

MAPPING THE TOURISM POTENTIAL OF SIDAN DAM IN ORDER TO SUPPORT THE DEVELOPMENT OF NEW RENEWABLE ENERGY AS AN ATTRACTION FOR GREEN TOURISM THROUGH EDUCOTOURISM IN BALI

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ABSTRACT

This research aims to map potential and formulate appropriate development strategies in the development of Sidan Dam as a green tourism-based destination that provides education and conservation of the surrounding nature. This research uses a descriptive qualitative approach through the analysis of natural, artificial, and cultural potentials that can support economic, socio-cultural aspects and reduce the impact on the surrounding environment. Data collection was conducted through field surveys, Focus Group Discussions (FGD), and documentation studies. Sidan Dam has significant potential to be developed as an ecotourism destination that integrates environmental conservation activities and education in tourism. The concept is relevant considering the adequate natural potential and the development of supporting facilities. The development of tourism at the Sidan Dam needs to focus on educational tourism infrastructure that is still under construction, which can support learning about water resource management and the surrounding environment, as well as the development of nature-based tourism activities that are conservation-oriented and do not harm the environment. The development of tourism in the Sidan Dam area is expected to provide sustainable benefits for the surrounding community and environmental preservation.

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1. INTRODUCTION

Dams are one of the constructions built with the purpose of holding back water flow to create reservoirs or lakes for irrigation, watering, electricity generation, and tourism. To meet the increasing water needs worldwide, dams are very important. By optimally utilizing water resources, we can ensure agricultural sustainability, generate environmentally friendly energy, and maintain a healthy living environment. The local government of Bali Province is considering the development of the tourism sector as one of the development planning programs because it believes that this sector plays an important role in the region's economic growth due to its potential.

The government is currently developing the tourism sector as one of the development planning programs that is a focus of the local government of Bali Province. One of the main economic sectors of Bali Province is tourism. Tourism is considered to have the ability to reduce the unemployment rate in addition to functioning as an economic driver. It is hoped that tourism will boost the national economy through foreign exchange earnings. The tourism sector is still the main pillar of Bali's economy. Due to the strong dependence on this sector, various ideas have emerged to

develop other subsectors to drive the economy. This is important because when the tourism sector develops into the most important and sole sector, the impact caused by the vulnerability of this sector to shocks will become even greater.

The development of renewable energy through the development of hydroelectric power plants (PLTA) and solar power plants (PLTS) in dam areas will impact the development of green tourism or ecotourism in the region. The development of ecotourism will certainly provide economic benefits to the surrounding communities. In terms of attractions, dam tourism activities usually focus on nature tourism, or ecotourism, because the natural beauty around the dam provides a very captivating allure. Tourists can also find various water activities at the dam, such as fishing, water skiing, and paddling. The social and cultural conditions of the communities around the dam will be influenced by the presence of the dam and its ecosystem.

Tourism plays an important role in various aspects, starting from the economic aspect where the presence of tourists will create job opportunities and automatically absorb the workforce, as well as the appreciation of arts and culture through tourism. (Agustina, 2022). Moreover, with the development of ecotourism related to the development of dam attractions, it will be able to preserve the surrounding natural resources, especially at the Sidan Dam, which will pass through several regencies in Bali. By utilizing the Dam as one of the tourist attractions, the visits from tourists can contribute to the maintenance of its function as a water resource infrastructure. (Yuwono, 2023). With the construction of the Sidan Dam integrated with green tourism, the Sidan Dam will not only generate electricity but also serve as an environmentally friendly tourist attraction. Therefore, to achieve the goal of making the Sidan Dam a source of New Renewable Energy (EBT) and a green tourism-based attraction, it is necessary to map the tourism potential within the Dam and other supporting tourism facilities that can preserve the surrounding environment while also contributing to the local economy around the Dam's construction.

2. METHOD

This approach includes the examination of important aspects that are considered, including the tourism potential at the review location and its surroundings; the study of the impact of renewable energy development on the tourism sector; the involvement in the development of sustainable green tourism products; and the development of tourism infrastructure. This approach involves the active participation of various stakeholders, including the government at the district, sub-district, and village levels, local communities, the tourism sector, and the energy sector. Through dialogue and collaborative engagement, this approach allows stakeholders to contribute to decision-making related to the utilization and governance of renewable energy in the context of green tourism. This active participation can enhance mutual understanding, encourage the adoption of sustainable solutions, and strengthen support for green tourism initiatives involving renewable energy. Data collection is conducted through field surveys, secondary data, and Focus Group Discussions.

3. RESULTS AND DISCUSSIONS

Sidan Dam in Badung Regency has tourism potential and can be developed into an integrated and cohesive tourist area by promoting Bendungan Sidan as the main attraction that can synergize with the tourism potential that can be developed around the Bendungan Sidan area. Bendungan Sidan not only functions as an irrigation system, but this dam also possesses unique features and natural beauty that have the potential to serve as a tourist destination, accompanied by various other development benefits. Based on the results of observations and field studies, the potential of the Sidan Dam as a tourist destination can be divided into two categories: natural tourism potential and artificial tourism potential. There are three things that make a tourist area interesting to visit, namely: something to see, something to do, and something to buy (Chusmeru, 2023). Sidan Dam has its own distinctive features with the surrounding natural beauty that supports the development of the tourism sector. The development of accessibility through the provision of adequate infrastructure, amenities through the enhancement of support capacity via spatial concepts. Meanwhile, non-spatially, it can be done through the strengthening of local wisdom in tourism activities and the identification of the potential of the Dam as a tourist attraction, thereby giving it a distinctive character. (Talakua, 2022). Based on the potential of a tourist destination that integrates tourism with the preservation of the environment and existing natural resources, ecotourism development strategies can play an important role in supporting nature conservation and minimizing environmental impact. (Angela, 2023). The development of tourism in the Sidan Dam based on its physical characteristics and surrounding environment can be collaborated with EBT educational tourism activities and ecotourism activities. This has been supported by the planning of infrastructure development and supporting facilities for tourism activities. Here are the development directions for the Sidan Dam area based on its potential according to the 4A tourism concept:

Table 1 Development of Tourist Attractions in the Sidan Dam Area

No	Activities	Excisting condition/facilities	Explanation
1	<i>Something to See</i>	<ul style="list-style-type: none"> Viewpoint building (with telescope) Theater room Cable car 	<ul style="list-style-type: none"> Beautiful scenery around the dam with cable car Bird watching Documenter video history about the dam
2	<i>Something to Do</i>	<ul style="list-style-type: none"> Rest area near garden Trekking track green house zone 	<ul style="list-style-type: none"> taking picture spot Trekking Planting plants
3	<i>Something to Buy</i>	<ul style="list-style-type: none"> Build arcade/artshop Culiner corner 	<ul style="list-style-type: none"> Souvenir Culinary

Tourist activities that can be designed based on the tourism potential found at the Sidan Dam are educational tourism activities combined with ecotourism activities. (Ecodutourism). These tourist activities are aimed at nature-loving travelers who are concerned about the environment and are intended for tourists who come to see and seek information about Bendungan Sidan. The tourism activity plan at Sidan Dam can be outlined as follows:

1. The visit begins with entering the gallery or photo exhibition on the history of the dam's construction.
2. Tourists are directed to the theater room for a presentation on the utilization and function of Sidan Dam.
3. Proceed to the wildlife observation and natural scenery zone, where several telescopes are provided.
4. Head to the dam zone, which can be viewed via cable car.
5. Tourists are invited to participate in the seeding and planting of rare plant seedlings.

The construction of the Sidan Dam is divided into the first area, the village of Bilok Sidan, Petang District, Badung Regency; the second area, the village of Buah Kaja, Payangan District, Gianyar Regency; the third area, the village of Langgahan, Kintamani District, Bangli Regency; the fourth area, the village of Mengani, Kintamani District, Bangli Regency; and the fifth area, the village of Bunutin, Kintamani District, Bangli. Based on the development of the Sidan Dam involving 3 regencies in Bali, the potential for regional development leading to the Sidan Dam area must be able to synergize well in order to ensure the equitable distribution of economic contributions that can be obtained by the local community through tourism development. The development of tourism potential in these 3 regencies (Badung, Gianyar, and Bangli) can be carried out to support the Sidan Dam area as one of the tourist attractions. This can be reviewed through the 4A components (Attraction, Accessibility, Amenity, Ancillary) in analyzing tourism potential and detailing strategies. (Aling, 2023). This can be elaborated in Table 2 as follows.

Table 2. Tourism potential that can be developed at the Sidan Dam

No	4A Components	Type of tourism	Future development
1	Attraction	Ecotourism	<ol style="list-style-type: none"> 1. The beauty of the natural scenery because it is surrounded by trees and beautiful natural views around the Sidan dam (nature tourism). 2. The bird habitat around the dam can be developed into an attraction for bird watching tourism at the viewing tower by providing telescopes. Types of birds present; red thrush, priniyas, turtledoves, river kingfishers, and others. 3. Photo spots developed on the western and eastern wings of the Sidan dam with views of the natural beauty.
		Edutourism	<ol style="list-style-type: none"> 1. The physical structure of the Sidan dam can be used for study tours and EBT tourist attractions. 2. The observation tower: Screening of historical documentaries and the function of the Sidan dam in a theater room in 3D or 4D format. 3. Trekking trails can be built around the Sidan dam that can be developed as tourist activities.
2	Accesibility	Transportation in Sidan Dam area	The potential to build a cable car transportation system from one platform to another (left and right dam platforms) and electric cars as transportation within the dam area for future planning.

3	Amenity	Improvement facilities	A zone for local community SMEs can be developed in the Sidan dam area related to souvenirs or culinary offerings as a supporting attraction.
4	Anciliary	Community role	There is a need for community empowerment, one of which is through the empowerment of local community SMEs.
		Integration management system	Perlu adanya integrasi sistem pengelolaan yang melibatkan 3 kabupaten (Badung, Gianyar dan Bangli) dalam pengembangan bendungan Sidan terkait sektor pariwisata

Ecotourism activities (nature tourism, conservation, and education) that can be designed based on the tourism potential found at Sidan Dam. These tourism activities are aimed at nature-loving tourists and those concerned about nature, as well as tourists who want to gain knowledge and seek information related to Sidan Dam. The design of tourism activities at Bendungan Sidan can be structured as follows:

1. Educational Tourism Program at Bendungan Sidan
 - a. The visit begins with entering the gallery or photo exhibition on the history of the dam's construction.
 - b. Tourists are directed to the theater room for a presentation on the utilization and function of Bendungan Sidan.
 - c. Then, they proceed to the wildlife observation and natural scenery zone, where several telescopes are provided.
 - d. Visitors can see the dam directly via cable car while enjoying the surrounding natural scenery, with a guide providing explanations.
2. Ecotourism Program at Bendungan Sidan
 - a. Visitors are invited to participate in activities such as the sowing and planting of rare plant seedlings (a special tourism activity that can be offered). Tourists are invited to participate in the seeding and planting of rare plant seedlings (a special tourism activity program that can be offered).
 - b. Activities to enjoy nature and bird watching up close through trekking, hiking, or cycling. (special activity program that can be offer)

Based on the presentation of the details of tourism activities at the Sidan Dam, half-day or full-day tour activities can be designed according to the needs of each tourist. The construction of the Sidan Dam is divided into first, the area of Bilok Sidan Village, Petang District, Badung Regency; second, the area of Buah Kaja Village, Payangan District, Gianyar Regency; third, the area of Langgahan Village, Kintamani District, Bangli Regency; fourth, the area of Mengani Village, Kintamani District, Bangli Regency; and fifth, the area of Bunutin Village, Kintamani, Bangli. Based on the development of the Sidan Dam involving 3 regencies in Bali, the potential for regional development leading to the Sidan Dam area must be well-synchronized in order to ensure the equitable distribution of economic contributions that can be obtained by the local community through tourism development. The development of tourism potential in the three regencies (Badung, Gianyar, and Bangli) can be carried out to support the Sidan Dam area as one of the tourist attractions. Edu-tourism is very suitable to be implemented in the agro-tourism area to gain education while also enjoying the natural beauty. (Chasanah, 2023). The tourism potential of the three districts in supporting the Bendungan Sidan area is reviewed through the 4A components (Attraction, Accessibility, Amenity, Ancillary) as follows:

Table 3. Tourism Potential that can be developed outside the Sidan Dam area as a tourism support

No	Location & attraction	Future development	Management
1	Waterlogging in Mengani Village, Bangli	<ul style="list-style-type: none"> • Water tourism • Cultural tourism • Culinary tourism 	Its development is directed towards community-based tourism, developed and managed by the community because it is related to the local culture and cuisine, which are distinctive tourist attractions in the village of Mengani due to the presence of water pools in the area.
2	<ul style="list-style-type: none"> • Water pooling in Bunutin village, Bangli regency • Pura Pingit • Pelisan waterfall (langgahan, Kintamani) 	<ul style="list-style-type: none"> • Water Tourism • Spiritual Tourism • Nature Tourism 	Development of spiritual tourism based on community-based tourism. Because it is related to the local community's culture and places of worship. Meanwhile, the management of nature tourism is carried out by the

			local government (tourism office) in collaboration with the community.
3	Belok Sidan Village in Badung regency	Agrotourism Ecotourism	Community management (community-owned land) related to the development of agro-tourism
4	Buahan Kaja Village at Gianyar regency	Cycling, Trekking dan hiking	Management and development are carried out by the community.

Based on the presentation of tourism potential above, the following recommendations can be made for the development of the Sidan Dam Area from a tourism perspective:

1. Several tourism potentials can develop well if the supporting facilities and infrastructure are adequately and sufficiently available.
2. The development of tourism at the Sidan Dam can be focused on green tourism with the appropriate use of technology. Thus, in this case, the development of the tourist attraction at the Sidan Dam is directed towards ecotourism, which is a collaborative development aimed at educational tourism and nature conservation tourism through activities that focus on rehabilitation, preservation, and wise utilization of nature.

4. CONCLUSION

Based on the results of the potential mapping study and the development of the Sidan Dam area as a tourist destination, it has good potential. The approach of green tourism based on education and nature tourism can be considered a relevant concept given the adequate natural potential around the Sidan Dam, so the concept of educational and nature tourism can be developed as ecotourism. In realizing the ecotourism concept at the Sidan Dam, several aspects need to be considered, such as the educational tourism infrastructure at the Sidan Dam and the form of nature tourism that leans more towards conservation activities. Overall, the development of the Sidan Dam as a tourist attraction is not only oriented towards economic aspects but also takes into account the existing environmental and socio-cultural aspects.

5. RECOMMENDATION

1. The development of tourist attractions in the Sidan Dam area is possible through green tourism based on education and nature tourism, utilizing the potential both around the dam and outside the dam area that supports tourism.
2. The development of educational and nature tourism infrastructure in the Sidan Dam area should be designed with criteria that can be fully met by the EBT electricity production and the physical facilities available in the dam area.
3. To support the sustainability of EBT and green tourism in the Sidan Dam area, an environmental conservation program, especially in the upstream area, needs to be designed to ensure the safety of the dam's water source while also serving as a tourist attraction.

REFERENCES

- [1] Agustina, L., & Alwi, M. (2022). Pengembangan Obyek Wisata Bendungan Marente Dalam Meningkatkan Pendapatan Masyarakat Desa Marente Kecamatan Alas Kabupaten Sumbawa. *Journal of Economics and Business*, 8(2), 266-293.
- [2] Angela, V. F. (2023). Strategi Pengembangan Ekowisata dalam Mendukung Konservasi Alam Danau Tahai. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, 8(3), 984-993.
- [3] Aling, F. A. N., Mahardika, K., Dewi, N. K. S., & Semadi, G. N. Y. (2023). Strategi Pengembangan Pariwisata Melalui Komponen 4A Pada Desa Buahan, Payangan, Gianyar, Bali. *MSJ: Majority Science Journal*, 1(1), 27-33.
- [4] Chasanah, S. I. U., Futhona, A. K., & Kurniawati, D. O. (2023). Pengembangan Konsep Eduwisata di Kebun Buah Bendosari. *Jurnal Mandala Pengabdian Masyarakat*, 4(1), 297-301.
- [5] Chusmeru, C., Sulaiman, A. I., Adi, T. N., Runtiko, A. G., Rofik, A., & Weningsih, S. (2023). Empowerment of Socio-Economic Institutions in Religious Tourism Villages Based on Local Wisdom. *International Journal of Business, Economics, and Social Development*, 4(4), 321-331.
- [6] Desmiati, I., & Aisyah, S. (2023). Potensi Biofisik Kawasan Konservasi sebagai Dasar Pengembangan Ekowisata Daerah Kabupaten Pesisir Selatan (Studi Kasus: Lubuk Larangan Bendung Sakti Inderapura). *Jurnal Sumberdaya Akuatik Indopasifik*, 7(1), 61-74.
- [7] Muliana, M., Masdarini, L., & Ariani, R. P. (2022). Potensi Bendungan Pandan Duri Sebagai Destinasi Wisata Di Desa Pandan Duri Kecamatan Terara Kabupaten Lombok Timur. *Jurnal BOSAPARIS: Pendidikan Kesejahteraan Keluarga*, 13(2), 66-71.

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- [8] Roza, A. D., Turyono, A., Lestari, E., Afani, E., Fitri, N. A., Solikhah, S., & Raharja, M. C. (2022). Optimalisasi Pengelolaan Dan Pengembangan Destinasi Wisata Bendungan Slinga Park Di Desa Slinga, Kabupaten Purbalingga. *Jurnal Ekonomi, Bisnis, dan Akuntansi*, 24(4), 53-58.
- [9] Talakua, J. C. E. (2022). Analisis Potensi Wisata Bendungan Way Ela Sebagai Kawasan Desa Wisata Di Negeri Lima Kecamatan Leihitu Kabupaten Maluku Tengah. *Semesta*, 2(2), 1-17.
- [10] Yuwono, Y., Pratomo, D. G., Pribadi, C. B., Khomsin, K., Kurniawan, A., & Anjasmara, I. M. (2023). Pembuatan Peta Wisata Waduk Selorejo, Desa Pandansari, Kecamatan Ngantang, Kabupaten Malang, Propinsi Jawa Timur. *Geoid*, 18(2), 229-236.