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# The Role of Local Wisdom of the Community of the Gamaran Forest Area in the Development of Nyarai Salibutan Eco-Tourism as a Development of Ecosystem Services

#### Mira Hasti Hasmira

Department of Sociology, Faculty of Social Sciences - Universitas Negeri Padang & Doctoral Program of Environmental Science, Postgraduate - Universitas Negeri Padang, Indonesia

## Eri Barlian

Department of Coaching, Faculty of Sports Science, Universitas Negeri Padang, Indonesia

## Siti Fatimah

Department of History Education, Faculty of Social Sciences, Universitas Negeri Padang, Indonesia

#### Heldi

Department of Fine Arts, Faculty of Language and Art, Universitas Negeri Padang, Indonesia

## Iswandi Umar

Department of Geography, Faculty of Social Sciences, Universitas Negeri Padang, Indonesia

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Abstract: An understanding of the services that ecosystems provide at the landscape level provides insight into the relationship between natural capital, ecosystem services, and human well-being. One of the available ecosystem services is ecotourism. Compared to conventional tourism, ecotourism has been reported as a sustainable measure to bridge the livelihoods conservation goals and communities around protected areas. As a tourism industry, the role of environmental communication is very important for the development of ecotourism. This paper describes how local wisdom is implemented by the community in the development of the Nyarai Salibutan ecotourism object located in

the Gamaran Forest area, Lubuk Alung, West Sumatra.

**Keywords:** ecotourism, local wisdom, ecosystem services, Nyarai

#### Introduction

Indonesia is blessed with the largest and most biologically diverse rainforest in the world. Tens of millions of Indonesians directly depend on these forests for their livelihood, whether they collect forest products for their daily needs or work in the wood processing sector. These forests are home to an abundance of flora and fauna, which is unmatched in a country of comparable size. Even today, almost

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every scientific expedition carried out in Indonesia's rainforests returns with the discovery of new species. [1]

Indonesia has the potential of abundant natural resources with tropical forests, vast and diverse land and sea areas. These natural resources play an important role in human survival. Natural resource management must be very wise because it takes a long time to recover from damage/extinction. Rational management is the use and management of optimal and environmentally friendly resources so that the existing natural resources remain sustainable. The protected forest ecosystem is one of the natural resources that play an important role in social, economic, ecological terms. Its main function is to protect life support systems to regulate water systems, prevent flooding, control erosion, prevent seawater intrusion and maintain soil fertility and provide various necessities of life for humans and other living things. The extent of the benefits that exist in the protected forest ecosystem has consequences for the protected forest ecosystem itself, namely with a higher level of environmental exploitation which often results in serious environmental degradation [2]. In addition, forests can also be used as ecological services. In Indonesia, ecotourism was introduced by several foreign tourism offices in the 1980s, one of which was Gunung Sobek Tourism. This travel agency opens ecotourism to climb the highest active volcano at the peak of Kerintsi, climb the second-highest volcanic lake in Lake Gunung Tujuh and visit the largest volcanic lake in Lake Toba. Ecotourism activities in Indonesia have the support of the state which is protected by a Decree of the Minister of Home Affairs 33/2009.

Article1, point 1 [3], states that ecotourism is a natural tourism activity in a responsible area by taking into account elements of education, understanding, and support for natural resource conservation efforts, as well as increasing local community income.

The ecosystem services framework is a powerful tool for understanding the relationship between nature and society. Ecosystem services became a widely used term in 2005 thanks to the Millennium Ecosystem Assessment (MEA), which adopted the concept of "remote academic staff in the core conservation and conservation process" [4]. The MEA defines ecotourism services as the benefits that communities have from ecosystems. This includes the provision of services such as food, water, or firewood; provision of services that affect climate, floods, diseases, waste or water quality; cultural services providing entertainment, aesthetic or spiritual blessings; and support services, such as onsite training. [5]. In the same way, tourism is an important expression of the connection between nature and society. As often noted, tourism is one of the largest industries in the world, supporting 284 million jobs and generating 9.8% of the gross domestic product in 2015 [6].

However, like all sectors of the economy, tourism relies on largely the ecosystem services of its activities. The tourism industry requires the provision of services, including the provision of food, water, or energy to tourists. In addition, the regulation of services is important because, for example, the ecosystem regulates the weather, which is very important when tourists choose a destination, as can be seen from the creation of a tourist climate index. In addition, many tourist activities are located in areas affected by natural disasters, such as floods or hurricanes. Therefore, the ecosystem can mitigate the risks that may affect tourism activities, risks that are expected to increase in the future due to climate change [7]. In addition, cultural ecosystem services are very important for visitor satisfaction. Tourists are attracted by various cultural ecosystem services, such as aesthetic gratitude [8], recreational experiences, [9] or spiritual and religious experiences [10].

In this case, the dependence of tourism on ecosystem services is obvious. However, the scientific literature focused on the link between tourism and ecosystem services remains limited. Several searches in the Scopus database from February 2017 (www.scopus.com) show that several studies based on ecosystem services mention tourism by title or keyword (more precisely 146 documents). Only four articles in tourism magazines (magazines with the

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word "tourism" in the title) mention ecosystem services in the title and only seven by keywords. In addition, only 11 articles were mentioned simultaneously in the title, mentioning ecosystem services and tourism when searching all scientific journals in the Scopus database. In studies based on ecosystem services, tourism plays a key role in the context of cultural services [11], following the categories proposed by the Millennium Ecosystem Assessment (MEA) [5].

In their review, Milcu et al. [12] note that tourism is often considered a leisure activity and is usually considered a cultural service, although some experts argue that it should be classified as a supply service, especially for communities that rely heavily on tourism. Thus, although ecosystem services and tourism are closely linked to the real world, they are not present in the scientific literature. The conceptualization of tourism as a service to the cultural ecosystem, rather than as an economic industry, is also problematic for several reasons. The culture of ecosystem services is associated with intangible benefits. However, tourism provides businesses and private communities that receive tourists with material benefits in the form of money. Moreover, the conceptualization of tourism as intangible, ie. As a non-consumer activity, it hides how tourism can consume resources and cause a wider negative impact on the environment.

Ecotourism, defined by the International Society of Ecotourism as "responsible travel in natural spaces that preserves the environment and enhances the well-being of local people" [13] has also been shown to produce environmental impacts, overexploitation of community resources, such as food, water, or land. However, it is said that when ecotourism projects are well structured and managed, the outweigh their problems. Currently, ecotourism locations are well developed, which are well known to foreign countries, such as Tangkahan, North Sumatra, Tanjung Puting National Park, Central Kalimantan, Komodo National Park, East Nusa Tenggara, Way Kambas National Park, Lampung, Raja Ampat, West Papua, Igen Crater, East Java, Gunung Leuser National Park, Aceh, Nusa Penida Island, Bali, Bunaken National Park,

North Sulawesi and Tembi Tourism Village, Special Region of Yogyakarta [14].

In West Sumatera, there is also a very charming ecotourism location. Nyarai Salibutan Ecotourism. This ecotourism has been visited by tourists since 2013. The highest number of tourist visits until now was in 2014 with a tourist visit rate of 35,767 people. Although until now (before the Covid 19 pandemic) the number of visits decreased, the number of tourists visiting this location was quite crowded, reaching an average of 11,427 tourist visits every year [15].

The author assumes that for the development of ecotourism, it is very necessary to involve the community with all of their local wisdom. Therefore, the article is one of the objectives of the research that the author is doing.

## **METHODS**

This research is an ethnography as proposed by Jams P. Spradley and is very well known in cognitive anthropology courses. Spradley's thinking begins with the thought of Ward Goodenoug's character, who says that a society's culture consists of everything that must be known or believed to behave in a way that is accepted by society, culture is not a material phenomenon: it does not consist of objects, people, behaviors, and feelings. These are the forms of things that people have in mind, the models they have to observe, relate to, and so on to interpret these things [16].

By using the ethnographic method, it can be seen how people organize their culture in their minds and then use that culture in life, which in this case is related to the opening of forest areas near their settlements, namely the Gamaran Forest as an ecotourism location. [17] that the thinking [16] is based on the theory of symbolic interaction. In this theory, culture is seen as a symbolic system where meaning does not exist in the human mind, but symbols and meanings are shared in the human mind, but symbols and meanings are owned by social actors, not internally, and are general. impersonal. Culture is also the knowledge that a person acquires to interpret experiences and infer social behavior. This theory has three prerequisites, namely: 1) human action

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towards something is based on its intended meaning; 2) the meaning of something comes from or is born among them and this meaning is used and modified through the process of interpretation that people use to explain something they encounter.

The research location is Nagari Salibutan, Lubuk Alung District, Padang Pariaman Regency. This location was chosen because Nyarai Salibutan is the first Nagari Forest area in West Sumatra to be managed as an ecotourism area. Based on the data obtained, [18], 4 locations use forests as ecotourism, namely Nyarai Salibutan Ecotourism (2014), Mirror Beach Area Ecotourism (2017), Harau Ecotourism (2017), and Padang VII Ecotourism (2018). Based on the data above, the location that has been around for a long time compared to other locations as an ecotourism area is Nyarai Salibutan, Lubuk Alung District, Padang Pariaman Regency, since 2013 but has only taken care of licensing in 2014. Forest management into Ecotourism This Nyarai has obtained permission through the management Nagari Forest Management Rights (HPAN), which means lowering from protected forest to nagari forest in Nyarai Waterfall.

Informants in this study were selected using the purposive sampling technique. According to [19], intentional sampling is a sampling technique with certain considerations. The informants are Nagari Community, Nyarai Tourism Manager (Pokdarwis LA Adventure), and tourists.

Data collection methods used are observation and indepth interviews. According to [19], observation can be used to determine behavior in certain social situations. Observation is the observation and recording of a phenomenon or phenomena being studied. An expert who divides observation into three types, namely [20], argues that observation consists of participatory observation, open and covert observation, and structured and unstructured observation. The three types of observations are described in detail below. a) Monitoring observations In monitoring observations, researchers are directly involved in the activities of research subjects. [21] divided observational observations into four parts, passive, moderate, active, and complete. The four

observations put forward by Spradley James are explained as follows: (1) Passive observation is if the researcher directly observes the activity but does not do it. (2) Moderate observation is what the researcher balances between his observations and nonindependence in the activities from which the data is taken. (3) Active observation is the researcher observes the activities carried out from the data source, but not entirely. (4) Full observation means that the researcher is fully involved in the activities carried out by the data source. But it doesn't look like researchers are involved, so it's only natural. The type of observation used in this study is active observation, where the researcher participates in the activities carried out by the data source but not completely. [22] explained that an interview is an interaction in which rules, responsibilities, feelings, beliefs, motives, and information are exchanged. The interview that will be used in this study is an indepth interview, which is a process of obtaining information for research purposes through face-toface interviews between the interviewer and the respondent or the person being interviewed, with or using an interview. guide, interviewers and informants have been involved in social life for a relatively long time [23]. The uniqueness of this in-depth interview is the observation in the life of the informant. Therefore, he hopes that researchers get more complete data.

#### **FINDINGS**

Nyarai Eco-Tourism is managed by Pokdarwis Tourism Awareness Group. Named LA Adventure and chaired by Ritno Kurniawan, it offers various tour packages such as hiking, camping, bird watching, and spearfishing. This ecotourism icon is Nyarai Waterfall. With the opening of the Gamaran Forest Area into an eco-tourism area, local people have new livelihoods, including the emergence of tour guide services. Now LA Adventure has approximately 170 guides. Among them 25 people have received a certificate from the Indonesian Mountaineering Association (APGI), even 10 people hold an international certificate for extreme adventure from National Geographic. Of the 170 guides, nearly 80 percent were originally illegal loggers. They finally voluntarily switched

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professions to become tour guides. On the other hand, other businesses are also developing in the community around this ecotourism area, namely food traders, processing forest products (non-timber), namely paniang-paniang fruit into key chains that have been marketed through exhibitions held by various government agencies.

Based on an interview with Ritno Kurniawan as the initiator of Nyarai ecotourism, before transforming into ecotourism, around 80 percent of the livelihoods of the people in the Nyarai Waterfall area were loggers. Gamaran Forest is one of the timber barns for West Sumatra. The first time it opened, tourists who wanted to visit the Nyarai Waterfall attraction were treated for free. However, the condition is that visitors can promote it on social media or word of mouth about the beauty of Nyarai Waterfall. Many of them choose to leave logging activities to become tour guides. Now changes are felt, people who used

to be loggers have felt their economic changes from being tour guides. The Inpres status of underdeveloped villages in the Nyarai Waterfall area was also revoked.

To reach Nyarai Waterfall, walk about 5.5 km from the post office location, combing the suburbs of Lubuak Lalang, Lubuak Ngungun, Lubuak Batu Tuduang, Lubuak Sikayan Limau, Lubuak Sikayan Tabiang, Lubuak Pasangkuhan, Lubuak Crossing Kasai Kasai Ketek and Crossing Lubuak Kasaki Ketek Kasai Gadang has just arrived at Nyaray Waterfall. This location has coordinates X100 ° 2 '46.2" Y 00 ° 41 '00 .2". To get to this place, tourists are also challenged to climb slopes with a slope of <25° even 4X and <45° even 2X. Nyarai is located at an altitude of 568 meters. To get to the location of Nyarai Waterfall, you can also take an alternative route which is usually used if the weather is rainy, but 4 times you take it with a slope of < 45°.



Fig 1. Nyarai Salibutan

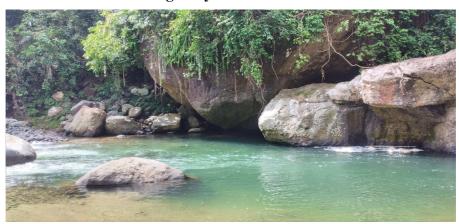


Fig 2. Lubuak Batu Tuduang

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Before tourists are guided by one guide per group of tourists, first a briefing is carried out to the tourists. Starting from the terrain to be passed to the local rules that must be obeyed. The rules in question are unwritten rules that residents obey for fear of the sanctions they will face if they violate them. These rules are known as local wisdom.

Here are some local wisdom that are always informed to tourists who will enter the forest area to the Nyarai waterfall:

- 1. Tourists are prohibited from entering the forest area on Friday and Eid al-Adha, so this location is automatically closed. This is because the people's trust at both times, the *inyiak* (tiger) will go down. Residents believe that if they enter the forest area at these two times, it will disrupt the activities of the tigers that inhabit the forest area. This can be interpreted that in the Gamaran Forest area there are still Sumatran tiger species. With existing local wisdom, this species is maintained without disturbing the community around the forest. The existence of good interaction between the community and the environment is ultimately able to maintain the existing ecosystem.
- 2. Another rule that is also reminded to tourists is that they are not allowed to swim in the forest area when the sun is right at the crown. If you violate this taboo, it is believed that the person who swims will fall ill. This knowledge is disseminated to tourists with the aim of helping tourists to help preserve the forest that they will enjoy.
- 3. The river that flows along the Gamaran Forest, is very clear. By maintaining the behavior of local people and tourists not to bathe, let alone using excessive shampoo and soap, it will disrupt the stability of the existing water parameter values. Once again, with the application of local wisdom, it is able to maintain the river ecosystem.
- 4. Fish ban. The existence of special fish in the Salibutan Forest river, which is believed by residents to be harvested together at certain times, is done so that every member of the

community can enjoy the fish along this river. As for ordinary days, people are prohibited from catching fish. If anyone is caught, there will be a fine of 1 bag of cement for 1 fish. In certain areas of this river, fish may be caught, but using a spear-like tool, it cannot be a net. This is done to maintain the ecosystem in the river.

The existence of local wisdom is not something that makes tourists cancel their visits to this ecotourism location. But it is an attraction for tourists. Enjoying the beautiful view of the forest towards this location icon in the form of a waterfall while understanding the culture of the local community is a selling point in the development of this ecotourism. As described earlier, in the theory of symbolic interactionism, culture is seen as a symbolic system where meaning does not exist in the human mind, but symbols and meanings are shared in the human mind, but symbols and meanings are owned by social actors, not inside, and are general. . impersonal. Culture is also the knowledge that a person acquires to interpret experiences and infer social behavior. This theory has three prerequisites, namely: 1) human action towards something is based on its intended meaning; 2) the meaning of something comes from or is born among them and this meaning is used and modified through the process of interpretation that people use to explain something they encounter.

As is the case with the Papuan people. Almost all ethnic groups in the interior of Papua believe that the interior of the mountains and mountains are sacred stores of various foods, possessions, and wealth that can be enjoyed by the community for life. the mountains around the moni tribe contain treasures. Indigenous Papuan tribes in the interior still believe that only migrants know how to get the treasure and don't want to tell the locals because they want to own it themselves. In the Papuan view of nature, God and spirit as a unit that surrounds human life is a manifestation of the teachings of monism that have a positive impact on nature conservation efforts. Man is part of nature, so if he destroys nature, he destroys himself [24]. In addition, Papuans identify nature with their parents, so the state is considered a mother. Papuans have a special spiritual connection with the earth [25]

Pariaman (Doctoral dissertation, Universitas Andalas).

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For most local ethnic groups in Papua, the state is where life flows from generation to generation. Errari added, in the Melanesian ecoculture in Papua, there is no surrounding area that falls into the category of "no man's land". Every inch of land has cultural ties to the local people in the vicinity, although the distance can be as far as a week's walk [25]. When the local wisdom of the community is understood by the community and then socialized to tourists, it is interpreted as something that is believed to be able to maintain the beauty of the forest in the area where they live. With the preservation of the forest, the ecosystem and the survival of the community are maintained. The survival of the community in the sense that they can take advantage of ecosystem services in the form of forest utilization as an eco-tourism location.

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## CONCLUSION

The services that ecosystems provide at the landscape level provide insight into the relationship between natural capital, ecosystem services, and human well-being. One of the available ecosystem services is ecotourism. In Nyarai ecotourism located in the Gamaran Forest area, Lubuk Alung, West Sumatera, it can be described that local wisdom understood and practiced by the community and tourists is considered capable of developing this ecotourism object. Local wisdom as a form of human interaction with the environment is considered capable of maintaining forest ecosystems and the survival of the community around the forest. The community's economy increases, the ecosystem is maintained, the community does not lose its cultural identity.

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