

Mitigating Ecotourism Challenges through Effective Stakeholder Engagement: Insights from Udawalawa National Park in Sri Lanka

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Received: 22 Jan 2025; Revised: 21 Feb 2025; Accepted: 23 Feb 2025; Published: 29 Mar 2025

Abstract: Ecotourism is an expanding segment of global tourism that promotes sustainable travel, balancing environmental conservation, cultural preservation, and economic benefits. In Sri Lanka, it serves as a vital mechanism for leveraging the country's biodiversity and natural resources while addressing challenges in conservation and stakeholder participation. However, ineffective implementation—often stemming from insufficient stakeholder commitment to ecotourism principles—poses significant challenges. This study aims to analyze stakeholder dynamics and propose strategies to enhance their commitment to effective ecotourism practices in Udawalawe National Park. Data were collected from 33 stakeholders through interviews and field observations, with findings quantified using the Relative Importance Index. Environmental considerations ranked highest among stakeholder priorities (0.648), followed by mutual understanding (0.636) and transparency (0.606). Key challenges identified include environmental degradation, governance gaps, economic disparities, and social disruptions. Critical threats such as poaching (38%), mining (31%), and overcrowding (12%) further hinder sustainable efforts. The Power-Interest and Influence-Commitment Matrices reveal disparities in stakeholder engagement, underscoring the need for decentralized governance and inclusive strategies. Recommendations include equitable economic distribution, the development of eco-friendly infrastructure, and educational programs to foster cultural and environmental awareness. This study emphasizes the integration of stakeholder dynamics as essential for achieving long-term sustainable ecotourism development.

Keywords: Challenges, Commitment, Ecotourism, National Park, Stakeholders

1.0 Introduction

Ecotourism represents a rapidly expanding segment of the global tourism industry, blending sustainable travel practices with environmental conservation and community development. Defined as responsible travel to natural areas that conserves the environment and sustains local communities, ecotourism has gained prominence due to increasing environmental awareness and the need for sustainable development (Honey, 2008; TIES, 2015). Sri Lanka, known for its biodiversity and cultural richness, has embraced ecotourism as a tool to balance conservation with economic growth, particularly within its network of national parks. Among these, Udawalawe National Park stands out as a critical site, attracting significant tourist interest while playing a pivotal role in wildlife conservation. However, despite its potential, ecotourism in Sri Lanka faces multiple challenges that threaten its sustainability. Issues such as deforestation, governance gaps, and insufficient infrastructure undermine the ecological and economic objectives of national parks. Recent research by De Zoysa (2022) identifies key conflicts between biodiversity conservation and ecotourism development, highlighting the need for structured solutions that promote sustainable tourism. Additionally, stakeholder dynamics further complicate the situation, with varying levels of power, interest, and commitment influencing the implementation of sustainable practices.

Udawalawe National Park, despite its status as a premier ecotourism destination, faces several socio-economic and environmental challenges. Kariyawasam et al. (2020) highlight that, while the park generates significant revenue, local communities receive limited economic benefits, as most of the income is transferred to the central government. Furthermore, restrictions on land use and development prevent locals from engaging in traditional agriculture, irrigation, and housing activities, exacerbating economic difficulties. Human-wildlife conflict remains a major issue, with frequent elephant attacks leading to crop destruction, property damage, and even human fatalities. Additionally, local participation in tourism remains minimal, as larger hotel chains and non-local operators dominate high-income services, while locals are mostly confined to low-paying roles. The lack of foreign language skills and tourism-related expertise further limits their involvement in the sector. Gender inequality is also evident, with women participating in tourism at significantly lower rates and being relegated to low-wage jobs.

These findings illustrate that ineffective regulation and a lack of enforcement mechanisms pose serious threats to ecotourism destinations, highlighting the need for improved governance and responsible tourism practices. Similarly, bureaucratic barriers and strict tourism regulations in Udawalawe make it difficult for small local businesses to operate legally, preventing them from accessing government support. Additionally, Udawalawe lacks proper tourism cluster development, leading to short visitor stays and reduced opportunities for local income generation.

In this context, effective stakeholder engagement emerges as a cornerstone for the success of ecotourism initiatives. This research focuses on understanding the role of stakeholders in shaping ecotourism at Udawalawe National Park. By analyzing the determinants of stakeholder commitment and the interplay of power and interest, the study aims to identify strategies for fostering collaboration and inclusivity. Using qualitative methodologies, including interviews and field observations, the study provides a comprehensive analysis of stakeholder dynamics. The findings offer actionable insights into overcoming barriers and enhancing the sustainability of ecotourism in Sri Lanka. Addressing governance issues, enforcing responsible tourism practices, and fostering multi-stakeholder involvement are critical steps toward ensuring the long-term success of Sri Lanka's ecotourism sector.

2.0 Study Area

Udawalawe National Park (Figure 1), located in the southern region of Sri Lanka, is a remarkable wildlife sanctuary that plays a vital role in conservation and research. Spanning 30,821 hectares, the park was established in 1972 to provide a refuge for displaced wildlife following the construction of the Udawalawe Reservoir. Today, it stands as a thriving ecosystem, offering a unique environment for ecological studies

and serving as a premier ecotourism destination in Sri Lanka. With its diverse habitats and abundant wildlife, the park attracts researchers, conservationists, and nature enthusiasts from around the world.

The landscape of Udawalawa National Park is a mosaic of habitats, ranging from expansive grasslands and scrub forests to riparian woodlands along rivers and streams. At the heart of the park lies the Udawalawa reservoir, a lifeline for both the flora and fauna, particularly during the dry season. The average annual rainfall is 1,500 mm, with two distinct rainy periods: an inter-monsoonal spell occurring between March and May and the northeast monsoon lasting from October to January (Perera et al., 2021). This variability in climate creates dynamic ecological conditions, making the park an intriguing subject for studying the interactions between climate, vegetation, and wildlife. Udawalawa's vegetation is primarily adapted to its dry-zone conditions, with dry monsoon forests, scrublands, and grasslands dominating the landscape. These habitats support a rich diversity of life, from hardy plants like *Ziziphus* to towering kumbuk (*Terminalia arjuna*) and weera trees (*Drypetes sepiaria*) found along waterways. The vegetation not only sustains the herbivore populations but also contributes to critical ecological functions, such as soil stability and water retention. The lush greenery along rivers contrasts beautifully with the arid plains, offering a visually stunning experience for visitors while serving as a critical refuge for the park's wildlife.

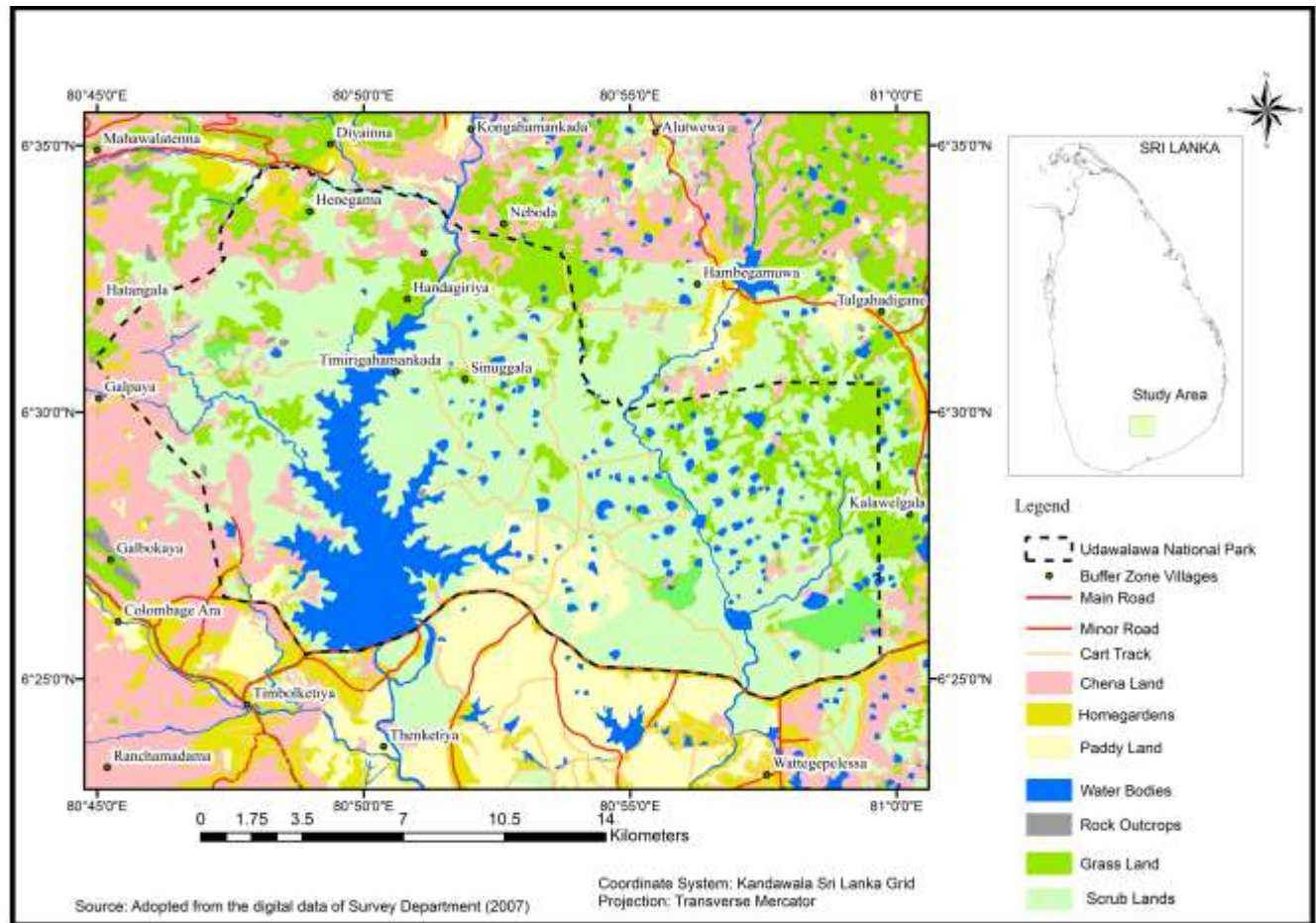


Figure 1: Land use and land cover types of Udawalawa National Park and the surrounding area

The park is globally renowned for its large population of Asian elephants (*Elephas maximus*), which are often seen in herds around the reservoir and other water sources. In addition to elephants, the park is home to a wide array of fauna, including leopards, sloth bears, sambar deer, water buffalo, and jackals. Birdlife in Udawalawa is equally impressive, with over 200 species recorded, including endemic birds like the Sri Lanka junglefowl (*Gallus lafayetii*) and migratory species that frequent the reservoir and wetlands. Reptiles, amphibians, and countless insect species, including vibrant butterflies, add to the park's incredible biodiversity, making it a haven for wildlife enthusiasts and researchers alike.

The hydrology of Udawalawa is dominated by the Udawalawa Reservoir and a network of streams, such as the Walawe River, which sustain life throughout the park. These water systems are critical during the dry season, which extends from June to September, drawing wildlife and creating spectacular viewing opportunities for visitors (Perera et al., 2021). The interplay between water availability and ecological dynamics makes the park a key location for studying hydrology and its influence on biodiversity.

As a conservation area, Udawalawa National Park holds immense ecological and social significance. For researchers, the park is a living laboratory where they can study biodiversity, climate resilience, and the interactions between human activities and wildlife. However, to ensure that Udawalawa's potential is fully realized and its ecological integrity preserved, there is an urgent need to implement and promote effective ecotourism practices.

3.0 Materials and Methodology

3.1 Study Design

The research utilizes a qualitative methodology with a case study design to examine stakeholder commitment to ecotourism development in Udawalawe National Park, Sri Lanka. This design was chosen to provide a rich, contextual understanding of the roles and dynamics of various stakeholders involved in effective ecotourism initiatives. By focusing on a single case, the study captures the complexities and nuances of stakeholder engagement within a specific ecological, cultural, and economic context. The case study approach allows for an in-depth exploration of stakeholder roles, emphasizing their contributions to programming, facilitation, and gatekeeping for sustainable tourism development.

3.2 Data Collection Methods

3.3.1 Key-Informant Interviews

The study conducted semi-structured interviews with 33 stakeholders to capture in-depth information about their perceptions, motivations, roles, and levels of commitment. The semi-structured format allowed for flexibility in exploring respondents' unique insights while ensuring consistency across key thematic areas. These interviews were specifically tailored to address aspects of stakeholder involvement, such as their influence on programming, facilitation, and gatekeeping roles within ecotourism development.

Prior to conducting the interviews, informed consent was rigorously obtained from all participants, ensuring they were fully aware of the research scope, their right to withdraw at any time, and the confidentiality measures in place. The interviews were conducted with sensitivity, with questions posed empathetically and professionally to minimize potential distress. This comprehensive approach to ethical considerations demonstrates a commitment to upholding the highest ethical standards in research involving vulnerable subjects and sensitive topics.

3.3.2 Field Observations:

The researchers also conducted field observations, which added contextual depth to the study. These observations aimed to examine stakeholders' real-world actions, behaviors, and interactions within the ecotourism landscape. This method complemented the interview data, providing a broader understanding of the practical dynamics at play.

3.4 Study Sampling

3.4.1 Sample Size

The study involved 33 stakeholders, who were selected from key categories, including state-centered agencies, local community members, local and foreign tourists, and external tourism facilitators. This categorization ensured that all critical contributors to the ecotourism ecosystem were included, capturing the full spectrum of interests and influences shaping sustainable development initiatives in the region.

3.4.2 Sampling Techniques

Stakeholders were selected based on their roles in ecotourism development, particularly those involved in programming, facilitation, and gatekeeping. This purposive sampling approach ensured that key informants with direct influence and interest in ecotourism were included in the study. By focusing on stakeholders with varying degrees of influence and interest, the research provided a holistic view of the dynamics shaping ecotourism development in Udawalawa National Park.

3.5 Analysis

3.5.1 Thematic Analysis

The study employed thematic analysis to identify recurring themes and patterns in the qualitative data collected. This method allowed the researchers to systematically analyze stakeholders' perceptions, motivations, and levels of commitment. To enhance the reliability of the findings, qualitative data were partially quantified using the Relative Importance Index (RII), adopted from Asma (2018). To accurately quantify stakeholder priorities in ecotourism development, the Relative Importance Index was calculated using the following formula:

$$RII = \Sigma (W / (A * N))$$

Where: ΣW (Sum of Weights), A (Maximum Weight), N (Number of Respondents). In this study, assigned weights were based on the frequency and emphasis of key themes in stakeholder responses. Themes mentioned by multiple informants were considered more important, while those strongly emphasized by respondents received higher weights. A simplified three-level coding scheme was used: highly emphasized and frequently mentioned themes were assigned a weight of 5, moderately emphasized and occasionally mentioned themes received a weight of 3, and less emphasized or rarely mentioned themes were assigned a weight of 1. This approach, known as magnitude coding, ensures consistency and avoids unnecessary complexity associated with a full 1–5 scale.

3.5.2 Stakeholder Mapping

To understand stakeholder dynamics, the research employed the Power/Interest Matrix, a strategic tool that categorizes stakeholders based on their level of influence over and interest in ecotourism outcomes. This analysis provided insights into how stakeholders can influence or support sustainable ecotourism practices. Building on these insights, the study developed the Dynamic Stakeholder Mapping and Influence-Commitment Matrix, offering practical strategies to enhance stakeholder engagement and ensure the long-term sustainability of ecotourism initiatives.

3.5.3 Framework Application

The research incorporated The International Ecotourism Society's (TIES) principles as a framework to assess stakeholders' alignment with best practices. These principles emphasize the importance of environmentally responsible, culturally sensitive, and economically inclusive tourism practices. This framework ensured that the study remained grounded in globally recognized standards for sustainable ecotourism.

4.0 Results

The analysis of the current state of ecotourism stakeholders' commitment is based on three key parameters: the Relative Importance Index (RII), Mean Value, and Rank for each index. These metrics provide insights into the significance and perceived effectiveness of various factors influencing stakeholders' commitment to ecotourism initiatives.

Table 1 - The Present State of Ecotourism Stakeholders' Commitment.

Index	RII	Mean	Rank
Environmental or ecosystem considerations	0.648	3.242	1
Mutual Understanding and Agreement	0.636	3.182	2
Willing to implement Decisions	0.618	3.091	3
Transparency	0.606	3.030	4
Comprehensiveness	0.588	2.939	5
Trust between and among stakeholders	0.588	2.939	6
Reaching Common Decisions	0.582	2.909	7
Socio - Culture pride and local economic development	0.564	2.818	8
Power decentralization	0.491	2.455	9

The Environmental or Ecosystem Considerations Index received the highest rank and RII value (0.648), indicating that stakeholders prioritize environmental sustainability and ecosystem conservation in their commitment to ecotourism development (Table 1). The high mean rating (3.242) underscores the importance of integrating environmental considerations into decision-making processes. Mutual understanding and agreement among stakeholders emerged as the second most important factor. The relatively high RII (0.636) and mean value (3.182) highlight the significance of effective communication and consensus-building in fostering collaborative efforts. Stakeholders' willingness to implement decisions ranked third, indicating their commitment to translating agreements into actionable initiatives. The moderate RII value (0.618) and mean rating (3.091) underscore the importance of follow-through and action-oriented approaches. Transparency in decision-making processes ranked fourth, highlighting the importance of openness and accountability. The RII value (0.606) and mean rating (3.030) indicate stakeholders' recognition of the need for transparent governance structures. The comprehensiveness of decision-making processes ranked fifth, reflecting stakeholders' emphasis on inclusive and thorough approaches to ecotourism development. Trust-building among stakeholders shared the sixth position, underscoring the importance of fostering trust and collaboration. Both indices had a moderate RII value (0.588) and mean rating (2.939), reflecting stakeholders' expectations for comprehensive planning and implementation and recognition of trust as a critical factor in effective partnerships, respectively. Reaching common decisions ranked seventh, indicating stakeholders' efforts to achieve consensus on key issues. The RII value (0.582) and mean rating (2.909) suggest stakeholders' recognition of the importance of shared decision-making processes. Socio-cultural pride and local economic development ranked eighth, highlighting stakeholders' acknowledgment of the socio-economic benefits of ecotourism. The RII value (0.564) and mean rating (2.818) reflect stakeholders' emphasis on community empowerment and economic growth. Power decentralization emerged as the ninth-ranked factor, indicating stakeholders' relatively lower emphasis on decentralizing decision-making authority. The lower RII value (0.491) and mean rating (2.455) suggest potential areas for improvement in distributing power among stakeholders.

The following thematic analysis of interviews revealed six key themes, reflecting the complex dynamics of ecotourism at Udawalawa National Park. To enhance the accuracy of these findings, the themes were cross-referenced with the above-mentioned Relative Importance Index (RII) values, providing a more valid understanding of the barriers and priorities identified by stakeholders.

4.1 Conservation Threats and Environmental Barriers

Udawalawa National Park and other national parks in Sri Lanka face an array of pressing conservation threats and environmental barriers that jeopardize their ecological integrity (Figure 2). Among these, poaching emerges as a critical issue, contributing significantly (38%) to the threats in Udawalawa. Weak enforcement mechanisms fail to deter illegal hunting and exploitation of wildlife. As ULC02 stated, "*Poaching is the main problem.*" Illegal logging, highlighted by USCA05, further exacerbates habitat destruction and deforestation as locals seek firewood and building materials. Mining activities account for 31% of threats in Udawalawa, leading to extensive habitat destruction and undermining conservation efforts. Overcrowding by tourists contributes to 12% of the threats, stressing park resources and causing environmental damage, especially during peak visitation periods.

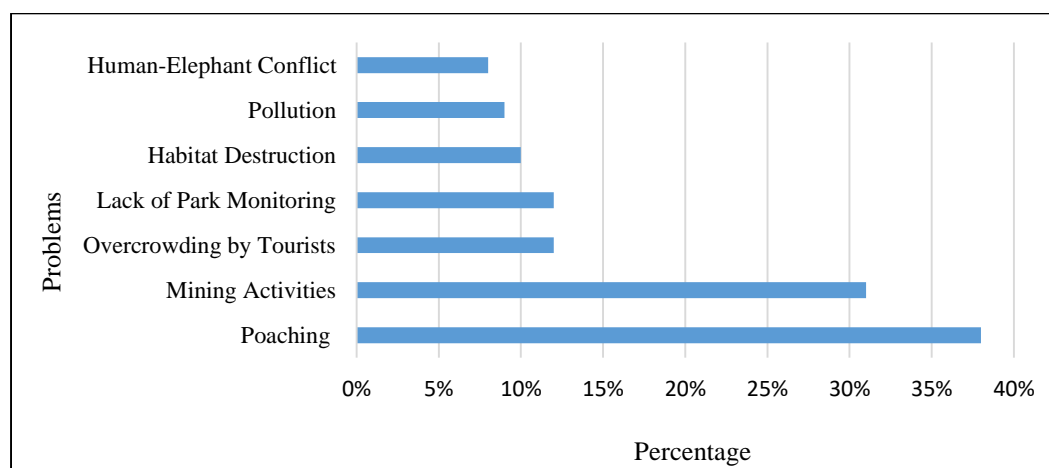


Figure 2: Conservation threats and environmental barriers (Source: Field data analysis, 2023)

Similarly, a lack of adequate monitoring (12%) enables illegal activities such as poaching and logging to persist unchecked. Human-wildlife conflicts, including the human-elephant conflict (8%), remain pervasive, fuelled by agricultural expansion and competition for space. ULC03's account underscores this issue: "*Wild animals enter our farmland, and it's hard to protect crops without harming them.*" ULC04 echoed this concern, emphasizing the tension between local communities' safety and wildlife conservation. Additionally, reckless tourism activities, such as improper waste disposal (pollution accounts for 9% of threats) and reckless safari practices, disrupt animal patterns and strain the fragile environment. UOTF05 noted, "*There are more tourists now, and they leave behind a lot of garbage,*" while UT03 observed that "jeeps drive too

fast, and it stresses the wildlife."Environmental degradation is further exacerbated by climate change, which alters rainfall patterns and intensifies dry seasons. USCA03, "Water levels are dropping in the park, and it's harder for animals to find water." Habitat destruction (10%) from human encroachment and behaviors like feeding wildlife disrupts natural animal patterns, damaging ecosystems. Stakeholder feedback highlights the critical need for robust conservation policies, stronger enforcement mechanisms, and sustainable ecotourism practices. Environmental and ecosystem considerations rank highest in importance among stakeholders, with a Relative Importance Index (RII) of 0.648 and a mean score of 3.242, underscoring the necessity of preserving ecosystems as foundational to ecotourism development. These interconnected threats demand urgent attention, including community education, climate adaptation strategies, and comprehensive measures to ensure the long-term sustainability of Udawalawa National Park and other protected areas in Sri Lanka.

4.2 Disparities in Stakeholder Commitment

Disparities in stakeholder commitment pose a significant challenge to conservation and sustainable development in Udawalawa National Park and other national parks across Sri Lanka (Figure 3). The most significant barrier, lack of collaboration (41%), reflects weak cooperation among key stakeholders, including local communities, tourism operators, and government agencies. This misalignment hampers the integration of conservation and tourism objectives, as local resident ULC01 noted: "Some people care about the environment, but others only care about making money from tourists." Similarly, inconsistent engagement (20%) exacerbates the issue, as uneven participation leads to fragmented responsibilities and outcomes. Communication barriers (12%) further hinder progress by preventing effective conflict resolution and alignment of stakeholder objectives. Differing priorities (10%) reveal the contrast between local communities' emphasis on sustainable resource use and tourism operators' pursuit of short-term profits, which often undermines long-term conservation goals. Tourism operators, as highlighted by UOTF03, "focus on profits rather than preserving the environment," reflecting a broader trend of profit-driven external stakeholders.

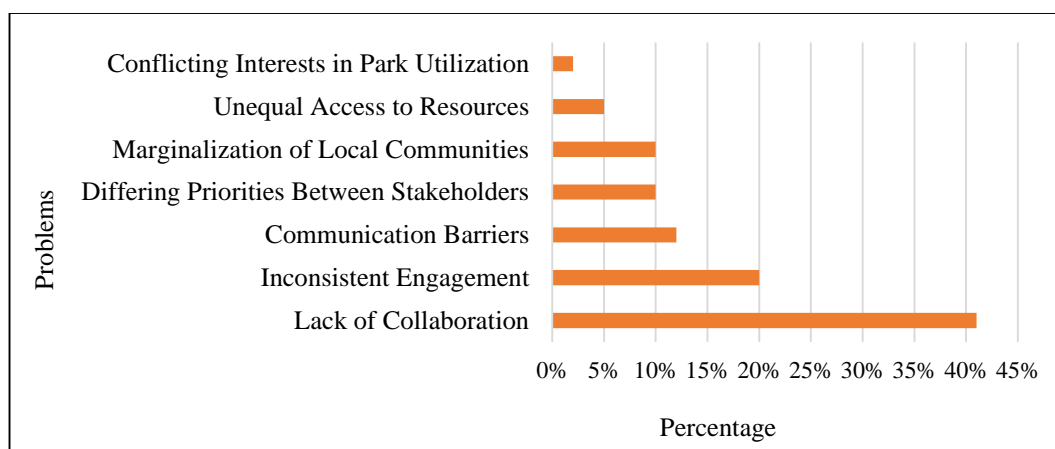


Figure 3: Disparities in stakeholder commitment (Source: Field data analysis, 2023).

Additionally, the marginalization of local communities (10%) underscores their exclusion from decision-making processes and the undervaluation of their local knowledge, which is critical for effective park management. Economic disparities exacerbate these challenges. Local resident ULC04 noted, "The big hotels and tour companies take most of the profits, while we get very little from tourism," illustrating unequal access to resources (5%), where state-centered agencies dominate resource allocation, leaving local stakeholders without sufficient funding or support for conservation projects. Conflicting interests in park utilization (2%) highlight tensions between conservation-focused stakeholders and those prioritizing visitor experiences, often at the expense of ecological balance. These issues are compounded by weak enforcement and lack of action. USCA04 criticized government inaction, stating, "The government talks about ecotourism, but nothing changes on the ground. We need more action, not just words." Furthermore, tourists' lack of awareness of ecotourism principles adds to the inconsistencies. As UT04 observed, "We didn't know about any ecotourism guidelines when we visited. There should be more information given to tourists." Stakeholder feedback underscores these disparities, revealing moderate RII scores for Willingness to Implement Decisions (RII: 0.618) and Trust Between Stakeholders (RII: 0.588). These scores reflect fragile relationships, particularly between local communities and profit-driven external operators. Addressing these disparities requires fostering trust, equitable resource distribution, stronger education, and collaborative ecotourism practices that integrate the interests of all stakeholders. Only through such initiatives can the long-term sustainability of Udawalawa National Park and Sri Lanka's other protected areas be ensured.

4.3 Infrastructure Deficiencies

Infrastructure deficiencies pose significant challenges to both visitor experiences and conservation efforts in Udawalawa National Park and other national parks across Sri Lanka (Figure 4). The most pressing concern, inadequate visitor facilities (35%), includes poorly maintained restrooms lacking basic amenities, leaving tourists dissatisfied. UT02 remarked, "The washrooms were inadequate and unhygienic," while UOTF07 added, "There are not enough facilities in the park, like restrooms or places to rest. Tourists get frustrated, especially on long safaris." Similarly, poor waste management (24%) exacerbates environmental pollution due to limited disposal facilities and a lack of recycling systems, leading to widespread littering. Limited access and connectivity (13%) are another critical issue, with poorly maintained roads especially during the rainy season hampering both tourism and monitoring of illegal activities. ULC02 observed, "There are no proper roads in many parts of the park, making it hard to monitor illegal activities."

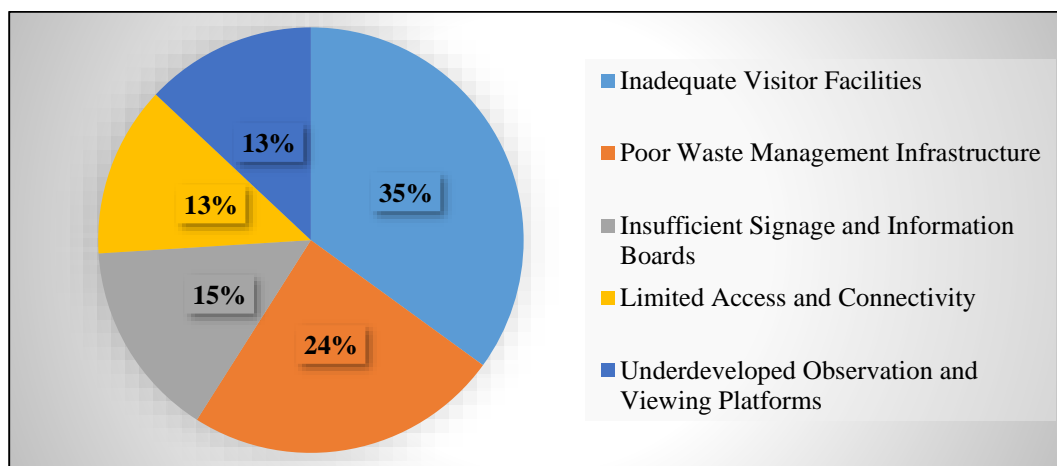


Figure 4: Infrastructure deficiencies (Source: Field data analysis, 2023).

Tourists, like UT03, have also expressed frustration: *"The roads to the park are terrible. We almost damaged our vehicle on the way here."* These road conditions further hinder local communities, as ULC01 explained, *"The local village doesn't have good transportation, so it's hard for us to even reach the park for work."* Insufficient signage and information boards (15%) reduce the educational impact of park visits by failing to inform tourists about biodiversity and conservation efforts. Underdeveloped observation platforms (13%) also restrict wildlife viewing opportunities, with existing platforms often overcrowded or in poor condition. Additionally, utilities like electricity and water supply are unreliable, creating challenges for tourism-related businesses. As UOTF06 noted, *"Our electricity is not stable, and sometimes we lose power for hours. It's hard to run any tourism-related business."* Stakeholders stress that addressing these infrastructure deficiencies is critical to enhancing visitor satisfaction, improving conservation efforts, and promoting sustainable ecotourism. However, balancing infrastructure development with environmental sustainability remains a priority. The Comprehensiveness in Decision-Making score of 0.588 (RII) reflects stakeholder awareness of these issues but indicates they are not being prioritized sufficiently. Enhancing infrastructure while ensuring sustainability is essential for the long-term success of Udawalawa National Park and other protected areas in Sri Lanka.

4.4 Governance and Policy Gaps

Governance and policy gaps significantly hinder conservation and sustainable ecotourism in Udawalawa National Park and other protected areas in Sri Lanka. The most critical issue (Figure 5), weak enforcement of laws (40%), enables threats such as poaching and illegal mining to persist unchecked. USCA06 emphasized this problem: *"There are rules, but no one is following them because there is no monitoring. We need more rangers and better oversight."* Additionally, lack of comprehensive policies (25%) reflects inadequate frameworks for addressing long-term conservation and tourism needs. UOTF01 remarked, *"There are no clear policies guiding how tourism should be managed in the park."* Ineffective stakeholder engagement (15%) undermines conservation goals by excluding local communities from decision-making processes.

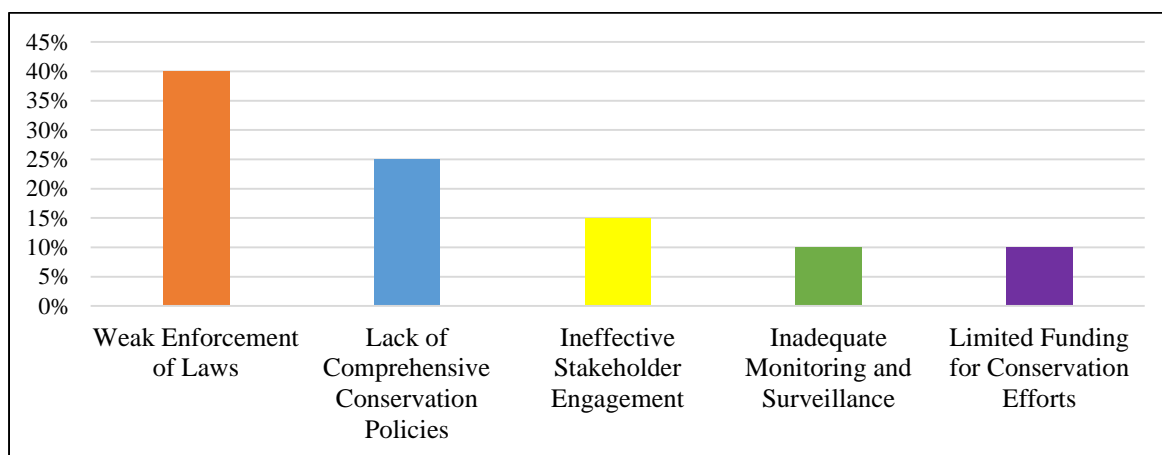


Figure 5: Governance and policy gaps (Source: Field data analysis, 2023).

ULC04 noted, *"The government does not listen to our concerns, and policies are made without involving the local community."* This exclusion is compounded by inadequate monitoring and surveillance (10%) and limited funding (10%), which constrain the implementation and enforcement of effective strategies. Furthermore, inconsistencies in policy application create confusion among stakeholders. UOTF03 remarked, *"There's no clear plan for what's allowed and what's not. Every time something happens, the rules change."* Local communities face additional barriers due to a lack of tangible government support, which limits their participation in ecotourism initiatives. ULC02 highlighted this issue: *"If we had more support from the government, we could open small businesses, but no one helps us."* This lack of support further weakens the integration of local communities into conservation and tourism frameworks. Stakeholders stress the need for stronger leadership, consistent policies, and increased government involvement. As USCA04 stated, *"The government talks about ecotourism, but nothing changes on the ground. We need more action, not just words."* The Power Decentralization score of 0.491 (RII) underscores governance weaknesses,

particularly the exclusion of local communities from key decisions. Addressing these governance and policy gaps requires decentralizing power, fostering stakeholder collaboration, and implementing integrated, consistent policies to ensure the long-term sustainability of Udawalawa National Park and other ecotourism destinations in Sri Lanka. Increased monitoring, better funding, and active community participation are essential to bridging these gaps and advancing conservation and sustainable tourism goals.

4.5 Cultural and Social Disruptions

Tourism and economic shifts are causing significant cultural and social disruptions for local communities around Udawalawa National Park and other protected areas in Sri Lanka (Figure 6). One major concern is drug addiction, driven by tourism-related activities and economic changes, which accounts for 18% of the issues and exacerbates social vulnerabilities. As UOTF03 noted, *"Because of tourism, drug addiction has increased among young people."* Similarly, prostitution has increased by 9% in surrounding areas, negatively impacting social dynamics and community well-being. The erosion of local traditions and cultural practices (33%) reflects the gradual loss of long-standing customs due to external influences brought by tourism. Youth marginalization (18%) highlights the lack of opportunities for young people, pushing them toward harmful activities or social isolation. ULC04 observed, *"The younger generation is losing touch with our traditions due to exposure to tourism."*

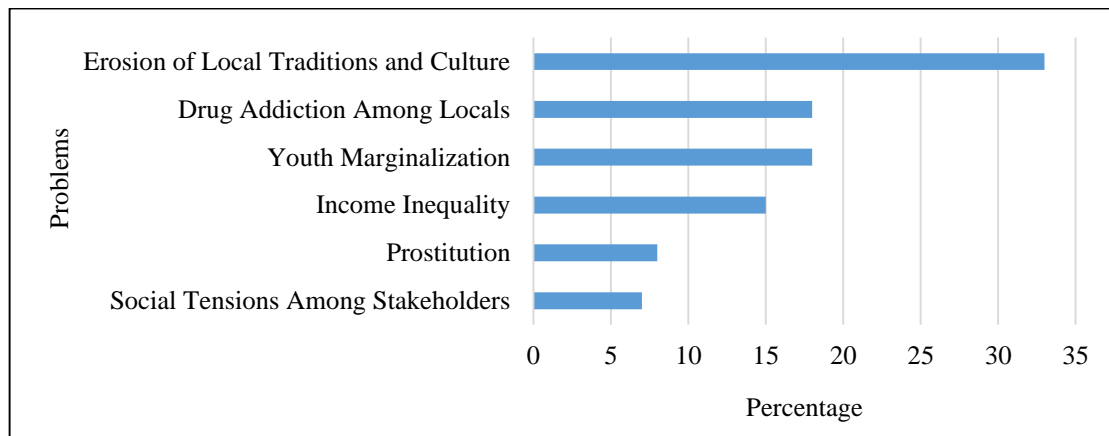


Figure 6: Cultural and social disruptions (Source: Field data analysis, 2023)

Income inequality (15%) reveals the uneven distribution of tourism benefits, leaving many residents economically disadvantaged. Additionally, social tensions among stakeholders (7%) arise from conflicting priorities between local communities, tourism operators, and conservation agencies, undermining collaboration. ULC01 expressed frustration with the cultural insensitivity of some visitors: *"The tourists don't understand our way of life. Sometimes they come to our villages and act in ways that are disrespectful to our customs."* The constant flow of tourists also disrupts the peace of local communities. As ULC03 mentioned, *"We used to live quietly, but now there is noise everywhere because of the constant flow of tourists. Our peaceful life has changed."* These disruptions highlight the need for culturally sensitive ecotourism practices that prioritize community well-being, equitable economic benefits, and the preservation of local culture. Stakeholders emphasize the importance of integrating local traditions, supporting youth development, and promoting equitable economic opportunities. The Socio-Cultural Pride and Local Economic Development score of 0.564 (RII) reflects moderate attention to cultural sustainability but indicates that these concerns are not yet central to ecotourism planning. To address these disruptions comprehensively, tourism policies must protect local traditions while balancing economic growth, ensuring the long-term sustainability and harmony of affected communities.

4.6 Economic Benefits and Disparities

While tourism generates substantial revenue, significant economic disparities hinder equitable and sustainable development in Udawalawa National Park and other protected areas in Sri Lanka (Figure 7). The unequal distribution of tourism revenue (41%) is the primary issue, with local communities receiving minimal financial benefits compared to large external operators. As ULC01 noted, *"Only a few people in the community actually benefit from tourism,"* and ULC04 added, *"We see tourists coming in, but we don't benefit much from it. Most of the money goes to the tour operators and people outside the community."* Low-paying and insecure employment opportunities (29%) further exacerbate these disparities.

ULC02 observed, *"There are jobs in tourism, but they don't pay well. Most of us work for low wages and have to rely on other jobs to survive."* This reliance on poorly paid roles limits the ability of local residents to achieve financial stability or improve their livelihoods. Additionally, dependency on seasonal tourism (15%) leaves communities vulnerable during off-peak periods, compounding financial instability. Limited support for local businesses (10%) and a lack of reinvestment in the local economy (5%) further restrict community development. Small operators struggle to compete with larger companies, as UOTF02 highlighted: *"Tourism brings a lot of money, but it mostly benefits the big companies. The small operators like us don't get a fair share."* Stakeholder feedback underscores these challenges. UOTF01 remarked, *"Tour operators benefit, but the local people see very little of this money."* The Power Decentralization score of 0.491 (RII) reflects centralized control over economic benefits, limiting local participation. Meanwhile, the Transparency score of 0.606 suggests moderate openness in revenue management but highlights the need for improvement in equitable and clear benefit-sharing processes. Addressing these economic imbalances requires inclusive and transparent economic policies that empower local communities and promote equitable revenue distribution. Supporting local businesses, ensuring fair wages, and reinvesting tourism revenues into community development are critical steps toward sustainable and inclusive ecotourism.

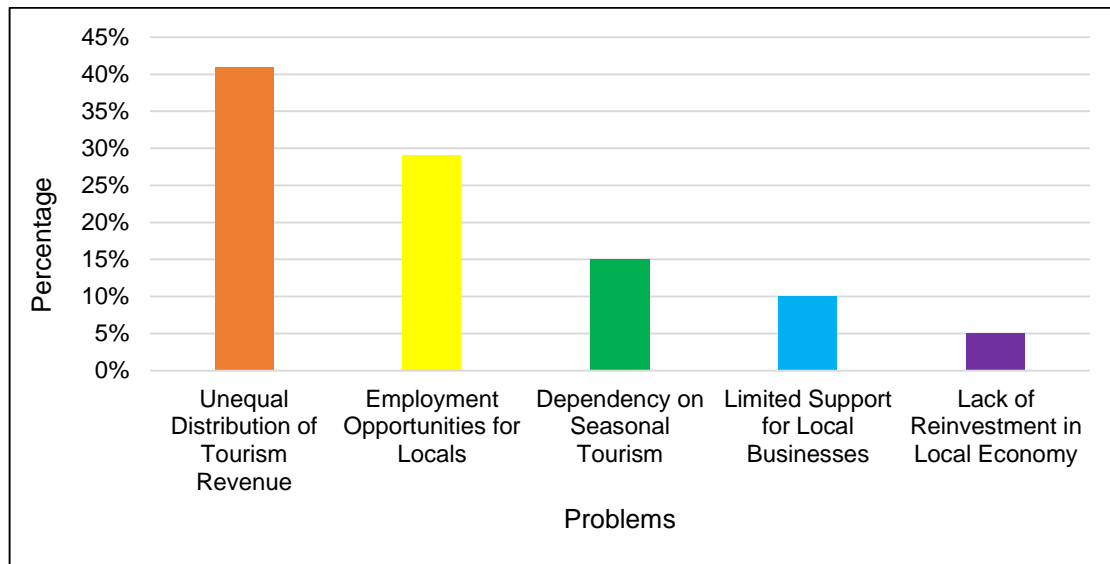


Figure 7: Economic benefits and disparities (Source: Field data analysis, 2023).

4.7 Power/Interest Matrix Analysis

Before identifying the power-interest dynamics, stakeholders have been classified into five categories based on their power and interest levels as follows (Figure 8). Table 2 indicates the stakeholders were classified into five categories based on their power and interest levels (Illustration of figure 8 data).

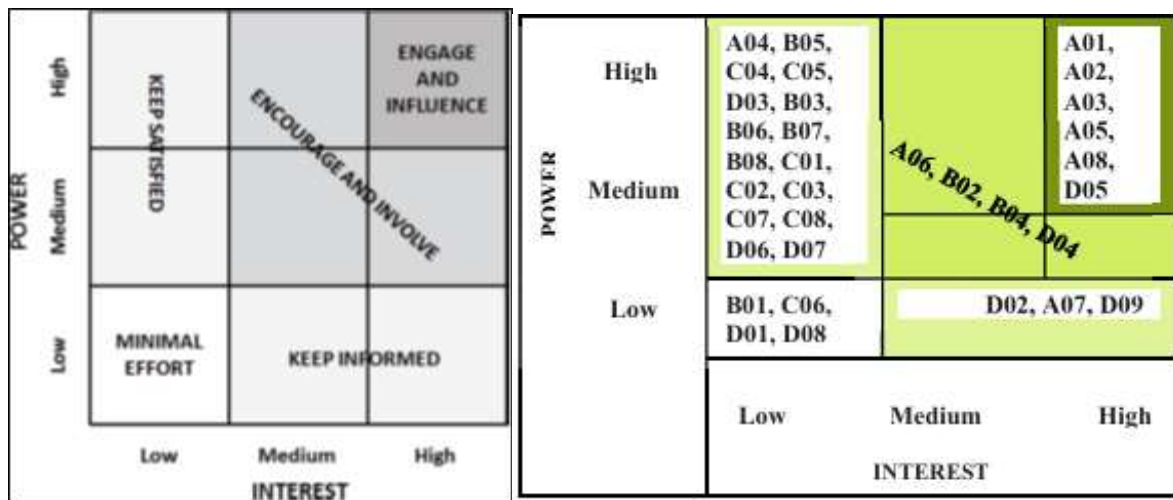


Figure 8: Power/Interest matrix: Adopted from Auvinen (2017) [left] and collected data by the researcher (right)

Following Figure 8, Table 2 presents a detailed classification of stakeholders, categorizing them into five distinct groups based on their power-interest levels. The "Professional Background" column in Table 2 provides additional context by indicating the current job or position held by each stakeholder. This inclusion enhances the understanding of the diverse range of individuals involved in ecotourism, showcasing their unique perspectives. It allows for a more comprehensive analysis of how different professional backgrounds intersect with stakeholder influence. Instead, this categorization serves to enhance the reader's understanding of stakeholder diversity, reflecting the broad spectrum of perspectives and contributions within the ecotourism framework of Udawalawa National Park.

According to the Figure 8 (right) data and qualitative analysis following data provides a detailed analysis of stakeholder dynamics within Udawalawa national park's ecotourism context, utilizing the Power/Interest Matrix and the Influence-Commitment Matrix. This approach is guided by Mitchell's Stakeholder Theory, which considers power, legitimacy, and urgency to categorize stakeholders effectively. Additionally, ecotourism principles as defined by The International Ecotourism Society (TIES) are incorporated to ensure an approach that is environmentally responsible, culturally sensitive, and economically inclusive.

Table 2: Classification of stakeholder based on their power and interest levels

No	Category	Stakeholders	Professional background
01	Minimal effort	Tourists	Physiologist
		Local community	Insurance officer
		Outside tourism facilitator	Safari jeep driver
			Tour guide
02	Keep informed	State-centered agencies	Wildlife ranger
		Outside tourism facilitator	Safari jeep driver/hotel owner
			Chairperson of the safari jeep drivers' association
		State-centered agencies	Wildlife ranger
03	Keep satisfied		03 Businessman
		Tourists	Housewife
			Retired principle
			Former Vise Chairman – Ambilipitiya Pradeshiya Sabha
			Poter
		Local community	Religious leader
			Grama Niladhari (GN)
			03 Businessman
			Safari jeep driver
		Outside tourism facilitator	Tour guide
			Hotel owner
		State-centered agencies	Wildlife guard
04	Encourage and involve	Tourists	Lawyer
			Nurse
		Outside tourism facilitator	Tour planner
		State-centered agencies	Wildlife conservationist
05	Engage and influence		Wildlife guard
			Wildlife ranger
			02 Wildlife ranger assistants
		Outside tourism facilitator	Hotel owner

4.8 Advanced Stakeholder Classification through Power/Interest Matrix

The Power/Interest Matrix classifies stakeholders based on their influence and interest levels in ecotourism, offering insight into their roles and potential impact on sustainable tourism development.

- **Minimal Effort Stakeholders (Dormant Stakeholders):** This category includes tourists, physiologists, local community members, and safari drivers who exhibit limited direct influence and moderate interest in ecotourism. These stakeholders align with Mitchell's "*dormant stakeholders*," possessing limited power despite their engagement in park activities. Their low influence underscores a need for targeted educational initiatives that promote awareness of conservation and responsible tourism, in line with TIES's ecotourism principles that emphasize environmental and cultural respect.
- **Keep Informed Stakeholders (Discretionary Stakeholders):** Stakeholders with high interest but limited power, such as state-centered agencies and wildlife rangers, are classified as "Keep Informed." These stakeholders, while keenly interested in conservation, face structural limitations that inhibit their capacity to enforce sustainable practices. According to Mitchell, they represent "*discretionary stakeholders*," valuable yet under-leveraged. Increased support through policy enhancement and resource allocation could empower these stakeholders, aligning with TIES principles that advocate for community empowerment and effective governance.
- **Keep Satisfied Stakeholders (Dependent Stakeholders):** Local businesspersons, community leaders, and some tourism facilitators benefit economically from ecotourism but hold limited sway over decision-making. As "*dependent stakeholders*," they rely on the economic stability that ecotourism provides. Their satisfaction is crucial to avoiding potential disruption, making benefit-sharing models an essential focus. Aligning with TIES's economic inclusivity principle, fair and equitable economic policies would enhance their support for ecotourism and conservation goals.
- **Encourage and Involve Stakeholders (Influential Stakeholders):** Stakeholders like wildlife guards, tour planners, and environmentally conscious tourists demonstrate high interest and moderate influence. Functioning as advocates for sustainable practices, these *influential stakeholders* support TIES's core principles by promoting environmental responsibility and cultural awareness. Involving them more actively in conservation and sustainable tourism practices would leverage their commitment to align with long-term ecotourism goals.
- **Engage and Influence Stakeholders (Definitive Stakeholders):** High-level wildlife conservationists, experienced wildlife rangers, and certain policymakers exhibit both high influence and strong commitment, fitting into Mitchell's "*definitive stakeholders*" category. With legitimacy, urgency, and power, they are critical to directing ecotourism practices toward sustainability. Their active involvement in management roles will likely advance ecotourism's objectives, aligning with TIES's environmental and social responsibility goals.

The Power/Interest Matrix aligns with Mitchell's Stakeholder Theory, which evaluates stakeholders based on power, legitimacy, and urgency. By categorizing stakeholders accordingly, it ensures prioritization in stakeholder engagement strategies. Additionally, the approach adheres to The International Ecotourism Society's (TIES) principles, which emphasize environmentally responsible, culturally sensitive, and economically inclusive ecotourism practices.

By linking stakeholder engagement strategies to these theoretical frameworks, the study ensures that conservation goals are met while also delivering tangible benefits to local communities. High-power, high-interest stakeholders, such as government bodies and large tourism operators, require direct engagement and strategic collaboration. Conversely, low-power, high-interest stakeholders, such as small local businesses and tourists, need information dissemination and participatory initiatives to enhance inclusivity. This structured stakeholder

engagement model serves as a foundation for developing sustainable ecotourism policies that balance economic, environmental, and social objectives.

4.9 Influence-Commitment Matrix and Dynamic Stakeholder Mapping

The Influence-Commitment Matrix complements the Power/Interest framework by mapping stakeholders based on their level of influence and commitment, helping identify tailored engagement strategies.

- High Influence - Low Commitment (Monitor & Guide): Stakeholders with significant influence but lower commitment, such as external tourism facilitators, require policies to align their activities with ecotourism principles. Given their focus on short-term profit, strategic incentives to adhere to TIES's guidelines on environmental respect and local cultural sensitivity could mitigate potential negative impacts on park sustainability.
- Low Influence - High Commitment (Empower & Involve): Stakeholders such as local communities and state-centered agencies show strong commitment but face structural constraints that limit their influence. Empowering these stakeholders through decentralized governance structures and capacity-building initiatives could transform their commitment into action, enhancing community participation. This aligns with TIES's principle of local community empowerment and respect for local traditions, supporting an inclusive ecotourism model.
- High Influence - High Commitment (Collaborate & Leverage): Stakeholders with both high influence and commitment, including conservation experts and high-level wildlife guards, are ideal collaborative partners in ecotourism development. Leveraging their expertise and influence through joint projects and participatory decision-making aligns with TIES's goals of environmental protection and cultural sensitivity, reinforcing sustainable practices across the tourism ecosystem.
- Low Influence - Low Commitment (Educate & Motivate): Tourists, while economically essential, often exhibit lower levels of commitment to ecotourism's long-term goals. Targeted educational programs emphasizing TIES's core values—environmental responsibility, cultural respect, and minimal impact—could foster eco-friendly behaviour, encouraging tourists to align with the principles of sustainable tourism.

This Influence-Commitment Matrix provides a structured approach to resource allocation and engagement, ensuring each stakeholder group contributes effectively to Udawalawa National Park's ecotourism goals.

4.10 Dynamic Stakeholder Mapping Based on TIES Ecotourism Principles

The application of TIES ecotourism principles allows for a responsive approach that respects and integrates the varying interests, power levels, and cultural values of stakeholders, promoting sustainable practices that balance ecological, economic, and social goals.

- Adaptive Management for Stakeholders with Growing Interest: Adaptive strategies are essential for stakeholders whose engagement might increase with incentives, particularly local communities and select tourism facilitators. Programs focusing on community-based ecotourism enterprises and training can incentivize their participation in conservation. This approach aligns with TIES's emphasis on community empowerment, fostering a sustainable and inclusive ecotourism framework.
- Conflict Resolution for High-Power Stakeholders: High-power stakeholders, such as conservationists and tourism facilitators, may face conflicts regarding conservation versus profit motives. Implementing participatory decision-making, structured dialogues, and stakeholder workshops can help balance these differing interests, advancing TIES's principles of cultural respect and environmental protection by fostering a collaborative approach to ecotourism.
- Feedback Mechanisms for Transitioning Stakeholders: Regular feedback channels, such as surveys and workshops, support stakeholders transitioning from low to high engagement. Such mechanisms ensure that stakeholders continuously align with ecotourism principles, fostering an adaptable and resilient approach to stakeholder engagement that maintains consistency with TIES's guidelines.

5.0 Discussion

Guided by environmental psychology, social science, and TIES ecotourism principles, the following recommendations aim to foster sustainable ecotourism at Udawalawa National Park.

- Strengthening Governance and Policy Frameworks – Decentralized governance through community-based tourism councils enhances local stakeholder participation, ensuring transparent and inclusive decision-making. Case studies from community-managed protected areas, such as those in Costa Rica and Namibia, demonstrate how decentralized governance leads to improved conservation outcomes and sustainable tourism practices.
- Eco-Friendly Infrastructure Development – Public-private partnerships (PPPs) can drive investments in sustainable infrastructure, such as eco-friendly transportation and waste management systems, reducing environmental impact. Case studies from South Africa's Kruger National Park demonstrate how sustainable infrastructure investments improve both conservation efforts and economic returns.
- Equitable Economic Distribution – Community-based tourism enterprises, including guided tours and eco-lodging, ensure fair benefit-sharing among local stakeholders. Case studies from Kenya's Maasai Mara demonstrate how community-based tourism enterprises have resulted in direct financial benefits for local residents, incentivizing conservation efforts.
- Educational Initiatives for Cultural and Environmental Sensitivity – Tourist education programs, such as pre-visit digital modules and guided eco-tours, promote responsible visitor behavior. Case studies from Australia's Great Barrier Reef tourism model demonstrate how pre-visit educational sessions on coral reef conservation have significantly improved visitor compliance with sustainability guidelines.
- Stakeholder Engagement and Policy Adaptation – Multi-stakeholder dialogue platforms and feedback mechanisms, such as regular stakeholder surveys and policy review forums, ensure continuous policy adaptation to address emerging ecotourism challenges. Case studies from Botswana's Okavango Delta demonstrate how multi-stakeholder platforms facilitate constructive discussions that balance economic, social, and environmental priorities.
- Sustaining Ecotourism through Private Sector Compliance – Ecotourism certification programs, like regulatory incentives and marketing benefits, encourage businesses to adopt sustainable tourism practices. Case studies from Costa Rica's Certification for Sustainable Tourism (CST) program demonstrate how certification frameworks have encouraged businesses to adopt environmentally responsible practices, ultimately improving conservation and visitor satisfaction.

- Dynamic Stakeholder Mapping for Policy Refinement – Annual stakeholder assessments and policy realignment workshops maintain adaptive governance, ensuring ongoing stakeholder engagement and conservation success. Case studies from Nepal's Annapurna Conservation Area demonstrate how stakeholder monitoring systems allow authorities to evaluate participation rates and adjust policies accordingly, reinforcing an adaptive and inclusive ecotourism framework.

By integrating these stakeholder-driven strategies, Udawalawa National Park can effectively translate theoretical frameworks into actionable initiatives that ensure sustainable tourism, equitable economic benefits, and long-term conservation success. The inclusion of case study examples from globally recognized ecotourism destinations further supports the feasibility and scalability of these recommendations.

6.0 Conclusions

This study underscores the critical importance of stakeholder engagement in the ecotourism development of Udawalawa National Park, Sri Lanka. By examining the intricate dynamics of power, interest, and commitment among stakeholders, the research highlights both opportunities and challenges in achieving responsible ecotourism practices. Environmental considerations emerged as the top priority, reflecting stakeholders' strong alignment with conservation goals. However, issues such as governance gaps, economic inequities, social disruptions, and infrastructure deficiencies impede progress toward long-term ecological and community benefits. The analysis reveals that decentralized governance, equitable economic distribution, and enhanced stakeholder collaboration are essential for overcoming these challenges. Additionally, integrating educational initiatives and eco-friendly infrastructure can promote cultural sensitivity and environmental stewardship among tourists and local communities. The findings emphasize the necessity of balancing ecological preservation, community well-being, and economic development through targeted strategies informed by stakeholder input.

The study stands apart from previous research through three significant advancements:

- Novel Application of the Relative Importance Index (RII) in Ecotourism
Unlike previous studies that rely primarily on qualitative assessments of stakeholder engagement, this research introduces the Relative Importance Index (RII) as a quantitative tool to rank stakeholder priorities in ecotourism. The RII framework enables a data-driven assessment of key stakeholder determinants, providing a structured method for prioritizing policy interventions and ensuring that ecotourism governance is aligned with stakeholder expectations.
- Integration of Dynamic Stakeholder Mapping Frameworks
This research enhances stakeholder analysis by integrating Mitchell's Stakeholder Theory with the Power/Interest Matrix and the Influence-Commitment Matrix, offering a multi-dimensional classification of stakeholders. Unlike previous studies, which often use static stakeholder categorizations, this study introduces a dynamic approach that recognizes the evolving nature of stakeholder influence and commitment over time. This methodological advancement enables park managers and policymakers to adopt more adaptive governance models, ensuring that ecotourism development remains responsive to stakeholder shifts.
- Governance-Centric Approach and Policy Implications
Previous research on Udawalawa and Sri Lanka has primarily focused on tourism's economic benefits, biodiversity conservation, or visitor satisfaction. This study shifts the focus to systemic governance weaknesses, power imbalances, and economic equity, highlighting issues such as policy gaps, enforcement failures, and the exclusion of local communities from decision-making processes. Unlike past studies, this research also examines social challenges associated with ecotourism, such as drug addiction, cultural erosion, and local livelihood disruptions, which are often overlooked in conventional ecotourism literature. The study provides practical, policy-oriented recommendations, including decentralized governance models, equitable revenue-sharing frameworks, and participatory stakeholder engagement mechanisms to enhance sustainable ecotourism governance.

This study makes several key contributions that advance existing knowledge in ecotourism stakeholder analysis and governance, particularly in the context of Udawalawa National Park and Sri Lanka. By combining quantitative stakeholder prioritization (RII), dynamic mapping techniques, and policy-driven governance models, the study provides a holistic and adaptive approach to ecotourism management. These methodological and analytical advancements set new standards for both academic inquiry and practical application in ecotourism governance, distinguishing this research through three significant advancements. Furthermore, this study positions itself as a pioneering contribution to ecotourism research in Sri Lanka, with broader applicability for global ecotourism governance frameworks.

Acknowledgment: We are immensely grateful to all the interviewees and information providers who generously shared their time and insights, which were invaluable to this research. Their contributions provided critical data and perspectives that enriched the study. Furthermore, we extend our sincere thanks to the Department of Wildlife Conservation Sri Lanka for their cooperation and support, particularly in facilitating access to necessary resources and information. Additionally, we thank the anonymous reviewers for their constructive comments and suggestions, which significantly improved the quality of this manuscript.

Conflicts of Interest: The authors declare that there are no conflicts of interest.

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