Cuadernos de Economía (2024) Volume 47, Issue 134, 27-37

Asociación Cuadernos de economía

Cuadernos de economía

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Sustainable Ecotourism Development Model in the Areas of the Greater Mekong Subregion: A Systematic Review

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Keywords:
Sustainable Ecotourism, Ecotourism Development Model, the Greater Mekong Subregion, Sustainable Development.

This systematic review explores the sustainable ecotourism development model within the Greater Mekong Subregion (GMS), focusing on Cambodia, China (Yunnan Province and Guangxi Zhuang Autonomous Region), Laos, Myanmar, Thailand, and Vietnam, aims to assess the main driving factors of ecotourism development and ecotourism's environmental, socio-cultural, and economic impacts in the GMS. This systematic review systematically evaluates literature published between 2002 and 2024 using Scopus and Google Scholar databases and employs thematic analysis to evaluate and analyze the data extracted from relevant literature systematically. The research addresses the question of the factors and impacts of ecotourism development in the GMS, focusing on the documented environmental impacts of ecotourism projects, the effects on local communities and cultural heritage, and the economic benefits and challenges. The findings reveal ecotourism's potential for fostering sustainable development while highlighting the need for strategic alignment with sustainable tourism development to optimize benefits and mitigate adverse effects. The study provides actionable insights and evidence-based recommendations for enhancing the GMS ecotourism model, aiming to inspire further research and practical application in the region's sustainable development efforts.

https://doi.org/10.32826/cude.v47i134.1404

Introduction

The concept of ecotourism was initially brought to light by Ceballos Lascurain, who serves as the Director General of the International Consultancy Program on Ecotourism (PICE). He also holds the position of Special Advisor on Ecotourism for both the International Union for Conservation of Nature (IUCN) and the United Nations World Tourism Organization (UNWTO). In 1983, ecotourism represented a form of sustainable tourism that emphasized the appreciation and conservation of natural environments while providing positive socio-economic benefits to local communities. In response to the ecological and environmental harm caused by conventional mass tourism, ecotourism rapidly drew attention from governments, scholars, and public figures globally. As reported by the International Ecotourism Society (TIES), ecotourism has emerged as the fastest-growing sector within the tourism industry in the 21st century. In Costa Rica, Ecuador, Nepal, Kenya, Madagascar, and Antarctica, ecotourism represents a significant portion of the gross domestic product and economic activity (Bunruamkaew & Murayama, 2012).

In the GMS, a region that encompasses Cambodia, China (Yunnan Province and Guangxi Zhuang Autonomous Region), Laos, Myanmar, Thailand, and Vietnam, ecotourism holds particular significance due to its ability to leverage the region's natural and cultural capital to foster inclusive economic growth. According to the Greater Mekong Subregion Tourism Strategy, in 2015, tourism provided direct employment for over 10.4 million workers in the GMS across various service and production sectors. Significant contributions to GMS economies come from tourism investments and key subsectors such as hospitality, retail, transportation, and leisure and recreational services that directly interact with tourists. To foster economic growth and mitigate income inequality, GMS countries are prioritizing investments in physical infrastructure and social services, encouraging the development of small and medium-sized enterprises, and enhancing the integration of regional value chains. The tourism industry in the GMS is both a major driver and beneficiary of these strategic initiatives. Within the GMS, renowned for its rich biodiversity and cultural diversity, tourism has emerged as a prominent economic driver. However, this growth is not without its challenges. Issues such as environmental degradation, cultural disruption, and infrastructural strains underscore the need for a meticulous examination of ecotourism's potential to foster sustainable development in the areas.

Academic interest in ecotourism research has gradually shifted from conceptual and developmental aspects to theoretical studies and practical applications, such as the impacts of ecotourism, community participation in ecotourism, and the environmental education functions of ecotourism, achieving substantial results and making significant contributions to the theoretical construction and practical development of ecotourism. This article, grounded in existing research, focuses on the demand for integrating ecotourism theory with practical application. It provides a comprehensive review of ecotourism research in GMS, from three dimensions: environmental, socio-cultural, and economic. The aim is to inspire further in-depth and optimized research on the GMS ecotourism model.

Literature Reviews

Global Ecotourism Development

Ecotourism development encapsulates a specialized form of sustainable tourism characterized by its explicit commitment to the preservation of natural environments, conservation of biodiversity, and the fostering of socio-economic benefits for local communities (Alramamneh & Abuanzeh, 2023; Dhami et al., 2014). At its core, ecotourism seeks to reconcile the dual objectives of providing immersive, educational experiences for tourists while safeguarding the ecological integrity of the destination (Kerimoğlu & Çıracı, 2008; Merza et al., 2022). This concept emphasizes responsible travel practices, aiming to minimize negative environmental impacts and promote a heightened awareness of environmental issues.

Ecotourism development is distinguished by its adherence to three fundamental principles: conservation, community involvement, and education (Hosseini et al., 2021). Conservation entails the protection of natural habitats, wildlife, and cultural heritage, ensuring their long-term viability for future generations. Community involvement emphasizes the active engagement of local inhabitants in the planning, operation, and benefits derived from tourism activities, thereby ensuring equitable distribution of economic gains and fostering a sense of ownership (Cáceres-Feria et al., 2021). Education is a cornerstone, aiming to enhance visitor awareness and understanding of the natural and cultural attributes of the destination, cultivating a sense of responsibility towards sustainable tourism practices (Almeida et al., 2021).

Ecotourism Development in the GMS

Ecotourism development in the GMS is guided by a multidimensional approach. This approach is grounded in the Environmental, Socio-Cultural, and Economic dimensions of sustainable tourism development. Scholars emphasize that a comprehensive assessment of sustainability necessitates the integration of these dimensions (Hassanzadeh et al., 2022; Weaver, 2005). The environmental dimension addresses the imperative of conserving natural resources and biodiversity, ensuring that ecotourism activities minimize environmental impact and contribute to the preservation of fragile ecosystems (Boruah et al., 2021). This dimension is pivotal in safeguarding the unique ecological heritage of the GMS, aligning with international calls for responsible and sustainable environmental practices in tourism.

Socio-cultural plays a crucial role in fostering community engagement and empowerment. It underscores the importance of involving local communities in the decision-making process, ensuring their active participation and equitable sharing of benefits. This dimension is integral in preserving cultural heritage and traditions, aligning with UNESCO's Sustainable Tourism Programme (UNESCO, 2019). By upholding the cultural identity of the GMS, this dimension contributes to the authenticity and distinctiveness of the ecotourism experience (Almeida et al., 2021). The Economic dimension of ecotourism development in the GMS border areas is fundamental for local economic growth, job creation, and poverty alleviation (Arsić et al., 2017). This dimension aligns with the recognized goals of sustainable tourism, emphasizing the potential of tourism to stimulate economic development (Xuan & Armstrong, 2019). By fostering economic opportunities and diversification, ecotourism development contributes to the overall economic resilience and prosperity of the region, which is particularly vital in areas with diverse cultural and environmental assets. The multidimensional framework of ecotourism development, encompassing the Environmental, Socio-Cultural, and Economic dimensions, provides a structured approach for assessing and guiding sustainable tourism initiatives in the border urban areas of the GMS. The interplay between the Environmental, Socio-Cultural,

and Economic dimensions in the research on Ecotourism Development in the Areas of the GMS forms a dynamic and interconnected framework that is essential for achieving sustainable outcomes.

Material And Methods

This section details the materials and methods utilized in the systematic review article, encompassing the study design, eligibility criteria, systematic review process, as well as data abstraction and analysis.

Study Design

Guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021), a systematic literature review was conducted to map the driving factors and impacts of ecotourism development and the ecotourism model in the GMS. Building on the primary research question outlined earlier, two specific research questions were developed and examined in this paper. These questions are:

RQ1: What are the documented environmental, socio-cultural, and economic impacts of ecotourism projects within the Greater Mekong Subregion?

RQ2: What are the driving factors of ecotourism development in the Greater Mekong Subregion?

This article systematically reviews and synthesizes existing literature on the impacts of ecotourism in the GMS to assess its contributions and challenges towards environmental sustainability, socio-cultural well-being, and economic development. Based on the systematic review findings, the final objective is to offer actionable insights and provide evidence-based recommendations for optimizing the ecotourism model in the GMS.

Data Collection

The keywords included “ecotourism”, “Greater Mekong Subregion,” and individual country names within the GMS. Boolean operators (AND, OR) were used to refine the searches and capture a wide range of relevant literature. A set of search strings was created by combining the identified keywords, which were then used to gather academic articles from the following databases: Scopus, and Google Scholar.

("Ecotourism") AND ("Thailand" OR "Lao" OR "Vietnam" OR "Cambodia" OR "Myanmar" OR "Guangxi" OR "Yunnan" OR "Greater Mekong Subregion")

Inclusion and Exclusion Criteria

The selection criteria for literature in this study were meticulously outlined to focus on ecotourism in the GMS. The year 2002 holds historical significance in developing ecotourism, as the United Nations declared it the International Year of Ecotourism. Then the included resources should be empirical or conceptual works that have undergone rigorous peer review, specifically journal articles, book chapters vetted by editorial committees, and doctoral theses endorsed by thesis committees, published between 2002 and 2024 to ensure that the findings were subjected to rigorous academic standards. The scope is confined to works in English to ensure clear comprehension and accessibility for analysis. However, the book series, entire books, conference proceedings, literature before 2002, non-English texts, or those that focus on regions outside the GMS were excluded from this paper, to maintain the study’s specificity and relevance. Finally, in line with the objectives that focus on ecotourism development in the areas of the GMS, only articles relevant to the subject matter were selected as presented in Table 1.

Table 1: The Inclusion and Exclusion Criteria.

Criterion	Inclusion	Exclusion
Type of Literature	Empirical or conceptual, peer-reviewed journal articles, book chapters in edited volumes, or doctoral dissertations with supervisory committees	Series of books, individual books, conference proceedings
Timeline	Between 2002 and 2024	<2002
Language	English	Non-English
Context	Articles focus on focus on ecotourism	Non-related to ecotourism
Countries and territories	GMS countries	Non-GMS countries

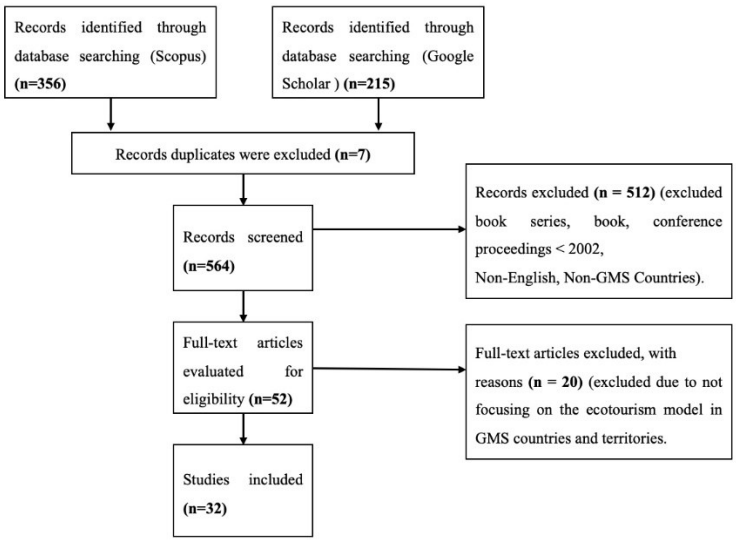

Figure 1: Flowchart of Included Articles in the Review from 2002 To 2024.

Records identified through database searching (Scopus: 356; Google Scholar: 215) were initially imported and screened for duplicates, resulting in the exclusion of 7 duplicates. This left a total of 564 records to be screened based on their titles and abstracts. Out of these, 512 records were excluded due to the exclusion. The remaining 52 full-text articles were carefully evaluated for eligibility. Ultimately, 20 articles were excluded for not focusing on the ecotourism model in GMS countries and territories. Consequently, 32 studies met the inclusion criteria and were included in the final review. The detailed process is illustrated in Figure 1.

Data Analysis

A thematic synthesis approach was employed to analyze the qualitative data (Thomas & Harden, 2008). The analysis drew on study findings and selected quotations, focusing on significant categories, themes, and codes. Data reliability was ensured by assessing the alignment and precision of the codes applied to the quotations (Ahn & Kang, 2018). This method ensured that the data were cohesive, thereby enhancing the depth, breadth, meaning, and reflective aspects of the concepts.

Table 2: Study Characteristics Included in Reviews.

No. study (years)	Country	Purpose	Methods Setting	Participant	Analysis
1. (Youdelis, 2013)	T	To understand the competitive disadvantages and contradictions inherent in ecotourism as a market-oriented conservation strategy.	Qualitative	30 KIs	Content Analysis
2. (Pimdee & Paksanondha, 2013)	T	To examine and contrast the promotional activities for ecotourism by Sub-district Administration Organizations (SAO) based on different variables.	Quantitative	800 samples	Descriptive statistics and inferential statistics (t-test)
3. (Bunruamkaew et al., 2012)	T	To evaluate land use and natural resources for planning future sustainable ecotourism sites utilizing GIS technology.	Qualitative	17 districts in Surat Thani province	The AHP method and raster-based format
4. (Auesriwong et al., 2015)	T	To start a collaborative, CBET development project at a travel destination.	Qualitative	1 district in Nong Khai Province	PAR Narrative
5. (Junead et al., 2021)	T	To evaluate the potential of ecotourism and determine stakeholder requirements for innovative ecotourism management, examine the behavior and preferences of Thai eco-tourists regarding the ecotourism management framework, and create products and innovative ecotourism activities for the Bang Pu community.	Mixed	385 samples, 50 KIs	Content Analysis, Multivariate Analysis
6. (Palmer & Chuamuangphan, 2018)	T	To understand the influence of governance on the participation of local communities in ecotourism	Qualitative	70 KIs	Content Analysis
7. (Mekhum & Torasa, 2020)	T	To investigate the relationship between knowledge sharing, information and communication technology (ICT), and ecotourism performance, with tourist attraction and digital management systems acting as mediators, among employees of ecotourism provider companies in Ranong province, Thailand.	Quantitative	300 samples	Partial Least Square
8. (Lerdsuchatavanich et al., 2016)	T	To identify key parameters for effective ecotourism management at Khao Krajome in Ratchaburi Province, Thailand.	Mixed	Multiple Stakeholders	Content Analysis, Multivariate Analysis
9. (Swangjang & Kornpiphat, 2021)	T	To assess ecotourism in a mangrove area and whether it conformed with sustainable tourism.	Mixed	400 samples, Stakeholders	Multivariate Analysis, SWOT Analysis
10. (Dungtripop & Srisuwan, 2021)	T	To develop guidelines for ecotourism cost management within community enterprises in Thailand.	Qualitative	58 KIs	PAR Narrative
11. (Boruah et al., 2021)	T	To explore the diversity of bird species in various green spaces within Valaya Alongkorn Rajabhat University (VRU), Thailand.	Qualitative	A total of 47 bird species	Observations
12. (Bui et al., 2023)	V	To explore the factors affecting sustainable ecotourism development in Phu Yen province within the context of the ASEAN Economic Community (AEC) integration.	Mixed Methods	10 KIs, 500 samples	Content Analysis, EFA, SEM

13. (Pham et al., 2021)	V	To suggest an alternative landscape value assessment method that evaluates different dimensions individually, instead of using a traditional composite indicator approach.	Mixed Methods	427 samples, 1 district	SEM, GIS
14. (To Quyen & Binh Tri, 2017)	V	To investigate the factors affecting the development of ecotourism in Phong Dien district, Can Tho city, Vietnam.	Quantitative	168 samples	Explorer Factor Analysis
15. (Dang, 2023)	V	To explore how ecotourism is represented in Vietnamese online advertisements and news media coverage.	Qualitative	30 websites, 17 Internet advertisings, 5 newspapers	Content Analysis
16. (Hoang et al., 2022)	V	To examine the relationships between electronic word-of-mouth (eWOM), social influence (SI), destination image (DI), tourist satisfaction (SAT), and ecotourism loyalty (EL).	Quantitative	499 samples	PLS-SEM model
17. (Tran & Walter, 2014)	V	To reveal how CBET impacts women's empowerment and the broader implications for gender equality and community development.	Qualitative	14 KIs	Content Analysis
18. (Nguyen, 2022)	V	To outline the potential, current status, strengths, weaknesses, opportunities, and challenges in the development of ecological tourism.	Mixed Method	210 samples, 1 destination	Descriptive statistics, SWOT Analysis
19. (Nguyen et al., 2022)	V	To explore the factors affecting sustainable ecotourism development in Phu Yen province within the context of ASEAN Economic Community (AEC) integration.	Mixed Method	Documentary, 63 samples,	AHP analysis, descriptive statistics
20. (Giao et al., 2021)	V	To examine the elements that impact the satisfaction of domestic tourists regarding the quality of ecotourism services.	Quantitative	457 samples	Multiple regression analysis
21. (Eshoo et al., 2018)	L	To evaluate the effectiveness of a direct payments approach in ecotourism for reducing illegal hunting and wildlife trade in Nam Et-Phou Louey National Protected Area (NPA).	Qualitative	9 villages	Narrative
22. (Germaine et al., 2022)	L	To understand the role of landscapes in ecotourism development, specifically in the Nam Ha National Protected Area (NPA) in Northern Laos.	Qualitative	606 tourist reviews on TripAdvisor	Content Analysis
23. (Roche, 2009)	L	To identify the challenges of ecotourism development of northern Laos.	Review	Documentary	Narrative
24. (Lonn et al., 2019)	C	To determine the effectiveness of the Chambok CBET program in Cambodia for forest conservation by comparing forest cover maps and analyzing local community perceptions.	Mixed Method	174 samples, 6 KIs	Content Analysis, Multivariate Analysis
25. (Kim et al., 2019)	C	To assess the factors affecting local people's participation in ecotourism and how ecotourism contributes to their livelihood.	Quantitative	237 samples	Logistic regression and ordinary least square (OLS)
26. (Nakahata, 2003)	C	To give an overview, prospects, and potentials of the Tonle Sap Lake for ecotourism.	Qualitative	Tonle Sap Lake area	Content Analysis
27. (Jensen, 2017)	C	To analyze how different scales and domains of environmental infrastructure and knowledge intersect and influence each other in the Mekong River Basin.	Qualitative	Documentary, Observation	Narrative
28. (Reimer & Walter, 2013)	C	To understand how CBET can contribute to environmental conservation, cultural preservation, and the improvement of local livelihoods.	Qualitative	10 KIs	Content Analysis
29. (Lonn et al., 2018)	C	To evaluate the contribution of CBET to household income and livelihood changes.	Mixed Method	173 samples, 6 KIs	Multivariate Analysis, Content Analysis

30. (Liu & Cheng, 2019)	G	To analyze and propose construction modes for ecological civilization driven by ecotourism in Guangxi.	Qualitative	5 counties	Narrative
31. (Brandt et al., 2012)	Y	To assess changes in forest types, with a particular focus on old-growth forests, within the biodiversity hotspot of northwest Yunnan.	Qualitative	1 community	Narrative
32. (Kim et al., 2023)	Y	To investigate the relationship between ecotourism motivation (EM), satisfaction (SA), place attachment (PA), and environmentally responsible behavior intention (ER) among camping tourists.	Quantitative	400 samples	Confirmatory factor analysis (CFA) and structural model analysis

Note(s): T = Thailand, V = Vietnam, L = Lao PDR, C = Cambodia, M = Myanmar, G = Guangxi, China, Y = Yunnan, China, KIs = key informants, PAR = Participatory Action Research, CEBT = Community-based Ecotourism, EFA = Exploratory Factor Analysis, SEM = Structural Equation Modeling

Results and Discussion

This review aims to integrate the findings from studies on ecotourism development in the GMS. Out of the 32 articles that met our inclusion criteria, 14 were qualitative studies, 7 were quantitative, 10 employed mixed methods, and one was a review. The thematic analysis highlighted details regarding the authors, country of study, setting, participants, and methods of analysis. Refer to Table 2 for more information. Table 3 presents themes across included studies, which are of the impacts and driving factors of ecotourism development across various studies conducted in the GMS. It categorizes the studies by their documented environmental, socio-cultural, and economic impacts, as well as the environmental, socio-cultural, and economic driving factors. For instance, several studies (e.g., studies 1, 10, 14, 18) highlight comprehensive impacts across all three dimensions, indicating a holistic approach to ecotourism development. In contrast, other studies focus on specific aspects, such as study 11, which emphasizes environmental impacts and driving factors.

Table 3: Themes Across Included Studies.

No	Impacts			Driving Factor		
	Environmental	Socio-cultural	Economic	Environmental	Socio-cultural	Economic
1	P	P	P			
2		P	P			
3	P	P		P		
4		P	P		P	
5		P	P			P
6		P			P	
7			P			P
8	P	P		P		
9	P		P			P
10	P	P	P		P	P
11	P			P		
12	P	P	P		P	P
13	P	P		P	P	
14	P	P	P		P	P
15	P	P		P		
16		P	P			P
17	P	P	P		P	P
18	P	P	P		P	P
19	P	P	P		P	P
20		P	P		P	P
21	P	P				
22		P		P	P	
23	P		P			
24	P	P		P		P
25				P	P	P
26	P		P			
27		P		P	P	
28	P		P			P
29	P			P	P	P
30	P	P		P	P	
31	P		P		P	
32	P		P	P		P

The Impacts of Ecotourism Development on Environmental, Socio-Cultural, and Economic Dimension in the GMS Areas

Ecotourism aims to balance tourism development with environmental conservation. For instance, the Banlaem Community Enterprise in Thailand faced challenges with mangrove encroachment but implemented mangrove planting activities to restore degraded fishing areas (Dungtripop et al., 2021), as noted:

The organization adopted strategies to promote mangrove

planting activities, mud spa treatment, and tourist communication using electronic word of mouth (eWOM) on social networking platforms…Ecotourism is a meaningful tool for the natural conversation in the destination.

Similarly, Bunruamkaew et al. (2012) observed that tourism activities could lead to environmental degradation, such as deforestation and reduced water flows, highlighting the need for careful management. In Vietnam, the Phong Dien district's natural resources, such as vast rivers and gardens, provide a strong foundation for ecotourism but also face environmental challenges from tourism development (Fernández et al., 2022; To Quyen et al., 2017). The Chambok CBET program in Cambodia effectively reduced deforestation, demonstrating the positive environmental impacts of community-based ecotourism (Lonn et al., 2019).

Ecotourism can enhance socio-cultural development by promoting local participation and preserving cultural heritage. The community-based ecotourism in Sangkhom District, Thailand, empowered local residents to participate in tourism planning and decision-making, thereby strengthening social and human capital (Sadykova et al., 2022; Seemann & Antweiler, 2020). In Pattani, Thailand, the alignment of tourism activities with Islamic principles ensured cultural sensitivity and community benefits (Junead et al., 2021), they reported:

The service is also offered by a gracious host in line with Pattani Provinc''s long-standing motto: "The beautiful city of three cultures with an excellent Halal Center, where people embrace faith and natural beauty, Pattani, the happy Southern Region." One of the communities rich in tourism resources and showcasing the unique, robust lifestyle of Pattani is Bang Pu Village, a 100 percent indigenous Muslim community located by the beach…To enhance tourism, villagers are encouraged and supported to organize accommodations that provide immersive experiences in Muslim culture, along with establishing appropriate rules and regulations.

In Laos, Palmer et al. (2018) highlighted the importance of local governance and participation in ecotourism projects, which helped preserve cultural practices while providing economic benefits. Roche (2009) noted that in Luang Namtha province, the involvement of ethnic minorities in ecotourism projects helped improve their livelihoods and supported forest conservation.

The economic benefits of ecotourism are substantial, contributing to income generation and employment. For instance, the Banlaem Homestay in Thailand experienced economic improvement due to increased tourist visits and the establishment of local enterprises (Dungtripop et al., 2021; Li et al., 2024). In the Mekong Delta, Vietnam, ecotourism activities significantly boosted the local economy (Giao et al., 2021). Pimdee et al. (2013) noted that the promotion behavior of Sub-district Administration Organization members in Thailand positively influenced the conservation of tourism sites, contributing to economic and environmental sustainability:

It has increased the social and economic benefits or directly and indirectly distributed the various benefits to the local community to develop the country to be a society of sustainable happiness.

And in the other hand, the Chambok CBET program in Cambodia provided modest cash benefits to local households, although the income inequality among members was higher compared to other sources (Lonn et al., 2019; Pham & Tran, 2024).

Overall, ecotourism in the GMS has shown substantial positive impacts across environmental, socio-cultural, and economic dimensions, despite some challenges in implementation and equitable benefit distribution.

The Driving Factors of Ecotourism Development on Environmental, Socio-Cultural, and Economic Dimension in the GMS Areas

The rich biodiversity and natural landscapes in the GMS serve as key environmental drivers for ecotourism. In Thailand, the Valaya Alongkorn Rajabhat University (VRU) campus's green spaces support diverse bird species, which attract bird-watching tourists (Lee & Du Preez, 2016). Similarly, the mangrove forests and diverse wildlife in the Mekong Delta offer unique ecotourism experiences (Giao et al., 2021). In Yunnan and Guangxi, the natural beauty and biodiversity of these regions provide a strong basis for ecotourism, although detailed studies specific to these regions were not included in the reviewed documents

Socio-cultural drivers include the preservation of cultural heritage and community involvement. The success of ecotourism in Pattani, Thailand, is partly due to the strong cultural identity and community participation in tourism planning and management (Junead et al., 2021). Additionally, the integration of cultural and historical significance in tourism activities enhances their attractiveness. As noted (Dungtripop et al., 2021):

It reflects that tourism focusing on traditional local lifestyles, unique environments, and culture is increasingly popular among tourists… This study area appears to have many potential attributes that can be explored and utilized for successful ecotourism development. For example, it is rich in nature, history, and culture which makes it a favorite destination for various international tourists.

Economic drivers for ecotourism involve the potential for income generation and employment. In the Mekong Delta, Vietnam, the development of tourism infrastructure and services has significantly boosted the local economy (Giao et al., 2021). Community enterprises in Thailand, such as the Banlaem Homestay, have also seen economic benefits from ecotourism.

Ecotourism Policy and Management in the GMS Areas

It's important to integrate national tourism policies with local interests to initiate community-based ecotourism planning (Auesriwong et al., 2015; Gao & Huang, 2024). They suggest that aligning policies at different administrative levels can help ensure that tourism development benefits both the environment and local communities. Similarly, To Quyen et al. (2017) discuss the role of government policies in promoting ecotourism in the Phong Dien district of Can Tho City, Vietnam, where the government has focused on developing orchards and eco-districts as part of its tourism strategy.

It highlights the success of the Nam Ha Ecotourism Project in Luang Namtha, Laos, which involved local communities in managing tourism activities and protecting forest biodiversity. This project demonstrates how community-based management can lead to both environmental conservation and economic benefits for local residents (Roche, 2009). Eshoo et al. (2018) demonstrate the effectiveness of a direct payments approach in ecotourism, linking financial benefits to wildlife sightings and reducing illegal hunting in Laos. This approach incentivizes local communities to engage in conservation activities by providing them with a direct economic benefit. Lerdsuchatavanich et al. (2016) identify significant challenges in the overuse of water resources and waste generation from tourism activities, which highlight the need for stringent environmental regulations and effective waste management practices. Dungtripop et al. (2021) discuss the challenges faced by community enterprises in managing costs effectively due to a lack of professional accounting knowledge, which can hinder the sustainability of ecotourism ventures.

The article identified seven factors influencing the development of ecotourism in Phong Dien District, such as staff competence, tangible factors, assurance elements, trust factors, local specialty factors, facility and infrastructure factors, and responsiveness factors (To Quyen et al., 2017). These findings underline the importance of comprehensive management strategies that address various aspects of tourism services. Giao et al. (2021) propose a model for factors affecting domestic tourist satisfaction with ecotourism services in the Mekong Delta. Their findings emphasize the importance of infrastructure, nature destination landscape, transportation, food and beverage services, security and safety, and tour guide quality. These factors highlight the need for coordinated efforts to enhance service quality and ensure visitor satisfaction. As suggested by To Quyen et al. (2017):
Local guide teams with cultural knowledge and professional skills can enhance the tourist experience and ensure that visitors receive accurate information about the local environment and culture
And to avoid environmental degradation, regulations should be put in place to control the construction of tourism facilities. For example, ensuring that accommodations maintain the rustic nature of eco-villages while providing necessary amenities can balance development and conservation (Roche, 2009). Regular inspections for safety, food hygiene, and waste disposal, along with training programs for local businesses, can help maintain high standards in tourism services. Eshoo et al. (2018) suggest that such measures can reduce negative environmental impacts and enhance the overall sustainability of ecotourism projects.
The sustainable development of ecotourism in the GMS requires a comprehensive approach that balances environmental, socio-cultural, and economic factors. Effective policy integration and sustainable management practices are essential to address the challenges and leverage the opportunities associated with ecotourism.

Ecotourism Development Opportunities and Challenges in the GMS Areas

Opportunities for ecotourism development lie in enhancing community participation, improving infrastructure, and promoting sustainable practices. Developing unique tourism activities and local products can attract more tourists and generate additional income. Integrating cultural and environmental education into tourism experiences can also enhance their value and sustainability (Boruah et al., 2021). And also, direct payments linked to wildlife sightings can effectively incentivize conservation efforts and reduce illegal hunting in protected areas.
Challenges in ecotourism development include environmental degradation, inadequate infrastructure, and limited community participation. Lerdsuchatavanich et al. (2016) identified the overuse of water resources and waste generation from tourism activities as significant challenges. The lack of professional accounting knowledge among community enterprises also hampers effective cost management (Dungtripop et al., 2021). And impact of the growing rubber industry in Luang Namtha, Laos, threatens the balance achieved through ecotourism efforts and poses risks to forest conservation (Roche, 2009).
By addressing the challenges and leveraging the opportunities, ecotourism can significantly contribute to the conservation of natural resources, the preservation of cultural heritage, and the economic well-being of local communities.

Ecotourism Development Model in the GMS Areas

The ecotourism development model for the GMS emphasizes the need for an integrated approach that balances environmental conservation, socio-cultural preservation, and economic development. Effective policy and management are the keystones that hold this model together, ensuring that all activities are sustainable and beneficial to local communities.
By addressing environmental impacts, empowering communities, preserving cultural heritage, and creating economic opportunities, this model promotes a holistic approach to ecotourism. Sustainable policies and management practices ensure that these benefits are maintained in the long term, providing a resilient framework for the future of ecotourism in the GMS. This comprehensive model can serve as a guide for policymakers, tourism developers, and local communities striving to achieve sustainable tourism development in the region.

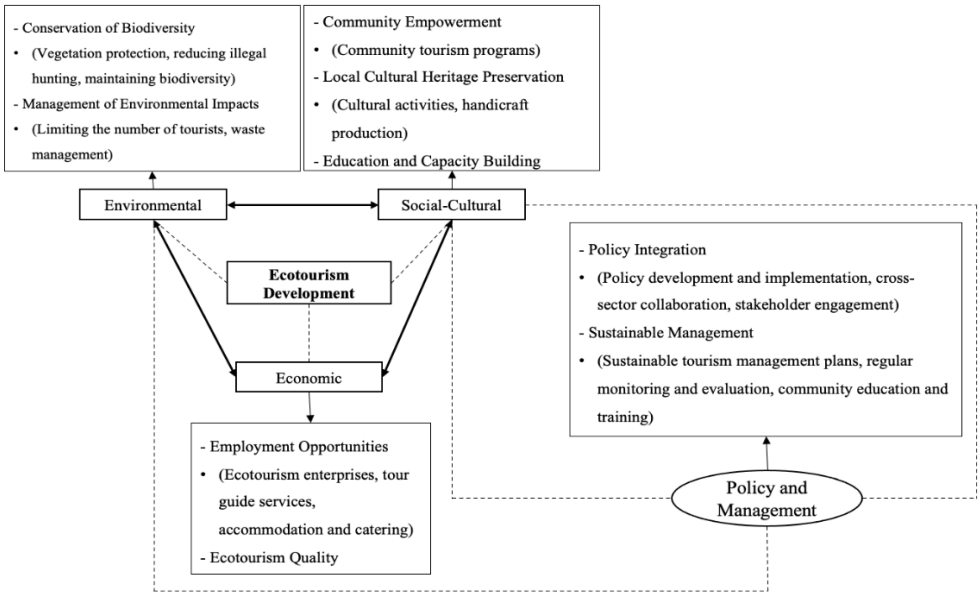

Figure 2: Ecotourism Development Model in the GMS.

The ecotourism development model for the GMS offers several key advantages due to its comprehensive and integrated approach. It balances environmental conservation, socio-cultural preservation, and economic

development by incorporating policy and management as central elements. The model emphasizes biodiversity protection and environmental impact management, ensuring sustainable use of natural resources. Community involvement and cultural heritage preservation empower local populations and enhance the authenticity of the tourist experience. Economically, the model creates employment opportunities and promotes infrastructure development, fostering local economic growth. Effective policy integration and sustainable management practices ensure that tourism activities are regulated, monitored, and continuously improved. By addressing environmental degradation, and infrastructure inadequacies, and promoting community education, the model tackles challenges while leveraging opportunities for unique tourism activities and improved visitor experiences. Overall, this model provides a robust framework for sustainable ecotourism development, yielding significant environmental, social, and economic benefits.

Limitations and Future Scope

While this systematic review provides a comprehensive analysis of sustainable ecotourism development in the GMS, several limitations must be acknowledged.

The review primarily focuses on specific regions within the GMS. However, variations in local contexts and ecological conditions may limit the generalizability of findings across the entire subregion. And there is no article to show about the data in Myanmar. The inclusion criteria restricted the review to English-language publications. This may have led to the exclusion of relevant studies published in other languages, potentially introducing a language bias. The review spans literature published between 2002 and 2024. While this provides a broad temporal perspective, it may exclude recent developments and emerging trends in ecotourism that are not yet documented in the literature.

Despite these limitations, the review identifies several avenues for future research and development in sustainable ecotourism within the GMS. Future research should include longitudinal studies to track the long-term impacts of ecotourism initiatives on environmental, socio-cultural, and economic dimensions. Such studies can provide deeper insights into the sustainability of ecotourism practices over time. And detailed case studies focusing on specific locales within the GMS can offer nuanced understandings of how local contexts influence the success and challenges of ecotourism development. Comparative studies between different regions can also highlight best practices and transferable strategies. Investigating the impact of emerging trends, such as digital tourism marketing, climate change adaptation strategies, and post-pandemic tourism recovery, can help adapt and evolve ecotourism models to meet contemporary challenges.

Future research is going to evaluate the effectiveness of specific policies and management practices in promoting sustainable ecotourism, such as China's Belt and Road Initiative (BRI). This can guide policymakers in refining and implementing strategies that balance conservation with community and economic benefits.

Acknowledgments

This systematic review constitutes a significant part of the doctoral dissertation in the Development Science program, Faculty of Humanities and Social Sciences, Khon Kaen University, Thailand, entitled "Ecotourism Development in the Border Urban Areas of the Greater Mekong Subregion within the Context of China's Belt and Road Initiative".

References

Alramamneh, I. M., & Abuanzeh, A. (2023). International and National Procedural Framework for Combating Cybercrime. *International Journal of Cyber Criminology, 17*(2), 330-349. Retrieved from https://cybercrimejournal.com/menuscript/index.php/cybercrimejournal/article/view/256

Ahn, E., & Kang, H. (2018). Introduction to systematic review and meta-analysis. *Korean Journal of Anesthesiology, 71*(2), 103-112. doi: https://doi.org/10.4097/kjae.2018.71.2.103

Almeida, F., Buzady, Z., & Ferro, A. (2021). Exploring the role of a serious game in developing competencies in higher tourism education. *Journal of Hospitality, Leisure, Sport & Tourism Education, 29*, 100347. doi: https://doi.org/10.1016/j.jhlste.2021.100347

Arsić, S., Nikolić, D., & Živković, Ž. (2017). Hybrid SWOT-ANP-FANP model for prioritization strategies of sustainable development of ecotourism in National Park Djerdap, Serbia. *Forest Policy and Economics, 80*, 11-26. doi: https://doi.org/10.1016/j.forpol.2017.02.003

Auesriwong, A., Nilnoppakun, A., & Parawech, W. (2015). Integrative participatory community-based ecotourism at Sangkhom District, Nong Khai province, Thailand. *Procedia Economics and Finance, 23*, 778-782. doi: https://doi.org/10.1016/S2212-5671(15)00529-8

Boruah, I., Hasin, S., Popradit, A., Sawasdee, V., & Cheentam, S. (2021). Biodiversity of birds in urban green space for support ecotourism activities in Valaya Alongkorn Rajabhat University Thailand. *Journal of Environmental Management and Tourism, 12*(4), 1131-1138. doi: https://doi.org/10.14505//jemt.v12.4(52).25

Brandt, J. S., Kuemmerle, T., Li, H., Ren, G., Zhu, J., & Radeloff, V. C. (2012). Using Landsat imagery to map forest change in southwest China in response to the national logging ban and ecotourism development. *Remote Sensing of Environment, 121*, 358-369. doi: https://doi.org/10.1016/j.rse.2012.02.010

Bui, T. T., Nguyen, T. Q., & Bui, P. T. (2023). Sustainable Ecotourism Development in the Context of ASEAN Economic Community Integration: The Study of Phu Yen Province, Vietnam. *JSMS 13*(4), 312-330. doi: https://doi.org/10.33168/JSMS.2023.0419

Bunruamkaew, K., & Murayama, Y. (2012). Land use and natural resources planning for sustainable ecotourism using GIS in Surat Thani, Thailand. *Sustainability, 4*(3), 412-429. doi: https://doi.org/10.3390/su4030412

Cáceres-Feria, R., Hernández-Ramírez, M., & Ruiz-Ballesteros, E. (2021). Depopulation, community-based tourism, and community resilience in southwest Spain. *Journal of Rural Studies, 88*, 108-116. doi: https://doi.org/10.1016/j.jrurstud.2021.10.008

Dang, T. K. P. (2023). Green nature or green fantasies: Representations of ecotourism in Vietnam. *Sustainability, 15*(5), 4601. doi: https://doi.org/10.3390/su15054601

Dhami, I., Deng, J., Burns, R. C., & Pierskalla, C. (2014). Identifying and mapping forest-based ecotourism areas in West Virginia–Incorporating visitors' preferences. *Tourism Management, 42*, 165-176. doi:

https://doi.org/10.1016/j.tourman.2013.11.007
Dungtripop, W., & Srisuwan, P. (2021). Cost management of ecotourism programs: A case study of the community enterprises in Thailand. *The Journal of Asian Finance, Economics and Business, 8*(7), 181-193. doi: https://doi.org/10.13106/jafeb.2021.vol8.no7.0181
Eshoo, P. F., Johnson, A., Duangdala, S., & Hansel, T. (2018). Design, monitoring and evaluation of a direct payments approach for an ecotourism strategy to reduce illegal hunting and trade of wildlife in Lao PDR. *PloS One, 13*(2), e0186133. doi: https://doi.org/10.1371/journal.pone.0186133
Fernández, M. F., Mendoza Reyes, U., Rodríguez Calle, D. M., & Aitken, H. G. W. (2022). A Review of Logistics Management and Service Quality in Peruvian Firms. *International Journal of Operations and Quantitative Management, 28*(3), 94-110. Retrieved from https://submissions.ijoqm.org/index.php/ijoqm/article/view/141
Gao, S., & Huang, J.-H. (2024). The Relationship Between College Teachers' Perceived Servant Leadership and Teachers' Organisational Citizenship Behaviour: The Mediating Effect of Teachers' Psychological Capital. *Eurasian Journal of Educational Research, 110*(110), 268-280. Retrieved from https://ejer.com.tr/manuscript/index.php/journal/article/view/1673
Germaine, M.-A., Ducourtieux, O., Orban Stone, J., & Cournet, X. (2022). Landscapes as drivers of ecotourism development: a case study in Northern Laos. *Canadian Journal of Development Studies/Revue canadienne d'études du développement, 43*(3), 370-392. doi: https://doi.org/10.1080/02255189.2022.2029734
Giao, H. N. K., Vuong, B. N., Phuong, N. N. D., & Dat, N. T. (2021). A model of factors affecting domestic tourist satisfaction on eco-tourism service quality in the Mekong Delta, Vietnam. *Geo Journal of Tourism and Geosites, 36*(2spl), 663-671. doi: https://doi.org/10.30892/gtg.362spl14-696
Hassanzadeh, Z., Mahdavi, I., Tajdin, A., & Fazlollahtabar, H. (2022). Designing a Sustainable Logistics Model with a Heterogeneous Collaboration Approach. *Operational Research in Engineering Sciences: Theory and Applications, 5*(3), 194-209. doi: https://doi.org/10.31181/oresta221122151h
Hoang, S., Nguyen, D., & Pham, M. (2022). Factors Affecting Ecotourism Loyalty With the Moderating Role of Social Influence-Empirical Evidence In Vietnam. *GeoJournal of Tourism and Geosites, 43*(3), 946-954. doi: https://doi.org/10.30892/gtg.43314-908
Hosseini, S. M., Paydar, M. M., & Triki, C. (2021). Implementing sustainable ecotourism in Lafour region, Iran: Applying a clustering method based on SWOT analysis. *Journal of Cleaner Production, 329*, 129716. doi: https://doi.org/10.1016/j.jclepro.2021.129716
Jensen, C. B. (2017). Mekong Scales: Domains, Test Sites, and the Uncommons. *Anthropologica, 59*(2), 204-215. doi: https://doi.org/10.3138/anth.59.2.t03
Junead, J., Ngamniyom, A., & Manirochana, N. (2021). Guidelines for Creative Ecotourism Management of Bang Pu Community, Pattani Province, Thailand. *Turkish Journal of Computer and Mathematics Education, 12*(8), 2369-2380. Retrieved from https://turcomat.org/index.php/turkbilmat/article/view/3711/3187
Kerimoğlu, E., & Çıracı, H. (2008). Sustainable tourism development and a governance model for Frig Valley. *A| Z ITU Journal of the Faculty of Architecture, 5*(02), 22-43. Retrieved from https://www.az.itu.edu.tr/index.php/jfa/article/view/585
Kim, K., Wang, Y., Shi, J., Guo, W., Zhou, Z., & Liu, Z. (2023). Structural relationship between ecotourism motivation, satisfaction, place attachment, and environmentally responsible behavior intention in nature-based camping. *Sustainability, 15*(11), 8668. doi: https://doi.org/10.3390/su15118668
Kim, M., Xie, Y., & Cirella, G. T. (2019). Sustainable transformative economy: Community-based ecotourism. *Sustainability, 11*(18), 4977. doi: https://doi.org/10.3390/su11184977
Lee, D. E., & Du Preez, M. (2016). Determining visitor preferences for rhinoceros conservation management at private, ecotourism game reserves in the Eastern Cape Province, South Africa: A choice modeling experiment. *Ecological Economics, 130*, 106-116. doi: https://doi.org/10.1016/j.ecolecon.2016.06.022
Lerdsuchatavanich, P., Pradatsundarasar, A.-o., Pattanakiat, S., & Utarasakul, T. (2016). Ecotourism is a significant tool for sustainable tourist attraction: A case study of Khao Krajome, Ratchaburi province, Thailand. *Journal of Environmental Management & Tourism, 7*(3), 481-492. Retrieved from https://www.ceeol.com/search/article-detail?id=471834
Li, Z., Jusoh, N. B., Niu, X., Liu, Y., & Zhou, J. (2024). Research on the Relationship Between Physical Education and Physical Health in Primary and Secondary Schools in Malaysia: Current Situation Analysis and Future Development Direction. *Arts Educa, 39*, 221-234. Retrieved from https://artseduca.com/submissions/index.php/ae/article/view/344
Liu, H., & Cheng, D. (2019). Research on the Construction Mode of Guangxi Ecological Civilization Driven by Ecotourism. *IOP Conference Series: Earth and Environmental Science, 267*, 052038. doi: https://doi.org/10.1088/1755-1315/267/5/052038
Lonn, P., Mizoue, N., Ota, T., Kajisa, T., & Yoshida, S. (2018). Evaluating the contribution of community-based ecotourism (CBET) to household income and livelihood changes: A case study of the Chambok CBET program in Cambodia. *Ecological Economics, 151*, 62-69. doi: https://doi.org/10.1016/j.ecolecon.2018.04.036
Lonn, P., Mizoue, N., Ota, T., Kajisa, T., & Yoshida, S. (2019). Using forest cover maps and local people's perceptions to evaluate the effectiveness of community-based ecotourism for forest conservation in Chambok (Cambodia). *Environmental Conservation, 46*(2), 111-117. doi: https://doi.org/10.1017/S0376892918000462
Mekhum, W., & Torasa, C. (2020). Effect of Knowledge Sharing and Digital Management to Performance on Ecotourism in Ranong Province, Thailand. *Research in World Economy, 11*(5), 481-492. doi: https://doi.org/10.5430/rwe.v11n5p481
Merza, F. I., Algaragolle, W. M. H., Huraish, A. H., Al Karaawi, N. J. M., Ali, M. H., luqman Ismail, Z., et al. (2022). Combatting money laundering and terrorism financing: An evaluation of Iraq's legislature and actions. *International Journal of Criminal Justice Sciences, 17*(1), 110-121. Retrieved from https://ijcjs.com/menuscript/index.php/ijcjs/article/view/476
Nakahata, M. A. (2003). Sustainable Ecotourism in the Tonle Sap Lake in Cambodia. *Education for*

Sustainable Development in Nepal: Views and Visions, 261-268. Retrieved from https://www.jstor.org/stable/resrep00803.25

Nguyen, H. P. (2022). Ecological tourism in Tram Chim national park: potential, opportunity and challenge. *Geology, Ecology, and Landscapes, 6*(1), 14-23. doi: https://doi.org/10.1080/24749508.2020.1742501

Nguyen, T. D., Hoang, H. D., Nguyen, T. Q., Fumikazu, U., Vo, T., & Nguyen, C. (2022). A multicriteria approach to assessing the sustainability of community-based ecotourism in Central Vietnam. *APN Science Bulletin, 12*(1), 123-140. doi: https://doi.org/10.30852/sb.2022.1938

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Bmj, 372*, 1-9. doi: https://doi.org/10.1136/bmj.n71

Palmer, N., & Chuamuangphan, N. (2018). Governance and local participation in Ecotourism: community-level tourism stakeholders in Chiang Rai province, Thailand. *Journal of Ecotourism, 17*(3), 320-337. doi: https://doi.org/10.1080/14724049.2018.1502248

Pham, K. T., & Tran, D. M. (2024). Analysis of Factors Affecting Innovation Adoption Decisions in Private Enterprises in Vietnam. *International Journal of Economics and Finance Studies, 16*(1), 83-102. Retrieved from https://sobiad.org/menuscript/index.php/ijefs/article/view/1844

Pham, T. A., Pham, T. M., Dang, G. T. H., Nguyen, D. T., & Du, Q. V. V. (2021). Mapping the potential aggregation values of ecotourism landscapes from stakeholder survey, structural equation modeling and GIS: Case study of Moc Chau site, Vietnam. *Plos One, 16*(7), e0253908. doi: https://doi.org/10.1371/journal.pone.0253908

Pimdee, P., & Paksanondha, P. (2013). Promotion behavior for ecotourism of sub-district administration organization member in Thailand. *Mediterranean Journal of Social Sciences, 4*(2), 81-87. doi: https://doi.org/10.5901/mjss.2013.v4n2p81

Reimer, J. K., & Walter, P. (2013). How do you know it when you see it? Community-based ecotourism in the Cardamom Mountains of southwestern Cambodia. *Tourism Management, 34*, 122-132. doi: https://doi.org/10.1016/j.tourman.2012.04.002

Roche, Y. (2009). Challenges of ecotourism in northern Laos: the case of Luang Nam Tha province. In C. Huhua (Ed.), *Ethnic Minorities and Regional Development in Asia: Reality and Challenges*. ICAS. Retrieved from https://www.researchgate.net/publication/277476223

Sadykova, T., Stamova, R., Abdina, A., Sapargaliyeva, S., Kulzhanova, Z., & Zhanarstanova, M. (2022). Globalization of Culture in Kazakhstan and Kyrgyzstan: Ways of Its Manifestation. *Croatian International Relations Review, 28*(91). Retrieved from https://cirrj.org/menuscript/index.php/cirrj/article/view/678

Seemann, F., & Antweiler, C. (2020). Linking European and Southeast Asian transdisciplinary knowledge production: Lessons learnt by doing evaluation. *ASEAS-Austrian Journal of South-East Asian Studies, 13*(2), 243-259. doi: https://doi.org/10.14764/10.ASEAS-0045

Swangjang, K., & Kornpiphat, P. (2021). Does ecotourism in a Mangrove area at Klong Kone, Thailand, conform to sustainable tourism? A case study using SWOT and DPSIR. *Environment, Development and Sustainability, 23*(11), 15960-15985. doi: https://doi.org/10.1007/s10668-021-01313-3

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology, 8*, 1-10. doi: https://doi.org/10.1186/1471-2288-8-45

To Quyen, L. T., & Binh Tri, N. (2017). Influenced Factors for Ecotourism Development At Phong Dien District, Can tho City, Vietnam. *International Journal of Humanities, Arts & Social Sciences, 3*(3), 106. doi: https://doi.org/10.20469/ijhss.3.20002-3

Tran, L., & Walter, P. (2014). Ecotourism, gender and development in northern Vietnam. *Annals of Tourism Research, 44*, 116-130. doi: https://doi.org/10.1016/j.annals.2013.09.005

Weaver, D. B. (2005). Comprehensive and minimalist dimensions of ecotourism. *Annals of Tourism Research, 32*(2), 439-455. doi: https://doi.org/10.1016/j.annals.2004.08.003

Xuan, B. B., & Armstrong, C. W. (2019). Trading off tourism for fisheries. *Environmental and Resource Economics, 73*, 697-716. doi: https://doi.org/10.1007/s10640-018-0281-5

Youdelis, M. (2013). The competitive (dis) advantages of ecotourism in Northern Thailand. *Geoforum, 50*, 161-171. doi: https://doi.org/10.1016/j.geoforum.2013.09.007