

TOURISM DEVELOPMENT STRATEGY BASED ON ENVIRONMENTAL SERVICES WITH INTEGRATED COASTAL ZONE MANAGEMENT (ICZM) TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN JOLOSUTRO BEACH OF BLITAR REGENCY INDONESIA

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Citation: Sumarmi, Irawan, L.Y., Arinta, D., Suprianto, A., Kurniawati, E., Hidajat, H.G., Marlina, Fahim, N.B.A., Arif, M., Sholeha, A.W., & Shaherani, N. (2024). TOURISM DEVELOPMENT STRATEGY BASED ON ENVIRONMENTAL SERVICES WITH INTEGRATED COASTAL ZONE MANAGEMENT (ICZM) TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN JOLOSUTRO BEACH OF BLITAR REGENCY INDONESIA. *Geojournal of Tourism and Geosites*, 55(3), 1377–1391. <https://doi.org/10.30892/gtg.55338-1310>

Abstract: Tourism has become an alternative to improve community welfare. One activity trend is tourism based on an environmental services economy. The aim of this research is to design a tourism development strategy for Jolosutro Beach based on Environmental Services Economics with Integrated Coastal Zone Management (ICZM). This research uses a mixed design (mixed-method design) with a quantitative and qualitative approach. Data were analyzed using suitability analysis for tourism, SWOT, and Huberman interaction analysis. The research results show that the condition of Jolosutro Beach can be developed as environmental services-based tourism with Integrated Coastal Zone Management (ICZM).

Keywords: Tourism Development, Environmental Services Economy, Integrated Coastal Zone Management

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INTRODUCTION

Tourism needs continuous development because it is an economic activity that supports the community's economy and a source of regional income (Andayani and Anwar, 2012). Tourism as a source of regional income can increase economic growth, employment opportunities, income, and standard of living, and activate other related production sectors within the

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country (Nurhadi, 2014; Sumarmi et al., 2020; Wahab, 2003), including travel agencies, craft or souvenir industries, tourist objects, attractions, hotels, and restaurants thereby supporting development (Andayani and Anwar, 2012; Arinta et al., 2016).

Tourism significantly impacts the community's economy by encouraging people to be more active and creative (Astina and Kurniawati, 2021; Choiriyah, 2018). However, along with its good effect on the economy, tourism is expected to continue to preserve the environment through ecotourism. Good and sustainable environmental conditions will maintain economic sustainability—this is where the term “environmental services economy” appears. The economic provision of environmental services in marine and coastal tourism can run well with the availability of open space for recreation, as mentioned by Chen and Teng (2016), Kenchington (1993), and Needham and Szuster (2011) that marine and coastal tourism makes the marine environment increasingly important in providing open space for tourism and recreation activities.

Marine tourism offers beaches as the main tourist attraction, where land and sea meet (Chen and Teng, 2016). The beach extends from the low tide line inland across unvegetated sediments to the beginning of vegetation or to the next geomorphic feature inland, which can be dunes or bedrock (Chen and Teng, 2016; Masselink and Gehrels, 2014). Attractive coastal landscapes with breathtaking panoramas make beaches an important resource for tourism and provide the potential for valuable economic contributions to tourist destinations (Botero et al., 2015; Er-Ramy et al., 2022; Kastenholz, 2018). However, the problem that often arises on the coast is the tragic loss of resources (Feeny et al., 1990) due to many coastal tourism activities leading to environmental degradation and affecting the ecological status, which causes losses to tourist destinations (Roca et al., 2009; Williams et al., 2013).

Problems related to beach tourism can be overcome by securing the significant values generated from beach tourism and realizing sustainable beach tourism. Securing the significant value of beaches can be done by evaluating the suitability of beaches for recreation (Arinta and Sumarmi, 2022), and analyzing the potential of beaches can be done through SWOT analysis (Arinta and Susilo, 2023; Astina and Kurniawati, 2021; Lukoseviciute and Panagopoulos, 2021). Formulating coastal carrying capacity is crucial to creating policies related to coastal development (Leka et al., 2022).

Jolosutro Beach in Blitar Regency is currently experiencing development. Jolosutro Beach is one of the priorities for natural tourism development in the Blitar Regency spatial plan for 2011-2031 (RTRW Blitar Regency, 2013). Jolosutro Beach began to be developed in 2016. Its development has led to the beach being clean and well-maintained, supported by cultural preservation. Visitors can do many activities at the beach, including camping, trekking, walking, planting Australian pine (*Casuarina equisetifolia*) and fragrant screw-pine, fishing, cleaning the beach area, and doing religious rituals. Each activity has utility value, so tourists come to do those activities for new experiences. Beaches are basically a multidimensional environment consisting of interacting natural, socio-cultural, and management systems (Kenchington, 1993).

Due to unclear development plans, managers find it hard to continue the beach's development; therefore, organizing a development direction strategy is necessary. It is also important to note that beaches come in various types and unique characteristics, giving rise to their own problems arising from various levels of human use (Chen and Teng, 2016); in other words, each beach requires its own management strategy. The research begins by evaluating the coastline for structuring tourist locations by considering internal and external factors, then formulating a development strategy and offering environmental, economic services at Jolosutro Beach using Integrated Coastal Zone Management (ICZM). The research objectives are to (1) identify the condition of Jolosutro Beach, (2) identify the condition of Jolosutro Beach Based on the Environmental Services Economy, and (3) design a tourism development strategy for Jolosutro Beach based on the Environmental Services Economy with Integrated Coastal Zone Management (ICZM).

LITERATUR REVIEW

Tourism is one of the important economic sectors in Indonesia; it can be an option to improve the country's economy (Muthahharah and Adiwibowo, 2017). Law Number 10 of 2009 mentions tourism as an important economic sector in Indonesia; the law regulates tourism implementation (Muthahharah and Adiwibowo, 2017). Tourism fulfills the physical, spiritual, and intellectual needs of every tourist, and at the same time, it also improves the economy of the community living around tourism sites (Suryani and Kumala, 2021). Based on this, tourism is an activity to fulfill human needs through recreation to improve community welfare. Tourism means traveling from one place to another (Suryani, 2017). Tourism aims to help enjoy a trip for sightseeing and recreation or to fulfill various desires (Suryani, 2017). The desire for travel and recreation is to seek happiness in the living environment in social, cultural, and scientific dimensions. Based on the definitions above, tourism can be defined as the journey of a person or group to enjoy recreational activities to seek happiness, gain experience, and broaden their knowledge.

Management of beaches as a tourist destination using an Environmental Services model with Integrated Coastal Zone Management (ICZM) is very important (Mestanza-Ramón et al., 2020). The current tourism trend, which tends to return to nature, causes tourism managers to pay more attention to their regions (Duvat, 2011). Tourism managers start to understand the need to integrate natural factors, cultural factors, and economic factors to create sustainable tourism for the welfare of society (Albotoush and Shau-Hwai, 2019), including having an impact on increasing the country's foreign exchange (Albotoush and Shau-Hwai, 2019; Mestanza-Ramón et al., 2020). The role of tourism managers is essential in determining the management direction of Jolosutro Beach to support sustainable development. Sustainable development considers ecological, economic, and socio-cultural aspects (Sumarmi et al., 2022). Environmental Services Management (ESM) aims to restore and protect the availability of sustainable environmental goods and services (Engel et al., 2008; Wunder, 2006). Ferdian et al. (2020) show that the potential services of ESM are seawater intrusion control services and cultural services from mangrove tourism. The perception and participation of the community and environmental service providers regarding

mangrove environmental services are considered sufficient to determine a plan to establish an ESM where the community is willing to participate in maintenance costs (Ayambire and Pittman, 2021). The following is Table 1 related to the Principles of Sustainable Tourism Development. The criteria for sustainable tourism development presented in Table 1 above are the basis for managing Environmental Services with Integrated Coastal Zone Management (ICZM). Therefore, in managing Jolosutro Beach, Blitar Regency, in addition to paying attention to the indicators in Table 2, attention must also be given to the quality of the beach according to the indicators below.

Table 1. The Principles of Sustainable Tourism Development (Source: Suryanti and Indrayasa, 2021)

No	Principles
1	Sensitivity and love for local cultural heritage
2	Increasingly concerned about preserving the natural environment
3	Contribute and stimulate the economy of the local community
4	Respect social and religious rules
5	Comply with the rules that apply in society
6	Follow the rules agreed upon as a result of deliberation and consensus
7	Consistently provide satisfaction and comfort to consumers
8	The things promoted meet customer's expectation
9	The environmental management system follows the concept of sustainable environmental management

Table 2. Beach Quality Indicators for Tourism (Source: Arinta and Susilo, 2023, Botero et al., 2015)

Variable	Indicators
Accessibility	Distance from the highway to the beach
	Car and motorcycle parking
	Phone signal
	Public transportation
	Signpost
	Information signs
	Tree shades
	Permanent noise
	Water pollution (DO, Coliform)
	Environmental cleanliness (from garbage)
Comfort	Sufficient width and length of the beach
	Calm ocean waves
	Wind velocity

Research on the environmental services economy is crucial for decision-making regarding resource management that is profitable from an economic perspective and sustainable from an environmental perspective. Increasing the sustainable development of a region is necessary for maintaining nature and culture, which is critical to sustaining economic value. Estimating the economic value of environmental services can be done using special methods; one of the economic valuation measures for environmental services is the natural beauty, including the beauty of beaches as tourist destinations, measured based on the amount of travel costs (Guo and Li, 2024; Hayati, 2021). The travel cost can be estimated using two approaches: travel costs based on regional zones and based on individual needs. The socioeconomic characteristics of visitors can be seen in age, income, and education; this information, however, is difficult to obtain using the first method (Hayati, 2021).

Research related to environmental services tourism needs to involve the government. This is in accordance with research (Guo and Li, 2024), the government must be able to use various management approaches to improve conservation and tourism simultaneously. Current developments that cause critical impacts such as greenhouse gas emissions from airlines, waste from shipping, and environmental problems need to be addressed for sustainable tourism management (Guo and Li, 2024). According to (Arinta and Susilo, 2023), environmental services economic tourism needs to involve the community. Management and investment in human resources is critical to the successful implementation of community-based ecotourism initiatives. A holistic approach to ecotourism development must pay attention to environmental, social and economic aspects to achieve long-term goals. Research (Li et al., 2024) found that the development of appropriate infrastructure in addition to reducing environmental pollution and safety supports sustainable coastal management and improves human welfare. Tourism based on an environmental services economy must pay attention to infrastructure development as one of the conveniences of tourism. Based on research (Mestanza-Ramón et al., 2020), the government responsible for its management is a key element in development through comprehensive legislation considering coastal tourism as one of the most dynamic economic activities. Economic tourism and environmental services must be managed well by the government. Apart from that, tourism based on an environmental services economy must develop spatial use zoning. This is in accordance with (Sulistyadi et al., 2024), the use of spatial zoning should not only focus on the core zone but also the supporting zones so as to create sustainable tourism.

METHOD

Research Design

This research uses a mixed quantitative and qualitative approach (mixed method). This approach was used because the first phase of the study identified the potential of Jolosutro Beach, both physical and social. In the second phase of the

study, a SWOT analysis of Jolosutro Beach was performed. SWOT analysis in a quantitative approach aims to calculate as accurately as possible to develop SWOT reconstruction and education models (Amirshenava and Osanloo, 2022a; Helms and Nixon, 2010). The third study is to formulate a development strategy for Jolosutro Beach. The research flowchart is shown in Figure 1. The research location is located in Ringinrejo Village, Wates District, Blitar Regency, East Java, as shown in Figure 2.

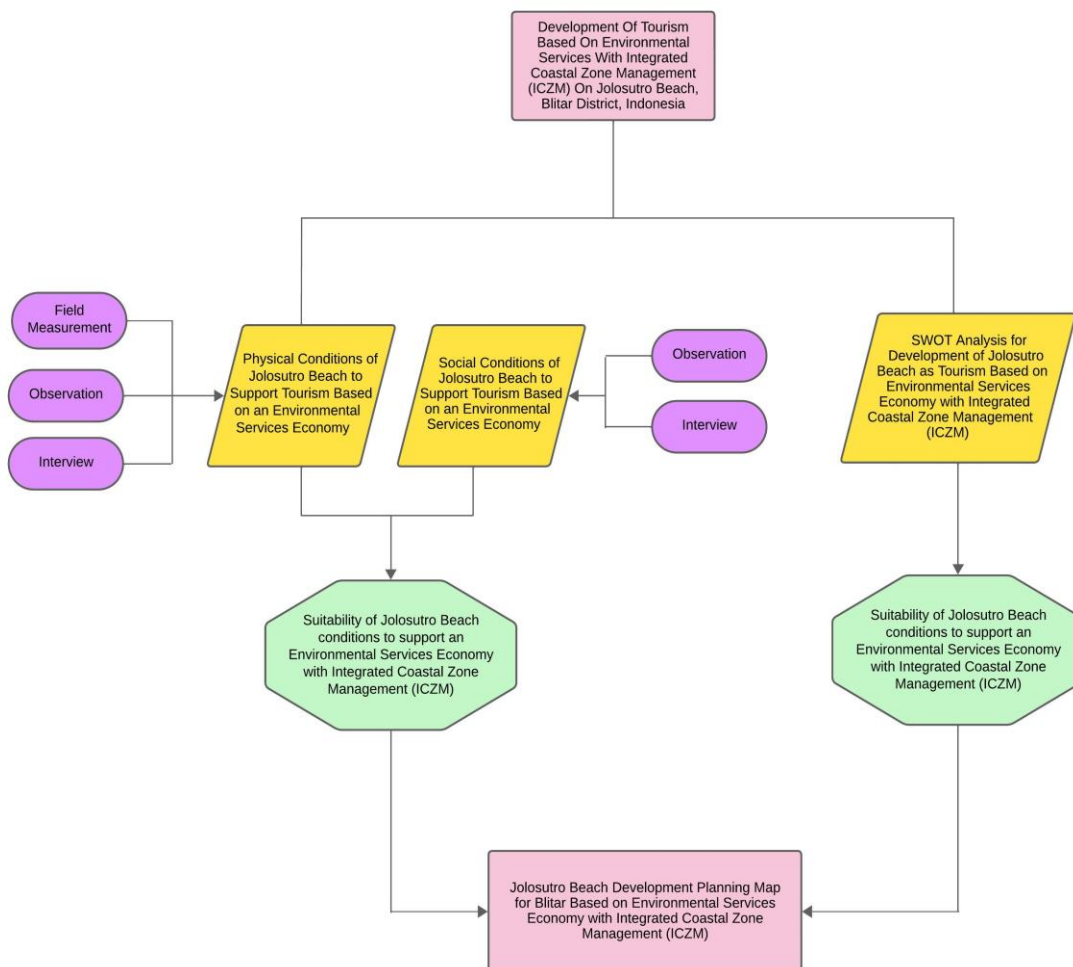


Figure 1. research flowchart for Jolosutro Beach Tourism Based on Environmental Services Economy with Integrated Coastal Area Management (Source: Researcher, 2024)

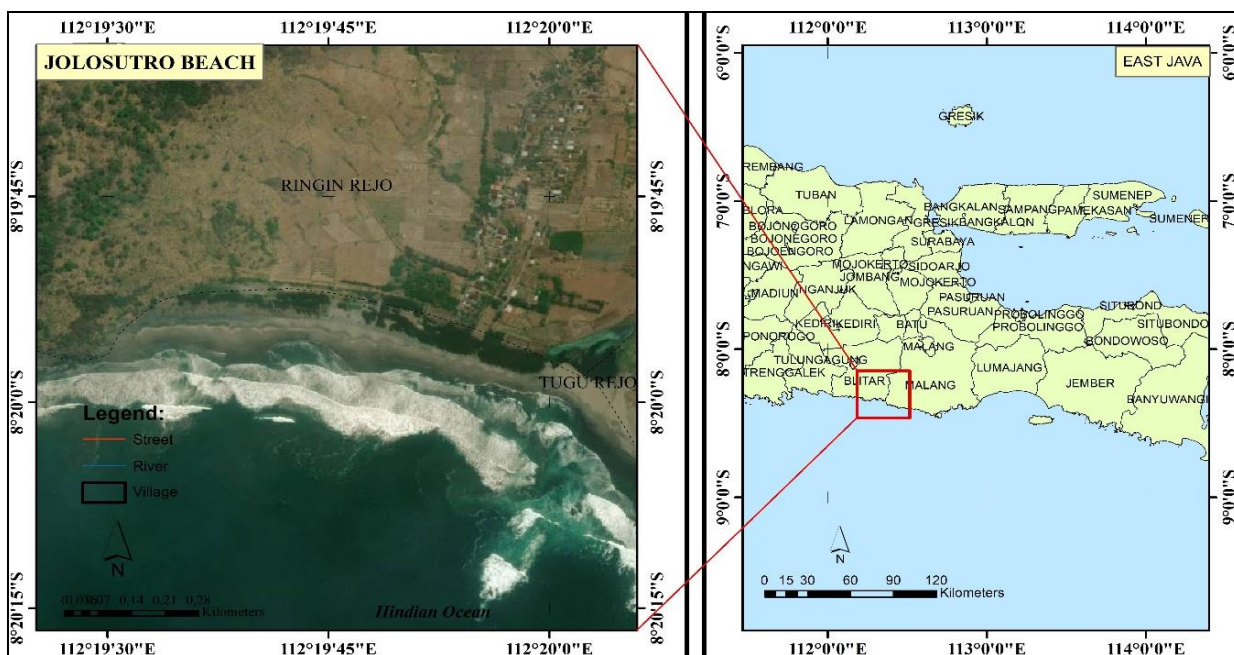


Figure 2. The study site in Ringinrejo Village, Wates District, Blitar Regency, East Java (Source: Google Earth, 2024)

Research Subject

The research subjects were determined using purposive sampling by setting several criteria, which also became a limitation for the informants involved. In accordance with the established criteria, the subjects in this research consisted of *Kelompok Sadar Wisata (Pokdarwis)*¹, *Kelompok Pengawas Masyarakat (Pokmaswas)*² in Ringinrejo Village, Wates District, Blitar Regency, stall owners, homestay owners, a team of motorbike taxi drivers, and farmers in a forest area near Jolosutro Beach and fishermen. Research respondents can be seen in Table 3.

Table 3. Research respondents

No	Respondent Types	Roles
1	The village head	Running the village government
2	Pokmaswas Rukun Jaya	Caring for the conservation of Jolosutro Beach
3	Pokdarwis	Driving tourism development in the village
4	Stall owners, homestay owners	Community members as tourism actors enjoying the impact of tourism
5	Farmers in a forest area located near Jolosutro Beach and fishermen	Community members as tourism actors enjoying the impact of tourism

Data Collection

Data were collected to measure physical and social conditions. Physical conditions were measured through field measurements, with indicators including beach ridge width, beach type, beach morphology, slope inclination, and distance to freshwater in the form of springs from nearshore beaches, coastal land cover, and dangerous biota. Qualitative data collection used observation, interviews, and documentation.

a) Observation is carried out by taking notes, then compiled into a structured report explaining the events that are the basis or topic of the research (Sudarwan et al., 2021). Observations in this research were a way of observing and documenting various objects, available facilities, and other things found at Jolosutro Beach. Things observed included the road to the beach, camping ground near the beach, lagoon on the edge of the beach, river mouth, Jolosutro Beach tourism management office, stalls, homestays under construction, motorbike taxi base, and density of forest vegetation around the beach.

b) Interviews were carried out using in-depth interview techniques, where we asked questions or asked for the subject's opinion regarding the condition of Jolosutro Beach tourism. An interview is a face-to-face question-and-answer process between the researcher and the research subject, and an interview guide is used as an interview tool (Sumarmi et al., 2022). In-depth interviews were conducted with managers of Pokdarwis in Ringinrejo Village, stall owners, homestay owners, and Jolosutro Beach visitors.

c) Documentation was taken using drones, cameras, and image data in the form of videos, photos, or maps.

d) If the data obtained were limited to the results of observations and interviews, then the level of validity of the data would be very minimal; thus, an FGD would be carried out with the stakeholders.

Data Analysis

Data analysis employed two methods: scoring and SWOT analysis. Scoring was employed to determine indicators of physical land suitability for Jolosutro Beach. Physical indicator assessment was used to map the strategic position of Jolosutro Beach in developing environmental services. Indicators for assessing the physical condition of Jolosutro Beach are presented in Tables 4, 5, and 6. SWOT analysis was used to determine the potential and strategy for beach development. The following are indicators for assessing the physical condition of Jolosutro Beach.

Table 4. Indicators for assessing physical conditions (Source: Arinta and Susilo, 2023; Yulianda, 2007)

No	Indicators	Description	Score	Data collection technique	Note
1	Width of beach ridge vegetation	>75 m	4	Observation	Modifications were made to the assessment. The appropriate score for the suitability of beach tourism is above, with the highest score of four.
		50-74 m	3		
		25-49 m	2		
		<25 m	1		
2	Beach type	Sandy	4	Observation	
		Sandy with coral	3		
		Rocky	2		
		Muddy	1		
3	Type morphology	Gently sloping	4	Observation	
		Sandy hilly beach	3		
		Rocky beach	2		
		Steep rocky beach	1		

¹ It can be translated as Tourism Awareness Groups, community-based organizations typically formed in tourist destinations to promote responsible tourism practices, preserve local culture and environment, and enhance the overall tourism experience. They often work closely with local authorities, businesses, and residents to develop sustainable tourism initiatives and ensure the well-being of both visitors and the host community.

² It can be translated as Community Vigilance Groups. These groups promote safety, security, and cooperation within a community. They often work with local authorities to prevent crime, address community concerns, and foster a sense of solidarity among residents. In some cases, Pokwasmas may also engage in disaster preparedness and response activities to ensure the community's safety in times of crisis.

4	Slope inclination	< 10%	4	Observation
		10-25%	3	
		26-45%	2	
		> 45%	1	
5	Distance to freshwater in the form of springs from nearshore beaches	< 500 m	4	Observation
		500-1000 m	3	
		1001-1500 m	2	
		> 1500 m	1	
6	Coastal land cover	Coconuts, open land	4	Observation
		Bush, savanna	3	
		Tall shrubbery	2	
		Mangrove forests	1	
7	Dangerous biota	None	4	Interviews
		Sea urchins, jellyfish	3	
		Sea urchins, jellyfish, stingrays	2	
		Sea urchins, jellyfish, stingrays, lionfish, sharks	1	

After assessing each of the physical condition indicators above, a comprehensive assessment and classification were carried out to determine the level of suitability of the physical condition as a tourist attraction, as depicted in Table 5.

The social data in this research came from the results of qualitative interviews using the interactive analysis model by Miles and Huberman (Huberman and Miles, 2002) which includes (1) data collection, (2) data reduction, (3) data presentation/data display, (4) conclusion drawing and verification. Data analysis in this research employed qualitative analysis and quantitative analysis (John and Cheryl, 2018). First, all data for analysis were transcribed as part of data processing and preparation. Second, the data were read and input. Third, data were reduced by selecting, reducing, simplifying, abstracting, and changing them. Fourth, an evaluation of the activities of managers and tourists at Jolosutro Beach was done, and data were classified into components relevant to the development of the environmental services economy. Fifth, an investigation on turtle conservation directions based on code categories was done at a deeper level. Sixth, typical and interesting things were mapped, and conclusions were drawn. Quantitative analysis in this research employed SWOT. SWOT analysis is used to support strategic decision-making, especially for environmental management (Bitoun et al., 2023).

In addition, SWOT analysis can help prioritize sustainable development targets based on stakeholder knowledge (Pomatto et al., 2023). This approach facilitates decision-making analysis and enables individuals to identify internal and external factors in turtle conservation and education at Jolosutro Beach. This approach examines strengths, weaknesses, opportunities, and threats so that stakeholders can gain insights that can be used in the decision-making process. The SWOT structural model helps formulate organizational strategies for building a reconstruction model, as seen in Table 6.

Table 5. Classification of the results of physical condition assessment (Source: Arinta and Susilo, 2023; Yulianda, 2007)

Class	Characteristic	Number
I	Very suitable	≥ 27
II	Suitable	21-27
III	Unsuitable	14-20
IV	Very unsuitable	7-13

Table 6. SWOT Matrix (Source: Sumarmi et al., 2020)

SWOT Analysis			
External Audit	Internal Audit		
	Opportunities	Strengths	Weakness
		SO	WO
	Threats	ST	WT

RESULT AND DISCUSSION

1. Description of Jolosutro Beach

Jolosutro Beach is administratively located in Ringinrejo Village, Wates District, Blitar Regency. The beach area is also part of the South Coast of East Java, 45.2 km from Alun-Alun of Blitar City. Geographically, this is a long beach, 1.25 km, with an average beach ridge width of 35 meters. This gently sloping beach is ideal and safe to use as a tourism area because. Tourists are prohibited from swimming because of the big waves. Even though this beach covers a vast area, it is clean, so it can be the leading choice to visit on holiday, as in Figure 3 and Figure 4. Jolosutro Beach, with predominantly rough topography, is located between two hills. The two hills and curves also make this beach shaped like a cape. The field measurements were made on (1) the width of the beach ridge, (2) slope inclination, (3) temperature, and (4) sand characteristics. The measurement results show that the average width of the beach ridge reaches 40 meters, the slope is 5°, the average air temperature in the morning is 29.7°C, and the wind speed in the morning is 1.20 m/s. Meanwhile, the characteristics of beach sand tend to be fine to very fine, with black and white sand and a mixture of iron minerals. Jolosutro Beach has a lagoon on the east side and has quite high waves, this can be seen in Figure 7 and Figure 8. On the eastern part of the coast, a bar-built estuary was found to form a lagoon (in the local language: *kondang*)

at the back of the beach ridge can be seen in Figure 9 and Figure 10. The vegetation and biota in Jolosutro Beach vary. Based on the observation results, the vegetation on this beach include (1) Australian pine (*Casuarina equisetifolia* L.), (2) bananas (*Musa*), (3) fragrant screw-pine (*Pandanus odorifer*), (4) *keben* (*Barringtonia asiatica*), (5) noni (*Morinda citrifolia*), (6) mangrove (*Rhizophora*), (7) coconut (*Cocos nucifera*), (8) *katang-katang* (*Ipomoea pes-caprae*), and (9) elephant grass (*Cenchrus purpureus*). Meanwhile, at Jolosutro Beach, there are captivity areas for turtles, pelicans, snapperfish, sharks, and monkeys. The plants and animals provide comfort for tourists, especially the presence of Australian pine, which can make the beach environment shady and attract tourists for fishing activities which can be seen in Figure 5 and Figure 6.



Figure 3. Middle part of Jolosutro Beach

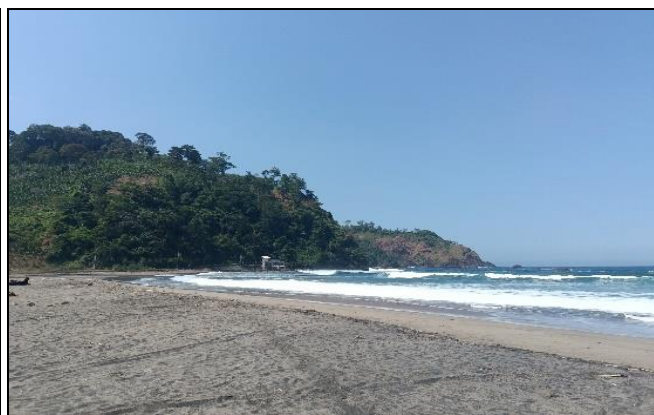


Figure 4. East side of Jolosutro Beach



Figure 5. Australian pine (*Casuarina equisetifolia* L.)



Figure 6. Turtle hatchery (Source: Researcher, Jolosutro Beach, 2024)



Figure 7. Lagoon at Jolosutro Beach

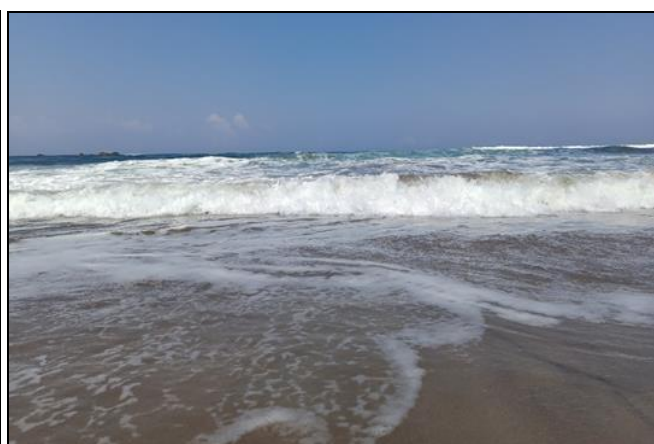


Figure 8. Waves at Jolosutro Beach

Various assessments were made to analyze the comfort of Jolosutro Beach. This beach is classified as conditionally compliant based on the measurement results of physical parameters and geomorphology. The measurement results are (1) relatively rare coastal currents or rip currents, (2) moderate wave height, around 0.5 -1.5 m, (3) moderate wind speed, (4) moderate midday air temperature of 32-38°C, (5) bright meteorological conditions, (6) primarily fine to very fine beach sand, (7) very suitable beach width at 35 m - 38 m, and (8) no disturbing animals. Based on the results, it can

be concluded that Jolosutro Beach has a sufficient level of comfort based on several considerations. The main consideration is visitor safety because the waves tend to be moderate and the potential for rip currents. Then the second consideration is to add warning signs along with lifeguards to ensure visitor safety.

The environmental quality variable at Jolosutro Beach is in the medium category. This can be seen from the main indicators, including (1) no noise, (2) indications of water pollution, especially in the estuary, (3) 5-15% sand waste, which is relatively small, and (4) waste found at several points dominantly organic, such as twigs, leaves, and coconut shells. This indicates the need for bioremediation or the return of environmental functions to recovery. However, it can be concluded that Jolosutro Beach still has good environmental quality and is worth visiting. Jolosutro Beach also has a very suitable physical carrying capacity of more than >16m. However, the embankment and breakwater are not yet available considering the waves tend to be high. Basic service facilities such as toilets and prayer rooms are available around the beach. Around the beach there are food stalls and specialties such as grilled fish which can be seen in Figure 11 and Figure 12.



Figure 9. Kondang is the lagoon at Jolosutro Beach



Figure 10. The tree-covered part of the lagoon at Jolosutro Beach



Figure 11. Grilled Fish, a Typical Menu of Jolosutro



Figure 12. Food stalls at Jolosutro Beach



Figure 13. Camping ground at Jolosutro Beach



Figure 14. Camping activities at Jolosutro Beach

In addition, internet connection is also provided via WiFi from the nearest stall. Another facility is a large camping ground which can be seen in Figure 13 and these facilities can be used for camping activities as in Figure 14. These facilities are basic facilities for the eligibility criteria of a tourist area; Jolosutro Beach can be categorized as good but not optimal because facilities to support other attractions for beach tourism activities have yet to be available. One thing that supports ecological services is the growth of Australian pine vegetation. Plants that grow along the beach ridge (a vegetation area close to the beach ridge) are an extraordinary attraction for visitors because the South Coast area of East Java has strong winds and hot weather. Results of field exploration also show that the Keben trees are growing quite well and evenly, so the quality of the environment around Jolosutro Beach is good.

Table 7. The Physical Condition of Jolosutro Beach (Source: Data analysis by the researchers, 2024)

No	Indicator	Measurement Results	Description	Score
1	Beach Slope	4.40 ⁰	Very suitable	4
2	Beach Width	39.6 meters	Very suitable	4
3	Beach Typer	Sandy	Very suitable	4
4	Beach Morphology	Sloppy beach	Very suitable	4
5	Distance from freshwater availability	217	Very suitable	4
6	Beach land cover	Coconut trees, sea cypress, and open area	Very suitable	4
7	Dangerous biota	None	Very suitable	4
Total				28
Category				Very Suitable

2. Jolosutro Beach Tourism Conditions Based on Environmental Services Economy

a. Physical Conditions of Jolosutro Beach to Support Tourism Based on an Environmental Services Economy

The development of coastal tourism depends on the suitability of coastal areas. Coastal areas rely heavily on beach tourism since it brings broad socio-economic implications (de Sousa et al., 2017). Physical condition is one of the factors for developing beach and sustainable tourism, especially for creating an environmental services-based economy (Akliyah and Umar, 2013; Arinta and Susilo, 2023). Measuring the physical condition of Jolosutro Beach is to determine its suitability as a tourist location. These physical conditions include the slope of the coastline, width of the coastline, distance to availability of fresh water, wind speed, beach types, beach morphology, wavelength, wave types, biota, and coastal land cover. The physical conditions of Jolosutro Beach are presented in Table 7. Field measurements show that the physical condition of Jolosutro Beach is very suitable for tourist attractions, as depicted in Figures 15 and Figure 16.



Figure 15. Panorama of Jolosutro Beach via UAV (Source: Researcher, Jolosutro Beach, 2024)



Figure 16. The View of Jolosutro Beach (Source: Researcher, Jolosutro Beach, 2024)

Beach morphology influences beach tourism (de Sousa et al., 2017). Morphologically, Jolosutro Beach is gently sloping, so it is suitable as a tourist spot. Beaches with a gentle slope help tourists feel safe (Arinta and Susilo, 2023; Sumarmi et al., 2020:

202; Yulianda, 2007). Beach morphology, slope inclination, and width determine the beach type, ideal for tourists to enjoy sunbathing, exercising, or playing games (Arinta and Sumarmi, 2022; Yulianda, 2007). In addition, Jolosutro Beach is sandy, making it very suitable as a tourist spot. Apart from that, another influencing factor is coastal area cover. On the east side of Jolosutro Beach, the land area is covered with Australian pine, while the west side is used by tourists for shelter, also with a variety of Australian pine. In addition, the distance between the freshwater source and the beach is 217 meters. Based on interviews with residents, the clean water available at Jolosutro Beach comes from groundwater at a depth of 6 meters during the rainy season. In the dry season, clean water can be obtained at a depth of more than 12 meters. Beaches suitable for tourism purposes should have a distance of <0.5 km to fresh water (Akliyah and Umar, 2013).

Jolosutro Beach also does not have dangerous biota; the absence of dangerous biota, such as sea urchins, jellyfish, lionfish, and sharks, makes the beach safe (Akliyah and Umar, 2013; Yulianda, 2007). Based on the physical condition of Jolosutro Beach, this beach is very suitable for tourism based on an environmental services economy.

b. The Social Conditions of Jolosutro Beach to Support Tourism Based on an Environmental Services Economy

The development of tourist sites will generally impact the social and cultural aspects of the community because areas previously used by local residents are now being used as tourist attractions (Ulya and Yulianti, 2023). Tourism provides opportunities for society to achieve prosperity. Tourists' demands to fulfill their spiritual and physical needs will bring extensive employment opportunities for the surrounding community so that they can provide quite good economic value for the community (Ferdian et al., 2020). Based on the results of interviews, Jolosutro Beach has experienced socio-economic development marked by the availability of new jobs in which people previously worked merely as fishermen can now have additional jobs as tourism managers, food sellers, and service providers for tourists.

According to interviews, in 2013, there were only 3 stalls at Jolosutro Beach, and they were only open on Saturdays and Sundays. In 2024, the number of stalls increased to 9, and they were open for more days. The stalls can be seen in Figure 17 and Figure 18. Community-based tourism has a significant impact on social, economic, and environmental aspects, such as providing welfare and satisfaction for the community, increasing community empowerment and participation, providing satisfaction to visitors, improving the economy, providing jobs, preserving the environment, and reducing waste and emissions (Pribadi et al., 2021). Another impact of tourism development at Jolosutro Beach is the better accessibility to the beach. Service facilities near the beach, such as toilets and prayer rooms, have begun to be developed.



Figure 17. The right side of the food stall from the side at Jolosutro Beach



Figure 28. The front of the food stall at Jolosutro Beach

3. Jolosutro Beach Tourism Development Strategy, Blitar Regency Based on Environmental Services Economy with Integrated Coastal Zone Management (ICZM)

SWOT analysis identified the potential for developing tourism based on Environmental Services economics with Integrated Coastal Zone Management (ICZM) at Jolosutro Beach. SWOT analysis is used to measure tourism strengths, weaknesses, opportunities, and potential threats (Amirshenava and Osanloo, 2022b). The results of the SWOT analysis are presented in Table 2. The IFAS and EFA matrices are assessed according to the criteria presented in Table 8. The quadrant of Jolosutro Beach as a tourist site is determined by the x and y values. The x value of 8.6 was obtained through internal factors by subtracting the weakness score (W) from the strength score (S). Meanwhile, the y value of 1.85 was obtained from external factors by subtracting the threat value (T) from the opportunity value (O). Therefore, Quadrant I is represented based on values of 8.6 x and 1.85 y, which shows that Jolosutro Beach tourism is still developing, as seen in Figure 19.

Jolosutro Beach is located in the I SO (Strength-Opportunity) Quadrant or white area, which indicates that this beach has superior potential for further development. Therefore, Jolosutro Beach needs to adopt growth-oriented strategies. Examples of these strategies are increasing road accessibility by widening roads and improving infrastructure to increase tourist access to Jolosutro Beach. Apart from that, the WO (Weakness-Opportunity) policy aims to strengthen coordination between managers and the village government. Meanwhile, the ST (Strength-Threat) policy requires the development of facilities to provide convenience for tourists, such as additional accommodation. Lastly, for

the WT (Weakness-Threat) policy, the community must add tourist attractions and promotions. The results of the SWOT analysis show that Jolosutro Beach has quite a large potential for community-based ecotourism.

Tabel. 8. The Results of the SWOT Analysis of Jolosutro Beach (Source: Data analysis by the researchers, 2024)

Internal Factors (IFAS)						
Strengths (S)				Weight	Rating	Score
1	The beach has a very beautiful view.	0.3	4	1.2		
2	The beach has a long coastline suitable for tourism.	0.3	3	0.9		
3	The beach ridge is wide and suitable for recreational activities.	0.3	3	0.9		
4	The white, fine sandy beach is very suitable for tourist activities.	0.2	4	0.8		
5	The beach has many Australian pine trees that function as shade trees making the beach very shady.	0.3	2	0.6		
6	There is a Pokmaswas organization that cares much about beach conservation.	0.3	3	0.9		
7	Pokmaswas of Ringenrejo Village, Wates District, Blitar Regency manages Jolosutro Beach.	0.3	3	0.9		
8	Jolosutro Beach has a big estuary, adding exotism to the beach view.	0.3	2	0.6		
9	Jolosutro Beach management has a conservation vision and understands Australian pine comprehensively — all of which support ecotourism.	0.25	3	0.75		
10	Jolosutro Beach is adjacent to Wedi Ireng Beach, making it possible to support each other for development.	0.3	3	0.9		
11	Jolosutro Beach has a gentle slope of < 10 %, making it very suitable for tourism.	0.2	4	0.8		
12	Supporting facilities and infrastructure, such as prayer rooms, toilets, stalls, and gazebos, are available.	0.2	3	0.6		
13	It has parking areas for cars and motorbikes.	0.2	3	0.6		
14	The wind speed at the beach is suitable for recreational purposes.	0.3	3	0.9		
15	Jolosutro Beach has a viewing post as one of the facilities provided by tourism managers to monitor the safety of tourists.	0.2	2	0.4		
16	Jolosutro Beach has warning signs.	0.2	3	0.6		
17	Jolosutro Beach has a turtle, mangroves, and Australian pine conservation.	0.2	3	0.6		
18	Jolosutro Beach is used for religious ritual activities to support local culture.	0.3	4	1.2		
19	Jolosutro Beach has two big traditional ceremonies, namely <i>Petik Laut</i> and <i>I Suro</i> .	0.25	3	0.75		
20	Jolosutro Beach has a stage for cultural performances.	0.2	2	0.4		
Total				5.1		15.3
Weaknesses (W)						
1	The distance to Jolosutro Beach is quite far from the center of Blitar City, as well as from Malang City.	0.3	2	0.6		
2	The road to the beach, whether for two wheels or four wheels, is still not in good condition.	0.25	2	0.5		
3	Public transportation to the beach	0.3	3	0.9		
4	Signposts to the beach	0.2	3	0.6		
5	The local government has not paid enough attention to the development of Jolosutro Beach.	0.3	3	0.9		
6	Supporting facilities are limited—homestays are not good enough and have not provided meals for guests, and the toilets are limited.	0.25	2	0.5		
7	Tourism management is suboptimal.	0.25	2	0.5		
8	Communication networks and facilities are not sufficient.	0.4	3	1.2		
9	There is no systematic promotion, so many tourists, both local and from outside Blitar, do not know much about Jolosutro Beach.	0.4	2	0.8		
10	Selfie facilities	0.2	1	0.2		
Total						6.7
X = Strength-weakness						8.6
External Factors (EFAS)						
Opportunities (O)						
1	The beach is far from the city, so it offers a calmer atmosphere and cooler weather.	0.2	4	0.8		
2	It is near the East Java Southern Cross Route, which will soon be opened in Blitar Regency	0.3	4	1.2		
3	It offers many development opportunities.	0.25	3	0.75		
4	It offers low costs for visits.	0.1	4	0.4		
5	The local community supports the beach as a tourist site.	0.1	3	0.3		
6	The beach is very suitable for camping and other activities.	0.2	4	0.8		
Total						4.25
Threats (T)						
1	There is a high risk of tidal waves, so stalls must be at some distance from the beach.	0.2	3	0.6		
2	The small number of stall managers may decrease visits to Jolosutro Beach.	0.1	2	0.2		
3	The lack of attention from the local government has resulted in less attention to the cleanliness.	0.35	2	0.7		
4	It is close to the pond, so that waste from the pond flows into the estuary on the beach.	0.3	3	0.9		
Total						2.4
Y = Opportunity-Threat						1.85

Ecotourism Development Efforts in Jolosutro Beach

The SWOT analysis results show that Jolosutro Beach is suitable for development as an environmental service-based tourist attraction with Integrated Coastal Zone Management (ICZM), but it still needs improvement. Environmental

services with Integrated Coastal Zone Management (ICZM) at Jolosutro Beach aim to develop physical and social potential. Improvement of Jolosutro Beach requires real efforts, such as evaluating management, human resources, and accessibility. Figure 19 depicts the real steps in developing a strategy from the results of the SWOT analysis. The Jolosutro Beach Development Strategy can be seen in Figure 20.

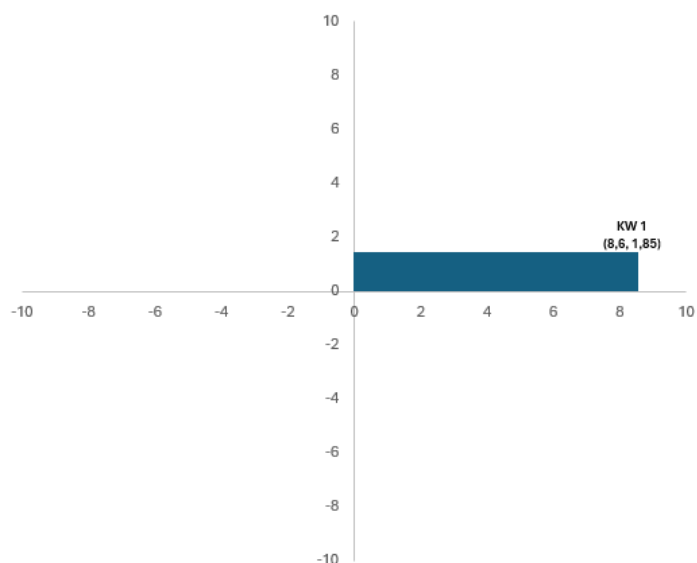


Figure 193. Quadrant of Jolosutro Beach Tourism (Source: Data analysis by the researchers, 2024)

<ol style="list-style-type: none"> 1. Developing facilities at Jolosutro Beach, including accommodation or resorts, toilets, prayer rooms, and food stalls with special food (fresh fish) 2. Making institutional structure and budget 3. Creating a tourism concept for environmental services with Integrated Coastal Zone Management in the form of ecotourism on turtle conservation and cultural ecotourism 4. Maintaining and re-branding special events for cultural ecotourism, such as “Patik Laut” and “Suroan” 5. Creating special events for conservation ecotourism, such as turtle egg surveillance and turtle releases. 6. Preserving <i>Kondang</i> as a water ride for children 7. Collaborating with travel agents to promote Jolosutro Beach 8. Increasing promotion through websites and social media such as Facebook and Instagram. 	<ol style="list-style-type: none"> 1. Encouraging participation and empowerment of communities around Jolosutro Beach, especially fishing communities through Pokdarwis 2. Pokdarwis must work in harmony with Pokmaswas and Perhutani 3. Providing training and assistance for local residents in developing businesses that support tourism at Jolosutro Beach 	<ol style="list-style-type: none"> 1. Improving road access to Jolosutro Beach 2. Waiting for the opening of East Java Southern Cross Route 3. Providing public transportation to Jolosutro Beach 4. Providing signposts to Jolosutro Beach
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Figure 20. Development Strategies for Jolosutro Beach (Source: Data analysis by the researchers, 2024)



Figure 214. Some Tourist Activities at Jolosutro Beach



Figure 22. Observing fishermen leaving for the sea

The determining factor for increasing visitors to Jolosutro Beach as a form of environmental service using the ICMZ model is easy accessibility. Accessibility to Jolosutro Beach must be improved by widening the road and providing public transportation. Apart from that, the opening of the Southern Cross Route connecting Malang-Blitars-Tulungagung Regency is also vital. Accessibility and facilities are vital in promoting tourist destinations (Herat et al., 2015). Accessibility is any means that can ease tourists to visit a tourist destination (Arinta and Susilo, 2023; Herat et

al., 2015) and is an integral part of a tourist attraction (French and Craig-Smith, 1995; Priskin, 2001) These facilities are crucial to help meet the needs of tourists while staying in tourist areas (Herat et al., 2015). Fulfillment of facilities is a basic need in order to provide services to tourists (Handayani et al., 2019).

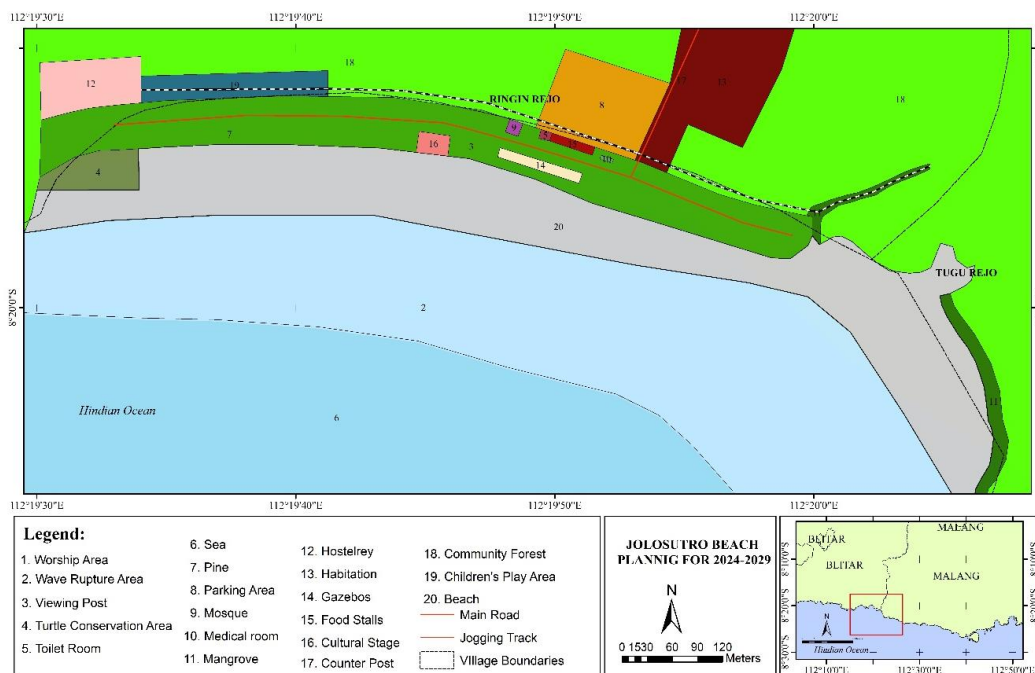


Figure 23. Jolosutro Beach development planning map (Source: The researchers, 2024)

The government's role in monitoring community activities leads to a positive attitude from the community in managing tourism. One form of monitoring to support environmental services is participating in unique cultural events at Jolosutro Beach, such as *Patik Laut* and *Suroan*. Local communities play an essential role in local tourism; they positively and negatively impact ecotourism management, and their knowledge and experience are very important in managing environmental services-based tourism (Caber et al., 2012; Zhang and Lei, 2012).

Other suggestions and recommendations from this research are management improvements in the form of installing additional facilities and infrastructure at Jolosutro Beach. Jolosutro Beach has the potential of a relatively long coastline, with settlements not well organized. In addition, another unique attraction of Jolosutro Beach is that in the afternoon tourists see fishermen leaving for the sea which can be seen in Figure 21 and Figure 22. A study of the potential and physical condition of Jolosutro Beach suitable for development can be prepared using a plan as in Figure 23.

CONCLUSION

Environmental service tourism based on Integrated Coastal Zone Management (ICZM) can be optimized by utilizing the physical and social potential of the coast. Physical and social conditions are the main supporting factors for the development of tourism based on the environmental service economy. Jolosutro Beach has the potential to be developed as an environmental service tourism object based on Integrated Coastal Zone Management (ICZM). The development of Jolosutro Beach is carried out through an evaluation of its physical and social conditions and a SWOT analysis to develop a strategy. The development strategy of Jolosutro Beach includes improving management, human resources, and accessibility so that development planning can be carried out. A holistic approach through the evaluation of physical, social and SWOT conditions can create a long-term development plan for sustainable tourism. This research is limited to the development of the Jolosutro Beach strategy for integrated coastal zone management (ICZM)-based environmental service tourism. Further research can be continued on the development of special interest tourism at Jolosutro Beach.

Author Contributions: Conceptualization, S. and D.A.; methodology, S and L.I. and A.S; software, E.K.; validation, S.S and H.G.; formal analysis, S and M. and E.K.; investigation, A.S. and N.S. and S.S.; data curation, M.A. and N.F and .S; writing - original draft preparation, S; writing - review and editing, S. and D.A. and N.F.; visualization, M.A.; supervision, S.S. and L.I. and N.F.; project administration, D.A. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study may be obtained on request from the corresponding author.

Acknowledgements: We thank the Institute for Research and Community Service (Lembaga Penelitian dan Pengabdian Masyarakat—LPPM) Universitas Negeri Malang for funding the study and the entire research team. The research and researchers have no conflict of interest toward individuals or groups.

Conflicts of Interest: The authors declare no conflict of interest.

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