

Conservation-based ecotourism development at Pasir Putih Prigi Beach, Trenggalek District, East Java, Indonesia

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Abstract. Sulistyaningrum N, Kurniawati B, Nugroho GD, Sunarto, Kusumaningrum L, Sujarta P, Nisyawati, Thenya T, Setyawan AD. 2022. Conservation-based ecotourism development at Pasir Putih Prigi Beach, Trenggalek District, East Java, Indonesia. *Indo Pac J Ocean Life* 6: 29-35. One of the contributors to state revenue is the tourism sector. To advance the tourism sector, the government has begun to develop tourism based on sustainable tourism. Sustainable tourism is useful for helping nature conservation efforts. Moreover, creating sustainable tourism, it can be done by creating ecotourism. This research was conducted in June 2022 with 50 respondents around the research location. Respondents aged 20-70 years consisted of traders, homemakers, fishermen, and Pasir Putih Prigi Beach management staff. This study examines conservation and ecotourism efforts by the community around Pasir Putih Prigi Beach and social perceptions of ecotourism. Several aspects studied in the Pasir Putih Prigi Beach conservation efforts include protection, preservation, utilization, and public perceptions of Pasir Putih Prigi Beach ecotourism. The study results show that protection employs local wisdom called *Larung Sembonyo*, a form of gratitude for the fishing community for the marine products that have been obtained. This ceremony is also a request for the safety of the fishing community when looking for fish in the sea. Preservation by regularly cleaning the beach while utilizing the beach as a recreation and trade center improves the community's economy. Recreation offered at the beach is swimming, boat rides, snorkeling, and deep diving. More than 90% of the coastal communities of Pasir Putih Prigi Beach do not understand the concept of ecotourism. People think that ecotourism is the same as tourism in general. Ecotourism conservation and development efforts are carried out by the Tourism and Culture Office of Trenggalek District through the TIU of Tourism Destinations with the community groups. Cooperation between the government and the community will increase coastal conservation and the economic benefits the community receives.

Keywords: Beach, conservation, ecotourism, Pasir Putih Prigi Beach, preservation

INTRODUCTION

Indonesia is one country that offers much tourism, ranging from nature tourism, culinary tourism, and cultural tourism. As an archipelagic country, Indonesia has thousands of islands with vast seas, so it is possible to have many diverse natural tourism potentials (Kodir et al. 2019). In addition, the coastal environment, as a transition between land and sea, has various environmental characteristics to support the community's economy.

Almost all regions in Indonesia have tourism icons with unique and interesting characteristics so that they can bring in various local and foreign tourists. Increasing visitors to the tourism area can help the country increase the country's foreign exchange earnings (Kodir et al. 2019). For example, the contribution of the tourism sector to the Gross Regional Domestic Product (GDP) of East Java Province

was 17.30% in 2013, 17.14% in 2014, 17.46% in 2015, and 17.76% in 2016 (Ariani and Hayati 2020). This upward trend gives tourism the potential to become an economic base (Zen and Wulandari 2016). Currently, the tourism sector in Indonesia is regulated and managed by the Indonesian Ministry of Tourism and Creative Economy.

Along with an increasing public interest in the tourism sector, it also brings indications of negative impacts because it causes damage to existing ecosystems (Purwaningrum 2020). Therefore, the development of the tourism sector in Indonesia has begun to be increased to become tourism based on sustainable tourism. A sustainable tourism development concept based on the environment, often referred to as ecotourism, is one of the real steps to help nature conservation (Irwansyah et al. 2021). Thus, ecotourism is appropriate and useful in maintaining the integrity and authenticity of ecosystems in

natural areas (Prihanta et al. 2020). In addition, ecotourism can economically increase local community involvement in environmental management (Sumarmi et al. 2021). The existence of ecotourism in an area also affects the lives of people around the area (Setyaningrum et al. 2020; Sumarmi et al. 2020). Therefore, ecotourism is rapidly gaining popularity as an alternative tourism development that will advance conservation and sustainable development.

One of the tourist sites in Indonesia is in East Java, precisely in Prigi Bay. The coastal waters of this bay have several beautiful beaches, namely Prigi Beach, Karanggongso Beach, Pasir Putih Prigi Beach, and Damas Beach. One of the famous beaches is Pasir Putih Prigi Beach. Pasir Putih Prigi Beach is one of the natural attractions in Tasikmadu Village, Watulimo Sub-district, Trenggalek District, East Java, Indonesia.

Based on field observations, Pasir Putih Prigi Beach has waves that tend to be small, making it suitable for visitors who want to try or have a hobby of swimming or other water sports. Furthermore, Pasir Putih Prigi Beach has facilities and water sports facilities such as banana boats and swimming equipment such as life jackets that visitors can rent. This beach also offers boat rides for rent according to visitors' inner satisfaction. In addition, this beach can offer deep diving and snorkeling activities that will be accompanied by trained staff so that the safety of visitors is guaranteed.

As the manager, the Tourism and Culture Office of Trenggalek District has tried to attract visitors by fixing

existing facilities, providing trash cans, and making promotional efforts directly and through social media. However, there are still some shortcomings in the development and conservation efforts at Pasir Putih Prigi Beach. In addition, the management's lack of knowledge about the ecotourism-based development of Pasir Putih Prigi Beach causes serious problems. Therefore, this study examines conservation and ecotourism efforts by the community around Pasir Putih Prigi Beach and social perceptions of ecotourism.

MATERIALS AND METHODS

Study area

The study was conducted in June 2022 at Pasir Putih Prigi Beach ($8^{\circ}17'56.65''$ S, $111^{\circ}44'23.96''$ E), in Tasikmadu Village, Watulimo Sub-district, Trenggalek District, East Java, Indonesia. This beach is included in one of the leading tours in Trenggalek, which contributes a lot to regional income and empowers the community around the coast. Pasir Putih Prigi Beach has located approximately 3 km beside Karanggongso Beach. The two beaches are connected using a connecting bridge that can be accessed on foot. This beach has white sand, so it is called *Pasir* (sand) *Putih* (white) Prigi Beach in Indonesia. The following is a map of Pasir Putih Prigi Beach, shown in Figure 1.

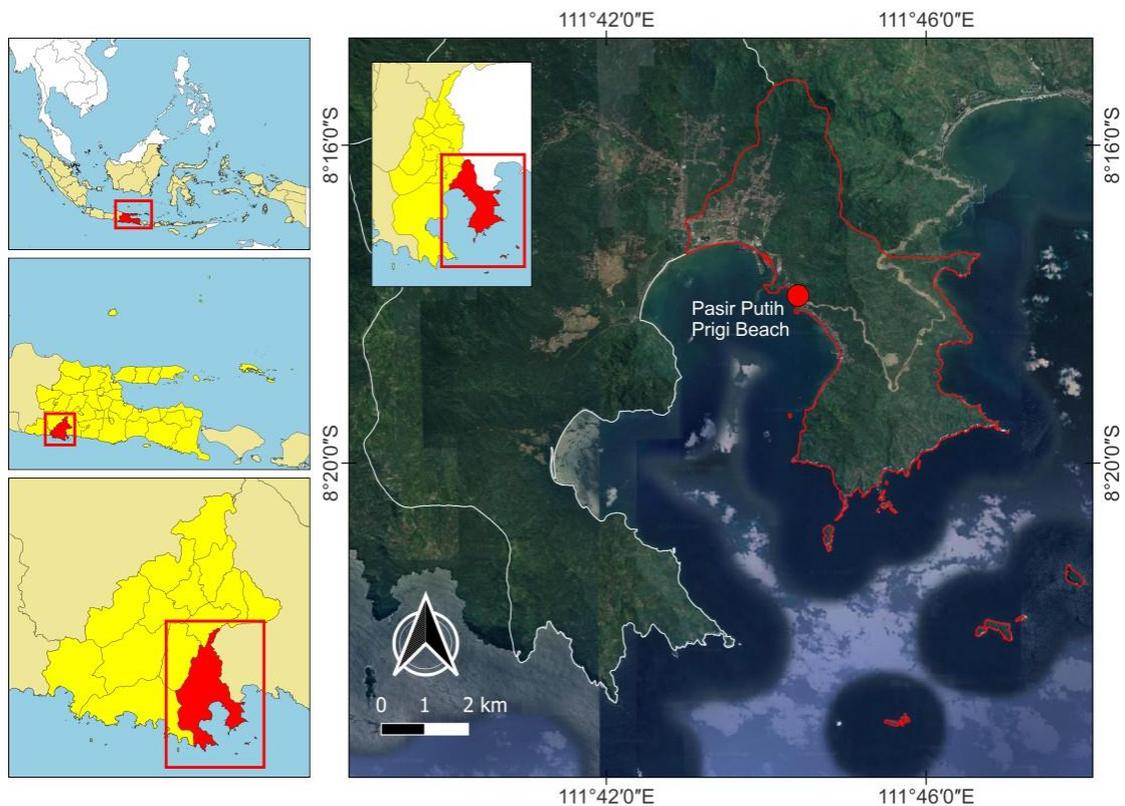


Figure 1. Map of the research location in Pasir Putih Prigi Beach, Tasikmadu Village, Watulimo Sub-district, Trenggalek District, East Java, Indonesia

Data collection and analysis

Data were collected by observation, structured interviews, and literature study (Setiawan et al. 2017). Observations and in-depth interviews were used to collect data on community conservation efforts. The structured interview used a questionnaire to determine the community's perception of ecotourism development. Finally, a literature study was used to collect data about the general description of Pasir Putih Prigi Beach and the literature that supports the research. Key individuals were sampled in conservation efforts, which were determined using snowball sampling, which is a non-probability technique in which a researcher starts with a small population of known individuals and expands the sample by asking those initial participants to identify others who should participate in the study (Setiawan et al. 2017). The Tourism and Culture Office of Trenggalek District and the Implementation Unit (TIU) of Tourism Destinations of Pasir Putih Prigi Beach were interviewed as key respondents and the residents directly affected by the ecotourism activities there. This research was conducted with structured interviews with 50 respondents around the research location. Respondents aged 20-70 years consisted of traders, homemakers, fishermen, and Pasir Putih Prigi Beach management staff. The average education of respondents is Elementary School (SD) or equivalent, with a percentage of 64% (Table 1).

Then, conservation efforts were analyzed descriptively based on the Indonesian Government Regulation No. 5/1990 on Conservation Efforts. Then, the data about community perception of ecotourism development was also analyzed descriptively. In addition, the community's perception of the development of coastal ecotourism is categorized by the scoring method that can be seen in Table 2.

Table 1. Respondent profile (n= 50)

Profile	Category	Number	Percentage (%)
Gender	Male	21	42
	Female	29	58
	Total	50	100
Age	20-30	5	10
	31-40	11	22
	41-50	16	32
	51-60	14	28
	61-70	4	8
	Total	50	100
Education	Elementary School or below	32	64
	Junior High School	10	20
	Senior High School	8	16
	Total	50	100
Work	Trader	37	72
	Homemakers	3	6
	Fisherman	6	12
	Pasir Putih staff	4	8
	Total	50	100

RESULTS AND DISCUSSION

Pasir Putih Prigi Beach is one of the leading tourist attractions in the Trenggalek District. The length of this coastline is approximately 2 km. This beach is located on the edge of the Indian Ocean, so it allows this tourist area to experience changes in coastline due to the influence of wind/waves, currents, and tides. The factors that cause Pasir Putih Prigi Beach to be visited by tourists are easy to access by vehicle, beautiful sea views and the waves on this beach are relatively calm, making it suitable for recreational, swimming, bathing, and other activities to relieve stress. The more crowded the visitors at this beach must be balanced with the conservation efforts to remain sustainable to manage and utilize natural resources wisely to ensure their current and future existence. This conservation effort includes three main activities: protecting, preserving, and utilizing natural resources (Government Regulation of the Republic of Indonesia No. 5 of 1990).

Protection of Pasir Putih Prigi Beach

Coastal wetlands, such as beaches, are under pressure from human activities and natural causes due to climate change (Finkl and Makowski 2017). In addition, according to Finkl and Makowski (2017), it is estimated that about 50% of the world's coastal wetlands have been destroyed by urbanization, industrialization, and commercial development. The remaining 50% are under extreme threat from various anthropogenic activities such as logging, sand mining, oil and gas exploitation, agricultural and cultivated land expansion, wildlife hunting, and recreation. Furthermore, tourism development has been recognized as a direct contributor to changing coastal wetland ecosystems due to environmentally damaging infrastructure development and indirectly by introducing non-native species into the ecosystem (Mejía and Brandt 2015).

Pasir Putih Prigi Beach is managed by the Tourism and Culture Office of Trenggalek District, one of the organizations in the Trenggalek government whose task is to carry out government affairs in the tourism and culture sector in Trenggalek District, East Java, Indonesia. The Technical Implementation Unit (TIU) of Tourism Destinations assists the service in managing Pasir Putih Prigi Beach. The management members of Pasir Putih Prigi Beach are taken from residents and led by the TIU's head of Tourism Destinations. TIU of Tourism Destinations for Pasir Putih Prigi Beach has rules that apply to visitors and traders in the beach area, namely not to litter, not to damage existing facilities on the beach, and always to keep the beach clean. However, if visitors or traders cause the damage, it must be reported to the TIU of Tourism Destinations or directly to the Tourism and Culture Office of Trenggalek District. The report will be taken care of, and the perpetrators of destroying the environment and facilities will receive strict sanctions by applicable regulations.

Then, the Larung Sembonyo traditional event is held every Suro Month on the Javanese calendar. *Larung Sembonyo* is a marine alms culture carried out for

generations by the ancestors of the local fishing communities around Pasir Putih Prigi Beach manifested in traditional ceremonies. That is a form of gratitude for the fishing community for the marine products that have been obtained. This ceremony is also a request for the safety of the fishing community when looking for fish in the sea. This habit has been carried out for a long time and has become part of the culture of the Trenggalek community, especially those living on the coast. With these factors, it will benefit visitors' inner satisfaction because it contains certain aesthetic values (Lellofery et al. 2016), making Pasir Putih Prigi Beach tourism very special and projected as one of the icons of Trenggalek. In addition, according to Uspayanti et al. (2021) and Abas et al. (2022) indirectly, the existence of local wisdom in a place will make the community around the location have a conservation spirit to protect nature, in this case, the nature of the Pasir Putih Prigi Beach.

Preservation of Pasir Putih Prigi Beach resource

Pasir Putih Prigi Beach is a leading tourist attraction that is the mainstay of contributors to Regional Original Income (ROI) in the Trenggalek District. According to data from the Tourism and Culture Office of Trenggalek District (2022), the tourism sector's Regional Original Income (ROI) is 60% or around 4.2 billion rupiahs. The daily visitors of Pasir Putih Prigi Beach can reach thousands, and for 1 year, it can reach hundreds of thousands of visitors. So it is not surprising that the preservation of the Pasir Putih Prigi Beach resources must be well maintained by the surrounding community and the Tourism and Culture Office of Trenggalek District. Ecotourism development must utilize natural resources optimally by their carrying capacity so that they do not cause damage, respect the socio-cultural community, ensure sustainable economic benefits, and are distributed fairly to all stakeholders (Arintoko et al. 2020).

To preserve the resources of Pasir Putih Prigi Beach, the Tourism and Culture Office of Trenggalek District, through the TIU of Tourism Destinations, carried out a plan consisting of five stages, namely (i) carrying out an inventory of all available facilities and the potential possessed by Pasir Putih Prigi Beach, (ii) estimating the tourism market and trying to project tourist traffic in the future, (iii) paying attention to the amount of tourist interest and offers that can be given, (iv) researching the development of activities that are by the characteristics possessed by the Pasir Putih Prigi Beach Prigi, and (v) carrying out certain protections for the natural resources owned and carry out the maintenance of cultural heritage and customs that exist around the ecotourism area of Pasir Putih Prigi Beach. The tourism industry development planning carried out by the Tourism and Culture Office of Trenggalek District has gone hand in hand with the increasing number of visitors every year, which is one of the strategies used to promote the region as a tourist destination to increase the economy and job opportunities for the local community.

The implementation of those five stages that can be done to preserve the ecotourism of Pasir Putih Prigi Beach,

namely carrying out regular community service to maintain the cleanliness of the coast, prohibiting the use of explosives and hazardous chemicals in fishing, planting trees in the coastal area, calling for to all visitors to dispose of garbage in the trash cans provided by the Tourism and Culture Office of Trenggalek District. Suppose the management of these potential natural resources is carried out properly; in that case, it will increase the country's foreign exchange, the availability of new job opportunities, and the development of new businesses. In tourism, management can be done through education that can increase public and tourist awareness about the importance of natural resource conservation. This education can be supported by developing coastal and marine ecotourism (Pasak et al. 2017). However, there are still shortcomings in implementing these steps, such as visitors having difficulty implementing regulations and appeals from the beach manager. In addition, there is also a lack of supervision from beach managers because there are too many beach visitors, especially during holidays, so managers are overwhelmed in controlling the visitors. In this case, visitors will usually be encouraged to go to other destinations provided by the Pasir Putih Prigi beach manager. The destination is Karanggongso Beach, located right beside the white sand beach. Both are connected by a bridge that can be accessed on foot while looking at the beach view.

Utilization of Pasir Putih Prigi Beach

Coastal wetlands, such as beaches, provide various ecosystem services to support human well-being. These ecosystem services include protection from storm surges and floods, regulation and purification of water, habitat protection, biodiversity conservation, carbon sequestration, education and research, and recreation (Dushani et al. 2021). In addition, according to Dushani et al. (2021), a wide variety of recreational activities can be carried out on the beach, including sunbathing, swimming, diving, snorkeling, boating, recreational fishing, bird watching, and mangrove viewing.

Especially at Pasir Putih Prigi Beach, based on the management staff, local communities, and direct observations, this beach has many benefits, namely preventing tidal water from directly flooding the land, a center for trading marine products, and a habitat for organisms that live in water, for fishing, and recreation areas. Recreational offered at the Pasir Putih Prigi Beach Prigi is swimming on the beach, boat rides, snorkeling, and deep diving. In addition, the well-maintained Pasir Putih Prigi Beach area makes coral reefs, and the fish that live in them also develop rapidly. That is one of the attractions and superior value of this beach that is rarely offered by other beaches.

Furthermore, to increase the number of tourists visiting Pasir Putih Prigi Beach, the manager is aggressively promoting social media, improving existing facilities around the beach, conducting conservation, and offering beach tourism based on local wisdom, which makes tourists never get bored of crowding the Pasir Putih Prigi Beach area. With the Pasir Putih Prigi Beach, the local

community's economy also increases. The Tourism and Culture Office of Trenggalek District empower the surrounding community by recruiting beach management staff. The rest are empowered by providing a place to sell food and drinks typical of Pasir Putih Prigi Beach. Usually, the fishermen will do fish netting at certain times, and then they will be bought by traders to be sold again in the Pasir Putih Prigi Beach area. Well-managed sustainable tourism in and around coastal wetlands can provide significant economic and ecological benefits while enabling sustainable ecosystem services (Latif et al. 2021).

Community perception of ecotourism development

Public perception of ecotourism development is divided into several aspects, including public knowledge about ecotourism, willingness to participate in ecotourism development, economic benefits for the community, damage caused by visitors, and sustainability of coastal ecotourism development at Pasir Putih Prigi Beach. Community knowledge about ecotourism is measured based on people's understanding of the difference between ecotourism and ordinary tourism.

The concept of ecotourism is used as a strategy for economic development and conservation. Ecotourism focuses on nature-based elements where visitors undertake travel activities that can enhance the experience, increase curiosity, minimize adverse impacts on the environment and consider the welfare of local communities (Bandara and Vlosky 2016). The concept of ecotourism offers many advantages: visitors will not only travel in nature. Still, they will also learn about something from nature and carry out various environmentally friendly tourism activities (Kiper 2013). In addition, this ecotourism concept also provides economic benefits and develops the surrounding community. That differs from ordinary tourism (mass tourism), which generally consists of artificial tourism and does not empower local communities (Basyuni et al. 2016).

More than 90% or as many as 46 respondents of the Pasir Putih Prigi Beach coastal communities do not understand the concept of ecotourism. People think that ecotourism is the same as tourism in general. Community members who understand the concept of ecotourism are people who participate in ecotourism management, know about ecotourism from extension programs, and are active in community group activities. After determining the level of community knowledge, measurements were made on six aspects of ecotourism development (Setiawan et al. 2017). The six aspects of the perception of ecotourism development are shown in Table 2.

Based on structured interviews with 50 respondents, the first aspect relates to activity planners, tour guides, handicrafts, and homestays. Most respondents prefer to participate in making handicrafts or selling them (62% in Table 2). That is no different from the people in Gandorih Beach, Pariaman City, West Sumatra, Indonesia, where people are more and like to do business activities by selling beach food and handicrafts (Jayanti 2019). They consider selling handicrafts, services, or special foods more profitable. The participation of the local community in ecotourism activities was very important because they

would provide most of the attractions and determine the quality of the tourism products (Pangastuti et al. 2016).

The second aspect is the public's perception of the Pasir Putih Prigi Beach tourism manager. Two (2) sub-aspects comprise the community's willingness as the manager of the Pasir Putih Prigi Beach and the willingness of the community to carry out ecotourism support activities as business actors. The community's willingness to carry out coastal management is 40%. Meanwhile, the community's willingness to support ecotourism activities as business actors is 60%. Most people prefer to participate as business actors because the community considers the results of selling directly to tourists. The community considers income as a business actor to get a more certain income. In addition, most people have education between primary and secondary schools which causes them to lack the confidence to participate as managers. So most people choose to support ecotourism as a business actor.

Table 2. Community perception of ecotourism development (n = 50)

Behavior	Agree/ willing (%)	Not agree/ willing (%)
<i>Willingness to participate in ecotourism development</i>		
Planning activities	40	60
Tour guide activities	50	50
Souvenir activities	62	38
Providing homestay	18	82
<i>Community perception of ecotourism group</i>		
Manager	40	60
Businessmen	60	40
<i>Government intervention in Pasir Putih Prigi Beach</i>		
Partial intervene		100
Full intervene	100	
<i>Ecotourism's impact on economic benefits</i>		
Increase economic benefit for the community	100	
Economic benefit only for some participants		100
<i>Visitors affect the environmental damage</i>		
Garbage in forest area	0	100
Garbage in village	0	100
Damaging the mangrove trees	0	100
Damaging the ecotourism facilities	0	100
<i>Willingness to develop sustainable mangrove ecotourism</i>	100	0

Based on the data obtained in a third aspect, namely the public's perception of government intervention or intervention in the management of the Pasir Putih Prigi Beach, the community agrees that the management of the Pasir Putih Prigi Beach requires government intervention with a percentage of 100%. People prefer that tourism management has government intervention because it is more profitable than without government intervention. The management of tourism that involves the community considers the government to be more structured and controlled to make it easier for the community to carry out other activities to support the development of ecotourism. In addition, the government's tourism management is considered better in various aspects. Through the research of Sumarmi et al. (2021), local governments and communities should consider alternative policies and developments to support the environment and ensure the sustainability of the quality of natural tourism.

The fourth aspect is the impact of ecotourism on the economy of the community around Pasir Putih Prigi Beach ecotourism. The impact of ecotourism brings economic benefits to the surrounding community (Faizal et al. 2017). As many as 50 respondents, with a percentage of 100%, agree that ecotourism activities can improve the economy of all communities around the Pasir Putih Prigi Beach tourist spot. With the Pasir Putih Prigi Beach, some people trade around the ecotourism area. Then, the fishermen, after catching fish, the fish they catch are sold to traders who sell smoked fish or cooked seafood products. In addition, not far from there are several shops selling food, drinks, and handicrafts. Then there are also plenty of bathroom rentals and places of worship. Therefore, the management could increase the number of tourists attending using local communities and their wisdom (Sumarmi et al. 2020).

The fifth aspect is the environmental damage caused by visitors to the Pasir Putih Prigi Beach ecotourism. From the results of direct observation, it is rare to find garbage in coastal areas because there are staff on duty to clean up if there is garbage that has accumulated. The surrounding community and visitors know how important it is to keep Pasir Putih Prigi Beach clean. However, some visitors still throw garbage around the beach areas. Moreover, damaged facilities are rare in the ecotourism area of Pasir Putih Prigi Beach. Improving the quality of coastal ecotourism must be done by optimizing beach facilities that are useful for maintaining and developing environmentally friendly beach facilities (Yahya et al. 2013). The facilities offered by Pasir Putih Beach include trash cans on every corner of the beach, homestays, vehicle parking, souvenir businesses, grocery stores, prayer rooms, toilets, and the Pasir Putih Prigi Beach help center. All of these sub-aspects have the same average result, namely the percentage of 100% (Table 2). The community and ecotourism managers of the Pasir Putih Prigi Beach agree that ecotourism visitors do not cause significant damage or waste in the Pasir Putih Prigi Beach area.

The various benefits of ecotourism make the community, and the government wants to manage Pasir Putih Prigi Beach sustainably (Table 2). Pasir Putih Prigi

Beach is an attraction for tourists because of its varied forms and atmosphere, based on the aspects of exploration, conservation, and integrated management. One aspect of development in the field of ecotourism is expected to realize sustainable ecosystem management through the development of ecotourism. One of the efforts to develop ecotourism is made using coastal conservation. Conservation management must be in line with the concept of tourism development which aims to maintain the process of ecological sustainability in living systems, protect biological wealth, ensure the authenticity and use of ecosystems and species, and have a positive impact on the welfare of the surrounding community (Yuliana 2019).

In addition to community welfare, one of the goals of ecotourism development is to reduce pressure on the coast as an environmental service (Finkl and Makowski 2017). Based on this, the ecotourism development of Pasir Putih Prigi Beach needs to pay attention to the possibility of disturbance from visitors. Currently, disturbances caused by visitors damage coastal ecosystems and beach facilities. Visitors to the Pasir Putih Prigi Beach ecotourism generally come from various regions. One of the beach managers, Sunaryo, said that on a normal day, there are 500 visitors to Pasir Putih Prigi Beach, but there will be an 8-fold increase to around 4,000 visitors during Eid. A large number of visitors brings economic benefits to the surrounding community and increases the regional income of the Trenggalek District. Therefore, most people agree with the development of the Pasir Putih Prigi Beach ecotourism. However, limited facilities, infrastructure, and the number of managers are challenges to the sustainable development of coastal ecotourism. Therefore, communities need support and cooperation from government and non-government organizations to develop ecotourism on Pasir Putih Prigi Beach.

This study concludes that the Pasir Putih Prigi Beach protection is carried out using local wisdom called *Larung Sembonyo*. Preservation by regularly cleaning the beach while utilizing the beach as a recreation and trade center improves the community's economy. Recreation offered at the beach is swimming, boat rides, snorkeling, and deep diving. More than 90% of the coastal communities of Pasir Putih Prigi Beach do not understand the concept of ecotourism. People think that ecotourism is the same as tourism in general. Ecotourism conservation and development efforts are carried out by the Tourism and Culture Office of Trenggalek District through the TIU of the Tourism Destination with the community members. With the collaboration of the government and the community, coastal conservation and the economic benefits received by the community will increase so that the community will participate in the protection and preservation of the Pasir Putih Prigi Beach ecotourism.

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