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Pathways to Cultural and Environmental Sustainability at the Borobudur World Heritage Site: Collaborative Governance through Community-Based Spiritual Tourism

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ABSTRACT

This article offers a cultural analysis of environmental governance at Borobudur-an Indonesian World Heritage site-by advancing Community-Based Spiritual Tourism (CBST) and a Collaborative Inter-Actor (CIA) model as culturally embedded pathways of social change. Drawing on an ethnographically informed mixed-methods design, the study integrates 15 in-depth interviews, participatory observation during 2023-2024 Vesak rituals, environmental surveys, and policy document analysis. It foregrounds Global-South perspectives and community voices in addressing heritage-based ecological challenges. Findings reveal five critical pressures-visitor overcapacity, solid waste, air pollution, loss of sacred vegetation, and structural erosion-while identifying eco-spiritual practices such as sacred-water rituals, tree conservation, and the framing of Borobudur as a sacred landscape that cultivate environmental stewardship. Building on cultural sociology and post/decolonial debates, CBST is theorised as an extension of CBT that centres ritual and symbolism in shaping pro-environmental behaviour, whereas CIA governance rebalances power among state, corporate, and community actors. The article contributes discourse by articulating spiritual ecology as cultural infrastructure for sustainability, reframing collaborative governance through ethnographic cultural analysis, and demonstrating how local spiritual epistemologies challenge Eurocentric managerialism.

Keywords: Borobudur, Community-Based Spiritual Tourism, Collaborative Governance, Cultural Sustainability, World Heritage Management, Spiritual Ecology

INTRODUCTION

Borobudur, a 9th-century architectural masterpiece located in Magelang, Central Java, Indonesia, is one of the largest temples in the world and has been recognized by UNESCO as a World Heritage Site since 1991. This status makes Borobudur not only a source of national pride, but also a global responsibility in preserving *its outstanding universal value*. Borobudur's position as one of the five *super-priority tourism destinations* in Indonesia poses a double challenge: on the one hand, it encourages economic acceleration through the tourism sector, but on the other

hand, it creates serious ecological pressure on the environment and the physical structure of the temple. This complexity makes Borobudur a strategic case to be studied through the perspective of collaborative governance and community-based tourism.

In the last two decades, the number of tourists visiting Borobudur has increased significantly, both domestic and foreign tourists. Major events such as Vesak, the lantern festival, and the Thudong procession bring tens of thousands of visitors in a matter of days. This development can be seen more clearly through data on the number of tourist visits to Borobudur in the last three years. The data shows a fluctuating trend as well as a significant upward trend after the pandemic, especially during religious events and cultural festivals.

Table 1. Borobudur Visitor Data 2021-2023

Month	**Number of Visitors to Borobudur Temple According to Tourist Origin and Month in Magelang Regency**					
	Domestic			**International**		
	2021	**2022**	**2023**	**2021**	**2022**	**2023**
January	30,394	131,561	121,138	52	127	6,278
February	18,641	89,203	87,706	37	170	6,241
March	34,624	111,540	67,520	33	348	8,520
April	30,713	23,890	93,561	64	618	9,510
May	38,369	324,135	126,410	55	2,175	14,438
June	54,589	191,810	158,430	70	4,341	16,696
July	0	125,266	127,271	0	1,184	29,166
August	0	51,906	58,900	0	15,550	34,092
September	5,892	44,552	63,997	9	9,853	24,852
October	30,285	76,461	77,455	93	7,688	18,180
November	51,485	74,253	86,941	106	4,941	12,291
December	127,938	198,709	211,897	155	6,941	12,789
Magelang Regency	422,930	1,443,286	1,281,226	674	53,936	193,053

Source: Magelang Regency Tourism, Youth, and Sports Office, 2024

At a certain point, the number of visitors exceeded the ideal carrying capacity of the site. A UNESCO report (2022) even mentioned concerns about stone wear, relief degradation, and the threat of air pollution and plastic waste, which are becoming increasingly difficult to control. The Borobudur Conservation Office also reported damage to the stairs, forcing the implementation of a protective wooden cover system to reduce direct contact between visitors' footsteps and the original temple stones. This phenomenon illustrates that the sustainability of Borobudur cannot be viewed solely as a cultural issue, but also as a complex environmental problem.

Various studies have confirmed that mass tourism, if unregulated, can have a high *ecological footprint* (Gössling & Peeters, 2015). Community-based tourism *(CBT*) has emerged as a strategy to balance economic needs, cultural preservation, and environmental sustainability. However, in practice, CBT often focuses only on economic and cultural aspects, while spiritual and ecological dimensions tend to be marginalized. This is crucial in Borobudur, where the site is not only an architectural monument but also a center of spirituality for Buddhists around the world. Therefore, the concept *of Community-Based Spiritual Tourism (CBST)* has emerged as an innovative e that integrates the spiritual values of local communities with the principles of environmental sustainability.

On the other hand, the governance of Borobudur is characterized by institutional complexity. The dualism of authority between the Borobudur Authority Agency (BOB), which was formed by the central government, and PT Taman Wisata Candi (PT TWC) as the commercial manager often gives rise to conflicts of interest. Meanwhile, the local community, tourism operators, and spiritual communities feel that they are not meaningfully involved in the decision-making process. In fact, the literature on *collaborative governance* (Ansell & Gash, 2008) emphasizes the importance of multi-stakeholder involvement to create legitimacy and sustainability. This situation gives rise to the need for a *Collaborative Inter-Actor (CIA) Governance* model that can balance power relations and ensure that ecological and spiritual dimensions are given equal weight with economic and political interests.

In terms of policy, various national and international regulations have been implemented to protect Borobudur. The 1972 UNESCO World Heritage Convention, Law No. 11 of 2010 on Cultural Heritage, and various regional regulations have emphasized the obligation to protect. However, weak implementation in the field has made these policies less than fully effective. For example, the ban on single-use plastics in tourist areas has not been consistently enforced, while the construction of modern infrastructure often sacrifices sacred vegetation and the spiritual landscape of local communities. Thus, the issue of Borobudur's sustainability cannot be adequately

addressed through top-down regulations alone, but requires the integration of local values and community participation.

This study aims to analyze how the integration of *Community-Based Spiritual Tourism* and *Collaborative Inter-Actor Governance* can contribute to the environmental sustainability of Borobudur. The research questions underlying this study are: (1) How do CBST practices influence environmentally friendly behavior at Borobudur? (2) How do key actors collaborate in the environmental governance of this world heritage site? (3) What policy recommendations can strengthen ecological sustainability through the integration of governance and spiritual tourism?

The contributions of this research are both theoretical and practical. Theoretically, this article expands the discourse *on environmental governance* by incorporating spiritual and community dimensions as key factors. Practically, this research offers a collaborative governance model that can be used as a reference in managing other world heritage sites facing similar dilemmas, such as Machu Picchu in Peru or Angkor Wat in Cambodia. With this framework, Borobudur is not only positioned as a cultural and economic icon, but also as a global laboratory for environmental sustainability practices based on spirituality and collaboration.

LITERATURE REVIEW

Environmental Governance Theory

The concept *of environmental governance* has developed rapidly since the 1990s in line with increasing global awareness of the environmental crisis. According to Lemos and Agrawal (2006), environmental governance encompasses the processes, actors, and institutions that influence how communities interact with ecosystems. This involves not only government regulation but also the participation of communities, international organizations, and the private sector. In the context of world heritage sites such as Borobudur, *environmental governance* must consider the balance between cultural preservation, tourism needs, and ecological protection.

The cultural dimension of environmental governance is also an important concern. England (2022), in his review of the book *Cultural Industries and the Environmental Crisis,* asserts that cultural industries and tourism often operate within a consumptive economic logic that accelerates ecological degradation. Tourism, festivals, and the commodification of cultural heritage not only create symbolic value but also add to the carbon footprint and pressure on natural resources. This perspective broadens the understanding *of environmental governance* from mere technocratic regulation to a critique of the cultural industry-based development model that demands ecological sustainability and ethical consumption. In the context of Borobudur, this means that environmental governance needs to consider how spiritual and cultural tourism is managed so that it does not get caught up in an industrial logic that actually exacerbates the ecological crisis.

The modern *governance* framework emphasizes that environmental sustainability cannot be achieved through top-down policies alone. Ostrom (2010) argues that the management of *common-pool resources* requires collective rules agreed upon by local actors. This principle is relevant to Borobudur, where the carrying capacity of the site is a common resource that is vulnerable to degradation due to overcapacity. A study by Borrini-Feyerabend et al. (2013) also emphasizes the importance of *co-management* between the government and local communities to prevent ecological damage.

Community-Based Tourism and Its Transformation

Community-Based Tourism (CBT) has long been promoted as a model for sustainable tourism development that places local communities as the main actors. Goodwin and Santilli (2009) define CBT as tourism that is owned and managed by the community, with the main objective of improving local welfare. In practice, CBT has often succeeded in increasing the income of tourism villages, but a number of studies have pointed out its limitations: participation is often uneven, management capacity is low, and environmental aspects receive little attention (Mitchell & Muckosy, 2008).

This is where the idea *of Community-Based Spiritual Tourism (CBST)* comes in. This concept emphasizes the integration of spiritual values in community-based tourism. Norman (2011) refers to spiritual tourism as a form of travel that connects the religious dimension with transformational experiences. When local communities act as guardians of spiritual traditions, CBST practices not only preserve rituals but also foster ecological awareness. A study in Ladakh, India, shows that local rituals that honor sacred mountains contribute to landscape conservation (Singh, 2019). Something similar could potentially be applied in Borobudur through meditation practices, pradaksina, and local traditions such as spirituality-based water conservation.

In the context of cultural heritage management, community participation does not always occur through formal mechanisms regulated by the state. A study conducted by Tuan & Hien (2025) shows that in peri-urban heritage areas in Vietnam, local residents often express their involvement through symbolic practices, rituals, and collective memory as a form of *silent dissent* against overly centralized heritage management. This *embodied* form of

participation shows that the spiritual and cultural dimensions of local communities can function as mechanisms for preserving values and social legitimacy, even outside the formal bureaucratic framework. This view is in line with the idea of *Community-Based Spiritual Tourism (CBST)* in Borobudur, which places rituals and spiritual awareness as part of a more inclusive collaborative governance system.

Collaborative Governance

The concept of *collaborative governance* is an important framework for understanding multi-stakeholder management. Ansell and Gash (2008) define *collaborative governance* as a collective decision-making process that involves public, private, and civil society actors in a shared forum. This model emphasizes the principles of consensus, dialogue, and trust. Emerson et al. (2012) then developed *an Integrative Framework* that highlights three dimensions: collaboration dynamics, joint action, and collective outcomes.

In the context of world heritage tourism, *collaborative governance* is highly relevant. Baggio et al. (2010) show that tourist destinations managed through multi-stakeholder networks are more adaptive to environmental challenges. However, critical studies (Dredge & Whitford, 2011) highlight power imbalances that often marginalize the voices of communities. This is also what found in Borobudur, where the dominance of state actors and state-owned enterprises often suppresses community participation.

Spirituality as An Cultural and Environmental Dimension

In international literature, the integration of spirituality with environmental sustainability is still relatively new. Berry (1999) in *The Great Work* emphasizes that the ecological crisis is a spiritual crisis: the loss of a sense of the sacredness of nature. A study by Loy & Goodhew (2020) on spiritual tourism in Bhutan shows that religious values can strengthen tourists' conservation behavior. Thus, CBST at Borobudur can be seen as an innovative approach that integrates spirituality, ecology, and sustainable development.

Cultural Analysis and Decolonial Lens

Understanding Borobudur's sustainability crisis requires more than a technocratic reading of environmental governance; it demands a cultural analysis that situates ecological challenges within systems of meaning, ritual, and power. Cultural analysis, in this sense, does not merely interpret culture as a passive backdrop but as an active and contested field through which social transformation occurs. Following Inglis (2021) and Tuan & Hien (2025), this study treats cultural practices, embodied rituals, and local narratives as analytical entry points for understanding how communities negotiate modernity, tourism, and environmental change.

From a decolonial perspective, the global discourse of heritage management has often been dominated by Eurocentric paradigms that prioritize preservation of monuments over the living cultural processes that give them meaning. At Borobudur, this epistemic hierarchy manifests in policies that privilege expert conservation and visitor economy while marginalizing local spiritual custodians. A decolonial lens therefore seeks to reposition knowledge production: to listen to the voices of monks, artisans, and villagers whose daily practices sustain the sacred ecology of the site. By foregrounding these voices, the study resists the instrumental logic of "cultural industry" (England 2022) and reframes Borobudur as a living sacred landscape rather than a commodified spectacle.

Cultural analysis also illuminates how symbolic systems-ritual purity, sacred water, or the sanctity of trees-function as informal environmental governance mechanisms. These symbols encode ecological ethics that guide collective behavior and maintain equilibrium between humans and nature. In this sense, spirituality operates not only as belief but as governance practice, translating metaphysical principles into ecological action. Finally, adopting a cultural and decolonial lens allows the integration of spiritual ecology into collaborative governance theory. Rather than treating religion as an external factor, it recognizes spiritual consciousness as an endogenous driver of social change. Through this perspective, Borobudur becomes a laboratory for reimagining sustainability-where cultural meaning, local agency, and ecological justice converge to challenge the managerialism of global heritage policy.

Research Gaps

Although there are many studies on Borobudur and community-based tourism in Indonesia, there are a number of research gaps that make this study important. First, the literature on *community-based tourism (CBT)* in the Borobudur area still largely focuses on economic and cultural aspects. Research by Sunaryo (2017), for example, emphasizes the contribution of tourism villages to community income, but minimizes discussion of the ecological dimension. As a result, environmental aspects often become only a secondary issue, even though the pressure of mass tourism in Borobudur is becoming more apparent every year.

Second, research on *environmental governance* at world heritage sites tends to emphasize *top-down* regulations. Reports by UNESCO and the Borobudur Conservation Office mostly contain technical conservation recommendations, such as limiting the number of visitors to the top stupa or applying protective coatings to the

stones. However, these studies rarely touch on how local communities and spirituality can contribute to environmental governance. In other words, there is a gap between technical conservation and value-based conservation.

Third, the concept *of collaborative governance* is often used in sustainable tourism analysis (Ansell & Gash, 2008; Emerson et al., 2012). However, its application in Borobudur is still limited to the normative level. State actors and state-owned enterprises dominate decision-making, while community participation is symbolic. Previous studies have not elaborated on how *Collaborative Inter-Actor (CIA) Governance* can overcome power imbalances and place communities and spiritual values as an integral part of environmental policy.

Fourth, the spiritual dimension is almost entirely absent in studies on Borobudur's sustainability. In fact, international studies show that spirituality can strengthen environmentally friendly behavior and ecological awareness (Loy & Goodhew, 2020). With no research that integrates spirituality, governance, and environmental sustainability in the context of Borobudur, there is a clear gap in the academic literature.

Thus, this study aims to fill four main gaps: (1) the dominance of economic orientation in CBT, (2) the weak integration of community and spirituality in *environmental governance*, (3) normative bias in *collaborative governance* approaches, and (4) the absence of studies linking spirituality with environmental conservation at Borobudur. By focusing on *Community-Based Spiritual Tourism* and *Collaborative Inter-Actor Governance,* this article seeks to make theoretical and practical contributions to the discourse *of environmental sciences* while offering an innovative model that can be replicated at other world heritage sites.

RESEARCH METHOD

This research was designed using a *mixed methods* approach that combines qualitative and quantitative methods. This approach was chosen because the issue of environmental management in Borobudur involves complex dimensions: ecology, spirituality, governance, and community behavior. Thus, the use of a single method is considered insufficient to capture this complexity.

Research Design

The research design used is an exploratory case study focusing on Borobudur as *a World Heritage Site* and a super-priority destination. Case studies were chosen because they provide space for researchers to understand phenomena in a real context, particularly the interactions between actors in managing environmental sustainability. Yin (2018) states that case studies are effective for exploring contemporary phenomena that cannot be separated from their social and institutional contexts.

Research Location and Context

The research was conducted in the Borobudur area, covering the core zone (temple and courtyard), buffer zone (surrounding villages such as Karangrejo, Candirejo, and Wanurejo), and administrative areas managed by the Borobudur Authority Agency (BOB) and PT Taman Wisata Candi (TWC). This location was chosen because it is the center of tourism activities, spiritual rituals, and environmental management policy formulation. Major events such as Waisak were used as special observation moments because they attracted a significant surge in visitors.

Data Collection Techniques

In-depth Interviews

Conducted with 15 key informants consisting of Local Government officials, PT TWC managers, Borobudur Conservation Agency officials, Buddhist leaders, representatives of the tourist village community, local MSME actors, and tourists. These interviews aimed to capture perceptions of governance collaboration, the contribution of spirituality, and ecological challenges.

Participatory Observation

Conducted during the 2023 and 2024 Vesak events to document ritual practices, visitor management, and waste management systems. Observations were also conducted in tourist villages to observe spiritually-based conservation practices, such as water rituals or the preservation of sacred trees.

Documentation and Policy Analysis

Reviewing official documents such as UNESCO/ICOMOS reports, national regulations (Cultural Heritage Law), local regulations, and Borobudur Conservation Office reports. This analysis is important to understand the applicable regulatory framework.

Environmental Survey

A simple survey was conducted with the involvement of research assistant students to measure the volume of waste at major events, record the average number of daily visitors, and identify critical areas of vegetation affected by infrastructure development.

Data Analysis Techniques

The analysis was conducted in three main stages:
Qualitative Analysis: Interview transcripts and observation notes were analyzed using *thematic coding of Etnography*. The main themes that emerged were collaboration between actors, cultural-spiritual practices, and environmental issues (waste, pollution, vegetation degradation).
Quantitative Analysis: Data on visitor numbers, waste volume, and environmental sustainability index scores (referring to Purwaningsih, 2021) were used to reinforce the qualitative findings. This data was then compared with UNESCO standards on the carrying capacity of world heritage sites.
Stakeholder Mapping: Using the *Collaborative Inter-Actor (CIA) Governance* approach, researchers mapped actors based on their roles, interests, and level of influence in the management of Borobudur. This mapping resulted in the classification of dominant, mediating, and marginal actors.

Validity and Reliability

To maintain validity, this study used *triangulation of sources and methods*. Interview results were compared with field observations and documentation data. Internal validity was strengthened by *member checking* with several key informants, while reliability was obtained through detailed recording of research procedures so that they could be replicated.

Research Ethics

The research was conducted in accordance with ethical principles: *informed consent* from informants, confidentiality of personal data, and respect for spiritual values and religious rituals. For example, photographs and videos were only taken with the permission of the Vesak committee and the local community. These ethical principles were important to ensure that the research did not violate the sanctity of the site.

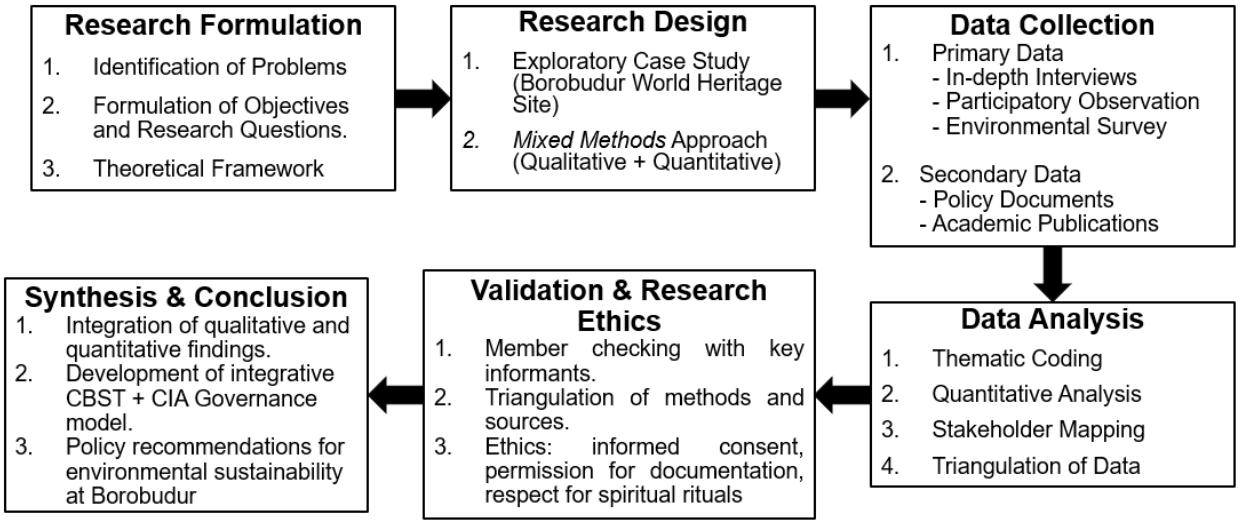

Figure 1. Research Methodology Flowchart

RESULT

This section presents the results of research on the implementation of *Community-Based Spiritual Tourism (CBST)* and *Collaborative Inter-Actor (CIA) Governance* in the Borobudur area and their contribution to environmental sustainability. The research results are divided into five main focuses: (1) carrying capacity and visitor management, (2) waste management, (3) air quality and transportation, (4) vegetation and water conservation, and (5) protection of the temple's physical structure. Data was obtained from interviews, observations, environmental surveys, and official documents, then analyzed thematically and quantitatively.

Carrying Capacity and Visitor Management

One of the main issues identified is visitor capacity exceeding the site's carrying capacity. UNESCO/ICOMOS recommends limiting the number of visitors climbing to the top of Borobudur's stupa ( ) to prevent structural damage. Observations during the 2024 Vesak event showed that the number of visitors reached more than 50,000 people in one day, far above the ideal daily capacity of 15,000-20,000. This caused congestion in the temple corridors, increased pressure on the stone stairs, and a decline in the quality of the spiritual experience.

Table 2. Peak Visits Around Vesak vs. Carrying Capacity Threshold

Date (Estimated)	Event	Daily Visitors
May 23, 2024	Waisak Peak 2024	37,029
May 20–25, 2024	Waisak 2024 Series (cumulative)	>75,000 (total)
May 12, 2025	Waisak 2025 Peak	45,914
-	Temple quota per day	1,200

Source Notes: InJourney/TWC (released in May 2024 & May 2025); Magelang Regency Government regarding the quota of 1,200/day.

Informants from the Borobudur Conservation Office confirmed that the wear and tear on the stones and reliefs has worsened due to the accumulation of visitor traffic. To address this, PT TWC has implemented a limited ticket system for access to Zone 1 (the temple) since mid-2023, but implementation has been limited due to economic pressures and tourist demand. The majority of the local community supports visitor restrictions due to concerns about site degradation, but some MSME actors feel that this policy reduces economic opportunities. The dynamics of visitor restriction policies show a tug-of-war between conservation, economic, and socio-cultural interests. The following table presents the index values for each dimension, which describe the sustainability of Borobudur's management more comprehensively.

Table 3. Borobudur Sustainability Index by Dimension (MDS-RapTourism)

Dimension	Index Value
Environment (Ecology)	66.94
Economy	72.62
Social-Cultural	72.76
Institutional	69.27
Composite (Total)	69.84

Source: Purwaningsih (2021), E3S Web of Conferences ICENIS

Waste Management

Waste management is a critical issue, especially during major events such as Vesak. A field survey conducted during Vesak 2024 showed that the production of single-use plastic waste reached around 12 tons in three days, including plastic bottles, plastic bags, and food packaging waste. The volume of waste increased by almost 300% compared to normal days. The recycling system is not yet optimal; most of the waste is taken to landfills without sorting.

Table 4. Daily Waste Generation in Magelang Regency (Regional Context)

Year	Waste Generation (tons/day)	Methodology/Data Source
2023	≈ 662.4	SIPSN Ministry of Environment and Forestry (secondary summary)
2024	668–681	Magelang Regency DLH (official statement/release)

Note: Specific data on Vesak events per ton has not been officially published; this table provides *a regional baseline* for estimating additional waste on peak days.

Local communities through village waste bank programs are attempting to implement 3R initiatives, but these efforts are still limited and lack institutional support. Interviews with community leaders indicate that spirituality can actually be a basis for reducing waste, for example by emphasizing the teachings of purity and cleanliness in every ritual. However, these teachings have not been fully integrated into official event regulations. To understand the extent of the community's capacity to implement the 3R principles, it is necessary to review the existence of community-based waste management infrastructure. The following data provides an overview of the distribution, capacity, and community involvement in waste management at the local level.

Table 5. Community-Based Waste Management Infrastructure (TPS3R) in Borobudur District

Indicator	Value
Number of villages in Borobudur District	20
Villages with TPS3R	12
TPS3R coverage of total villages (%)	60
Operational status	Operational, but heterogeneous (human resource and funding constraints)

Source Notes: JEMT study (2024); local supporting reports; TWC-village collaboration (since 2021).

Air Quality and Transportation

Private vehicle density is a major contributor to air pollution in the Borobudur area. A simple survey conducted by the research team in May 2024 showed that particulate matter (PM10) levels in the parking area reached 130 μg/m³ during rush hour, exceeding the WHO threshold of 50 μg/m³. This has an impact on visitor comfort and the health of the surrounding community.

Although the government has operated shuttle buses from the outer parking terminal, the usage rate remains low because tourists prefer private vehicles. The local community also complains that the shuttle buses are not environmentally friendly (they still use fossil fuels). Some parties have proposed the use of electric buses, but this has not been implemented due to budget constraints. These findings emphasize the need for green transportation policies to reduce emissions.

Vegetation and Water Conservation

Community-based vegetation and water conservation practices still continue despite being marginalized by modern development. For example, the tradition *of klenting* to maintain clean water availability in buffer villages is still practiced, but only in a few hamlets. Observations show that sacred vegetation areas, such as teak and waru trees, have been heavily logged for the construction of parking lots and shuttle routes. This has caused tension between local communities who view these trees as spiritual symbols and local governments that are focused on infrastructure development.

In addition, the spiritual rituals of nira farmers who care for coconut trees as part of the life cycle are considered a form of *eco-spiritual practices*. These practices contribute to biodiversity conservation, but are not formally recognized as part of conservation efforts. The community believes that the government places more emphasis on technical conservation (stone coating, drainage improvement) than value-based conservation.

Physical Structure Protection of Temples

The wear and tear of stairs and stones is one of the biggest challenges. Data from the Borobudur Conservation Office (2023) shows that the rate of damage to stairs has increased by 15% in the last five years. To reduce the impact, some of the stairs are now covered with protective wood so that the original stones do not come into direct contact with thousands of visitors' footsteps. However, this measure is only a temporary solution.

The spiritual community views access restrictions not only as a technical solution but also as a step to restore the temple's sacredness. A monk interviewed emphasized that Borobudur should be treated as a place of worship, not just a mass tourist attraction. This perspective reinforces the idea that the spiritual dimension can synergize with physical conservation goals.

The Dynamics of Collaborative Governance

Research found that the governance of Borobudur is still dominated by state actors (Ministry of Tourism, BOB, PT TWC). Multi-stakeholder collaboration already exists, but community participation is often still a formality. Mapping of *Collaborative Inter-Actor Governance* shows three groups of actors:

1. Dominant actors: Central government, PT TWC, UNESCO.
2. Intermediary actors: Local government, Conservation Office, tourism associations.
3. Marginal actors: Local communities, MSME actors, spiritual groups.

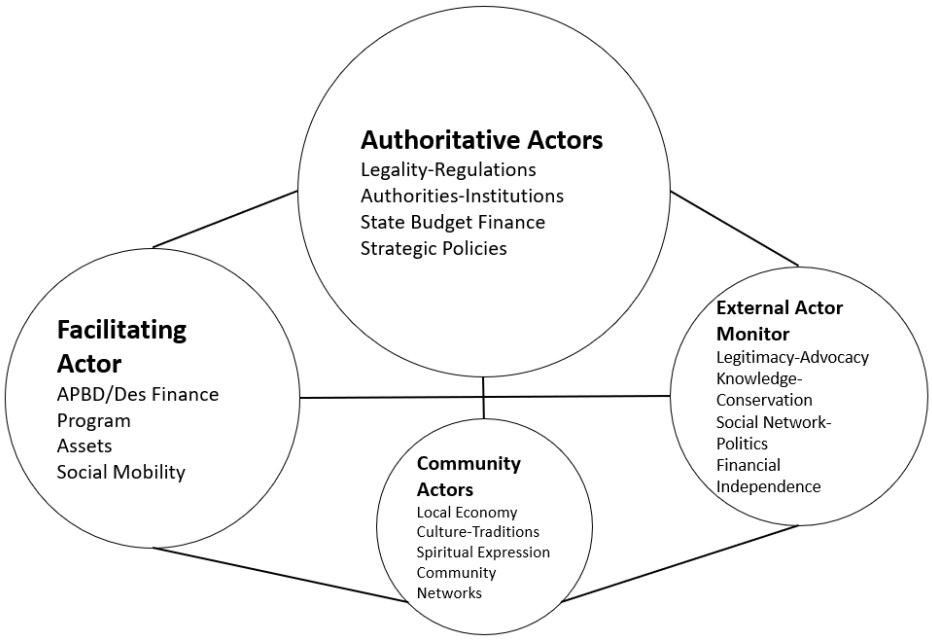

Figure 2. Stakeholder Mapping Diagram

This imbalance creates conflicts of interest. For example, the central government promotes high tourist visitation targets, while local communities prioritize environmental sustainability. This conflict results in policy inconsistencies, such as the construction of new facilities that actually reduce green space.

Overall, this study finds that the environmental sustainability of Borobudur faces serious challenges: visitor overcapacity, weak waste management, air pollution from transportation, vegetation degradation, and physical damage to structures. However, there is great potential through the integration of spiritual values into conservation practices and the implementation of more inclusive collaborative governance. Quantitative data (e.g., a sustainability index of 69.84 and 12 tons of waste during major events) reinforce the qualitative findings regarding the weakness of the current environmental management system.

DISCUSSION

By applying a cultural analysis of social change, this discussion interprets the Borobudur case as a dynamic negotiation between economic modernization, spiritual ecology, and community agency. The findings illustrate how collaborative governance acquires new meaning when grounded in the lived cultural practices of the Global South. This section discusses the research findings by linking them to relevant theoretical frameworks and literature. The discussion focuses on three aspects: (1) the dynamics of carrying capacity and its implications in the framework *of environmental governance*, (2) the integration of spiritual values in community-based tourism as a conservation enhancer, and (3) the role of *Collaborative Inter-Actor (CIA) Governance* in overcoming governance inequalities.

Carrying Capacity, Overcapacity, and Environmental Governance

The results show that the number of visitors to Borobudur often exceeds the ideal capacity, especially during major events. This condition is in line with the experience of Angkor Wat in Cambodia, which through *its Tourism Development Strategic Plan 2012-2020* established a strategy to limit and regulate visitor flow to reduce pressure on the temple structures and surrounding landscape (UNESCO, n.d.). In addition, the management of the water and landscape systems in the Angkor area, including canals, *moats,* and catchment areas, shows that the physical sustainability of world heritage sites is not only determined by the number of visitors but also by the quality of management of the surrounding supporting ecosystems (Chim et al., 2021). This condition is in line with the findings of Gössling and Peeters (2015), who emphasize that mass tourism produces a high ecological footprint and threatens the sustainability of destinations. The phenomena of visitor overcapacity, vegetation degradation, air pollution, and physical structure damage found in this study are in line with global threat patterns at World Heritage sites.

Falk & Hagsten (2023), through a survey of 396 *World Heritage Sites*, noted that the threats most frequently reported by managers were mass visitor pressure (*overtourism*), urbanization around the site, climate change, and weak local regulations. These findings confirm that the problems at Borobudur are not isolated cases, but reflect

systemic challenges in the management of World Heritage sites. Thus, visitor quotas and regulations on the use of green transportation at Borobudur should be seen as part of global efforts to address the threat of *over-tourism* to Outstanding Universal Value (OUV). A similar view also emerges in contemporary cultural studies. England (2022) shows that the cultural and tourism industries, although packaged as means of economic development, often contribute to *the ecological crisis* by encouraging mass consumption and dependence on excessive mobility. In the context of Borobudur, the pressure of mass visitors and the commodification of spiritual values are a clear reflection of how the "cultural industry" can create a paradox: on the one hand, it preserves heritage, but on the other, it causes ecological degradation.

Within the framework of *environmental governance* by Lemos & Agrawal (2006), the failure to regulate carrying capacity reflects weak collective regulation in managing *common-pool resources*. Ostrom (2010) emphasizes that successful management of common-pool resources requires participatory rules and collective oversight. The implementation of visitor quotas, which is only top-down from PT TWC, has not been fully effective because it does not involve the community in policy formulation. This has caused resistance among MSME actors who feel they have lost profits. Thus, *environmental governance* in Borobudur still does not meet the principles of inclusiveness and accountability.

Waste, Pollution, and CBST Practices

The drastic increase in plastic waste during *Vesak Day* underscores the need for *zero waste tourism-based* regulations. A UNEP study (2019) shows that tourist destinations that implement policies banning single-use plastics can reduce waste production by up to 40%. Findings in Borobudur indicate that similar policies are not yet in place. However, the potential integration of spiritual values in CBST can be an effective instrument.

Norman (2011) asserts that spiritual tourism encourages reflective awareness in tourists, which can be translated into environmentally friendly practices. In the context of Borobudur, the teachings of purity and cleanliness in Buddhist rituals can be used to establish a new norm: "cleanliness as a form of dharma". Thus, CBST not only preserves sacred values but also encourages ecological behavioral transformation.

Poor air quality due to private transportation underscores the weak implementation of green transportation. Becken's (2007) study shows that the transportation sector contributes to more than 70% of carbon emissions in tourism. Borobudur faces a similar challenge, where fossil-based shuttles still dominate. The integration of spirituality can strengthen the policy narrative, for example by linking sustainable travel as part of a spiritual practice of respecting nature.

Vegetation, Water, and Spirituality Conservation

The finding that local practices such as *klenting* and the maintenance of sacred trees still survive indicates the existence of *eco-spiritual practices*. Berry (1999) in *The Great Work* refers to the ecological crisis as a spiritual crisis, in which the loss of a sense of the sacredness of nature accelerates environmental degradation. Community practices in Borobudur prove that spirituality can be a real force for preservation. However, modern development that sacrifices sacred vegetation reveals a conflict between the economic development paradigm and the spiritual-ecological paradigm. This is in line with the findings of Dredge and Whitford (2011), who criticize that tourism management is often biased towards economic growth, while the social and ecological dimensions are marginalized. Therefore, integrating spiritual practices into official policy can be a middle ground for strengthening the legitimacy of conservation.

This phenomenon is also in line with Inglis' (2021) reflections in a sociological study of wine-based tourism, in which production processes rooted in nature and local traditions create a distinctive ecological awareness. He emphasizes that *tourism of process,* namely tourism that appreciates the rhythm of nature, manual labor, and the symbolic value of the land, can foster an ethical relationship between humans and the environment. With this analogy, spiritual practices at Borobudur can also be understood as a form of *ecological process tourism* that is oriented towards a balance between ritual, culture, and environmental sustainability.

Physical Structure of the Temple and Holistic Conservation Perspective

The wear and tear on the stairs and reliefs caused by millions of visitors' footsteps illustrates the physical vulnerability of the temple. Technical measures such as protective wood coating are temporary solutions. From an academic perspective, this reflects a conservation approach that is overly technical and short-term. Loulanski (2006) emphasizes the need for a functional approach that connects cultural conservation with social and spiritual dimensions. The spiritual community's view that restricting access is a form of restoring sacredness shows that physical conservation cannot be separated from the conservation of values. In other words, the protection of Borobudur's structure will only be successful if it is understood as part of holistic conservation involving technical, social, and spiritual dimensions.

Collaborative Inter-Actor Governance and Power Imbalances

A mapping of actors shows the dominance of the central government and state-owned enterprises in the governance of Borobudur, while local communities tend to be marginalized. This condition confirms the criticism of Dredge and Whitford (2011) that *collaborative governance* is often only rhetoric because it does not address power inequalities. The results of this study, which show the position of local communities as marginalized actors, emphasize the importance of more inclusive governance. A similar idea is also expressed by Campbell & Chung (2022) in their study of arts and cultural environments that seek to build inclusion. They highlight that efforts to create cross-actor collaboration and participation often face structural limits, especially when dominant institutions still maintain their own definitions of "who should be involved" and "how participation should occur."

Thus, inclusivity is often symbolic, merely fulfilling social legitimacy demands without actually shifting the distribution of power. This perspective is relevant to the context of Borobudur, where a multi-stakeholder collaboration forum has been established, but substantive control remains in the hands of state actors and state-owned enterprises. Recognizing these structural limitations is important so that the *Collaborative Inter-Actor (CIA) Governance* model does not stop at procedural participation, but rather develops into transformative participation that balances the roles of spiritual and local communities.

Furthermore, a study on the impact of heritage site designation and heritage tourism in China by Liu et al. (2022) shows that without meaningful participation, local communities often experience detrimental changes in their livelihoods and a reduction in control over local resources. Similar conditions were also noted by Liljeblad & Oo (2020) at the Sri Ksetra site in Myanmar, where top-down conservation policies were ineffective due to community resistance. This cross-case comparison reinforces the urgency of implementing *Collaborative Inter-Actor Governance* at Borobudur to ensure that the voices of local communities and spiritual groups are part of decision-making and the distribution of tourism benefits. *The Collaborative Inter-Actor (CIA) Governance* model proposed in this study seeks to address these weaknesses by recognizing the interdependence of resources among actors Pfeffer & Salancik, (1978) and the dynamics of social exchange Blau, (1964). For example, the government depends on the social legitimacy of the community, while the community depends on regulatory support and economic resources. If these relationships are managed in a balanced manner, collaboration can result in more inclusive and environmentally oriented policies.

Theoretical Synthesis and Implications

This discussion shows that empirical research findings support the literature on the need for collaborative, inclusive, and value-based environmental governance. The integration of CBST enriches CBT theory by adding a spiritual dimension as a conservation instrument. Meanwhile, the strengthening of CIA Governance expands the *collaborative governance* literature with a focus on power imbalances and resource exchange.

The practical implication is the need for policy design that combines top-down regulation with local practices based on spirituality. For example, visitor restriction policies must be accompanied by MSME empowerment programs so that they do not lose income. Similarly, zero plastic policies must be integrated with the values of cleanliness rituals in order to be culturally accepted. With this approach, the sustainability of Borobudur can be better ensured.

CONCLUSIONS

This study aims to analyze how *Community-Based Spiritual Tourism (CBST)* and *Collaborative Inter-Actor (CIA) Governance* can strengthen environmental sustainability in the Borobudur area as a world heritage site. Based on field findings, literature analysis, and the theoretical framework used, a number of important conclusions can be drawn at the empirical, theoretical, and practical levels.

Empirical Conclusions

First, this study confirms that Borobudur faces serious pressure from mass tourism. Visitor capacity that often exceeds carrying capacity, surging waste production during major events, air pollution from private vehicles, degradation of sacred vegetation, and damage to the physical structure of the temple indicate a real threat to the ecological sustainability of the site. Quantitative data, such as a moderate sustainability index (69.84) and waste production reaching 12 tons during Vesak 2024, reinforce the finding that the environmental aspect is the weakest dimension in the current management of Borobudur.

Second, the spirituality inherent in Borobudur and the surrounding community has proven to have great potential as an instrument of conservation. Practices such as *klenting* air, the preservation of sacred trees, and the interpretation of the temple as a place of worship show that spirituality can reinforce ecological behavior. However, this potential has not been fully integrated into official policy. Third, governance dynamics reveal significant power

imbalances. The central government, PT TWC, and UNESCO are the dominant actors, while local communities are often marginalized. This imbalance results in only symbolic community participation and weakens the effectiveness of environmental policies.

Theoretical Contributions

Theoretically, this study contributes to three main areas. First, it enriches the literature *on community-based tourism* by introducing a spiritual dimension, giving rise to a CBST framework that positions spirituality as a reinforcement of ecological conservation. Second, it expands the discourse *on collaborative governance* by proposing a *Collaborative Inter-Actor Governance* model that emphasizes the importance of overcoming power imbalances through an understanding of resource dependence and social exchange. Third, this study affirms the relevance of integrating spirituality and *environmental governance,* an aspect that is still rarely touched upon in international literature.

Practical and Policy Implications

From a practical standpoint, this study offers concrete policy recommendations that can be implemented to strengthen the environmental sustainability of Borobudur:

1. **Visitor Quota:** Set a maximum quota of 15,000-20,000 visitors per day with a transparent online reservation system.
2. **Green Transportation:** Replace fossil fuel-powered shuttles from outside zone II with electric vehicles and expand the environmentally friendly transportation network.
3. **Zero Plastic Event:** Implement a policy banning single-use plastics at major events, including Vesak, by providing environmentally friendly alternatives.
4. **Sacred Vegetation Conservation:** Integrating the protection of sacred trees and spiritual landscapes into the area's spatial planning.
5. **Annual Environmental Audit:** Establishing a monitoring system based on measurable indicators, such as air pollution, waste volume, vegetation condition, and temple structure wear and tear.

The implications of these policies show that Borobudur's sustainability can only be achieved through a combination of *top-down* regulation, community participation, and the integration of spiritual values.

This study confirms that Borobudur is not only a world cultural heritage site, but also a global laboratory for environmental sustainability practices. Through the integration of CBST and CIA Governance, Borobudur can serve as an example of how spirituality and multi-stakeholder collaboration play an important role in addressing the ecological crisis caused by mass tourism. This model has the potential to be replicated at other world heritage sites facing similar dilemmas, such as Machu Picchu and Angkor Wat. Thus, the main conclusion of this study is that the sustainability of Borobudur cannot be achieved solely through technical or regulatory approaches. It requires inclusive governance based on spiritual values and supported by fair and balanced multi-stakeholder collaboration. Borobudur can continue to be a global cultural and spiritual icon, as well as a global example of the integration of tourism, governance, and environmental sustainability. At the societal level, CBST and CIA Governance catalyze a form of cultural transformation in which ecological responsibility emerges from renewed spiritual consciousness. This transformation exemplifies how cultural systems can drive social change towards sustainability.

LIMITATIONS AND FURTHER RESEARCH

This study acknowledges several methodological and contextual limitations. First, as a single case study of Borobudur, the findings may not represent the full diversity of spiritual tourism and governance models across Indonesia or other Global South settings. Comparative research across multiple World Heritage Sites, such as Angkor Wat, Bagan, or Machu Picchu, would help illuminate how cultural and political contexts shape collaborative environmental governance. Second, the environmental data collected were largely descriptive; future studies should adopt longitudinal and technology-based assessments (e.g., GIS mapping or satellite-derived pollution indices) to enhance the ecological rigor of the CBST-CIA framework. Third, while the ethnographic approach provided rich insights into ritual meanings and community participation, researcher presence during major religious events may have influenced behavior. Employing participatory ethnography could strengthen validity and inclusiveness. Finally, further inquiry into spirituality's transformative role in shaping ecological ethics and policy narratives-especially through intersectional perspectives such as gender, youth, and digital mediation-would broaden the theoretical reach and policy relevance of Community-Based Spiritual Tourism as a model for sustainable and culturally grounded development.

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REFERENCES

Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543-571.

Baggio, R., Scott, N., & Cooper, C. (2010). Network science: A review focused on tourism. *Annals of Tourism Research*, 37(3), 802-827.

Becken, S. (2007). Tourists' perception of international air travel's impact on the global climate and potential climate change policies. *Journal of Sustainable Tourism*, 15(4), 351-368.

Berry, T. (1999). *The Great Work: Our Way into the Future*. New York: Bell Tower.

Blau, P. (1964). *Exchange and power in social life*. New York: John Wiley & Sons.

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Pathak Broome, N., Phillips, A., & Sandwith, T. (2013). *Governance of protected areas: From understanding to action*. Gland: IUCN.

Campbell, M., & Chung, E. (2022). Tending the Garden: Possibilities and Limitations of Developing Inclusive Environments in the Arts and Culture Sector. *Journal of Cultural Analysis and Social Change*, *7*(1).

Chim, K., Tunnicliffe, J., Shamseldin, A. Y., & Bun, H. (2021). Assessment of land use and climate change effects on hydrology in the upper Siem Reap River and Angkor Temple Complex, Cambodia. *Environmental Development*, *39*.

Dredge, D., & Whitford, M. (2011). Event tourism governance and the public sphere. *Journal of Sustainable Tourism*, 19(4-5), 479-499.

Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory*, 22(1), 1-29.

England, L. (2022). Cultural Industries and the Environmental Crisis. *Journal of Cultural Analysis and Social Change*, *7*(1), 08.

Falk, M., & Hagsten, E. (2023). A management perspective on threats to Cultural World Heritage Sites. *International Journal of Heritage Studies*, *29*(3), 167–183.

Goodwin, H., & Santilli, R. (2009). Community-based tourism: A success? *ICRT Occasional Paper*, 11, 1-37.

Gössling, S., & Peeters, P. (2015). Assessing tourism's global environmental impact 1900-2050. *Journal of Sustainable Tourism*, 23(5), 639-659.

Inglis, D. (2021). Towards a Sociology of Wine: The Power of Processes. *Journal of Cultural Analysis and Social Change*, *6*(2).

Lemos, M. C., & Agrawal, A. (2006). Environmental governance. *Annual Review of Environment and Resources*, 31, 297-325.

Liljeblad, J., & Oo, K. T. T. (2020). World Heritage Sustainable Development Policy & Local Implementation: Site Management Issues using A Case Study of Sri Ksetra at Pyu Ancient Cities in Myanmar. *Sustainable Development*, *28*(3), 1–10.

Liu, Y., Wang, Y., Dupre, K., & McIlwaine, C. (2022). The Impacts Of World Cultural Heritage Site Designation And Heritage Tourism On Community Livelihoods: A Chinese Case Study. *Tourism Management Perspectives*, *43*.

Loulanski, T. (2006). Revising the concept for cultural heritage: The argument for a functional approach. *International Journal of Cultural Property*, 13(2), 207-233.

Loy, D. R., & Goodhew, C. (2020). The Dharma of ecology: Buddhist contributions to environmental ethics. *Worldviews: Global Religions, Culture, and Ecology*, 24(3), 281-301.

Mitchell, J., & Muckosy, P. (2008). A misguided quest: Community-based tourism in Latin America. *Overseas Development Institute Opinion Paper*, 102, 1-2.

Norman, A. (2011). *Spiritual tourism: Travel and religious practice in Western society*. London: Bloomsbury Academic.

Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change*, 20(4), 550-557.

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.

Purwaningsih, E. (2021). Sustainability status assessment of Borobudur Temple. *E3S Web of Conferences*, 317, 05004.

Singh, R. (2019). Spiritual tourism and the conservation of sacred natural sites in Ladakh, India. *Journal of Heritage Tourism*, 14(2), 121-139.

Sunaryo, B. (2017). Policy and application of community-based tourism: Indonesian context. *Journal of Tourism Research*, 12(2), 245-260.

Tuan, B. van, & Hien, T. T. (2025). Silent Dissent and Embodied Memory: Reframing Community Participation in Vietnam's Peri-Urban Heritage. *Journal of Cultural Analysis and Social Change*, 61–76.

UNEP. (2019). *Single-use plastics: A roadmap for sustainability*. Nairobi: United Nations Environment Programme.

UNESCO & ICOMOS. (1991-2024). *Borobudur Conservation Reports*. Paris: UNESCO.

UNESCO. (n.d.). *Guide 2 Case Study: Angkor and The Tourism Development Strategic Plan 2012-2020*. UNESCO World Heritage Convention. Retrieved September 30, 2025, from https://whc.unesco.org/en/sustainabletourismtoolkit/guide2/angkor/

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Los Angeles: Sage Publications.

