A QUALITATIVE EXPLORATION OF ECOTOURISM DEVELOPMENT AND SUSTAINABILITY PRACTICES IN BORDER AREAS OF THE GREATER MEKONG SUBREGION

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Abstract: This study aims to explore and compare the current state of tourism and its associated challenges in the border areas of the Greater Mekong Subregion (GMS) and develop comprehensive sustainable ecotourism recommendations that integrate political, environmental, socio-cultural, and economic considerations, particularly within the context of rapid tourism growth and cross-border collaboration in the GMS with a particular focus on Xishuangbanna, China, and Luang Namtha, Laos. A qualitative approach was employed, utilizing documentary research, field observations, and in-depth interviews with 40 key informants from the government, community, and private sectors. The collected data were analyzed through content analysis using the Atlas.ti program. The findings reveal that while large-scale ecotourism initiatives in Xishuangbanna have promoted the conservation of natural and cultural resources, challenges remain regarding unequal economic distribution and the dominance of external operators. This has led to concerns about the marginalization of local communities, who often have limited decision-making power in tourism planning and development. In contrast, Luang Namtha's community-based tourism (CBT) model has successfully engaged local residents in cultural preservation and environmental conservation, fostering a sense of ownership and empowerment among the community. This approach has not only supported sustainable livelihoods but also strengthened local identity and cultural heritage. Both regions face shared challenges in achieving sustainable tourism development amidst rapid growth, including environmental degradation, pressure on local resources, and balancing economic benefits with cultural and ecological preservation. Moreover, the need for stronger cross-border cooperation and harmonized policies has emerged as a critical factor in addressing these challenges and promoting a more integrated and resilient ecotourism framework in the GMS. Stakeholders in both regions have emphasized the importance of capacity-building programs to equip local communities with the skills necessary for effective tourism management. The role of government support and clear regulatory frameworks has also been highlighted as essential for fostering sustainable practices and mitigating negative impacts. Ecotourism marketing strategies tailored to promote authentic cultural experiences while respecting local traditions have shown potential in attracting responsible travelers.

Keywords: Ecotourism, Greater Mekong Subregion, cross-border region, sustainable tourism, sustainability

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INTRODUCTION

Tourism has long been recognized as a significant economic engine globally. According to the Annual Research Report of the World Travel & Tourism Council, 2023 the travel and tourism sector contributed USD 9.9 trillion to the global economy, representing 9.1% of the world's GDP. In Southeast Asia, tourism contributed 8.3% to the region's economy, with significant growth in tourism arrivals post-pandemic, reaching USD 314.0 billion by the end of 2023 (World Travel & Tourism Council, 2024). The Greater Mekong Subregion (GMS), comprising Yunnan province and Guangxi province of China, Myanmar, Laos, Thailand, Cambodia, and Vietnam, is witnessing this surge. In Laos alone, tourism generated LAK 25.25 trillion (USD 1.5 billion) in 2023, highlighting its importance as a central pillar of economic development. The region's border areas are particularly significant as they benefit from cross-border tourism and trade, making them focal points for tourism growth. Ecotourism, which emphasizes environmental conservation, cultural preservation, and community benefits, has been increasingly promoted across the GMS as a sustainable alternative to mass tourism. However, rapid and unmanaged tourism growth in this region has also presented complex environmental and socio-economic challenges (Busbarat et al., 2021). These challenges demand new management approaches that ensure tourism growth aligns with sustainability objectives. Several critical issues specific to the GMS border areas need to be addressed to ensure that tourism development is both sustainable and equitable. These issues can be analyzed through three interconnected lenses: instrumental, political, and normative, which provide insights into practical solutions, regional cooperation, and sustainable tourism practices (Liu & Chamaratana, 2024a).

At the Instrumental Level, the practical question of "how" to manage tourism sustainably is paramount. In places like Luang Namtha, Lao PDR, community-based tourism (CBT) has shown success, but more structured approaches to tourism management are still needed. For example, in Laos, where tourism grows at 7.3% annually, increased

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infrastructure development, including hotels and transportation networks, is straining local ecosystems. Similarly, tourism infrastructure expansion in Myanmar has led to a 78.3% decline in environmental quality (Scopin et al., 2019). In China, rapid tourism growth and infrastructure expansion have also put immense pressure on the natural environment, making implementing Nature-Based Solutions (NbS) crucial to balancing tourism growth with environmental conservation. NbS, which leverages natural ecosystems to manage tourism pressures, can help preserve biodiversity and mitigate development impacts on local ecosystems (Scott et al., 2016).

At the Political Level, the focus shifts to "who" is involved in managing tourism and the importance of cross-border cooperation. Regional collaboration is essential for addressing GMS's shared environmental and cultural challenges. Regionalism highlights the role of political relationships and governance structures in shaping tourism development across borders. For example, in Yunnan province, China, cross-border cooperation with neighboring countries like Laos and Myanmar is crucial for managing shared ecosystems and ensuring that tourism development aligns with broader regional goals (Sofie et al., 2015). Similarly, in Luang Namtha, Lao PDR, coordination with neighboring regions in China and Thailand is essential for facilitating sustainable tourism growth by sharing resources and best practices.

At the Normative Level, the focus turns to "why" sustainable tourism is vital. The ethical foundation of Sustainable Tourism Development ensures that tourism growth does not come at the expense of environmental degradation or cultural commodification (Cheshmehzangi et al., 2021). For instance, while tourism has brought significant revenue to Laos, generating LAK 25.25 trillion (USD 1.5 billion), much of the revenue does not stay within local communities due to economic leakages, with larger operators capturing the bulk of the benefits (Germaine et al., 2022).

In Thailand, tourism generated THB 1.86 trillion (USD 53.5 billion) in 2023, but similar patterns of economic inequality persist (Fu et al., 2023). In Vietnam, for example, cultural tourism generated VND 682.65 trillion (USD 28.5 billion) in 2023, but the risk of cultural erosion remains a concern as traditions are modified to cater to tourist expectations (Dang, 2023). By aligning tourism practices with the principles of sustainable development, the GMS can ensure that tourism promotes economic growth and cultural heritage preservation.

If these challenges are not addressed, the long-term sustainability of tourism in the GMS will be compromised. Environmental degradation will erode the natural assets that form the foundation of ecotourism, leading to biodiversity loss. Economic inequalities may prevent local communities from fully benefiting from tourism growth, and unchecked cultural commodification will diminish the unique heritage that attracts tourists (Liu & Chamaratana, 2024b). While the GMS has experienced rapid tourism growth, particularly in border areas, a significant gap exists in understanding how this growth can be managed sustainably. Existing studies have often focused on the economic benefits of tourism, but few have comprehensively addressed the environmental and socio-cultural challenges accompanying this growth. Specifically, there is limited research on how NbS can be practically applied to mitigate the environmental impacts of tourism and how cross-border collaboration, guided by Regionalism, can enhance the sustainability of shared ecosystems.

This study addresses the research question: How can sustainable ecotourism be developed for the GMS's border areas, considering the region's unique environmental and socio-cultural contexts in the context of rapid tourism growth and cross-border collaboration? Research Objective: This research aims to assess the current state of tourism and its associated challenges in the GMS's border areas and develop comprehensive sustainable ecotourism recommendations that integrate political, environmental, socio-cultural, and economic considerations, particularly within the context of rapid tourism growth and cross-border collaboration in the GMS.

THEORETICAL FRAMEWORK

The theoretical framework for this study is constructed around three complementary perspectives: Nature-Based Solutions (NbS), Regionalism Theory, and Sustainable Tourism Development. These are chosen for their ability to collectively address the complex environmental, political, and ethical dimensions of ecotourism development in the GMS. NbS, a concept formalized by the International Union for Conservation of Nature (IUCN) in the early 2000s, provides a practical framework for using natural processes and ecosystems to tackle societal challenges, including those posed by tourism infrastructure and environmental degradation (Dorst et al., 2019). This approach aligns closely with the goals of ecotourism, which seeks to minimize ecological impact while enhancing biodiversity. In regions like the GMS, where rapid tourism growth places increasing pressure on natural resources, NbS offers valuable strategies for balancing development with conservation. At the political level, Regionalism Theory, as developed by scholars like Andrew Hurrell and Björn Hettne, provides a lens through which to analyze the governance structures and cross-border cooperation needed to manage shared environmental and cultural resources (Sitikarn & Kankaew, 2021).

Given the GMS's geographical and socio-political complexity, where countries like Laos, China, and Thailand share ecosystems and tourist flows, this theory helps understand the necessity of regional coordination in tourism planning and environmental conservation (Jamil & Puad, 2010). Regionalism highlights the importance of multi-state partnerships in fostering sustainable development across borders, especially in regions where ecosystems and tourist activities do not adhere to political boundaries (Kunavut et al., 2018). Sustainable Tourism Development offers the ethical foundation for this framework. Originating from Jost Krippendorf's work in the 1980s and later expanded by the World Tourism Organization (UNWTO), this theory emphasizes tourism's responsibility to balance economic growth with the preservation of environmental and cultural integrity (Cheshmehzangi et al., 2021).

This perspective is particularly relevant to the GMS, where the risk of cultural commodification and environmental degradation poses significant challenges. By integrating the principles of sustainable tourism, this study aims to ensure that tourism development does not sacrifice long-term ecological and socio-cultural health for short-term economic gain.

Together, these three theoretical perspectives, 1) NbS for practical environmental management, 2) Regionalism for political cooperation, and 3) Sustainable Tourism Development for ethical considerations, provide a comprehensive framework for examining the challenges and opportunities of ecotourism development in the GMS by addressing the "how," "who," and "why" of sustainable tourism, this framework offers a holistic approach to managing the region's unique environmental and socio-economic contexts, see as Figure 1.
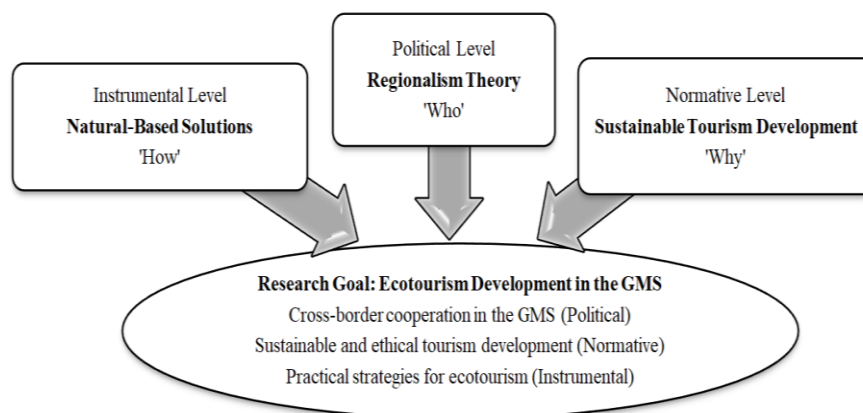
Figure 1. Integrated Structure of Theories and Research Goal

1. Instrumental level: nature-based solutions (nbs) in the gms

At the Instrumental Level, NbS provides a framework for addressing the environmental challenges associated with tourism growth. Combining into the tourism industry, NbS focuses on using natural processes and ecosystems to manage human-induced issues, habitat degradation, loss of biodiversity, and the strain placed on local ecosystems by tourism (Dorst et al., 2019; Scott et al., 2016). According to the International Union for Conservation of Nature, NbS is not a substitute for traditional conservation efforts but a complementary approach that integrates natural solutions with human development needs. In the GMS, where rapid tourism growth and infrastructure expansion pose a significant threat to local ecosystems, the principles of NbS provide a practical guide for managing tourism in ways that sustain both the environment and local communities.

According to Cohen-Shacham (2019), the key to the success of NbS is the adherence to eight principles that frame its operationalization can guide ecotourism development: 1) Conservation Alignment; 2) Integration with Other Solutions; 3) Context-Specific Design; 4) Societal Benefits and Equity; 5) Support for Biological and Cultural Diversity; 6) Landscape-Scale Implementation; 7) Balancing Economic Trade-offs; 8) Policy Integration and Adaptation. The eight principles of NbS provide a structured and flexible approach (Cohen-Shacham et al., 2019). In the context of ecotourism development in the GMS, these principles guide the sustainable integration of tourism with environmental conservation.

2. Political level: regionalism theory in the GMS

At the Political Level, Regionalism Theory provides a framework to understand the "who" of ecotourism management, especially in a region as politically interconnected in the GMS, for understanding the governance structures necessary to manage cross-border tourism development. As Toan Thanh Bui (2023) argues, regionalism emphasizes the importance of cooperation between neighboring nations in addressing shared environmental and socio-economic challenges. ASEAN's example shows regionalism is about increasing intra-regional trade or integration and using regional frameworks to support global connections and sustainable development strategies (Toan, 2023).

Also, to achieve a win-win practice, Cao (2024) advances regional governance structures that must enable seamless cooperation across borders, particularly for managing shared ecosystems like forests and rivers. In the context of the GMS, regionalism is crucial because the natural ecosystems that support ecotourism, such as forests and waterways, extend across national boundaries (GIAO et al., 2021). This necessitates collaborative governance to consistently implement sustainable practices across the region. Ji (2024) notes that regionalism allows countries to manage resources more effectively by pooling expertise, resources, and political will, thus creating a more coherent and efficient strategy for ecotourism management. Political collaboration between countries like China, Laos, and Thailand, within the context of China's Belt and Road Initiative (BRI), the infrastructure and trade cooperation are developing, essential for addressing transboundary issues exacerbated by tourism infrastructure projects (Beškovnik & Golnar, 2020).

According to Le and Ho (2024), regional cooperation is key to mitigating the environmental impacts of tourism while ensuring that economic benefits are distributed equitably across borders. Regional governance structures facilitate sustainable development and ensure that the cultural and environmental assets driving tourism are preserved for future generations (Le & Ho, 2024). Thus, combining successful regionalism practices in ecotourism development must adhere to several key principles: 1) Cross-Border Cooperation; 2) Resource Sharing and Integration; 3) Collaborative Governance; 4) Ensuring Economic Equity; 5) Preserving Cultural and Environmental Assets; 6) Regional Coordination of Infrastructure Projects (Cao et al., 2024; Ji, 2024). These principles ensure that tourism growth does not lead to environmental degradation or socio-economic inequality. In the GMS, applying these principles to developing ecotourism can help achieve a balanced approach to tourism that benefits all nations involved while preserving the region's natural and cultural heritage.

3. Normative Level: Sustainable Tourism Development (STD) in the GMS

At the Normative Level, STD offers a framework that addresses the ethical dimensions of tourism by emphasizing why sustainability must be prioritized. This perspective was first articulated by Jost Krippendorf (1982), who argued that tourism should serve economic interests and prioritize the well-being of host communities and the preservation of natural and cultural resources. His ideas have since been expanded by the United Nations World Tourism Organization (UNWTO, 2018), which formalized a global approach to STD, advocating for the balance between economic benefits and environmental and socio-cultural preservation (Hoang et al., 2022). In the GMS, applying sustainable tourism principles is critical, given the region's fragile ecosystems and rich cultural diversity. As Cheshmehzangi et al. (2021) emphasize, sustainable tourism development must protect local communities' cultural identities and environmental assets while fostering economic growth. Without careful management, tourism development risks commodifying culture and exploiting natural resources for short-term economic gain, leading to long-term harm to the environment and cultural integrity (Baros & Dávid, 2007). STD emphasizes several interconnected principles. Central to these is the need for community participation and empowerment in tourism-related decisions. As Mak et al. (2017) argue, involving local communities ensures they have control over the cultural and environmental assets upon which tourism relies.

Furthermore, resource efficiency is crucial in regions like the GMS, where the overuse of resources due to tourism infrastructure can lead to ecological degradation. Yoopetch et al. (2022) highlight that resource-efficient practices can help minimize the negative externalities of tourism, such as pollution and habitat destruction. Tourism can exacerbate inequalities without inclusivity in economic benefits, with large-scale operators capturing the most gains (Klinsrisuk & Pechdin, 2022). This principle of inclusivity aligns with environmental preservation, as development must not harm the ecosystems on which tourism depends. Equally important is preserving cultural integrity, a concern raised by Krippendorf, who noted that cultural commodification can undermine the authentic tourism experience.

This idea is echoed by Thipsingh (2015), who stresses the importance of respecting local cultures, especially in regions like the GMS, where ethnic minority traditions are integral to tourism (Thipsingh, 2015). Key Principles of STD in the GMS: 1) Community Participation and Empowerment; 2) Resource Efficiency; 3) Economic Inclusivity; 4) Environmental Preservation; 5) Cultural Integrity; 6) Long-Term Sustainability (Cheshmehzangi et al., 2021; Eshoo et al., 2018; Klinsrisuk & Pechdin, 2022; Mak et al., 2017; Yoopetch et al., 2022).

4. Interrelationship between the levels and theoretical framework

The three levels of this theoretical framework are interconnected, providing a holistic approach to managing the challenges of ecotourism development in the GMS. **NbS,** at the **Instrumental Level,** offers practical tools for minimizing ecotourism's environmental impacts. At the same time, **Regionalism Theory,** at the **Political Level,** emphasizes the importance of cross-border governance in managing shared ecosystems. **STD**, at the **Normative Level**, ensures that tourism growth is guided by ethical principles prioritizing long-term sustainability and local communities' well-being. The main principles of the three levels are shown in Table 1.

Table 1. Key Principles of NbS, Regionalism Theory, and STD in the GMS
NbS = Nature-Based Solutions, R = Regionalism Theory, STD = Sustainable Tourism Development

Instrumental Level - NbS	Political Level - Regionalism Theory	Normative Level - STD
NbS1, Conservation Alignment	**R1**, Cross-Border Cooperation	**STD1**, Community Participation and Empowerment
NbS2, Integration with Other Solutions	**R2**, Resource Sharing and Integration	**STD2**, Resource Efficiency
NbS3, Context-Specific Design	**R3**, Collaborative Governance	**STD3**, Economic Inclusivity
NbS4, Societal Benefits and Equity	**R4**, Ensuring Economic Equity	**STD4**, Environmental Preservation
NbS5, Support for Biological and Cultural Diversity	**R5**, Preserving Cultural and Environmental Assets	**STD5**, Cultural Integrity
NbS6, Landscape-Scale Implementation	**R6**, Regional Coordination of Infrastructure Projects	**STD6**, Long-Term Sustainability
NbS7, Balancing Economic Trade-offs		
NbS8, Policy Integration and Adaptation		

To form a cohesive theoretical framework for ecotourism development in border areas of the GMS, the principles from the NbS, Regionalism Theory, and STD are into the domains of Political**,** Economic**,** Socio-cultural, and Environmental dimensions, merging similar principles from each level. In the political dimension, cross-border cooperation and collaborative governance are essential for managing shared resources like forests, rivers, and cultural heritage that span national borders (Duy et al., 2020). Integrating policies at multiple governance levels ensures that sustainability strategies are implemented across all GMS countries, promoting joint efforts for ecotourism management (Jawabreh et al., 2023). In the economic dimension, the framework emphasizes the need for equitable distribution of tourism benefits across local communities and nations (Nigatu & Tegegne, 2021). Resource-sharing frameworks and economic inclusivity should guide policies to ensure that the benefits of tourism do not disproportionately favor larger operators or specific regions. Balancing economic trade-offs ensures long-term viability, allowing tourism to grow without harming the underlying ecosystems or cultural heritages (Bunruamkaew & Murayama, 2012).

From a socio-cultural perspective, involving local communities in decision-making is paramount. This dimension focuses on empowering local populations, ensuring their cultures are not commodified but preserved, and encouraging

tourism that reflects and respects cultural integrity. The environmental dimension emphasizes aligning tourism development with broader conservation efforts. Tourism strategies should be designed based on the specific environmental contexts of each region, ensuring that ecosystems are not disrupted (Adinolfi et al., 2023).

The landscape-scale implementation of environmental protection measures and long-term sustainability strategies ensure that natural resources are protected and maintained for future generations.

METHODOLOGY

The study employs a qualitative research approach to deeply understand the context of the current state of tourism and its associated challenges in the GMS's border areas and develop comprehensive sustainable ecotourism recommendations for this region.

1. Research Design

The study employs a qualitative research approach. Qualitative methods are particularly suited for this research, as they allow for the in-depth exploration of complex social, cultural, and environmental dynamics (Denzin & Lincoln, 2018). The specific methods used include documentary research, in-depth interviews, and field observations, with data triangulation ensuring the findings' reliability and depth (Patton, 2002).

1) Documentary Research: The study uses documentary research to contextualize the primary data collected from interviews and observations. This involves a systematic review of peer-reviewed journals, governmental reports, case studies, and relevant policy documents published between 2000 and 2024. This provides a theoretical foundation and historical context for the study, highlighting long-term trends in ecotourism development in border areas.

2) In-depth Interviews: Purposive sampling is employed to select 20 key informants in each location, for a total of 40 informants across Xishuangbanna and Luang Namtha. These interviews aim to capture detailed perspectives on the impacts and challenges of ecotourism development. As Yin (2019) notes, in-depth interviews allow for the collection of rich, qualitative data, revealing insights into the experiences of individuals directly involved in or affected by tourism development (Yin et al., 2019).

3) Field Observations: Field observations are systematically conducted at selected ecotourism sites in both Xishuangbanna and Luang Namtha to capture real-time data on environmental conditions and socio-cultural practices. These observations supplement the interview and documentary research data, ensuring a comprehensive understanding of the on-the-ground realities of the (Kiatkawsin et al., 2021).

2. Key Informants

A total of 40 key informants are selected across the two research areas, 20 from Xishuangbanna and 20 from Luang Namtha, to ensure a diverse representation of perspectives. Informants are divided into three main sectors: community, government, and private sectors, based on purposive sampling techniques (Babbie, 2010; Marshall, 1996). This selection strategy ensures the study captures a well-rounded view of ecotourism development in both locations (Xishuangbanna, China, and Luang Namtha, Lao PDR).

1) Community Sector: Four residents who have lived near ecotourism sites for over two years and within 10 kilometers of an ecotourism site are selected in both locations. Each location selects one community leader who has held leadership positions for at least two years and is involved in ecotourism projects. These individuals provide insights into the socio-cultural impacts of tourism and the long-term effects of ecotourism on the local community (Mitchell & Reid, 2001).

2) Government Sector: Each location includes one central government tourism official with at least two years of experience in tourism policy or management and has been involved in at least one major sustainable tourism project. Four local government officials have at least two years of involvement in local tourism development and have participated in cross-border tourism initiatives or other relevant projects. The central officials provide a top-down perspective on national tourism strategies, while local government officials offer insights into implementing these strategies at the regional and local levels (Hall, 1999).

3) Private Sector: In both Xishuangbanna and Luang Namtha, five tour operators with at least five years of experience that operate on both local and international scales and five repeat tourists have visited at least one ecotourism site or the same destination within the GMS at least twice in the last 12 months are selected. The tour operators provide professional insights into market trends and best practices in ecotourism, while the tourists offer feedback on the sustainability and quality of their experiences (Vimoltip & Krit, 2018). This selection of informants ensures a comprehensive understanding of the tourism ecosystem in both locations.

3. Research Areas

The research is conducted in two key areas, shown as Figure 2.

1) Xishuangbanna Dai Autonomous Prefecture in Yunnan Province, China, is known for its rich ethnic diversity and biological resources, making it an ideal location for studying the integration of ecotourism into urban planning. The region's tropical rainforests are recognized as a UNESCO Man and Biosphere Reserve, enhancing its status as an ecotourism destination (Jianchu, 2006). The prefecture covers an area of 19,124.5 square kilometers with a population of 1.196 million, including two counties (Menghai county and Mengla county) and one county-level city (Jinghong). Xishuangbanna's position as a border region adds complexity to its tourism dynamics, particularly regarding cross-border collaboration and cultural preservation (Jin et al., 2022).

2) Luang Namtha Province in northern Laos is another critical area for this study. Known for its protected natural areas, particularly the Nam Ha National Biodiversity Conservation Area, Luang Namtha is a critical site for ecotourism development in Laos. The region is home to various ethnic minority communities whose sustainable living practices are closely tied to their natural surroundings (Habito et al., 2024). As a border province, Luang Namtha plays a pivotal role in cross-border tourism between Laos and China, making it an ideal case for exploring how ecotourism can contribute to sustainable development while preserving cultural and environmental heritage (Lonn et al., 2018).

Figure 2. The GMS and Geographical Relationship between Xishuangbanna and Luang Namtha (Datasource: Baidu Map)

4. Data Collection

The data collection process includes the following methods:

1) Documentary Research: This study reviews relevant governmental reports, peer-reviewed journals, and case studies on ecotourism development published between 2000 and 2024.

2) In-depth Interviews: From April 2024 to October 2024, 40 in-depth interviews were conducted with key informants in Xishuangbanna and Luang Namtha. The research tool was in-depth interview guidelines, which focused on gathering qualitative data on the informants' experiences and perceptions of ecotourism development in the regions.

3) Field Observations: Systematic observations are carried out in both research areas to capture real-time data on tourism development's environmental and socio-cultural impacts. The research tool is an observation guideline. These observations complement the documentary research and interview data.

5. Data Analysis

Content analysis is employed to analyze the collected data, systematically organize it, and give deeper insights into the challenges and opportunities in ecotourism development in Xishuangbanna and Luang Namtha. The combination of documentary research, interviews, and field observations ensures the data is triangulated for greater reliability and validity.

RESULTS AND DISCUSSIONS
1. Current State of Tourism in the GMS Border Areas

The data collected from interviews, field observations, and documentary research revealed several trends in the current state of tourism in Xishuangbanna and Luang Namtha. Both regions have experienced rapid tourism growth, spurred by cross-border infrastructure development and increasing international tourism flows. However, this growth has not been uniform, and challenges remain in ensuring that tourism contributes to long-term sustainability.

Tourism growth in Xishuangbanna and Luang Namtha has been notably influenced by infrastructure improvements, particularly the introduction of the high-speed train linking the two regions as part of China's BRI. This development has resulted in a significant surge in tourist arrivals in Xishuangbanna. A tourism official who has five years of work experience from Xishuangbanna stated on 17th May 2024:

"The high-speed train has significantly expanded our tourism reach, bringing in visitors from across China and internationally. This has greatly benefited local businesses, especially in the hospitality and service industries. However, the rapid increase in visitors has also put immense pressure on our infrastructure. We are struggling to manage waste, transport, and maintain the cultural integrity of our sites amidst this growth."

Conversely, Luang Namtha has experienced growth primarily within the ecotourism sector, focusing on preserving its natural and cultural resources. A tourism officer from Luang Namtha highlighted 21st May 2024:

"Thanks to the train, we have seen more visitors, but our approach is focused on small-scale, sustainable tourism. We aim to preserve our natural beauty and cultural heritage, ensuring that tourism benefits local communities without compromising what makes Luang Namtha special. The visitor increase has been advantageous, especially for small businesses and community-based initiatives."

While tourism has contributed positively to the local economies, the rapid growth has exposed significant weaknesses in the infrastructure of both regions. Responses in Luang Namtha reported deficiencies in tourism-related infrastructure, particularly in accommodation and transportation. A resident who opened a shop in the tourism site of Luang Namtha observed on 25th June 2024:

"Our roads are poorly maintained, and we lack sufficient accommodations to meet the growing number of tourists. Tourism numbers fluctuate, and while it helps the economy, we worry about becoming overly dependent on tourism. If we don't address these issues with long-term solutions, we might end up worse off."

Environmental degradation emerged as one of the most pressing concerns. In both regions, the rapid expansion of tourism infrastructure, particularly hotels, roads, and recreational facilities, has contributed to habitat fragmentation and biodiversity loss. An environmental officer in Xishuangbanna noted on 27th Sep 2024:

"Tourism has led to a 78.3% decline in certain species of flora and fauna in areas of high tourist activity… We've noticed the impact on wildlife and forest areas as more tourists visit the conservation area".

Similarly, in Luang Namtha, the Nam Ha National Biodiversity Conservation Area has faced challenges, with concerns about unregulated tourism disrupting local ecosystems.

The reliance on natural resources to support tourism activities places unsustainable pressures on local ecosystems. For instance, the demand for fresh water in tourist resorts has led to resource shortages for local communities during peak tourism seasons in Xishuangbanna.

"Tourists take priority when it comes to water usage, which leaves locals struggling during the dry season," one resident who works as a driver and lives in the suburban community expressed on 29th July 2024.

Similar concerns were raised in Luang Namtha, where a local farmer commented that the expansion of tourism-related agriculture uses up water resources they rely on for their crops. Both regions are rich in ethnic diversity, and tourism has increasingly capitalized on these cultural resources. However, the interviews revealed concerns about the commodification of culture. In Xishuangbanna, respondents noted that the traditional Dai culture is under pressure, with one elder local stating that in April 2024, Dai village,

"Tourists expect a certain version of our culture, so we feel forced to adapt our practices to meet their expectations… Our traditional dances and customs are changing to fit what tourists want to see, which is not how they were meant to be."

The findings also indicate a gap in community participation in tourism planning. Despite tourism's growth, local communities in both regions feel marginalized in decision-making processes. In Xishuangbanna, only 20% of respondents felt they had any say in tourism planning and development, while in Luang Namtha, this figure was slightly higher, at 35%. This lack of participation undermines tourism's sustainability, as local communities are not empowered to manage their cultural and natural resources effectively (Mak et al., 2017)

While tourism has undoubtedly brought economic benefits, these gains are not evenly distributed. Large-scale tourism operators, often based outside the region, capture most of the profits in both Xishuangbanna and Luang Namtha. Local small-scale businesses and community-based tourism initiatives struggle to compete. A local vendor in Xishuangbanna expressed frustration on 8th August 2024,

"We are left with the scraps while the big hotels and tour companies make most of the money." Similarly, a homestay owner in Luang Namtha remarked, "We work hard to attract tourists, but the big operators get most of the business… We see tourists coming, but we don't see the money staying here. It goes back to the big cities or even overseas."

Economic leakages are a significant problem in both regions, particularly Luang Namtha, where up to 40% of tourism revenue leaves the local economy (Germaine et al., 2022). In Xishuangbanna, the figure is slightly lower but still significant, with 25% of tourism revenue flowing out of the region.

2. Integration of NbS with Ecotourism Development in the GMS Border Areas

The application of NbS in the tourism sector is still in its infancy in both regions. However, some positive examples emerged from the interviews. In Xishuangbanna, pilot projects focusing on the restoration of wetlands and the use of sustainable tourism infrastructure have shown promise. A government tourism official noted on 10th August 2024,

"We have started using eco-friendly materials in new tourism facilities, and the wetland restoration project is helping to mitigate some of the environmental damage caused by tourism."

In Luang Namtha, community-based tourism projects incorporating NbS, such as sustainable water management and reforestation, are gaining traction, although they remain limited in scale. Stronger policy frameworks are also needed to support the broader implementation of NbS in the tourism sector. Interviews with government officials revealed that while NbS is gaining recognition, it has yet to fully integrate into national tourism policies.

"We are aware of NbS, but we don't have the policy support or resources to implement it effectively," on 7th June 2024, said a policymaker who worked in the provincial tourism department in Xishuangbanna.

Cross-border cooperation on NbS remains weak, with respondents noting that political tensions between GMS countries often impede collaborative environmental efforts.

3. Cross-Border Cooperation and Regionalism in the GMS Border Areas

Cross-border cooperation remains challenging at the political level. Respondents from government sectors in China and Laos pointed to the need for more robust regional frameworks that facilitate collaboration on shared environmental and cultural resources. However, bureaucratic hurdles and differing political priorities often slow progress. Despite these challenges, there are promising signs of regional cooperation. In Luang Namtha, collaborative projects with Yunnan province, China, on sustainable tourism and environmental preservation are beginning to yield positive results. A Luang Namtha local tourism official who joined the local CBT project two years ago mentioned that on 23rd May 2024,

"We have agreements in place, but they take a long time to implement because of the different laws and regulations in each country… We want to collaborate more, but political obstacles are always in the way…Our joint projects with China are helping us manage tourism better, especially regarding conservation efforts."

These projects highlight the potential for regionalism to enhance tourism sustainability by pooling resources and expertise across borders (Ji, 2024).

4. Long-Term Sustainability in Sustainable Tourism Development STD

The findings highlight the need for more robust ethical guidelines in tourism development. Respondents emphasized the importance of ensuring that tourism aligns with STD principles, particularly those regarding environmental preservation and the protection of cultural integrity. A local leader in Xishuangbanna stated, "We want tourism that respects our culture and environment, not one that exploits it for short-term gain." Similarly, a community leader in Luang Namtha emphasized, "Tourism must benefit everyone, not just the big businesses."

The long-term sustainability of tourism in the GMS will depend on the successful integration of NbS, regional cooperation, and STD. These findings underscore the importance of developing policies that address the GMS's unique environmental, socio-cultural, and political contexts while fostering economic growth and protecting the region's rich natural and cultural resources.

CONCLUSIONS

This study explored the ecotourism development in the border areas of GMS, focusing on Xishuangbanna, China, and Luang Namtha, Laos. Analyzing both regions through a qualitative lens revealed that while tourism growth has brought economic opportunities, it has also posted significant political, environmental, socio-cultural, and economic challenges. The large-scale ecotourism initiatives in Xishuangbanna have spurred rapid growth, but unequal economic benefits and cultural commodification remain significant concerns. On the other hand, Luang Namtha's CBT model has successfully engaged residents in preserving cultural heritage and supporting environmental conservation. However, issues like waste management and over-reliance on external operators persist.

Both regions benefit from cross-border cooperation under the BRI, but greater policy integration and community involvement are needed to ensure sustainable growth. The implementation of NbS is still nascent, and more robust frameworks must be developed to balance tourism growth with environmental preservation and cultural integrity. Regional cooperation, while promising, requires more robust frameworks to overcome political and bureaucratic obstacles. Long-term sustainability will depend on the successful integration of NbS, STD, and regionalism, ensuring that tourism benefits are equitably shared across local communities without compromising the region's environmental and cultural assets.

Recommendations

According to the results and discussions, these recommendations are directed towards ecotourism management authorities, policymakers, local communities, and ecotourism operators to improve the model of ecotourism development in the border areas of the GMS:

- Local governments should improve infrastructure planning to address waste management, transportation, and the protection of cultural heritage sites to cope with tourism growth.
- Community involvement in tourism planning should be increased to ensure residents have a say in the development process and reduce cultural commodification.
- Policies should be created to support local small businesses and community-based tourism initiatives, ensuring that economic benefits are distributed more equitably.
- NbS should be integrated into tourism development to mitigate environmental degradation and protect local ecosystems.
- Regional cooperation in the GMS should be strengthened to address shared environmental and cultural challenges and facilitate cross-border tourism management.
- Policies should focus on aligning tourism with environmental preservation and cultural integrity to ensure long-term sustainability.

Implementing these recommendations can make ecotourism in the GMS a model for sustainable development, fostering economic growth while protecting the environment and preserving the region's unique cultural heritage. Collaboration among governments, local communities, and ecotourism operators is essential to achieving a balanced and sustainable ecotourism framework that benefits all stakeholders.

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