



# BIMP-EAGA

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### Ecotourism Development in the Darau Wetlands, Sabah: Key Success Factors

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#### Abstract

The Darau Wetlands in Kota Kinabalu, Sabah, serve as a critical nexus for community-based ecotourism (CBET), integrating high-value biodiversity with indigenous cultural heritage. This research evaluates the site's operational efficacy and community engagement through the lens of Pengiran Bagul's (1999) Ecotourism Success Factor Framework, assessing environmental, social, economic, and governance dimensions. Adopting a qualitative methodology, the study utilized semi-structured interviews with key stakeholders, focus group discussions (FGDs), and longitudinal field observations. The findings indicate that the success of ecotourism in Kampung Darau is anchored in a multi-stakeholder ecosystem characterized by robust community cohesion, strategic institutional partnerships, and proactive environmental stewardship. Furthermore, the results highlight that local leadership and livelihood diversification are pivotal in translating conservation efforts into socio-economic resilience. By emphasizing the synergy between grassroots agency and external institutional support, this study argues for a collaborative governance model as the baseline for sustainable growth. Ultimately, the Darau Wetlands model provides a scalable and replicable framework for community-managed wetland ecotourism across the BIMP-EAGA region and tropical wetland corridors.

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Keywords: Community-Based Ecotourism (CBET), Ecotourism Success Indicators, Darau Wetlands, Collaborative Governance

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## 1. Introduction

The Darau Wetlands, situated near Kota Kinabalu, Sabah, are an emerging ecotourism site characterized by mangrove ecosystems, riverine habitats, and strong community engagement. Ecotourism offers an opportunity to balance environmental preservation with socioeconomic empowerment in local communities. However, success in ecotourism depends on measurable indicators that integrate sustainability principles with local realities.

This research employs Pengiran Bagul's (1999) success factor indicators to assess ecotourism development in Kampung Darau. These indicators provide an output-oriented, stakeholder-derived framework assessing both community participation and site success. By analysing the Darau experience, this paper identifies key factors that have contributed to sustainable ecotourism outcomes.

## 2. Literature Review

### 2.1 Ecotourism Principles

Ecotourism is distinguished by its emphasis on conservation, education, and community involvement (Ross & Wall, 1999). It promotes responsible travel that enhances natural and cultural heritage while providing interpretive learning experiences. Sustainable management and local participation are central to ensuring long-term ecological and social benefits.

### 2.2 Community Empowerment

Scheyvens (1999) asserts that empowerment—economic, social, psychological, and political—is essential for ecotourism success. Effective participation ensures that communities are not passive beneficiaries but active decision-makers in tourism planning and management. This shifts evaluation from project inputs toward tangible community outcomes.

### 2.3 Pengiran Bagul's Success Indicators

Pengiran Bagul's (1999; 2009) framework integrates community and site success indicators derived from Sabah case studies. It emphasizes stakeholder consensus, mutual benefits, and collaborative management. The framework encompasses five domains: (i) environmental sustainability, (ii) community participation, (iii) economic viability, (iv) visitor satisfaction, and (v) institutional support. These indicators align closely with empowerment theory and provide an operational bridge for evaluating ecotourism sites such as the Darau Wetlands.

## 3. Methodology

A qualitative case study design was adopted to capture contextual understanding of ecotourism success in Kampung Darau. Data were gathered through semi-structured interviews, focus group discussions, field observations, and document analysis. Data were analysed thematically, guided by Pengiran Bagul's indicator framework, and supported by SWOT analysis to identify internal strengths and external enablers.

## **4. Findings**

### *4.1. Community Cooperation and Participation*

Collective participation is the cornerstone of Darau's success. Villagers actively engage in conservation and tourism activities such as mangrove planting, river clean-ups, and cultural events. The establishment of Koperasi Darau Berhad institutionalizes collective ownership, ensuring inclusive decision-making and equitable benefit-sharing.

### *4.2. Institutional Support and Partnerships*

Strong partnerships with Universiti Malaysia Sabah (UMS), Dewan Bandaraya Kota Kinabalu (DBKK), the Department of Environment, the Forestry Department, and NGOs such as the Rotary Club have been instrumental. These partnerships introduced training programs, infrastructure support, and mangrove rehabilitation initiatives, strengthening the community's technical and managerial capacities.

### *4.3. Environmental Conservation*

Ecotourism in Darau originated from environmental rehabilitation, notably mangrove planting projects initiated with NGO support. Today, conservation is deeply embedded in community values—villagers enforce no-logging rules, maintain river cleanliness, and treat the environment as both livelihood source and heritage asset.

### *4.4. Natural and Cultural Attractions*

Darau's ecotourism appeal stems from a fusion of natural assets—fireflies, otters, mangrove ecosystems—and cultural offerings such as traditional food, handicrafts, and welcoming ceremonies. This blend enhances visitor satisfaction and positions Darau as a distinctive eco-cultural destination.

### *4.5. Leadership and Governance*

Leadership at multiple levels ensures organizational stability. The Village Head provides strategic direction, the JKKK manages administration and security, while the Darau Wetland Committee oversees tourism operations. Clear role division and accountability foster continuity and trust.

### *4.6. Economic Empowerment*

Ecotourism has diversified village livelihoods, providing income from homestays, river cruises, handicrafts, and guiding services. The cooperative model ensures equitable profit distribution and reinvestment in community projects, reducing dependency on declining fisheries.

#### *4.7. Youth Participation*

Youth engagement bridges traditional and modern tourism practices. Younger villagers contribute digital literacy, language proficiency, and innovation—helping to promote Darau online and enhance hospitality standards.

### **5. Discussion**

The findings affirm Pengiran Bagul's framework as a robust tool for evaluating community-based ecotourism success. Darau exemplifies the interconnectedness between environmental stewardship, social cohesion, and economic empowerment. Internal strengths (cooperation, leadership, conservation ethic) interact synergistically with external enablers (institutional partnerships, training, infrastructure) to sustain tourism outcomes. The thematic interconnections—community participation with leadership, institutional support with conservation, economic empowerment with cultural heritage, and youth with innovation—highlight a holistic ecosystem of sustainability.

### **6. Conclusion**

Kampung Darau's ecotourism model demonstrates that sustainable success emerges from cooperative governance, environmental ethics, and inclusive economic participation. Applying Pengiran Bagul's success indicators revealed that Darau not only meets theoretical expectations but also operationalizes them through everyday community action.

This study contributes to ecotourism scholarship by validating a locally derived success framework in a wetland context. Policymakers and planners can adopt Darau's integrated model—combining community empowerment, institutional collaboration, and environmental stewardship—as a blueprint for future ecotourism development in Sabah.

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