

Impact Of Tourism On Physical Environment In Bali Province

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Abstract. This research focuses on two issues, namely 1) what is the impact of tourism on the physical environment in Bali Province?, 2) What are the efforts made on the physical environment to avoid the negative impacts of tourism in the Province of Bali?. The research method used is the normative legal research method. Tourism in the Province of Bali, is a series of activities carried out by tourists who directly touch and involve the community, thus bringing various impacts on the local community and also on the environment, primarily the physical environment. Bali has a physical environment in the form of natural environment (flora and fauna; natural landscape; and natural phenomena) and an artificial environment (cultural sites, rural areas and historical heritage). The impact of tourism on the physical environment in the Province of Bali, namely: beneficial / positive: Water, Air, Beach, Mountains, Animal life, historical, cultural and religious sites, as well as urban and rural areas. While the impacts that are detrimental / negative namely: water pollution can occur water; air can occur air pollution, noise and public health problems; the beach can damage the coastal environment, coastal erosion occurs; mountains can occur landslides, soil erosion; animal life disturbs animal reproduction, animal migration occurs; historical, cultural and religious sites occur in tourist densities; tourism commercialization; and urban and rural areas occur pressure on land, changes in the function of residential land into commercial land, traffic jams and noise pollution, air pollution, and aesthetic pollution. Meanwhile, efforts made to the physical environment in order to avoid the negative impact of tourism in the Province of Bali, which can be pursued through the application of visitor management.

Keywords: Impact; Tourism; and physical environment

1. Introduction

Tourism is a dynamic activity that involves many people and enlivens various fields of business [1]. According to RI Law. No. 10 of 2009 concerning Tourism, Article 1 Number (3), states Tourism is: "various kinds of tourism activities and supported by various facilities and services provided by the community, entrepreneurs, and government". While the Trade Organization (WTO), Tourism is: "someone who lives in a country, travels in a place within a country that is not his country at least 24 hours or one night for purposes other than earning

income at his destination". Article 1 Number (4) states: Tourism is: all activities related to tourism and are multidimensional and multidisciplinary in nature which emerge as a manifestation of the needs of each person and the State as well as interactions between tourists and the local community, fellow tourists, the Government, Regional Governments and Entrepreneurs. According to [2] tourism contains three basic aspects, namely: 1. Tourism as a form of service trade; 2. The relationship between tourism business activities with culture and the environment; and 3. Laws governing tourism service trade activities and the relationship between tourism and culture.

Tourism activities, essentially and objectively, are service trading activities based on economic and non-economic potentials ranging from natural resources to the socio-cultural resources of the communities in which these activities are carried out.

The relationship between tourism and culture is:

1. tourism activities as a form of service trade, are activities that are subject to the rules, traditions, standards, techniques, and mechanisms of the economy, trade and service trade in general, which can utilize nature, social systems, and culture as a product packaging;
2. culture as a result of human cultivation is a separate field, with its own systems and processes, and in relation to tourism, it can contribute in the form of cultural process results that can be offered as a product packaging.

According to Article 14, RI Law. No. 10 of 2009 concerning Tourism, tourism businesses include:

- a. tourist attraction;
- b. tourism area;
- c. travel transportation services;
- d. travel services;
- e. food and beverage services;
- f. providing accommodation;
- g. organizing entertainment and leisure activities;
- h. organizing meetings, incentive trips, conferences and exhibitions;
- i. tourism information services;
- j. tourism consulting services;
- k. tour guide services;
- l. tirta tourism; and
- m. spa

Bali as one of the provinces in Indonesia, with the majority of the population adhering to the Hindu Dharma Religion along with Customs and Culture, has a variety of objects and potential tourist attractions to be visited by tourists [3]. Relating to the present issue, the following contains some previous regarding to impact of the tourism on the physical environment. Firstly, a research conducted by [4] showed that well-distributed development of tourism might help the upkeep of attractions and the preservation of valuable natural and historical environments and cultural monuments, particularly in those developing countries where means are scarce and the local population is still little interested in the natural sights and monuments within its territory. However, the development of tourism as an industry on a massive scale--which is the general trend nowadays in both developing and developed countries-- poses new and often severe risks for the environment: its long-range detrimental impact may more often than not outweigh its short-run benefits. We may therefore conclude that modern mass tourism becomes more and more of an environmental menace, whose effects often approximate those of extractive industries.

Secondly, a research done by [5], the result showed that The measurement of off-road vehicle tracks provided an indication of direct impacts caused by coastal tourism and recreation. In 1965, 516.5 km of four-wheel drive tracks were measured compared to 812.9 km in 1998. Access points to the coast also increased from 421 to 908 during the same period. Even by conservative estimates, land needing rehabilitation due to four-wheel drive use may be 2500km² in the region. Thirdly, a research carried out by [6], The findings indicated that some glacial landscapes are declining in aesthetics or attractiveness while some landscapes face the prospect of sustained decline or even disappearance. This not only affects glacial cultural appreciation or mountain residents' beliefs, but increases the difficulty in entering and experiencing glaciers. Some points of tourism even face the risk of glacial disaster. Rapid glacial retreat or even disappearance will bring a loss of tourism revenues. Base on the explanation of preceding research above, the present study aims to know and understand the impact of tourism on the physical environment in the Province of Bali and to know the efforts of overcoming the negative impact of tourism on the physical environment in the Province of Bali.

2. Method

This study uses a normative legal research method. That is, a process to find the rule of law, legal principles, and legal doctrines in order to address the legal issues faced [7]. Normative legal research or library research, in this case, the statute approach and conceptual approach will be used. Because it is a library research, sources of legal, primary, secondary and tertiary materials will be obtained. The collection of legal materials from library research, is done by classifying legal materials, reading, recording, and systematizing legal materials from library research. Furthermore, after all legal materials (primary, secondary and tertiary) are collected, a qualitative - descriptive analysis is carried out [8]. This means that the explanation or description of the words is done in the form of a sentence which is poured descriptively, so that an appropriate, correct, logical and scientific conclusion is obtained according to the problem formulation.

3. Results And Discussion

3.1 Impact Of Tourism On Physical Environment In Bali Province

3.1.1 Tourism in the Province of Bali

Tourism is a series of activities carried out by tourists who directly touch and involve the community, thus bringing various impacts to the local community and also to the environment, primarily the physical environment. Bali Province is a tourism destination that is already popular in foreign countries, it is not only a major tourist destination for foreign tourists, but also domestic or domestic tourists (wisnus) [9]. Tourism is one of the sectors that provides the biggest contribution to regional budget revenue (PAD) in the Province of Bali [10]. In addition, Bali has long lived from tourism. There are concerns about Bali tourism for the next ten years, these issues include: a) tourism imbalances such as tourist destinations in North Bali with South Bali or other tourist destinations; b) decreasing the length of stay of tourists and c) the problem of congestion in several points of the Bali Province (Sukawati,

2018). Bali has a very diverse tourist attraction that is spread across all districts / cities in Bali. Attraction or tourist attractions offered in Bali viz: Kuta beach; Pandawa Beach; Tanah Lot; Bedugul; Uluwatu; Sanur; Garuda Wisnu Kencana (GWK); Tanjung Bena, Lake Beratan; Nusa Dua; Monument of Struggle (Bajra Sandi); Jimbaran; Dream land; Sukawati; Ubud; Seminyak; Sangeh; Lovina; and Tampaksiring. All tourist destinations in the province of Bali, can make satisfied tourists who come to Bali. So that tourists who visit tourist destinations in Bali once visited, will be followed by subsequent visits and even by inviting friends or family of tourists to participate in the visitation offered by the island of Bali or the island of Bali.

3.1.2 Physical Environment and Impact of Tourism

The tourism industry has a close and strong relationship with the physical environment. The natural environment is a tourism asset and is affected because the physical environment is fragile and inseparable. Is fragile because the natural environment is God's creation which if damaged will not necessarily grow or return to normal. Is inseparable because humans must come to the natural environment to be able to enjoy it.

According to [1] the physical environment is the main attraction of tourist activities. The physical environment includes the natural environment (flora and fauna, landscape, and natural phenomena) and the artificial environment (cultural sites, urban areas, rural areas, and historical relics). Bali Province has natural environment destinations, such as Kuta Beach, Tanah Lot, Bedugul and others. Likewise artificial environments, such as historical heritage sites, such as Goa Gajah and Tampaksiring, and Gunung Kawi, Penataran Sasih Temple in Gianyar Regency, tourist destinations in Penglipuran Village, Bangli Regency. Bearing in mind the theory, the relationship between nature and tourism must be mutual and beneficial [1]. Tourists enjoy the beauty of nature and the income paid by tourists is used to protect and preserve nature for the sustainability of tourism.

The relationship between environment and tourism is not always a symbiotic that is supportive and beneficial so that conservation, appreciation and education efforts are carried out so that the relationship between the two is sustainable, but the reality that there is a relationship between them actually brings up conflict. Tourism more often exploits the natural environment. The disharmony of the physical environment and tourism occur because of several factors that affect, namely: a) the nature of tourism, the nature of which cannot be separated into important factors that give rise to the benefits and burdens of tourism on the physical environment; b) the nature of the tourist destination (natural environment). Conservation of space for tourism activities can cause pressure on the natural environment due to the fragile nature of the natural environment; c) types of tourism activities, some tourism activities exploit the physical environment in excess which is solely carried out to meet the needs of tourists, and d) time dimension. Theoretically, the seasonal nature of tourism provides benefits to the natural environment because when the season is quiet, the physical environment can be recovered from the pressure of tourist visits. Tourism activities throughout the year will only exert excessive natural environment pressure and result in damage.

The impact of tourism on the physical environment is an impact that is easily identified because it is real. The impact of tourism that occurs on the physical environment in the Province of Bali, can have beneficial and adverse impacts including:

1. Favorable / positive:

- a. Water: benefits for cleaning and saving water programs; the use of environmentally friendly water transportation, such as rowing boats.
- b. Air: use of environmentally friendly vehicles and use of mass air transportation.

- c. Beaches: benefits for beach and marine preservation and conservation; environmentally friendly tourist activities.
 - d. Mountains: carry out reforestation and mountain rejuvenation.
 - e. Animal life: conservation and preservation; biodiversity, animal breeding, relocation of animals to native habitats, and making regulations on hunting animals.
 - f. Historical, cultural and religious sites: conservation and preservation, renovation, and visitor management.
 - g. Urban and rural areas: managing the city or village, community empowerment, and visitor management.
2. Harm / negative:
- a. Water: sewage pollution (water pollution), difficulty in getting clean water, public health problems, damage to water vegetation, reduced water aesthetics, seafood becoming dangerous due to toxic water.
 - b. Air: air pollution, noise pollution, and public health problems occur.
 - c. Beach: damaged coastal environment, damaged coral reefs, loss of allotment of traditional coastal land, and beach erosion can occur.
 - d. Mountains: landslides, soil erosion, depletion of mountain vegetation, visual pollution.
 - e. Animal life: animal hunting as souvenirs, wildlife harassment for photography, animal exploitation for shows, animal reproduction disorders, changes in animal instincts, and animal migration.
 - f. Historical, cultural and religious sites: overcrowding in tourist areas, alteration of initial site functions, and commercialization of tourist areas.
 - g. Urban and rural areas: pressure on land, changes in the function of residential land into commercial land, traffic jams, and noise pollution, air pollution, and aesthetic pollution.

3.2 Efforts Taken On The Physical Environment In Order Avoid The Negative Impact Of Tourism In The Province Of Bali

Noting, the Province of Bali is a tourism destination both worldly and domestically in Indonesia or domestically, the government of the Province of Bali must pay attention to the existence of tourist destinations in the province of Bali in order to remain and always be able to attract the interest of tourists to come to Bali. This, in addition to the types of attractions and cultural arts that are offered to tourists, must also be maintained in the cleanliness of the tourist destination area, security, as well as the beauty of the destination area offered to these tourists. Furthermore, taking into account the number of tourist visits to destinations in the Province of Bali, in recent years shows a significant increase from year to year. This can be seen from the data of the number of tourist visits to Bali in the last ten (10) years which were 2,484,644 people in 2007, increasing to 6,063,558 people in 2012, finally reaching 8,643,680 people in 2016. Implementation of the field of tourism in the Province of Bali, not only tourism in the field of culture, but there are also natural tourism, marine / marine tourism, agro tourism, and others which are all under the management and supervision of the provincial government of Bali Province because of the existence of such tourism in authority of the Province of Bali. Paying attention to tourist visits to the Province of Bali every year is increasing, so that it can be advantageous for the Province of Bali to enter the local budget of the tourist visas, but the increasing number of tourist visits can also have a negative or detrimental impact on the physical environment of the Province of Bali.

Taking into account the opinion of Tjokorda Oka Artha Ardhana Sukawati, stated that the problems of the Province of Bali have now occurred, such as tourism imbalances, decreasing length of stay of tourists and the problem of congestion at several points in Bali, to reduce the

problem of Bali that can be answered with the concept of "one island one management" (Sukawati, 2018). So with the concept of "one island one management" from Tjokorda Oka Artha Ardhana Sukawati, it is hoped that the problems that hamper the development of Bali's tourism can be overcome properly. The impact of tourism occurs due to the interaction of tourists with tourist destinations, In the Province of Bali, static elements occur if tourists in tourist destinations in the Province of Bali when their activities are not free from factors such as: 1) long stay in tourist destinations; 2) type of tourist activity; 3) the level of use of the destination area; 4) level of tourist attraction; and 5) the socio-economic characteristics of the Balinese people. Noting the impact of tourism on the physical environment that can occur in the Province of Bali, then to avoid the negative impacts caused by tourism in Bali, especially for the physical environment can be pursued through the implementation of visitor management. Through the implementation of visitor management can minimize the negative impact of tourism activities. Visitor management concept, which is an ongoing process to meet the needs of visitors and attractions so that it can be interpreted that visitor management is an activity to manage visitors who come to a tourist attraction so as to provide benefits [1].

In visitor management, there are two (2) basic elements, namely: 1) achieving a balance between the needs and requirements of attractions and visitors. And 2) become an important part in the development and management of a tourist attraction. Thus, visitor management is an opportunity to influence the movement of visitors, meet the needs of visitors, encourage even distribution of visits and provide the best tourist experience.

The application of visitor management, there are two (2) ways viz:

1) **Hard measure**, which forces visitors to behave in accordance with the wishes of the manager of the tourist attraction in the following way: a) close part or all of the tourist area for repairs and maintenance. This method is usually applied in tourism objects that consist of tourist zones. The management can cover areas that are considered to have exceeded capacity or need treatment; b) tighten the time of the visit at a tourist attraction. This method is applied to attractions that have time to visit. Managers can tighten visit times; c) introducing the concept of parker pickup (park and ride). This concept invites all visitors to must park their private vehicles in the available places. The introduction procession uses a tourism bus towards tourist attractions; d) tightening the parking, vehicle and pedestrian traffic. This method is implemented by the manager of the tourism object; e) creating the concept of zoning. This method is done in general by the manager of attractions; f) impose payment of admission tickets to tourist areas and g) use a price discrimination strategy. Price discrimination strategy is a way to differentiate prices based on demographics, psychography and / geography. Application of visitor management in a hard way (hard measure) in addition to being able to minimize the negative impact of tourism on the environment, but can also cause problems, among others: 1) supervision of the implementation of visitor management that is too tight can reduce the interest in visiting a tourist attraction. If management is too hard in implementing visitor management, there is a possibility that interest in visiting tourist attractions will decline, even visitors will be reluctant to come because they feel they are being watched; 2) conflict between rules and travel freedom. Trends, tourism aims to be relaxed and free of all routines, including regulations so that tourists often do not want to follow the rules set by the management of attractions because they are considered to limit the space for movement; 3) indifference of related parties to the implementation of visitor management. The benefits of visitor management have not been fully felt by the visitors themselves, so visitors often ignore the implementation; 4) restrictions imposed in visitor management can cause imbalance in the development of attractions. This happens when an area in a tourist attraction becomes excellent and visitors always make the area as the main tourist attraction. The

tendency for management will pay more attention to the main areas than other areas so that the development in other areas that are equally important is neglected.

2) **Soft measures**, which motivate visitors to behave in accordance with the wishes of the manager of attractions and the community. The ways are: a) promotional activities, especially before and after a visit by offering more than one day visit packages for certain target markets with the aim of increasing visitor awareness; b) dissemination of information before and during the visit aims to help visitors design travel tours and encourage visits to less popular areas so that the distribution of visits is evenly distributed, providing itineraries and tour guides to ease the density of visitors at certain points of interest, and provide suggestions for visits to quiet season in order to get the optimal tourist experience and reduce vehicle and visitor congestion; c) interpretation, which encourages appreciation and knowledge of a tourist area so that it gives rise to an understanding of conservation and environmental problems; d) interpretation can be done in various ways, including personal attended service, when visitors can interact directly with interpreters; and e) the use of signage to direct visitors according to tourist routes to avoid damage, reduce traffic jams in vehicles and pedestrians, minimize conflict between visitors, draw the attention of tourists to less popular areas, and ensure visitors can reach tourist objects quickly and safely .

Benefits of applying visitor management to the environment, namely:

1) visitor management can minimize congestion and reduce pollution. By arranging and distributing visits, a tourist attraction can avoid traffic jams and pollution; 2) the possibility of damage to sensitive tourism objects can be reduced. This is done by creating tourist zones. Only areas that have high tamping capacity can accommodate high traffic flows. Vice versa so that vulnerable tourist areas get protection and longer age; 3) Management of visitors can be carried out one of them by pricing. The ticket sales can be used for conservation so that environmental quality improves; and 4) environmental quality can be improved to satisfy visitors and managers. Visitor management provides a win-win solution, not aimed at burdening one party, both visitors and managers.

4. Conclusions

1. The impact of tourism on the physical environment in Bali Province, namely:

(profitable / positive):

- a. Water: benefits for cleaning and saving water programs; the use of environmentally friendly water transportation, such as rowing boats.
- b. Air: use of environmentally friendly vehicles and use of mass air transportation.
- c. Beaches: benefits for beach and marine preservation and conservation; environmentally friendly tourist activities.
- d. Mountains: carry out reforestation and mountain rejuvenation.
- e. Animal life: conservation and preservation; biodiversity, animal breeding, relocation of animals to native habitats, and making regulations on hunting animals.
- f. Historical, cultural and religious sites: conservation and preservation, renovation, and visitor management.
- g. Urban and rural areas: managing the city or village, community empowerment, and visitor management.

In addition, the impact of tourism on the physical environment that is detrimental / negative, namely:

- a. Water: sewage pollution (water pollution), difficulty in getting clean water, public health problems, damage to water vegetation, reduced water aesthetics, seafood becoming dangerous due to toxic water.
 - b. Air: air pollution, noise pollution, and public health problems occur.
 - c. Beach: damaged coastal environment, damaged coral reefs, loss of allotment of traditional coastal land, and beach erosion can occur.
 - d. Mountains: landslides, soil erosion, depletion of mountain vegetation, visual pollution.
 - e. Animal life: animal hunting as souvenirs, wildlife harassment for photography, animal exploitation for shows, animal reproduction disorders, changes in animal instincts, and animal migration.
 - f. Historical, cultural and religious sites: overcrowding in tourist areas, alteration of initial site functions, and commercialization of tourist areas.
 - g. Urban and rural areas: pressure on land, changes in the function of residential land into commercial land, traffic jams, and noise pollution, air pollution, and aesthetic pollution.
2. To avoid the negative impact due to tourism in Bali, especially for the physical environment can be pursued through the application of visitor management. The concept of visitor management, which is an ongoing process to meet the needs of visitors and attractions so that it can be interpreted that visitor management is an activity to manage visitors who come to a tourist attraction so as to provide benefits.

References

- [1] Ismayanti, *Pengantar Pariwisata*. Jakarta: Gramedia Widiasarana, 2010.
- [2] W. I. B. Putra, *Hukum Bisnis Pariwisata*. Bandung: Refika Aditama, 2003.
- [3] Agung Suryawan Wiranatha, Ed., "Dinas Pariwisata Provinsi Bali, Karakteristik Pasar Utama Pariwisata Bali, Oleh Kelompok Pengkajian Kepariwisataaan Provinsi Bali," Denpasar, 2007.
- [4] B. Sadler, "The impact of tourism on parks.," *Park. Tour. Prog. or Prostit. Proc. Conf. Victoria, BC, 1982*, no. June 1978, pp. 58–60, 1982.
- [5] J. Priskin, "Physical impacts of four-wheel drive related tourism and recreation in a semi-arid, natural coastal environment," *Ocean Coast. Manag.*, vol. 46, no. 1–2, pp. 127–155, 2003.
- [6] S. J. Wang and L. Y. Zhou, "Integrated impacts of climate change on glacier tourism," *Adv. Clim. Chang. Res.*, vol. 10, no. 2, pp. 71–79, 2019.
- [7] P. M. Marzuki, *Penelitian Hukum*, Pertama. Jakarta: Prenada Mesia Group, 2005.
- [8] R. H. Soemitro, *Metodologi Penelitian Hukum*. Jakarta: Ghalia Indonesia, 1993.
- [9] L. S. Yusiana, S. Nurisjah, and D. Soedharma, "Perencanaan Lanskap Wisata Pesisir Berkelanjutan Di Teluk Konga, Flores Timur, Nusa Tenggara Timur," *J. Lanskap Indones.*, vol. 3, no. 2, 2011.
- [10] L. P. Sudini, *Penerapan Kebijakan General Agreement on Trade in Service dalam Perkembangan Pariwisata Di Provinsi Bali, Hasil Penelitian, Program Studi Magister Kenotariatan*. Denpasar: PPs Unwar, 2018.
- [11] Republic of Indonesia, Law Number 10 Year 2009 concerning Tourism. RI State Gazette. 2009, Number 140 and Supplement to the State Gazette of the Republic of Indonesia. No. 5059
- [12] Tjokorda Oka Artha Ardhana Sukawati, 2018, "Kekhawatiran itu Akhirnya Terjadi", Media "Bali Post", Jumat Umanis, 24 August, Denpasar.