

Ecotourism Development Policy, Supporting Capacity and Development of Sustainable Tourism Facilities and Infrastructure in Raja Ampat Regency, West Papua Province

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Abstract

The purpose of the research is to incite the awareness of the government and stakeholders on the environmental carrying capacity of the sustainable tourism sector and the supervision of the development of facilities and infrastructure that are environmentally sound and provide added economic value to the development of local communities. Qualitative research methods are used in data collection by conducting direct visits to research sites, direct interviews with the tourism office of Raja Ampat Regency, tourism management communities, tour guides and homestay managers with research locations on Misool Island, Salawati, Batanta, and Waigeo Raja Regency. Ampat. The study results explain that a marine tourism location is vulnerable to coral and environmental damage caused by overexploitation; it requires strict supervision and supervision from all parties as well as binding regulations so that the carrying capacity of Raja Ampat is well maintained and sustainable. The construction of facilities and infrastructure must be planned and supervised to achieve green development in determining tourist locations, homestay building locations, development processes and environmentally friendly materials. Communities need to be empowered with funding assistance and operational management training for marine tourism and homestay management, using local wisdom in maintaining ecotourism sustainability.

Keywords: Raja Ampat; Environmental Carrying Capacity; Marine tourism; Coral Triangle; Sustainability.

A. INTRODUCTION

Raja Ampat Regency is a marine tourism destination based on ecotourism, which consists of a group of islands located in the Province of West Papua - Indonesia. The beauty of this island makes Raja Ampat one of the most popular underwater tourism icons in Indonesia; it has developed into an icon of Indonesian marine tourism and the international world and is known for its beautiful waters and corals, an attraction for tourists from abroad who come to enjoy the uniqueness of the island, and the beauty of its natural resources (Isti'anah, 2019).

In contrast to Raja Ampat, one of the world's top diving and snorkeling sites, Raja Ampat is distinguished by its breathtaking underwater beauty. Raja Ampat has been and continues to be a world-class setting for any style of photography, but since there is

always something happening, wide-angle lenses will preserve your memories more effectively. In addition to the marine life, you can dive or snorkel.

Raja Ampat offers many other activities that will allow you to explore this spectacular part of the world, including kayaking, village visits, jungle excursions, visiting small islands, and appreciating the flora and fauna of the region (<https://rajaampatbiodiversity.com/why-visiting-raja-ampat-is-essential>). With the finding of 1,104 species of fish, 699 species of mollusks (soft animals), and 537 species of coral animals, Raja Ampat possesses a high level of species diversity and uniqueness. Raja Ampat is not only rich in fish species, but also in coral reefs, seagrass beds, mangrove forests, and stunning rocky cliff beaches. This location has also been considered as a World Heritage Site by the Indonesian government. The development of ecotourism firms is a further intriguing possibility (Park et al., 2015).

The Raja Ampat Islands have a variety of ecosystems, such as tropical rain forests, savannas to mangroves in their coastal areas, where all of the underwater and land beauty of Raja Ampat has attracted foreign, domestic and domestic tourists to visit (Ricardianto et al., 2017). In addition to the natural beauty both under the sea and on land, the uniqueness of indigenous Papuan culture in Raja Ampat has also become an attraction for visiting tourists, such as tribal dances, wooden musical instruments, customs and rituals, traditional clothing, traditional weapons, carvings and sculptures, made of wood, ancient ancestral food, typical sago food and archaeological sites of prehistoric cultural patterns in Raja Ampat (Maturan, 2019).

Various obstacles in developing Raja Ampat as ecotourism are local endangered species in this area, such as turtles, sharks, whales, manta rays, dugongs and dolphins (Nikijuluw et al., 2017). For this reason, it is necessary to prepare the Raja Ampat waters to meet the requirements as a conservation area as well as a world tourism destination area, and at the same time as an area that is managed or managed sustainably.

To ensure the long-term viability of each potential resource, tourist development in Raja Ampat Regency must incorporate the notion of ecotourism, or environmentally responsible tourism. What is meant by environmentally friendly tourism is a sustainable tourism activity that does not have a negative impact on the environment, does not damage the social order, has an economic impact on the local population, does not produce pollution and most importantly, does not reduce the quantity and quality of natural resources (Dolnicar, 2020).

Another obstacle faced is the development of tourism in the Raja Ampat Islands (Irani a. Yunita 2019) in connection with the increasing number of tourist visits, especially the number of visits to villages spread across the small islands of the Raja Ampat Islands. In its development, there are several problems in tourism management, including low involvement of indigenous people in managing tourism businesses and environmental damage caused by visiting tourists and local communities. The development of tourism in the Raja Ampat Islands, especially in the development of the accommodation tourism

industry in tourist attraction locations, demonstrates that the management of the tourism industry is still dominated by foreign parties and parties from outside the Raja Ampat Islands, making it one of the government's and stakeholders' immediate responsibilities to take action (Adesetiani & Kolopaking, 2022).

As one of the supporting areas that is particularly beneficial to the Indonesian economy, the global tourism industry's development is accelerating from year to year. Due to the COVID-19 epidemic, the global tourism industry is witnessing an alarming downturn. The tourist industry in Indonesia is presently undergoing considerable expansion. In addition, the government states that tourism, as a tool of development, can become the second-largest source of foreign cash after oil and gas. In Indonesia, tourism contributes to foreign exchange, GDP, and employment. In 2018, the tourist sector contributed 5.25 percent to the national gross domestic product, had a total foreign exchange of 229.50 trillion rupiah, and employed 12.7 million people.

Excessive expansion of tourism infrastructure leads the protection of the tourist area's uniqueness to be neglected and undermined by the mass tourism business. One of the goals of ecotourism must be able to describe the value of environmental wisdom and, at the same time, invite people to appreciate anything even though it seems very simple (Prihanta et al., 2020). In essence, simplicity guides the community around the tourist area to maintain its natural sustainability; thus, the involvement of various parties as supervisors becomes very important.

The cultural evolution of the indigenous populations surrounding the ecotourism area, which is distinct from that of the tourists, must also be considered. Whether we are aware of it or not, a cultural transition could lead to the extinction of the original civilization. Indigenous populations and tourists will have a connection and mutual respect in an ideal ecotourism region (Tanati, 2020).

The principle of environmental carrying capacity is considered where the level of tourist visits and activities in an ecotourism destination is managed according to acceptable limits in terms of nature and socio-culture (Faiz & Komalasari, 2020). Various experiences in several areas have served as a warning for Raja Ampat district to immediately anticipate the impact of excessive tourist arrivals causing damage to coral reefs and forests around tourist sites, as experienced by Bunaken National Park, North Sulawesi (Manumpil et al., 2019) (Schaduw, 2016).

In some countries, such as tourism in Iceland and many other countries, over-tourism brings positive and negative impacts. When compared and weighed, the more dominant impact that appears is the negative impact and will kill the tourism business, which was initially a regional flagship but will eventually die slowly (Antonova & Rieser, 2019).

The novelty of this article provides guidance to tourism industry players and stakeholders on ecotourism-based tourism policies, environmental carrying capacity and the development of sustainable tourism facilities and infrastructure to mitigate the

environmental damage caused by visitor activities by prioritizing approaches the industry can utilize to build new interventions independently. The objective of the research is to raise awareness in the field of environmentally sustainable tourism and environmental carrying capacity, as well as to contribute to the economic growth of local communities.

B. METHOD

Research Methodology

Qualitative research is used because prior knowledge is not substantial about the concept; therefore, it is necessary to introduce and clarify concepts and develop priorities for further research. The research population comprised tourism stakeholders in Raja Ampat Regency, tourism management communities, tour guides and lodge managers, namely Misool Island, Salawati, Batanta, and Waigeo. The selection of this tourist location is based on the fact that most cultural and natural tourism takes place on the four islands. The interview method was obtained from secondary data and mixed results from previous studies. The results of interviews, focus group discussions, and direct observations at the study site were also used to enrich the analysis.

Description of Research Site

Raja Ampat Regency is one of the regencies in West Papua Province, which is in the form of an archipelagic regency. Raja Ampat Regency consists of 11 districts covering 85 villages in an area of 6,084.5 km². The total population is 95,770 people (Source BPS, 2018).

Geographically, Raja Ampat Regency is located at coordinates 00° 30.33" North Latitude - 01° South Latitude and 124° 30.00 - 131° 30 East Longitude. Administratively, the boundaries of the Raja Ampat Regency are as follows: a) In the south, it is directly adjacent to North Seram Regency, Maluku Province; b) In the west, it is bordered by Central Halmahera Regency, North Maluku Province; c) In the east, it is bordered by Sorong City and Sorong Regency, West Irian Jaya Province; and d) Northside is directly adjacent to the Pacific Ocean.

The Raja Ampat Islands are located in the heart of the world's coral triangle (CoraTriangle) and are the centre of the richest tropical marine biodiversity today. The livelihoods of the Raja Ampat community are fishermen and gatherers by utilizing geographical conditions and natural resources (marine and land resources) for activities that support marine tourism.

C. RESULT AND DISCUSSION

Ecotourism is a subset of sustainable tourism that reflects meeting the needs of the present generation without compromising the ability of future generations (Wondirad et al., 2020), consisting of cultural, rural, and natural tourism aimed at preserving biodiversity; maintaining the welfare of local communities; including experiential learning; requiring the lowest possible consumption of non-renewable resources and petrochemicals (Erku, 2011; Rihena et al., 2020).

The general qualities of ecotourism must satisfy the following criteria: Small visiting groups, rural locations, eco-marketing activities, and a high price to filter the market. Little impact on the natural environment and few controllable variables, management based on regional economic concepts, individualized ties between tourists and the community, Local development objectives, Loyalty in the training and teaching process for environmentally responsible behavior, Reduced construction of tourist amenities (Dorobantu, 2012; Phoek et al., 2021).

Ecotourism Development Policy

Law Number 10 of 2009 pertaining to Tourism also states that the implementation of tourism is intended to increase national income in order to improve the welfare and prosperity of the people, expand and equalize business opportunities and employment opportunities, and encourage nature tourism as a prospective type of tourism, because in addition to serving as a source of regional original income and foreign exchange for the country, it also serves as a source of regional original income. This source of revenue derives from the money spent by tourists and is proportional to their length of stay. It is also anticipated that nature tourism will ensure the conservation of natural resources and provide economic growth for the community. Ecotourism development policies can be understood within the context of national interests, as articulated by the laws and government rules governing ecotourism development policies:

The Minister of Tourism and Postal Decree No. KM.98/PW.102/MPPT-1987 about Tourism Object Business Provisions. No.Kep.18/U/11/1988 Decree of the Director General of Tourism Regarding Provisions for the Business of Tourism Objects and Tourist Attractions. Joint Decree of the Minister of Forestry and the Minister of Tourism, Post and Telecommunication No. 24/KPTS-11/89 and No. KM.1/UM.209/MPPT-1998 on Improved Coordination of the Two Agencies for the Development of Nature Tourism Objects as Tourist Attractions. The Conservation of Biological Natural Resources and Ecosystems Law No. 5 of 1990. Act No. 9 of 1990 relating to Tourism. Ratification of the Biodiversity Conservation Law No. 5 of 1994. Government Regulation No. 13 of 1994 pertaining to Natural Management in the usage zone of nature conservation areas. Government

Regulation No. 67 of 1996 pertaining to Tourism Implementation. The following factors should guide the development policy for ecotourism:

In development, it is highly recommended that infrastructure and facilities be carried out as needed, not excessive, and using materials found in the area (Mirsanjari, 2012). Efforts are made to keep modern technology and facilities to a minimum. Development and activities in the project involve local residents as much as possible to improve the local community's economy (Heryati, 2019). Local people are encouraged to maintain their daily customs and habits without being affected by the arrival of visiting tourists.

Mahenye has not been conserved as a result of the unfavorable financial improvements in the nation after the year 2000, which have resulted in bad outcomes and considerable obstacles for ecotourism activities. Changes in the natural environment have an effect on the primary components of an ecotourism attraction, including natural life assets, comforts, attraction, accessibility, administration framework, marketing, receivers, and connections. Given this context, it becomes essential to develop elements that ensure ecotourism efforts can adapt to shifting socioeconomic conditions and become robust in the face of setbacks. This asserts that ecotourism initiatives must be commercially, socially, and biophysically sustainable in order to be profitable. Political stability is also essential for the success of ecotourism endeavors. To respond effectively to emerging threats such as zoonotic diseases and pandemics like COVID-19, effective approaches must be created. These zoonotic diseases and pandemics have increased arguments for restricting the trading of wild animals. This is frequently the case because the majority of these growing resistant illnesses begin in natural life (Santana, 2020). These developments have an impact on broader ecotourism issues. The spread of COVID-19 has resulted in lockdowns, travel restrictions, and the closing of tourist offices and enterprises. In tropical savanna ecosystems and elsewhere in the world, it is essential to develop administration systems that allow ecotourism excursions to remain adaptable in the face of shocks caused by a changing local environment (Mudzengi et al., 2021).

Ecotourism includes a considerable financial impact in today's advanced period (Salman et al., 2022; Gültekin, 2022). It produces business for the goal and gives the community an elective source of salary (Nguyen & Tong, 2022). They have monstrously benefits from ecotourism, but their viable execution is challenging due to the multi-stakeholder nearness in a range (Üllenberg et al., 2015). Partners have an impressive effect on the goal; in this way, knowing who they are and how to handle them is basic. In this manner, accomplishing economic ecotourism without recognizing and overseeing the partners is considered unreasonable. Partner administration is the honing of routinely characterizing, evaluating, planning, and executing activities to lock in partners (Swangjang & Kornpiphat, 2021).

Ecotourism is committed to returning benefits to the surrounding community by promoting not biological but also financial support (Rocha et al., 2022). This is done by

preparing residents to become ecotourism guides. The advancement of environmental knowledge should be a goal for every ecotourism company. However, most of the training programs are developed in western countries and then adapted to businesses in developing countries (Rej et al., 2022). These programs require a certain capacity (e.g., lack of computer education, higher teaching) from members that cannot be anticipated from developing country members. Even though the workshops are conducted by the main creator, who grew up and lived in the area of consideration, the instructions are Western influence. This may affect the thinking plan and thus cause restrictions for the close initial members.

Based on this experience, training and mentoring were needed to ensure that all members seemed to try the workshop in English; it was later found that some members may speak but not learn English.

Building Based on Carrying Capacity

Understanding the carrying capacity of the environment, it can be formulated the carrying capacity of the tourism environment, namely the ability of the environment (nature) to accommodate tourism activities in a maximum amount that does not damage the existence, existence and sustainability of the environment (nature) in the future. Law Number 32 of 2009 also defines environmental capacity as the ability of the environment to absorb substances, energy and other components that enter or are included in it, understanding that the environment can accept tourism activities without destroying nature and the existing environment.

The preparation of the carrying capacity of tourism is closely related to the concept of sustainable development, which is applied to ecotourism principles (Thies, 2011). The 2010 Quebec Declaration on Quebec Declaration on Ecotourism states that ecotourism is tourism that applies the concept of sustainable tourism with the principles: a) Playing an active role in environmental conservation, both natural and cultural heritage; b) Involving local and indigenous communities in their planning, development and operational activities and beneficially improving their welfare; and c) Allowing tourists, both independent travellers and small groups of tourists on organized tours, to enjoy them in a better way.

Based on the carrying capacity of 10 types of tourism, the potential for tourism development in Raja Ampat reaches 91,275 people per year (Sutrisno, 2017). However, Raja Ampat's natural tourism resources can accommodate or support 7,675 visits on the same day. If a tourist visits 3-4 types of tourism in one day, the carrying capacity of Raja Ampat reaches 2,103 tourists.

Of this total carrying capacity, 96% is the carrying capacity of marine tourism. The five biggest potentials that contribute about 80% of the total tourism carrying capacity of Raja Ampat are in row; swimming throughout the Raja Ampat area, beach excursions consisting of sand-bathing and beach-based activities throughout the

Dampier and Misool Region, kayaking in the Dampier Strait, diving in the Dampier Strait and diving in South East Misool. The distribution of visitors in recent years can be illustrated in the following table:

Table 1. Number of tourist visits

Traveller	Number of Tourist Visits						
	2014	2015	2016	2017	2018	2019	2020
Overseas	10,759	12,011	13,616	18,841	23,099	24,090	7,076
Domestic	7,691	10,251	12,472	17,250	20,811	22,285	514

Source: Central Bureau of Statistics (BPS)

The increasing number of visitors yearly needs the policy to fulfil tamping capacity. This policy will impact ecosystem maintenance and environmental damage due to the overload capacity. Suppose the government, other stakeholders, and the community do not manage it properly. In that case, it will lead to environmental degradation because the development of tourism activities will impact the surrounding environment. Other impacts of tourism activities can lead to a decrease in environmental quality, such as the unclean environment due to the many developments in tourism areas, the destruction of coral reefs due to the activities of diver tourists, and fewer resources that can be managed and utilized (Khrisnamurti et al., 2017).

The ecotourism natural carrying capacity refers to the acceptable number of tourists that may be accommodated in a certain area, which not only meets the needs of tourists and benefits the tourism business, but also protects the environment and reduces its impact. In this analysis, the pointer framework of natural carrying capacity was constructed, and calculations were performed based on this premise. The ecotourism natural carrying capacity framework consists of four components: asset natural carrying capacity, biology natural carrying capacity, brain research natural carrying capacity, and tourist natural carrying capacity. The value of ecotourism's natural carrying capacity is not the sum of its parts, but rather the lowest value assigned to each part (Zhao & Jiao, 2019).

According to the findings, the incorporation of indigenous knowledge and practices into the development of sustainable marine ecotourism is the incorporation of local knowledge as a means to enable the active participation of local communities in the development of marine ecotourism to preserve biodiversity and maintain cultural and traditional landscapes (Tjilen et al., 2018). The concession agreements between marine ecotourism operators and local indigenous peoples permit the incorporation of marine sasi into marine ecotourism sites in order to protect marine life for the biodiversity value that tourists cherish. In contrast, local residents can continue fishing or traditional resource use in a sustainable and environmentally responsible manner.

The current consideration offers a few critical hypothetical contributions. In the first place, the inquiry and analysis have contributed to the ongoing conversation on practically all of the important focuses and shortcomings in ecotourism enhancement by examining broad writing. In support of this conclusion, the research findings indicate that ecotourism contributes to ecological preservation and social recuperation and improves the lives of the local people. In settings with multiple populations, such as Raja Ampat, ecotourism is unquestionably secondary to the community's active participation in ecotourism activities. Current research proposes that key stakeholders' association and collaboration with the management specialist can advance partnerships among partners, improve the destination's fiscal conditions, expand market opportunity, and increase destination competitiveness, thereby increasing the destination's benefits (Gültekin, 2022; Salman et al., 2021).

Sustainable Tourism Facilities and Infrastructure Development

Sustainable tourism development can be explained as an activity that minimizes costs and maximizes tourism benefits for the sake of the natural environment and local communities and can be carried out indefinitely without destroying resources. Tourism (Li li ane Pasape, at all, 2014) (Phoek & Tjilen, 2019). If tourism resources are the natural environment, sustainable tourism does not damage natural resources. Tourism infrastructure consists of the natural resources, human resources, and housing facilities that tourists require to travel to tourism locations, such as roads, electricity, water, telecommunications, terminals, bridges, etc (Kristiana et al., 2018).

Some of the researcher's suggestions that become references in sustainable tourism development are described as follows:

1. The principle of physical development without destroying the landscape of the sea and land needs to be implemented. The findings explain that investors and the public are aware that the construction of hotels, resorts and homestays has been aware of maintaining environmental conditions and land contours, but is still constrained by the limitations of sufficient land for the construction site, so land clearing is forced, several trees and building materials that are not suitable—forced to be cut down and used as building materials. While development using coastal reclamation is not carried out, for coastal stretches, it can be done by making stilt buildings that can add to the beauty and beauty and overcome the shortage of freshwater sources and loss of species.
2. The principle of localization of physical development risks needs to be applied. This principle is that not all places must have permanent physical buildings. For example, a hotel with permanent construction does not have to be built everywhere. The finding that the location chosen to meet the needs of a place to stay is not all following government directives, this results in transportation costs and

supervision of tourists being difficult to implement, this is not following the direction of the hotel development as an option, so this is done without changing landscape and carried out only in certain places, for example in the district capital.

3. The principle of prioritizing the development of tourism facilities should prioritize local investment. One of the important elements of sustainable tourism is community involvement in investment and share ownership. Based on this principle, it is recommended that the construction of community-owned homestays be the main choice in preparing residential accommodation for tourists. If you have to build a resort, green resorts (minimizing tree cutting, efficient use of water and energy, managing waste) should be an option. The results of the observations explain that local people have limited capital to build a resort, so it is expected that land ownership by the community should be used as their share in physical development.
4. In addition to the existing homestay or community guest house, the community's house or residence can be developed as a homestay. That way, the community will benefit directly from the progress of Raja Ampat tourism. The process of mutual learning and respect can also occur. To achieve this, local governments need to issue standard guidelines for residential houses used as homestays and help the community structure their homes and space as a place to live.
5. Developing environmentally friendly electricity facilities has become an obligation in developing lodging areas, so the construction of lodging must use solar cells. However, in implementation, there are still quite a lot of people who still use diesel fuel, which can damage the environment.

D. CONCLUSION

The study results explain that a marine tourism location is vulnerable to coral and environmental damage caused by overexploitation; it requires strict supervision and supervision from all parties as well as binding regulations so that the carrying capacity of Raja Ampat is well maintained and sustainable. The construction of facilities and infrastructure must be planned and supervised to achieve green development in determining tourist locations, homestay building locations, development processes, and environmentally friendly materials. Communities need to be empowered with funding assistance and operational management training for marine tourism and homestay management, using local wisdom in maintaining ecotourism sustainability.

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