

Sustainability ecotourism in Ujung Kulon National Park, Banten

Abstract

The Ujung Kulon National Parks (UKNP) is one of the most-strategic national parks in the island of Java with a population of 70% of the population of Indonesia. The national park is also located near the international airport. It closed to the capital city of Indonesia. The park is urban green area for them. However, research on the park is still lacking. Furthermore, the UKNP very rarely encountered or found in the literature. Its' role as the oxygen's producer for the communities. This study analyzed the sustainability of tourism in UKNP. Result analysis indicated the tourism ministry staff is expecting to utilize natural resources for ecotourism activity and local communities' cultural values, and social development as the first and second highest values. Instead, educating local communities to minimizing or mitigate negative environmental impacts, get the least ratings. The study found that UKNP implements the concept, but because of a lack of understanding - empowerment of communities in dealing with and solving problems caused by increasing urbanization and community housing development, as well as enhanced tourists' awareness. The result indicates the need for further in-depth studies to understand and manage the problem.

Keywords: sustainable ecotourism, the Ujung Kulon, national parks

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Introduction

The annual number of tourist in the UKNP are hard to estimate. An annual visitation could not increase and estimated precisely. While, other resources had mentioned proportionally the number of tourists up to 0.04 million per year as quoted from the main target of the Ministry of Tourism (see Table 1, for the benchmark of prominent national parks). A German Botanist, named F. Junghun (1846) the first introducer the UKNP. At that time, he was collecting tropical plants that have begun to be known by the researchers. The trip to the UKNP was enrolled briefly in a scientific journal a few years later. Subsequently, beginning in 1921, The Netherlands Indies Society for The Proctein of Nature recommended the UKNP Peninsula and Panaitan Island as a Nature Reserve Area.¹ Aside from being a rare animal conservation area of Java rhinoceros and a number of other animals, the UKNP region stores several of the marine tourism potentials as well as exotic beaches that are very beautiful and rich. The UKNP region is rich in natural resources, flora and fauna. It listed as one of the seven recognized conservation areas in the world. The research has conducted to redound - conceiving the parks in urbanizing and industries. (Figure. 1)

Table 1 Comparison of prominent national parks

National Parks	Area	Annual numbers visitor
Scottish highlands, UK ¹	30,659 sq. km	3,50 million
Grand Canyon, Arizona, USA ²	4,926 sq. km	5,90 million
Fiordland, New Zealand ³	12,607 sq. km	0,20 million
Kruger, South Africa ⁴	19,485 sq. km	0,16 million
Ujung Kulon, West Java, Indonesia ⁵	1,206 sq. km	0,04 million

Data sources: 1. <http://www.visitscotland.org>; 2. <https://www.nationalgeographic.com>; 3. <http://www.doc.govt.nz>; 4 <https://showme.co.za>; 5. <https://www.suara.com>

The presented study is about sustainability ecotourism in Ujung Kulon Nasional Parks (hereinafter referred to as UKNP). The UKNP is one of six National Parks in Indonesia Including World Heritage

Sites. It represents world's parks and features a plant and animal of over 700 species representing tropical plant trees, Rhino, etc. The park is important and is the lungs of the earth in Indonesia from the activities of photosynthesis of tropical rainforests can lower levels of carbon dioxide (CO₂) in the atmosphere, which means it can be healthy residents.

- i. The UKNP (122 ha) represented urban park that served the oxygen for Java Island the Jawa islands and close to the capital city of Jakarta;
- ii. The UKNP is located in the Jawa Island was occupied by 70 percent of Indonesia's population.
- iii. The UKNP is well connected to the largest and busiest airport in Indonesia (up to 60 million passengers per year) namely Soekarno-Hatta International Airport.



Figure 1 Location of the Ujung Kulon National Parks: area 122 ha, Latitude DMS: 6°47'39.67"S, Longitude DMS: 105°30'23.8"E, annual rainfall of approximately 3,250mm, Elevation: 36.08 Feet (https://www.distance.to.com/coordinates/id/jalan-taman-nasional-ujung-latitude_longitude/history/136854.html; www.google.com).

Several previous researchers studied the development of national parks with the problems of building and developing sustainable architecture,¹ sustainable economic development,² and community empowerment.³ There is 3 criteria of sustainability.^{1,4,5} Firstly, integrating and utilizing nature-based management. Secondly,

Emphasizing socio-economy – rural communities. Finally, Managing policy eco-tourism-based. The problem of ecotourism sustainability in UKNP is the aim at this study. Due to time constraints, related studies can still be carried out which included analysis of environmental policies and women's empowerment in supporting the regional economy.

Literature review

Almost 63 journals assess sustainable tourism and discussed in national parks. Meanwhile, Weaver (2010) assessed the evolution of links between tourism - indigenous peoples over 200 published journals on indigenous tourism in Australia, Canada, New Zealand and the United States. Meanwhile, Oulanka national parks managers in Northeast Finland (290 sq. km) undertook socio-cultural development related to tourism that includes: (1) integrating nature-based tourism and conservation,⁶ (2) emphasizing the utilization of the socio-economics⁷ and (3) managing policy ecotourism-based and national park development.⁸ Although local stakeholders mostly have a positive perception of tourism in the park, there are major problems such as the lack of opportunities and the contradictions of participation in traditional subsistence economies.⁹ The various stakeholder positions in this discourse tend to influence their view of sustainability.^{10,11} In many tropical areas, human-wildlife conflicted inhibit local community supported for ecotourism in national parks. With economic contributions to the local population, increasing conservation. In addition, the program also promotes the sustainable use of non-timber forest products.^{12,13}

As a note, ecotourism is a tool for promoting conservation that affected positive perceptions significantly and villagers are more aware on the program.¹⁴ In addition, they benefit economically. The program enhances better knowledge of sustainable use of ecotourism. Other socio-economic factors such as education and income also affect their attitudes in managing natural resources.^{15,16}

Thereby, ecotourism in protected-areas¹⁷ is growing rapidly around the world. The national park has great potential for ecotourism¹⁸ activities that include utilizing natural resources for ecotourism activity and contributing economics to local people.¹⁹ Besides, it enhanced tourists' awareness in maintaining nature conservation,⁴ local community culture and social development as they travel.²⁰ In addition, managers promote and educate local communities²¹ and tourists to safeguard biodiversity and other landscapes from NP holistically to minimize or mitigate negative environmental impact.²²⁻²⁴

Method

This quantitative and qualitative study was conducted from October 2016 to October 2017. Primarily, reviewing relevant information and literature that associated with tourists, travel agent, related departments of national parks. More than 150 questionnaires returned (Table 2). This seven months study started in December 2016.

The outcome indicated: (1) utilizing natural resources for ecotourism activity;^{25,26} (2) contribute socio-economics to local people;^{7,27} (3) enhanced tourists' awareness.^{28,29} Besides, (4) local community cultured and social development;^{29,30} (5) It promoted and educated local communities;^{8,12,31} and (6) it mitigated negative environmental impacts.^{14,32}

The indicators concede to ratifying sustainability. It squarely, on these criteria. Firstly, integrating and utilizing nature-based tourism

and conservation.^{30,33,34} Secondly, emphasizing the utilization of the socio-economy and cultural experiences with benefits to rural communities.^{6,34-36} Finally, adapting ecotourism and national park development.³⁷ We excogitated two semi-structures, where above indicators were utilizing - acquired corroborative answer:

- i. Utilizing natural resources for ecotourism activity and local communities' cultural values
- ii. Contributing socio-economics to local people around National Park
- iii. Enhance tourists' awareness in maintaining nature conservation
- iv. Local community culture and social development as community benefit of tourists' travel activities
- v. Promoting and educate local communities and tourists to safeguard biodiversity and other landscapes from national park holistically based on institutional development - legislative frameworks
- vi. Minimizing or mitigate negative environmental impacts and adverse effects of social organization-dynamics

And

- i. The National Parks is integrating and utilizing nature-based ecotourism management
- ii. Emphasizing the utilization of the socio-economy with negligible benefits of rural communities
- iii. The National Park managing policy ecotourism-based

The statement was converted into questionnaires by asking the respondents to communicate their approval for the Likert scale (Boone and Boone, 2012) through five levels from 1 (strongly agree) to 6 (strongly agree).^{38,39} It analyzed with content analysis,⁴⁰ it mentioned as Kappa coefficient (K),⁴¹ as well as performed by SAS/STAT.⁴²

This study also organized two group discussions. Firstly, 75 respondents discussed about Sustainable ecotourism in Ujung Kulon National Park (Figure 1). Secondly, the group discussion participants were started from general discussions to figure out the appeared from the survey was a representative.¹²

Table 2 Respondent groups

Group of Respondents	Number of respondents
National and international tourists	15
Banten travelled agents	8
Department of tourism staffed members	10
Taxi drivers	14
Public car drivers	16
Captain and skipper of a speedboat	15
The TNUK reservation and other officers	9
Social and Environmental Impact Assessment	11
UKNP local community	15
Tour-guides	12
Rangers	8

Result and Discussions

The study establishes several visitor in UKNP. Utilizing natural resources for ecotourism activities is the most valued by respondents (Table 3a). The respondents were directed to assess the culture of local communities and social development as supporting community benefits from tourist tourism activities that support socio-economic

contributions to local communities with each of the second and third highest rating ratings. In contrast, Promoting and educate local communities and Minimizing or mitigate negative environmental impacts are ranked lower. Apparently, efforts to minimize or mitigate negative environmental impacts and the effects of the ecotourism's dynamics activities and of social organizations were classified as somewhat lack of an environmental management. The results of ecotourism sustainability assessment at the UKNP (Table 3b) are in accordance with management sustainability (Table 3) with closing assessment of Kappa coefficients (K) of 0.5926 and 0.5930 for ecotourism and management, successively.

Table 3a Sustainability of management in the Ujung Kulon National Parks

Indicators	Value	% Freq
Utilizing natural resources for ecotourism activity	42	0,2625
Contributing socio-economics to local people	28	0,1750
Enhanced tourists' awareness	23	0,1438
Local community culture and social development	30	0,1875
Promoting and educate local communities	19	0,1188
Minimizing or mitigate negative environmental impacts	18	0,1125
Coefficient Kappa = K =	0,5926	

Table 3b Sustainability of ecotourism in the Ujung Kulon National Parks

Indicators	Value	% Freq
Integrating and utilizing nature-based management	40	0,494
Emphasizing socio-economy - rural communities	18	0,222
Managing policy ecotourism-based	22	0,275
Coefficient Kappa = K =	0.5930	

The K value of nearly 0.6 indicates an opinion of respondents. Table 3b figure out the sustainability of UKNP. However, the analysis of studies shows an already high resource utilization rate. While, socio-economic profitability from ecotourism-based management remains unclear and requires further study of optimization. An increase in the number of tourists without adequate infrastructure upgrades or improvements can cause more harm and negative environmental impacts than good. Right now, an important issue in the UKNP is an accessibility. It would adjust the public to visit the Ecotourism Park. Obviously, the poor condition of infrastructure and travelling cost to the park is very expensive.⁴³ This image built in society. Specifically, the space is only for high-income users or the elite. The most important, all the guidelines on the park is a cultural asset and the development of Banten Provincial social community for the whole nation. While, the national park area is very important and benefit from various parties. The government needs to coordinate with UKNP to improve the excellence in the park, by step-up the improvements of infrastructures or the roads gradually. Furthermore, causing the area of UKNP to be an ecotourism area must also be prepared carefully, in order to accommodate tourists that come and still can follow the rules set by the management park. That cannot come haphazardly to a place that is a forbidden zone. In essence, these activities must be linked to communities and tourists in protecting the protected forests together.

The results of this study indicate the utilizing natural resources for ecotourism activity that do not damage the environment and pay attention to local community culture and social development. Although, the importance of using non-destructive resources for ecotourism on an ongoing basis is self-evident, local community culture and social development may not be as clear to the UKNP. Nevertheless, natural environment with the cultural authenticity of local communities can be the most important motivation for most travelers such as in Canada,⁴⁴ Maldives and Nepal, Spain⁴⁵ mentioned

80% of ecotourism success is social communication with local people. Sustainable tourism indicators of community-based ecotourism businesses are the success of conservation programs and the quality of community-park relationships. In addition, the sustainability of park management requires the participation in local actors and the surrounding social organizations. The role of government in general determines the success of park management in particular and in the process of development of local communities with communities to enhance their partnership with national parks. Social, economic, scientific and political changes in places where there are protected areas and in urban centers that control these areas. In the end, the increased development in the region reversed the land covered trend did not accompany by forest conservation strategies being the impact on accommodation associated with nature-based tourism operations.

This low rank coincides with the indicators of poor management at the park. It can make the tourists not satisfied. In particular, respondents did not assess the government's role in infrastructure and transport management or accessibility to reach the park. Furthermore, the situation of the utilization of the TNUK buffer zone area depicts most of it is not suitable to plan expansion of existing utilization such as rice field, wetland forest and mixed garden. The buffer zone of the park has potential objects and natural tourist attraction that deserve to be developed. In addition, forest encroachment, timber theft, poaching, livestock grazing in the area and management issues are institutional problems, human resources, facilities and infrastructure, and other technical issues.

The population of Java rhinoceros (*Rhinoceros sondaicus*) was monitored in 2017. It is known that the minimum number of Javan rhinoceros population of the TNUK currently only reach 67, consisting of 37 males and 30 females individuals (Putri, 2018). This happens to the settlements of residents within the park, especially in the border region. Rice fields and fields are also increasingly urgent into the area of the parks. In addition, there was a conflict between communities around the area and the management of the TNUK areas about the utilization of space and natural resources. It became one of the source of livelihoods surrounding communities. Meanwhile, the situation of spatial use of park area buffer was illustrated. It is not suitable for expansion plan for utilization such as rice field, wetland forest and mixed garden. In fact, the park buffer area has the potential for objects and natural tourist attraction worthy to be developed.

Towards the sea, this park has various types of mangroves, swamps, and marine fish. The most common types of mangroves are *Lumnitzera racemosa*, *Avicena sp.*, *Rhizophora*, *Sonneratia alba* and *Bruguiera sp.*, Sometimes there is *Nypa fructicans* and swamp fern (*Acrostichum aureum*) in brackish river estuaries. Extensive mangrove forests are found in a broad strip along the northern side of the isthmus extending north along the coast of the Cikalong River and Legon Lentah Panaitan Island on the Ujung Kulon Peninsula.

Furthermore, the park has this forest characterized by the species *Thypha angustifolia*, *Cyperus sp.*, *Cyperus pilosus* and *Ardisia humilis* that sometimes form pristine stands. Trees found in this area belong to the Palmae family, such as *Salacca edulis* and *Caryota mitis*. This forest is generally adjacent to the rain forest. This seasonal swamp forest is located in the northern part of the Ujung Kulon Peninsula.

In this park, tourists can find various types of fish that live in rivers and in the sea. The fish there is angel fished (*Pterophyllum scalare*), lionfish (*Scorpanidae sp*), parrotfish (*Scarus croicensis*), glodok fish (*Periothalamus sp*), chopsticks fish (*Toxotes microlepis*), butterfly fish (*Chaetodontidae sp*).

Conclusion

The results indicated economic contribution to the local community becomes main issue that needs to be improving on UKNP. Local government efforts are needed to implement several elements of sustainable ecotourism management. This can be strengthening by updating tourism management policies of UKNP. Given the abundant biodiversity in UKNP, both for marine biota as well as animals and plants out the core zone, it becomes an ecotourism attraction in UKNP. However, there are still other updating environmental care, infrastructure and ecotourism policy issues need attention on local governments. Obviously, deeper studies are needed for better understanding and management of the problem. In particular, weak monitoring may be a phenomenon that exists on the rapidly developing as well as in the regions. The reported findings are also relevant to urbanization in developing countries in general.

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Conflicts of Interest

Author declares there are no conflicts of interests.

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