

ENVIRONMENTAL-BASED TOURISM VILLAGE MANAGEMENT: CASE STUDIES ON TARO TOURISM VILLAGE BALI

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ABSTRACT

This study aimed to analyze environmental-based tourism village management, from the perspective of managers and government to support sustainable tourism. Data were collected through observation, interviews, and focus group discussions. Interviews were held with the Head of Tourism Village Management in Bali, focusing on three districts: Bangli Regency (Pengelipuran), Tabanan Regency (Pinge), and Gianyar Regency (Taro). Informants were purposefully chosen, comprising the village head or government head in charge of the tourism village under study. To develop a suitable model, a focus group discussion with the informants was conducted, and the collected data were analyzed through qualitative descriptive analysis. The results showed that by implementing all indicators or sections of GSTC and by designing a model modified from the GSTC, tourist village can increase the implementation of Village SDGs as directed from the central government, especially in Bali and also across Indonesia.

Keywords: Environment, Government, GSTC, Management, Tourism village

1. INTRODUCTION

Sustainable tourism encompasses at least five key elements, as outlined in Muller's magic pentagon, namely economic wealth, guest satisfaction, healthy culture, protection of natural resources, and well-being of the local community (Donyadide, 2010). These five elements are interlinked in ensuring the sustainability of a destination. Several studies have shown that all tourism components, such as transportation, accommodation, attractions, events, promotions, associations, and others must be managed effectively (Triana et al., 2023) to achieve sustainable development goals (SDGs) (Rodríguez-Díaz & Pulido-Fernández, 2019; Scheyvens et al., 2021; Telfer & Sharpley, 2015). The Ministry of Tourism and Creative Economy in Indonesia has introduced a tourism village, implementing guidelines for creating sustainable tourist destinations. These guidelines focus on four areas: managing sustainable tourism destinations, benefiting local communities economically, preserving culture for both locals and visitors, and protecting the environment. This aligns with previous research highlighting the importance of involving entrepreneurs, communities, tourists, and policymakers in destination development. (Madanaguli et al., 2023; M. Marzo Navarro et al., 2015) to achieve sustainable environmental development (Murni et al., 2023). In addition, it is important to engage the local government, which plays a very

important role, especially in the political economy (Shone et al., 2016), as well as in developing the culture of the local community (Vasstrøm & Normann, 2019).

According to previous studies, the local community plays an essential role in preserving the environment and is responsible for the management of tourism village, as this influences the consumption patterns of visiting tourists (Hu et al., 2021). In addition to being responsible for preserving the environment, their self-management ability (self-efficacy) has a significant relationship with social, cultural, economic, and environmental concerns (Fong et al., 2017). Tourism village managers, as part of the local community, have a broader responsibility. For these individuals, tourism is not only about maintaining village assets and infrastructure but also about improving the well-being of others. This can be achieved by generating income, empowering individuals, and safe-guarding local cultural heritage (Murni, 2016). Managers must ensure that tourism activities do not harm the natural environment or the local culture, and are also responsible for maintaining and enhancing green service offerings to keep the destination appealing to tourists. This includes the use of green marketing strategies, such as eco-brands, eco-labels, green advertising, and encouraging eco-conscious purchasing behavior (Chin et al., 2018).

In addition to managers, local governments play a crucial role in overseeing and co-ordinating the management of tourism villages. They need to establish policies that promote sustainable development and ensure that environmental, safety, and tourist satisfaction regulations are upheld. The government can assist tourism village managers through financial aid, training, and promotional efforts, enhancing their ability to manage the destination effectively. Furthermore, it is vital for the government to monitor the effects of tourism activities on both the village and the surrounding community (Maxim, 2016; Rastegar, 2020, Oka et al., 2021).

Beside that other study also stated that travelers are increasingly looking for experiences that align with their values, and destinations that prioritize conservation and community well-being will continue to attract visitors. Ecotourism or environmental based destination can also offers a way forward, one that benefits the planet and its in-habitants. By implementing responsible practices, fostering collaboration, and recognizing the balance between conservation and economic development, we can ensure that ecotourism remains a powerful force for positive change in the world of travel (Feng, 2023). In other side from similar research conducted in other villages in Bali stated that implementing environmentally based villages could also preserve the village's culture, it means that can support the sustainability of rural tourism (Darmayanti, 2024).

To ensure the sustainability of tourism village from an environmental perspective, guidelines such as those provided by the Global Sustainable Tourism Council (GSTC) can be adopted. The GSTC outlines 4 key areas of sustainability, including management, cultural, socio-economic, and environmental (Gustiarini et al., 2023; Council, 2015). According to the GSTC, environmental sustainability comprises 3 dimensions, namely conservation of natural heritage, resource management, and waste and emissions management. Each dimension is further divided into 12 specific indicators, which serve as checklists for environmental management in tourism village (Fujihasa et al., 2022; Council, 2015).

2. METHODOLOGY

This study aimed to examine the management of environmentally focused on tourism villages from the viewpoints of village managers and government officials. It employed a qualitative approach to investigate real-world phenomena in the Taro tourism village. Data were gathered through direct field observations and semi-structured interviews with 11 stakeholders representing both village management and government. These respondents selected with purposive sampling based on their

competencies in each field (head of village, vice head of village, manager and vice manager of village, head of women village, head of village financial, head of sub village, head of village irrigation, IT team) Interview questions were manually prepared using a Google Form to enhance data accuracy. Additionally, a focus group discussion was held with all stakeholders to validate the preliminary model developed by the research team. The data presentation involved data condensation, display, and the drawing of conclusions along with verification (Miles, Huberman, and Saldaña 2014).

3. RESULT AND DISCUSSION

Analysis of Environmentally Based Tourism Village Management from the Management and Government Perspective

The study focused on three eco-friendly tourism villages. First, Pinge Tourism Village, is known for its environmental conservation efforts. According to an interview with AA Management Chair Ngurah Arimbawa, Pinge Village upholds environmental preservation as part of the Tri Hita Karana philosophy, which guides the village's development. The beautiful village also had *angkuls* which were similar to Penlipuran village and most village in Bali.

Taro Tourism Village was used as a case study to illustrate environmentally based tourism village management in this discussion. As mentioned in the previous chapter, destination management is divided into four components: (1) sustainable management, (2) socio-economic factors, (3) culture, and (4) the environment. Specifically, for the environment component, there were 12 criteria used in this study, namely:

a. Sensitive Environmental Protection

In an interview with the Head of the Taro Tourism Village Management, it was revealed that, to protect the sensitive environment, the management together with the village government must agree to preserve the animal, namely the white ox, whose existence was sacred by the local community because it was associated with major ceremonies in Bali. Additionally, with the younger generation becoming more aware of environmental preservation, the Go Green group was established in January 2010, followed by clean-up efforts in the Lembu Putih Taro area. In 2011, funds were raised, leading to the construction of the Shiwandandi Monument. In October 2012, the "Lembu Putih Taro" Foundation was formed. April 1, 2013, the articles of association and bylaws were completed, on October 9, 2014, the Notarial Foundation deed was issued, and on October 9, 2014, permission from the Minister of Law and Human Rights was obtained. Armed with this, the foundation prepared a plan for activities, namely, 1) Preservation of the White Lembu, 2) Protection and Conservation of the Taro Traditional Forest, 3) Protection of the Pura Agung Gunung Raung Historical Site, 4) Development of rare plants, *usada* (herbs) as well as *upakara* plants, Kalpataru was proposed in 2015 and in 2016 there were 25 out of 30 participants. It was reintroduced in 2017, and on August 30, 2018, it won the Kalpataru award in the environmental conservation category during an event held in Blitung, North Sulawesi. Regarding the SDGs, the Taro tourism village had fulfilled Goal 15, which focuses on protecting terrestrial ecosystems.

b. Visitor Management at Natural Sites

Visitor management at natural sites like the White Lembu Conservation, Firefly Park, and Semara Ratih was overseen by Pokdarwis. To enter the White Lembu Conservation, visitors needed to pay an admission fee of Rp. 10,000, which went towards ser-vice contributions and visitor organization. The area featured a spacious and beautiful green park, a children's play area, a *bale bengong*, and *Wantilan Sarba Wana*. Visitors could take selfies with the White Cow and explore the park, as well

as enjoy the play-ground facilities. Additionally, many residents were permitted to enter this location to seek alternative treatments by requesting safety or healing from Ida Bhatara Shiva, the owner of the white cattle. Lembu Putih Taro offered various supporting facilities, including parking, a meeting room (wantilan), two bale gongs, Nandini Resto, and two restrooms, as well as several accommodation options like homestays and villas nearby. Visitors to the white oxen site were accompanied by a local guide who could provide information about the white oxen.

Visitors to the Firefly Park were also regulated to avoid exceeding the given capacity. This park had 6x30 square meters which was a firefly conservation area in the natural habitat of organic rice fields. Tourists could see fireflies directly and combine it with trekking, cycling, and cooking classes. Additionally, the park's restaurant offered a variety of food and drink options, complemented by stunning natural views and a refreshing atmosphere, operating from 9:00 AM to 10:00 PM. An entrance fee of IDR 25,000 was charged for local visitors in the afternoon, which included coffee or tea and snacks, while tourists paid IDR 150,000, covering the entrance fee, guided tour, coffee or tea, snacks, and dinner.

c. Interaction with wildlife

Tourists visited the white cattle conservation area had the opportunity to interact directly with the white cattle, while being supervised by the on-duty officers. Visitors engaged with the animals by petting them and providing food that had been prepared by the manager. (see Figure 1)



Figure 1. Feeding white cow

d. Exploitation of species and animal welfare

No animals were exploited in the White Lembu Conservation area or at other locations like Firefly Park, as visitors did not ride or excessively use them. However, photos were taken while interacting with the animals. For instance, guests could only view the animals at Firefly Park during nighttime visits, indicating that the animals were not under stress and thus not exploited. I Wayan Gede Ardika, the manager of Taro Village Pokdarwis, mentioned that when the butterfly garden was established, it was intended to be an organic garden, spanning approximately 3.5 hectares. Wayan Gede wasn't alone; he partnered with I Komang Petak to establish an organic garden. To their surprise, this garden attracted a significant number of fireflies. This firefly conservation area originated from the organic garden. They used natural fertilizers and pesticides, and the soil and water quality were excellent, which encouraged the presence of fireflies. As the firefly population grew, conservation efforts were implemented in the surrounding rice fields. Fireflies thrive in these

areas, but the use of chemicals made it increasingly difficult for them to survive. A high number of fireflies indicates that the environment re-mains healthy, with good nutrients and water.

e. Energy conservation

The infrastructure and technology for energy production delivered clean and efficient energy, promoting positive growth and aiding in reducing environmental impacts. Possible alternative energy sources for development included hydroelectric power, geo-thermal energy, bioenergy, biofuels, solar energy, and marine energy. These Village Sustainable Development Goals (SDGs) guaranteed that everyone had access to renewable energy. The accomplishment of this goal by 2030 could be assessed through various indicators, including household electricity consumption in the village reaching at least 1,200 kWh, village households utilizing gas or wood waste for cooking, and the adoption of a renewable energy mix. Furthermore, the energy conservation efforts in Taro Village were comparable to those in other villages in Bali, such as Penglipuran and Pinge. In Taro, households cooked using gas and wood fires, practiced energy saving by turning off lights when not in use, and employed energy-efficient bulbs. However, only a few homestays utilized solar power for water heating, and Taro Village had not yet engaged in energy-independent tourism initiatives.

f. Water stewardship and water quality

Village SDGs Number 6, such as decent with clean water and sanitation, was intend-ed to ensure that basic human needs in the form of clean water and adequate sanitation could be provided. The accomplishment of the Village SDGs goal was evaluated based on various factors, including household access to safe drinking water and adequate sanitation. By 2030, the efficiency of drinking water usage and efforts to protect and restore ecosystems related to water resources—such as mountains, forests, wetlands, rivers, groundwater, and lakes—was achieved at a rate of 100%. While several areas in Taro Village demonstrated a sufficient supply of clean water at the household level, some hamlets still faced shortages during the dry season, with water flow often decreasing or temporarily vanishing. Additionally, there was insufficient pipe maintenance, and some channels were outdated. In response to this issue, the Village Government recognized the need to improve clean water piping, construct storage tanks at various locations, and maintain the areas surrounding water sources. In Taro village, water management relied on rivers and Subak systems for irrigation regulation. Subak Puakan was the largest and oldest Subak in Taro, as well as in Bali. The village primarily sourced its irrigation water from Puakan, where the community actively practiced water stewardship and quality maintenance by planting trees, refraining from indiscriminate deforestation, conserving forests, and safeguarding water sources that also served as drinking water supplies. This encompassed the Yeh Pikat water source, which was a notable tourist attraction in Taro village. Furthermore, the village community safeguards these water sources through reforestation efforts, pollution prevention, the production of bio taro and bio gas, and laboratory testing of the water every six months to assess its drinking quality. For daily use, each banjar oversaw its water supply, and residents contributed to self-help water costs based on their cubic meter usage.

g. Management of liquid waste and solid waste

Waste and emissions management was carried out by Taro Village, especially pro-cessing liquid waste and solid waste. Liquid waste from households in the form of kitchen washing waste and clothes washing entered household sewers and was ultimately discharged into rivers. The issue of waste and sanitation was a problem that had not been overcome by all parties. The problem of waste and sanitation was related to the awareness of community members and the consistent

facilitation of the village government in directing and providing alternative handling solutions, from the results of visual observations of community awareness and ability to manage waste. However, it was still low, even in terms of sanitation regarding general environmental cleanliness and residents' yards, household waste, stalls, villas, restaurants, and several tourist attractions required attention from all parties. Up until now, Taro Village had not been designated as waste-free (particularly of inorganic waste), as in some hamlets, trash was still being disposed of haphazardly, with some thrown behind houses and others directly into the river.

h. GHG emissions and climate change mitigation

Village SDGs Number 13 focused on creating a Climate Change Responsive Village, aiming to lower greenhouse gas and CO₂ emissions resulting from deforestation, peat-land fires, and the burning of fossil fuels for energy, electricity generation, industry, and transportation. Additionally, this goal sought to mitigate the effects of global climate change through various programs implemented by village governments in line with their core responsibilities. The achievement of this goal was measured by several indicators, including the village's disaster risk index.

i. Low impact transportation

The traffic in Taro Village mainly consisted of low-emission vehicles, including private cars and tourist minibuses, due to the village's slightly uphill terrain, which kept traffic density low. However, there is a need to prepare for a potential increase in tourist visits in the future, particularly to attractions like Lembu Putih, Firefly Park, Yeh Pikat Trekking & Waterfall, Village Tour Cycling, Bali Wana Tropical, Alas Taro, Bali Taro Adventure, and Semara Ratih.

j. Light and noise pollution

Taro Village was free from light and noise pollution due to its abundance of shady plants and the dense, well-preserved forests maintained by the residents. The village forest, known as Sarwa Ada, effectively blocked sunlight and vehicle noise. Additionally, the surrounding village forest, home to around 300 monkeys, contributed to the peaceful atmosphere.

Environmental Based Tourism Village Management Model

From the analysis described in the discussion above, an environment-based tourism village management model could be designed which was referred to as GSTC as displayed in Figure 2.

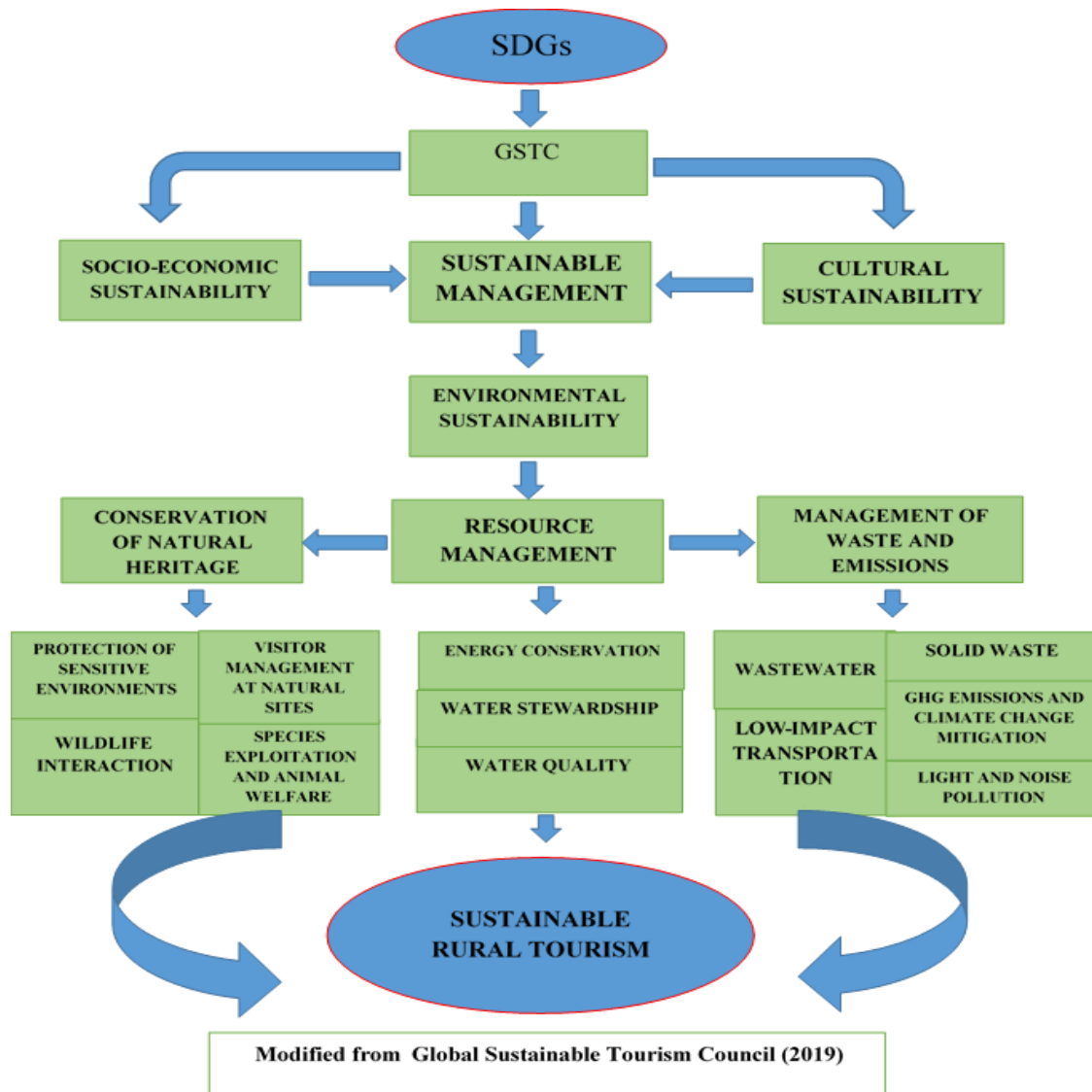


Figure 2. Environmentally Based Tourism Village Management Mode

4. CONCLUSION

In conclusion, this study indicated that environmentally based tourism village management in the Taro tourism village was carried out according to the standards of the Global Sustainable Tourism Council, especially environmental aspects. Of the 3 parts consisting of nature conservation, resource management, and waste and emissions management, 2 parts had been managed well, namely nature conservation and resource management. Meanwhile, in section 3, several subsections or indicators needed to be managed well, such as the quality of solid and liquid waste processing that needed to be improved by the quality standards set out in the GSTC. There was no accurate emission measurement in line with standards, and waste recycling was suboptimal. Additionally, light and noise measurements need to be conducted to ensure Taro village becomes sustainable and can handle the rising number of tourist visits. A model for managing an environmentally sustainable tourism village, aligned with global standards set by the Global Sustainable Tourism Council, was needed to raise awareness among village managers and government officials about the importance of environmentally focused tourism. By embracing GSTC standards, tourism village managers can gain a deeper understanding of and motivation to

implement Village SDGs, serving as a tangible re-reflection of the central government's efforts to achieve the broader SDGs.

RECOMMENDATION

From this study, it can be recommended for village management and government to continue using a sustainable environmental management approach by developing green technology, involving local communities in making decisions, providing regular training to tourism village managers, and establishing partnerships with environment organizations and academics in maintaining and developing environmental, economic and cultural sustainability.

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