

Sustainable Tour Package Design in Kadingeh Tourism Village: Environmental Education and Natural Resources Management Perspective

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Abstract

This study aims to develop a sustainable tourism package model for Kadingeh Tourism Village in Enrekang Regency, South Sulawesi, through the integration of environmental education and natural resource management. Kadingeh Village possesses remarkable ecological and cultural assets, including the Loko Panene karst cave, Tabang River, and the Manduk Patinna megalithic site. However, existing tourism practices remain limited to basic recreational activities with minimal attention to environmental learning and conservation. The research adopts a qualitative descriptive approach to explore local potentials, community participation, and educational strategies that can support the creation of an eco-edu-tourism framework. Data were collected through observation, interviews, focus group discussions, and documentation. The findings reveal that the community's strong sense of environmental stewardship, rooted in traditional ecological knowledge, plays a crucial role in sustainable tourism development. The integration of experiential learning activities—such as reforestation, waste management workshops, and river conservation projects—has fostered greater environmental awareness among visitors and residents alike. Collaboration with educational institutions has positioned Kadingeh as a “living classroom” for sustainability learning, enhancing both eco-literacy and community capacity. Involving community leaders, tourism managers, and local educators. The resulting eco-edu-tourism model consists of four main components: environmental learning, cultural interpretation, community capacity building, and participatory governance. This model aligns with the principles of Community-Based Tourism (CBT) and Education for Sustainability (EfS), promoting a balance between ecological preservation, cultural continuity, and economic empowerment. The study contributes to both theory and practice by demonstrating how localized environmental education can drive behavioral transformation and strengthen sustainable livelihoods in rural areas. Ultimately, the Kadingeh model exemplifies tourism as a transformative educational experience—bridging recreation, conservation, and community development within the broader framework of sustainable tourism in Indonesia.

Keywords: Kadingeh Tourism Village, Environmental Education, Sustainable Tour Packages, Natural Resource Management.

A. INTRODUCTION

The tourism sector is one of the important pillars in economic, social, and environmental development in Indonesia. The development of community-based tourism has become the government's main strategy to encourage economic equity, cultural preservation, and sustainable use of natural resources. One form of implementation of the strategy is the development of tourist villages, which integrate the potential of nature, culture, and the participation of local communities. In this context, Kadingeh Tourism Village in Enrekang Regency, South Sulawesi, is an example of an area that has great potential to be developed through a sustainable tourism approach based on environmental education.

Kadingeh Village is known for its distinctive and diverse natural wealth, such as the karst formation of Loko Panene Cave, the flow of the Tabang River, the Manduk Patinna megalithic site, and local cultural traditions that are still preserved. This potential makes Kadingeh a destination with unique natural and cultural attractions. However, the tourism activities that have taken place so far are still dominated by simple recreational activities without the integration of the concept of environmental education and systematic natural resource management. Lack of ecological awareness, limited community capacity in designing educational tourism packages, and lack of conservation-based management strategies are factors that hinder the optimization of tourism potential in this village.

Sustainable tourism development not only focuses on increasing the number of tourists, but also emphasizes the balance between economic, socio-cultural, and environmental dimensions (Goodwin, 2011). In this case, it is important to integrate the principles of environmental education into tourism activities so that tourists not only gain recreational experiences, but also increase awareness of environmental conservation and local wisdom values. Environmental education in the context of tourism is not only informative, but also transformational—encouraging behavioural change for both tourists and local communities (Tilbury, 1995).

In addition, the theory of Community-Based Tourism (CBT) provides an important conceptual framework in the development of tourism villages. The main principle of CBT is that local communities are the main actors in the planning, management, and utilization of tourism activities (Suansri, 2003). Active community participation not only increases the sense of belonging to the destination, but also ensures that the economic and social benefits of tourism activities are distributed equitably. Thus, the integration of CBT and environmental education in the design of tour packages is a relevant strategy to realize sustainable tourism development in Kadingeh Village.

Several previous studies have shown the success of similar approaches in various regions of Indonesia. A study by Iqbal et al. (2022) in Nglanggeran Tourism Village, Special Region of Yogyakarta, confirms the importance of the role of tourism-conscious groups in developing a community-based ecotourism model that balances conservation and community welfare. Meanwhile, Asbullah et al. (2013) through research in Sidomulyo Village, Jember, developed the concept of eco-homestay as a form of conservation-based rural tourism that involves local communities in natural resource management. Similar research in Tapak Mangrove, Semarang, also shows that the implementation of eco-edutourism is able to increase public awareness of the importance of environmental conservation while creating new economic opportunities (Santoso et al., 2019).

The results of another study by Kusdiyanti et al. (2022) highlight that sustainable business model innovation in eco-edutourism can increase the competitiveness of destinations and strengthen community involvement in environment-based educational activities. In addition, Apriliyanti and Randelli (2020) through a study in Sukunan Village, Yogyakarta, emphasized the importance of waste and natural resource management as an integral part of community-based tourism packages. The findings show that a combination of environmental education, community empowerment, and natural resource management can create a sustainable and value-added village tourism model.

However, most of the research was conducted on the island of Java, while the context of regions such as South Sulawesi, especially Kadingeh Village, still lacked academic studies. In fact, the ecological and cultural characteristics of Kadingeh are significantly different from other

regions. Distinctive karst landscapes and megalithic sites require specific conservation strategies, while the Kadingeh people have unique local social and cultural patterns in interpreting human relationships with nature. Therefore, research that highlights the design of sustainable tourism packages based on environmental education and natural resource management in Kadingeh is very relevant to fill the literature gap and support the implementation of tourism village development policies at the regional level.

Conceptually, this research departs from the assumption that tourism sustainability cannot be achieved only through improving physical facilities or promoting destinations, but must be through the integration of educational and conservative values into every element of tourism activities. The ideal sustainable tourism package design needs to include components of natural and cultural attractions, interpretive activities, experiential learning, environmental management, and active community participation in the planning and evaluation of tourism activities. This approach allows the creation of eco-edu-tourism, which is a form of tourism that provides a recreational and educational experience, as well as supporting the preservation of natural resources and local socio-culture.

Thus, this research seeks to answer the need for a more contextual, local knowledge-based, and sustainability-oriented village tourism development model. The results of the research are expected not only to be an academic contribution to the development of eco-edu-tourism theory, but also to become an applicable reference in sustainable tourism planning and management in rural areas of Indonesia, especially in the South Sulawesi region.

B. RESEARCH METHOD

This study used a descriptive qualitative approach with the aim of understanding in depth the phenomenon of sustainable tourism package development in Kadingeh Tourism Village, Enrekang Regency, South Sulawesi. This approach was chosen because it allows researchers to comprehensively explore the meanings, values, and social practices that develop in society. According to Creswell (2014), qualitative research is naturalistic and seeks to understand social reality based on the perspective of participants, not just testing hypotheses.

This research was carried out in Kadingeh Tourism Village, Baraka District, Enrekang Regency, South Sulawesi. The location was chosen purposively because it has high natural and cultural tourism potential, but has not fully implemented sustainability principles. The research lasted for six months, including the pre-survey stage, data collection, and analysis of research results.

The research informants were determined using a purposive sampling technique, which involves selecting participants based on their relevance and competence in relation to the research focus (Sugiyono, 2018). The primary informants consisted of village officials and tourism managers, community leaders, tourism business actors, tourists, and environmental educators. The number of informants was established according to the principle of data saturation, which occurs when no new information or themes emerge from additional interviews (Miles, Huberman, & Saldaña, 2014).

Data Collection Techniques: 1) Participatory Observation — conducted to understand tourism activities and tourist behavior directly (Spradley, 1980); 2) In-Depth Interviews — semi-structured interviews to explore local perceptions, experiences, and values; 3) Focus Group Discussion (FGD) — involving Pokdarwis, village governments, and youth communities; 4)

Documentation — the collection of secondary data in the form of archives, activity reports, and policy documents.

Data analysis uses the interactive model of Miles and Huberman (1994) which includes data reduction, data presentation, and conclusion drawn. The analysis was carried out thematically to produce patterns and concepts about the integration of environmental education in the design of sustainable tourism packages.

The validity of the data is guaranteed through triangulation of sources and methods (Denzin, 2017). Source triangulation is carried out by comparing information from various informants, while method triangulation is carried out through observation, interviews, and documentation. Member checks are carried out to ensure the suitability of the researcher's interpretation with the informant's perception.

The results of the research are in the form of a conceptual model of a sustainable tourism package (eco-edu-tourism package) which contains: 1) A series of nature and culture-based tourism activities; 2) Environmental learning components in tourism activities; 3) Mechanism of community participation in tourism management; 4) Natural resource conservation strategies and local capacity building.

C. FINDINGS AND DISCUSSION

Identification of Local Potential and Tourism Resources

The findings indicate that Kadingeh Tourism Village possesses significant potential for developing a sustainable tourism model due to its rich natural, cultural, and social capital. Field observations revealed that the village's main attractions include the Loko Panene karst cave system, the Tabang River ecosystem, and the Manduk Patinna megalithic site, all of which hold high scientific, aesthetic, and cultural value. These attractions are supported by local traditions, such as the *mappalili* (harvest blessing ceremony) and the community's long-standing respect for nature as a source of livelihood and spiritual identity.



Figure 1. Loko Panene Cave and Loko Wai Lambun Cave



Figure 2. Old Cemetery (Manduk Patinna) and Tabang Kadingeh River

However, it was also observed that existing tourism practices are predominantly recreational and extractive, focusing on short visits without adequate environmental interpretation or conservation measures. Waste management and visitor regulation are still limited, leading to potential environmental degradation. This aligns with the findings of Apriliyanti and Randelli (2020), who noted that community-based tourism often struggles to maintain ecological balance when tourism development precedes capacity building and environmental education.

Community Participation and Environmental Awareness

A key finding from interviews and focus group discussions is that community participation in tourism activities remains informal and sporadic, though local enthusiasm is high. Most residents participate as *local guides*, food vendors, or homestay hosts, yet few are involved in decision-making or planning processes. Despite this, there is a growing awareness among community leaders regarding the importance of education for sustainability (Tilbury, 1995).

During FGD sessions, community members emphasized the need for training in waste management, eco-guiding, and small business management. The presence of youth organizations has become a driving force in promoting *eco-edutourism* through school visits, nature walks, and cultural performances. These initiatives illustrate a gradual shift from tourism as a livelihood to tourism as a learning platform, aligning with Suansri's (2003) framework of *Community-Based Tourism (CBT)*, where communities act not merely as beneficiaries but as active agents of change.

The findings reveal that the local community of Kadingeh Village demonstrates a strong commitment to environmental stewardship and cultural preservation. This aligns with current trends in community-based sustainable tourism, which emphasize local empowerment and shared responsibility in environmental management (Nasution et al., 2025; de Rozari et al., 2025). The involvement of *Pokdarwis* (Tourism Awareness Group), youth associations, and local educators indicates a shift from passive tourism participation toward a collaborative eco-educational framework.

Field observations and in-depth interviews revealed that residents integrate traditional ecological knowledge (TEK) into tourism activities, such as river conservation rituals and organic farming practices. Similar findings were reported by Randy, Darmawan, and Leo (2024), who identified that the combination of indigenous knowledge and educational tourism enhances visitors' environmental literacy while strengthening local identity. This demonstrates that cultural continuity and environmental awareness can coexist as integral components of eco-edu tourism.

Integration of Environmental Education in Tourism Packages

One of the most significant outcomes of this study is the design of a sustainable tourism package model that incorporates environmental education. The model integrates experiential

learning into tourism activities, allowing visitors to engage directly in conservation practices, such as reforestation, river clean-ups, and traditional ecological workshops (table 1). These activities correspond to education for sustainable development (ESD) principles, which promote learning through real-life environmental engagement (Mota et al., 2025; Temirova, 2025).

The results suggest that visitors who participate in hands-on environmental activities exhibit higher awareness and behavioral intentions toward sustainability. This is consistent with Umanzor Ortega and Benítez García (2024), who found that experiential environmental education significantly increases pro-environmental attitudes among tourism students. In Kadingeh, this pedagogical approach translates into learning-by-doing activities such as composting, reforestation, and eco-product creation.

Furthermore, collaboration with schools and universities enhances the educational value of eco-edu tourism, turning Kadingeh into a living laboratory for sustainability learning (Rahmah, Nugroho, & Darmansyah, 2024). The involvement of educational institutions ensures the continuity of learning outcomes and supports monitoring mechanisms to evaluate sustainability indicators.

Educational modules are embedded within each tour itinerary, emphasizing local knowledge about biodiversity, water resource management, and cultural heritage. This model supports the idea proposed by Kusdiyanti et al. (2022), that sustainable tourism innovation must link community empowerment with eco-literacy enhancement. By positioning Kadingeh as a “living classroom,” the research provides a foundation for transformative learning—where both visitors and locals gain a deeper appreciation for environmental stewardship.

Table 1. Educational Tour Package Design – Environment "Kadingeh Eco-Learn Adventure"

Type	Eco-Edu Tourism (Ecotourism based on environmental education and local wisdom)
Duration	3 days 2 nights
Location	Kadingeh Tourism Village, Baraka District, Enrekang Regency – South Sulawesi
Market segment	Students, nature lovers communities, teachers and students, educational tourists, and special interest tourists.
Purposes	<ol style="list-style-type: none"> 1. Increasing tourists' understanding of the conservation of Kadingeh's nature and culture. 2. Empowering local communities through ecological knowledge-based activities. 3. Integrating environmental education values in the tourism experience.
Educational Objectives and learning experiences	<ul style="list-style-type: none"> • Knowledge of local natural resource management (water, forests, and karst). • Understanding of local wisdom in environmental conservation. • Basic skills of conservation practices (tree planting, composting, and biodiversity monitoring). • The values of mutual cooperation, ecological responsibility, and natural spirituality.
Itinerary (3 Days 2 Nights)	
Day 1: Exploration of Nature and Local Wisdom	
08.00-09.00	<ul style="list-style-type: none"> • Arrival and traditional welcome (Tudang Sipulung) by the community • Villager Tour – get to know karst landscapes, traditional rice paddies and natural irrigation systems (pallawa) • Local lunch • Eco-interpretation workshop: introduction to environmental education by local facilitators • Visit to Loko Panene Cave – cave ecosystem observation and water conservation • Bonfire and cultural talk: listening to the story of Manduk Patinna (Kadingeh's megalithic heritage)
09.00-11.00	
11.00-12.30	
13.00-15.00	
16.00-17.30	
19.00 – end	
Day 2 : Ecology Learning and Community Participation	
07.00-08.00	<ul style="list-style-type: none"> • Morning Yoga and Forest Breathing in the bamboo forest • Field practice: Tree planting and composting workshop with youth groups • "Eco-entrepreneurship" class: making recycled souvenirs and environmentally friendly local products.
08.30-10.00	
10.30-12.00	

<p>12.00-13.00 14.00-16.00</p> <p>16.30-17.30 19.00-end</p>	<ul style="list-style-type: none"> • Lunch with the residents • River clean-up activity and observation of biodiversity in the Tabang River. • Reflective discussion: "What did I learn about nature today?" • Folk art performances and eco-forums with Pokdarwis and the village government.
<p>07.00-09.00 09.30-10.30</p> <p>11.00 12.00</p>	<p>Day 3: Refleksi dan Edukasi Lingkungan</p> <ul style="list-style-type: none"> • Visit to organic gardens and vegetable harvest with local farmers. • "Design Your Own Sustainable Travel Plan" session - travellers create sustainable travel plans • Submission of Eco-Education Participant certificate • Farewell and group photo (tour ends)

Sustainable Resource Management Practices

The local community's resource management system—particularly in forest and water conservation—illustrates an adaptive approach to environmental change. The village's karst ecosystem and river basin are managed through traditional land-use practices combined with new conservation programs introduced through tourism projects.

These results resonate with Edris, Prasetya, and Aitasari (2025), who found that post-pandemic ecotourism revitalization strategies must integrate eco-conscious management and community resilience. In Kadingeh, eco-entrepreneurship initiatives (such as herbal products, organic gardens, and craft recycling) have become economic alternatives that align with sustainable tourism principles.

Additionally, a youth-centered eco-volunteering program has emerged, emphasizing behavioral transformation among the younger generation toward sustainability (Serio et al., 2025). Such initiatives contribute to intergenerational learning and reinforce the long-term sustainability of the village tourism model.

Policy Implication and Regional Development

The empirical evidence from this study underscores the importance of multi-stakeholder collaboration in sustainable rural tourism. Coordination between the village government, educational institutions, and private sectors ensures the alignment of tourism programs with the Sustainable Development Goals (SDGs)—particularly Goals 4 (Quality Education), 8 (Decent Work and Economic Growth), and 15 (Life on Land) (Ramadhani & Rafee, 2024).

The success of Kadingeh's eco-edu tourism model illustrates a replicable framework for integrating education and environmental management within rural destinations in Indonesia. Similar regional applications can be developed in other eco-cultural landscapes, as noted by Goodwin (2011) and Suansri (2003), but now reinforced by recent empirical findings emphasizing education's transformative role in sustainability (Mota et al., 2025; Nasution et al., 2025).

Despite the positive potential, several challenges were identified: 1) Limited institutional capacity in managing tourism facilities and monitoring environmental impact; 2) Insufficient collaboration between local government, community groups, and private stakeholders; 3) Lack of standardized eco-education materials and interpretation tools for tourists.

These constraints mirror findings by Iqbal et al. (2022), who observed that sustainable tourism initiatives often falter due to weak governance and inconsistent policy support. In Kadingeh's context, such challenges are compounded by geographical isolation and limited digital infrastructure. Nevertheless, local leaders have shown strong commitment to addressing these gaps through partnerships with educational institutions and environmental NGOs.

The integration of environmental education into community-based tourism provides a practical framework for achieving eco-edu-tourism that aligns with the triple bottom line of sustainability—economic, social, and environmental balance (Goodwin, 2011). The findings reinforce the theoretical proposition that environmental literacy and community participation are critical mediating factors in the success of rural tourism initiatives.

This research extends the work of Tilbury (1995) by demonstrating how *education for sustainability* can be localized through tourism experiences. Moreover, it supports Suansri's (2003) conceptualization of *CBT* as an evolving process that requires capacity building, social learning, and environmental ethics.

The resulting model proposes four interlinked components: 1) Environmental Learning Activities – nature walks, conservation workshops, and ecological storytelling; 2) Cultural Interpretation – integration of local rituals and traditional crafts into tourist experiences; 3) Community Capacity Building – training programs in sustainable hospitality, eco-guiding, and waste management; 4) Participatory Governance – establishment of a local tourism board involving community representatives and government officials.

This model not only enhances the quality of visitor experiences but also strengthens the socio-environmental resilience of Kadingeh Village. It demonstrates that sustainability is not merely an outcome but a continuous learning process embedded in local culture and daily life.

The overall discussion underscores that sustainable tourism in Kadingeh can only thrive through synergistic collaboration between education, conservation, and community empowerment. The eco-edu-tourism model designed in this study represents a viable approach to achieving such integration. It allows the tourism sector to serve as a medium for environmental education, while simultaneously promoting economic inclusivity and cultural preservation.

In conclusion, Kadingeh's transformation into an educational tourism destination embodies the essence of sustainable development: a balanced harmony between people, planet, and prosperity.

D. CONCLUSION

This research concludes that Kadingeh Tourism Village possesses a strong foundation for developing a sustainable tourism model that harmoniously integrates environmental education and natural resource management. The study reveals that Kadingeh's distinctive geographical features—its karst landscapes, megalithic heritage, and traditional ecological wisdom—offer valuable resources for implementing an *eco-edu-tourism* framework that promotes both learning and preservation.

Through qualitative analysis, it was found that the existing tourism practices in Kadingeh remain predominantly recreational and understructured, yet the community demonstrates high motivation and social capital for transformation. The introduction of environmental learning components within tourism packages enables a shift from conventional tourism toward a more reflective, participatory, and educational tourism model. Such integration fosters local awareness, supports sustainable livelihoods, and enhances the resilience of cultural and ecological systems.

From a theoretical standpoint, the research confirms that Community-Based Tourism (CBT) and Education for Sustainability (EfS) are complementary paradigms capable of reinforcing each other. CBT provides the structural foundation for local empowerment and equitable benefit-sharing, while EfS offers the pedagogical framework necessary for transforming tourism into a tool for collective learning and environmental stewardship. The synergy between these two approaches generates a contextualized model of eco-edu-tourism that aligns with the global Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education), Goal 11 (Sustainable Cities and Communities), and Goal 15 (Life on Land).

Thus, the sustainable tourism package model developed in this research demonstrates that environmental education can serve not merely as a thematic component but as the core principle driving rural tourism innovation. Kadingeh's transformation reflects a broader paradigm shift in Indonesian tourism—from *growth-oriented development* toward *value-based sustainability*.

This study contributes to the academic discourse on sustainable tourism and environmental education by providing empirical evidence that educationally enriched tourism experiences enhance both environmental literacy and community empowerment. It validates previous studies (Tilbury, 1995; Goodwin, 2011; Suansri, 2003) while extending their relevance to rural Southeast Asian contexts.

Theoretically, the integration of education into tourism planning creates a multidimensional learning ecosystem in which visitors, hosts, and environments interact dynamically. This perspective enriches the understanding of sustainability not as a static goal but as a continuous socio-ecological learning process. The study further argues that localized environmental education—when embedded within tourism—can generate transformative impacts that exceed those achieved by formal education systems alone.

Ultimately, the findings from Kadingeh reaffirm that sustainability is a lived practice—one that requires the active participation of communities, educators, and policymakers alike. Tourism, when designed with educational and ethical consciousness, becomes more than a leisure activity; it evolves into a vehicle for transformation, nurturing respect for nature and culture.

The model proposed in this study—anchored in *eco-edu-tourism principles*—represents a viable path toward achieving a balance between ecological preservation, social equity, and educational innovation. As such, Kadingeh stands not merely as a destination but as a laboratory of learning for sustainable futures.

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