Thai Man and Society Review

Original Research Article

Received: 26 January 2026 **Revised:** 3 February 2026 **Accepted:** 5 February 2026

ECOTOURISM TRANSITIONS (2001-2025): FROM DISRUPTION TO REGENERATIVE PATHWAYS AND THE CIRCULAR ECONOMY

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Handling Editor:
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(This article belongs to the Theme 2: Technology, Mobility, and the Environment)

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Abstract

This documentary research comprehensively analyzes the evolution of global ecotourism from 2001 to 2025, synthesizing economic, socio-cultural, and environmental dimensions. The study delineates three distinct phases: the pre-pandemic era of rapid growth and overtourism concerns; the COVID-19 crisis, which exposed systemic fragilities while accelerating digital adoption and domestic market shifts; and the post-pandemic recovery. The analysis reveals a critical paradigm shift in the latter phase, moving beyond traditional sustainable development toward Regenerative Tourism. This emerging model prioritizes the active restoration of natural and social capital, integrating Circular Economy principles and smart technology to address persistent inequalities. Results indicate that while ecotourism remains a vital economic driver, its future viability hinges on transcending mere conservation to foster deep community resilience. The study concludes that successful adaptation requires harmonizing high-tech innovations with local wisdom and enforcing rigorous policies. By mapping these transformative pathways, this review provides a foundational framework for policymakers and stakeholders to construct a robust, equitable ecotourism industry capable of navigating future global uncertainties.

Keywords: Regenerative Tourism, Circular Economy, Community Resilience, Smart Tourism, Ecotourism Dynamics

Citation Information: Pariwongkhuntorn, N., Mankhong, P., Rodboonsong, S., & Liao, Q. (2025). Ecotourism Transitions (2001-2025): From Disruption to Regenerative Pathways and The Circular Economy. *Thai Man and Society Review*, 1(2), Article 1. https://doi.org/10.14456/tmsr.2025.6

Introduction

Ecotourism has emerged as a significant phenomenon in the global tourism industry during the first quarter of the 21st century. This rise has been primarily driven by increasing global environmental awareness and the imperative to mitigate the negative impacts of unchecked mass tourism (Selvakumar et al., 2024). The concept of ecotourism, rooted in the 1980s, has continued to evolve and expand in scope. The International Ecotourism Society (TIES) provides a globally recognized definition: "responsible travel to natural areas that conserves the environment and improves the well-being of local people" (Blamey, 2001). The global ecotourism market has expanded rapidly, from a mere few billion US dollars in the early 2000s to US$181.1 billion in 2019, with projections to reach US$333.8 billion by 2027, representing an annual growth rate of 14.3% (Alarcón-del-Amo et al., 2023).

Thailand, recognized as one of the world's leading destinations for ecotourism due to its rich natural ecosystems and distinctive local character, has seen ecotourism become one of its most widely discussed forms of tourism. Consequently, research on its potential (Suwanno et al., 2017; Junsuthonpoj et al., 2025), influencing factors for tourists (Arugsomboon, 2012), and strategies and tools for its promotion (Suansaen et al., 2023; Srisattarat, 2025) has consistently attracted significant attention. This interest persisted despite the COVID-19 pandemic in 2020, which marked a significant turning point and severely impacted the global tourism industry, including ecotourism. This led to unprecedented disruptions and significant shifts in operational models and approaches (Gössling et al., 2020; Lenzen et al., 2020).

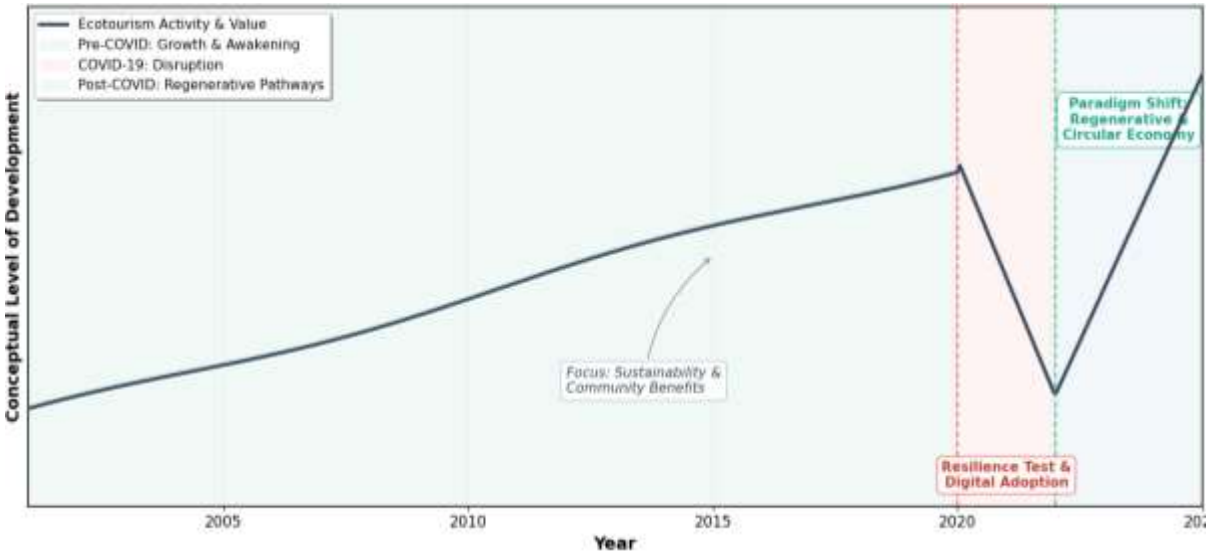

Figure 1 The Evolutionary Trajectory of Ecotourism (2001-2025)

This study adopts a Documentary Research approach to synthesize the evolution of ecotourism over the past quarter-century. As illustrated in Figure 1, the analysis categorizes the temporal progression into three distinct phases: the Pre-COVID-19 Growth Era (2001-2019), characterized by rapid market expansion and emerging overtourism concerns; the Pandemic Disruption (2020-2021), representing a critical inflection point of systemic fragility and digital adaptation; and the Post-Pandemic Regenerative Era (2021-2025), marked by a paradigm shift towards circular economy principles and resilience. This visual trajectory underscores not merely fluctuations in tourism volume, but also a fundamental transformation in the industry's philosophical underpinnings—from minimizing harm (Sustainability) to actively restoring natural and social capital (Regeneration).

The scope of this study encompasses ecotourism in an international context, including both developed and developing destinations, particularly in Southeast Asia, a significant region for

ecotourism globally. The study employs a Documentary Research approach, reviewing and analyzing secondary data from diverse sources. These include academic articles published in internationally indexed journals (e.g., Scopus, Web of Science, PubMed, and JSTOR), nationally indexed journals (e.g., TCI), and internationally indexed databases (e.g., Google Scholar). Additionally, statistical reports from the United Nations World Tourism Organization (UNWTO) and other international organizations, policy reports, and case studies from governments and non-governmental organizations, and relevant academic books are analyzed. The analysis utilizes Content Analysis and Narrative Synthesis to identify trends, patterns, and interconnections within the data (Moher et al., 2015).

The conceptual framework of this study integrates three core concepts: Sustainable Development, which emphasizes balancing economic, social, and environmental dimensions (World Commission on Environment and Development, 1987); Community-Based Tourism, which highlights the role and decision-making power of local communities (Jamal & Getz, 1995); and Circular Economy, which focuses on efficient resource utilization and waste reduction (Geissdoerfer et al., 2017). This study is expected to provide both theoretical and practical benefits, serving as foundational knowledge for academics and researchers, supporting policy formulation and development plans for policymakers, and offering practical guidelines for operators and local communities in developing sustainable and innovative ecotourism.

Ecotourism in the Pre-COVID-19 Era (2001-2019): An Age of Growth and Awakening

The nearly two decades preceding the COVID-19 pandemic represented a golden era for ecotourism, marked by rapid growth and widespread recognition. During this period, the evolution of ecotourism concepts and definitions became increasingly refined, transitioning from an exclusive focus on mitigating environmental impacts to a comprehensive integration of economic and social dimensions. Key concepts developed during this time included principles of biodiversity conservation, the generation of economic benefits for local communities, environmental education and awareness, and stakeholder participation (Weaver & Lawton, 2007; Fennell, 2015). The distinctions among ecotourism, nature tourism, and sustainable tourism have become more clearly understood. Ecotourism, in particular, emphasized the centrality of conservation and genuine local community involvement.

The market growth and economic dimension of this period demonstrated immense potential. Ecotourism has become one of the fastest-growing market segments within the tourism industry, with growth rates exceeding those of the broader tourism industry (Honey, 2008). Driving factors for this growth included rising environmental consciousness among tourists, particularly in developed countries; the expansion of the middle class in developing nations, particularly in Asia; and robust support from governments and international organizations. Economic benefits for local communities were clearly evident, especially in developing countries. Studies in various regions, such as the Annapurna Conservation Area Project in Nepal, have shown ecotourism's capacity to generate higher income and employment than traditional occupations, while also fostering infrastructure development and social services (Nyaupane et al., 2006). In Malaysia, research indicated that employment opportunities, community-based accommodation businesses, and community participation yielded significant positive socio-economic impacts (Saufi et al., 2014).

The environmental and conservation dimension during this period revealed both successes and challenges. On the positive side, ecotourism created economic incentives for conservation by attributing tangible economic value to natural resources, thereby motivating local communities to protect and manage them. Ecotourism revenues were often channeled to support protected area management and biodiversity conservation projects (Goodwin, 2011).

However, significant challenges also began to emerge. Overtourism became an issue in several popular destinations, leading to the degradation of natural resources and diminished tourist experiences. Comparative studies analyzing the ecological footprint of ecotourism versus mass tourism found that in some cases, ecotourism had a larger ecological footprint due to long-distance travel and inefficient resource use (Gössling & Peeters, 2007).

The socio-cultural dimension and community participation gained significant attention. Although local community involvement is a fundamental principle of ecotourism, literature reviews indicated a wide gap between theoretical ideals and practical implementation. A study by Stronza and Gordillo (2008) found that the level and quality of participation varied considerably across contexts, depending on power structures, available resources, and community capacity. Policy development and regulatory frameworks made significant progress during this period. The Global Sustainable Tourism Council (GSTC) developed international standards for sustainable tourism (Version 1), encompassing four pillars: sustainable management, socio-economic impacts, cultural impacts, and environmental impacts (GSTC, 2013). Numerous governments have developed policies to promote and regulate ecotourism, including providing tax incentives and financial support, and setting regulations on carrying capacity and the protection of sensitive areas. The post-2015 linkage with the United Nations Sustainable Development Goals (SDGs) led to widespread recognition of ecotourism as a crucial tool for achieving various SDGs, particularly SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), and SDGs 12-15 (Responsible Consumption and Production, Climate Action, and Life on Land) (UNWTO, 2017).

Ecotourism Amidst the COVID-19 Crisis (2020-2021): Disruption, Adaptation, and Lessons Learned

The COVID-19 pandemic triggered the most profound disruption to the tourism industry since the end of World War II. Its direct impacts on ecotourism were severe and multi-dimensional. Border closures, stringent travel restrictions, and pervasive lockdown measures drastically curtailed international tourist arrivals, resulting in severe economic repercussions for local communities heavily reliant on ecotourism revenues (Gössling et al., 2020). A study conducted in Tanzania's Burunge Wildlife Management Area revealed that the pandemic profoundly affected socio-economic activities, tourism income, and biodiversity conservation efforts. Local communities experienced significant income and job losses, prompting increased reliance on natural resources, which, in turn, led to increased illegal hunting and encroachment into protected areas (Lindsey et al., 2020). Similarly, in Ghana's Savannah region, ecotourism has had substantial socio-economic and ecological impacts, particularly on communities whose livelihoods are primarily derived from tourism (Soliku et al., 2021). The reduction in tourism revenue also impaired the capacity to support conservation projects and protected area management, resulting in diminished patrolling and protection efforts.

However, the unprecedented cessation of tourism activities also yielded short-term positive environmental effects. Natural areas, previously subjected to intense tourist pressure, experienced a period of recovery. Air and water pollution declined due to reduced tourism-related activities and transportation, with some wildlife species reoccupying previously human-dominated spaces (Corlett et al., 2020). Nevertheless, several experts cautioned that these environmental gains were temporary and could not offset the severe negative impacts on local communities' economic stability and long-term conservation efforts (Buckley, 2020).

The period of crisis spurred significant adaptation and innovation, demonstrating the resilience and creativity of various sectors. A pivotal strategy was the redirection towards domestic tourism. Small-scale ecotourism businesses in many regions adapted by actively targeting domestic and regional visitor segments (Rastegar et al., 2021). Concurrently, demand for outdoor and nature-based experiences surged, driven by increased public

awareness of the value of nature for physical and mental well-being and the perception that outdoor activities are safer than indoor settings (Derks et al., 2020).

Business and service innovations rapidly emerged to navigate the novel circumstances. These included developing new experience packages that prioritize safety, convenience, and authentic local immersion. Food services adapted through the adoption of food trucks, takeaway options, and delivery services, often emphasizing local ingredients and culinary storytelling. There was an accelerated integration of digital technologies for online marketing, contactless booking systems, and health tracking applications (Sharma et al., 2021). A critical lesson from this crisis was the paramount importance of building resilience. The inherent fragility of business models predominantly reliant on international tourism was starkly exposed. A study in Quebrada Verde, Peru, that examined community responses and resilience to the simultaneous risks of pandemic and climate change found that communities with diversified income sources and robust social capital exhibited greater coping capacity during the crisis (Gabriel-Campos et al., 2021). Consequently, the concept of community resilience emerged as a vital consideration, with strong social networks, robust relationships, adaptive capabilities, and a culture of continuous learning and innovation identified as crucial factors for fostering resilience.

The shifts in tourist behavior observed during this period hold significant implications for the future trajectory of ecotourism. Tourist values and expectations have evolved, placing greater emphasis on health and safety. There was a discernible increase in appreciation for natural environments and open spaces, coupled with a growing propensity to select more responsible and meaningful tourism options (Wen et al., 2021). The pandemic may have inadvertently cultivated a new demographic for nature-based tourism: individuals who forged a renewed connection with nature during the crisis and seek to maintain this relationship. Key lessons gleaned from this crisis underscore the importance of cultivating robust local and regional markets, investing in resilient infrastructure, and fostering collaborative partnerships to bolster small businesses and communities. Furthermore, the crisis highlighted the critical need for proactive preparedness against future disruptions and the imperative to integrate resilience with sustainable practices.

Ecotourism Post-COVID-19 (2021-2025): Recovery, Paradigm Shifts, and New Directions

The recovery of ecotourism post-COVID-19 has exhibited distinct characteristics compared to other tourism segments, demonstrating remarkable resilience and potential. The revitalized and new models of ecotourism are marked by three salient features: faster recovery than other tourism forms, sustained focus on domestic and regional markets, and enhanced hygiene and safety standards (Hall et al., 2020). Research in Sri Lanka highlighted post-pandemic recovery strategies, including market diversification, the development of nature-based tourism, and leveraging the potential of geotourism (Geoparks) as crucial tools to attract tourists back. Demand for nature experiences has persisted and even intensified. Multiple studies indicate that post-pandemic intentions for nature-based travel differ from pre-COVID preferences, with people expressing greater appreciation for nature and a stronger desire to engage more deeply with it (Ugur & Akbiyik, 2020).

The conceptual shift from sustainable tourism to Regenerative Tourism represents the most significant transformation in the post-COVID era. Regenerative tourism extends beyond merely mitigating negative impacts; it actively seeks to create positive impacts and improve conditions (Bellato & Pollock, 2025). Key tenets of regenerative tourism include regenerating natural capital, enhancing social and cultural capital, building long-term economic capital, and generating net positive benefits. A case study in Jatiluwih Village, Bali, Indonesia, illustrated the integration of Balinese cultural values, particularly the concepts of Tulus

(sincerity) and Nau (giving), into regenerative tourism offerings. Another study in Penglipuran Village, Bali, examined how community understanding and co-management interact to achieve regenerative outcomes, finding that genuine community participation and decentralization are critical factors for success (Sugita et al., 2025). Regenerative tourism is increasingly perceived as a vital instrument for achieving global climate and biodiversity goals, aligning with the Paris Agreement and the Kunming-Montreal Global Biodiversity Framework.

The role of technology and innovation has significantly expanded in the post-COVID era. Smart Tourism, leveraging technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), digital platforms, and Blockchain, has become a pivotal tool for enhancing tourist experiences, efficient resource management, and promoting sustainable behaviors (Gretzel et al., 2020). Studies in Southeast Asia indicate that Thailand, for instance, possesses high readiness in smart tourism, characterized by investments in digital infrastructure, supportive policies, and public-private sector collaboration (Weltman et al., 2024). Social media and influencers also play a crucial role in promoting ecotourism by raising awareness, influencing tourist loyalty, and advocating for policies. Research suggests that support from non-governmental organizations (NGOs) acts as a crucial mediating factor, reinforcing the role of social media in promoting sustainable ecotourism policies (Zahra & Ryan, 2007).

The integration with the Circular Economy has emerged as a key trend in ecotourism. Circular economy principles encompass waste management, renewable energy utilization, natural resource conservation, the application of green technologies, and sustainability certification with traceability (Geissdoerfer et al., 2017). Studies in Southeast Asia have identified critical factors influencing the application of circular economy principles in ecotourism. Waste management remains a central issue, with key strategies including food-waste reduction, waste segregation and collection, reduction of single-use plastics, and the adoption of biotechnological solutions. Research in Nan, Thailand, developed a framework for implementing bio-solutions in cultural tourism destinations, evaluated four low-carbon waste management scenarios, and found that integrated multi-method approaches yielded the best results (Jones & Comfort, 2020). The environmental and socio-economic benefits of applying circular economy principles include reduced greenhouse gas emissions, improved environmental quality, job creation and income generation, and enhanced destination image.

Wellness Tourism has grown rapidly post-COVID-19, exhibiting strong connections to ecotourism. Research highlights the link between wellness tourism and regenerative concepts, emphasizing holistic well-being, the utilization of natural resources for health benefits, and ethnobotanical knowledge. Policies and regulations in this new era are strengthening frameworks and standards, with increased adoption of the Global Sustainable Tourism Council (GSTC) standards, greater NGO involvement in policy advocacy, and improved multisectoral integration. Remaining challenges and limitations include gaps in policy support, the digital divide, climate impact management, and the need to balance growth with conservation. Emerging trends and future directions encompass Slow Tourism, Conscious Tourism, Transformative Tourism, and the extension of ecotourism concepts to urban environments. To synthesize the complex transitions discussed throughout this study, Table 1 presents a comparative matrix detailing structural shifts across economic, environmental, and technological dimensions, highlighting that the post-pandemic era requires fundamental restructuring of the ecotourism ecosystem.

Table 1 Comparative Matrix of Ecotourism Paradigms across Three Eras (2001-2025)

Dimension	Pre-COVID Era (2001-2019)	COVID-19 Crisis (2020-2021)	Post-COVID Era (2021-2025)
Core Philosophy	Sustainability: Minimizing negative impacts and conserving biodiversity.	Resilience: Survival, adaptation, and crisis management.	Regeneration: Actively restoring natural/social capital and creating net-positive impacts.
Market Focus	International mass tourism and rapid quantitative growth.	Domestic/Regional tourism and "Staycations" due to border closures.	Conscious, Slow, and Wellness Tourism; Quality over quantity.
Key Challenges	Overtourism, greenwashing, and leakage of economic benefits.	Economic collapse, job losses, and poaching due to income deprivation.	Uneven recovery, digital divide, and balancing climate goals with growth.
Technology Role	A tool for marketing and basic booking systems.	Accelerator for contactless services and virtual tours.	Smart Tourism: AI, IoT, Blockchain for resource management & circularity.
Environmental Focus	Conservation funding via tourism revenue.	Temporary ecological recovery ("The Anthropause").	Circular Economy: Waste reduction, bio-solutions, and decarbonization.

Conclusion: Lessons Learned, Recommendations, and Future Directions for Ecotourism

The comprehensive review and analysis of ecotourism during the first quarter of the 21st century reveals its significant and intricate evolution, transforming it from a niche market into a crucial component of the global tourism industry. The pre-COVID-19 era was characterized by rapid growth and increased awareness, marked by clearer conceptual and definitional developments, impressive market expansion, and tangible economic benefits for local communities. However, challenges such as overtourism, inequitable distribution of benefits, and greenwashing began to emerge. The COVID-19 pandemic caused profound disruption and served as a critical turning point, prompting a re-evaluation of sustainability, resilience, and responsible tourism. The post-COVID era has witnessed a unique recovery and significant conceptual shifts, notably the emergence of a more ambitious approach to regenerative tourism (Higgins-Desbiolles, 2020).

Key lessons derived from this study encompass several critical dimensions. Firstly, striking a delicate balance between conservation and development is essential and requires careful management; an exclusive focus on either can lead to environmental and social challenges. Secondly, local community participation must transcend mere rhetoric and entail genuine involvement at every stage, from planning to benefit sharing (Scheyvens, 1999). Thirdly, effective carrying capacity management is a crucial tool that requires rigorous development and consistent enforcement. Fourthly, diversifying risks and enhancing community resilience are imperative, especially in today's highly uncertain global contexts. Fifthly, while technology offers an effective means to promote sustainability, its application must be responsible and appropriate. Sixthly, the paradigm shift from mere sustainability to

regeneration signifies a critical evolution in the philosophy of responsible tourism, necessitating adjustments in both conceptual frameworks and practical approaches.

Key recommendations can be categorized by stakeholder group. For policymakers, it is crucial to develop integrated policy frameworks that harmoniously link tourism, conservation, and community development; strengthen robust standards and certification systems; support diversification of community risks; invest in sustainable infrastructure; and develop effective monitoring and evaluation systems (Hall, 2008). For operators, full adoption of circular economy principles is recommended, along with investing in appropriate technologies, fostering genuine collaboration with local communities, diversifying product offerings, and prioritizing quality over quantity. Local communities should continuously develop skills and capacities, build strong community organizations, conserve cultural and natural resources, and actively forge networks and collaborations. Researchers and academics should conduct high-quality empirical studies, develop reliable measurement and evaluation tools, investigate regenerative approaches in diverse contexts, research the impacts and potential of emerging technologies, and promote interdisciplinary research.

Multiple factors will shape the future trajectory of ecotourism. Climate change will undoubtedly pose a significant and urgent challenge, demanding the development of robust adaptation and mitigation strategies. Emerging technologies such as AI, IoT, and Blockchain will play an increasingly prominent role, though their potential risks and negative impacts require careful consideration. Demographic shifts, particularly the evolving values and expectations of younger generations, will profoundly influence tourism patterns and demands. Regenerative tourism approaches are expected to become widely adopted as a primary framework for future development. Integration with the circular economy will transition from an exception to a standard practice. Wellness tourism will continue its growth trajectory, and the expansion of ecotourism concepts into urban environments will be a significant trend (Cheer, 2020). Ultimately, ecotourism should evolve beyond a mere segment of tourism to become a guiding principle and practice encompassing all forms of tourism. This will ensure the entire tourism industry genuinely strives for sustainability and regeneration, benefiting both present and future generations.

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Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

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