

# Community Awareness and Capacity in Developing Ecotourism: A Case Study from Cô Tô Island, Northern Vietnam

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**Abstract:** *This article examines the awareness, involvement, and perceptions of local communities regarding community-based ecotourism (CBET) in Cô Tô Island, Quang Ninh Province, Vietnam. Using survey data from 70 households, the study explores how residents perceive the economic and environmental impacts of CBET and identifies both opportunities and barriers to wider participation. While many respondents acknowledge CBET's role in job creation, income growth, and cultural preservation, limited infrastructure, inadequate skills, and coordination gaps hinder broader community engagement. The findings suggest that a strategic approach—centered on education, infrastructure, local empowerment, and environmental safeguards—is vital for achieving sustainable ecotourism development in Cô Tô.*

**Keywords:** community-based ecotourism, local participation, sustainable tourism, Cô Tô Island, Vietnam

## 1. Introduction

In recent decades, Community-Based Ecotourism (CBET) has emerged as an effective approach to promote sustainable development, particularly in rural and island areas rich in natural and cultural resources [2]. Unlike mass tourism, CBET emphasizes the role of local communities in actively participating, organizing, and benefiting from tourism activities. This approach not only generates income and employment for local residents but also contributes to resource conservation, enhances public awareness, and helps preserve traditional cultural identities [3], [9].

In Vietnam, CBET has increasingly received attention as a tourism development strategy aligned with poverty reduction, especially in coastal and island localities. Among these, Co To Island District (Quang Ninh Province) is considered a prominent example of successful community-based ecotourism development, thanks to its pristine marine landscapes and the growing interest of both domestic and international tourists. Local authorities have implemented a range of support programs to encourage community participation in activities such as homestay accommodation, food and beverage services, tour guiding, and the sale of local souvenirs [5].

This study was conducted to assess the level of community participation and awareness regarding CBET development in Co To Island District. The findings serve as a foundation for proposing appropriate solutions to promote a sustainable CBET model that ensures meaningful community engagement at the local level. This study contributes to the growing body of literature on sustainable tourism by providing localized, data-driven insights into community-based ecotourism practices in small island settings

## 2. Study Area and Research Methodology

Co To is an island district of Quang Ninh Province, Vietnam, with a population of approximately 6,900 people living across three administrative units: Co To Town, and the communes of Dong Tien and Thanh Lan [7]. Comprising over 50 large and small islands, Co To is considered one of the most promising archipelagos for tourism development in the region. The district is renowned for its pristine beaches with white, fine sand—such as Love Beach (Bãi Tình Yêu), Hong Van, Van Chay, Bac Van, Ca Chep, Bay Sao, Nam Hai, Ba Chau, Hai Quan, and Co To Con—along with its crystal-clear blue waters, which are ideal for beach tourism. Despite rapid urbanization in recent years, Co To has retained its distinctive forest ecosystem and natural landscapes. Moreover, the rich maritime culture of the local population provides a favorable foundation for developing community-based ecotourism [4].

This research is based on both secondary and primary data sources. Secondary data were collected from official reports covering the period from 2015 to 2024. The primary data were obtained through 70 structured sociological questionnaires administered across the Co To archipelago. The survey was designed to achieve the following objectives: (1) to assess the level of local community participation in community-based ecotourism (CBET) activities in Co To District; and (2) to explore community perceptions of CBET's benefits and impacts on household economy, the environment, and local development expectations.

The survey targeted households in Cô Tô District, including both direct and indirect participants in community-based ecotourism (CBET). Respondents were selected based on three criteria: permanent residency in the district, being 18 years or older, and voluntary consent to participate. A total of 70 valid household responses were collected using a stratified random sampling method, with strata defined by administrative units (Cô Tô Town, Đồng Tiền, and Thanh Lân Communes) and levels of CBET involvement. This ensured

representation across geographical areas and varying degrees of tourism engagement, thereby enhancing the validity and generalizability of the results.

The structured questionnaire comprised four sections: (1) demographic information; (2) participation in CBET (e.g., service types, income sources); (3) awareness and perceived impacts (economic, environmental, and social); and (4) evaluation and expectations for CBET improvement. Data collection was conducted through face-to-face interviews, with clarifications provided to ensure respondent comprehension.

Quantitative data were coded and analyzed using SPSS [6]. Complementary qualitative analysis was conducted through open-ended survey responses and in-depth interviews with selected households. Content analysis was employed to identify key themes such as environmental concerns, institutional support, capacity-building needs, and community expectations. The integration of qualitative insights enriched the analysis by capturing local voices and

supporting a holistic understanding of CBET's current status and development prospects.

### 3. Results and Discussion

#### 3.1 Overview of Tourism in Co To

Currently, Co To Island District hosts approximately 300 accommodation establishments, many of which operate under the community-based ecotourism (CBET) model, with a concentration in Dong Tien Commune and Co To Town [1]. However, the majority of homestays are still informal and lack standardized environmental practices, adequate customer service skills, and eco-friendly architectural design. While the internal road infrastructure has improved significantly, connectivity to Thanh Lan Commune remains challenging, especially during the stormy and rainy seasons. The spatial organization of tourism in Co To has formed around three main functional zones (Table 1):

**Table 1:** Functional Zoning of Tourism Space in Co To Island District [8]

Tourism Zone	Main Characteristics	Typical Activities
Central Zone (Town)	Accommodation services, access to port, public beaches	Homestays, boat tours, electric vehicle services
Dong Tien – Southern Zone	Fishing villages, protective forest, Hong Van Beach, proximity to Thanh Lan	Trekking, craft village experiences, forest excursions
Northern Islands & Islets	Primary forests, pristine beaches, Co To Con Island, Tran Island	Ecotourism experiences, camping, scuba diving

Since Co To was officially designated as a provincial-level tourist zone (according to Decision No. 1288/QĐ-UBND dated April 28, 2016), the number of tourist arrivals has steadily increased year by year, both in visitor volume and tourism revenue. In 2023, Co To welcomed 442,287 tourist arrivals, and this figure rose to 513,913 in 2024. Tourism service quality has significantly improved, establishing tourism as a key economic sector that now accounts for over 60% of the district's economic structure. The sector provides both direct and indirect employment for nearly 2,500 local workers [7].

With its natural endowments, Co To is currently focusing on developing experiential tourism, ecotourism, marine sports, and resort tourism—areas in which the island district holds considerable strengths. The local government has also formulated a development plan for sustainable, safe, and regulated inter-island tours within the district, emphasizing safety, service quality, and long-term sustainability.

#### 3.2 Demographic Characteristics – Social Basis for CBET Development

Among the 70 respondents surveyed, males accounted for 52.9% (37 individuals), while females made up 47.1% (33 individuals). This relatively balanced gender distribution reflects the equal participation and awareness of both men and women in community-based ecotourism (CBET) activities in Co To. Notably, women play a significant role in certain activities such as homestay operations, souvenir sales, and food and beverage services—indicating that ecotourism is a sector with diverse employment opportunities across genders.

In terms of educational attainment, the survey revealed that most local residents have a general education background. Specifically, 48.6% had completed lower secondary education, and 37.1% had completed upper secondary education—accounting for a combined total of 85.7%. This is a positive signal, suggesting that the Co To community possesses the basic educational foundation needed to access information, comprehend CBET concepts, and participate in tourism-related activities at a general level. Individuals with secondary education are also more likely to acquire and apply fundamental operational skills such as guest communication, food service, accommodation provision, or running basic tourism services.

However, only two respondents (2.9%) had attained a university degree or higher. This indicates a shortage of high-quality human resources in the area, posing a challenge to the professional development of CBET—particularly in specialized roles such as tour design, tour guiding, service management, marketing, and digital communication. Therefore, targeted policies and training programs are needed to enhance professional and managerial capacity, especially among younger generations with long-term potential in the tourism sector.

Although a small group (11.5%, equivalent to 8 respondents) had no formal education or only completed primary school, this group is at risk of being excluded from the CBET value chain unless support is provided. For these individuals, traditional roles in handicrafts or cultural heritage-related activities—where literacy is not essential—can still offer meaningful economic and cultural value. Training programs for this group should be designed with appropriate delivery

methods, using visual aids and minimizing theoretical content.

The educational structure of Co To Island District reflects a locality where general education is prevalent, but there is a marked shortage of high-level professionals and skilled tourism workers. This is a core issue that must be addressed if the locality aims to develop a sustainable, effective, and competitive CBET model.

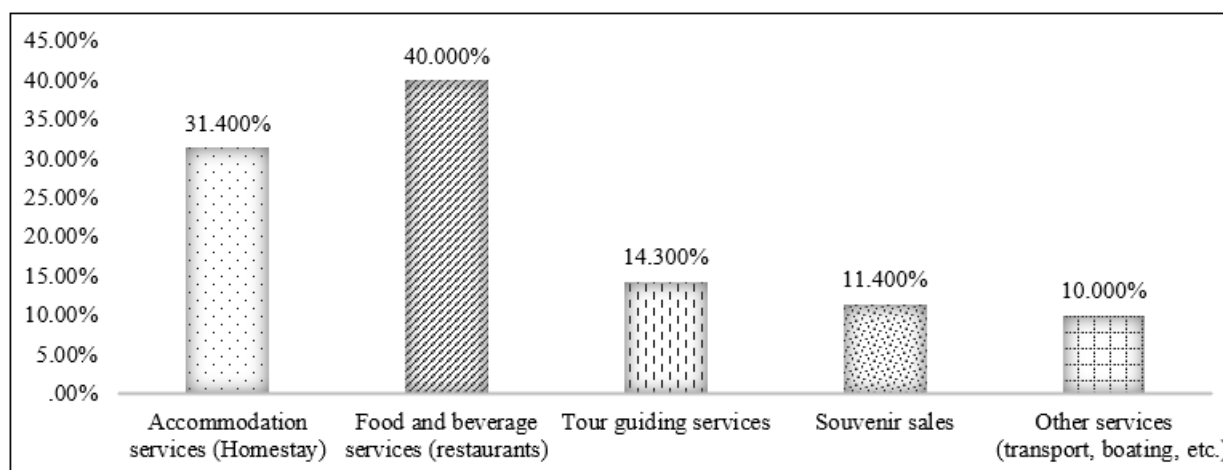
Occupationally, Co To residents exhibit a diverse structure: 37.1% are engaged in tourism services, 25.7% are fishermen, 12.9% are farmers, and the remaining 23.4% work in other occupations (e.g., teachers, commune officials, freelance laborers, etc.). The relatively high proportion of those employed in tourism services (over one-third of respondents) clearly demonstrates the growing importance of tourism in the district's employment structure. However, a significant portion of the population has yet to fully transition from traditional occupations.

It is essential to focus on vocational training and tourism-related skill development for the working-age population. At the same time, the district should implement sustainable livelihood transition programs to support the shift from fisheries and agriculture to community-based tourism services.

### 3.3 Participation in CBET – Degree of Integration into the Tourism Value Chain

Although only 26 individuals (37.1%) identified "tourism services" as their primary occupation, the number of people engaged in community-based ecotourism (CBET) activities reached 46 (65.7%). This indicates the multi-functional and flexible nature of the CBET model in C   T  , where locals can simultaneously maintain traditional livelihoods (such as fishing or farming) while participating in tourism services (food services, accommodation, other services, etc.). This also reflects a diversified livelihood structure and the strong linkage between CBET and the local community, consistent with the spirit of sustainable tourism development. However, about one-third of residents are not yet participating, which implies existing barriers in terms of resources, awareness, or access to tourism opportunities.

In response to the question, *"What type of services are you participating in?"*, the survey results show that among those involved in CBET, the two most common services are food and beverage (40.0%) and accommodation (31.4%). This reflects the initial development of restaurants, food stalls, and homestays catering to tourists. However, more specialized and high-value services such as tour guiding (14.3%) and souvenir sales (11.4%) remain underdeveloped. This indicates that most locals are involved in basic segments of the tourism value chain, often in an informal and unstructured manner without clear division of labor.



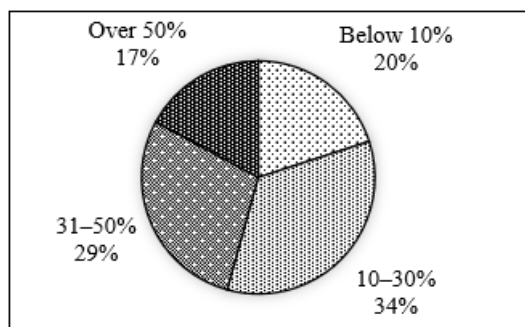
**Figure 1:** Types of Services Participated in CBET

Surveys on benefits and income structure show a growing reliance on CBET. Specifically, 52 out of 70 respondents (equivalent to 74.3%) acknowledged the benefits of community-based ecotourism for the local community. This is a positive indicator, reflecting a relatively high level of awareness about the role of CBET, especially in the context of C   T   – an island district facing economic and infrastructure challenges.

However, it is important to note that 25.7% of respondents have not clearly recognized CBET's benefits, suggesting a portion of the population lacks information or has not been reached by training or communication programs. This highlights the need for targeted communication and education strategies, including: organizing workshops and training sessions on CBET, increasing involvement of local

authorities and social organizations, and developing effective CBET pilot models to promote wider adoption.

In terms of CBET income proportion, survey results show the contribution of CBET-related income to total household income in C   T   is divided into four groups.



**Figure 2:** Household Income Structure from CBET

The group earning less than 30% of their income from CBET (under 10% and 10–30%) accounts for 54.3% of respondents. This suggests that most households currently participate in CBET as a supplementary income source, not as their main livelihood.

The group earning 30% or more of their income from CBET (30–50% and >50%) accounts for 45.7%, including 17.1% who earn over 50% from CBET. This indicates that CBET has become a primary income source for some households, proving its potential for economic transformation if developed strategically.

This income disparity shows that CBET serves as an important supplementary income stream, especially for households in the 10–30% and 30–50% income groups. For these households, CBET contributes to livelihood diversification and reduces dependence on natural resource exploitation such as fishing. However, the 20% of households earning less than 10% from CBET shows that a segment of the population is not yet deeply engaged in the tourism value chain. This may stem from factors such as: lack of skills or experience in serving tourists; lack of capital or basic infrastructure; and limited connection with CBET development programs led by the government or tourism businesses.

Nevertheless, the survey also highlights strong momentum for sustainable CBET development in C   T  . The 12 households (17.1%) earning more than 50% of their income from CBET

are concrete evidence of its potential to become a primary livelihood. This also reflects a shift in household economic structure from agriculture and fisheries to tourism services. It provides a basis for local authorities to encourage replication of the CBET model, especially in areas with scenic value, tourism resources, and supporting infrastructure.

### 3.4 Economic–Environmental Impacts: Two Sides of the Same Process

The survey results show that 74.3% of respondents (52 out of 70) are clearly aware of the benefits of community-based ecotourism (CBET) to the local community. However, when asked specifically about the economic benefits to their own households, the percentage of “yes” responses slightly dropped to 71.4%, while up to 17.1% answered “not sure.” This reflects the reality that although most people positively assess CBET at the community level, a considerable number of households have yet to see tangible economic benefits for themselves. This indicates a need to enhance equitable benefit distribution, which is key to strengthening sustainability and community cohesion in CBET models.

The data show that residents not only understand CBET's overall role but can also distinguish the specific benefits it brings. For instance, 86.5% believe CBET helps create more local jobs, especially for unskilled or part-time labor—this is a pressing need in island districts like C   T  , where agriculture and fishing jobs are increasingly unstable. Meanwhile, 80.8% feel CBET increases household income, indicating the commercial potential of local services such as lodging, food, and transportation. Nearly 60% recognize that CBET helps improve infrastructure, which aligns with tourism development demands for stable transportation, electricity, water, and communication systems. Notably, 55.8% acknowledge that CBET contributes to the conservation of nature and local culture—showing that the educational function of this tourism model is gradually being recognized. A smaller proportion (11.5%) mentioned other benefits like community bonding, increased awareness of security, and maintenance of social order—indicating a deeper social evaluation from some residents (Table 2).

**Table 2:** Survey results (n = 52 respondents aware of CBET benefits)

Perceived Benefit	Number of respondents	Percentage (%)
Creating more local jobs	45	86.5%
Increasing income from tourism services	42	80.8%
Promoting infrastructure development (electricity, roads)	31	59.6%
Nature conservation and cultural promotion	29	55.8%
Other benefits (security, community connection, etc.)	6	11.5%

It is evident that C   T   residents possess a relatively clear and multidimensional understanding of CBET benefits. This serves as a critical foundation for designing communication campaigns, training, and community capacity-building programs that enable people to engage in the tourism value chain more proactively, creatively, and sustainably. Notably, over 45.7% of households earn more than 30% of their income from tourism, which means that fluctuations in CBET development directly impact household livelihoods and social welfare. Therefore, local authorities must establish livelihood insurance mechanisms, diversify tourism products and markets, and reduce risks associated with overreliance on a

single tourism revenue stream (e.g., seasonal, weather-related, or visitor fluctuation risks).

Regarding the question: “Does CBET have negative impacts on the environment?”, nearly half (45.7%) of respondents acknowledged such impacts, while over a quarter (25.7%) were “not sure.” This indicates a degree of awareness—but also knowledge limitations—about environmental issues among a portion of the community.

For the types of negative impacts, 40% of respondents expressed concerns about environmental pollution (waste,



wastewater, air), 31.4% mentioned tourist overcrowding, and 25.7% believed CBET could lead to landscape degradation if not properly managed. These percentages closely match the total number of respondents who recognized environmental harm, indicating that awareness is not only present but also specific and grounded in observation. This forms an essential basis for both authorities and communities to actively develop sustainable environmental protection measures alongside tourism growth.

Therefore, it is necessary to adopt the principle of “*people at the center – nature as the foundation*” in CBET management; enhance environmental monitoring mechanisms for tourism; and integrate tourism planning with ecosystem conservation and waste management planning.

### 3.5 Community-Based Recommendations for Improvement – Voices from the Community

The survey question “*In your opinion, is it necessary to improve community-based ecotourism (CBET) activities in your locality?*” received a strong affirmative response, with 82.9% of respondents agreeing that CBET should be improved. This high level of consensus underscores a strong community desire for enhancing the quality and effectiveness of CBET operations. It demonstrates not only awareness of the benefits of CBET but also a widespread aspiration for long-term and sustainable development. Such consensus forms a critical foundation for planning activities, restructuring tourism spaces, training human resources, and developing culturally rooted tourism products. Simultaneously, it reflects the emerging social capital within the island community—characterized by trust, cooperation, and a shared vision for development.

Only 8.6% of respondents (6 people) did not see the need for improvement. This small group may be either content with current tourism conditions or uninvolved in CBET, limiting their awareness of its challenges, or lack sufficient information to make a well-informed judgment. Another

8.6% answered “not sure,” suggesting hesitation or insufficient knowledge about CBET to provide an objective evaluation. The presence of this group highlights the importance of communication and public awareness campaigns—especially given that CBET is a relatively new and evolving model in Cò Tô Island.

Previously, 74.3% of respondents demonstrated a clear understanding of CBET benefits, and 45.7% of households reported that tourism accounts for a significant portion of their income. This explains why such a large proportion (82.9%) of respondents desire improvements to CBET—because of the direct and long-term benefits that come from sustainable tourism development. This high level of support also reflects the community's vigilance regarding potential risks of unregulated or spontaneous tourism growth—a concern already evident in responses about environmental impacts, where 45.7% of respondents acknowledged negative effects.

These findings point to a readiness within the community not only to participate but also to shape the future of CBET. Therefore, it is crucial to develop participatory mechanisms that integrate local voices into the planning and governance of tourism, and to foster inclusive dialogue among stakeholders. Empowering residents through targeted training, capacity building, and transparent benefit-sharing will be key to enhancing CBET performance. Equally important is the incorporation of community feedback into policy frameworks to ensure that CBET development aligns with local needs, capacities, and aspirations.

#### + Proposed Solutions for Improvement

The most frequently selected solution—**awareness-raising and education** (62.9%, or 44 respondents)—highlights the community's recognition of the importance of public awareness in promoting sustainable ecotourism. This underscores the foundational role of education and communication in shaping responsible behavior and encouraging active participation in CBET development.

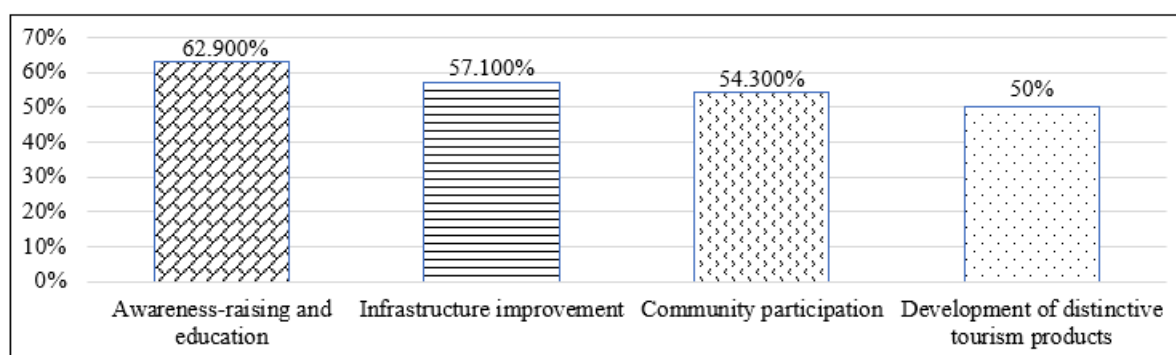


Figure 3: Proposed Solutions

**Infrastructure improvement**, chosen by 40 respondents (57.1%), reflects the urgent need for better physical and service infrastructure—particularly on islands like Cò Tô, where transportation, electricity, water supply, and waste management systems remain inadequate. Investing in infrastructure not only enhances visitor experience but also mitigates environmental pressures and provides a critical foundation for sustainable CBET services.

**Community participation**, selected by 38 respondents (54.3%), emphasizes the residents' desire to be actively involved in planning, monitoring, and sharing the benefits of tourism. This reflects a strong will for more democratic and equitable involvement. Since CBET is, by nature, “community-based,” the call for meaningful roles and voices from local people in implementation is logical and necessary. Realizing this would enhance sustainability and reduce potential conflicts.

Half of the respondents (35 people, or 50.0%) called for the development of distinctive tourism products that reflect local identity and help preserve the natural environment. These products would increase service value, extend tourist stay durations, and attract responsible and higher-end visitors, thereby reducing pressure on local resources and infrastructure.

These figures directly reflect the current bottlenecks in tourism development on Cô Tô: limited transportation and utility connections; a lack of distinctive, localized tourism offerings; and constrained community involvement due to insufficient capacity, knowledge, and a fragmented governance framework.

Therefore, CBET development in Cô Tô cannot remain at the level of spontaneous, household-based initiatives. It must evolve into a structured, professional local tourism sector—complete with planning, training, product development, and coordinated governance among the state, community, and businesses.

#### + Community Aspirations for the Future of CBET

Responses to the open-ended section reveal that local residents in Cô Tô have clear and thoughtful aspirations for the future of CBET. These center around the following themes: Tourism development aligned with the preservation of natural landscapes and local culture; Increased income without compromising cultural identity; Stronger government support in the form of technical guidance, training programs, and access to financial resources.

These perspectives reflect a deepening understanding of sustainable tourism and a collective vision toward achieving a balance between economic development, environmental protection, and cultural integrity.

### Conclusion

The survey results indicate that the local community on Cô Tô Island District has developed a relatively clear understanding of the roles and benefits of community-based ecotourism (CBET). Many residents have directly participated in tourism service activities and view CBET as an important source of income. At the same time, the community has shown concern regarding the potential negative environmental impacts that could arise if tourism is not properly managed.

However, several limitations remain, such as a relatively high proportion of non-participating households, a limited technical capacity and awareness regarding CBET, underdeveloped infrastructure, and the absence of effective coordination mechanisms between the community, local authorities, and businesses. These issues highlight the urgent need for a well-planned, comprehensive, and sustainable approach to CBET development.

To promote sustainable CBET in Cô Tô Island District, several key solution groups should be prioritized: Enhancing community awareness and capacity, through training programs, awareness campaigns, and tourism skills

development for local residents; Improving infrastructure and tourism-supporting conditions, such as transportation, electricity, clean water, and waste management systems; Developing distinctive tourism products that are closely tied to the island's coastal ecology and cultural identity; Strengthening community participation and linkages, by establishing cooperatives or CBET groups to enable residents to co-manage, share benefits, and take on responsibilities together; Protecting natural resources and managing environmental impacts, including creating visitor management regulations, limiting tourist numbers at sensitive sites, and promoting green tourism activities; Improving policy mechanisms and institutional support, such as establishing a legal framework, providing incentives, financial support, and attracting businesses to partner with local communities.

These findings underscore the importance of community-centered planning, capacity-building, and policy alignment in realizing ecotourism's full potential as a sustainable development pathway for island regions.

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