

Contribution of Ecotourism Implementation to Environmental Sustainability Waterfall Nature Tourism in Banjar Bhuana Sari, Wanagiri Village

I Putu Ananda Citra^{1*}, Ida Bagus Arya Yoga Bharata², Restu Ade Yanti³, Lutfiatul Janah⁴

¹ Geography Department, Universitas Pendidikan Ganesha, Indonesia

² Environment Management Study Program, Universitas Pendidikan Ganesha, Indonesia

³ Sekolah Dasar Negeri 1 Gendoh, Indonesia

⁴ Madrasah Aliyah Al-Qur'an Nahdlatuth thullaab Banyuwangi, Indonesia

*Corresponding Author: ananda.citra@undiksha.ac.id

Abstract: The concept of ecotourism presents a suitable approach to tourism management in Bali, given its abundant natural attractions. One such attraction is the Banjar Bhuana Sari Waterfall in Wanagiri Village, Sukasada District, Buleleng Regency, Bali Province. This study aims to identify and analyze the potential of this natural site for ecotourism development by examining three key aspects: (1) the tourism potential of the site, (2) the level of community participation, and (3) the contribution of tourism to the local area. Data was collected through observation, interviews, questionnaires, and literature review. The data were then analyzed using a rating or scoring system to classify each indicator. The findings reveal that Banjar Bhuana Sari Waterfall possesses substantial potential for ecotourism development. High levels of community participation play a significant role in maintaining the site's sustainability. However, while the natural environment is generally well-preserved, further improvement is needed regarding tourism facilities and infrastructure. Additionally, the economic and social contributions of tourism to the local community, although present, require enhancement to ensure a more impactful and sustainable tourism model. Overall, the research highlights the importance of strengthening both environmental management and tourism benefits to support the long-term development of ecotourism at Banjar Bhuana Sari Waterfall.

Keywords: ecotourism, environmental sustainability, nature tourism, waterfall.

Article History: Submitted 23 January 2025 | Revised 7 April 2025 | Accepted 9 May 2025

How to Cite: Citra, I. P. A., Bharata, I. B. A. Y., Yanti, R. A., & Janah, L. (2025). Contribution of Ecotourism Implementation to Environmental Sustainability Waterfall Nature Tourism in Banjar Bhuana Sari, Wanagiri Village. *International Journal of Green Tourism Research and Applications*, 7(1), 16–29. <https://doi.org/10.31940/ijogtra.v7i1.16-29>

Introduction

The island of Bali is blessed with its culture and beautiful natural potential (Utama, 2016). Apart from unique culture and close synergy with nature, these potentials have many opportunities to be preserved and developed, including ecotourism-based management (Arida, 2017). One area that has excellent opportunities in ecotourism development is Buleleng Regency. Buleleng Regency has natural potential, one of which is a waterfall (Rahman & Citra, 2018; Citra et al, 2020; Yanti et al, 2022). Topographic characteristics with geomorphological conditions (Wahyuni et al, 2020) give Buleleng Regency the potential for many waterfalls to spread across the region (Rahman & Citra, 2018). One of the villages in Buleleng Regency with these topographic characteristics is Wanagiri Village, which is

administratively located in Sukasada District. Wanagiri Village is located in the Upland area (Astawa, 2022; Yanti et al, 2022; Bharata et al, 2023) and has a variety of potential waterfalls. One of the locations in the administrative unit at the Banjar level, namely Banjar Bhuana Sari, has the potential for waterfalls spread over one site area as a tourist attraction that has the potential to be developed for ecotourism (Yanti et al, 2022).

The concept of ecotourism management, which also often refers to natural tourism objects (Arida, 2017; Suditha & Citra, 2014; Citra, 2015; Citra, 2017; Wisnawa, 2017; Khairuddin et al, 2019; Sriartha et al, 2021), especially the waterfall (Citra, 2015; Khairuddin et al, 2019). Ecotourism itself is a sustainable tourism concept that focuses on experience and education about nature, managed with a particular management system and has the lowest possible negative impact on the environment, is not consumptive and oriented locally in terms of control, the benefits that can be taken from business activities that are also easy for stakeholders to understand (Ross & Wall, 1999; Libosada Jr, 2009; Arida, 2017). The nature of ecotourism involves preserving and utilizing nature and community culture (Citra, 2015). This is because ecotourism does not exploit nature but focuses on using ecosystem services (Prasetyo et al, 2017) (Nair et al, 2018; Ramdan et al, 2021) and society (Citra, 2015; Arida, 2017) in meeting the need for physical and psychological knowledge of tourists. Existing research in one area also shows that tourist perceptions of ecotourism show that ecotourism has more positive impacts than negative impacts (Olubunmi-ojo et al, 2022).

Ecotourism is vital as a management model for maintaining natural sustainability, especially in tourist destinations such as waterfalls that naturally already preserve the sustainability of the environment around them (Citra et al, 2023). This is also because waterfalls are often located in areas with high biodiversity, such as rainforests or mountain ecosystems (Jiménez & López, 2023). Managing a waterfall destination with the concept of ecotourism requires good environmental management to preserve the surrounding ecosystem (Hien & Chu, 2024).

The evaluation based on concept and indicator of ecotourism in Bali, especially in Wanagiri Village, is essential because Bali, as an island, is facing major environmental problems that stem from tourism implementation (Utama et al, 2021; Mahendra, 2024). This is due to the tourism mindset being more accommodating of the mentality of mass tourism rather than tourism based on sustainability and ecologically based management, such as ecotourism (Marzouki et al, 2012). The impact of mass tourism in Bali is enormous, from environmental dimensions such as the plastic waste problem (Putrajaya & Antara, 2014; Febrianto et al, 2018; Sutrisnawati & Purwahita, 2018; Chong, 2020), building density, overcrowded beaches, traffic congestion (Antonio & Alamsyah, 2024), and unclear land management regulations that lead to violations (Yasa & Sunarta, 2019; Suparta & Suciati, 2021; Suryana et al, 2022; Jayswara & Sudiana, 2024). Not only the environment, but also the Social and Cultural impact that makes Balinese accustomed to the commodification of culture, disconnection and superficial understanding of Balinese culture, the expense of traditional values, and erosion of cultural identity and social cohesion (Chong, 2020; Mahendra, 2024). Economically, this impacts the regional income due to taxpayers from tourism accommodation such as Hotels and Villas (Adnyani, 2014), but little in contributing to the environmental sustainability and commonly compromising the externality of the economy generated by this tourism model.

If we look closely and locally in Wanagiri Village, this area is vital because of its water status is already unsustainable, meaning the function of ecosystem services can

support the provision of water for human activities above it, but the use of water for human activities can have a significant impact or be unsafe for the ecosystem (P3E Bali Nusra, 2021). In his history, the Wanagiri Village is also the location of the deadliest natural disaster recorded in Balinese History, which is known as *Gejer Bali* (Faral et al, 2024). Research by Tamonob et al (2021) showed that over 1.165,62 hectares or 71,64 % of Wanagiri Village is considered high landslide hazard potential. These environmental conditions make Wanagiri Village vulnerable if any significant changes or development happen in this rural part of the area, which makes ecotourism-based management and evaluation important in ensuring the sustainability of one of the water sources in the central part of North Bali.

Based on previous research, waterfalls in Wanagiri Village have low to moderate potential (Rahman & Citra, 2018), but have not been considered in understanding ecotourism development in the area. Another research conducted is Wijana & Mulyadiharja (2020), which focuses on forest tourism in Taman Gumi Banten in Wanagiri Village. Rahmawati et al. (2020) describe the potential of tourism and the general challenges that exist in Wanagiri Village. Laksemi et al (2019) evaluated the social forestry management in the Wanagiri Village Forest, namely the principles of a sustainable environment (environmental aspects), improving community welfare (socio-economic elements), and improving forest governance (institutional aspects).

Based on the previous research above, although ecotourism is often considered an environmentally friendly approach, previous studies tend to focus more on the potential of nature tourism without examining its contribution to environmental sustainability. Ecotourism is discussed more from the economic and community participation aspects. At the same time, its impact on local ecosystems and its potential to mitigate environmental degradation are still rarely explored. From a methodological perspective, most studies use a descriptive approach without integrating more comprehensive spatial assessments and environmental policy analysis. In addition, many studies rely on ranking or scoring methods that focus more on economic and social aspects but have not assessed ecosystem sustainability quantitatively. From an empirical perspective, research on ecotourism in Bali generally focuses on popular destinations with high visitor numbers.

In contrast, the potential for ecotourism in Banjar Bhuana Sari has not received much attention. In particular, the impact of ecotourism on spatial patterns and environmental degradation in the waterfall area is still an aspect that has not been widely studied. Another gap is seen in policy implementation, where the absence of precise spatial planning in Banjar Bhuana Sari can threaten environmental sustainability, but this has not been widely highlighted in previous studies. In addition, although the importance of community participation in ecotourism is often mentioned, studies discussing how the economic contribution of ecotourism can improve the welfare of local communities sustainably are still minimal. What distinguishes this research from previous research is the location, which focuses on Banjar Bhuana Sari in Wanagiri Village and describes the Contribution of Ecotourism Implementation to the Environmental Sustainability of Waterfall Nature Tourism in Banjar Bhuana Sari, Wanagiri Village. Based on the argument above, this study aims to examine how implementing ecotourism contributes to the environmental sustainability of the waterfall tourism site in Banjar Bhuana Sari.

Methodology

This research design is descriptive research, with the method of collecting data through interviews on qualitative information (Harahap & Effendi, 2020), and

supported by observation (Citra, 2015; Rahman & Citra, 2018). The information extracted in this study covers aspects of ecotourism, namely the potential for the tourism environment, community participation, and tourism contributions (Citra, 2015; Arida, 2017), and is analyzed using an ecological approach. The informant we interviewed included Mr. Ketut Rinta as the Bhuana Sari Waterfalls Destination chief, Mr. Natih as finance manager, and I Wayan Surya Wibawa as entry post guard.

This research is located in the natural tourist attraction site of Banjar Bhuana Sari waterfall, Wanagiri Village, Sukasada District, Buleleng Regency, Bali Province (Figure 1). The time of the research was carried out from March to April 2021. Determination of the sample in the community is carried out purposively at the location of tourist objects that can meet the requirements or represent the interests of research and can represent the completeness of the elements to be observed and assessed related, which is carried out employing observation, interviews, open questionnaires and document study (Citra, 2015; Harahap & Effendi, 2020). Data is processed through ratings or scoring on each indicator to determine the class of each (Muta'ali, 2015).

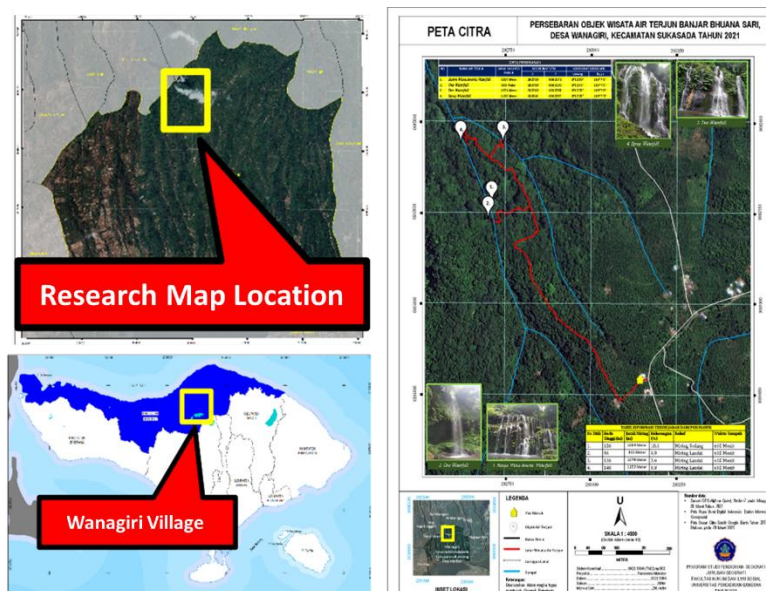


Figure 1. Research Location Map
(Source: Data visualization, 2021)

Results and discussions

Results

Analysis of the Contribution Level of Application of Ecotourism Tourism Banjar Bhuana Sari Waterfall

The analysis of the ecotourism aspects in the Banjar Bhuana Sari Waterfall tourist attraction encompasses three main components: tourism environmental potential, community participation, and tourism contribution. The ratings or scoring on each indicator to determine each class from the tourism environmental potential aspect has a value range of 14 to 42, with three courses, resulting in an interval of 9.3. The classification categories are low (14-23.3), medium (23.3-32.6), and high (32.6-42). The total score obtained for this aspect is 36, which falls into the high category. Community participation has a lowest value of 13 and a highest value of 39, with an interval of 8.6. The classification categories are low (13-21.6), medium (21.6-30.2),

and high (30.2-39). The total score of 39 indicates that community participation is also in the high category. The tourism contribution aspect has a lowest value of 6 and a highest value of 18, with an interval of 4.6. The classification categories are low (6-10), medium (10-14), and high (14-18). The total score is 15, placing tourism contribution in the high category.

Table 1. Data Result and Analysis of Bhuana Sari Waterfalls Nature Tourism Based on Ecotourism Contribution perspective

Aspects	Variable	Indicators	Result	Value
Tourism Environmental Potential	Tourism Attraction	Main Attraction	Existing and preserved/maintained	3
		Supporting Attraction	Exist and preserved	3
	Accessibility	Road Condition inside Destination	Good (no holes or cracks)	3
		Distance from City/District	Very Far >10 Km	1
		Transportation Availability	None	1
	Facility	Accommodation	Many (>1)	3
		Health Post	None	1
		Security Post	Exists and operating	3
		Information Center	Exists and operating	3
		Management	Government, Private, Traditional Village	3
	Institutional	Organizational structure	Exists and are according to management standards	3
		Rules (<i>awig-awig</i>) of preservation	It exists and is implemented	3
	Environmental preservation	Maintaining environment preservation and cleanliness	Routine (scheduled)	3
		Waste Management	Exist	3
Community Participation	Planning	Meeting and Discussion	Always involved	3
		Decision-making	Always involved	3
		Identify the problem	Always involved	3
		Tourist Destination Promotion	Always involved	3
	Monitoring	Monitoring/supervisory team	Always involved	3
	Management	Parking attendant	Always involved	3
		Security officer	Always involved	3
		Tour guide	Always involved	3
		Cleaning services	Always involved	3
		Employee	Always involved	3
	Ecotourism entrepreneurs/ economic actors	Accommodation	Always involved	3
		Transportation Services	Always involved	3
		Restaurant/Food House	Always involved	3
Institutional	Social-	Increased income	Sometimes	2

Aspects	Variable	Indicators	Result	Value
aspects	Economy	Employment Opportunity	There are easy conditions	3
	Physical Infrastructure	Infrastructure (roads in tourist areas)	Good condition (wide and undamaged)	3
		Spatial planning of tourist areas	There are no spatial planning	1
		Hotel/Villas	Many >1	3
		Restaurant/Food House	Many >1	3

Source: Data analysis (2021)

Based on Table 1 above, the results have been classified based on each aspect of ecotourism. There are 14 indicators for the potential of the tourism environment, with the highest value being 42. Community participation in nature tourism has 13 indicators, with the highest value being 39. The contribution of nature tourism is divided into six indicators, with the highest value being 18. Each aspect will be calculated with the interval first, with the highest value minus the lowest value divided by the number of classes, so that each element of ecotourism gets an interval and class classification level. Thus, a classification level can be made from the level of ecotourism potential that can be seen, namely (low = 33 - 55, medium = 55 - 77, and high = 77 - 99). Based on the results, the ecotourism aspect of the natural tourist attraction of the Banjar Bhuana Sari waterfall was assessed based on tourism environmental potential, community participation, and tourism contributions. The total potential of the waterfall tourism environment for ecotourism development in Banjar Bhuana Sari is 84, which is classified as high, as shown in Figure 2 at the percentage level to be better visualized.

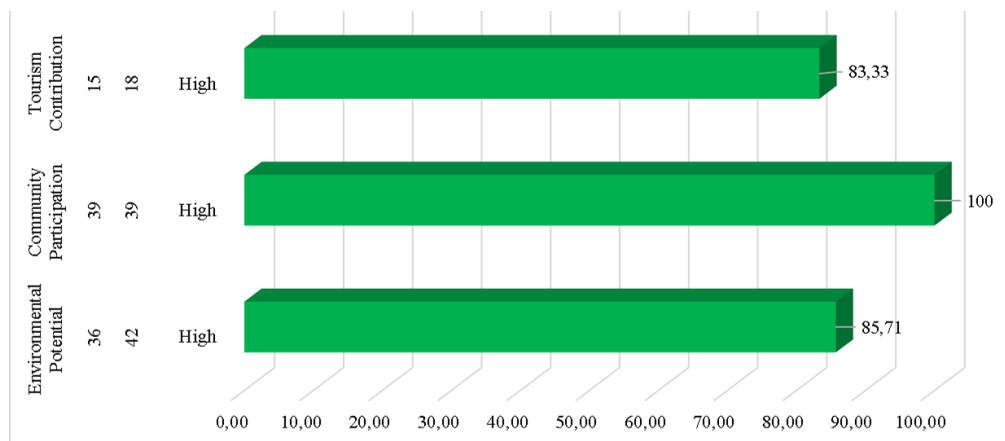


Figure 2. Diagram of the Percentage Level of Contribution to the Implementation of Ecotourism Tourism Banjar Bhuana Sari Waterfall
(Source: Data analysis, 2021)

Discussions

Environmental Potential of Banjar Bhuana Sari Waterfall Tourism

Waterfalls are the main tourist attraction in Banjar Bhuana Sari. This is because there are four waterfalls in the area of the waterfall tourist attraction in Banjar Bhuana Sari. The four waterfalls are Banyu Wana Amerta Waterfall, One Waterfall, Two Waterfall, and Spray Waterfall (Yanti et al, 2022). From its attractions, the main tourist

attraction in Banjar Bhuana Sari, namely the existing waterfall, has been well preserved. The existing supporting attractions are well-maintained and cared for, so the location is well-organized. In terms of accessibility, the condition of the road leading to the waterfalls in Banjar Bhuana Sari is also excellent, with no holes and cracks. The distance from the city center in Buleleng district is far, more than 10 km in Singaraja City, Buleleng District.

There is transportation to the waterfall tourist attraction in Banjar Bhuana Sari, but only to the main post, because the road to the waterfall must be walked. From the facilities, the accommodations at the waterfall tourist attraction are also quite numerous, such as toilets, information boards, road signs, stair railings, and food stalls. Security is also maintained because the entry post also functions as a security post, where the guards and managers also play a role in security. Institutionally, managing the natural tourist attraction of waterfalls in Banjar Bhuana Sari involves the government, especially the Village, Private, and Traditional Villages. The organization is maintained and meets management standards with each section's chairman, treasurer, secretary, and members. Environmental conservation is also reasonably good because in the management, there are rules (*awig-awig*) where every scheduled Friday cleaning is always carried out. In the tourist attraction environment, there is also a place to manage waste, especially garbage. Also similarly, Nurfatriani et al (2023) emphasize that effective village-level institutions are crucial for sustaining ecotourism in forest-edge communities in Upstream Citarum Watershed, West Java, Indonesia. The community manages the institution in ensuring the natural sustainability of the waterfalls and its environment, also proven by another study around the world, such as in Kenya (Guthiga & Mburu, 2006), Burkina Faso (Bouda et al, 2011), and the Taita Hills forests (Wekesa et al, 2021).

Community Participation in Banjar Bhuana Sari Waterfall Tourism

In the process of planning an activity at the natural tourist attraction of the Banjar Bhuana Sari waterfall, activities such as meetings, decision-making, problem identification, and promoting natural waterfall tourism are always involved. Monitoring activities or monitoring by forming a supervisory team in tourism management are also always involved. From management, community involvement in being parking attendants, security officers, tour guides, cleaners, and employees is always involved. Entrepreneurs or ecotourism economic actors are also involved. Both accommodation, transportation services, and restaurants/restaurants are engaged in natural waterfall activities in Banjar Bhuana Sari. Community participation in ecotourism can make tourism sustainable for the long term if stakeholders, destination management, and key stakeholders understand and are involved in planning, decision-making, and ecotourism management in tourist destinations (Salman et al, 2020; Salman, 2021). Although the results can be considered good as the method used in this research, it is still unknown how much impact this community participation has on nearby households (Kandel et al, 2020), such as the waterfall tour. The high level of community participation can be attributed to tourism awareness groups (*pokdarwis*), which have a strong social influence in the community. This shows that local institutional support plays an essential role in the success of ecotourism management. This finding is also in line with the research results of Nierras (2022) in the Philippines, which showed that the involvement of village communities in managing waterfall tourism increased awareness of water conservation and preservation. This community involvement shows a sense of ownership and a desire to maintain the sustainability of ecotourism.

Tourism Contribution to Banjar Bhuana Sari Waterfall

Socio-economically, the increase in income is uncertain, as the decrease in the number of visitors due to the COVID-19 pandemic has an impact on the tourism sector. Job opportunities for the surrounding community to be involved in tourism activities in the natural tourist attraction of the Banjar Bhuana Sari waterfall are open on conditions and are available easily. From the physical appearance of the natural tourist attraction of the Banjar Bhuana Sari waterfall, the infrastructure and roads in the tourist attraction area are maintained in good condition. From the spatial arrangement of the tourist area, there is no spatial arrangement for the natural tourist attraction of the Banjar Bhuana Sari waterfall. If this spatial plan still does not exist, it will potentially threaten land conversion and degradation of the natural environment in tourist areas (Olaniyi & Atalor, 2018) (Olaniyi et al, 2018). There are several hotels or villas as well as restaurants or restaurants that support tourist activities even though they are outside the natural tourist attraction of the Banjar Bhuana Sari waterfall which is scattered in Wanagiri Village because Wanagiri Village is a village that has many tourist attractions and other supporting tourism (Rahmawati et al, 2020).

From the potential of the tourism environment, the natural tourist attraction of Banjar Bhuana Sari waterfall has a value of 36, which is classified as high. This is because of the attractiveness indicators, both primary and supporting, road conditions, accommodation, security, information centers, well-available institutions, and efforts to preserve the environment. From the participation of the community, the natural tourist attraction of the Banjar Bhuana Sari waterfall has a high value of 39. This is because, from the indicators of planning, monitoring, and management, to the involvement and participation of the community, the entrepreneurs/economic actors of ecotourism are always involved. From the contribution of tourism, the natural tourist attraction of Banjar Bhuana Sari waterfall has a value of 15, which is also relatively high. This is due to indicators of easy job opportunities, infrastructure such as roads in good tourist attraction areas, hotels and villas, restaurants, and other facilities. The impetus for the high potential in ecotourism development of a waterfall is also due to its beautiful visuals (Khairuddin et al, 2019). There are shortcomings in this study, which does not explore how other livelihoods, in particular, are the potential types of vegetables and food that exist and are cultivated around tourist areas, especially those in Banjar Bhuana Sari, Wanagiri Village itself. Vegetables and food that are cultivated around the tourist area if they have a high value are also able to encourage the potential value of the environment such as the development of local home industries in the vicinity which of course must not disturb the nature around the tourist area (Nierras, 2022; Rana & Bisht, 2023; Rana et al, 2024).

Even though it is classified as high class, several things become challenges in developing ecotourism in the natural tourist attraction of Banjar Bhuana Sari waterfall. From the potential of the tourism environment at a distance to the city center, which is far away, especially in Singaraja, as the city center in the Buleleng district, transportation is not yet available, and there is no health post. From the participation of the community in general, the community is very involved. Based on his contribution to the community during the COVID-19 pandemic, income is uncertain, and there are no rules in spatial planning areas.

Effective ecotourism management requires careful planning because it allows ecotourism managers to understand and manage space effectively, identify the most suitable locations for ecotourism development (Ambecha et al, 2020; Chaudhary et al, 2022), and avoid conflicts with other activities (Wiratno et al, 2022). Thus, spatial planning can help ecotourism managers to develop appropriate infrastructure (Choy et

al, 2017), integrate ecotourism activities with other activities in the area (Bharata et al, 2021; Bharata et al, 2023; Bharata et al, 2024), and achieve the goals of preserving the environment (Bharata et al, 2021; Bharata et al, 2023) and improving the welfare of local communities (Solly, 2021).

Its high potential shows that the manager has implemented good management. Of course, this good management also needs to maintain the environmental area of supporting objects and the preservation of natural tourist attractions as the main object (Idajati & Widiyhwati, 2018), in particular, the role of Indigenous peoples and local communities needs to be maintained for land conservation efforts and protecting land from the threat of land degradation and deforestation either naturally or as a result of human activity itself (Olaniyi & Atalor, 2018; Olaniyi et al, 2018; Sarhan et al, 2016; Christiawan, 2017) because it can have environmental impacts and disasters (Olaniyi & Atalor, 2018; Olaniyi et al, 2018; Christiawan, 2018; Eshun & Tichaawa, 2020). Due to the COVID-19 pandemic, promotions are also needed, such as through social media, which also considers and strictly monitors health protocols.

Based on the description above, it can be stated that the results of identifying tourism potential that are applied to the development of ecotourism in the natural tourist attraction of Banjar Bhuana Sari waterfall are classified as high. This is due to the strong potential of the tourism environment and high community participation, as well as the contribution of tourism to the community. The existence of natural waterfall tourism per the concept of ecotourism management in Banjar Bhuana Sari can improve the community's welfare (Hardanto et al, 2021).

Conclusions

The results showed (1) the potential of the tourism environment was 36 (high), (2) community participation was 39 (high), and (3) the contribution of tourism was 15 (medium). The natural tourism potential of waterfalls for ecotourism development in Banjar Bhuana Sari is high, totaling 84 (high). Based on the description above, it can be stated that the results of identifying tourism potential that are applied to the development of ecotourism in the natural tourist attraction of Banjar Bhuana Sari waterfall are classified as high. This is due to the strong potential of the tourism environment and high community participation, as well as the contribution of tourism to the community. Based on the results of research that has been carried out at the location of the natural tourist attraction of the Banjar Bhuana Sari waterfall, the suggestions that can be given from the results of this study are, that tourism managers need to arrange spatial planning, especially with the preparation of the site of the tourist attraction area with details on the location of any object that is required and mitigate threat of land conversion and degradation of the natural environment in tourist areas. Further researchers can assess the waterfall landscape and compile a site for a tourist area to help complete spatial information, spatial location, landscape assessment, and tourism willingness to pay. These findings indicate the importance of designing community-based ecotourism governance that strengthens local institutions and considers environmental sustainability. Village governments and tourism managers are advised to develop local spatial plans that include protection zones, establish cross-stakeholder collaborative forums, and provide ecotourism training for the community.

References

- Adnyani, N. K. S. (2014). Correlation Analysis Between The Improvement Tax With Tourism Development In The Lovina Singaraja Area (Case Study In The Buleleng District). *International Journal of Business, Economics and Law*, 4(2).
- Ambecha, A. B., Melka, G. A., & Gemed, D. O. (2020). Ecotourism site suitability evaluation using geospatial technologies: a case of Andiracha district, Ethiopia. *Spatial Information Research*, 28(5), 559-568.
- Antonio, R. S., & Alamsyah, A. (2024, December). Analyzing Overtourism Dynamics in Bali: A Data-Driven Approach Using Geospatial Analysis and Text Classification. In *2024 Beyond Technology Summit on Informatics International Conference (BTS-I2C)* (pp. 544-549). IEEE.
- Arida, I. N. S. (2017). Ekowisata Pengembangan, Partisipasi Lokal, dan Tantangan Ekowisata. Denpasar: Cakra Press.
- Astawa, I. B. M. (2022). The Implication of Local Wisdom-Based Geographical Curriculum and its Course Book on the Cosmocentric Attitude of the Students in Bali Upland Region. *Jurnal Pendidikan dan Pengajaran*, 55(1), 53-63.
- Bharata, I. B. A. Y., Mariani, N. L., Ariasih, N. P., Sari, N. K. I. K., Kusuma, I. G. A. A. K., Utama, I. W. G. M., & Rahman, F. (2021). Inventarisasi dan Pemantauan Sumber Daya Hutan Lindung Bukit Cemara Geseng Via Desa Silangjana. *Jurnal ENMAP*, 2(2), 43-50.
- Bharata, I. B. A. Y., Wesnawa, I. G. A., & Astawa, I. B. M. (2023). Karakteristik Jalur Trekking Sebagai Potensi Lanskap Wisata Alam di Desa Panji Anom. *Jurnal Pendidikan Geografi Undiksha*, 11(3), 320-329.
- Bharata, I. B. A. Y., Marianti, K., Suryana, I. G. P. E., Atmaja, D. M., & Putra, I. W. K. E. (2024). Potensi Bahaya Bencana pada Jalur Wisata Alam di Bali Timur. *Bencana Alam di Bali dalam Perspektif Ilmu Geografi*. Badung : Nilacakra Publishing House, 83-96.
- Bouda, H. N., Savadogo, P., Tiveau, D., & Ouedraogo, B. (2011). State, forest and community: Challenges of democratically decentralizing forest management in the Centre-West Region of Burkina Faso. *Sustainable Development*, 19(4), 275-288.
- Chaudhary, S., Kumar, A., Pramanik, M., & Negi, M. S. (2022). Land evaluation and sustainable development of ecotourism in the Garhwal Himalayan region using geospatial technology and analytical hierarchy process. *Environment, development and sustainability*, 1-42.
- Chirstiawan, P. I. (2017). The Role of Local Wisdom in Controlling Deforestation. *International Journal of Development and Sustainability*, 6(2), 876-888.
- Chirstiawan, P. I. (2018). Cultural Landscape: A Bridge Between Deforestation and Local Community. *Journal of Landscape Ecology*, 11(2), 77-87.
- Choi, Y. E., Song, K., Kim, M., & Lee, J. (2017). Transformation planning for resilient wildlife habitats in ecotourism systems. *Sustainability*, 9(4), 487
- Chong, K. L. (2020). The side effects of mass tourism: the voices of Bali islanders. *Asia Pacific Journal of Tourism Research*, 25(2), 157-169.
- Citra, I. P. A. (2015). Studi Kelayakan Potensi Objek Wisata Alam Untuk Pengembangan Ekowisata di Kabupaten Buleleng. *Media Komunikasi Geografi*, 16(2) 50-64.
- Citra, I. P. A. (2017). Strategi Pemberdayaan Masyarakat untuk Pengembangan Ekowisata Wilayah Pesisir di Kabupaten Buleleng. *Jurnal Ilmu Sosial dan Humaniora*, 6(1), 31-41.

- Citra, I.P.A., Sarmita, I.M., & Nugraha, A.S.A. (2020). Pengembangan Desa Wisata Melalui Pemetaan Potensi Wisata Desa Sambangan. In *Proceeding Senadimas Undiksha 2020*.
- Citra, I. P. A., Christiawan, P. I., & Manalu, S. H. (2023). Sambangan Tourism Village Development. *Proceedings of the 4th International Conference on Law, Social Sciences, and Education*, ICLSSE 2022, 28 October 2022, Singaraja, Bali, Indonesia.
- Eshun, G & Tichaawa, T. M. (2020). Community Participation, Risk Management And Ecotourism Sustainability Issues In Ghana. *GeoJournal of Tourism and Geosites*, 28(1), 313-331.
- Faral, A., Lavigne, F., Sastrawan, W. J., Suryana, I. G. P. E., Schrikker, A., Pageh, M., ... & Hadmoko, D. S. (2024). Deadliest natural disaster in Balinese history in November 1815 revealed by Western and Indonesian written sources. *Natural Hazards*, 120(13), 12011-12041.
- Febrianto, D., Widyawati, W., Hidayat, T. A. R., & Syahputri, A. R. (2018). Kebijakan pemerintah kota Denpasar terhadap upaya pencegahan pencemaran lingkungan hidup di kota Denpasar. *Jurnal Reformasi Hukum: Cogito Ergo Sum*, 1(2), 45-50
- Guthiga, P., & Mburu, J. (2006, June). Local communities' incentives for forest Conservation: case of Kakamega Forest in Kenya. In *11th Biannual Conference of International Association for the Study of Common Property (IASCP)*, Indonesia.
- Harahap, I & Effendi, I. (2020). The Potential Forest Ecotourism in Suligi Hill, Riau Province, Indonesia. *Journal of Physics: Conference Series* 1655 (2020) 012148.
- Hardanto, A., Ardiansyah., Mustofa, A., & Taryana, A. (2021). Waterfall Exploration in Banyumas Regency Based on Ecotourism Environmental Protection (EEP) Approach for Water Conservation. *IOP Conf. Series: Earth and Environmental Science* 757 (2021) 012044.
- Hien, T. T. T., & Chu, H. J. (2024). Revealing Ecotourism Potential of Streams and Waterfalls: Identification of Influential Factors in a Case Study from Thua Thien Hue Province, Vietnam. *Sustainability*, 16(21), 9299.
- Idajati, H & Widiyahwati, M. (2018). The sustainable management priority of ecotourism mangrove Wonorejo, Surabaya-Indonesia. *IOP Conf. Series: Earth and Environmental Science* 202 (2018) 012048.
- Jayswara, K. A., & Sudiana, A. K. (2024). Efektivitas Peran Desa Lembongan Dalam Penanganan Pelanggaran Pembangunan di Sempadan Pantai Dengan Dampak Pencemaran Lingkungan. *Jurnal Hukum Mahasiswa*, 4(02), 1832-1846.
- Jiménez, A., & López, R. R. (2023). Environmental valuation of hydro-environmental services of the Tropical Montane Cloud Forest: A recreational value of "La Granada" waterfall in the municipality of Coatepec using the travel cost method. *UVserva: revista electrónica de la Coordinación Universitaria de Observatorios de la Universidad Veracruzana*, (15), 175-192.
- Kandel, S., Harada, K., Adhikari, S., & Dahal, N. K. (2020). Ecotourism's Impact on Ethnic Groups and Households near Chitwan National Park, Nepal. *Journal of Sustainable Development*, 13(3), 113-127.
- Khairuddin., Nisa, K., & Asysyfa. (2019). Analisis Kelayakan Objek Ekowisata Air Terjun Mandin Mangapan di Desa Paramasan Atas Kabupaten Banjar Provinsi Kalimantan Selatan. *Jurnal Silva Scientist*, 2(3), 493-501.
- Laksemi, N. P. S. T., Sulistyawati, E., & Mulyaningrum. (2019). Perhutanan Sosial Berkelanjutan di Provinsi Bali (Studi Kasus di Hutan Desa Wanagiri). *Jurnal Sylva Lestari*, 2(2), 150-163.

- Libosada Jr., C. M. (2009) Business or leisure? Economic development and resource protection Concepts and practices in sustainable ecotourism. *Ocean & Coastal Management*, 52, 390–394. 2009.
- Mahendra, D. (2024). The Impact of Tourism on the Preservation and Transformation of Cultural Identity in Bali, Indonesia. *Studies in Social Science & Humanities*, 3(6), 34-41.
- Marzouki, M., Froger, G., & Ballet, J. (2012). Ecotourism versus mass tourism. A comparison of environmental impacts based on ecological footprint analysis. *Sustainability*, 4(1), 123-140.
- Muta'ali, L. (2015). *Teknik Analisis Regional untuk Perencanaan Wilayah, Tata Ruang, dan Lingkungan*. Yogyakarta : Badan Penerbit Fakultas Geografi UGM.
- Nair, G. V. G., Mojiol, A. R., Kamlun, K. U., & Lintangah, W. (2018). The Contribution of Forest Ecosystem Services Toward the Local Community Living Vicinity to The Forest Protected Area: The Case of Kawang Forest Reserve, Sabah Malaysia. *Transaction on Science and Technology*, 5(1), 25-30.
- Nierras, M. D. C. (2022). Assessment of the ecotourism and livelihood potentials of Sayahan waterfall in Barangay Gaas, Ormoc city, Philippines. *World Journal of Advanced Research and Reviews*, 14(02), 406-413.
- Nurfatriani, F., Tarigan, H., & Perkasa, H. W. (2023). The role of the social forestry programs in increasing farmers' income and conserving forests in the Upstream Citarum Watershed, West Java, Indonesia. *International Forestry Review*, 25(2), 211-222.
- Olaniyi, O. E & Atalor, N. O. (2018). Land use/land cover dynamics around ecotourism attractions and support facilities in Ikogosi Warm Spring Resorts, Nigeria. *Journal of Forestry Research and Management*, 15(1), 197-220.
- Olaniyi, O. E., Ogunjemite, G. B., Akindele, S. O., & Sogbohossou, E. A. (2018). Temporal and distance decay analysis of land use/land cover around ecotourism hotspots: evidence from Pendjari National Park, Benin. *GeoJournal*, 85, 53–66.
- Olubunmi-ojo, T. T., Anosike, U. M., Omotoba, N. I., & Osamor, M. (2022). Assessment of the Perception of Tourist and Community Development of Olumirin Erin Ijesha Waterfall, Osun State, Nigeria. *J. Appl. Sci. Environ. Manage*, 26 (7), 1277-1282.
- Prasetyo, H. D., Hakim, L., & Retnaningdyah, C. (2017). Evaluating Environmental Services of Trisula Waterfall as Nature-Based Tourism Attraction in Bromo Tengger Semeru National Park. *Journal of Indonesian Tourism and Development Studies*, 5(2), 101-106.
- Pusat Pengendalian dan Pembangunan Ekoregion Bali dan Nusa Tenggara (P3E Bali Nusra). (2021). *Dokumen Status Daya Dukung Air Pulau Bali*. Kementerian Lingkungan Hidup dan Kehutanan.
- Putrajaya, I. K., & Antara, I. G. M. Y. (2014). Eksistensi Objek Wisata Lovina Desa Kalibukbuk (Tinjauan Geografi Pariwisata). *Media Komunikasi FPIPS*, 13(1), 23-32.
- Rahman, F & Citra, I. P. A. (2018). Karakteristik Air Terjun Sebagai Potensi Wisata Alam di Kecamatan Sukasada. *Jurnal Pendidikan Geografi Undiksha*, 6(3), 133-145.
- Rahmawati, P. I., Trianasari, & Widiastini, N. M. A. (2020). Analisis Potensi Wisata Desa Wanagiri Kabupaten Buleleng Provinsi Bali. In *Seminar Nasional Riset Inovatif ke-7 tahun 2020*.
- Ramdan, H., Prameswari, S.A., & Dwiartama, A. (2021). Suiability Analysis of Kampung Pasundan Cisamaya in Mount Ciremai National Park Area as Healing Forest Spot. *Journal of Biological Science, Technology and Management*, 3(2), 85-91.

- Rana, J. C., & Bisht, I. S. (2023). Reviving smallholder hill farming by involving rural youth in food system transformation and promoting community-based agri-ecotourism: A case of Uttarakhand state in north-western India. *Sustainability*, 15(11), 8816.
- Rana, J. C., Bisht, I. S., Mathur, P., Fadda, C., Mitra, S., Ahlawat, S. P., ... & Yadav, R. (2024). Involving Rural Youth in Agroecological Nature-Positive Farming and Culinary Agri-Ecotourism for Sustainable Development: The Indian Scenario. *Sustainability*, 16(21), 9417.
- Ross, S & Wall, G. (1999). Ecotourism: towards congruence between theory and practice. *Tourism Management* 20, 123-132.
- Salman, A., Jaafar, F., & Mohamad, D. (2020). Strengthening Sustainability: A Thematic Synthesis of Globally Published Ecotourism Frameworks. *African Journal of Hospitality, Tourism and Leisure*, 9(3), 246-258.
- Salman, A. (2021). Ecotourism development in Penang Hill: a multi-stakeholder perspective towards achieving environmental sustainability. *Environmental Science and Pollution Research*, 28, 42945–42958.
- Sarhan, A., Abdelgalil, R & Radwan, Y. (2016). Ecotourism principles as a framework for culturally responsive community development. *WIT Transactions on Ecology and The Environment*, 201, 15-25.
- Solly, A. (2021). Land use challenges, sustainability and the spatial planning balancing act: Insights from Sweden and Switzerland. *European Planning Studies*, 29(4), 637-653.
- Sriartha, I. P., Wesnawa, I. G. A., Astawa, I. B. M., Citra, I. P. A., Christiawan, P. I., Sarmita, I. M., & Nugraha, A. S. A. (2021). What is the Most Potential Coastal and Marine Resources in the Buleleng Region?. *ICLSSE 2020: Proceedings of the 2nd International Conference on Law, Social Sciences and Education, ICLSSE 2020, 10 November, Singaraja, Bali, Indonesia* (p. 160). European Alliance for Innovation.
- Suditha, I.N & Citra, I.P.A. Pemetaan Potensi Ekowisata Wilayah Pesisir di Kabupaten Buleleng. Seminar Nasional Riset Inovatif ke-2 tahun 2014.
- Suparta, I. W., & Suciati, D. A. P. (2021). Penegakan Hukum Terhadap Pelanggaran Pembangunan Di Sempadan Sungai Oleh Satuan Polisi Pamong Praja Provinsi Bali. *Pariksa: Jurnal Hukum Agama Hindu*, 5(1), 31-40.
- Suryana, I. N. M., Junaedy, I. K. D., & Sumawidayani, N. (2022). Implementasi Kebijakan Penataan Kawasan Sempadan Jurang Di Obyek Wisata Penelokan, Kecamatan Kintamani Kabupaten Bangli. *Widyanata*, 19(2), 98-101.
- Sutrisnawati, N. K., & Purwahita, A. R. M. (2018). Fenomena sampah dan pariwisata Bali. *Jurnal Ilmiah Hospitality Management*, 9(1), 49-56.
- Tamonob, M. O. S., Atmaja, D. M., & Kurniawan, W. D. W. (2021). Pemetaan Kerawanan Tanah Longsor pada Objek Wisata Swafoto di Desa Wanagiri, Kecamatan Sukasada, Kabupaten Buleleng. *Pranatacara Bhumandala: Jurnal Riset Planologi*, 2(1), 1-9.
- Utama, I. G. B. R. (2016). Keunikan Budaya dan Keindahan Alam sebagai Citra Destinasi Bali menurut Wisatawan Australia Lanjut Usia. *Jurnal Kajian Bali*, 6(1), 149–172.
- Utama, I. G. B. R., Suardhana, I. N., Sutarya, I. G., & Krismawintari, N. P. D. (2024). Assessing the impacts of overtourism in Bali: Environmental, socio-cultural, and economic perspectives on sustainable tourism. *TourismSpectrum: Diversity & Dynamics*, 1(2), 10-56578.

- Wahyuni, D. N., Sukarsa, I. N., Nugraha, A. S. A. (2020). The Role of Geomorphological Maps in Regional Planning and Management in Indonesia (Case: Buleleng Regency, Bali). In *ICLSSE 2020, November 10, Singaraja, Indonesia. 2020*.
- Wekesa, C., Ndalilo, L., & Many, C. (2021). Reconciling Community Livelihood needs and Biodiversity Conservation in Taita Hills forests for improved livelihoods and transformational management of the Landscape. *Maiko Nishi· Suneetha M. Subramanian Himangana Gupta· Madoka Yoshino Yasuo Takahashi· Koji Miwa, 17*.
- Wijana, N & Mulyadiharja, S. (2020). Pengembangan Hutan Taman Gumi Banten Desa Wanagiri sebagai Wisata Hutan. *Seminar Nasional Riset Inovatif ke-7 tahun 2020*.
- Wiratno, W., Withaningsih, S., Gunawan, B., & Iskandar, J. (2022). Ecotourism as a resource sharing strategy: Case study of community-based ecotourism at the Tangkahan Buffer Zone of Leuser National Park, Langkat District, North Sumatra, Indonesia. *Sustainability, 14*(6), 3399.
- Wisnawa, I. G. Y. (2017). Pemetaan Potensi Ekowisata di Kawasan Daerah Rencana Bendungan Titab, Buleleng. In *Seminar Riset Inovatif 2017*.
- Yanti, R.A., Bharata, I.B.A.Y., Janah, L., Melianti, D., Nuraini, L. (2022). Persebaran Air Terjun Dan Karakteristik Jalur Trekking Dalam Pengembangan Ekowisata Di Desa Wanagiri. *Jurnal ENMAP, 3*(1), 34-44.
- Yasa, I. N. S. M. W., & Sunarta, I. N. (2019). Eksploitasi Sempadan Jurang Sebagai Usaha Pariwisata Di Desa Pecatu Kecamatan Kuta Selatan Kabupaten Badung. *Jurnal Destinasi Pariwisata, 7*(1), 118.