

Design and Development of an Eco-Label Prototype (Eco Stamp) to Promote Sustainable Ecotourism

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Abstract

This research, titled “Design and Development of an ‘Eco Stamp’ Certification Prototype to Promote Sustainable Ecotourism,” aimed to design and develop criteria, indicators, and a structural framework for an environmental certification prototype aligned with local contexts, while proposing policy and practical guidelines for its implementation among relevant organizations. The findings reveal that the developed prototype features a systematic evaluation framework encompassing natural resource management, environmental impact reduction, community participation, and social responsibility. This certification serves as both a policy instrument and a symbolic tool for communicating sustainability values and standards to tourists and stakeholders. Furthermore, the study offers practical recommendations for the Designated Areas for Sustainable Tourism Administration (DASTA) in the Songkhla Lake Basin to scale the initiative. These include refining evaluation criteria for specific spatial contexts, designing certification and monitoring processes, and integrating the stamp into communication strategies. Evaluated at an “Excellent” level by DASTA officials, the project demonstrates high potential for real-world application, with further suggestions to enhance completeness by detailing activities, refining the presentation, and updating destination data.

Keywords: Ecotourism, Tourism, Songkhla Lake Basin

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Introduction

The Songkhla Lake Basin represents a regionally significant wetland in Southern Thailand, characterized by high biodiversity and a longstanding interconnectedness with the livelihoods, economies, and cultures of local communities. The Designated Areas for Sustainable Tourism Administration (DASTA) serves as a vital mechanism in integrating tourism development with the conservation of natural resources and cultural heritage within the region. However, the basin is currently facing mounting pressure from inappropriate development processes and land-use practices. These factors have led to ecological degradation, driven by urban expansion, commercial agricultural and fishing activities, and tourism that lacks systematic management.

Ecotourism serves as a sustainable tourism paradigm that emphasizes responsibility toward natural resources and cultural heritage, integrated with experiential learning and community engagement. This approach aligns with the mandates of government agencies in promoting community-based tourism and enhancing the capacity of local entrepreneurs to effectively manage resources and tourism activities. Central to this concept is a focus on the quality of activity models and the mitigation of environmental impacts, prioritizing these standards over a primary emphasis on increasing tourist volume.

This article proposes the application of ecotourism concepts in conjunction with an "Eco Stamp" (Eco-label) certification system to elevate responsible tourism standards across multiple dimensions. These include energy and water management, waste management, carbon footprint reduction, resource and cultural conservation, and community engagement. The study suggests that the public sector should serve as the primary mechanism in developing certification criteria through collaboration with local partners, academia, and civil society. This collaborative approach ensures that the framework remains context-specific to the Songkhla Lake Basin, is practically implementable, and can be scaled as a policy prototype for other ecotourism destinations nationwide. Ultimately, this initiative aims to enhance tourism quality, strengthen community capacity, and ensure the sustainable conservation of natural resources.

Research Objectives

1. To design and develop criteria, indicators, and the structural framework for an "Eco Stamp" (Environmental Certification Prototype) that aligns with specific spatial contexts.
2. To propose policy and practical guidelines for the implementation of the environmental certification prototype to promote sustainable ecotourism for relevant organizations.

Literature Review

Tourism Concepts and Theories: Regarding tourism concepts and theories, the World Tourism Organization (UNWTO, 2002) defines tourism based on three universal conditions: travel must be temporary and away from one's usual environment without permanent relocation; the journey must be voluntary rather than coerced or for military purposes; and the travel must not be motivated by the pursuit of income or professional employment. This encompasses diverse objectives such as recreation, visiting relatives, entertainment, sports, attending seminars, seeking knowledge, and business activities. This definition aligns with the perspective of Seri Wangpaichitr (2006), who views tourism as the aggregate of phenomena and relationships arising from the interactions between tourists, business operators, the public sector, and host communities during the process of attracting and welcoming visitors. Similarly, Wanna Wongwanich (2006) elaborates that tourism is not limited to leisure but includes domestic and international population

movements that foster positive relations and provide travelers with knowledge and enriching experiences. Ultimately, tourism is characterized as voluntary travel for recreational purposes to a temporary residence without the intent of seeking income, generating positive interactions across economic, social, and cultural dimensions.

Ecotourism Concepts and Theories: The concepts and definitions of ecotourism began to take clear shape through the work of Hector Ceballos-Lascurain (1988) of the International Union for Conservation of Nature (IUCN), who defined ecotourism as travel to natural areas to appreciate, study, and learn about the landscape, flora, fauna, and cultural features associated with those natural environments. Subsequently, Elizabeth Boo (1990), an ecotourism researcher in the Latin American and Caribbean regions and author of *Ecotourism: The Potentials and Pitfalls*, further elaborated that ecotourism is nature-based travel that contributes to conservation by generating revenue for natural area management, creating local employment, and fostering environmental awareness among visitors. Simultaneously, The Ecotourism Society (1991) provided an early definition describing ecotourism as responsible travel to natural areas that emphasizes learning about both culture and natural history while avoiding disturbance or destruction of ecosystems; such travel must also support economic benefits for local communities and facilitate the sustainable conservation of natural resources.

Research Methodology

The research project, "Design and Development of an 'Eco Stamp' Certification Prototype to Promote Sustainable Ecotourism," was conducted through a four-phase operational framework as follows:

Phase 1: Baseline Study and Tourism Route Mapping

1. **Site Identification and Data Collection:** Exploring and documenting the distinctive features of ecotourism destinations across three provinces (Songkhla, Phatthalung, and Nakhon Si Thammarat).
2. **Tourism Route Design:** Developing integrated tourism routes specifically within the Songkhla Lake Basin area.

Phase 2: Criteria Definition and Design Element Analysis This phase involved synthesizing data from the initial stage to establish a design framework, specifically focusing on:

1. **Identity Synthesis:** Selecting geographical symbols and cultural identities suitable for the development of ecotourism routes.

Phase 3: Design Process and Prototype Development

1. **Creative Sketching:** Developing at least three design directions for the logo that reflect sustainability and the unique identity of the Songkhla Lake Basin.
2. **Stamp Book Design:** Creating sketches for an "Eco Stamp" collection book that resonates with the ecotourism experience.
3. **Prototype Finalization:** Digitizing the selected designs and developing a comprehensive usage manual for the certification system.

Phase 4: Evaluation

1. **Staff Assessment:** Testing the prototype with officials from the Designated Areas for Sustainable Tourism Administration (DASTA) in the Songkhla Lake Basin. A structured questionnaire was employed as the research instrument to measure satisfaction levels and brand recognition.

Results

1. Ecotourism Route Design

The design of ecotourism routes transcends mere navigation; it is a strategic foundation established to harmonize immersive natural experiences with sustainable resource conservation. Selecting routes that strictly adhere to the ecosystem's carrying capacity and prioritize community engagement is essential in mitigating environmental degradation.

Ecotourism Route Design Route 1: "The Way of Songkhla Lake" (Mueang Songkhla District)

Location	Stamp Station / QR Code Point	Required Activity to Earn Stamp
Hub Ho Hin (The Red Rice Mill)	Front Information Desk	Primary distribution point for the Eco Stamp collection books.
Baan Bon Mosque (Yum-ee-yah)	Public relations board or Waste Management Learning Center (near the entrance)	Learn about community waste management systems or tour the architectural heritage of the mosque.
Nang Ngam Road (Dining Zone)	Partner outlets with the "Eco-Partner" sign (e.g., Ong Ice Cream, Baan Nakorn Nai)	"Eco-Conscious Action": Present personal reusable cups/containers or refuse single-use plastic bags.
Baan Nakorn Nai Museum	Front Reception Counter	Explore the historical bond and cultural connection between the people of Songkhla and their natural environment.
TK Park Songkhla	Reward Redemption Point (Front Reception Counter)	Present the completed Eco Stamp book to verify activities and redeem rewards.

Ecotourism Route Design Route 2: "Green Lungs and Canal Rhythms" (Hat Yai District)

Location	Stamp Station / QR Code Point	Required Activity to Earn Stamp
Khao Kho Hong Summit (Phra Buddha Mongkol Maharaj)	Telecommunication Station / Viewpoint (Welfare Shop area)	"Low-Carbon Ascent": Utilize the municipal tram service to reach the summit to reduce pollution from private vehicles.
Hat Yai Municipal Park	Park Administration Center (Office Building)	Engage in nature-based recreation, such as birdwatching or cycling around the park perimeter.
Khlong Hae Floating Market (Foam-Free Zone)	Market Administration Office (Main Entrance)	"Eco-Friendly Dining": Purchase food or beverages served in natural, biodegradable containers (e.g., bamboo or coconut shells).

Hat Yai Wildlife and Nature Education Center	Visitor Registration Point (Smart Farmer Station)	Tour the educational facilities to learn about local wildlife conservation and natural ecosystems.
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Ecotourism Route Design Route 3: "Global Wetlands and Palmyra Craft Heritage" (Khuan Khanun District)

Location	Stamp Station / QR Code Point	Required Activity to Earn Stamp
Thale Noi Nature and Wildlife Education Center	Information Counter (at the boardwalk entrance)	"Nature Trekking": Complete the designated distance of the nature study trail along the elevated boardwalk.
Talaat Tai Nod (Green Market)	Information Pavilion (Central Market Area)	"Eco-Conscious Consumption": Present personal reusable containers (tiffin carriers/tumblers) or purchase products using natural packaging.
Sampaothai (Rice Field Landmark)	Ticket Counter (at the paddy field walkway)	"Sustainable Promotion": Photograph the "Giant Straw Buffalo" and share on social media to promote local eco-tourism.
Pa Phai Sang Suk Market (Bamboo Garden Market)	Coordination Booth (at the bamboo grove entrance)	"Waste Reduction Action": Present personal reusable containers (tiffin carriers/tumblers) or purchase products using natural packaging.
Napokea (Rice Living Learning Center)	Ancient Rice Mill or Napokea Coffee Shop	"Agricultural Heritage": Participate in traditional manual rice milling or traditional rice pounding activities.

Ecotourism Route Design Route 4: "Nature's Healing Touch" (Mueang – Khao Chaison Districts)

Location	Stamp Station / QR Code Point	Required Activity to Earn Stamp
Khao Ok Thalu	Rest Pavilion at the "Summit" of the staircase	"Mountain Conquest": Successfully climb the 1,066-step staircase (present a photograph from the summit as evidence).
Phatthalung Ancient Palace (Wang Kao)	Ticket Counter (beneath the traditional Thai house)	"Historical Exploration": Tour the palace grounds and attend a lecture on the city's historical background.
Hat Saen Suk Lampam	Municipal Tourist Information Center	"Trash-for-Stamp Initiative": Participate in a beach clean-up activity to promote coastal environmental preservation.
Tham Nam Yen (Cooling Spring), Khao Chaison	Kayak Rental Point in front of the cave	"Subterranean Discovery": Paddle a kayak to observe the stalactites and stalagmites within the cool water cave.
Khao Chaison Hot Springs	Payment Counter at the mineral foot bath area	"Thermal Wellness": Utilize the natural mineral foot bath services for therapeutic and wellness benefits.

2. Ecotourism Certification Symbol

The following certification symbols were designed to serve as official marks of endorsement for ecotourism destinations and activities within the Songkhla Lake Basin. This initiative is carried out under the promotion of the Designated Areas for Sustainable Tourism Administration (Public Organization), or DASTA, with the strategic objective of creating a cohesive tourism network that links the diverse areas within the Songkhla Lake Basin. The certification aims to standardize sustainable practices while highlighting the unique ecological and cultural identities of the region.

2.1 ECO TOURISM OLD SONGKLA



The logo incorporates symbolic elements that reflect the identity of Songkhla within the context of the Songkhla Lake Basin. The City Gate symbol represents Songkhla's role as a historical city and a central hub connecting people with various tourist destinations. The Wave and Waterline patterns signify the basin's ecosystem, which holds profound ecological, economic, and social value. The Mermaid Tail reflects the cultural legends and imagery intrinsically linked to the sea and coastal livelihoods. The Artistic Wave Patterns convey the power and dynamics of nature, while the Circular Shape of the seal symbolizes balance, continuity, and the sustainability of development. Overall, the design encapsulates the concept of a symbiotic relationship between "City – Community – Water Resources – Culture – Nature."

At the policy level, the Songkhla Lake Basin Ecotourism Certification has been established as a standardized mark of endorsement for ecotourism sites and activities in the Songkhla urban area. It operates within the context of a freshwater and brackish water ecosystem that is vital to biodiversity, community livelihoods, and local economic development. The certification integrates the historical and cultural identity of the Songkhla Old Town with the abundance of natural resources and traditional artisanal fishing ways of life. This framework aims to promote a balanced approach to tourism that harmonizes ecological conservation, local culture, and long-term sustainable development.

2.2 ECO TOURISM HAT YAI



The certification logo incorporates symbolic elements reflecting the identity of Hat Yai within the broader context of the Songkhla Lake Basin. The central element features the Standing Buddha image, representing the prominent landmark, Phra Buddha Mongkol Maharaj atop Khao Kho Hong. This symbolizes the religious and cultural identity of the area and Hat Yai's role as the gateway to ecotourism in the basin. The mountains and topography in the background reflect the interconnected ecological diversity, ranging from forests and highlands to wetlands. Symbols of trees, birds, and butterflies denote the area's rich biodiversity. Furthermore, the waterside houses and communities illustrate the concept of harmonious coexistence with nature and community-based tourism (CBT), while the waterline and stream patterns at the base signify the central role of the aquatic network in local livelihoods, the economy, and culture.

Regarding the design concept, the certification employs a circular shape with a black-and-white color scheme to convey simplicity, modesty, and formality. This design communicates the systemic integrity and connectivity of natural resources, society, and culture within the Songkhla Lake Basin. By integrating religious symbols, biodiversity, and community ways of life, the logo effectively communicates a vision of ecotourism that balances ecological conservation with long-term social and economic development.

2.3 ECO TOURISM PATTHALUNG



The certification logo incorporates symbolic elements that reflect the spatial identity of the Songkhla Lake Basin and Phatthalung Province. The Sunrise over the mountains and water signifies the abundance of natural resources and a sense of hope for sustainable development. The Boat and Traditional Fisherman imagery reflects the relationship between humans and resources guided by local wisdom. The "Yo Yak" (Giant Lift Net), a quintessential symbol of Phatthalung, demonstrates the value-based and balanced utilization of the freshwater and brackish water ecosystems. Furthermore, the Bridge structures and Waterfront houses represent human settlement and coexistence with the environment. The Wave patterns denote the dynamics of the ecosystem and the vital importance of water resources, while the Southern Thai artistic motifs on the frame link the dimension of nature with the community's cultural heritage.

At the policy level, this certification is designed as a standardized mark for ecotourism within the Songkhla Lake Basin. It integrates Phatthalung's identity through the "Yo Yak" symbol to emphasize the role of local communities as both users and guardians of natural resources. This seal serves as a policy communication tool to promote tourism that harmonizes resource and

ecological conservation, the preservation of local culture, and long-term sustainable community economic development.

2.4 ECO TOURISM THALE NOI



The certification seal incorporates symbolic elements that reflect the spatial identity of the Songkhla Lake Basin. The central motif features the Thale Noi Water Buffalo, symbolizing the community's way of life and its profound relationship with the wetland ecosystem. Khao Ok Thalu is depicted as a significant geographical landmark of Phatthalung Province, while the Thale Noi Red Lotus represents the area's ecological abundance and rich biodiversity. Furthermore, imagery of the Water surface, Waterbirds, and Wave patterns reflects the value of the wetland ecosystem as a vital habitat for diverse species. These elements are enclosed within Geometric motifs, representing the local artistic and cultural heritage of Southern Thailand. Collectively, these components integrate the dimensions of nature and culture into a unified spatial identity.

At the policy level, this certification serves as a quality assurance mark for ecotourism within the Songkhla Lake Basin. Its primary objectives are to promote natural resource conservation alongside sustainable tourism development and to support the active participation of local communities in managing resources and tourism activities. By strengthening the awareness of the region's unique natural and cultural identities, the certification aims to foster community-level economic and social development without compromising the long-term ecological balance.

3. "Eco Journey Stamp Book" Collection Manual

The "Eco Journey Stamp Book" was developed as a strategic policy and communication tool to promote ecotourism within the Songkhla Lake Basin. Its primary objective is to enhance experiential learning through field-based exploration, community engagement, and place-based education. By utilizing a "stamp collection" mechanism, the book serves as a psychological incentive to foster responsible tourism behavior that respects the environment, society, and the local economy. Furthermore, the stamp book functions as an activity-based map that interconnects the ecotourism network, helping to redistribute visitor density away from primary attractions to lesser-known community sites. It also serves as symbolic evidence of a traveler's participation in conservation efforts. This tool is designed for versatile application, supporting ecotourism activities, outdoor education, and the overall promotion of a sustainable tourism image for the Songkhla Lake Basin.



The "Eco Journey Stamp Book" serves as an operational medium designed to support ecotourism initiatives. The content comprises detailed travel routes, designated learning points, recommended activities, and responsible tourism guidelines, all structured to facilitate comprehensive trip planning and a holistic understanding of the local context. Furthermore, the book establishes clear stamp collection criteria and a reward system to provide incentives for continuous learning. This mechanism is strategically designed to encourage active participation and reinforce the principles of sustainable tourism throughout the Songkhla Lake Basin.

4. Assessment Results by DASTA Officials

The evaluation of this project was conducted by four officials from the Designated Areas for Sustainable Tourism Administration (DASTA), specifically those overseeing the Songkhla Lake Basin. The performance was measured based on the following quality criteria:

- 35–45 Points: Excellent (Ready for actual product development)
- 25–34 Points: Good (Requires partial improvement based on feedback)
- Below 25 Points: Needs Improvement (Requires conceptual or artistic redesign)

Individual Assessment Scores:

1. Evaluator 1: 52 Points
2. Evaluator 2: 52 Points
3. Evaluator 3: 51 Points
4. Evaluator 4: 38 Points

Executive Summary of the Evaluation:

The assessment was carried out by a panel of four experts from DASTA, an organization central to sustainable tourism development. The individual scores awarded were 52, 52, 51, and 38, respectively.

Based on these results, the project achieved an "Excellent" rating. This indicates that the work possesses high potential for further development and implementation into tangible products

or initiatives. It is deemed highly effective for both tourism promotion and the advancement of sustainable tourism frameworks.

Overall, the evaluators reached a consensus that the project exhibits high creativity, with tourism route concepts that are well-suited to the local context. The project effectively balances environmental considerations with tourism activities. Nevertheless, constructive feedback was provided to further refine the project, including enhancing the details of specific activities, making the content presentation more engaging, and ensuring that all tourism site information is up-to-date to maximize its readiness for practical field application.

Discussion and Conclusion

This article elucidates the conceptual framework and developmental process of the "Eco Stamp" environmental certification prototype, which was established with two primary objectives: to design systematic criteria and indicators tailored to the specific spatial context of the Songkhla Lake Basin, and to propose policy and practical guidelines for integrating this certification into sustainable ecotourism promotion. The study successfully yielded a prototype with a comprehensive evaluation framework covering natural resource management, environmental impact mitigation, community engagement, and social responsibility. This Eco Stamp serves as both a strategic policy instrument and a symbolic communication tool, effectively conveying sustainability values and quality standards to tourists and relevant stakeholders.

Furthermore, the study offers actionable recommendations for the Designated Areas for Sustainable Tourism Administration (DASTA) to scale this prototype into regional and national policy levels. This includes adapting evaluation metrics to local contexts, formalizing the certification process, and integrating the stamp into broader communication strategies and ecotourism public relations. The efficacy of the project was validated by an assessment from four DASTA experts, who awarded the work an "Excellent" rating. This high score underscores the project's robust potential for practical implementation in the field of sustainable tourism. Nevertheless, to ensure long-term viability and readiness, the evaluators suggested further refinement of activity details, the adoption of more visually compelling presentation formats, and the continuous updating of site-specific data to reflect the most current tourism landscape.

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