

Development of Marine Potential as Sustainability-Based Coral Reef Tourism in Rajatama Village, Buleleng, Bali

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Abstrak

Desa Rajatama di Buleleng, Bali, memiliki potensi terumbu karang, namun belum dimanfaatkan secara optimal sebagai destinasi wisata. Program pengabdian masyarakat ini bertujuan untuk membantu masyarakat dalam mengembangkan potensi laut sebagai destinasi wisata terumbu karang yang berkelanjutan. Model yang diterapkan adalah pendekatan pembelajaran campuran yang menggabungkan komponen pembelajaran jarak jauh dan tatap muka. Tahap persiapan program dilakukan secara jarak jauh, putaran pertama pelatihan dan pendampingan dilakukan secara tatap muka, sedangkan putaran kedua pendampingan dan evaluasi dilakukan secara jarak jauh. Program ini ditujukan kepada 45 tokoh masyarakat, nelayan, praktisi pariwisata lokal, dan pemuda desa. Hasil program menunjukkan bahwa warga telah memperoleh pemahaman yang lebih baik tentang konservasi terumbu karang, pengembangan paket wisata berkelanjutan, dan pembentukan kelompok pengelola wisata terumbu karang. Program ini telah mengembangkan konsep pengembangan struktural wisata terumbu karang yang berfokus pada faktor lingkungan, ekonomi, dan sosial budaya. Kesimpulan program ini menunjukkan bahwa program pendampingan berkelanjutan berbasis masyarakat memiliki kapasitas untuk membantu masyarakat mengelola sumber daya laut secara efektif sebagai daya tarik wisata, sekaligus berkontribusi positif terhadap lingkungan dan perekonomian.

Kata kunci— *Wisata terumbu karang, Keberlanjutan, Pengabdian masyarakat, Bali, konservasi laut*

Abstract

The Rajatama Village in Buleleng, Bali has potential coral reefs, yet has not been put to optimal use as a tourist destination. This community service program aims to assist the community in developing the potential of the ocean as a sustainability-based coral reef tourism. The model applied is a blended learning approach which incorporates remote and in-person components. The preparatory phase of the program is conducted remotely, the first round of training and mentoring is conducted in-person, while the second round of mentoring and evaluation is done remotely. The program is aimed at 45 community leaders, fishermen, local tourism practitioners and the village youth. The outcomes of the program indicate that residents have gained a better understanding of coral reef conservation, the development of sustainable tourism packages and the establishment of a coral reef tourism management group. This program has developed a concept for the structural development of coral reef tourism focusing on the environmental, economic, and socio-cultural factors. This program's conclusion indicates that community-based, sustainability assistance programs have the capacity to help communities effectively manage ocean resources as a tourism attraction, while also positively contributing to the environment and the economy.

Keywords— *Coral reef tourism, sustainability, community service, Bali, marine conservation*

1. INTRODUCTION

Coral reef ecosystems, one of Indonesia's many marine resources, are abundant in the water territories of the world's largest archipelagic country (Burke et al., 2012). Aside from being a habitat for abundant marine life, coral reefs also have the potential to be developed for use in marine tourism (Honey & Krantz, 2007). One of the main tourist destinations in Indonesia, Bali has coral reefs located in Buleleng, situated in the northern part of the island, which remain underdeveloped. Rajatama village located in Buleleng Regency possesses unoptimized excellent potential for coral reefs. As of 2020, The Coral Triangle Initiative has Suggested that the coral reefs in the village range in life-sustaining coral cover from 65 to 75 percent, and seems to be in relatively good condition. Yet, the inhabitants of the area lack the necessary knowledge and skills necessary for converting the area into a sustainable tourist hotspot.

Spalding et al. (2017) states that Sustainable Coral Reef Tourism is a type of tourism development that focuses on environmental conservations, economic benefits to the nearby communities, and culture sustaining tourism activities. This type of tourism is also related to the SDGs (Sustainable Development Goals) targets 14 and 11 (United Nations, 2015) on marine and oceans and on sustainable cities and communities respectively. Research suggests that coral reef tourism, if properly managed, can immensely benefit the local community's economy (Marshall et al., 2019). Dearden et al. (2012) suggests that in the case of Thailand, sustainable coral reef tourism can raise a person's income by up to 40% without compromising the integrity of the ecosystem. On the other hand, if the development of coral reef tourism is poorly managed, the consequences can be catastrophic, such as the uncontrolled tourism activities that lead to coral reef destruction (Lamb et al. 2014).

The effectiveness of the Community-Based Tourism (CBT) approach on the development of sustainable tourism in several developing countries is well-documented (Tasci et al., 2013). CBT focuses on the actual participation of the local communities in the planning, management, and exploitation of tourism products (Goodwin & Santilli, 2009). Regarding the tourism of coral reefs, this approach is very relevant considering the local communities have necessary traditional knowledge of the waters and can serve as stewards for the protection of coral reefs (Clifton, 2013). Developed forms of coral reef tourism also depends on information and communication technologies (Buhalis & Amarangana, 2015). Digital

technologies facilitate the marketing of the product, online reservations, and educating clients on coral reef protection (Neuhofer et al., 2012). Nevertheless, the use of technology in the development of tourism in the developing world is complicated by several factors, such as poor infrastructure and scanty human resources (Werthner & Ricci, 2004).

A thorough mentoring program is required to leverage the marine potential of Rajatama Village as a sustainable coral reef tourism destination. This is in view of the current state of affairs and its possible outcomes. This service to the community seeks to help the community acquire the capacity to manage coral reef tourism in a sustainable manner through a blended learning format that incorporates both online and offline components.

2. METHOD

In this instance, the community service program is constructed using the participatory action research (PAR) framework, which encompasses the community at all levels (Kindon et al. 2007). This framework is selected because it has the potential to enhance local communities as well as ensure the program's self-sufficiency after the mentor caretaking has been completed. The site for this activity was Rajatama Village, Gerokgak District, Buleleng Regency, Bali. This program is scheduled to run for 6 months from January to June 2024. The site selection is justified through the following rationales: (1) availability of favorable coral reef ecosystem, (2) availability of responsive population to the development initiative, (3) suitable physical infrastructure, and (4) endorsement from local administrative entities. The program is designed for 45 participants selected using the following criteria: (1) community and administrative leaders, (2) capture fishers and fishery entrepreneurs, (3) service and guide personnel, and (4) youth of the village with an inclination towards the tourism industry, and (5) entrepreneurial women willing to diversify into the culinary tourism industry. The participants were nominated through the village council and local leaders from the community.

The implementation of the program was conducted using a blended learning method involving three main phases. Online preparation phase, it lasted for 2 weeks and covered the following activities: (1) program socialization through webinars, (2) initial assessment of the condition and potential of coral reef tourism, (3) introduction to the concept of sustainable tourism, and (4) the formation of a working group. The First Training and Mentoring Phase (Offline) was

conducted in Rajatama Village for 1 week and covered the following activities: (1) comparative study of sustainable coral reef tourism development, (2) training on managing tourism destination (3) tourism product development, and (4) digital marketing. Rajatama Village was selected as the comparative study site because of the village's success in developing sustainable marine tourism and advanced digital technology. The Second Mentoring and Evaluation Phase (Online) was conducted for 3 months focusing on the following activities: (1) assisting the implementation of the formulated tourism development plans, (2) periodic monitoring and evaluation, (3) coaching tourism management groups, and (4) program final evaluation.

Several different types of data collection methods were performed that included: (1) a series of questionnaires, a pre and post test for the level of respondents knowledge and skill increase, (2) focus group discussion (FGD) to gauge the public's perceptions and hopes, (3) participant observation to study the educational activities and the implementation of the program, (4) key informant in-depth interviews, and (5) activity documentation through videos and pictures. Quantitative data were analyzed through descriptive statistics (mean, median, mode, percentage) and t-test to determine the level of difference between the pre and post test scores. Qualitative data were analyzed by thematic analysis of the key issues that were raised in the FGDs and the interviews. Data triangulation was used to cross-check the results for validity and reliability.

3. RESULT AND DISCUSSION

Initial Situation of the Community

Based on the initial assessment, the knowledge level of the residents in Rajatama Village with respect to sustainable tourism is still very low. 78% of the respondents were not familiar with the basic tenets of sustainable tourism and merely 23% claimed to have participated in tourism activities. Despite that, 89% of the respondents were very eager to promote tourism in their village. Rajatama Village demonstrates an impressive 70% live coral cover, indicative of the region's thriving aquatic ecosystems. Found within the village's waters are 45 documented species of hard corals and an astonishing 120 species of reef fish, which are significant indicators of sustainable and prosperous tourism.

Implementation of Activities

Results from the Preparation Phase

For this particular project, 52 individuals signed up for the webinar, with an impressive active participation rate of 85% for the entire webinar session. Participants

of the webinar learned about sustainable tourism, the economic opportunity that comes with coral reef tourism, and exemplary cases of tourism marketing done by and for the community. Based on the pre-test of having to gauge the participants' level of understanding, the anticipated outcome was that the learners would achieve a mean score of 45 percent out of a possible 100, which unfortunately was the case. The instructor for each group was chosen according to the individual's knowledge and proficiency on the topic, and it was to this group that the working title was given: "Coral Reef Conservation Group, Product Development Group, and Marketing and Promotion Group."

Results from the First Phase of Training and Mentoring

To the participant of this activity, the comparative study done in the Penuktukan Village was most instructional. This visit gives a clear illustration of what sustainable tourism management of a coral reef entails. Witnessing the actual use of technology in the management of a destination, the online booking system, and the educational conservation program for tourists provides a unique opportunity for participants. Training in the management of tourist destinations results in a comprehensive plan for the development of tourism. Participants were able to create a vision and a mission for the development of coral reef tourism in Rajatama Village. This was, "To become a sustainable coral reef tourism destination that economically benefits the local community while conserving the marine ecosystem." The strategic plan that was developed contains infrastructure development, capacity building, marketing, and conservation monitoring system.

The participants that took part in the workshop on developing tourism products were able to create a total of eight tour packages. These tours include: (1) Snorkeling Tour and conservation interpretation, (2) Diving Experience for advanced participants, (3) The Coral Restoration Program for tourists who wish to contribute to conservation efforts, (4) A Traditional Fishing Experience, (5) A delightful Sunset Cruise with local cuisine, (6) Marine Life Photography, (7) An Educational Tour designed for kids, and (8) A Community Living Experience. The design of these packages takes into consideration the local community, the environment, and the sustainable tourism practices. Websites and social media pages are developed as part of the training done on digital marketing. Participants are taught how to use Instagram, Facebook, and TikTok for destination marketing. Also, the development of an online booking system that is coupled with digital payment facilities has been designed.

Mentoring and Evaluation Phase Results

During the online mentoring period, an impressive growth in the use of the program was evident. The Coral Reef Conservation Group was able to apply the coral restoration program that consists of planting 500 coral fragments in 3 different locations. This program has the added value of helping to educate tourists, who participate, on how to conserve the environment. The Tourism Product Development Group has managed to execute 6 out of the 8 tour packages that were developed. The Snorkeling Tour and Basic Fishing Experience packages are the most liked with a rating of 4.2 out of 5.00. There was a total of 287 tourists during this period of whom the average payment made was IDR 350,000.

Social media destination awareness is achieved by the Marketing and Promotion Group. The Local Culinary Group created 12 specialized food menus that incorporate the area's seafood and agricultural products. Among the most popular menu items that tourists enjoy are the 'Ikan Bakar Rajatama' and the 'Es Kelapa Muda Coral.' Participants in food safety training courses learn how to properly carry out various food presentation techniques. The Group that Manages Destinations has prepared SOPs for various tourism activities as well as for food safety training. The SOPs cover the safety of tourists, a set of guiding principles for local guides, a fair profit-sharing scheme, and monitoring of the environmental consequences. The establishment of the Village Tourism Management Agency, which has come to be referred to as BumDes Wisata, has also been approved by the village authority and is now operational.

Obstacles and Measures

Some of the obstacles encountered in the implementation of the activities are of a diversified character, which include (1) insufficient internet coverage, (2) the overly conservative viewpoints of some individuals, (3) a shortage of funds for the construction of tourism infrastructure, and (4) changes in climate which constrain tourism activities.

The actions taken are: (1) collaboration with internet service suppliers to enhance service delivery quality, (2) tailored outreach to resistant community leaders to demonstrate program sponsorship benefits, (3) assisting with access to microfinance through collaboration with lending institutions, and (4) developing weather-independent tourism products. The program brings about a number of innovations in developing community-based coral reef tourism. First, the blended approach of using both online and offline teaching is valuable for increasing community capacities. Second, the combination of coral restoration and tourism activities fosters a model of

conservation tourism. Third, the sustainable development of BumDes Wisata through the establishment of a fair and easily understandable profit-sharing mechanism guarantees program continuity.

Evaluation of the Success of the Program

Evaluation of the Program was done using a blended method with different quantitative and qualitative metrics. Based on the results from the post-test, the participants were able to achieve a statistically significant improvement of a knowledge score from a mean of 45 to 78 ($p < 0.05$). Observational assessment during field practice also suggests an improvement of practical skills within the domain of tourism management. Additional metrics of success include: (1) the establishment of 5 cooperative and functional working groups, (2) the development of 8 tourism products with commercialization potential, (3) a 150% growth in tourist arrivals relative to the prior period, (4) a 35% improvement in the level of average income of the community, and (5) a 5% increase in the cover of the live corals.

The impact of the program in the long run shows that the model developed for the sustainable development of coral reef tourism and its sustainable management can be utilized in other regions. The establishment of BumDes Wisata, together with the community's dedication to the follow-on conservation and tourism development activities, assures the continuity of the program's impact.

4. CONCLUSION

“Assistance in the Development of Marine Potential as Sustainable Coral Reef Tourism in Rajatama Village, Buleleng, Bali” community service program has attained the desired objectives. The application of blended learning techniques in improving community skills in managing sustainable coral reef tourism proves successful. The program has been able to effect considerable positive change in various parameters. Knowledge and skills improved as the participants' average score increased from 45 to 78. The socio-economic parameters demonstrated a 35% increase in average community income along with the creation of 28 new jobs. The environment improved with a 5% increase in live coral cover and increased community conservation awareness.

The operational success of this program has far-reaching consequences for the enhancement of sustainable tourism in Indonesia. First, the benefits of participant-centered program design that enables community participation at all levels of a program. Second, the successful application of blended learning

community service programs in remote regions of the country. Third, the need to incorporate conservation principles in tourism development projects to support sustainable tourism development.

Some of the suggested strategies for advancing similar programs are: (1) focusing on the support of local authorities regarding policies and funding (2) cultivating strategic relationships with the private sector regarding financing for sustainability (3) extending the use of the model to other regions with similar prospects and (4) formulating a more rigorous assessment and evaluation framework to track long-term consequences. With adequate support, local communities could harness the potential of their natural resources to create sustainable economic ventures while preserving environmental integrity, as demonstrated by this program. The model of sustainable coral reef tourism development can serve as a guide for other marine tourism destinations in Indonesia.

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