

The Natural and Cultural Resources for Ecotourism Development in Trenggalek Regency, East Java

Zulfaidha Zulia*, Bagyo Yanuwiadi

Department of Biology, Faculty of Mathematics and Natural Sciences, University of Brawijaya, Malang, Indonesia

Abstract

Ecotourism is all of the activities that is responsible for maintaining the conservation and environmental education. This activities also involves the local communities to get some benefit. This research's aim are to determine some potentials objects and attractions for supporting ecotourism development program in Trenggalek Regency, East java. Field survey was conducted at Trenggalek Regency following several steps including preliminary study, field surveys, and interviews to several informants. Data obtained from interviews with several informants as well as from direct observations were analyzed by using descriptive analysis techniques. The results show that Trenggalek Regency have some potential resources for supporting ecotourism i.e. Geghog rice, Ayam Lodho, Alen-alen, Kripik Tempe, Tiban ceremony, Lowo Cave, Prigi Beach, Bamboo Handy Craft, Larung Sembonyo ceremony, Nyadran Ceremony, Clove plantation, and Cengkong Beach. Each of those mentioned potential resources have different characteristics that can become supporting unit for ecotourism development.

Keywords: community development, conservation, natural resources, sustainable tourism

INTRODUCTION

Tourism sector is one of the economic development machines for developing countries. It is especially important in Indonesia. In 2020 Indonesia was predicted to be visited by more tourists [1]. In the last few years, Indonesian government started to introduce and promotes ecotourism, which is expected as an effort to protect nature and its resources from environmental damage [2].

Ecotourism is tourist activity that is responsible for maintaining environment, promoting environmental education and promoting local communities to obtain benefits [3]. As continuous activities for ecotourism development, each tourism sector in Indonesian regions must be directed to ecotourism.

Trenggalek is a district located in the southern part of Province in East Java. The geologies condition was surrounded by mountains and abutted on southern coast causing Trenggalek rich in biodiversity and landscapes that could potentially become a tourist attraction. Potential tourism of Trenggalek divided into four aspects, namely the landscape, typical food, attraction and ceremonies. Overall potential tourism in Trenggalek may be appointed as a tourist attraction that is became the object of ecotourism. Therefore, the aim of this study is

identifying the potential tourism of Trenggalek which can be used as the object of ecotourism.

MATERIALS AND METHODS

Study Site

This study was conducted from October 2014 until January 2015 in several districts, i.e District of Trenggalek, District of Watulimo, District of Panggul, District of Pogalan, and District of Gandusari. Trenggalek Regency was coterminous with Tulungagung regency and Ponorogo regency in the north, in the east was with Tulungagung, in the south was with Indonesian Ocean, and in the west was with Ponorogo and Pacitan (Fig.1).



Figure 1. Trenggalek map [4]

* Correspondence address:

Zulfaidha Zulia

Email : zulfaidhazulia22@gmail.com

Address : Dept. of Biology, University of Brawijaya
JL. Veteran Malang, 65145

Data Collection

Data was collected through several steps, namely preliminary study, field observation,

interview and documentation. Preliminary study was conducted to get comprehensive picture of the study area and to get permission for related insititution. Field observation was done by visiting interested object for tourism developmet. Determination of informan was done by using certain criteria for appropriate competence. Semi-structure interviews was conducted to identify the meaning of attraction and informant perspection about the natural and cultural resources for attraction development. Data obtained from interviews with several informan as well as from direct observations were documented and analyzed using descriptive analysis techniques [5].

RESULTS AND DISCUSSION

Principally, Trenggalek regency is rich in term of cultural and natural attraction for ecotourism development. The interesting and important resources were described bellow.

1. Gehhog Rice

Gehhog Rice is one of the specialities foods from Trenggalek (Fig. 2). Gehhog rice was available in the District of Bendungan. In the last years, Gehhog rice was often carried by farmers as a provision in the fields. At last, Gehhog rice was created icon from District of Bendungan. Gehhog rice is very simple which is consists of rice and anchovy sauce. The sauce was added to make rice tasted very spicy. The materials of the sauce used chili, anchovies, garlic, onions, and tomatoes. Pepper and anchovies were the most important basic ingredient in this culinary. *Capsicum frutescens* L is the main chili which was used in the sauce. The communities were planted *Capsicum frutescens* L. in around their yard or field for supplied this plant. So, if the price of chili increased, the communities had stock of chili from their yard or field.



Figure 2. Gehhog rice

Most villagers in the District of Bendungan had realized the importance of chili plants in their lives. Beside as materials for food Gehhog

Rice, chili was also used for other cooking spices and ingredients in traditional medicines. *Capsicum frutescens* L. was contained nutrients includes fats, proteins, carbohydrates, and calcium, phosphorus, iron, vitamin A, and B1, B2, C, and alkaloid compounds [6]. *Capsicum frutescens* L. was one of the ground cover plants that can be represented a wide variety of insects and stabilized the food chain so that it can also be recommended as refugia plants [7].

Anchovy was different compare to *Capsicum frutescens* L. because anchovy can not supplied directly from the District of Bendungan. The topology areas of Bendungan were mountainous area. Thus, the fish was supplied from other district. This can be described as an act of conservation, because it provided opportunities for communities in other areas to increased production of the anchovy and automatically the communities will conduct the conservation of the anchovy habitat.

2. Tiban Ceremony

Tiban was known as tradition to invite rain. For some people of Trenggalek Tiban tradition were believed to make the rain in the dry season. This tradition began when children fighting a pitch for water as a stock during the dry season. The childrens was played hardball by used the whip and unexpectedly in the middle of fight rain drops. Tiban performer consists of two people doing whip between each other (Fig. 3). Tiban attraction was headed by "Landang". He was responsible for the operations of the Tiban attraction. Whip in Tiban attraction was made from palm sticks and tied with a rope. The rope was used from the slice of bamboo. The palm stick (*Arenga pinnata*) was widely available in the District of Pogalan.

However, the presences of palm plants were decreased in Pogalan and very difficult to find it. Nowadays the existence of palm plants were greatly influenced by the people activities that used for sale. In terms benefits of economic, palm plants ranging from physical parts (roots, stems, leaves, fibers, etc.) and their products (juice, starch and fruit) can be used for daily needs [8]. Beside that palm were given economic benefits, palm useful as a protective soil from erosion, especially in the cliffs of the river as well as the elements of production [9]. Tiban attractions can be used as a supporting ecotourism, if the requirements of all support materials for Tiban attractions can be conserved, especially palm (*Arenga pinnata* Merr.). Thus,

there needs to be an effort from both the government and people for doing conservation of the palm plant. Palm plant conservation can be doing by choosing the selection logging of old plants and replanting again.



Figure 3. Tiban and sectional palm trees; a) Tiban attraction, b) whip from the stick of palm, c) the section of palm tree, d) the section of palm tree leaf.

3. Bamboo Craft

Bamboo craft is one of the commodities from Trenggalek. Bamboo craft was widely available in the District of Pogalan. Most of the people were worked as bamboo crafts. Bamboo crafts made by people in the district of Pogalan include braids, steamer, and baskets (Fig. 4). The type of bamboo for some handicraft must an old bamboo rod.



Figure 4. Many kinds of bamboo craft

The people of Pogalan not only got the benefit from bamboo plants into crafts, but also bamboo can make atmosphere becomes shady or dim. Beside that, people mostly used of young bamboo for vegetable. Bamboo plant has a root rhizomes (rhizon) are segmented that allow rain water can absorb up to 90% compared to other crops. If more increased population of bamboo plants, then water volume in under ground will be increase too. Automatically, the water supplies also increase in the region. Besides that bamboo plant also served to conserve land, as

well as the improvement of the environment [10].

4. Kripik Tempe

Kripik Tempe is one of the specialty foods from Trenggalek. Kripik Tempe is very famous for the delicacy and the crunchy (Fig. 5). Kripik Tempe was made from Tempe with flour, garlic, coriander, and lime leaves. Kripik Tempe had only two flavors include original flavor and lime leaves flavor. Kripik Tempe from Trenggalek was made from specifically of Tempe for kripik Tempe. Soya Tempe for kripik Tempe was thinner.



Figure 5. Kripik Tempe

Kripik Tempe can be used as a supporting ecotourism when it was processing through organic processing. Soybeans organic can be cultivated by means of organic farming. Organic farming will be providing benefits including the cost are not too much, the price for organic agricultural products is much higher than conventional farming, as well as improving soil fertility in the long term [11]. Thus, agricultural land in the region of Trenggalek can be maintained sustainably when agricultural system was transferred into the organic farming system.

5. Ayam Lodho

Ayam lodho was made from chicken with coconut milk and spicy flavor. Ayam lodho usually served with savory rice and vegetables (Fig. 6). The chickens must be used Javanese chicken. Javanese chickens are chickens that were allowed to eat and live freely in the yard or the field.



Figure 6. Ayam lodho with urap-urap

The Javanese Chicken in maintenance that will be fed in the morning. The Javanese chicken will be released into the yard or moor at noon, in order to the Javanese chicken to feed themselves. Liberation diets that applied in Javanese chicken get the nutrients naturally. In the yard or moor, chicken can take all kinds of plants and animals for example, chicken can eat the flowers on the grass, young leaves of grass and small animals ranging from worms to various types of insects.

Ayam lodho can be used as a supporting of ecotourism if the chicken must be used Javanese chicken. If Ayam lodho was appointed as an icon of Trenggalek, then the need for the Javanese chicken will be increased. The yard or fields will be a lot left to over grow ground cover plants. Automatically the land will be protected from erosion caused by water. Ground cover plants from grasses can serve to slow runoff, as protector of the land surface caused by the destruction of the power of rainwater, enriched organic materials, encourage the development of soil biota that can improve soil physical and chemical properties, and increase soil porosity [12].

6. Alen-Alen

Alen-alen is other of the typical food from Trenggalek. Alen-alen used as a snacks food because has a small shape, like ring, fried and savory taste (Fig. 7). Characteristic of alen-alen have a yellow color. Alen-alen was made from cassava (*Manihot esculenta* Crantz). Varian sense of alen-alen include onion flavor, cheese, chocolate, sweet and spicy flavor.



Figure 7. Alen-alen

The process of making starch cassava (*Manihot esculenta* Crantz) was started from milling. Results of milling are starch that has been mixed with water. Waste milling results called gamblong and was separated for fodder duck. Then strach was dried in order to evaporate the water content and remaining flour. Cassavas were supplied from outside the area Trenggalek because the area Trenggalek not able to supplied

cassava in large quantity. In fact, Trenggalek basically able to supplied cassava. It is evident that in 2012 Trenggalek had become one of the largest producers of the commodity cassava in East Java.

Alen-alen can be used as a support ecotourism when the farmers of cassava got knowledge to grow crops (*M. esculenta* Crantz) following traditional practices. This will have a positive impact for farmers that can increase revenue. Besides that, the other benefits can utilize the land continuously without timeless. Planting of cassava (*M. esculenta* Crantz) can be done by Multiple cropping, intercropping, and (Sequential cropping) [13].

7. Lowo Cave

Lowo Cave is a natural tourist destination located in the Watulimo Trenggalek (Fig. 8). Lowo Cave is the largest cave, the longest and most beautiful in Asia. The length of Lowo Cave reaches 859 m and consists of 9 rooms. Lowo cave was discovered in 1931 by Mbah Lomedjo. He was curious about the animal prey may disappear. In his search, Mbah Lomedjo found a cave and not accidentally mentioned Goa Lowo, so the name of the cave is used until now [14].



Figure 8. Lowo Cave area; a) The entrance Lowo Cave, b) Stalactite and stalagmite, c) inlet sunlight, d) Bats in the ceiling of the cave.

Lowo Cave; *Lowo* means bat; thus many bats found in the cave. Species of bats found in the Lowo cave had a small size and black color. Reviewed from the small size, bats lived in Lowo cave are insectivorous bats (Microchiroptera).

The existence of bats is very beneficial for the community and the environment. For people, the bats are produce manure that can be used as fertilizer. The manure was called *guano* fertilizer. In addition to produce manure, which serves as a fertilizer, Microchiroptera is the type of insectivorous bats that can serve as natural enemies and effectively to control pests of

agricultural crops [15]. In order to sustain Low cave, the bat population conservation was needed.

8. Prigi Beach

Prigi beach is one of the natural tourist areas on the south coast. Prigi beach was located in the Tasikmadu village, District of Watulimo. Prigi Beach location was approximately 48 km from the centre of Trenggalek. Prigi beach had an area approximately 5 ha with a length approximately 2 km. Prigi beach was located on the Prigi bay. Waves of Prigi beach relative smaller than south area. It is because the waves on the Prigi beach had been blocked by hills which are on either side of the beach.

Prigi beach is well known as the largest producer of fishery, in which more than 90% of fisheries productions were exported outside Trenggalek [16]. This makes Prigi Beach as a place of landing the largest fish on the south coast after Cilacap. Species of fish had economically valuable include tuna, sword fish, lemuru and cakalang (Fig. 9).



Figure 9. Prigi Beach area; a) Prigi Beach, b) Type of fish catches

Fish resources are renewable resources (resources that can be recovered). However, it must be balanced with good management, because if not managed carefully it will have an impact on fisheries resources and the environment. Management of fisheries resources must be accordance with the principles of sustainable development. Therefore, it must be balanced with attention to the integrity of the marine ecosystem as a whole marine life. Marine ecosystem must be maintained including coral reefs and mangroves, in order to the fishery resources can be continued [17].

9. Traditional ceremony Larung Sembonyo

Prigi beach is not only famous for the fisheries sector, but is known for a place to perform traditional ceremonies *Larung Sembonyo* (Fig. 10). Larung Sembonyo was implemented with sweeping away offerings and agricultural products into the sea as agratitude to God in hope got blessed, safety, and obtained abundant

sea and land. Larung Sembonyo was held in the Selo month (Java calendar), Sunday kliwon. Larung Sembonyo Ceremony was performed by farmers and fishermen.



Figure 10. Larung Sembonyo ceremony

The culmination of the Larung Sembonyo ceremony was swept away the couple small doll with a sitting position on the boat. A small doll was made of banana stems and pinned three colors flowers include of ylang flower, jasmine flower and lecari flower. Other offering was used "Cuk badek bakal tetes" which means everything that was consumed by humans. Among them are crops, Banana, chicken eggs, sugar, tobacco, coconut, and medicinal plants.

Larung Sembonyo ceremony can be used to support ecotourism. This is associated with all equipment must be presented if the ceremony was done. The crops plant must be presented in Larung Sembonyo ceremony. In order to always able to meet the needs of crops, the community needs to pay attention to the arrangement of land. Land arrangement can be done with the cropping systems, overlapping shifts, and hall way system. The advantages of the land arrangement can reduce the risk of crop failure, because the plants one to the other can be complementary [18].

10. Cengkronk Beach

Sub district of Watulimo is a region with many charming beaches, e.g. *Cengkronk Beach* which rarely visited by people. Cengkronk beach is an area of beautiful mangrove forests (Fig. 11). Mangrove forests in Cengkronk Beach had approximately 10 species of mangrove, i.e. *R. apiculata*, *Sonnaretia alba*, *Bruguiera gymnorhiza*, *Ceriops tagal* CRob., *Xylocarpus granatum*, *Avicennia* sp., *Aegiceras corniculatum*, *Lumnitzera* sp., *Derris* sp., and *R. mucronata*.

Mangrove forests in the Cengkronk region not only was presented a fresh green expanse of forest, but tourists were who visited can enjoy various types of shore birds and wild animal, i.e. monkeys, small crocodiles, as well as the

cultivation of certain biota aquatic. Mangrove forests in area of Cengkong Beach had provided many benefits to the community around the Cengkong coast region, especially economic field. The public economy will be increased because the people were used by several types of mangrove plants as food, beverages, building materials or anything that can be sold. One of them is "bogem"; the fruit of mangrove plant were used by communities for raw materials syrups, jams and soaps. Some other types can be used as raw material for textiles and pharmaceuticals.



Figure 11. Cengkong Beach area

In terms of function, mangrove forests have three functions, i.e physical function, biological function, and economical function. Physical functions that maintain the condition of the beach in order to stable remain, protecting coastal cliffs, and as a green belt to prevent coastal erosion caused by the sea water. Mangrove biological function, include as a nursery habitats of fish seed, shrimp, and crabs, as a diverse source and non biota aquatic, and the source of plasma cum. Mangrove economic function is as a source of fuel, building materials, medicines, food and beverage, and textile raw materials [19]. To sustain mangrove forest in Cengkong beach, we must take care environmental around Cengkong beach and used the land for aquaculture is permitted only about 20% of the total mangrove forest area.

11. Nyadran

Nyadran ceremony is one tradition that was carried by the people in Ngantru Village, Trenggalek. Nyadran from the word *Sadra* meaning grave pilgrimage. Nyadran ceremony in Ngantru was tradition to visited grave of *Minak Sopal*, the first Regent of Trenggalek who contributed in building *Bagong Dam*. Nyadran tradition was held on Friday Pon, Selo month (Javanese calendar), housed in Bagong Dam.

Nyadran Ceremony procession include tadarusan, bathing buffaloes, Wayang Kulit, slaughtering buffalo, tahlil, ruwatan, Jaranan,

throwing buffalo head in Bagong Dam, and salvation event. The event was conducted over several days before Friday Pon. Top part of Nyadran ceremony was swept away buffalo head in Bagong Dam (Fig. 12).



Figure 12. Nyadran ceremony [20]

In implementation of Nyadran, buffalo is an important of an element. Type of buffalo that use in traditional ceremonies of Nyadran is albino buffalo (*Bubalus bubalis*). Albino buffalo was denoted as a substitute for the white elephant that used by Minak Sopal used as escape goat when establishing Bagong Dam. But with the development of the times, a white elephant is very difficult to find thus it was replaced with a buffalo.

As an important element in the Tradition of Nyadran, the buffalo Caucasians should always provided in the moment Nyadran ceremonies. But the existence of albino buffalo gradually decreased because the number of cut is very high without an increase in population and the lack of feed and natural grazing fields. With the existence of this demand, there has to be an effort to make the population of buffalo does not become extinct. Some things that can be done is the maintenance of traditional buffalo grazing. In this case they need to maintain the existence of puddles or swamp that will automatically protect the soil from erosion. Pools or swamps area provide wide variety of ground cover plants as buffalo's food. It also increases the enthusiasm of local communities to preserve traditional Nyadran ceremony, so it becomes an incentive to preserve the population of buffalo [20].

12. Clove Plantation

Clove (*Syzygium aromaticum* L) is a major commodity in Trenggalek. Clove plantation crops are very well known and widely exported out of the city. In 2004, Trenggalek is the largest clove production in East Java. However, the productivity was decreased by 2008. According to the Social Macro Economic Data in 2004-2008, the decrease was caused by higher cost of care

than the offered price. Clove farmers are also has difficulties in selling, because not all of the cloves can be accepted by the middlemen. Therefore, clove farmers in Trenggalek choose to switch the cultivation of other crops.



Figure 13. Clove estate in Munjungan sub-district

Most of the districts in Trenggalek are very suitable to plant the clove. Terms were intended planting cloves that 300-600dpal. The communities who are farmers not only planted clove, but the distance between one plant clove with other crops planted with production plants. Some types of plants are planted at a distance of cloves, e.g. fruit plants (banana, guava, mango, pineapple and coffee) and sometimes planted with grass. These plants can grow well in the shade of cloves as the main crop. Beside to use the results of cloves, clove farmers may use the results of crops under clove trees because it can be harvested within a short time.

It is in the implementation, the community has been using Agroforestry to the pattern to plant the cloves. Advantages of Agroforestry systems, especially in the field of ecology, among others, cause plants can create a breeding place for birds and mammals. Beside that, Agroforestry can conserve the genetic diversity with different functions in stabilizing an ecosystem [21].

CONCLUSION

Trenggalek has several tourist destinations that can be used as a support for ecotourism, i.e Geghog Rice, Ayam Lodho, Alen-Alen, Kripik Tempe, Tiban, Lowo Cave, Prigi Beach, Bamboo Craft, Nyadran Ceremony, cloves estate, and Cengkronk Beach. Each potential of tourism has different characteristics that can be used as a support for ecotourism, thus create a component that well conserved in the district of Trenggalek.

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