (2016) stated, diversity often results in higher difficulties with manual methods than with computer methods, and land use forecasting is no exception. Spatiotemporal analysis enables the recovery of historical information about space, which has various advantages: multilevel, multispectral, multitemporal, and with a broad coverage area.

The development of manufacturing and tourism along the coast as a main point of economic development certainly has various impacts. It has increased the coastal population. The increasing number of people with various economic interests will also threaten coastal ecosystems (Liu et al., 2017). Fishermen are aware of the consequences of destroying the environment, yet their economic demands prevent them from discontinuing different activities that affect the environment (Habert, 2014). Many regions in Indonesia have complete autonomy in controlling their regional development and economy, resulting in an increase in the inventory and exploitation of the environment.

Banyuwangi Regency, East Java's largest district, is a location having rapid growth in natural resource utilization and tourism. Banyuwangi has experienced rapid development, including port expansion, settlements and industry, and especially tourism development (Istiqomah et al., 2021). It has led to vulnerability to the preservation of mangrove forests in the area. Mangrove forests provide oxygen to the community, protect coastal ecosystems, and serve as a source of income for coastal towns (Setyasih, 2021). It also served as an ecotourism development area, which benefits the economy of the surrounding community (Zamzami et al., 2021).

Mangrove forests in Banyuwangi have several advantages compared with other regions. It is located in an estuary area, so it has accumulated organic deposits suitable for expansion. Natural resources are also supported by the government and community's active participation in ecotourism (Sumarmi et al., 2021a). The mangrove forests are also managed sustainably by applying ecological values (Harahab et al., 2021). There are more educational tourism facilities available, and tourist guides are more informed of ecological values and principles for environmental sustainability, including in maintaining mangrove forests (Husamah & Hudha, 2018). Educational tours in the Bedul mangroves include mangrove tours by boat along traditional piers, mangrove planting, mangrove nursery programs, and education about the value of mangrove forests.

One of the mangrove forest areas available for ecotourism is Bedul Mangrove Ecotourism (Winoto et al., 2015). Along with the coastal area's increasing economic development, the mangrove forest in Bedul requires increased monitoring and management, as a popular tourist destination. Thus, the present study is expected to become a good reference for the local government of Banyuwangi for policy-making and spatial, strategic planning. The comprehensive analysis could give insights for other researchers interested in studying mangroves and maintaining coastal areas. The findings may also be beneficial for the surrounding coastal communities in utilizing sustainable resources.

Meanwhile, Bedul Mangrove Ecotourism becomes one of the most popular models for mangrove conservation in Banyuwangi (Setyaningrum et al., 2020). Many people are already aware of the educational tourism destinations dedicated to mangrove conservation, yet visitor demand continues to decrease every year. This is shown by the number of visitors which increased at the beginning of the opening in 2010 to reach 67 976 people, and then immediately decreased dramatically every year until 2016 to 18,461 people (Data from BUMDes Loh Jinawi Sumbersari village, 2017). This will certainly have an effect on the community, as they will begin to adapt to new tourist opportunities, leaving old traditions that are damaging to the mangrove environment's sustainability, such as excessive mangrove logging.

Ecotourism is a primary strategy used in developing Bedul Mangrove areas. This strategy has also shown progressive results in several areas including the Mount Salak II Resort Area and Mount Halimun Salak

National Park that showed an increasing number of visitors since the area was opened to tourists (Jubei et al., 2017). However, the number of tourist visits to Bedul Mangrove Ecotourism has decreased significantly, so it is critical to evaluate and improve innovative strategies.

This area is a strategic location that has high potential to be developed as a conservation tourist area because it is located near one of the famous tourist sites, namely Pulau Merah Beach (Sumarmi et al., 2021a). Pulau Merah Beach reached 395 134 visitors in 2016 and 402 017 visitors in 2017 (Wahyuni & Santoso, 2018). Pulau Merah Beach and Mangrove Ecotourism Area Bedul have significantly different characteristics. Mangrove Bedul can be developed by emphasizing the unique characteristics and supporting factors, so visitors will be attracted to visit as well. For mangroves to grow sustainably at least through 2030, there are a number of factors that must be considered, according to the SDG agenda. Therefore, researchers intend to conduct research and evaluations about the current situation in the area, and also offer green and fair alternatives to the ecotourism strategy that has already been implemented.

Methods

The research was conducted in Bedul Mangrove Ecotourism, located approximately 89 kilometers from the center of Banyuwangi Regency. Alas Purwo National Park It is located between Grajagan Beach, Alas Purwo, and Plengkung Beach (G-Land). The area has a river named Segoro Anakan that is currently used for boat tours. The Segara Anakan estuary is about 16 kilometers long and averages 400 meters wide, connecting the river to the South Java coast (Observation Data, 2020). The research was based on a qualitative descriptive method using Internal Factor Analysis System (IFAS) and External Factor Analysis System (EFAS) matrix analysis from the SWOT (strengths, weaknesses, opportunities, and threats) approach (Purwohandoyo et al., n.d.; Yavuz & Baycan, 2013). Primary and secondary data were collected in the middle of 2020, with a total of 6 visits ranging between 4–7 days per visit. Visits covered observation,

licensing, data collection, and assessment efforts, and also confirmation of research evaluation results. Primary data were collected through observations and in-depth interviews with the senior residents in Loh Jinawi village, security post employees in Balai TNAP Banyuwangi, and 4 boat service providers. Secondary data were obtained from literature reviews, documentation/publications of the village-owned enterprise (BUMDes Loh Jinawi), and the local community.

Further, the internal and external factors of Bedul Mangrove Ecotourism were assessed, both in terms of strengths, weaknesses, opportunities, and threats related to natural attractions, amenities, accessibility, markets, community involvement in ecotourism, and other supporting factors. Additionally, the primary data collection process was defined by determining the ecotourism feasibility parameters for Bedul Mangrove Ecotourism, which included physical factors such as height (in meters), as well as documentation of mangrove species data and plant species diversity in the surrounding area. This identification was followed by an assessment of the Bedul Forest's supporting elements, including the supply of clean water, electricity networks, accessibility, environmental cleanliness, communication networks, toilets, outdoor areas, prayer rooms, and parking lots. The Bedul Mangrove area is shown in *Fig. 1*.

The data were analyzed using spatial analysis with a Geographic Information System (GIS) to examine physical characteristics, land use, and social, economic, and cultural situations. The analysis results were integrated with SWOT (strength, weaknesses, opportunities, and threats) to obtain development strategies. The SWOT analysis is conducted using Analytic Hierarchy Process (AHP) containing Internal Factor Analysis System (IFAS) and External Factor Analysis System (EFAS).

The IFAS and EFAS results in Bedul Mangrove Ecotourism were analyzed to develop alternative policies for sustainable development. Also, the alternative policy was also expected to have a significant influence in optimizing the implementation of strategies to support the community's economy and sociocultural life, including preservation of the coastal environment as a natural tourist attraction to support the environment's carrying capacity. Meanwhile, the strategies

Fig. 1. *Research site map (Source: Esri, GEBCO, NOAA, National Geographic. 2020)*
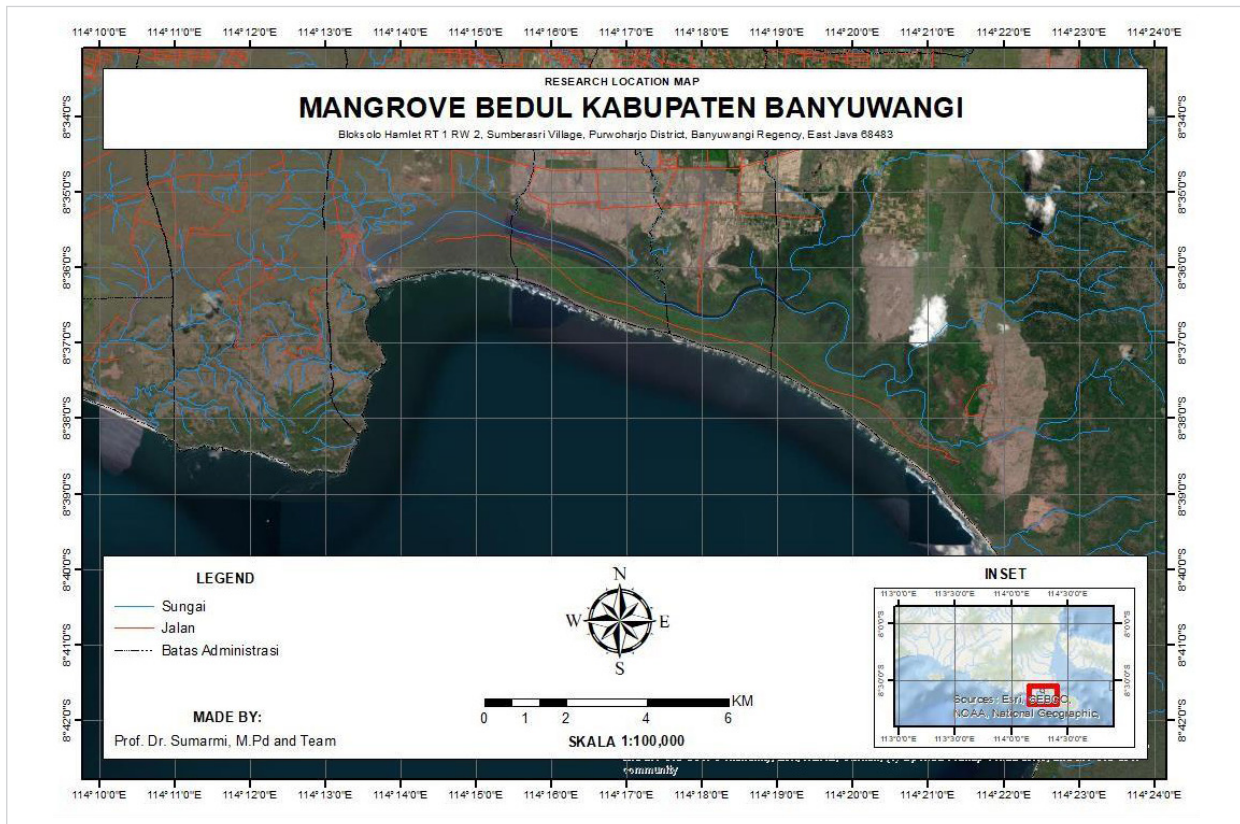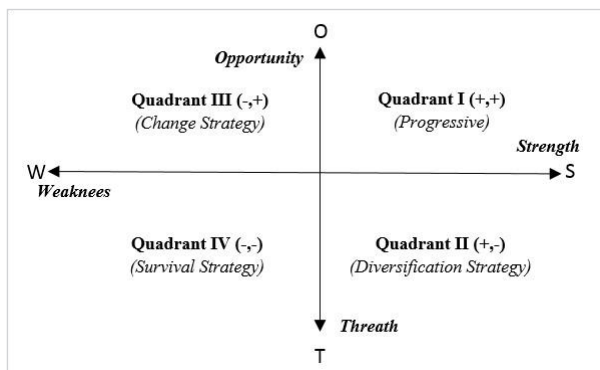

Fig. 2. *Hierarchical calculation of internal and external SWOT analysis (Purwohandoyo et al., n.d.; Yavuz & Baycan, 2013)*

that have been implemented are connected with the purpose of tourism development. However, developing a successful implementation strategy that has not resulted in an increase required modifying or adding new methods with a higher probability of success and focused on problem solutions (Saarinen, 2014).

Results and Discussion

Environmental conditions and existing development strategies in Bedul Mangrove Ecotourism

The mangrove forest's official name is *Ekowisata Mangrove Blok Bedul Banyuwangi* or Bedul Mangrove Ecotourism, which was previously known as Alas Purwo National Park. Bedul originates from the name of a fish found in the river, the "Bedul" fish. The fish is a species of snakehead that is also seen around unirrigated mangroves (Interview, 2020). Bedul is home to 24 different species of mangroves throughout a 2,300-hectare area, and is considered to have the most complete mangrove ecosystem in East Java (Documentation of Balai TNAP Banyuwangi, 2017). *Ceriops decandra* and *Scyphiphora hydrophyllacea* are two of the 24 species growing in Bedul that are considered rare worldwide. Additionally, the area has a

diverse ecosystem, as shown by the variety of bird and fish species and the diversity of mangrove flora.

Bedul Mangrove Ecotourism was established in 2007 through collaboration between the Sumbersari village government and the Alas Purwo National Park management and has gained more attention since then (Winoto et al., 2015). The ecotourism area officially opened in 2009 in response to increased demand for tourism and education designed to promote coastal ecological programs. Previously, there had been several violations involving illegal logging as a result of the community's economic difficulties (Interview, 2020). Bedul Mangrove Ecotourism is a model of ecological education tourism that is highly respected in Banyuwangi Regency due to the large number of mangroves, the Segara Anakan estuary, and an ecosystem that is perfect for tourism and conservation.

Bedul Mangrove Ecotourism has developed into Banyuwangi's most popular model for mangrove conservation (Setyaningrum et al., 2020). Since its launch, the ecotourism model has required the government and local community members to manage the area following sustainability principles. Although it attracted 67 976 tourists in 2010, the number continues to decrease each year, with only 37 382 tourists visiting Bedul in 2014 and 18 461 in 2016 (Data from BUMDes Loh Jinawi Sumbersari Village, 2017). The decline in the number of tourists visiting needs to be analyzed by the local government and tourist managers. Cooperation and communication between the government, managers, local communities, and investors is needed to increase the number of visits (Matarrita-Cascante, 2010). Therefore, a comprehensive analysis and assessment for Bedul management are needed to measure internal and external factors.

Based on IFAS and EFAS analysis, Bedul Mangrove Ecotourism belonged to Quadrant II and reached a diversification strategy. The values of the diversification strategy in Quadrant II (positive, negative) S 0.70 (+) and T 0.60 (−) are placed between concentric and conglomerate diversification, indicating a strong organization but also facing significant threats capable of reducing positive influence. Therefore, Bedul Mangrove is in a perfect position to change the current development plan, but problems will persist if only directed by the old strategy (Arsyad et al., 2011); thus, the development requires a diversity of methods that can support the implementation.

**Fig. 3.** *Bedul Mangrove areas (Research Documentation, 2020)*

Table 1. *IFAS and EFAS Matrices of Bedul Mangrove Ecotourism*

Internal Factor (IFAS)			
Strengths (S)	Weight	Rate	Score
1. A long bridge in the mangrove forest	0.10	5	0.50
2. Natural mangrove trees	0.10	5	0.50
3. Boats are available for visitors	0.10	5	0.50
4. Long and calm estuary is suitable for boat tours	0.20	5	1.20
5. Many birds are found in the mangrove forest	0.15	4	0.60
6. Wide parking areas and clean toilets	0.10	4	0.40
7. Safety is guaranteed	0.10	4	0.40
8. Management by the local community and forestry officials	0.10	3	0.30
9. Continuous promotion activities	0.5	5	0.25
Total			4.65
Weaknesses (W)			
1. Far from the downtown area, small roads	0.20	5	1.00
2. No limitation for visitors to maintain its sustainability	0.30	4	1.00
3. No satisfying hotels or inns near the area	0.30	3	0.80
4. The local community has low education background to keep the area clean and sustainable	0.25	4	0.70
5. Limited number of garbage bins	0.25	4	0.70
Total			3.95
Strengths			**0.70**
External Factors (EFAS)			
Opportunities (O)			
1. Becoming the most popular location for boat tours, with a high level of local community participation	0.15	5	0.75
2. Far from the city, so the place is calm and relaxing	0.10	4	1.00
3. Has *Desa Tangguh Bencana* or disaster resilient village	0.10	4	0.50
4. Regulations for tourism management have been made	0.30	4	0.75
5. Low cost to visit the location	0.20	3	0.30
Total			3.30
Threats			
1. High risk of tidal wave and tsunami	0.20	4	0.80
2. Some of the nearby beaches have unique characteristics and a higher tourist carrying capacity than others in the area	0.35	5	1.75
3. Visitors are not contributing to the area's cleanliness and sustainability	0.30	3	0.90
4. The beach is small, making it rather uncomfortable for kids to play	0.15	3	0.45
Total			2.70
Threats			**0.60**

Source: Research Data (2020)

Fig. 4. *Quadrant SWOT IFAS and EFAS (Research Data, 2020)*
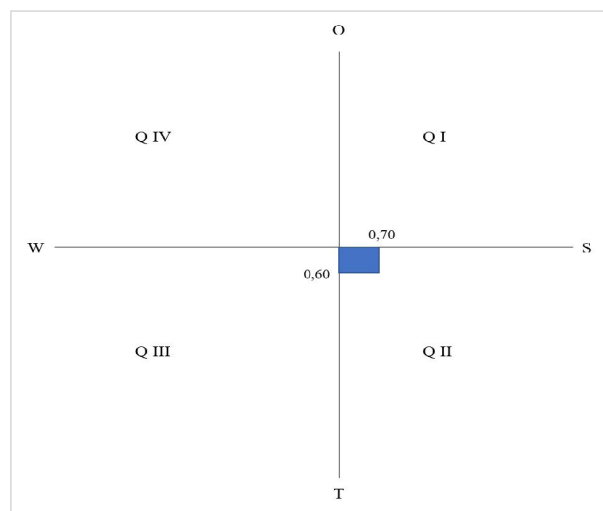
Although the strategy does not fully meet ecotourism standards, such as limiting visits and educating visitors about sustainable environment conservation, Bedul Mangrove Ecotourism does an excellent job of implementing ecotourism. In-depth observations and interviews found that the mangrove environment was clean and the business actors in the area also supported and implemented conservation activities, confirmed by the development of Alas Purwo National Park (Yuniari, 2017). It specifically focuses on three main points: (1) increasing nature tourism activities and utilization of environmental services, (2) improving the welfare and empowerment of communities around the national park, and (3) increasing efforts to utilize the national park area and its potential as an educational media for nature conservation to increase public awareness and appreciation of nature conservation.

IFAS and EFAS analysis showed that the weaknesses value was smaller than the strengths but the threat values were bigger than opportunities. The problems were attributed to the local government and community's insufficient efforts to provide suitable facilities comparable with any other educational tourist destination. Due to the region's distance from the city center, visitors will require accommodation assistance from tour operators to easily access the area (Interview, 2020). Boat operators must get appropriate and consistent training to improve communication and

educate guests about conservation activities. Compared with other well-known major attractions nearby, the area's originality and service make it valuable, not the threat level directly. Business owners confirmed that visitors seemed unhappy about the facility and accommodation. The decline in tourist numbers was due to frequently conflicting regulations between the national park's management and the village government.

Increasing environmental, social, economic, and cultural conditions in communities surrounding Bedul Mangrove Ecotourism in Banyuwangi Regency

The community views about environmental conservation need to be studied. The local community's perception of sustainable ecotourism is substantial on the result of a sustainable natural tourism strategy. Therefore, community maturity and tourist managers are needed in maintaining ecotourism areas to reduce poverty and improve public education (Matarrita-Cascante, 2010). Indonesia has continued to exploit maritime natural resources over the previous few decades without making sustained attempts to manage a complex environmental system (Arsyad, 2011; Istiqomah et al., 2021; Sumarmi et al., 2021a). Fishing and degradation of marine habitats, including coral reefs, seagrass beds, and mangroves, can put coastal ecosystems at risk (Ferrol-Schulte et al., 2015). Coastal communities must protect the environment to ensure the future availability and quality of resources.

Mangrove forest conservation as part of ecotourism has increased in Banyuwangi, providing an economic and sociocultural impact on the community (Setyaningrum et al., 2020). Bedul Mangrove Ecotourism is being developed to maximize educational tourism activities and to promote environmental sustainability by using the mangrove's ecological stability as a tourist destination. Due to the fact that various development issues and economic requirements have resulted in a decrease in the quality of the mangrove environment in Banyuwangi, the proposed development strategy is the most effective. This is supported by Yuniari (2017) stating that Bedul Mangrove Ecotourism was chosen and determined in increasing

awareness of conservation land, tourism education, empowerment of mangrove plants, and is expected to contribute to the economic value of sustainable tourist areas. A previous study on DKV students at Petra Christian University has found a promotional symbol to raise awareness of the need to integrate the area's economic opportunities with ecological values (Winoto et al., 2015).

Coastal and marine ecotourism is based on the following principles: (1) reducing the influence of tourist activities on the landscape and culture of local communities; (2) educating and interacting visitors and local communities with the importance of conservation; (3) collecting retribution and conservation tax to be used directly; (4) involving community participation in developing ecotourism, and (5) encouraging conservation through economic benefits (Putra, 2014). Additionally, ecotourism development is affected by the following factors: (1) population increase and density, (2) global trade, (3) poor infrastructure, (4) lack of environmental awareness, and (5) lack of legal regulation (Zamzami et al., 2021).

Ecotourism principles will help with the development of coastal areas while still promoting environmental sustainability. Thus, policy and implementation need to be improved to achieve a balance between environmental conservation and economic growth. It is necessary to empower coastal village communities through ecotourism and the blue revolution (marine economic revolution), which will enable: (a) to create alternative employment opportunities, (b) to connect the coast to sources of capital, (c) to integrate the coast to technology, (d) to connect the community to the market, and (e) to promote community solidarity and collectivity. The development is expected to be carried out optimally and responsibly, without affecting ecological values in Bedul Mangrove Ecotourism.

According to the interview findings, the opening of Bedul Mangrove Ecotourism had some economic benefits; however, the impacts were not optimal. Initially, the village was dominated by fishermen who depended on nature with changing conditions. The fisherman cannot go to the sea when the weather is poor and the waves are high. The community is completely aware

Fig. 5. *Boat Tours in Bedul Mangrove Ecotourism (Research Documentation, 2020)*
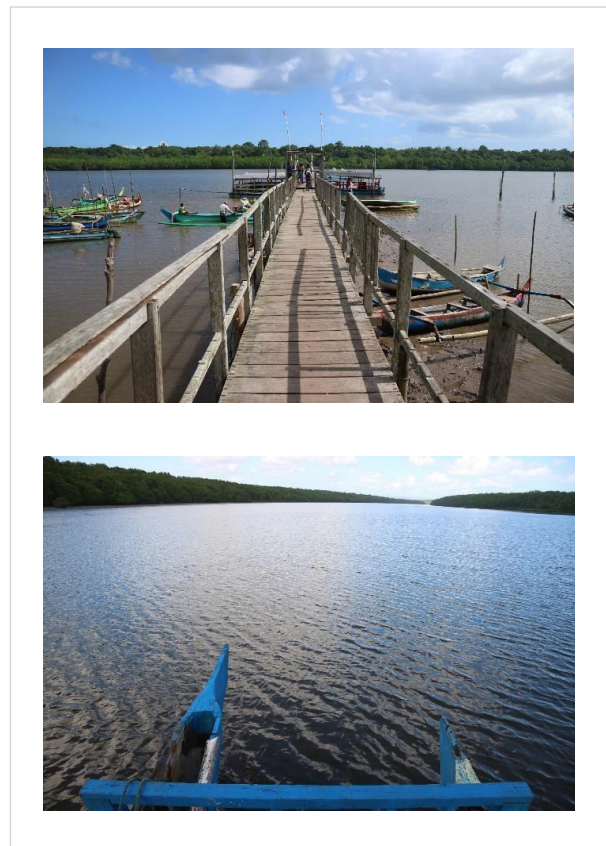
of this condition due to the sea's closeness to the Indian Ocean. Therefore, the community saw this as a new economic opportunity, such as boat tours and other services.

Fig. 5 above demonstrates that the Bedul mangrove forest ecosystem is ideal for ecotourism development. The community recognizes that the number of visitors is still relatively low during the development process. Additionally, the area surrounding Bedul Mangrove Ecotourism provides a beautiful view of marine tourism. This area has not received many improvements in addition to being part of the Alas Purwo National Park management because it must maintain conservation values. It also has not had sufficient facilities compared with other tourist beaches around the area (Interview, 2020). Thus, the findings of interviews and field observations, the IFAS and EFAS matrix analyses,

and an in-depth analysis of the regional development impact found that the existing plan is necessary for the area's needs. However, the strategy's implementation must be improved to develop the area into a sustainable ecotourism destination by addressing three critical components of sustainable development: (1) ecological sustainability; (2) social and cultural sustainability; and (3) economic sustainability (Sumarmi et al., 2021a).

Development of Bedul Mangrove Ecotourism based on sustainable tourism indicators

The environment of Bedul Mangrove ecotourism, which has been shown to be valuable because of the area's current conditions, needs some improvements and changes. According to the recommendations of the SWOT analysis, quadrant 2 indicates that the area's diversification strategy is reliable but could be improved. This improvement must certainly be sustainable in nature, given the ecological benefits of mangrove areas, which overlap with economic sustainability, environmental maintenance requirements, and the welfare of community social life. Several questions were added during the development process to determine the following: 1) can the current strategy and conditions of regional development be sustainable; 2) how do environmental maintenance efforts consider the area to be part of conservation land; 3) how does ecotourism contribute to the community's economic development; and 4) how to participate in various circles, especially the community and its impact to the community welfare. The analyses of interviews and local assessments indicated that improvements and sustainability can be achieved. This effort certainly requires assessment instruments that are aligned with sustainable development goals, particularly the 2030 SDGs Agenda for Tourism (Rasoolimanesh et al., 2020).

The sustainable tourism development can be achieved properly if it is supported by local government policies regarding the cooperation between government, tourism managers and local community. Good communication between the stakeholders can provide clarity to manage mangrove tourism areas so that there is no overlapping management (Zamzami et al., 2021). The stakeholders can monitor each other to avoid misuse of entrance tickets on tourist destination and taxes

taken from tourism managers (Sumarmi et al., 2021b). Basically, the general aims of sustainable development, particularly the 2030 agenda, contribute to tourism sustainability. However, the UNWTO is anticipating a rapid increase in three goals: a) Goal 8 *decent work and economic growth*, b) Goal 12 *responsible consumption and production*, and c) Goal 14 *life beneath the ocean* (World Tourism Organization [UNWTO], 2021). As aligned to the goals of sustainable tourist development, the following description of Mangrove Ecotourism Bedul condition might be considered:

a Goal 8. The strength of the tourism area is expected to provide economic benefits and employment opportunities so that tourism can be sustainable. The significant influence of economic improvement cannot be denied to be the primary element why the tourism sector can be sustained. Sustaining acceptance increases life satisfaction through increased social welfare guarantees. This dominant goal has not been seen at all in the use of Mangrove Bedul Ecotourism as one of the environmental education tourism destinations. Boat service providers and local residents are unsure whether they can survive only on boat services. There has been no visible promotion indicating that this area has developed into a tourist destination. This can be seen in the drastic decrease in tourist numbers, as well as the fact that the local community residential environment is becoming less sustainable. Besides the lack of advertising, economic activity has remained flat since there is no appropriate limit on the terms and conditions of tourism on conservation land, which the manager does not fully understand, making tourist control difficult to accommodate.

b Goal 12. This goal orientation is quite obvious. There has been no effort made to ensure the production process and consumption fulfillment. Product innovation activities have not been pursued because of the belief that accommodation in the area is difficult and remote from the main routes, which is seen to be a disadvantage to visitor interest. There is a mangrove area in Banyuwangi Regency that has developed into an innovation area for mangrove cultivation products, specifically on Cemara Beach. In the tourist area, mangrove cultivation products such as bever-

age ingredients, chips and snacks, and accessories began to be processed and became local souvenirs, increasing the value of tourism. Such things are not found at all in Mangrove Ecotourism Bedul. Therefore, no new products are being developed, and tourist attractions like mangrove processing and cultivation will be limited as a result.

c Goal 14. This objective ensures the long-term sustainability of the marine water environment, particularly the ecology that surrounds it while it is used as a tourism destination. Mangrove Ecotourism Bedul in Banyuwangi Regency is one of the areas with the highest mangrove sustainability, making it an ideal model for educational tourism aimed at introducing and maintaining coastal environment. As it comes to determining the SDGs 2030 agenda, it is believed that coastal resources can be efficiently utilized for fisheries, aquaculture, agroecology, and sustainable coastal tourism. This educational tourism possibility has developed pretty well thus far, with boat tourism options that enable access to all points of the environment, providing tourists with a unique experience. Therefore, the improvement of services such as to support various ecological education tourism activities, especially mangroves, can be immediately designed and implemented.

Green and fair strategies in Bedul Mangrove Ecotourism to achieve sustainable tourism in accordance with the Agenda SDGs 2030

This area is managed following ecotourism principles to preserve nature, improve the economy, and empower the local people. Ecotourism can be defined as a concept of alternative tourism and sustainable tourism development (Putra, 2014; Sumarmi et al., 2021a). The United Nations Environment Program (UNEP) and the United Nation World Tourism Organization (UNWTO) have defined sustainable tourism as tourism that takes complete account of the current and future economic, social and environmental impacts, meeting the needs of visitors, industry, the environment, and the community as well as stakeholders involved (Carbone, 2005). Likewise, with the main concept of sustainable development, the above definition has high value. It is subject to various interpretations and

views, with appropriate reference to sustainable development as a comprehensive global-scale process oriented toward the future of people's social welfare (Saarinen, 2014).

The identification of the IFAS and EFAS matrices revealed that the strategy is located in quadrant II, indicating diversification of strategies, implying that the strategy is fairly appropriate but requires a combination of other strategies to overcome a significant threat. As a result of an in-depth analysis of the management of mangrove ecotourism in Bedul, it was determined that the plan applied met the requirements for a development area, but optimization is required. Evaluating options that also require an expansion of other strategies while ecotourism is the main strategy occurs in the CMC (Clungup Mangrove Conservation) area, which is responsible for managing 81 hectares of mangrove in 3 coastal locations continuously. Husamah and Hudha (2018) found that the results of both identifications indicate that there are several criteria for achieving existing ecotourism areas that have not been implemented (or are still at a low level of implementation), are being planned, are being pursued, and are being optimized to the point where improvement efforts utilizing other alternatives are required. Visitors, managers, and members of the community participating in the use of mangrove areas can achieve community economic welfare by prioritizing environmental sustainability through improving the strategy's implementation.

The findings of the speech, when compared with the UNWTOs submitted goals, revealed an area that has progressed in accordance with the existing development strategy, but has not yet reached the level of sustainable tourism expected. The three goals that have been proclaimed have not been applied continuously. While the existing conditions are ideal for developing an ecological education tourist area based on ecotourism principles, the area's weak economic impact on the communitys welfare must also be considered. Therefore, an in-depth examination and observation of the elements affecting development conditions and the compatibility with tourism sustainable development goals demonstrate the necessity for policy revisions or additions capable of addressing

development issues (Zamzami et al., 2021). As a result, this area requires a combination of ecotourism management strategies, one of the most critical of which is the green and fair strategy.

The green and fair strategy is a reliable strategy for Bedul Mangrove Ecotourism, especially in balancing environmental sustainability with the community's economy (Winoto et al., 2015; Yuniari, 2017; Zamzami et al., 2021). This is critical to highlight because if the high ecological values are not created and managed effectively, breaches might arise, reducing the surrounding population's economic potential. The Green Marketing/eco-fair trade labeling in Swaden, stated that regional effort into green and fair strategies for developed area has some characteristic, including: 1) protected from "cradle-to-the grave", 2) long-term optimization of natural resources, 3) have quality related to labor standards, 4) social responsibility of government and stakeholders, and 5) successful promotion and communication with consumers, and transparency in regional management and development (Zaman et al., 2010).

Interview results revealed that the number of mangroves continued to decline because of illegal logging before Bedul was designated a conservation area. If this happens again, the impact may be much more prominent, such as decreasing employment opportunities, damaging ecosystems, and increasing the risk of natural disasters. This condition is in accordance with the objectives of green economic development; in this case, green and fair strategy's main purposes of implementing this strategy are: 1) to improve human well-being and social equity and 2) to reduce environmental risks and ecological scarcities (Vocke, 2021).

The findings and discussions about the development of mangrove ecotourism areas in Bedul using alternative methods in accordance with IFAS and EFAS matrix conditions indicate that one of the most effective strategies is to use green and fair strategies. There is a possibility that the green economy will not be environmentally friendly, so a mature design and implementation over time will produce progressive effects, even if they are not immediately noticeable. Referring to the areas where this strategy is being implemented, it is clear that it is not primarily aimed at achieving ecological sustainability; it also indicates the existence

of development efforts aimed at resolving the region's social and economic problems, implying the need for a "fair" approach in this situation (Yuniari, 2017).

The green and fair strategy is an alternative to the development of ecotourism strategies implemented previously in Bedul Mangrove Ecotourism. This strategy focused on achieving green tourism economic activities; the area needs to be protected for the sustainability of its ecosystem and to be able to provide economic benefits for the surrounding community (Zaman et al., 2010). Indicators of this strategy can be specifically adapted from "Green Tour Africa 'Certification for Sustainable Tourism in Kenya and wider Africa'" on area management and monitoring mechanism, consisting of (a) sustainability management and legal compliance, (b) social policy and human rights, (c) environment and community relations, (d) transport, (e) accommodation, (f) partner agencies, (g) excursions, (h) tour leaders, local representatives, guides, and destinations, and (g) customer communication and protection (Kusters, 2019). Those indicators are suitable with Bedul Mangrove Ecotourism since its weaknesses are related to tourist services and high competition from the surrounding tourist areas. As a result, the area needs comprehensive improvements in management, collaboration, and added value to the vitality of the area and tourism promotion.

After determining the indicators for achieving a green and fair strategy necessary to improve Bedul Mangrove Ecotourism's management strategy, managers must assess the dimensions of sustainable ecotourism management, which include the community's environmental, economic, and social dimensions, followed by assessment indicators for each dimension (Choi & Turk, 2011). In the environmental dimension, the indicator assessment may include an assessment of (a) the inventory of natural resources in ecotourism areas, (b) the rate of damage or degradation of ecosystems, (c) the environmental impact of tourism activities, and (d) public health (air quality) and ecosystems. The two economic dimensions of the assessment can be carried out on these indicators: (a) the availability of qualified employment and labor, (b) distribution related to capital and income, (c) community involvement and investment activities, (d)

calculation of demand for tourism services, and (e) budget from local governments. The last dimension is the social dimension that includes: (a) stakeholder and community involvement in tourism, (b) social cohesion, (c) visitor criteria (age and gender), (d) tourist satisfaction, (d) community resources, (e) resource distribution or energy, (f) public health and safety, and (g) community quality of life.

Conclusions

Bedul Mangrove Ecotourism is part of Alas Purwo National Park. It is located between Grajakan Beach, Alas Purwo, and Plengkung Beach (G-Land). The natural resources in the area have been used as educational tourism. Based on IFAS and EFAS analysis, Bedul Mangrove Ecotourism belonged to Quadrant II and it has reached the diversification strategy. The diversification strategy in Quadrant II (positive, negative) with values S 0.70 (+) and T 0.60 (–) is between concentric and conglomerate diversification where this position signifies a strong organization but faces strong threats. The area needs improvement in implementing the green and fair strategy so the ecotourism principle can go along with efforts to develop the local community's economy by practicing sustainable conservation values. Ecotourism strategy is quite appropriate but requires a combination of other strategies to overcome a large threat. But the reflection between the goals of SDGs 2030 for tourism is not considered with each of them. The result showed a lack of economic growth and distrust from the community. There is no innovation from

mangrove products, and the mangrove areas still cannot manage the opportunity to be the most wonderful place to educate tourism destinations for many circles to achieve experience to understand more about mangrove conservation. Therefore, the green and fair strategy's main purpose of implementing this strategy is to improve human welfare and social equality, and reducing environmental risks and the ecological gap becomes feasible. However, the application requires a mature plan and requires a lot of time. As a preliminary step to implementing this strategy, it is necessary to collect data from multiple sources and validate it in accordance with standards/dimensions of knowledge. Additionally, monitoring of green and fair strategies as described must be conducted. The research implication requires local governments to provide policies or regulations that support management, funding, and training for local communities and tourism managers. The research findings are limited on policies to reach sustainable goals of SDGs 2030 in Bedul tourism areas. Further research is needed to discuss related to behavior, culture and the community's economy as well as the organization system in managing tourism areas.

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