



## Research Paper

# Sustainable Tourism Development and Heritage Conservation in Polonnaruwa, Sri Lanka: A Stakeholder Perspective

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## ABSTRACT

The interplay between tourism development and cultural heritage conservation presents a unique challenge, especially in heritage sites like Polonnaruwa, Sri Lanka, a UNESCO World Heritage site. This research investigates the impact of tourism on the preservation of Polonnaruwa's historical assets through a qualitative analysis of stakeholder perspectives, including local communities, tourists, destination managers, and government officials. The study employs semi-structured interviews to gather data, allowing an in-depth exploration of economic, socio-cultural, and environmental implications. Results indicate that while tourism generates economic benefits, it simultaneously places stress on the conservation of ancient structures, contributes to the commodification of local culture, and exacerbates environmental degradation. Key findings highlight the need for better infrastructure, reinvestment in conservation, and increased community participation in tourism management. The study emphasizes sustainable tourism development (STD) as a framework to balance economic growth with cultural preservation. The research concludes that a multi-stakeholder approach is essential to ensure that tourism development supports, rather than undermines, the long-term conservation of Polonnaruwa's heritage.

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## 1. Introduction

The intersection of tourism and cultural heritage conservation poses a significant global challenge, vividly illustrated by Polonnaruwa, a UNESCO World Heritage site in Sri Lanka. Research highlights Polonnaruwa's importance within Sri Lanka's Cultural Triangle alongside Anuradhapura and Kandy, emphasizing its rich historical and cultural legacy that attracts both international tourists and scholars (Perera, 2023; Gayathri, 2021; Wijesooriya, 2020). While tourism drives economic growth and provides vital income and employment for local communities, studies caution that it also risks damaging the very heritage assets that attract visitors (Cai et al., 2021).

Sri Lanka's tourism sector has expanded rapidly in recent decades, fueled by the country's cultural richness, natural beauty, and renewed global standing after the civil war (Chandrapala, 2021). The Sri Lanka Tourism Development Authority (SLTDA) projects that by 2025, the country aims to attract 6 million tourists and generate approximately USD 10 billion in tourism revenue, marking a significant increase in the sector's contribution to the national economy (Te Velde & Wignaraja, 2025, Udurawana, 2016). However, balancing economic benefits with the preservation of Polonnaruwa's cultural and historical integrity remains a complex issue.

Efforts to sustain tourism highlight the increasing difficulty of managing conservation alongside tourism growth at heritage sites such as Polonnaruwa (Wijesooriya, 2020). Its ancient temples, stupas, and palaces suffer environmental degradation, pollution, and physical wear due to increasing tourist numbers (Chandrapala, 2021). Additionally, the commercialization of local culture and infrastructure challenges exacerbate tensions between tourism development and heritage preservation, especially as modern tourists demand more engaging experiences, sometimes at odds with conserving fragile monuments (Kempiak et al., 2017).

The primary aim of this research is to explore stakeholder perspectives on the relationship between tourism development and the conservation of Polonnaruwa's cultural heritage. By engaging with diverse groups—including tourists, local community members, destination managers, area guides, and government officials—the study seeks to reveal the intricate economic, socio-cultural, and environmental factors influencing heritage preservation. Specifically, the research investigates how tourism shapes local livelihoods and cultural identity, including concerns around cultural commodification, and examines environmental challenges such as pollution and physical wear on historic sites. Furthermore, the study aims to identify sustainable tourism strategies that harmonize economic benefits with heritage preservation, offering actionable recommendations to policymakers and stakeholders for enhancing community participation in tourism planning and management. This research adopts the Sustainable Tourism Development (STD) concept as its guiding theoretical framework. STD emphasizes the need to balance the growth of tourism with the preservation of cultural resources and conservation of natural resources. It also integrates economic, socio-cultural, and environmental dimensions into tourism planning. According to Baloch et al (2023), sustainable tourism involves minimizing the negative impacts of tourism on local communities and environments while maximizing its economic and socio-cultural benefits. In the context of heritage sites like Polonnaruwa, this means ensuring that tourism activities do not compromise the long-term preservation of historical and cultural assets. Moreover, STD concept argues for the inclusion of local communities in the tourism planning process (Baloch et al, 2023). Fretes et al, (2023) highlight that community involvement not only fosters a sense of ownership and pride but also ensures that tourism development aligns with the needs and values of the local population. This is particularly relevant for Polonnaruwa, where local residents often feel marginalized in the tourism planning process (Gnanapala, and Sandaruwani, 2016). In many cases, decisions are made by external stakeholders, such as government bodies or private tourism companies, without adequately consulting the local communities who are directly affected by these decisions. By employing the Sustainable Tourism Development (STD) framework, this research aims to guide

Polonnaruwa's tourism planning towards a balanced approach that integrates economic growth with heritage conservation. The STD concept directly informs the study's objectives by focusing data collection and analysis on key aspects such as managing tourist numbers, enhancing infrastructure, fostering responsible tourism behavior, and reinvesting tourism revenues into conservation. Methodologically, the framework shapes the semi-structured interviews and thematic analysis, prioritizing stakeholder insights related to sustainable practices and community involvement. The expected outcomes are practical, actionable recommendations grounded in the STD principles, designed to support the long-term preservation of Polonnaruwa's cultural assets while maximizing tourism benefits for the local community and economy. Polonnaruwa, located in Sri Lanka's North Central Province, has a rich history dating back to the 11<sup>th</sup> century, when it served as the country's capital. The site is known for its ancient ruins, which include temples, stupas, statues, and royal palaces. Among the most notable structures are the Gal Vihara, a group of rock-carved Buddha statues, and the Polonnaruwa Vatadage, a circular relic house that is considered one of the best-preserved examples of ancient Sinhalese architecture. Despite its historical significance, Polonnaruwa faces numerous challenges due to the increasing number of tourists visiting the site. The local community, largely dependent on agriculture, has seen its traditional way of life transformed by the growing tourism industry. While tourism brings economic benefits, such as income from accommodation, food services, and transportation, it also introduces a range of socio-cultural and environmental issues. Local traditions and cultural practices are often altered to cater to the preferences of international tourists, leading to the commodification of local culture. The environmental impact of tourism is also a pressing concern. The delicate archaeological structures of Polonnaruwa are vulnerable to damage from increased foot traffic, pollution, and waste (Gnanapala and Sandaruwani, 2016). Local authorities struggle to maintain the site's integrity amidst these pressures, with limited financial resources and infrastructural support. Furthermore, the rising cost of living associated with tourism development has placed additional strain on the local population, contributing to socio-economic disparities (Thilakasiri et al, 2024).

Tourism and heritage conservation in Polonnaruwa involve a wide range of stakeholders, each with differing interests and perspectives that often lead to tensions. For instance, tourists seek immersive cultural experiences but may inadvertently damage delicate heritage sites due to limited awareness of conservation needs (Gnanapala & Sandaruwani, 2016a). Local community members, while benefiting economically from tourism, express concerns over the commodification of their culture and rising living costs, and feel marginalized in decision-making processes (Jayamanna et al., 2023). Destination managers and area

guides face the difficult task of balancing visitor promotion with site preservation amid limited resources (Gnanapala & Sandaruwani, 2016). Government officials acknowledge tourism's economic importance but struggle with equitable allocation of revenue towards conservation, fueling stakeholder dissatisfaction (Wijesooriya, 2020). These differing interests influence policy and management decisions, often resulting in conflicts over priorities between economic development and heritage preservation, underscoring the need for inclusive, multi-stakeholder governance frameworks. Tourists, both international and domestic, are primarily interested in experiencing the cultural and historical aspects of Polonnaruwa. However, their lack of awareness of the site's cultural significance often leads to behavior that negatively impacts conservation efforts (Gnanapala and Sandaruwani, 2016a). For example, many tourists are unaware of the delicate nature of the ancient structures and may inadvertently cause damage through their actions. Local community members play a crucial role in the tourism industry, providing services such as accommodation, food, and guiding tours. However, they often feel excluded from the decision-making process regarding tourism planning and management. Many locals express concerns about the loss of cultural identity and the commodification of their traditions, as well as the rising cost of living due to the influx of tourists (Jayamanna et al, 2023). Destination managers and area guides are responsible for managing the flow of tourists and ensuring that the site is well-maintained. They face the ongoing challenge of balancing the promotion of tourism with the imperative to preserve Polonnaruwa's heritage, often amidst conflicting priorities. For example, destination managers and area guides must manage increasing visitor numbers while addressing limited conservation funding and infrastructural constraints. These tensions are further complicated by local community concerns over cultural commodification and exclusion from decision-making, which influences policy by creating competing demands between economic growth and heritage preservation. Recent debates have centered on how tourism revenue is allocated, with stakeholders calling for greater reinvestment in conservation efforts to ensure long-term site sustainability. This is particularly difficult given the limited financial resources available for conservation efforts (Gnanapala and Sandaruwani, 2016). Government officials are tasked with overseeing tourism development and conservation at the national level. While they recognize the economic importance of tourism, they are also aware of the need to protect Sri Lanka's cultural heritage. However, the allocation of tourism revenue remains a contentious issue, with many stakeholders arguing that not enough funds are being reinvested into conservation projects (Wijesooriya, 2020). Sustainable tourism in the context of Polonnaruwa requires practical strategies that address the site's unique conservation challenges while supporting local socio-economic development. Recent studies emphasize the importance of

managing visitor numbers through digital ticketing and visitor caps to reduce overcrowding and physical strain on vulnerable structures (Dilshod et al., 2024). Effective waste management and infrastructure upgrades are critical to mitigating pollution and landscape degradation exacerbated by increasing tourist flows (Baloch et al., 2023). Community involvement is pivotal, as empowering locals through participatory tourism planning fosters cultural preservation and equitable economic benefits (Chan, 2023; Fretes et al., 2023). Additionally, promoting lesser-known heritage sites and integrating technology such as virtual reality experiences can diversify tourist attractions, alleviating pressure on major monuments while enhancing visitor engagement (Dilshod et al., 2024; Rasoolimanesh et al., 2021). These approaches exemplify how sustainable tourism practices are being operationalized to balance heritage conservation with tourism development at Polonnaruwa.

## Methodology

This study adopts a qualitative approach to analyze stakeholder views about tourism development in the context of heritage site conservation in Polonnaruwa, Sri Lanka. Qualitative approaches are essential for understanding the intricate and specific context of different multicultural stakeholders such as tourists, community members, destination marketers and managers, area guides, government personnel, and other decision-makers whose Polonnaruwa's tourism activities intersect with the cultural heritage site preservation processes as they have undergone over time. This permits the study to capture the rich social, economic, and environmental factors that shape, often overlooking, the efforts towards conservation and management of tourism, or in contrast to what is quantitatively measured.

## Information Gathering

The semi-structured interview technique was the principal method of primary data gathering due to its capability to generate detailed narratives enriched pertained to participants' views directly towards heritage conservation issues. The interviews were face to face, which enabled the researcher to strengthen her relationship with the respondents and obtained candid responses that were deeply thoughtful and furthered the quality and depth of the data as a result of the rapport built with the participants. Such an approach reduced the risk of bias associated with remote interview conduits.

In an effort to mitigate respondent bias when designing questions and interpreting answers, open-ended questions were used so participants could give their opinions without being steered by leading questions. colonel lecturer peers also debriefed on data analysis with colleagues of higher academic standing to bolster credibility and verify findings throughout the data analysis process.

The economic, socio-cultural, and environmental aspects formed the basis of the impact areas that guided the interview and its objectives as the focus of the research.

Sample questions included:

- **Economic impacts:**
  - *"How has tourism affected local infrastructure and income opportunities?"*
  - *"In what ways is tourism revenue contributing to heritage conservation?"*
- **Socio-cultural impacts:**
  - *"What changes have you observed in local traditions due to tourism?"*
  - *"How involved do you feel the local community is in tourism planning?"*
- **Environmental impacts:**
  - *"What environmental challenges have arisen from increased tourist activity?"*
  - *"How is pollution or site degradation being managed?"*

Despite the participants being guided on the structure and flow of the interviews, they were permitted to discuss any other relevant issues that pertained to the study.

### Sampling Procedures and Selection of Subjects

Utilizing predetermined criteria to choose participants deemed fitted for this study is known as purposive sampling, a qualitative approach. With the participants having relevance to the context of the research, a total of thirteen participants were deemed appropriate: six international tourists, two destination managers, two local community members, two area guides, and one government official - all having direct experience with the heritage tourism and conservation aspects of Polonnaruwa.

Even though the sample size is relatively small, it was deemed sufficient given the qualitative emphasis on depth and context-specific understanding rather than broad generalization. Most importantly, the sufficient sample size was validated through the application of thematic saturation: interviewing participants towards the end of the data collection process revealed no fundamentally new insights, which validated the sample size.

In order to achieve a greater depth and validity of the data, diversity within stakeholder groups was purposefully pursued. In the case of international tourists, diversity factors included their nationality, reason for travel, and length of stay, accommodating different visitor experiences. Community members represented different levels of occupation and tourism engagement, giving a wide range of

local perceptions. Destination managers and area guides were chosen to cover different roles and levels of experience in tourism and site management. The government official contributed more analytical policy information, alongside grassroots insights. Such a purposive but diverse sample ensured diverse aspects of the multifarious nature of tourism's influence on heritage conservation were documented.

### Data analysis

Following transcription, the data were thematically analyzed, which is a systematic style of qualitative analysis involving the identification and arrangement of patterns, and their interpretation within the data. The first step in the coding process was to categorize data according to the primary research objectives: economic, socio-cultural, and environmental impacts of tourism on heritage conservation.

Sub-themes were identified within these more broad themes, including infrastructure improvement (economic), commodification of a culture (socio-cultural), and environmental harm (pollution). These sub-themes were explicitly linked to the research questions demonstrating how particular aspects of tourism's impact on heritage conservation were made responsive to particular questions within the research. For example, cultural commodification provided insight into socio-cultural shifts as a result of tourism, while pollution provided insight into concerns of environmental degradation.

Thematic coding used both direct participant quotations (e.g., "rising living costs") and participant responses (e.g., exclusion from tourism planning), blending the stakeholder view seamlessly. Themes were continuously refined and checked with peer debriefing and by comparing findings with the study objectives enhancing analytic depth.

Alongside thematic analysis, content analysis looked at how frequently and in what context key terms aligned with the three areas of impact were mentioned. This quantitative aspect showed to what extent particular issues were raised, and the tone of these discussions, enriching understanding of stakeholder priorities. For instance, frequent negative references to 'rising prices' illustrated heightened economic concerns, and recurring mentions of 'community involvement' pointed to governance concerns. This multi-analytic method enhanced qualitative data evaluation.

### Validity, Reliability, and Ethical Considerations

To improve validity and reliability, multiple strategies were employed. Triangulation was achieved with diverse stakeholder perspectives and inter-group cross validation, minimizing bias risk from a single source. Consistency and credibility were enhanced through peer debriefing with academic colleagues, external to the study, who reviewed



the interpretations. Clear and organized coding strategies also strengthened reliability.

The ethics were very carefully set out. Participants were provided with all relevant information pertaining to the aims of the study and consented to participate of their own free will. The participants were protected within the data confidentiality framework during the study as identifying information was removed during transcription and reporting. The study complied with the ethical requirements of the employing organization and protected the participants' rights and dignity throughout the entire process.

### Limitations

Even though the qualitative method provided a rich context and deep understanding, the findings from Polonnaruwa due to the limited 8sample size. It was, however, meant to bring insights that were detailed and contextually informative rather than representative. The diverse set of participants ensured that these context-relevant insights were challenging and informative to include. Further studies could consider having a larger sample size or use different methodologies to increase applicability.

## Results and Interpretation

The tables presented below outline the raw interview responses grouped under economic, socio-cultural, and environmental impacts of tourism on heritage conservation in Polonnaruwa. Each table provides direct quotes from interview participants, categorizing their responses according to the main theme discussed in the interview. This structured format will serve as the foundation for identifying the major themes in the next step of the thematic analysis.

**Table 1.** *Economic Impacts of Tourism - Stakeholder Interview Responses*

Stakeholder Group	Response
Local Community Member	"Tourism has led to some improvements like better roads, but there's still a lack of proper infrastructure."
Local Business Owner	"Prices for food and goods have increased, making it harder for us to live here."
Government Official	"Although tourism brings revenue, it's not being reinvested into conserving heritage sites like it should."
Destination Manager	"Compared to other tourist destinations, we are lagging behind in terms of both infrastructure and maintenance."

**Table 2.** *Socio-Cultural Impacts of Tourism - Stakeholder Interview Responses*

Stakeholder Group	Response
Area Guide	"We are changing our traditions to match what tourists want to see, which makes our culture less authentic."
Local Community Member	"It feels like we are losing our cultural identity because everything is tailored for tourists now."
Government Official	"Local communities need to be more involved in tourism planning to preserve our cultural heritage."
Destination Manager	"Many tourists come without knowing the significance of the sites they visit, and that's causing harm."

**Table 3.** *Environmental Impacts of Tourism - Stakeholder Interview Responses*

Stakeholder Group	Response
Area Guide	"The increase in visitors is leading to pollution and damage to the ancient sites."
Destination Manager	"Maintaining the integrity of these sites is challenging with so many tourists every day."
Government Official	"Tourism generates revenue, but unfortunately, we don't always have enough funds for conservation."
Local Community Member	"There's too much pressure on the popular sites, which is causing more wear and tear than we can handle."

## Thematic Analysis

This section will provide a detailed analysis of the findings from the interviews, organized in tables. Each table will introduce the theme, followed by a summary of key evidence and quotes from the interviews, and then the interpretation and analysis of the results.

### 1. Economic Impacts of Tourism

Tourism has had a considerable economic impact on the community surrounding Polonnaruwa. While the development of infrastructure and the generation of income from tourism activities have benefited local economies, these benefits are unevenly distributed. The table 4 below outlines the major economic impacts, with supporting quotes from stakeholders.

**Table 4. Economic Impacts of Tourism in Polonnaruwa**

Theme	Evidence/Quotes
<b>Infrastructure Development</b>	"Tourism has led to the development of better roads and some facilities, but it's still not sufficient." – Local Community Member
<b>Increased Cost of Living</b>	"The prices for basic goods have gone up since more tourists started coming here." – Local Business Owner
<b>Limited Investment in Conservation</b>	"Unfortunately, the money from tourism is not directly invested in conservation efforts at Polonnaruwa." – Government Official
<b>Comparison with Other Sites</b>	"Compared to other tourist destinations, our infrastructure and conservation efforts are far below standard." – Destination Manager

The economic benefits of tourism are evident in infrastructure improvements, such as better roads and increased facilities. However, this development has been insufficient to meet the needs of both tourists and the local community. The increase in the cost of living, driven by the demand for goods and services from tourists, has disproportionately affected local residents. Additionally, the lack of reinvestment in conservation highlights a major issue, as tourism revenue is not adequately channelled into the preservation of the heritage site.

The comparison with other tourist destinations underscores the gap in Polonnaruwa's infrastructure and conservation efforts, indicating that more attention needs to be paid to reinvesting tourism revenue into sustainable development projects. Economic benefits are skewed toward short-term gains, rather than long-term conservation strategies.

## 2. Socio-Cultural Impacts of Tourism

The socio-cultural impact of tourism is another critical area of concern (table 5). Many interviewees expressed anxiety about the commodification of their culture, the loss of cultural identity, and the lack of community involvement in tourism planning.

Tourism has significantly affected the socio-cultural fabric of Polonnaruwa. The commoditization of local traditions and practices to cater to tourist preferences has resulted in a sense of cultural loss among the local community. The loss of cultural identity is particularly pronounced, as local residents find their traditional practices and celebrations altered or diluted to fit the expectations of international tourists.

The lack of community involvement in tourism planning has exacerbated these socio-cultural issues. Local residents feel

sidelined in the decision-making processes that directly affect their cultural heritage. Furthermore, tourist awareness of the cultural significance of Polonnaruwa is low, contributing to uneven visitor loads and increased pressure on the most popular sites.

**Table 5 - Socio-Cultural Impacts of Tourism in Polonnaruwa**

Theme	Evidence/Quotes
<b>Cultural Commoditization</b>	"We see our traditions being commercialized to please tourists, which is sad." – Local Community Member
<b>Loss of Cultural Identity</b>	"Tourism is changing the way we live and celebrate our culture." – Area Guide
<b>Community Involvement</b>	"Local communities should be more involved in tourism planning to ensure their culture is preserved." – Government Official
<b>Tourist Awareness</b>	"Many tourists are unaware of the cultural significance of the sites they visit." – Destination Manager

### 2.1 Emotional and Social Ramifications of Cultural Erosion and Community Empowerment in Polonnaruwa's Tourism Development

As discussed, the commodification of culture coupled with the loss of identity and tourism provides deep emotional and social repercussions, especially in relation to the local community of Polonnaruwa. Most residents suffer profound alienation and grief due to alteration of their traditions which damages well-being and compromise social bonds. Once cherished traditional celebrations and cultural practices anchored in memories, values, and community life are increasingly performed as mere rituals for tourists leading to feelings of cultural alienation among locals.

Wane of cultural identity gives rise to intergenerational divides where the older generation view the younger shift in perception as a counter continuity as hostile. This level of social disintegration undermines a community's ability to maintain authentic cultural heritage over time. Interviewees highlighted that the commodification spectacle of culture tends to create a culture of exploitation in which locals feel used and unappreciated, thus cultivating negative attitudes towards tourists and external tourism planners.

Engaging local communities in tourism planning helps limit socio-cultural issues that might arise. Effective participation empowers a community's sense of ownership and pride, guaranteeing that tourism development is aligned with local sentiments and not purely on external economic interests.

Residents may be able to protect important cultural practices by negotiating the manner in which they are presented to tourists—protecting important aspects of culture while actively engaging tourists through meaningful experiences.

As well, community-oriented projects, such as the promotion of cultural tours and local crafts, offer economic opportunities alongside reinforcement of social cultural identity. Trusting more of the decision-making processes to the locals aids in ensuring that tourism becomes a means of cultural construction rather than destruction.

**Table 6.** Emotional, Social Consequences of Cultural Loss & Community Empowerment

Theme	Evidence/Quotes	Interpretation
<b>Emotional Alienation</b>	"We feel like strangers in our own traditions when they are performed just for tourists." – Local Elder	Cultural performances adapted for tourists cause emotional distancing from heritage, impacting community well-being.
<b>Intergenerational Tensions</b>	"Younger people don't seem to value our customs the way we do." – Community Member	Changing attitudes across generations weaken cultural continuity and shared identity.
<b>Cultural Exploitation</b>	"Our culture is used to make money, but we don't always benefit or feel respected." – Artisan	Perception of exploitation fosters resentment, undermining social cohesion and trust in tourism.
<b>Community Ownership</b>	"When we have a say in tourism planning, we can protect what really matters to us." – Community Leader	Inclusion in decision-making strengthens cultural preservation and local pride.
<b>Local-led Cultural Initiatives</b>	"We started cultural tours ourselves to share our stories authentically with visitors." – Guide	Community initiatives empower locals economically and socially, reinforcing cultural identity.

### 3. Environmental Impacts of Tourism

Tourism has also had a profound environmental impact on Polonnaruwa, particularly in terms of pollution, landscape degradation, and conservation challenges (table 7).

**Table 7.** Environmental Impacts of Tourism in Polonnaruwa

Theme	Evidence/Quotes
<b>Pollution and Landscape Degradation</b>	"We have noticed increased pollution and damage to the landscape due to the high number of tourists." – Area Guide
<b>Conservation Challenges</b>	"Maintaining the site is challenging with the current level of tourist traffic." – Destination Manager
<b>Funding for Conservation</b>	"While tourism brings money, it is not always allocated for conservation efforts." – Government Official
<b>Pressure on Popular Sites</b>	"The main attractions are overcrowded, causing more wear and tear." – Local Community Member

The degradation of the environment due to tourism is clearly seen in the heightened pollution levels and the physical damage inflicted on the site. Tourists contribute to the littering and waste problem, which surpasses the active waste disposal systems in place. This poses aesthetic, ecological, and long term detrimental impacts to the site. In addition, ancient structures are also experiencing progressive wear and tear due to incessant foot traffic, and this poses major challenges to preservation efforts.

Despite the heavy financial benefits brought in by tourism, specific funding toward conservation is perpetually lacking. This lack of funding increases the burden faced by delicate and popular sites, where an increase in tourism overwhelms these sites, intensifying physical damage while weakening preservation efforts. Without the needed reinvested resources, Polonnaruwa's heritage resources risk unsustainability.

Considering these problems, more than one policies should be applied for these issues. To begin with, creating an efficient system for waste management is a critical step. There should be adequate waste collection and disposal bins implemented, along with regular cleanup days, recycling programs, and education on proper environmental societal roles. Community engagement can make a difference and encourage students to take ownership and respond more helpfully to environmental concerns.

Infrastructures such as new facilities or pathways should aim to ecoconstruct, employing disintegrative materials friendly to nature in construction and minimizing ecological harm. Archaeological as well as other natural areas that are delicate and sensitive can be preserved with the help of control paths that regulate visitor movements.

Equally essential is the fostering of eco-friendly tourism activities through educating the public. Display boards, guiding, and web-based platforms serve to increasing knowledge among tourists for Polonnaruwa and the need to be environmentally considerate and act responsibly. In addition, uncontrolled leveling out and the resulting strain measuring tools for controlling visitors such as blocked access set for specific times and digitized admission cards may be utilized to prevent inordinate numbers of visitors from accessing vulnerable sites.

Mitigation strategies for undesirable socio cultural impacts and environment sustainment in Polonnaruwa includes earmarking part of the funds collected from tourists towards preservation works, involving the local populace and the regions around the site into the management. The above strategies helps in taking measure to ensure that the development of tourism accompanying is done without measures being taken to care for and maintain the environment.

## Content Analysis

Following table 8 demonstrate the results of the content analysis carried out.

**Table 8:** Frequency of Key Impact Mentions Across Stakeholder Groups

Stakeholder Group	Economic Impact (mentions)	Socio-Cultural Impact (mentions)	Environmental Impact (mentions)
Local Community Members	10	12	8
Local Business Owners	9	4	5
Government Officials	6	5	9
Destination Managers	8	7	10
Area Guides	4	6	7
Tourists	3	3	5

The economic impact of tourism in Polonnaruwa is one of the most frequently mentioned themes, particularly among local community members and local business owners, with 10 and 9 mentions, respectively. The tone in these discussions is primarily one of frustration and discontent, as participants expressed concerns about rising living costs and the lack of financial reinvestment into heritage conservation. Local business owners reported that while tourism generates revenue, the influx of tourists has driven up the cost of goods, making everyday living more difficult. Government officials and destination managers, though recognising the economic contributions of tourism, echoed

concerns about insufficient infrastructure development and the disparity between tourism revenue and funds allocated for conservation. The focus on short-term economic gains without long-term sustainability measures is evident in the frequent reference to terms like “rising prices” and “inadequate reinvestment.”

Socio-cultural impacts were most frequently mentioned by local community members (12 mentions), reflecting the significant effect of tourism on the local way of life. The tone here is often one of concern and disappointment, particularly regarding the commodification of cultural practices. Phrases like “tourism is changing who we are” and “our traditions are being commercialised” highlight a sense of cultural erosion. Area guides and government officials also expressed concerns about the loss of cultural identity and the lack of local involvement in tourism planning, with government officials emphasising the need for greater community participation to ensure that tourism aligns with local values. Tourists, with fewer mentions in this category, often lacked awareness of the cultural significance of the heritage sites they visited, which exacerbates these socio-cultural tensions.

The environmental impact of tourism was a dominant theme in discussions with destination managers and government officials, with both groups raising concerns about the degradation of heritage sites and pollution caused by increased tourist numbers. Destination managers, with 10 mentions, frequently pointed to overcrowding at popular sites like the Gal Vihara, which has led to significant wear and tear on the ancient structures. The tone in these discussions is one of urgency and frustration, as limited resources and conservation funding have made it difficult to address these issues adequately. Phrases such as “damage to heritage structures” and “increased pollution” were commonly used, illustrating the critical state of environmental management. Local community members also voiced concerns about the pressure on key sites, but with fewer mentions compared to other groups, their primary focus remained on economic and socio-cultural impacts.

## Discussion

The discussion section of this research focuses on the intersection of heritage conservation and tourism development in Polonnaruwa. Based on the interviews conducted and thematic analysis of the data, the findings reveal a complex relationship between economic growth, socio-cultural changes, and environmental challenges. This discussion will critically analyse how tourism has shaped these dimensions in Polonnaruwa, using the insights from stakeholders, and will evaluate how these findings align with broader literature on sustainable tourism and heritage conservation. The following sections will delve into the economic, socio-cultural, and environmental impacts of



tourism, highlighting both the positive outcomes and the challenges.

The economic benefits of tourism in Polonnaruwa are undeniable, particularly with regard to infrastructure development and increased income for local businesses. Tourism has led to improved roads, better facilities, and growth in ancillary services such as accommodation, food, and transportation. These developments have positively impacted local livelihoods, as tourism has become a significant source of income for many residents. However, the study reveals that these economic benefits are unevenly distributed, with certain sectors and individuals benefiting more than others. Local community members reported that despite the growth in infrastructure, it remains insufficient to fully support the needs of both tourists and the local population.

One of the major concerns raised by stakeholders is the rising cost of living in Polonnaruwa, driven by the increased demand for goods and services due to tourism. Local businesses may see an increase in revenue, but for the broader population, this can translate into higher prices for everyday necessities. This phenomenon, often referred to as the "tourism inflation effect," has been observed in other heritage sites around the world, where tourism drives up the cost of living for local residents without necessarily improving their quality of life. This aligns with findings from other studies on tourism's economic impact on heritage sites, where the benefits of tourism are often concentrated in a few hands, leading to growing socio-economic disparities (Kronenberg and Fuchs, 2022).

The issue of limited reinvestment in conservation efforts also emerged as a critical concern. While tourism generates significant revenue, much of this income is not channelled back into preserving the heritage site itself. Government officials and destination managers acknowledged that there is a gap between the income generated from tourism and the funds allocated for conservation. This raises questions about the sustainability of tourism as a long-term economic strategy. If the site continues to deteriorate due to lack of investment in maintenance, its attractiveness as a tourist destination will diminish, eventually affecting the economic benefits derived from tourism.

In comparison to other heritage sites, Polonnaruwa's infrastructure and conservation efforts are perceived to be lagging. Destination managers expressed concerns that the site is not being maintained to the same standards as other well-known heritage destinations, such as Anuradhapura or Sigiriya, despite its significance within Sri Lanka's Cultural Triangle. This highlights a broader issue in heritage tourism - the need for a balance between promoting a site for tourism and ensuring that its conservation needs are adequately addressed. As noted by Job et al (2020) heritage sites often face challenges in balancing economic

imperatives with conservation priorities, and Polonnaruwa is no exception.

Tourism has also had profound socio-cultural impacts on Polonnaruwa, particularly in terms of cultural commoditisation and the loss of cultural identity. The interviews revealed that many local residents feel that their traditions and cultural practices are being altered or commercialised to cater to tourists. This sense of cultural commoditisation is a common issue in heritage tourism, where the need to make cultural practices more accessible and appealing to tourists can lead to the simplification or distortion of local traditions.

The loss of cultural identity is particularly significant for Polonnaruwa, as the site is not only a source of economic livelihood but also a central part of the community's historical and cultural heritage. The commodification of culture for tourism often involves reducing complex and meaningful practices to mere performances for tourists, which can lead to a disconnect between the local population and their heritage. As an area guide noted, tourism is changing the way people in Polonnaruwa live and celebrate their culture, often at the expense of authenticity. This is consistent with the work of Bui et al (2020), who argue that tourism can lead to the erosion of local cultures, particularly when it is driven by external market forces rather than local needs and values.

A related issue is the lack of community involvement in tourism planning. The interviews revealed that local communities feel sidelined in decision-making processes regarding tourism development. This lack of involvement exacerbates feelings of disconnection from their own heritage and culture, as decisions are made by external stakeholders without adequate consultation with the people who live and work in the area. This issue has been highlighted in previous studies on heritage tourism, which emphasise the importance of community participation in tourism planning to ensure that tourism benefits are distributed more equitably and that cultural heritage is preserved in a way that reflects local values (Esichaikul and Chansawang, 2022).

Tourist awareness of the cultural significance of Polonnaruwa is another key issue. Many tourists visiting the site are unaware of the deep historical and cultural importance of the monuments they are seeing. This lack of awareness contributes to uneven visitor distribution, with tourists flocking to the most famous sites, such as the Gal Vihara, while neglecting lesser-known but equally significant locations. This creates pressure on the most popular sites, leading to overcrowding and increased wear and tear on the monuments. The findings suggest that there is a need for better interpretive programs and educational initiatives to raise awareness among tourists about the cultural significance of Polonnaruwa, which could help distribute

visitor loads more evenly and reduce pressure on specific sites.

The environmental impacts of tourism on Polonnaruwa are substantial, with pollution, landscape degradation, and conservation challenges emerging as major concerns. The increased foot traffic from tourists has led to the physical deterioration of the site, with several ancient structures showing signs of wear and tear. This issue is compounded by the limited resources available for conservation, as much of the revenue generated from tourism is not allocated for preservation efforts.

Stakeholders, including area guides and destination managers, expressed concern about the pollution and landscape degradation caused by tourism. Increased littering, waste generation, and damage to the natural landscape surrounding the site are visible effects of the growing number of tourists. This issue is not unique to Polonnaruwa; heritage sites around the world face similar challenges when tourism is not managed sustainably. As noted by Baloch et al (2023) tourism can have significant environmental impacts on heritage sites, particularly when there are no effective systems in place to manage waste and regulate tourist behaviour.

The issue of conservation funding is closely linked to these environmental challenges. Government officials noted that while tourism brings in money, these funds are often diverted to other areas of development, leaving conservation projects underfunded. This lack of financial resources makes it difficult to address the wear and tear caused by increased tourist traffic, leading to a vicious cycle where the site's condition deteriorates further, potentially reducing its appeal as a tourist destination. As Chan (2023) argue, sustainable tourism development requires a commitment to reinvesting tourism revenue into conservation efforts to ensure the long-term viability of heritage sites.

The pressure on popular sites within Polonnaruwa is another significant issue. Sites such as the Gal Vihara and the Polonnaruwa Vatadage receive the bulk of tourist attention, leading to overcrowding and further physical damage. This pressure not only affects the conservation of these sites but also diminishes the overall visitor experience, as overcrowded sites are less enjoyable for tourists. One way to mitigate this issue is by promoting lesser-known sites within Polonnaruwa to help distribute visitor traffic more evenly. This strategy has been successful in other heritage destinations, where diversifying the tourist experience helps to relieve pressure on the most popular sites while enhancing the overall visitor experience (Rasoolimanesh et al, 2021).

The findings from this research highlight the importance of adopting a sustainable tourism development (STD)

approach in Polonnaruwa. As outlined in the literature review, STD concept emphasises the need to balance tourism growth with the conservation of cultural heritage, taking into account economic, socio-cultural, and environmental factors (Volka and Mironova, 2024). This approach is particularly relevant for Polonnaruwa, where the economic benefits of tourism must be weighed against the need to preserve the site's cultural and environmental integrity.

One of the key recommendations emerging from this research is the need for enhanced educational programs for both tourists and local stakeholders. By raising awareness of the cultural and environmental significance of Polonnaruwa, these programs can help foster more responsible tourist behaviour, reduce the negative impacts of tourism, and promote a greater appreciation for the site's heritage. Educational initiatives can also play a role in empowering the local community by involving them in tourism planning and decision-making processes. As Roxas et al (2020) argue, community involvement is essential for achieving sustainable tourism outcomes, as it ensures that tourism development aligns with local values and priorities.

Another important strategy is the promotion of lesser-known sites within Polonnaruwa to distribute tourist traffic more evenly. By encouraging tourists to visit a broader range of sites, destination managers can reduce pressure on the most popular locations while enhancing the overall visitor experience. This approach has been successful in other heritage tourism contexts, where diversifying the tourist offering helps to alleviate overcrowding and protect vulnerable heritage sites from further degradation (Dilshod et al., 2024).

In terms of infrastructure development, there is a clear need for improved facilities to support both tourists and local residents. Stakeholders identified the need for better sanitation, interpretive programs, and transportation infrastructure to enhance the visitor experience and ensure that tourism benefits are shared more equitably across the community. Investment in infrastructure must be coupled with a commitment to reinvesting tourism revenue into conservation efforts, as the long-term sustainability of tourism in Polonnaruwa depends on the site's continued preservation.

Even considering the many challenges of tourism in Polonnaruwa, further examination must be done in equally important areas, including the positive impact that tourism has contributed towards heritage conservation and global awareness. Note tourism's role in raising the profile of Polonnaruwa as a UNESCO World Heritage site, which in turn attracts international attention, scholarly interest and has the potential to lead to the availability of funding and collaborative efforts directed toward conservation. A number of tourism projects such as Boxed Community

Cultural Tours and community-based frameworks for visitor management have, though on a limited scale, contributed to the conservation and protection of Polonnaruwa's heritage. Academics and policy practitioners argue that the improved site access and roads, enhanced sanitation, construction of visitor centers, and other facilities made available through tourism put and maintained serviced centers increased both the site's maintenance capacity and the visitor's experience. As a result of the above activities brought about due to endless tourism, active stakeholder participation in the process of planning of tourism regions has started to mean integrating objectives related to conservation, showing that there is emerging concern over the not-so-happy marriage of economic gains and heritage resources. The combination of sound governance through tourism reinvestment policies provides a firm framework for realizing targeted set-out conservation objectives.

## Recommendations

The outcome of the research conducted at Polonnaruwa emphasizes the need of managing tourism in a way that it supports economic growth, preservation of cultural legacy, and ecological conservation simultaneously. Based on stakeholder perspectives discussed in the content and thematic analyses, this chapter provides clear, practical paths of action for central government officials, tourism operators, local community members, and managers at specialized destinations.

### 1. Implementation of Sustainable Tourism Management Framework (STMF)

Given the interrelationship of economic, socio-cultural, and environmental factors in Polonnaruwa tourism, there is a need for an integrated response. To mitigate cultural commodification and overcrowding, the STMF should be compiled by a broad range of stakeholders which includes government agencies, local community women and youth, managed care tourism, conservation, and business tourism. A multi-stakeholder governance committee can manage enforcing visitor quotas at sensitive areas like Gal Vihara and Vatadage, education-based behavioral change, active monitoring of tourism impacts, and responsible tourism. The dominant design from stakeholders is to implement in phases with distinct milestones over a few years to ease funding concerns and resistance due to identified stakeholder barriers.

### 2. The Special Purpose Account for Conservation

Participants pointed out the reinvestment into conservation efforts is either lacking or absent altogether. Creating a transparent Conservation Fund that reserves a certain proportion of tourism revenue (between 10-15%) will guarantee perpetual funding for restoration, workforce development, and the training and infrastructure.

Community members having a stake in the fund governance increases responsibility and trust, addressing local relapses of anger around heritage preservation. Other similar initiatives at other heritage sites have had success in aiding the continuation of conservation activities.

### 3. Lesser- Known Heritage Sites Marketing

Overpopulation at central heritage sites leads to an inverse relationship as far as the quality of experience offered is concerned. Through new advertising campaigns with specific focus on Rankoth Vehera, Lankatilaka Temple, and Kadurugoda Temple, in collaboration with tour operators, designed tourist trails will promote the sites and help ease the congestion experienced at flagship monuments. This takes care of the need to improve the tourism appeal and at the same time helps protect vulnerable regions.

### 4. Participation of Local Communities and Expertise Boards

It has been reported that the local population does not take part in the tourism planning and this is perceived as one of the elements of culture and culture clash. These situations can be ameliorated by creating Community Advisory Boards that guarantee attendance of women youth and other marginalized individuals. These boards will also need to meet periodically with government and heritage institutions to ensure they are effective in developing and implementing policies that foster inclusive tourism policy within a culturally sensitive context.

### 5. Educational Offerings for Stakeholders and Tourists

Lack of tourist appreciation concerning the cultural value of Polonnaruwa contributes to inappropriate behavior and damage to the facility. Designing interactive educational activities that emphasize the significance of heritage and encourage responsible tourism will foster greater stewardship. Culturally train guides and other personnel in the tourism sector such as hotels, transport, and restaurants, so that they can positively frame, through their communications, visitors' behaviors enhancing the experience.

### 6. Supplementary Digital Tools and Advanced Infrastructure

Environmental deterioration and missing infrastructure are the most dying issues. Urgent attention should be directed toward the enhanced management of waste and toilet facilities to reduce pollution and preserve the integrity of the site. Further, the sustainability of the region will be advanced by improving transport infrastructures. Complementing investments in physical infrastructure, pre-purchasing admission tickets online, monitoring visitor flow in real-time, and self-guided mobile tours enable

customization of experiences, thus controlling participant numbers to prevent overcrowding.

## Conclusion

This study highlights the complex relationship between tourism and heritage conservation in Polonnaruwa. While tourism has undoubtedly contributed to economic growth and infrastructure development in the area, it has also created significant socio-cultural and environmental challenges that need to be addressed through a sustainable approach. The findings underscore the importance of striking a balance between promoting tourism and ensuring that the cultural and historical integrity of Polonnaruwa is preserved for future generations.

The research has identified key areas where improvements are necessary, particularly in terms of reinvesting tourism revenue into conservation efforts, promoting lesser-known heritage sites, and involving the local community in tourism planning. By adopting a Sustainable Tourism Management Framework, stakeholders can ensure that tourism activities are carefully regulated, with visitor limits in place to protect the most sensitive areas of the site. A dedicated conservation fund is also essential to ensure that tourism revenue is used to support long-term preservation efforts.

The socio-cultural impacts of tourism, particularly the commoditisation of culture and the loss of cultural identity, can be mitigated through greater community involvement and educational initiatives. By empowering local residents to participate in tourism planning and management, destination managers can create a more inclusive and culturally sensitive tourism experience that reflects the values of the local population. Educational programs for both tourists and stakeholders will play a crucial role in promoting responsible tourism practices and fostering a deeper appreciation for Polonnaruwa's cultural heritage.

Environmental challenges, such as pollution and landscape degradation, can be addressed through investment in infrastructure development and the use of technology to manage visitor flows and enhance the tourist experience. By promoting lesser-known sites and offering virtual reality experiences, destination managers can reduce the pressure on popular sites while providing tourists with a diverse and engaging experience.

The recommendations provided in this study offer a comprehensive approach to ensuring that tourism in Polonnaruwa is both economically beneficial and environmentally sustainable. By prioritising conservation, community involvement, and responsible tourism practices, Polonnaruwa can continue to thrive as a major heritage destination while preserving its cultural and historical significance for future generations.

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