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A Sustainable Ecotourism Model: Integrating Forest Conservation, Environmental Protection, and Local Economic Well-Being

Nensi Lapotulo[1], Angger Hidayat[2], Zakia Ayu Lestari [3]
[1]Politeknik Pariwisata Batam, Indonesia
[2]UIN Sulthan Thaha Saifuddin Jambi, Indonesia
[3]Universitas Muhammadiyah Bangka Belitung, Indonesia

nlapotulo@btp.ac.id*

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Abstract

Ecotourism is widely promoted as a development pathway that can simultaneously finance forest conservation, reduce environmental pressure, and raise local incomes. In practice, these three goals are usually pursued through separate policy instruments, and the literature remains fragmented across case studies that rarely explain how the goals reinforce or undermine one another. This study develops an integrative model that specifies the mechanisms linking forest conservation, environmental protection, and local economic well-being in ecotourism settings. Method: A systematic integrative review was conducted following PRISMA 2020 guidance. Forty records retrieved from the Consensus academic database through bilingual (English and Indonesian) queries were de-duplicated into a corpus of 29 peer-reviewed studies published between 2021 and 2026, which were coded and analysed through reflexive thematic synthesis. Five recurrent mechanisms were identified: governance and stakeholder synergy, community agency and local wisdom, benefit-sharing and livelihood diversification, ecological safeguards and restoration, and environmental education with valuation of ecosystem services. Economic benefits translate into conservation only when benefit-sharing is institutionalised and ecological limits are enforced. The proposed Integrated Forest–Environment–Economy Ecotourism (IFEE) model offers policymakers and destination managers a diagnostic framework for designing and evaluating forest-based ecotourism, particularly in tropical developing countries such as Indonesia

INTRODUCTION

Forests occupy a paradoxical position in contemporary development. They are among the most valuable assets for climate regulation, watershed protection, and biodiversity, yet for the communities living within and around them, standing forests often generate less immediate income than logging, plantation conversion, or mining. This tension sits at the heart of the sustainability debate in tropical countries, where high forest cover coincides with persistent rural poverty. Ecotourism has emerged over the past three decades as one of the few development strategies that claims to resolve this tension by turning the conservation value of forests into a source of local livelihood. The premise is simple: if visitors are willing to pay to experience intact ecosystems, then protecting those ecosystems becomes economically rational for the people who live beside them.

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The empirical record, however, shows that this premise does not hold automatically. Bibliometric work by Khanra et al. (2021), covering 878 articles published between 1990 and 2019, concluded that ecotourism research is fragmented and organised around four largely separate thematic areas: ecological preservation, residents' interests, carbon footprint, and tourist behaviour. In other words, the field has studied the ecological, social, and economic sides of ecotourism, but often in isolation. Baloch et al. (2022) similarly documented that tourism development carries measurable pressures on environmental sustainability and argued that a dedicated framework for sustainable ecotourism is needed precisely because growth in visitor numbers can erode the natural capital on which the sector depends. The literature therefore oscillates between two narratives: ecotourism as a conservation instrument and ecotourism as a new source of environmental pressure.

The conservation narrative is supported by a growing body of evidence linking ecotourism to forest protection. De Zoysa (2021) reviewed forest-based ecotourism in Sri Lanka and connected its outcomes to the state of governance, livelihoods, and forest conservation, showing that these three dimensions must be read together rather than separately. Saavedra (2024), writing in a leading development economics journal, examined how ecotourism relates to economic development and environmental conservation, placing the question within a rigorous economic evaluation frame. At a more theoretical level, Pathak et al. (2023) constructed a mathematical model of the role of ecotourism in conserving forest biomass, illustrating that the conservation contribution of ecotourism depends on parameters that can be managed, such as visitor pressure and reinvestment in forest stock. Abdullah et al. (2025) added an economic valuation perspective by estimating the value of forest ecosystem services derived from recreation and ecotourism, which strengthens the argument that standing forests carry tangible economic worth.

The livelihood narrative is equally prominent. Bhushan et al. (2024) evaluated local livelihoods, sustainable forest management, and ecotourism potential in the Kaimur Wildlife Sanctuary in India, situating ecotourism as one component of a broader livelihood portfolio rather than a stand-alone solution. Gültekin (2022) used structural equation modelling to examine how forest villagers perceive ecotourism, highlighting that community perceptions mediate whether ecotourism is accepted and supported. Mulyana (2025) examined the role of ecotourism in improving the economic and environmental welfare of local communities in Bali, while Erdawati and Ayub (2024) proposed a holistic community-empowerment model for sustainable development through ecotourism. These studies suggest that the economic benefits of ecotourism are real but unevenly distributed, and that their contribution to conservation depends on whether local people perceive themselves as beneficiaries and co-owners of the resource.

Indonesia provides a particularly important context for this debate. The country holds one of the largest tropical forest estates in the world and an extensive mangrove coastline, alongside a policy agenda that increasingly promotes nature-based tourism as a driver of regional development. Lawasi et al. (2025) offered a comprehensive review of forest-based ecotourism in Indonesia, identifying policy challenges, diverse practices, stakeholder engagement, conservation efforts, and socioeconomic aspects as the key dimensions of the sector. Their review shows that Indonesian ecotourism is characterised by a high diversity of local practices but weak policy coherence. Case studies across the archipelago reinforce this picture. Zainal et al. (2024) demonstrated how the local knowledge of the Gayonese community in Aceh Tengah can be actualised for sustainable ecotourism in a protected forest area, while Zainal et al. (2023) analysed the rationality of developing protected mangrove forests as ecotourism destinations. Sagajoka and Nona (2025) proposed a local-wisdom-based ecotourism model for the Kebesani tourism forest conservation area in Ende Regency, and Iskandar et al. (2026) examined sustainable synergy governance and community agency in asset-based ecotourism.

Coastal forest ecosystems have attracted particular attention. Rosid and Yuliani (2025) developed a sustainable mangrove ecotourism management model for Berau Regency in East Kalimantan, and Jafri et al. (2026) extended this work by linking mangrove

ecotourism management based on local wisdom to the economic empowerment of coastal communities in the same regency. Islam and As (2025) connected mangrove ecotourism with social entrepreneurship as an integrated solution for community development, and Islam et al. (2025) formulated strategies for sustainable mangrove ecotourism in Lembung, Pamekasan. Beyond forests, Hasmira et al. (2025) showed that ecotourism can be integrated with disaster mitigation and turtle conservation in Nagari Ampiang Parak, West Sumatra, demonstrating that ecotourism models can carry multiple public goals simultaneously. Kiswanto et al. (2025) examined adaptive ecosystem restoration as a strategy for strengthening ecotourism hotspots in protected forest landscapes, suggesting that ecological restoration and tourism development need not be sequential but can be designed together.

International evidence shows that these Indonesian findings are part of a wider pattern. Ekanayake and Fernando (2026) discussed the integration of biodiversity conservation with sustainable ecotourism in Sri Lanka, and He et al. (2026) documented the Hide-in-Bird Pond approach in China as a new pathway to synergise biodiversity conservation and sustainable development. Santos and Chitongo (2026) reassessed ecotourism as an environmental management instrument for biodiversity conservation and rural development in South Africa's Eastern Cape. In Europe, Gajić et al. (2025) compared attitudes towards the balance between nature conservation and economic development in EU and non-EU countries, and Petrović et al. (2025) evaluated natural heritage and sustainable development in Golija Nature Park, Serbia. Huang et al. (2023) provided empirical evidence that environmental education concepts support the sustainable development of ecotourism, while Van Doan and Pham (2025) investigated how ecotourism efficiency promotes sustainable tourism development in Vietnam's North Central Region. Ahmad and Balisany (2023) linked sustainable tourism management and ecotourism to the Sustainable Development Goals, and Thomas (2022) framed ecotourism as a strategy for balancing economic growth, socio-cultural development, and conservation.

The disruption of the COVID-19 pandemic made the fragility of this balance visible. Bhammar et al. (2021) showed that the collapse of visitor revenues exposed how heavily protected areas and surrounding communities had come to depend on tourism income, and proposed a framework for a green and sustainable recovery of protected-area tourism. The pandemic thus demonstrated that an ecotourism model which relies solely on visitor spending is vulnerable, and that resilience requires diversified livelihoods and conservation financing mechanisms that do not collapse when tourist flows stop.

Taken together, the literature establishes that ecotourism can contribute to forest conservation, environmental protection, and local economic well-being, but that these contributions are conditional rather than automatic. The conditions under which the three goals reinforce one another, however, remain poorly specified. One reason is dimensional fragmentation. Previous reviews have mapped ecotourism research broadly (Khanra et al., 2021) or examined the conservation–tourism nexus in specific tenure contexts, such as privately owned natural areas (Müller et al., 2023), while empirical studies usually emphasise a single dominant outcome, whether forest biomass and ecological integrity (Pathak et al., 2023; Kiswanto et al., 2025), environmental pressure (Baloch et al., 2022), or household welfare (Mulyana, 2025; Jafri et al., 2026). Consequently, few studies explain how forest conservation, broader environmental protection, and economic well-being interact as a single system, including the points at which they trade off against each other.

A second reason is the proliferation of models without synthesis. Recent Indonesian scholarship has produced numerous context-specific ecotourism models, ranging from local-wisdom models (Sagajoka & Nona, 2025) and mangrove management models (Rosid & Yuliani, 2025) to community-empowerment models (Erdawati & Ayub, 2024) and models that integrate disaster mitigation (Hasmira et al., 2025). These contributions are valuable, yet they are rarely compared with one another or with international evidence, so it remains unclear which of their components are site-specific and which represent transferable design principles. A third and closely related reason is the limited attention paid to conversion mechanisms. Much of the literature assumes that income from ecotourism will translate into

conservation behaviour without specifying the institutional arrangements, such as benefit-sharing rules, reinvestment of revenue in restoration, or environmental education, through which economic gains become conservation outcomes. Without such mechanisms, ecotourism risks becoming conventional nature-based mass tourism carrying an environmental label.

This article responds to these gaps and offers three contributions that constitute its novelty. It synthesises the most recent evidence published between 2021 and 2026 across tropical and non-tropical contexts, giving deliberate attention to Indonesian scholarship that is often under-represented in international reviews. It then moves beyond listing success factors by identifying the conversion mechanisms that turn economic benefits into conservation and environmental outcomes, as well as the feedback loops through which conservation sustains the economic base. Finally, it organises these mechanisms into the Integrated Forest–Environment–Economy Ecotourism (IFEE) model, which arranges them into enabling conditions, core processes, safeguards, and reinforcement processes, and pairs each component with indicators that destination managers and policymakers can monitor.

The study is guided by three research questions. RQ1: What mechanisms link forest conservation, environmental protection, and local economic well-being in recent ecotourism research? RQ2: Under what enabling and constraining conditions do these mechanisms produce mutually reinforcing outcomes? RQ3: How can these mechanisms be integrated into a coherent model that can guide policy and destination management?

METHODS

Research Design

This study adopts a qualitative systematic integrative review design. An integrative review was chosen because the research questions require combining evidence from heterogeneous designs, including case studies, surveys, structural equation models, mathematical models, economic valuations, and prior reviews. Reporting follows the PRISMA 2020 statement (Page et al., 2021), adapted for a qualitative synthesis. The unit of analysis is the published study, and the analytical goal is model building rather than effect-size estimation.

Data Source and Search Strategy

Records were retrieved from Consensus, an AI-assisted academic search engine that indexes peer-reviewed literature, on 7 October 2026. Two queries were executed to capture both international and Indonesian scholarship: an English query mirroring the article title ("A Sustainable Ecotourism Model: Integrating Forest Conservation, Environmental Protection, and Local Economic Well-Being") and an Indonesian query with equivalent meaning ("Model Ekowisata Berkelanjutan: Integrasi Perlindungan Hutan, Lingkungan, dan Kesejahteraan Ekonomi Lokal"). Each query returned 20 records, which were exported in RIS format, giving 40 records in total.

Eligibility Criteria and Study Selection

Studies were eligible if they (a) were published between 2021 and 2026; (b) were journal articles or peer-reviewed proceedings with a registered DOI; (c) addressed ecotourism or nature-based tourism; and (d) discussed at least one of the three target dimensions: forest or biodiversity conservation, environmental protection, or local economic well-being. Records were excluded if they were duplicates, lacked an identifiable source, or concerned tourism without an ecological component.

De-duplication by DOI removed 11 records that appeared in both query results, leaving 29 unique records. Title and abstract screening against the eligibility criteria retained all 29 records, which formed the final corpus. To position the findings theoretically, a small set of supplementary sources was consulted separately, including prior bibliometric and systematic reviews (Khanra et al., 2021; Müller et al., 2023) and foundational theoretical works; these sources informed interpretation but were not coded as part of the

corpus.

Data Extraction

A structured extraction matrix was developed with the following fields: bibliographic details; country and ecosystem type (terrestrial forest, mangrove, wetland, coastal, mixed); study design; stakeholders involved; and reported contributions to each of the three target dimensions. A further field captured the mechanism through which one dimension was reported to affect another, for example, community income financing patrols, or education changing visitor behaviour.

Data Analysis

Analysis proceeded in three stages. First, a descriptive profile of the corpus was compiled by year, region, ecosystem, and design. Second, reflexive thematic analysis (Braun & Clarke, 2021) was applied to the extracted mechanisms. Codes were generated inductively, grouped into candidate themes, and reviewed against the full corpus. Third, the themes were mapped onto the three target dimensions to identify which mechanisms connect which dimensions and in which direction. This cross-dimensional mapping produced the components and relationships of the IFEE model.

Trustworthiness

Credibility was strengthened by applying explicit eligibility criteria, documenting each screening decision, and tracing every theme back to the studies that support it (see Table 1). Confirmability was supported by distinguishing findings reported in the corpus from the authors' interpretive synthesis. Because the corpus is drawn from a single database, the findings are treated as analytically rather than statistically generalizable.

Research Flowchart (Figure 1)

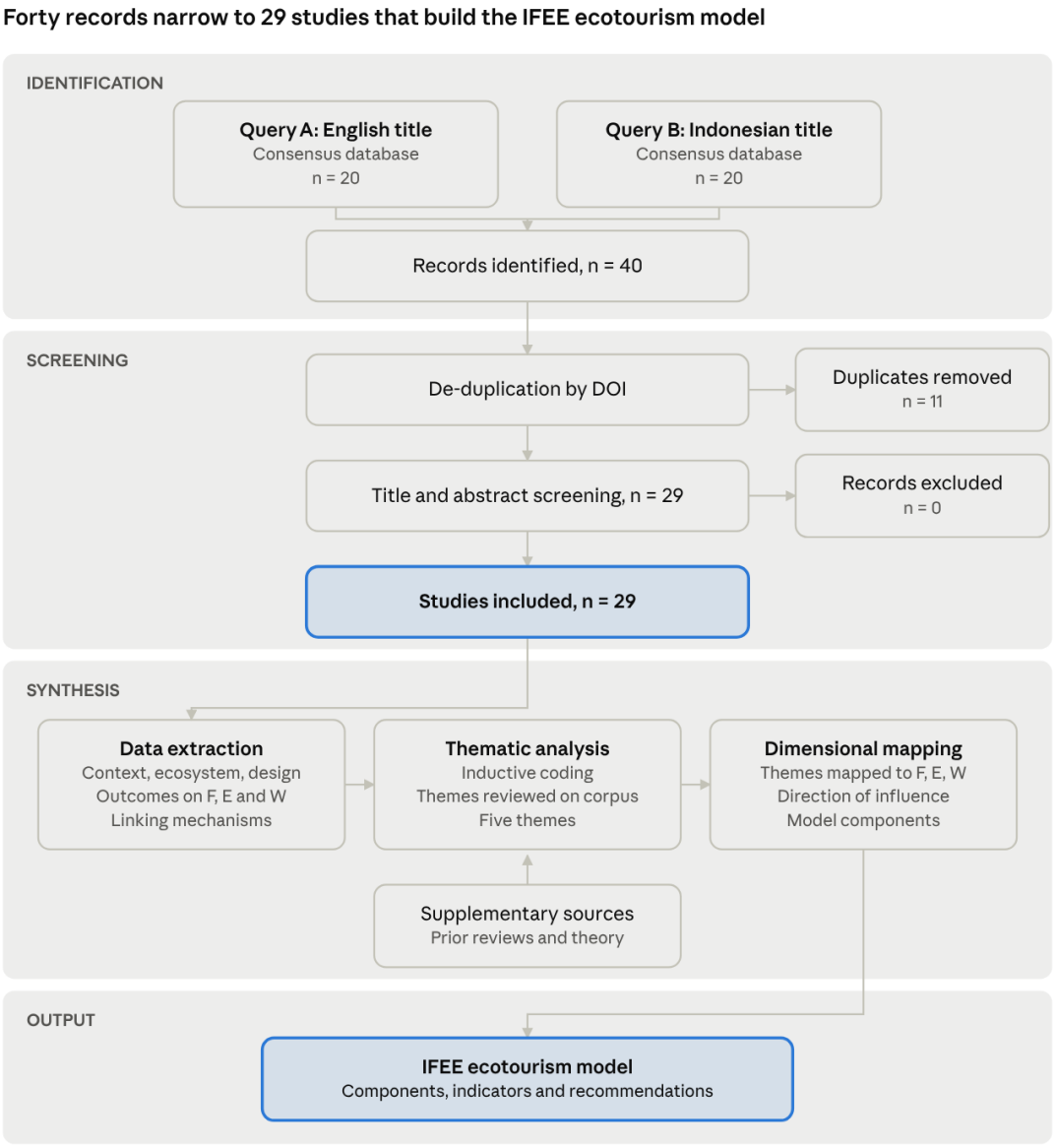


Figure 1. Flow of the systematic integrative review, from record identification to development of the IFEE ecotourism model (adapted from PRISMA 2020; Page et al., 2021)..

Figure 1 · review flow from 40 records to the IFEE model
F = forest conservation, E = environmental protection, W = local economic well-being. Duplicates and exclusions branch to the right; the supplementary sources inform the thematic analysis but are not coded as part of the corpus.

RESULTS AND DISCUSSION

The synthesis shows that ecotourism delivers integrated sustainability outcomes only when five mechanisms operate together; when any one is missing, the three goals tend to diverge rather than converge

Profile of the Corpus

The 29 included studies are recent and concentrated in the latest period: one was published in 2021, three in 2022, four in 2023, four in 2024, twelve in 2025, and five in 2026. This distribution signals rapidly growing scholarly interest in integrated ecotourism

models in the post-pandemic period. Geographically, the corpus is dominated by Asia, with Indonesian settings forming the largest single group (for example, Aceh, East Kalimantan, Flores, West Sumatra, Bali, and Madura), complemented by studies authored in or focused on India, Sri Lanka, China, Vietnam, Malaysia, Taiwan, Pakistan, Turkey, Serbia, the wider Balkans and EU, South Africa, and Colombia. In terms of ecosystems, terrestrial forests and protected forest areas form the largest category, followed by mangrove forests, which appear in five studies. Methodologically, the corpus combines qualitative case studies, surveys and structural equation modelling (Gültekin, 2022), mathematical modelling (Pathak et al., 2023), econometric evaluation (Saavedra, 2024), economic valuation (Abdullah et al., 2025), and reviews (De Zoysa, 2021; Lawasi et al., 2025).

This profile carries an important interpretive implication. Because most studies are single-site case studies, the evidence base is rich in context but weak in comparability. The value of a synthesis lies precisely in identifying the mechanisms that recur across these diverse contexts.

Governance and Stakeholder Synergy

The first and most pervasive mechanism is governance. Across the corpus, ecotourism outcomes depend less on the attractiveness of the natural resource than on the institutional arrangements that govern access, decision-making, and accountability. Lawasi et al. (2025) identified policy challenges and stakeholder engagement as central dimensions of Indonesian forest-based ecotourism, and De Zoysa (2021) explicitly linked the state of governance in Sri Lanka to both livelihood and forest conservation outcomes. Iskandar et al. (2026) advanced this argument through the concept of *sustainable synergy governance*, in which government agencies, community groups, and private actors coordinate around shared community assets rather than operating in parallel.

Governance matters because ecotourism in forest areas is a classic common-pool resource problem. Forests and scenic landscapes are difficult to exclude users from, and their use by one party diminishes their quality for others. Ostrom's (1990) work on governing the commons shows that such resources are sustained not by privatisation or state control alone but by institutions with clear boundaries, locally adapted rules, collective-choice arrangements, monitoring, and graduated sanctions. The corpus provides strong support for this perspective: the reviewed studies repeatedly associate multi-stakeholder arrangements with more balanced outcomes than top-down designation alone. Gajić et al. (2025) further showed that public attitudes towards the balance between conservation and economic development differ across institutional contexts in EU and non-EU countries, implying that governance structures shape not only management practice but also societal expectations.

A critical reading, however, suggests that "stakeholder synergy" is often asserted rather than demonstrated. Several studies describe collaboration in normative terms without examining power asymmetries between state forestry agencies, investors, and villagers. Müller et al. (2023) observed that research in the Global South tends to treat ecotourism as the main inducement for conservation, which can obscure questions of who controls the land and who captures the revenue. Governance, therefore, should be evaluated not by the number of stakeholders involved but by the distribution of decision rights.

Community Agency and Local Wisdom

The second mechanism concerns the agency of local communities and the mobilisation of local ecological knowledge. Zainal et al. (2024) showed that the local knowledge of the Gayonese in Aceh Tengah can be actualised as a basis for sustainable ecotourism in a protected forest area, and Sagajoka and Nona (2025) built an ecotourism model explicitly on indigenous wisdom in the Kebesani forest conservation area. Jafri et al. (2026) similarly grounded mangrove ecotourism management in local wisdom as a route to coastal economic empowerment.

These studies converge on an important insight: local wisdom is not merely cultural

content to be packaged for tourists. It functions as an existing institution, a set of norms about when, where, and how natural resources may be used. When ecotourism is built on these norms, conservation rules gain legitimacy because they are recognised as the community's own. This is consistent with Scheyvens's (1999) empowerment framework, which argues that ecotourism benefits communities only when it produces economic, psychological, social, and political empowerment. Gültekin's (2022) structural equation model of forest villagers' perceptions supports this reasoning by showing that community perceptions mediate support for ecotourism; communities that perceive ecotourism as theirs are more likely to support its conservation requirements.

The critical caveat is that local wisdom can be romanticised. Traditional norms evolved under lower population densities and without market pressures from tourism. Where visitor numbers grow quickly, customary rules may be insufficient to regulate new forms of use. Community agency must therefore be complemented by formal safeguards, which is the subject of Theme 4.

Benefit-Sharing and Livelihood Diversification

The third mechanism is the economic engine of the model. The corpus consistently reports that ecotourism can raise household incomes, create jobs in guiding, homestays, food services, and crafts, and stimulate local entrepreneurship (Erdawati & Ayub, 2024; Mulyana, 2025). Islam and As (2025) highlighted social entrepreneurship as a vehicle that combines profit generation with community development in mangrove ecotourism, while Rosid and Yuliani (2025) incorporated economic dimensions into their mangrove management model for Berau.

The more decisive finding, however, concerns *how* benefits are distributed rather than *how large* they are. Bhushan et al. (2024) evaluated ecotourism as one element of a broader livelihood portfolio alongside sustainable forest management, and Santos and Chitongo (2026) reassessed ecotourism as an instrument for rural development rather than an automatic remedy for poverty. The sustainable livelihoods perspective (Scoones, 2009) helps explain why diversification matters: households that combine ecotourism income with other livelihood sources are more resilient to shocks, and less likely to return to extractive activities when tourism declines. The COVID-19 disruption made this vulnerability visible, prompting calls for a green recovery framework for protected-area tourism (Bhammar et al., 2021).

The conversion of income into conservation also depends on whether benefits are tied to conservation behaviour. Saavedra (2024) examined the joint relationship between economic development and environmental conservation through ecotourism in a rigorous econometric framework, reinforcing the argument that the economic and ecological effects of ecotourism must be evaluated together rather than assumed. Where revenue is captured by external investors or local elites, communities experience the costs of conservation restrictions without commensurate benefits, and support for conservation erodes. Benefit-sharing rules, such as village funds, reinvestment quotas, and preferential local employment, are therefore the critical link between Theme 3 and the conservation outcomes of Theme 4.

Ecological Safeguards and Adaptive Restoration

The fourth mechanism concerns the ecological limits within which ecotourism must operate. Baloch et al. (2022) demonstrated that tourism development imposes pressures on environmental sustainability, including waste generation, energy consumption, and habitat disturbance, and argued for a dedicated sustainable ecotourism framework. Pathak et al. (2023) modelled the relationship between ecotourism and forest biomass, showing that ecotourism can support biomass conservation only within certain parameter ranges, which in practical terms corresponds to managing visitor pressure and reinvesting in the forest resource.

Several studies show that safeguards can be designed as productive, not only

restrictive, interventions. Kiswanto et al. (2025) proposed adaptive ecosystem restoration as a strategy to strengthen ecotourism hotspots in protected forest landscapes, suggesting that restoration itself can become part of the visitor experience. He et al. (2026) described the Hide-in-Bird Pond approach in China, in which habitat creation for birds supports both biodiversity and nature-based recreation. Hasmira et al. (2025) integrated ecotourism with disaster mitigation and turtle conservation, showing that ecological safeguards can also reduce community exposure to hazards. Ekanayake and Fernando (2026) likewise emphasised the integration of biodiversity conservation into ecotourism planning in Sri Lanka.

Mangrove studies illustrate both the promise and the risk. Zainal et al. (2023) analysed the rationality of developing protected mangrove forests as ecotourism, and Islam et al. (2025) formulated development strategies for mangrove ecotourism in Lembung. Mangroves provide coastal protection, carbon storage, and fisheries habitat; poorly planned boardwalks, waste, and visitor trampling can degrade precisely the functions that make them valuable. The implication is that zoning, carrying-capacity limits, and ecological monitoring must be built into the model from the outset.

Environmental Education and the Valuation of Ecosystem Services

The fifth mechanism operates on knowledge and values. Huang et al. (2023) provided empirical evidence that integrating environmental education concepts supports the sustainable development of ecotourism. Education influences both visitors, by encouraging low-impact behaviour and willingness to pay for conservation, and residents, by strengthening understanding of the long-term value of intact ecosystems. Thomas (2022) framed ecotourism as a means of connecting people with nature while balancing growth, socio-cultural development, and conservation.

Valuation complements education by making the economic worth of forests visible to decision-makers. Abdullah et al. (2025) estimated the value of forest ecosystem services derived from recreation and ecotourism, and Petrović et al. (2025) evaluated natural heritage in Golija Nature Park as a basis for sustainable development. Van Doan and Pham (2025) linked ecotourism efficiency to sustainable tourism development in Vietnam. When forest values are quantified, conservation can compete more effectively against conversion in policy debates. Ahmad and Balisany (2023) connected ecotourism management to the Sustainable Development Goals, providing a policy language through which such values can be institutionalised.

Cross-Dimensional Synthesis

Table 1 summarises how each mechanism contributes to the three target dimensions and identifies the main risk when the mechanism is weak.

Table 1. Synthesis of ecotourism mechanisms and their contributions to forest conservation, environmental protection, and local economic well-being (n = 29 studies)

Mechanism (theme)	Contribution to forest conservation	Contribution to environmental protection	Contribution to local economic well-being	Risk if mechanism is weak	Key supporting studies
1. Governance and stakeholder synergy	Clear rules on access, zoning, and enforcement in forest areas	Coordinated regulation of waste, infrastructure, and visitor flows	Transparent allocation of concessions and revenue	Elite capture; policy incoherence; conflict between agencies and villagers	De Zoysa (2021); Lawasi et al. (2025); Iskandar et al. (2026); Gajić et al. (2025)
2. Community agency and local wisdom	Customary norms legitimise use restrictions	Traditional practices limit over-harvesting	Community-owned enterprises retain value locally	Romanticised tradition unable to regulate new	Zainal et al. (2024); Sagajoka & Nona (2025); Jafri et al.

				market pressures	(2026); Gültekin (2022)
3. Benefit-sharing and livelihood diversification	Income replaces extractive use and funds patrols	Reduced dependence on polluting or degrading activities	Higher and more diversified household income	Income not linked to conservation; vulnerability to tourism shocks	Bhushan et al. (2024); Mulyana (2025); Islam & As (2025); Saavedra (2024); Santos & Chitongo (2026)
4. Ecological safeguards and adaptive restoration	Carrying-capacity limits and restoration maintain biomass and habitat	Zoning and monitoring reduce pollution and disturbance	Healthy ecosystems sustain the long-term product	Ecotourism becomes nature-based mass tourism and degrades its own asset	Baloch et al. (2022); Pathak et al. (2023); Kiswanto et al. (2025); He et al. (2026); Hasmira et al. (2025)
5. Environmental education and ecosystem valuation	Raises social and political support for protection	Encourages low-impact behaviour by visitors and residents	Valuation justifies conservation finance and premium pricing	Forest values remain invisible in land-use decisions	Huang et al. (2023); Abdullah et al. (2025); Petrović et al. (2025); Van Doan & Pham (2025)

Three analytical conclusions follow from Table 1. First, the mechanisms are interdependent rather than additive. Benefit-sharing without safeguards can accelerate degradation by attracting more visitors, while safeguards without benefit-sharing can generate local resentment and non-compliance. Second, the economic dimension acts as the engine of the system, but governance and safeguards act as its steering and braking functions. Third, education and valuation operate as long-term reinforcing loops, shaping the norms and political support that allow the other mechanisms to persist.

These conclusions extend the triple bottom line logic (Elkington, 1994). Rather than treating ecological, social, and economic performance as three parallel accounts to be balanced, the synthesis shows that they are causally linked: economic well-being sustains community support for conservation, conservation sustains the natural capital that generates income, and environmental protection prevents the sector from undermining its own base. The integration problem in ecotourism is, therefore, a problem of designing the links between the three dimensions, not merely of measuring each separately.

The Integrated Forest–Environment–Economy Ecotourism (IFEE) Model

Building on these findings, the IFEE model organises the five mechanisms into a four-layer structure. The enabling layer consists of governance and stakeholder synergy together with community agency, which provide legitimacy and decision rights. The core process layer consists of benefit-sharing and livelihood diversification, which generate the economic incentive. The safeguard layer consists of ecological limits and adaptive restoration, which keep economic activity within ecological boundaries. The reinforcement layer consists of environmental education and ecosystem valuation, which build long-term support. These layers jointly produce three integrated outcomes: forest conservation, environmental protection, and local economic well-being, which in turn feed back into the enabling conditions.

Table 2. Components and monitoring indicators of the IFEE model

Layer	Component	Example indicators for monitoring
Enabling	Governance and stakeholder synergy	Existence of a multi-stakeholder management body; share of decisions involving community representatives; clarity of tenure and access rules
Enabling	Community agency and local wisdom	Recognition of customary rules in management plans; share of enterprises owned by local residents
Core process	Benefit-sharing and livelihood diversification	Share of tourism revenue retained locally; share of revenue reinvested in conservation; number of livelihood sources per household
Safeguard	Ecological limits and adaptive restoration	Visitor numbers relative to carrying capacity; forest cover or mangrove area over time; area under active restoration
Reinforcement	Environmental education and valuation	Coverage of interpretation programmes; estimated value of ecosystem services; conservation funding linked to that value
Outcomes	Forest, environment, and economy	Deforestation rate; waste and water-quality indicators; household income and poverty incidence

The model's main practical message is that integration should be designed as a sequence. Destination managers should first secure governance arrangements and community ownership, then build benefit-sharing rules that explicitly tie income to conservation, then set ecological limits before visitor numbers grow, and finally invest in education and valuation to sustain support. Reversing this sequence, by promoting visitation first and introducing rules later, is the pattern most commonly associated with degradation and conflict in the reviewed literature

CONCLUSIONS

Ecotourism can integrate forest conservation, environmental protection, and local economic well-being, but only when its economic engine is deliberately connected to conservation through institutions. Synthesising 29 studies published between 2021 and 2026, this article identified five recurrent mechanisms: governance and stakeholder synergy, community agency and local wisdom, benefit-sharing and livelihood diversification, ecological safeguards and adaptive restoration, and environmental education with ecosystem valuation. These mechanisms are interdependent: income without safeguards accelerates degradation, and safeguards without benefit-sharing erode local support. The IFEE model organises them into enabling, core process, safeguard, and reinforcement layers, and argues that integration is achieved through the design of the links between dimensions rather than the pursuit of each goal separately.

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