

Implementation of Ecotourism Principles in Batulumbang Mangrove, Denpasar City

I Gede Anom Sastrawan, I Made Bayu Ariwangsa

Tourism Faculty, Udayana University

Tourism Faculty, Udayana University

Abstract

The study aims trend of mass tourism often detrimental effects on environmental conditions, underscoring the necessity for a sustainable alternative: ecotourism. Ecotourism, as a crucial form of alternative tourism, is gov-erned by core principles that must be met to ensure its validity and sustainability. This concern is particularly relevant as numerous destinations are merely branded as ecotourism sites, yet their adherence to and imple-mentation of the ecotourism principles remain suboptimal. This study focuses on analyzing the implementation of ecotourism principles by both the management and the visitors of the Batulumbang Mangrove Ecotourism in Denpasar City. Furthermore, it aims to analyze the diverse range of ecotourism activities offered to tourists. Ba-tulumbang Mangrove Ecotourism represents a unique destination centered on Mangrove Conservation, Mud Crab Cultivation, and Coastal Tourism Attractions with an educational basis. The results showed that ecotourism had a positive influence by creating alternative sources of income through activities such as tour guiding and Mangrove strolling management. In addition, community involvement in decision-making has also increased. However, challenges still exist, such as limited human resources and waste problems from the river. The con-clusion of this research is that Batu Lumbang Mangrove Ecotourism has supported the creation of sustainable tourism in terms of social, economic and environmental aspects. Therefore, suggestions include improving the quality of human resources, involving the younger generation, and real support from the government and the private sector to strengthen the sustainability of this area in the future.

Keywords - Implementation; Principles; Ecotourism; Alternative Tourism; Batulumbang Mangrove

I. Introduction

Ecotourism is an alternative form of tourism that is classified as nature tourism, which aims to preserve local nature and culture (Amtiran, M. I., & Suryawan, I. B, 2016). The basic principles of ecotourism are to increase cultural or environmental awareness, reduce impacts, offer positive experiences for tourists or beneficiaries, and have the capacity to empower the surrounding population (UNESCO, 2009). The naturalness of the ODTW (tourist destination), conservation ethics, education, and overall sustainability are crucial in the context of ecotourism, so it can be said that the principles of ecotourism must prioritize the preservation of natural re-sources, ensure the participation of local or surrounding communities, enhance experiences, incorporate responsible activities, and support productive small businesses.

Based on the initial observation, the ecotourism site has provided reading materials in the form of posters for tourists located at the entrance. However, there are questions regarding the Ecotourism Principle proposed, which involves traveling to natural destinations (Honey,2008). There are indicators explaining that an ecotourism site should be located in remote areas or can be described as undeveloped/pristine (minimally disturbed) areas. This needs to be re-identified considering the location of the ecotourism site, which is located near the Bali Galeria Mall Shopping Center, Denpasar City Reservoir, and the Ngurah Rai Bypass Road, with a fairly high traffic density. Furthermore, ecotourism activities are not only conservation-based but also educational. This relates to the ecotourism principle proposed by (Honey,2008), which is build-ing

environmental awareness. It is necessary to re-identify whether tourists receive other forms of education, in addition to providing educational boards.

It is also unknown whether the Ekowisata Mangrove Batulumbang in Denpasar City meets the criteria for implementing applicable ecotourism principles. This research should be conducted to determine the extent to which the Batulumbang Mangrove Ecotourism in Denpasar City has optimized the implementation of ecotourism principles. This relates to the problem of some ecotourism sites that merely brand themselves as ecotourism destinations, but their implementation of ecotourism principles is still less than optimal.

II. Methodology

A qualitative method with a descriptive approach was employed to understand the existing conditions and the implementation of ecotourism principles at the Ekowisata Mangrove Batulumbang in Denpasar City. The objective of this approach is to gain in-depth insights into the experiences, perspectives, and evaluations of both the site management and the tourists, utilizing interviews, observation, document analysis, and literature review (Heher, 2003). In this study, the research object is the Ekowisata Mangrove Batulumbang, located in Pemogan Village, South Denpasar District, Denpasar City, Bali Province. This area is a coastal-based ecological tourism destination, characterized primarily by its vast and pristine expanse of mangrove forest (Lumnauw & Benazira, 2023). This ecotourism offers activities that prioritize direct interaction with nature, such as exploring the mangrove paths, observing the coastal ecosystem, and understanding the importance of environmental conservation. To clarify the boundaries of this research, the scope of the study is elaborated as follows: Research Scope The study focuses on: (a) Ecotourism Activities Ekowisata Mangrove Batulumbang, where data aspects include; (b) Ecotourism activities concerning the natural aspect; (c) Ecotourism activities concerning the educational aspect; (d) Ecotourism activities concerning the cultural aspect; (e) Ecotourism activities concerning the economic aspect. Implementation of Ecotourism Principles at Ekowisata Mangrove Batulumbang, where data aspects include: (a) Involving travel to natural destinations; (b) Minimizing negative impacts; (c) Building environmental awareness; (d) Providing direct benefits for conservation; (e) Providing financial and empowerment benefits for the local community; (f) Respecting local culture; (g) Supporting human rights and democratic movements.

The type of informant determination technique used in this study is purposive sampling, which is a non-probability sampling technique where samples are intentionally selected based on specific criteria to ensure the information obtained is relevant and in-depth, aligning with the research focus (Pendit, 2010). In the context of the Ekowisata Mangrove Batulumbang, the researcher selected informants who were deemed to have experience, comprehensive understanding, and direct involvement in the management and development activities of the ecotourism area. In this research, two types of informants were utilized: key informants and main informants. Key informants are parties who possess broad and strategic knowledge regarding the overall ecotourism management process. Main informants are local community members who are directly involved in ecotourism activities and experience their impact. Some of the key informants who also serve as main informants in this study include Bapak I Wayan Pasek Pastika, as Ketua Kelompok Pengelola Ekowisata Mangrove Batu Lumbang. Made Megantara Johannes, as Sekretaris I Ekowisata Mangrove Batu Lumbang and Anak Agung Dwi Yuli Andari, Sekretaris II Ekowisata Mangrove Batu Lumbang.

III. Discussion

Ecotourism consists of travel to or visiting relatively undisturbed natural areas, with the truly objective intent to see, study, and admire the face of natural beauty, flora, fauna, including the cultural aspects, both past and present, that may be present in the area (Hecktor Ceballos in Pendit, 2010). Ecotourism is a responsible model of nature-based tourism in natural or naturally managed areas, which aims to enjoy the beauty of nature by involving educational elements, supporting conservation efforts, and increasing the local community's economic income (Suprayitno, 2008).

In accordance with the definitions of ecotourism by Hecktor Ceballos (in Pendit, 2010) and Suprayitno (2008), it can be determined that the activities of an ecotourism product can cover four aspects: natural,

educational, cultural, and economic. Various tourism packages offered certainly contain activities encompassed by these four aspects. Therefore, the following is a description of ecotourism activities according to these four aspects.

Ecotourism Activities in the Natural Aspect

Ekowisata Mangrove Batulumbang is a destination primarily focused on mangrove conservation. In addition to its conservation base, Ekowisata Mangrove Batulumbang also serves as a Mud Crab (*Scylla serrata*) Cultivation Site. The primary ecotourism activities within the natural aspect involve enjoying the view of the Badung Strait Sea and the Mangrove Forest. The extensive area of the Ekowisata Mangrove Batulumbang site, coupled with its beautiful natural scenery, constitutes the main appeal that draws tourists to visit and engage in ecotourism activities. In Figure 1 it is explained as a habitat for a diverse range of fauna, including: Crabs, Clams (shellfish), Monitor lizards, Fish, Birds, Sea snakes.



(Source : <https://travel.tribunnews.com/>, 2025)

Figure 1. Ecotourism Activities Around the Mangrove Forest

The activities of these animals such as foraging for food, interacting with conspecifics, and other unique behaviors are a significant draw. Observing the life of these animals within the mangrove forest ecosystem is a specific attraction for tourists. The cool expanse of the Badung Strait Sea and the verdant mangrove forest are pleasing to the eye of the visitors. Direct Immersion and Ecotourism Packages Indirectly, tourists engaging in ecotourism activities can enjoy the natural scenery and capture moments of their experience. The majority of activities offered in the various tourism packages are conducted in the natural environment.

Ecotourism activities focusing on the natural aspect refer to organized programs, often packaged as tours, that invite tourists to directly immerse themselves in the existing natural environment. All activities conducted in the water will proceed according to the tides. With the advancement of technology, the determination of when an ecotourism activity, which is dependent on the tides, can be conducted is currently detected using an Application named Info BMKG (Badan Meteorologi, Klimatologi dan Geofisika). The Info BMKG Application is accessible via smartphone. There are various tourism packages available with the main activity taking place in nature. The first is touring the mangrove forest with a traditional boat. They will also be provided with life jackets, gloves to ensure hand hygiene, and plastic bags for collecting trash. During this ecotourism activity, the tour guide will still guide them. They will be taken around the mangrove forest shown in Figure 2, while removing trash caught in the roots and trunks of the mangrove trees.



(Source: Research Documentation, 2025)

Figure 2. Canoe Ecotourism Activities

The third activity offered is fishing. This activity utilizes two types of transport: a traditional boat and a canoe. If choosing to use the canoe, tourists will receive preliminary guidance from a tour guide regarding paddling techniques. The equipment provided includes bait, fishing rods, and life jackets. Tourists will be accompanied by a tour guide to find a strategic fishing location. Various types of fish commonly caught in the Badung Strait Sea include Barramundi and Totok Fish. There are several options available for the tourists' catch: The catch can be released back into the sea. The catch can be taken home. The catch can be cooked directly at the Warung Nelayan Batulumbang. This information was obtained from an interview with Agus Diana, Secretary of the Batu Lumbang Fishermen Group.

“Ikan yang biasa didapat di sini itu jenis Barramundi dan Totok, hasil tangkapan yang didapat merupakan hak dari wisatawan itu sendiri, kalau wisatawannya hanya bertujuan untuk melakukan aktivitasnya saja biasanya mereka lepas kembali, tapi ada juga wisatawan yang bertujuan untuk mencari ikan maka mereka bawa pulang, tapi saya juga menawarkan untuk dimasak di restoran ini.” (Hasil Wawancara 05 Juli 2025).

Fourth is the activity of planting mangrove seedlings. Planting mangrove seedlings is an activity that is carried out directly by going into nature. Mangroves are usually planted in fairly muddy areas. The tools provided include bamboo, rope, boots, and gloves. The bamboo and rope serve to support the mangrove seedlings, while the gloves and boots are to prevent accidents during the mangrove planting activity. Accidents during mangrove planting activities usually occur from plant thorns that impale the palms and various sharp objects buried in the mud.

Ecotourism Activities in the Educational Aspect

Since ecotourism is a form of conservation-based tourism, it inherently requires the pro-vision of education regarding the importance of environmental preservation. Besides being based on mangrove conservation and mud crab cultivation, Ekowisata Mangrove Batulumbangis also an education-based tourism destination.

There are several species of mangroves, and they naturally possess distinct characteristics. Some mangrove species thrive in areas that do not require much water (less inundated areas), while others live in highly inundated areas (permanently flooded). Several mangrove species found in Ekowisata Mangrove Batulumbanginclude: Bakau (*Rhizophora mucronata*), Tancang (*Bruguiera* spp.) Tangere (*Ceriops*), Pedada (*Sonneratia caseolaris*), *Rhizophora mu-cronata*, and Lindur (*Bruguiera gymnorrhiza*). Two mangrove species, Bakau (*Rhizophora* species, implied by the context of *Rhizophora mucronata*) and Lindur, are consistently used in mangrove planting activities. Consequently, these two types of trees are indirectly the

most numerous species found at the Ekowisata Mangrove Batulumbang location. The benefits of mangrove conservation are immense for both the environment and the community. The advantages of mangroves include: Preventing coastal erosion (abrasion), Producing oxygen for the wider community, Serving as a source of building materials and furniture equipment, Providing edible and processable fruit, Mangrove Fruit Processing Two types of fruit can be processed at this ecotourism site: Lindur fruit and Pedada fruit. Pedada fruit can be processed into juice, jam, candy, and dodol (a sweet, thick confection). Lindur fruit can be processed into chips and ground into flour for use in cakes and nuggets. Ecotourism Activities and Education before engaging in any package tour activity, education about mangroves and environmental cleanliness is always provided. The available activities include: Mangrove planting, Cruising on traditional boats, Fishing using canoes and traditional boats, Canoeing with a cleanup program, Mangrove cooking class, mangrove seeding/nursery activities. The mangrove education provided for the Mangrove Seeding/Nursery and Mangrove Cooking Class activities differs slightly; Mangrove Seeding/Nursery Activity. In the mangrove seeding activity, tourists receive more in-depth education related to mangroves.

Ecotourism Activities in the Economic Aspect

Ekowisata Mangrove Batulumbang Ecotourism activities at Ekowisata Mangrove Batulumbang related to the economic aspect are encapsulated in production and consumption activities. Production Activities at Ekowisata Mangrove Batulumbang include several offerings within the tour packages: Mangrove Seedling Preparation, Mangrove Cooking Class (or Mangrove Fruit Processing), Mangrove fruit is processed into various products, such as: Mangrove fruit juice, Mangrove fruit jam, Mangrove dodol (a sticky sweet confection), Mangrove soap, Mangrove fruit chips, and others. Production activities are also carried out by the Batulumbang Fishermen Group members, which include: Fishing, Mud Crab Aquaculture The catches and cultivated products are further processed and transformed into ready-to-sell dishes by the POLKAHSAR (Kelompok Pengelola Pasar) members.

Tour Packages offered to tourists are quite numerous and are designed to provide a unique experience, including: Mangrove planting, Mangrove seedling preparation, Canoeing with a clean-up program, Mud crab aquaculture information, Fishing in the mangrove forest by canoe, Touring the mangrove forest by traditional boat, Fishing by traditional boat. Tourists can purchase the Processed Mangrove Fruit Products. Mangrove fruit juice is always available daily, but other processed mangrove fruit products can be pre-ordered, though not in large quantities. The Purchase of Dishes at Batulumbang Restaurant is also available to tourists. The menu items offer a diverse range of flavors and are reasonably priced.

Ecotourism Activities in the Cultural Aspect

The following are several activity ideas that integrate the mangrove environment with local cultural heritage: Scenic River Cruise/Mangrove Tour with Local Storytelling: Utilize traditional boats (if available) to explore the mangrove area. During the cruise, a local guide (preferably from the surrounding community) will share legends, myths, or oral history related to the mangrove forest, river, or local sea. This promotes the preservation of oral traditions, the use of local wisdom in interpreting nature, and recognizes the spiritual/historical connection of the community to the environment. Local Craft Workshop Using Mangrove/Natural Materials: Host a short workshop teaching tourists how to make handicrafts, natural dyes, or food products (e.g., dodol/syrup from mangrove fruits, if safe and sustainable) using materials responsibly sourced from the surrounding area. This introduces traditional skills and livelihoods, empowers the local economy, and fosters appreciation for the wise use of natural resources.

Participation in Traditional Rituals Ceremonies: If the local community has rituals or ceremonies (e.g., sea thanksgiving, mangrove planting rituals, or ceremonies before going out to sea) related to the natural environment, tourists can be invited to respectfully observe or participate. This shows respect for and provides a deep understanding of local values and beliefs, as well as showcases traditional conservation practices. Local Seafood-Based Culinary Experience: Offer a dining experience featuring local cuisine that uses sustainably caught seafood or ingredients from the mangrove area, prepared using traditional cooking methods. This introduces culinary heritage, supports local fishermen and farmers, and promotes

understanding of traditional diets aligned with the ecosystem.

Implementation of Ecotourism Principles in Batulumbang Ecotourism

The implementation of ecotourism principles in Ekowisata Mangrove Batulumbang is elaborated by identifying and evaluating the implementation of the ecotourism principles that have been applied based on the ecotourism concept in Batulumbang Ecotourism. It is important to know the implementation of these ecotourism principles as a benchmark for the success of the ecotourism principles that have been carried out based on the ecotourism concept, namely the seven ecotourism principles put forward by Honey (2008). To facilitate the evaluation of the implementation of the ecotourism principles, the following matrix is presented Table 1.

Table 1. The Seven Principles of Ecotourism according to Honey, Martha (2008)

No	Principles of Ecotourism	Indicator	Has it been implemented or not	Information
1.	Involve travel to natural destinations	a. Are remote areas	Not implemented yet	Located close to the main road and Tukad Badung Reservoir
		b. Can be an inhabited or uninhabited area	Not implemented yet	Located close to residential areas and shopping centers
		c. Under National, International, Communal, or Private Environmental Protection	It has been implemented well	Under the protection of the communal level (local community)
2	Minimize impact	a. Minimizing the Negative Impacts of Hotels, Routes and Other Infrastructure	It has been implemented well	Carrying out active conservation activities such as planting and nursery, conducting clean-up programs and conducting outreach to the community.
		b. Using locally available building materials	It has been implemented well	Recycling wood purchased from the demolition of several buildings in Bali
		c. Architectural Design Has Cultural Elements	It has been implemented well	Not all buildings are built with Balinese cultural architectural designs
		d. Regulating the Number and Behavior of Tourists to Minimize	It has been implemented well	Mangrove planting has attracted thousands of tourists. Regulations are in place to minimize environmental damage.

		Damage			
3.	Build environmental awareness	a.	Providing Education to Tourists and Local Communities	It has been implemented well	Providing education on mangroves, environmental cleanliness, and mangrove crab cultivation to tourists. Providing training to local communities.
		b.	Providing reading materials for tourists	It has been implemented well	There are educational boards and a small library.
4.	Provide direct financial benefits for conservation	a.	Ecotourism Helps Raise and Support Environmental Protection	Not implemented yet	Funding and equipment assistance is obtained from companies and communities on a voluntary basis.
5.	Provide financial benefits and empowerment for local people	a.	Local Communities Benefit from Ecotourism that can be Felt	It has been implemented well	Providing employment opportunities to local communities
		b.	Local Communities Receive a Share of Income from Ecotourism Activities	It has been implemented well	Local communities receive several types of income from ecotourism activities.
		c.	Accommodation Provided by Local Communities as Hosts	Not implemented yet	Not have a Guest House managed by the local community
6.	Respect local culture	a.	Respect local culture	It has been implemented well	Most tourists do not break the rules regarding local culture.
		b.	Contribute to International Understanding, Peace, and Human Prosperity	It has been implemented but not yet optimally	Communities value cultural differences without fostering international understanding and peace. Ecotourism activities benefit the prosperity of local communities.
7.	Support human	a.	Universal Respect for	It has been implemented	Granting the right to assemble and organize for

rights and democratic movements	Human Rights	well	members of the Kelompok Nelayan Batulumbang. Granting the right to express opinions and provide criticism to both members of the fishermen's group and tourists.
---------------------------------	--------------	------	--

(Source: Research Documentation, 2025)

Based on the table above, an evaluation of the implementation of ecotourism principles in Batu Lumbang Ecotourism will be carried out in accordance with the research results as follows.

Involving Travel to Natural Destinations

The majority of activities in the tourism packages offered by Batu Lumbang Ecotourism take place in nature. These activities include planting mangrove trees, canoe tours (divided into two types: a clean-up program canoe tour and a fishing tour in the mangrove forest by canoe), and traditional boat tours (divided into two types: a traditional boat tour around the mangrove forest and a fishing tour in the mangrove forest by traditional boat). The implementation of the principle of involving travel to natural destinations will be described through the following indicators:

Remote Areas

This indicator has not been implemented. This is because the location of Batu Lumbang Ecotourism is close to the Jln Bypass Ngurah Rai-Pemogan. Access to this location can be reached by both two-wheeled and four-wheeled vehicles. Nevertheless, there is a positive impact generated, namely the view of the sea toll road, which indirectly shows the overall layout of Batu Lumbang Ecotourism. This makes many people curious about the beautifully arranged setting of Batu Lumbang Ecotourism and prompts them to visit. The results of the observation show that the location of Batu Lumbang Ecotourism is not situated in a remote area. In addition to being close to the Ngurah Rai Bypass Highway, there are also several buildings around the ecotourism area, such as a souvenir center, restaurants, and a travel agency office. Although they can be considered close, the locations of these buildings are not immediately adjacent. The constant movement of airplanes and motor vehicles causes significant noise in the Batu Lumbang Ecotourism area itself. However, the location of Batu Lumbang Ecotourism is quite strategic and easy to find. Based on the description above, it can be concluded that the indicator of remote areas has not been implemented.

Can be an Inhabited or Uninhabited Area

The location of Batu Lumbang Ecotourism is quite close to several residential houses, so it can be said that the location of Batu Lumbang Ecotourism is a populated area. Although it can be said to be close to several residents, the activities of most of the residents do not interfere with the activities of Batu Lumbang Ecotourism, both the ecotourism activities and the habitat of the flora and fauna in this ecotourism. This is because the ecotourism activities take place within the mangrove forest area. From the observations made, it appears that the location of Batu Lumbang Ecotourism is close to several residential houses, but there are no resident activities carried out in the ecotourism area. Most of the ecotourism activities are carried out at quite a distance, such as the location of Batu Lumbang Ecotourism being quite inland, where tourists must pass through a tracking path in the mangrove forest to reach the restaurant. Furthermore, activities such as canoeing, fishing, touring with traditional boats, and mangrove planting are carried out in the Badung Strait Coastal area. Based on the explanation above, it can be said that the indicator of "can be an inhabited or uninhabited area" has not yet been implemented (as a defining characteristic of the ecotourism's core area).

Under National, International, Communal, or Private Environmental Protection

Batu Lumbang Ecotourism is under the auspices of the Batu Lumbang Fishermen Group, located in Tuban Village, Kuta District, Badung Regency. Therefore, the ecotourism is under communal protection.

Judging from the various efforts made by the Batu Lumbang Fishermen Group, Batu Lumbang Ecotourism receives environmental protection under communal protection. The various protections implemented by the Batu Lumbang Fishermen Group include creating tourism packages with planting, seeding, cultivation, and clean-up programs. These efforts are made to provide benefits to the environment for the future. Based on the explanation above, it can be said that the indicator of "under national, international, communal, or private environmental protection" has been well implemented. Based on the results of the interviews that have been conducted, a brief summary of the data obtained on the principle of involving travel to natural destinations is that most of the ecotourism activities offered in the tour packages involve direct engagement with nature. The location of Batu Lumbang Ecotourism is not in remote areas but is a populated area. The residents. Batu Lumbang Ecotourism is under communal protection because it is protected by the Batu Lumbang Fishermen Group, who are the Tuban Community.

Minimizing Impact

The implementation of the principle of minimizing impact on Batu Lumbang Ecotourism will be explained through the following indicators:

Minimizing Adverse Impacts from Hotels, Trails, and Other Infrastructure

The location of Batu Lumbang Ecotourism is not adjacent to hotels. Batu Lumbang Ecotourism is only adjacent to one homestay owned by a member of the Batu Lumbang Fishermen Group. The waste generated from the homestay is certainly well managed and not haphazardly disposed of. There are several large projects located near Batu Lumbang Ecotourism, namely the construction project of the Bali Mandara Toll Road and the construction of the Ngurah Rai Tugu Intersection Underpass. The construction of these large projects certainly had a significant impact on the sustainability of tourism activities at Batu Lumbang Ecotourism. The impacts of the Toll Road construction were: the clearing of mangrove trees, which was originally planned for 1,000 trees but was reduced to 150 trees due to pressure from the Wanasari Fishermen; a reduction in the presence of coral reefs, which requires 5 to 10 years for recovery; and the displacement of 2 crab cages. The negative impact of the Ngurah Rai Tugu Intersection Underpass construction was not very significant, only the traffic congestion caused by the project, but ecotourism activities continued by observing the natural conditions of the mangrove forest area. Several efforts have been made to address these adverse impacts and are still being carried out today, including: conducting conservation activities such as tree seeding and planting; implementing clean-up programs with tourists; inviting fishermen members and local communities to maintain the mangrove forest; and conducting socialization about the importance of mangrove conservation to the general public, educational institutions, and communities. Some efforts appear to have been made up to now, such as actively engaging in planting and clean-up programs. Based on the explanation above, it can be concluded that the indicator of minimizing adverse impacts from hotels, trails, and other infrastructure has been well implemented.

Using Available Local Building Materials

Because it applies a nature-based concept, the construction of Batu Lumbang Ecotourism is partially large-scale construction of semi-permanent buildings. The buildings are mostly constructed from timber materials, such as the Batu Lumbang Ecotourism building and the tracking trail surrounding the mangrove forest. The wood material used is not new wood, but rather reclaimed wood purchased from the demolition of buildings in the Bali area. However, the use of local building materials is not done entirely. From the observations conducted, it is true that most of the ecotourism buildings are made of wood. However, because not all of the buildings are made of local building materials, it can be stated that based on the explanation above, the indicator of using available local building materials has been implemented but not yet optimally. Architectural Design Has Cultural Elements There are only a few buildings using cultural architectural designs. Balinese cultural architectural design is only located at the Batu Lumbang Ecotourism gate, which is shaped like a gapura (gateway), and the padmasana (shrine) section available in the ecotourism area. From the observations conducted, it is true that not all buildings in the ecotourism area have Balinese cultural architectural designs.

Building Environmental Awareness.

Implementation of the principle of building environmental awareness in Batu Lumbang Ecotourism will be presented through the following indicators:

Providing Education to Tourists and the Community

The provision of education to tourists is naturally carried out and relates to mangrove trees, the types of mangroves present in Batu Lumbang Ecotourism, the functions of mangrove forests, how to process various products derived from mangrove trees, and how to cultivate mud crabs, covering their maintenance system, the time required until harvest, the type of feed, and the standard weight for consumption. Additionally, education on maintaining environmental cleanliness is also provided, aiming to encourage tourists to always care for the environment now and in the future. Based on the information obtained, the provision of education has been implemented. Education concerning mangroves and maintaining environmental cleanliness is given across all activities within the offered tour packages. Furthermore, other education is provided in specific tour packages, such as education on mud crab cultivation, which is given during the activity of the mud crab cultivation information tour package, and education on how to process mangrove fruit, which is provided during the activity of the mangrove cooking class tour package. Aside from the information above, the provision of this education is also proven by the results of observations that have been conducted. Based on the exposition above, it can be stated that the indicator of providing education to tourists and the community has been implemented well.

Providing Reading Material for Tourists

Besides direct presentation, education is also provided through the placement of educational signboards at several points. These signboards also display several photos of mangrove species, the benefits of mangrove fruit, and the history and purpose of the establishment of Batu Lumbang Ecotourism. Based on the observations conducted, there are several educational signboards provided. These signboards are located at several points. There are 2 signboards located near the ecotourism entrance, which contain discussions about the history of the establishment of Batu Lumbang Ecotourism as well as education about the mangrove forest. And there are also 2 signboards located in the mangrove nursery area, which contain discussions about the benefits of mangrove fruit and the types of mangroves that live in Indonesia. The existence of educational signboards is highly beneficial for tourists. Their size is also quite large, making it easy for tourists to read. The design of the signboards is made attractive by including several photos and icons of plants. Based on the exposition above, it can be concluded that the indicator of providing reading material for tourists has been implemented well. Based on the results of the interviews that have been conducted, a brief description of the data obtained on the principle of building environmental awareness is the provision of education. has been provided to tourists when carrying out ecotourism activities. Education is also provided to the community in the form of several training sessions and socialization programs for the general public, such as volunteers from the education sector and communities.

Providing Direct Benefits for Conservation

The implementation of the principle of providing direct benefits for conservation at Batu Lumbang Ecotourism will be presented through the following indicators :

Ecotourism Helps Raise Funds for Environmental Protection

This indicator has not been fully implemented, as the ecotourism emphasizes voluntary fundraising without being explicitly requested. Conservation funds for environmental protection are primarily obtained from the CSR Program (Corporate Social Responsibility) of a company. The regulation that mandates companies to carry out CSR is stipulated in Peraturan Pemerintah atau PP Nomor 47 Tahun 2012 Tentang Tanggung Jawab Sosial dan Perseroan Terbatas. Pada pasal 2 dan 3 Peraturan Pemerintah that "Every company, as a legal entity, has social and environmental responsibility. Peraturan UU PT dan Peraturan Pemerintah 47/2012 state that the amount of CSR funds is not specific and is subject to company policy. The

CSR program is intended as a form of tangible contribution to improving the quality of life of the community and the environment, and its main concept is to create sustainability in all business activities while balancing economic, social, and environmental interests. Donations are also provided by several communities, given in the form of funds or goods. The following are some of the companies and communities that provide fundraising for Batu Lumbang Ecotourism. Perusahaan BUMN (dengan skala CSR diatas 25 juta rupiah): PLN Bali Indonesia Power, PT. Jasa Raharja, Indonesia Financial Group (IFG). Perusahaan Swasta(dengan skala CSR dibawah 3 juta rupiah) : Hard Rock Hotel Bali, Hilton Group, Grand Mirage Group, Six Senses Hotel Group, Mercure Hotel Group. Komunitas: Komunitas Jalinan Kasih, Komunitas Peduli Hutan Bali, Komunitas Fave Bali, Komunitas Burung Bali, Komunitas Pemuda Gereja, Komunitas Putra Putri Bali.

Providing Financial and Empowerment Benefits to the Community

The implementation of the principle of providing financial and empowerment benefits to the community at Batu Lumbang Ecotourism will be described through the following indicators:

Local Community Receives Tangible Benefits from Ecotourism

The community greatly benefits from the tourism activities carried out at Batu Lumbang Ecotourism. Community empowerment is highly prioritized in the ecotourism's operation. 2) Local Community Benefits from Ecotourism Activities. The existence of community empowerment enables local people, who initially only worked as fishermen, to take on roles as tour guides and assistant tour guides to accompany the visiting tourists. This is naturally supported by the spirit of the local community itself to learn about mangroves, learn how to cultivate mud crabs, and study foreign languages. With the knowledge gained, the Batu Lumbang Ecotourism does not need to recruit tour guides from outside the area to accompany the tourists. Furthermore, it also provides benefits by creating job opportunities for the wives of the fishermen. The Batu Lumbang Ecotourism, which was established to market the catches and aquaculture products of the Wanasari Fishermen, is also managed by POLKAHSAR, whose members are the fishermen's wives. There are 15 active members involved in managing the restaurant. In addition to serving dishes, POLKAHSAR members can also teach a Mangrove Cooking Class Practice. Initial processing training for mangrove fruit was certainly provided to POLKAHSAR members, but along with technological advancements, the types of processed mangrove fruit products continue to be developed through the innovation and initiative of the POLKAHSAR members, by looking at various information through the internet. This is certainly excellent, seeing that Batu Lumbang Ecotourism implements community empowerment in the operational management being carried out.

Local Community Receives a Share of Ecotourism Activity Revenue

This indicator has also been well-implemented. The benefits obtained by the local community, especially the members of the Batu Lumbang Fishermen Group, include a daily income derived from accompanying the tour packages booked by tourists. All funds generated from the ecotourism activities will first be deposited into the fishermen's treasury as a profit of 10%, and the remainder will be divided for operational costs and for the fishermen who accompanied the tour package at that time. Therefore, it can be said that not all fishermen are active in accompanying the available tour packages. There are only 3 active tour guides and 4 active assistant tour guides. Furthermore, all members of the Batu Lumbang Fishermen Group receive a Residual Business Result (SHU) every six months in the form of a holiday allowance (for members who are Hindu) consisting of 5 Kg of pork and 250 thousand rupiah for spices. Members of other religions will receive the equivalent in cash, totaling 750 thousand rupiah in SHU. This SHU is given to the 100 members of the Batu Lumbang Fishermen Group. Based on the information above, it can be concluded that the community receives income from all ecotourism activities undertaken, both from ecotourism activities in the form of tour packages and culinary tourism. This greatly assists the local community's economy. However, it is a great pity that only a small number of members from the fishermen group are active in the operation of Batu Lumbang Ecotourism. From the explanation above, it can be stated that the indicator for local communities receiving a share of ecotourism activity income has been well implemented.

Accommodation Provided by Local Community as Hosts

From the information obtained, it is known that the community provides accommodation in the form of a Guest House. However, it is very unfortunate that there is only 1 (one) accommodation owned by the local community, even though accommodation for tourists is an asset that can provide a considerable income to the community. From the explanation above, it can be stated that the indicator for accommodation being provided by the local community as hosts has been implemented but is not yet optimal. Based on the interviews conducted, a brief description of the data obtained for the principle of providing financial benefits and empowerment for the community is that the local community certainly benefits from Batu Lumbang Ecotourism. These benefits include the provision of employment opportunities. Income from ecotourism activities is also provided in the form of SHU (Residual Income/Profit Sharing). Furthermore, the community also receives income from accompanying tour packages and income from the operation of Batu Lumbang Ecotourism in the form of a monthly salary.

Respecting Local Culture

The implementation of the principle of respecting local culture at Batu Lumbang Ecotourism will be described through the following indicators:

Respecting Local Culture

It is stated that before Batu Lumbang Ecotourism collaborated with Travel Agents who accompany International and local tourists, the managers had conveyed to the Travel Agent managers the rules that tourists must follow regarding the respect for local culture. These rules may include the prohibition of damaging nature and the appeal to respect local culture, especially Balinese Culture. This includes dress code, speaking etiquette, and behavior. Tourists who are menstruating are also not allowed to participate in activities that involve going out into nature. During the tourist activities, the number of tourists who commit violations is very minimal. Tourists who commit violations are usually given advice or the activity needed to be paused to conduct the ecotourism activity. However, some tourists tolerate this, such as an example involving a foreign tourist wearing relatively revealing clothing; after being reprimanded, the foreign tourist understood and was willing to change clothes in accordance with the applicable rules.

Contributing to International Understanding, Peace, and Human Prosperity

Batu Lumbang Ecotourism is an ecotourism site that adheres to sustainable principles, as seen from the ecotourism activities aimed at environmental protection, such as mangrove planting which is expected to prevent abrasion. Increasing mangrove planting also produces oxygen, which affects the air quality in Tuban. Furthermore, the activity of cleaning up flotsam/sent-in garbage carried out by the Batu Lumbang Fishermen Group has a very large impact on the environmental conditions, especially on the odor pollution caused by decaying trash. These various activities unconsciously provide benefits for the prosperity of the community in Tuban. Abrasion can cause the erosion of the land; if this erosion continues to occur, it will affect the condition of settlements located in the coastal areas. Good air quality influences the health condition of the Tuban community. Odor pollution caused by trash can also cause physical discomfort for the Tuban community. The community empowerment that is highly prioritized in the operation of Batu Lumbang Ecotourism activities greatly affects the prosperity of the Tuban community, their economy, and social well-being. Because most of the Bali area is a tourist region frequently visited by foreign tourists, the Tuban community is not surprised by the new cultures brought by foreign tourists; this is still tolerated if it is within a reasonable scale. This understanding of international or foreign cultures takes place spontaneously without any specific education provided regarding international understanding.

Supporting the Human Rights and Democracy Movement

The implementation of the principle of supporting the human rights and democracy movement in Batu Lumbang Ecotourism will be described through the following indicators:

Universal Respect for Human Rights

This indicator has been well implemented. Universal respect for human rights is applied in realizing all forms of programs at Batu Lumbang Ecotourism. The ecotourism provides the right to assemble and organize in a positive domain, which is seen from the management of Batu Lumbang Ecotourism being held by the Batu Lumbang Fishermen Group Organization. Meetings are held every 6 months, and during these meetings, members can voice their opinions regarding the operational continuity of Batu Lumbang Ecotourism. All members of the fishermen group of course, by respecting differences of opinion that will be resolved through deliberation to reach a consensus. Batu Lumbang Ecotourism also welcomes participation and accepts constructive criticism and suggestions. Besides being conveyed directly, criticism and suggestions usually take the form of reviews given by tourists on Google Review. There are several suggestions regarding existing potential for adding types of tour packages and suggestions regarding the addition of facilities that are still lacking. From the information obtained, it is known that Batu Lumbang Ecotourism gives universal respect for human rights. Looking at the reviews given by tourists, they suggested the need for construction repairs and having a special menu for children. This is true and needs to be done, where from the results of the observation, there are several buildings that need to be repaired.

IV. Conclusion

Based on all the discussions that have been conducted, the following conclusions can be elaborated: Ecotourism activities carried out by tourists are viewed from several aspects, namely the natural aspect, educational aspect, cultural aspect, and economic aspect. There are several activities carried out in the natural aspect, where these activities are done by directly engaging with nature to enjoy the scenery and observe various animals. These activities include planting mangrove seedlings, fishing with traditional boats or canoes, touring with traditional boats, and canoeing accompanied by environmental cleaning. All the described activities also contain activities related to the educational aspect. Thus, it can be said that tourists who perform these activities will always receive education about mangroves and education about maintaining environmental cleanliness. There are several other activities where the education provided is more specific, including the activity of making mangrove seedlings, the activity of providing information on mud crab cultivation, and the mangrove cooking class activity. The activities in the economic aspect consist of production activities and consumption activities. The production activities carried out at Batu Lumbang Ecotourism include several activities such as making mangrove seedlings, processing mangrove fruit, fishing activities, mud crab cultivation activities, and processing the catches into a cooking menu. Consumption activities are included in the activities of purchasing tour packages, purchasing processed mangrove fruit products, and purchasing food menus available at Batu Lumbang Ecotourism. Activities concerning the cultural aspect only involve culinary tourism, where there is one menu cooked with a typical Balinese seasoning, namely Bumbu Rajang. Thus, it can be known that most of the ecotourism activities cover 3 aspects: natural, educational, and economic, but the ecotourism activities in the cultural aspect are minimally highlighted.

Viewed based on the 7 principles of ecotourism, the manager of Batu Lumbang Ecotourism has not fully implemented the ecotourism principles, both in the form of activities and in the form of tourist facilities. Certainly, here is the English translation of the journal excerpt Ecotourism Principles Implementation Analysis: (a) The first principle is involving travel to natural destinations, which has 3 indicators. There is 1 indicator that has been well-implemented, which is the indicator that the destination is under national, international, communal, or private environmental protection. However, there are 2 indicators that have not been implemented, namely the indicator that the area constitutes remote regions and the indicator that the area may be inhabited or uninhabited, (b) The second principle is minimizing impact, which has 4 indicators. There is 1 indicator that has been well-implemented, which is the indicator to minimize the negative impact of hotels, trails, and infrastructure. However, there are 3 indicators that have been implemented but not yet optimally, namely the indicator of using readily available local building materials, the indicator that architectural design incorporates cultural elements, and the indicator of regulating the number and

behavior of tourists to minimize damage. (c) The third principle is building environmental awareness, which has 2 indicators: the indicator of educating tourists and local communities and the indicator of providing reading materials for tourists. Both of these indicators have been well-implemented. (d) The fourth principle is providing direct benefits for conservation, which has 1 indicator: the indicator that ecotourism development raises funds for environmental protection. This indicator has not been implemented. (e) The fifth principle is providing financial benefits and empowerment for the community, which has 3 indicators. There are 2 indicators that have been well-implemented, namely the indicator that local communities receive tangible benefits from ecotourism and the indicator that local communities receive a share of the income from ecotourism activities. However, there is 1 indicator that has been implemented but not yet optimally, which is the indicator that accommodation is provided by local communities as hosts. (f) The sixth principle is respecting local culture, which has 2 indicators. There is 1 indicator that has been well-implemented, but there is also 1 indicator that has been implemented but not yet optimally, which is contributing to international understanding, peace, and human prosperity. (g) The seventh principle is supporting human rights and democratic movements, which only has 1 indicator: universal respect for human rights. This indicator has been well-implemented.

From this discussion, it is mentioned that Batu Lumbang Ecotourism only fulfills all indicators in 2 ecotourism principles: the principle of building environmental awareness and the principle of supporting human rights and democratic movements. Although most of the indicators across the principles have been implemented, there are still several indicators within the principles that have not been implemented by the ecotourism site. This prevents the other principles from being considered fully met.

Acknowledgements

We would like to express our gratitude to the Rector of Udayana University for allocating funds for this research. We also extend our gratitude to the Batulumbang Mangrove Ecotourism Management Group, including Mr. I Wayan Pasek Pastika, Head of the Batu Lumbang Mangrove Ecotourism Management Group; Made Megantara Johannes, Secretary I of the Batu Lumbang Mangrove Ecotourism; and Anak Agung Dwi Yuli Andari, Secretary II of the Batu Lumbang Mangrove Ecotourism who contributed data and information related to this research.

References

1. Amtiran, Muni Imelda; SURYAWAN, Ida Bagus. Praktik Ekowisata Di Kampung Tradisional Bena, Desa Tiworiwu Kabupaten Ngada, Provinsi Nusa Tenggara Timur. *Jurnal Destinasi Pariwisata*, [S.l.], v. 4, n. 2, p. 100 - 102, dec. 2016. ISSN 2548-8937. doi:<https://doi.org/10.24843/JDEPAR.2016.v04.i02.p17>.
2. Angela, V. F. (2023). Strategi Pengembangan Ekowisata dalam Mendukung Konservasi Alam Danau Tahai. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, 8(3), 984-993. DOI: <https://doi.org/10.24815/jimmps.v8i3.24980>
3. Heher, S (2003) *“Ecotourism Investment and Development Models”*, School of Hotel Administration Cornell University.
4. Honey, M. (2008) *“Ecotourism and Sustainable Development : Who Owns Paradise?”*. Washington: Island Press. Jakarta: Rajawali Pers.
5. Latupapua, Y. 2007. Studi Potensi Kawasan dan Pengembangan Ekowisata di Tual Kabupaten Maluku Tenggara. *Jurnal Agroforestri Volume II No 1 Maret 2007*. Halaman 65-71. DOI:10.23960/jsl37267-276
6. Lumanauw, N., & Benazira, A. (2023). Potensi Ekowisata Mangrove Batu Lumbang sebagai Destinasi Wisata di Tahura Bali. *Jurnal Akademi Pariwisata Medan*, 11(2), 36-46. DOI: <https://doi.org/10.36983/japm.v11i2.491>

7. Mastari, Kadek, and Ida Bagus Suryawan. "Dampak Pembangunan Jalan Tol Bali Mandara Terhadap Aktivitas ekowisata di Ekowisata Kampoeng Kepiting, Tuban Bali." *Jurnal Destinasi Pariwisata* 8.1 (2020): 134-140.
8. Mursyid, H., Aji, K. B., Panuntun, M. D., Ihsan, M. A. F., & Pinem, M. L. (2022). Urgensi Pelestarian Ekosistem Lingkungan Fisik Pada Destinasi Wisata: Pengalaman dari Kawasan Ekowisata Hutan Mangrove Batu Lumbang, Denpasar, Bali. *Jurnal Master Pariwisata (JUMPA)* Vol, 9(1), 451-477.
9. Pendit, Nyoman S. 2010. *Ilmu Pariwisata Pengantar Perdana*. Jakarta: Pradnya Paramita.
10. Pynanjung, P. A. (2018). Dampak pengembangan ekowisata terhadap kesejahteraan masyarakat di Kabupaten Bengkayang: Studi kasus kawasan ekowisata Riam Pangar. *Jurnal Nasional Pariwisata*, 10(1), 22-38.
11. Suprayitno. 2008. *Teknik Pemanfaatan Jasa Lingkungan dan Wisata Alam*. Departemen Kehutanan. Pusdiklat Kehutanan. Bogor.
12. Suryawan, I. B. (2013). Pengelolaan Potensi Ekowisata Di Desa Cau Belayu Kecamatan Marga Kabupaten Tabanan. *Jurnal Analisis Pariwisata*, Universitas Udayana, 11, 106- 111.
13. Suwarsih. (2018). Pemanfaatan Ekologi dan Ekonomi dari Program Rehabilitasi Mangrove di Kawasan Pesisir Pantai Desa Jenu Kecamatan Jenu Kabupaten Tuban. *Jurnal Techno-fish* Vol 2(1), 12-18
14. UNESCO Office Jakarta. (2009). *Panduan Dasar Pelaksanaan Ekowisata*. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000185506>
15. Wardani, Wesnawa (2018). "Potensi Ekowisata Batulumbang di Desa Tuban, Kecamatan Kuta, Kabupaten Badung." *Jurnal Pendidikan Geografi Undiksha* 6.1