

## **Environmental Exploitation and Tourism Commercialization: The Transformation of Sibolangit Camping Ground**

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### **Abstract**

Sibolangit Camping Ground in North Sumatra has undergone a significant transformation from a natural forest ecosystem into a commercial tourism destination. This study aims to analyze the environmental and social impacts of tourism commercialization and land-use change in the area through the perspectives of political ecology and the Tragedy of the Commons. A qualitative descriptive approach was employed using field observations and literature review to examine the interrelationship between local economic interests, environmental exploitation, and community social dynamics. The findings reveal that rapid and unregulated tourism development—including deforestation for villas, commercial facilities, and camping infrastructure—has resulted in ecological degradation, reflected in increasing local temperatures, declining ecosystem quality, and unmanaged solid waste. Furthermore, tourism commercialization has intensified land ownership disputes, unhealthy business competition, and the emergence of social deviance, indicating a shift from collective resource management toward market-oriented exploitation. These dynamics demonstrate how weak governance and unsustainable land-use practices accelerate the degradation of shared natural resources. The study argues that these challenges have important implications for achieving Sustainable Development Goal (SDG) 15: Life on Land, particularly in promoting the sustainable management of terrestrial ecosystems and preventing biodiversity loss in nature-based tourism destinations. Therefore, strengthening environmental governance, community participation, and sustainable tourism policies is essential to balance economic development with long-term ecological conservation.

**Keywords:** Environmental exploitation, Tourism commercialization, Land-use change, Social conflict, Tragedy of the Commons, Sustainable tourism

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### **1. Introduction**

Nature-based tourism has become one of the fastest-growing sectors in global tourism and is increasingly recognized as an important instrument for achieving sustainable development. Beyond its contribution to economic growth, employment generation, and regional development, tourism is expected to support environmental conservation and improve the welfare of local communities through sustainable resource management. This perspective is explicitly reflected in the 2030 Agenda for Sustainable Development, which positions tourism as a strategic sector for supporting inclusive economic development while simultaneously protecting natural resources and ecosystems (United

Nations, 2015). Likewise, the United Nations World Tourism Organization (UNWTO) emphasizes that tourism development should not merely pursue economic growth but also integrate ecological sustainability, social inclusion, and effective governance as inseparable dimensions of sustainable development (UNWTO & UNDP, 2018). Consequently, the success of tourism development is no longer measured solely by increasing visitor numbers or economic revenues but also by its ability to preserve environmental quality and maintain social sustainability.

Despite these expectations, numerous studies have demonstrated that tourism development frequently creates a paradox between economic expansion and environmental conservation. Tourism undoubtedly stimulates local economies by generating employment opportunities, encouraging investment, and diversifying community livelihoods. However, rapid tourism expansion often accelerates land-use change, environmental degradation, biodiversity loss, and increasing pressure on natural resources, particularly in destinations that rely heavily on ecological assets (Butler, 1980; Weaver, 2006; Fennell, 2020). These contradictory outcomes indicate that tourism development can simultaneously function as a driver of economic prosperity and a catalyst for ecological deterioration when environmental governance and planning remain weak. Consequently, sustainable tourism has increasingly shifted from being merely a development concept toward becoming a governance challenge requiring the integration of ecological, economic, and socio-cultural dimensions.

This issue is particularly relevant to the implementation of Sustainable Development Goal (SDG) 15 (Life on Land), which emphasizes the protection, restoration, and sustainable use of terrestrial ecosystems. Forest-based tourism destinations represent an especially complex context because their economic value depends directly upon ecological quality, while tourism expansion itself frequently threatens the very ecosystems upon which it depends. Recent studies therefore argue that tourism sustainability should be evaluated not only through economic performance but also through its contribution to ecosystem conservation, biodiversity protection, and responsible land management (Boluk et al., 2019; Rosato et al., 2021). In other words, tourism destinations cannot be considered sustainable when economic gains are achieved at the expense of long-term ecological resilience. Within this context, examining the interaction between tourism commercialization and environmental exploitation becomes increasingly important, particularly in developing countries where institutional capacity and environmental governance remain relatively limited.

One example illustrating this phenomenon is Sibolangit Camping Ground, located in Deli Serdang Regency, North Sumatra. Originally functioning as a natural forest utilized by surrounding communities for subsistence activities such as farming, gathering forest products, and small-scale hunting, the area has gradually transformed into one of the most popular nature-based tourism destinations in the region. Along with increasing tourist arrivals and private investment, Sibolangit has experienced rapid physical development characterized by the construction of villas, restaurants, parking facilities, camping infrastructure, and various tourism-related businesses. Although these developments have generated new economic opportunities for local communities, they have simultaneously

intensified environmental pressures through forest clearing, declining vegetation cover, increasing waste generation, and the gradual degradation of ecosystem quality. These transformations indicate that tourism commercialization has substantially altered the ecological function of the area while simultaneously reshaping patterns of resource utilization and social interaction among local communities.

From the perspective of land-use change, such transformations represent more than merely physical landscape modification. Instead, they reflect complex interactions among economic incentives, institutional arrangements, demographic dynamics, and political decisions that collectively determine how natural resources are managed (Lambin et al., 2001). Similarly, political ecology argues that environmental degradation should not be understood solely as the consequence of individual behavior but rather as the outcome of unequal power relations, competing economic interests, and governance structures that shape access to and control over natural resources (Bryant & Bailey, 1997; Robbins, 2020). Consequently, environmental degradation in tourism destinations should be interpreted as a socio-ecological process in which ecological change and social transformation continuously influence one another.

Previous studies have investigated Sibolangit and tourism development from various perspectives. El Fikri and Ritonga (2017) primarily examined tourism marketing strategies and visitor satisfaction, demonstrating how marketing influences tourists' decisions to visit the destination. Meanwhile, Iswandi (2019) discussed forest exploitation from the perspective of environmental ethics, emphasizing the moral dimensions of natural resource utilization. Beyond the local context, Cole (2007) demonstrated that tourism commercialization frequently transforms local social relations through the commodification of culture and space, while Boluk et al. (2019) argued that tourism research should increasingly be situated within the broader framework of the Sustainable Development Goals. Likewise, Rosato et al. (2021) highlighted the growing importance of integrating sustainability principles into tourism development under the 2030 Agenda. Collectively, these studies have significantly enriched the understanding of tourism development, environmental management, and sustainability.

Nevertheless, existing studies remain fragmented. Previous research generally emphasizes either tourism marketing, economic development, environmental ethics, or tourism sustainability as separate issues. Few studies integrate environmental exploitation, land-use change, tourism commercialization, governance, and socio-cultural transformation within a single analytical framework, particularly in the context of nature-based tourism destinations in Indonesia. Furthermore, limited attention has been devoted to understanding how these interconnected processes influence the achievement of SDG 15 (Life on Land) at the local level. As a result, important questions regarding the relationships among ecological degradation, tourism commercialization, institutional governance, and community transformation remain insufficiently explored.

Accordingly, this study offers a different analytical perspective by integrating Political Ecology, Land-Use Change, Tragedy of the Commons, and Sustainable Tourism into a single analytical

framework to explain the ecological and social transformation of Sibolangit Camping Ground. Rather than viewing environmental degradation solely as the consequence of increasing tourist activities, this study examines how tourism commercialization, institutional weaknesses, and changing community resource-use practices collectively shape environmental exploitation and social change. This integrated perspective constitutes the scientific novelty of the study because it bridges ecological, social, and governance dimensions while simultaneously positioning the findings within the broader discourse of sustainable development and SDG 15 (Life on Land).

Based on these considerations, this study addresses the following research problem: how has tourism commercialization transformed ecological conditions and social dynamics in Sibolangit Camping Ground, and what are the implications of these transformations for sustainable environmental governance and the achievement of SDG 15? Therefore, this study aims to analyze the environmental and social impacts of tourism commercialization in Sibolangit Camping Ground through the perspectives of political ecology, land-use change, and the Tragedy of the Commons, while identifying their implications for sustainable tourism governance and the conservation of terrestrial ecosystems.

## **2. Methodology**

This study employed a qualitative descriptive approach to examine the ecological and socio-cultural transformations resulting from tourism commercialization in Sibolangit Camping Ground, Deli Serdang Regency, North Sumatra, Indonesia. A qualitative approach was considered appropriate because it enables an in-depth understanding of the interactions between tourism development, environmental change, and community dynamics within their natural setting (Creswell, 2014).

The study was conducted at Sibolangit Camping Ground, a nature-based tourism destination that has experienced substantial environmental and spatial transformation due to the rapid expansion of tourism-related activities. The site was selected purposively because it represents a relevant case for investigating the relationship between tourism commercialization, land-use change, and environmental exploitation. The research utilized both primary and secondary data. Primary data were obtained through direct field observations focusing on environmental conditions, land-use changes, tourism facilities, visitor activities, and visible ecological transformations within the study area. Secondary data were collected from scientific journal articles, books, government reports, policy documents, and other relevant publications concerning political ecology, land-use change, sustainable tourism, and environmental governance.

Data were collected using three complementary techniques. First, non-participant observation was conducted to document physical changes in the landscape, tourism infrastructure, environmental conditions, and human activities within the destination. Second, documentation was undertaken by examining photographs, official reports, spatial information, and archival materials related to the historical development of Sibolangit Camping Ground. Third, library research was carried out to establish the theoretical framework and support the interpretation of empirical findings through relevant

scholarly literature.

The researcher served as the primary research instrument (human instrument), responsible for planning the fieldwork, conducting observations, organizing the collected information, interpreting empirical findings, and drawing analytical conclusions. Supporting instruments included field notes, observation sheets, photographic documentation, and document review forms to ensure systematic data recording throughout the research process.

The research was conducted through several stages. The first stage involved identifying the research problem based on the observed environmental transformation of Sibolangit Camping Ground. The second stage consisted of collecting primary and secondary data through field observations, documentation, and literature review. Subsequently, all collected data were organized and categorized according to the main analytical themes, including tourism commercialization, land-use change, environmental degradation, governance, and community dynamics. Finally, the findings were interpreted using the perspectives of Political Ecology, Land-Use Change, Tragedy of the Commons, and Sustainable Tourism.

Data were analyzed using the interactive model of Miles and Huberman (1994), which consists of data reduction, data display, and conclusion drawing and verification. During the analysis, empirical findings were continuously compared with relevant theoretical perspectives to identify patterns explaining how tourism commercialization has transformed ecological conditions and socio-cultural relations in Sibolangit Camping Ground. To enhance the credibility of the findings, source triangulation was applied by comparing information obtained from field observations, documentation, and relevant scientific literature.

### **3. Result and Discussion**

#### **3.1. Landscape Transformation and Ecological Degradation: Tourism Commercialization and the Challenge of SDG 15**

The findings demonstrate that tourism commercialization has fundamentally transformed the ecological landscape of Sibolangit Camping Ground from a relatively intact forest ecosystem into a market-oriented tourism space. Rather than representing ordinary land conversion, this transformation reflects a structural reconfiguration of ecological functions driven by tourism expansion, local economic interests, and weak environmental governance. Field observations indicate that the increasing construction of villas, food stalls, camping facilities, parking areas, and other tourism infrastructure has progressively reduced vegetation cover and altered the ecological characteristics of the area. Consequently, the landscape has shifted from functioning primarily as a forest ecosystem that maintained ecological balance into a fragmented commercial landscape where economic interests increasingly dominate environmental considerations. This finding suggests that the transformation occurring in Sibolangit is not merely a physical alteration of land use but represents a broader socio-ecological transition in which the value of natural space is increasingly defined by its economic potential

rather than its ecological functions.

This landscape transformation is closely associated with the rapid growth of tourism activities that has occurred without integrated spatial planning or effective environmental regulation. The development of tourism facilities has largely been undertaken independently by multiple actors responding to increasing visitor demand and expanding market opportunities. Such development patterns have generated a fragmented landscape characterized by dispersed commercial infrastructure that continues to encroach upon forested areas. As observed during fieldwork, forest clearing has become an integral component of tourism expansion, creating new accommodation facilities and recreational spaces while simultaneously reducing the ecological integrity of the surrounding environment. These findings indicate that tourism growth in Sibolangit has proceeded more rapidly than the institutional capacity required to regulate land conversion and environmental protection, allowing commercial expansion to become the dominant force shaping landscape transformation.

From the perspective of land-use change, these findings reinforce the argument proposed by Lambin et al. (2001) that landscape transformation is rarely the consequence of ecological processes alone. Instead, land-use change emerges through the interaction of multiple driving forces, including economic incentives, demographic pressures, institutional arrangements, and political decisions. The empirical evidence from Sibolangit clearly illustrates this interaction. The growing popularity of the destination has increased demand for tourism services, encouraging local communities and private investors to convert previously vegetated land into tourism facilities. Simultaneously, the limited institutional capacity to regulate spatial development has enabled land conversion to occur incrementally and without comprehensive environmental planning. Consequently, landscape transformation has become a cumulative process rather than a series of isolated development activities. Beyond altering the physical appearance of the destination, the observed land conversion has generated broader ecological consequences. Reduced forest canopy has contributed to increasing local temperatures through the loss of shade and evapotranspiration functions, while declining vegetation cover has weakened the capacity of soil to retain water, increasing the risks of surface runoff, erosion, and long-term environmental degradation. Field observations also identified the accumulation of unmanaged solid waste and the gradual decline of environmental quality in several tourism zones, indicating that ecological degradation has become increasingly visible alongside tourism expansion. These environmental changes demonstrate that tourism development in Sibolangit has exceeded the ecological functions that previously sustained environmental stability, gradually reducing the carrying capacity of the destination itself.

The concept of carrying capacity provides an important framework for interpreting these findings. Weaver (2006) argues that tourism destinations remain sustainable only when the intensity of tourism activities remains within the ecological limits of the environment. Similarly, Fennell (2020) emphasizes that sustainable tourism requires continuous integration between environmental conservation, social welfare, and economic development rather than prioritizing economic growth alone. The evidence from

Sibolangit indicates that such integration has not yet been achieved. Tourism development has primarily responded to immediate economic opportunities without equivalent attention to environmental thresholds or ecosystem resilience. Consequently, environmental degradation should not be understood as an accidental by-product of tourism development but rather as an expected outcome when ecological carrying capacity is systematically overlooked during destination planning.

The transformation observed in Sibolangit can also be interpreted through the perspective of Political Ecology, which views environmental change as the product of unequal relationships between power, economic interests, and access to natural resources rather than merely individual environmental behavior (Bryant & Bailey, 1997; Robbins, 2020). From this perspective, environmental degradation is embedded within broader political-economic structures that encourage continuous resource exploitation while providing limited institutional mechanisms for environmental protection. Tourism commercialization has created strong economic incentives for expanding tourism infrastructure, whereas environmental governance has remained relatively weak in regulating development intensity. Consequently, ecological degradation in Sibolangit reflects structural governance problems rather than isolated environmental incidents. The landscape has become increasingly organized according to market demands instead of ecological sustainability, illustrating how economic rationality can gradually reshape environmental governance in nature-based tourism destinations.

These findings extend previous research conducted in Sibolangit and contribute additional dimensions to the existing literature. El Fikri and Ritonga (2017) primarily examined tourism marketing strategies and visitor satisfaction, highlighting the growing attractiveness of Sibolangit as a tourism destination. While those findings explain the increasing popularity of the area, they do not address the environmental consequences associated with tourism expansion. Likewise, Iswandi (2019) discussed forest exploitation from the perspective of environmental ethics but did not specifically examine how tourism commercialization restructures ecological landscapes. Beyond the Indonesian context, Cole (2007) argues that tourism commercialization commodifies places by transforming cultural and environmental resources into economic assets. The Sibolangit case demonstrates that such commodification extends beyond cultural transformation to include the restructuring of ecological functions through continuous land conversion. Furthermore, the findings support Boluk et al. (2019) and Rosato et al. (2021), who argue that tourism sustainability should be evaluated not only by economic performance but also by its contribution to environmental protection and sustainable development.

More importantly, the ecological transformation identified in this study has direct implications for the implementation of Sustainable Development Goal (SDG) 15: Life on Land. SDG 15 emphasizes the protection, restoration, and sustainable management of terrestrial ecosystems while preventing biodiversity loss and land degradation (United Nations, 2015). However, the empirical evidence from Sibolangit demonstrates that current tourism development has yet to align with these objectives. Instead of strengthening ecosystem conservation, tourism commercialization has accelerated forest conversion, weakened ecosystem resilience, and intensified ecological pressures due to insufficient governance

mechanisms. These findings reinforce the argument of UNWTO and UNDP (2018) that tourism contributes to sustainable development only when environmental conservation is integrated into destination governance and long-term planning. Therefore, the principal scientific finding of this study is that the transformation of Sibolangit Camping Ground represents not merely a process of tourism development but a structural shift in environmental governance, where commercial expansion increasingly outweighs ecological sustainability. This imbalance poses a significant challenge to achieving SDG 15 and demonstrates that sustainable tourism cannot be realized without strengthening institutional capacity, spatial planning, and ecosystem-based governance.

### **3.2 Tourism Commercialization and Environmental Exploitation: Economic Rationality and Ecological Pressure**

The findings indicate that the commercialization of tourism in Sibolangit Camping Ground has not only transformed the physical landscape but has also intensified the exploitation of environmental resources. Field observations reveal that the continuous expansion of tourism-related businesses has increased the demand for land, natural resources, and supporting infrastructure, encouraging the conversion of forest areas into commercial facilities such as accommodation, restaurants, parking areas, and recreational spaces. Rather than functioning as isolated development activities, these interventions collectively represent an economic process in which natural resources are increasingly treated as commodities capable of generating financial returns. Consequently, environmental exploitation has become embedded within the tourism development process itself rather than occurring as an unintended consequence of tourism growth.

The empirical evidence further demonstrates that the increasing intensity of tourism activities has generated multiple forms of ecological pressure. Forest clearing for tourism infrastructure has reduced vegetation density, while the growing concentration of visitors has increased waste generation and placed additional pressure on water resources and surrounding ecosystems. The expansion of commercial facilities has also altered the natural characteristics of the destination by replacing ecological functions with built environments designed primarily to maximize visitor convenience and economic profitability. These findings suggest that environmental degradation in Sibolangit is cumulative, resulting from the interaction of numerous small-scale development activities that collectively exceed the ecological capacity of the area.

From the perspective of Political Ecology, environmental exploitation should be understood as a consequence of broader political-economic processes rather than merely individual environmental behavior. Bryant and Bailey (1997) argue that environmental change is closely associated with unequal access to natural resources, competing economic interests, and institutional arrangements that shape patterns of resource utilization. Robbins (2020) further explains that environmental degradation frequently reflects structural power relations in which economic actors possess greater capacity to influence resource management than environmental institutions responsible for conservation. The

findings of this study strongly support these perspectives. Tourism commercialization in Sibolangit has created strong economic incentives for expanding tourism businesses, whereas environmental protection mechanisms have developed more slowly. Consequently, commercial interests increasingly determine how natural resources are utilized, while ecological considerations receive comparatively less attention during tourism development.

The observed pattern also reflects the economic rationality underlying tourism commercialization. Tourism operators and local entrepreneurs naturally respond to increasing visitor demand by expanding facilities and improving tourism services to remain economically competitive. Although such strategies contribute positively to local economic growth and employment opportunities, they simultaneously increase the extraction of environmental resources required to sustain continuous tourism expansion. This condition illustrates that environmental exploitation is not necessarily driven by deliberate environmental destruction but rather by rational economic decisions made within an institutional context where ecological limitations are insufficiently regulated. Therefore, tourism commercialization creates a development trajectory in which economic success paradoxically becomes one of the primary drivers of environmental degradation.

These findings are consistent with the principles of Sustainable Tourism, which emphasize that tourism development should maintain a balance between economic viability, environmental conservation, and social well-being (Weaver, 2006; Fennell, 2020). In Sibolangit, however, this balance has not yet been fully achieved. Tourism development has successfully stimulated local economic activities, but environmental management has not progressed at the same pace. The absence of effective monitoring mechanisms, environmental carrying-capacity assessments, and integrated spatial planning has allowed tourism expansion to proceed without adequate ecological safeguards. Consequently, environmental exploitation has become increasingly difficult to control despite the economic benefits generated by tourism activities.

The present findings also complement previous studies on tourism commercialization. Cole (2007) argues that tourism frequently commodifies local resources by transforming cultural and environmental assets into marketable products. The empirical evidence from Sibolangit extends this argument by demonstrating that commodification also alters patterns of environmental utilization, encouraging continuous resource extraction to satisfy growing tourism demand. Likewise, Boluk et al. (2019) emphasize that tourism should contribute to sustainable development only when economic objectives are integrated with environmental stewardship and social responsibility. Rosato et al. (2021) similarly argue that tourism development under the 2030 Agenda requires governance models capable of balancing economic innovation with ecological sustainability. The Sibolangit case demonstrates that this balance remains difficult to achieve when tourism expansion is driven primarily by short-term economic considerations.

Another important scientific finding emerging from this study is that environmental exploitation in Sibolangit should not be interpreted solely as an ecological issue but also as a governance challenge.

Environmental degradation has occurred because institutional mechanisms regulating tourism development have been unable to respond proportionally to the increasing intensity of commercial activities. As a result, tourism commercialization has gradually produced a governance gap in which environmental protection policies lag behind the pace of economic development. This finding strengthens the argument that sustainable tourism cannot be achieved merely through increasing environmental awareness among tourism stakeholders but requires institutional arrangements capable of regulating land use, controlling development intensity, and protecting ecosystem resilience over the long term.

The implications of these findings extend directly to the achievement of Sustainable Development Goal (SDG) 15 (Life on Land). SDG 15 calls for the sustainable management of terrestrial ecosystems, the prevention of land degradation, and the conservation of biodiversity (United Nations, 2015). However, the increasing exploitation of environmental resources observed in Sibolangit demonstrates that tourism commercialization has generated ecological pressures that potentially undermine these objectives. As emphasized by UNWTO and UNDP (2018), tourism can only contribute to sustainable development when environmental conservation is embedded within destination planning and governance. Therefore, the principal scientific finding of this section is that environmental exploitation in Sibolangit is not an inevitable consequence of tourism growth but the result of an imbalance between expanding economic interests and the institutional capacity required to govern natural resources sustainably. This imbalance reinforces the need for governance reforms that integrate environmental protection into tourism development as a prerequisite for achieving SDG 15.

### **3.3 Institutional Failure and the Tragedy of the Commons: Rethinking Environmental Governance in Sibolangit**

The findings reveal that the environmental degradation observed in Sibolangit Camping Ground cannot be explained solely by the increasing intensity of tourism activities or the growing number of visitors. More fundamentally, the study demonstrates that ecological deterioration has been facilitated by weaknesses in institutional arrangements governing the utilization of shared natural resources. Tourism commercialization has created a situation in which multiple stakeholders—including tourism entrepreneurs, visitors, local communities, and government authorities—simultaneously depend upon the same environmental resources while operating under limited coordination and weak regulatory control. Consequently, the ecological functions of the area have become increasingly vulnerable to overutilization, illustrating a pattern commonly associated with the Tragedy of the Commons.

Hardin (1968) argues that environmental degradation occurs when individuals rationally pursue their own economic interests in the utilization of common resources without considering the cumulative impacts of their actions on the collective good. Under such circumstances, every additional use of a shared resource appears individually beneficial, yet collectively contributes to environmental decline. The empirical evidence from Sibolangit reflects several characteristics of this phenomenon. The

continuous establishment of tourism facilities, gradual forest clearing, increasing visitor activities, and expanding commercial services all provide immediate economic benefits to individual actors. However, when these activities occur simultaneously without effective regulation, their cumulative effects generate substantial ecological pressures that exceed the environmental capacity of the destination. Thus, environmental degradation emerges not from a single destructive activity but from the accumulation of numerous rational decisions made by different actors pursuing similar economic opportunities.

Nevertheless, the findings of this study also indicate that the Sibolangit case cannot be fully understood through Hardin's framework alone. Hardin's argument assumes that environmental degradation is an almost inevitable consequence of individual self-interest in managing common resources. However, field observations suggest that institutional arrangements play a far more significant role in shaping environmental outcomes than individual motivations alone. Environmental deterioration in Sibolangit is closely associated with limited coordination among stakeholders, inconsistent implementation of environmental regulations, and the absence of integrated mechanisms for controlling tourism expansion. In this context, ecological degradation reflects institutional weaknesses rather than the unavoidable failure of collective resource management.

This interpretation is consistent with Ostrom (1990), who challenges the deterministic assumptions of the Tragedy of the Commons by arguing that common-pool resources can be managed sustainably when appropriate institutional arrangements, collective agreements, and local governance mechanisms are established. Rather than viewing resource users as inherently incapable of cooperation, Ostrom emphasizes the importance of clearly defined rules, monitoring systems, graduated sanctions, and participatory decision-making in preventing environmental degradation. The contrast between Hardin and Ostrom provides an important analytical lens for understanding the Sibolangit case. The problem is not simply that too many actors utilize the same environmental resources, but that governance mechanisms have failed to regulate how these resources should be collectively managed.

The empirical findings demonstrate that tourism development in Sibolangit has expanded more rapidly than institutional adaptation. Economic opportunities generated by tourism have encouraged continuous investment and infrastructure development, whereas environmental management institutions have not evolved at the same pace to establish clear rules regarding land utilization, visitor capacity, environmental monitoring, and conservation priorities. Consequently, the absence of effective institutional coordination has created governance gaps through which environmental exploitation continues to occur despite growing awareness of ecological degradation. This finding reinforces the argument that environmental sustainability depends not only on limiting resource utilization but also on strengthening institutional capacity to coordinate competing interests among multiple stakeholders.

The present findings also contribute to broader discussions within Political Ecology. Bryant and Bailey (1997) argue that environmental problems should be interpreted through the relationships between power, institutions, and resource access rather than being reduced to individual environmental

behavior. Robbins (2020) further emphasizes that environmental degradation often reflects unequal political and economic structures that privilege particular development interests over ecological sustainability. The Sibolangit case supports these perspectives by demonstrating that institutional weaknesses are closely intertwined with economic incentives created through tourism commercialization. Environmental degradation therefore represents a structural governance issue in which market expansion proceeds more rapidly than institutional mechanisms designed to regulate environmental protection.

Compared with previous studies, this research offers a broader explanation of environmental change in Sibolangit. Earlier studies largely emphasized tourism attractiveness (El Fikri & Ritonga, 2017), environmental ethics (Iswandi, 2019), or tourism commodification (Cole, 2007). While these perspectives remain important, they do not sufficiently explain why environmental degradation persists despite increasing public awareness of conservation issues. By integrating the perspectives of Hardin (1968), Ostrom (1990), and Political Ecology, this study demonstrates that environmental degradation is fundamentally a problem of institutional governance rather than merely the outcome of individual environmental behavior or tourism growth alone.

The principal scientific finding of this section is that the environmental challenges observed in Sibolangit should be interpreted as an institutional failure in governing common-pool resources. Tourism commercialization has intensified competition over shared environmental resources, yet governance mechanisms have been unable to adapt to these changing socio-economic conditions. Consequently, ecological degradation reflects not the inevitable tragedy of shared resources, but the absence of effective institutional arrangements capable of balancing economic development with long-term environmental stewardship. This finding provides an important foundation for understanding the broader governance challenges discussed in the following section concerning the socio-cultural transformation of local communities under tourism commercialization.

### **3.4 Social Transformation under Tourism Commercialization: Reshaping Community Relations and Local Livelihoods**

The findings indicate that tourism commercialization has not only transformed the ecological landscape of Sibolangit Camping Ground but has also reshaped the social organization and livelihood patterns of the surrounding community. The expansion of tourism activities has gradually shifted the economic orientation of local residents from predominantly resource-based livelihoods toward tourism-related businesses, including accommodation services, food stalls, parking management, equipment rental, and various informal commercial activities. This transformation demonstrates that tourism development has generated new economic opportunities while simultaneously restructuring the ways in which local communities interact with natural resources and with one another. Consequently, tourism commercialization should be understood as a socio-economic process that extends beyond environmental change to include the reconfiguration of community relations, economic strategies, and

local identities.

The empirical findings further reveal that the increasing dependence on tourism has altered traditional patterns of resource utilization. Previously, forest resources primarily functioned as part of local subsistence practices, supporting agriculture, small-scale resource extraction, and other livelihood activities closely connected to the ecological characteristics of the area. As tourism expanded, however, the economic value of the landscape increasingly outweighed its ecological and cultural significance. Land, forest scenery, and environmental amenities gradually became tourism commodities capable of generating financial income. This transition illustrates a fundamental shift in the meaning of nature, from a shared ecological resource supporting community livelihoods to an economic asset embedded within tourism markets.

Such transformations can be interpreted through the concept of tourism commodification. Cole (2007) argues that tourism frequently converts local spaces, cultural practices, and environmental resources into market-oriented commodities whose value is increasingly determined by visitor demand rather than by local social functions. The findings from Sibolangit support this perspective while extending it beyond cultural commodification. In this case, commercialization has also transformed ecological space into an economic commodity, encouraging communities to reinterpret forests not only as environmental assets but also as productive spaces capable of supporting tourism businesses. Consequently, environmental value and economic value have become increasingly intertwined, often creating tensions between conservation objectives and commercial interests.

The observed social transformation also reflects broader dynamics discussed within Political Ecology. Bryant and Bailey (1997) emphasize that environmental change simultaneously alters patterns of social interaction because access to natural resources is closely linked to economic opportunities and power relations. Similarly, Robbins (2020) argues that changes in environmental governance inevitably reshape relationships among social actors by redistributing both benefits and responsibilities associated with resource utilization. The findings of this study confirm these arguments. As tourism commercialization intensified, economic opportunities became increasingly concentrated around tourism-related activities, encouraging new forms of competition, cooperation, and social adaptation among local residents. Community members who successfully participated in tourism businesses benefited from expanding economic opportunities, while others experienced greater pressure to adjust their livelihoods to the changing local economy.

Another important finding concerns the emergence of new forms of social dependency on tourism. As tourism became the primary source of local income, fluctuations in visitor numbers increasingly influenced household economic stability. This growing dependence illustrates that tourism commercialization has generated a structural transformation in local livelihoods, where economic resilience is becoming progressively linked to the performance of the tourism sector. Although tourism has contributed positively to employment creation and income diversification, excessive dependence on a single economic sector may also increase community vulnerability to environmental degradation,

economic shocks, and changing tourism trends. Therefore, the benefits generated through tourism commercialization should be understood alongside the new social risks accompanying increased reliance on tourism-based livelihoods.

These findings complement previous studies on tourism development while offering a broader analytical perspective. El Fikri and Ritonga (2017) demonstrated that effective tourism marketing contributes to increasing visitor satisfaction and destination attractiveness. However, the present study reveals that increasing tourist arrivals also trigger significant transformations in local social organization and livelihood structures. Likewise, while Cole (2007) highlights the commodification of tourism destinations, the Sibolangit case illustrates that commodification extends beyond cultural representation to include everyday economic practices, community adaptation, and changing perceptions of environmental resources. Consequently, tourism commercialization should be interpreted as a multidimensional process that simultaneously transforms ecological systems, economic structures, and social relations.

The findings also demonstrate that social transformation in Sibolangit cannot be separated from ecological transformation. Changes in land use, environmental quality, and resource accessibility continuously influence how local communities organize economic activities and negotiate access to tourism opportunities. This reciprocal relationship supports the Political Ecology perspective that environmental and social transformations are mutually constitutive rather than independent processes. Ecological degradation affects community livelihoods, while changing livelihood strategies further shape patterns of environmental utilization. Therefore, environmental sustainability and community well-being should not be treated as separate dimensions of tourism development but as interconnected processes requiring integrated governance approaches.

The principal scientific finding of this section is that tourism commercialization has fundamentally reconfigured the relationship between local communities and their surrounding environment by transforming ecological resources into economic assets and restructuring livelihood strategies around tourism activities. This transformation demonstrates that the impacts of tourism extend far beyond physical environmental change, producing long-term shifts in community organization, economic dependency, and patterns of interaction with natural resources. Understanding these socio-ecological dynamics is essential for explaining why environmental governance in tourism destinations requires not only ecological protection but also careful consideration of the social transformations accompanying tourism development.

### **3.5 Towards Sustainable Tourism Governance: Integrating Environmental Conservation and Community Participation**

The findings of this study demonstrate that the environmental and social challenges identified in Sibolangit Camping Ground cannot be addressed solely through conservation initiatives or restrictions on tourism activities. Rather, they reflect broader governance issues arising from the imbalance between

tourism commercialization, environmental protection, and community participation. The cumulative evidence presented in the previous sections indicates that landscape transformation, environmental exploitation, institutional weaknesses, and socio-economic change are interconnected processes that require integrated governance rather than fragmented management interventions. Consequently, the sustainability of Sibolangit as a nature-based tourism destination depends not only on ecological restoration but also on the establishment of governance mechanisms capable of balancing economic development with environmental conservation and community welfare.

The empirical findings suggest that tourism governance in Sibolangit has predominantly responded to increasing tourism demand through physical development and commercial expansion, while environmental management has received comparatively less attention. Although tourism has contributed to local economic growth and created new livelihood opportunities, environmental protection measures have not developed proportionally to accommodate the increasing intensity of tourism activities. This imbalance has allowed land conversion, environmental degradation, and institutional fragmentation to continue without comprehensive coordination among relevant stakeholders. As a result, tourism development has become increasingly oriented toward short-term economic gains rather than long-term ecological sustainability.

These findings reinforce the principles of Sustainable Tourism, which emphasize that tourism development should simultaneously achieve economic viability, environmental integrity, and social equity (Weaver, 2006; Fennell, 2020). Sustainable tourism therefore extends beyond the promotion of tourism activities and requires governance systems capable of maintaining ecological carrying capacity while ensuring that economic benefits are distributed fairly among local communities. In the case of Sibolangit, however, the study demonstrates that these three dimensions have not yet been fully integrated into destination management. Economic objectives have largely driven tourism expansion, whereas ecological protection and institutional coordination remain relatively underdeveloped. Consequently, sustainability should be understood not as an outcome of tourism growth itself but as the result of effective governance capable of regulating the interaction between environmental, economic, and social interests.

Another important implication emerging from this study concerns the role of local communities in tourism governance. The findings presented in the previous section demonstrate that tourism commercialization has substantially transformed local livelihood strategies and increased community dependence on tourism-related economic activities. This condition indicates that local communities should not merely be regarded as beneficiaries of tourism development but also as active stakeholders in environmental governance. Consistent with Ostrom's (1990) perspective, long-term sustainability is more likely to be achieved when resource users participate directly in establishing, implementing, and monitoring institutional arrangements governing common-pool resources. Therefore, strengthening community participation in tourism planning, environmental monitoring, and conservation programs becomes an essential prerequisite for improving environmental governance in Sibolangit.

The present findings also support broader international discussions regarding governance and sustainable tourism. Boluk et al. (2019) argue that tourism should be evaluated according to its contribution to sustainable development rather than solely through indicators of economic performance or visitor growth. Similarly, Rosato et al. (2021) emphasize that tourism governance under the 2030 Agenda requires institutional innovation capable of integrating environmental sustainability, economic development, and stakeholder collaboration into coherent development strategies. The empirical evidence from Sibolangit confirms these perspectives by demonstrating that environmental sustainability cannot be achieved through isolated conservation initiatives alone. Instead, sustainability requires coordinated governance involving government institutions, tourism operators, local communities, and other stakeholders responsible for managing environmental resources.

Within this context, the findings of the present study also have important implications for the implementation of Sustainable Development Goal (SDG) 15: Life on Land. SDG 15 calls for the protection, restoration, and sustainable use of terrestrial ecosystems while preventing land degradation and biodiversity loss (United Nations, 2015). The environmental transformation occurring in Sibolangit indicates that these objectives cannot be achieved merely by maintaining tourism growth or expanding conservation programs independently. Rather, effective implementation of SDG 15 requires governance systems capable of integrating spatial planning, environmental regulation, institutional coordination, and community participation into tourism management. This interpretation is consistent with the position of UNWTO and UNDP (2018), which emphasizes that tourism contributes to sustainable development only when ecological conservation forms an integral component of destination governance and policy implementation.

Accordingly, this study argues that future tourism governance in Sibolangit should adopt an integrated socio-ecological approach. Such an approach should incorporate stricter spatial planning to regulate land conversion, environmental carrying-capacity assessments to control tourism intensity, participatory governance mechanisms involving local communities, and continuous environmental monitoring to evaluate ecological change over time. Rather than viewing tourism development and environmental conservation as competing objectives, these findings suggest that both should be treated as mutually reinforcing components of sustainable destination management. Integrating these governance principles would not only strengthen ecosystem resilience but also enhance the long-term economic sustainability of tourism by preserving the environmental assets upon which the destination depends.

The principal scientific finding of this section is that the sustainability of nature-based tourism is determined primarily by governance capacity rather than by tourism growth itself. The case of Sibolangit demonstrates that tourism commercialization can contribute to local economic development only when supported by governance mechanisms capable of coordinating environmental protection, institutional effectiveness, and community participation. Without such governance integration, tourism expansion is likely to intensify ecological degradation and weaken the long-term resilience of both the

destination and the communities that depend upon it.

### **3.6 Integrating Political Ecology and Sustainable Tourism: A Socio-Ecological Perspective on Tourism Commercialization**

The findings of this study demonstrate that the transformation occurring in Sibolangit Camping Ground cannot be adequately understood through a single analytical perspective. Rather than representing isolated environmental degradation, tourism commercialization has simultaneously reshaped ecological systems, institutional arrangements, and community livelihoods. The environmental changes observed throughout the study are closely interconnected with broader social, economic, and governance transformations, indicating that tourism development should be interpreted as a complex socio-ecological process rather than merely an economic activity. Consequently, understanding tourism commercialization requires an analytical framework capable of integrating environmental change, institutional governance, and social transformation within a unified perspective.

From the perspective of Political Ecology, environmental transformation is never solely the consequence of ecological processes but emerges through interactions among economic interests, political institutions, and unequal access to environmental resources (Bryant & Bailey, 1997; Robbins, 2020). The empirical findings strongly support this perspective. Landscape transformation, environmental exploitation, and changing patterns of resource utilization in Sibolangit have been driven by expanding tourism markets that continuously increase the economic value of environmental resources. However, these market dynamics have developed more rapidly than institutional mechanisms responsible for regulating tourism expansion. Consequently, ecological degradation should be interpreted not as an accidental outcome of tourism development but as the result of structural interactions between commercialization and governance.

The findings further demonstrate that land-use change represents the principal mechanism through which tourism commercialization alters ecological systems. As argued by Lambin et al. (2001), land transformation reflects interactions among economic pressures, institutional arrangements, and policy decisions rather than environmental processes alone. The Sibolangit case illustrates precisely this dynamic. Forest ecosystems have gradually been converted into commercial tourism spaces as increasing visitor demand encourages continuous investment in tourism infrastructure. This transformation subsequently reduces ecosystem resilience, alters environmental functions, and increases ecological vulnerability. Therefore, land-use change serves as the critical link connecting tourism commercialization with environmental degradation.

The analysis also demonstrates that environmental exploitation becomes increasingly difficult to control when institutional capacity fails to adapt to rapid tourism expansion. The dialogue between Hardin (1968) and Ostrom (1990) provides an important explanation for this phenomenon. While Hardin explains how individually rational decisions may collectively produce environmental degradation, Ostrom demonstrates that such outcomes are neither inevitable nor irreversible when

effective institutions governing common-pool resources are established. The findings from Sibolangit support Ostrom's argument by indicating that environmental degradation is primarily associated with institutional weaknesses rather than with the existence of common resources themselves. Consequently, strengthening governance capacity becomes more important than merely restricting tourism activities. Another significant contribution of this study concerns the reciprocal relationship between environmental transformation and social change. Tourism commercialization has generated new livelihood opportunities and diversified local economic activities, yet these benefits have simultaneously increased community dependence on tourism while reshaping traditional relationships between society and the environment. Ecological resources have gradually become economic assets whose value is increasingly determined by market demand. This transformation confirms Cole's (2007) argument regarding tourism commodification while extending it beyond cultural commodification toward the commercialization of ecological space itself. Accordingly, environmental transformation and social transformation should not be analyzed separately because both constitute mutually reinforcing dimensions of tourism commercialization.

Taken together, these findings suggest that the sustainability of nature-based tourism depends less on the rate of tourism growth than on the capacity of governance systems to balance environmental conservation, economic development, and community participation. This interpretation supports the principles of Sustainable Tourism proposed by Weaver (2006) and Fennell (2020), both of whom emphasize that tourism sustainability requires the simultaneous integration of ecological, social, and economic objectives. The evidence from Sibolangit indicates that tourism development becomes environmentally sustainable only when institutional arrangements evolve alongside commercial expansion, enabling environmental protection to remain an integral component of destination management rather than a secondary policy objective.

The present study therefore proposes a socio-ecological interpretation of tourism commercialization in which environmental degradation should be viewed as the cumulative outcome of interactions among tourism expansion, land-use change, institutional capacity, and changing community livelihoods. Rather than functioning as independent variables, these dimensions continuously influence one another through dynamic feedback processes. Tourism commercialization encourages land conversion; land conversion intensifies environmental exploitation; environmental exploitation exposes institutional weaknesses; institutional weaknesses reshape community adaptation strategies; and these social changes subsequently influence future patterns of tourism development. Understanding these interconnections provides a more comprehensive explanation of environmental transformation than approaches focusing exclusively on ecological, economic, or social dimensions.

This integrated perspective constitutes the principal theoretical contribution of the present study. By combining Political Ecology, Land-Use Change, Tragedy of the Commons, and Sustainable Tourism within a single analytical framework, this research demonstrates that environmental degradation in nature-based tourism destinations is fundamentally a governance issue emerging from the interaction

of ecological, institutional, and socio-economic processes. Consequently, sustainable tourism should be understood not merely as an objective of development policy but as a continuous process of balancing commercialization, environmental stewardship, and community resilience. This perspective also reinforces the broader relevance of the study for understanding the governance challenges faced by rapidly developing nature-based tourism destinations in Indonesia and other developing countries.

#### **4. Conclusion**

This study demonstrates that tourism commercialization has fundamentally transformed Sibolangit Camping Ground through interconnected ecological, institutional, and socio-economic processes rather than through isolated environmental changes. The findings indicate that the expansion of tourism has accelerated landscape transformation and land-use change, intensified environmental exploitation, reshaped local livelihood strategies, and exposed institutional weaknesses in governing shared natural resources. These transformations reveal that the environmental challenges observed in Sibolangit are not merely the consequence of increasing tourism activities but are closely associated with the imbalance between economic development, environmental conservation, and governance capacity. Accordingly, the study confirms that tourism commercialization should be understood as a socio-ecological process that simultaneously influences ecological sustainability, institutional effectiveness, and community adaptation.

The principal scientific contribution of this study lies in its integration of Political Ecology, Land-Use Change, Tragedy of the Commons, and Sustainable Tourism into a unified analytical framework for explaining environmental transformation in a nature-based tourism destination. Unlike previous studies that primarily examined tourism development from marketing, economic, or environmental perspectives separately, this research demonstrates that environmental degradation emerges through dynamic interactions among tourism commercialization, land-use transformation, institutional governance, and changing community livelihoods. This integrated perspective provides a more comprehensive understanding of how ecological and social transformations are mutually reinforcing processes, thereby extending the application of Political Ecology within tourism studies, particularly in the context of nature-based tourism in developing countries.

The findings also suggest that strengthening sustainable tourism governance requires greater integration between environmental conservation, spatial planning, institutional coordination, and community participation. Long-term sustainability cannot be achieved solely by expanding tourism activities or implementing conservation programs independently, but depends upon governance mechanisms capable of balancing ecological integrity with socio-economic development. In this regard, the findings are relevant to broader efforts toward sustainable management of terrestrial ecosystems, including the aspirations reflected in Sustainable Development Goal (SDG) 15: Life on Land. Future research is encouraged to examine similar socio-ecological dynamics in other nature-based tourism destinations through comparative approaches involving multiple stakeholders and different governance

contexts, thereby contributing to a broader understanding of sustainable tourism governance across diverse environmental and cultural settings.

## References

- Boluk, K. A., Cavaliere, C. T., & Higgins-Desbiolles, F. (2019). A critical framework for interrogating the United Nations Sustainable Development Goals 2030 Agenda in tourism. *Journal of Sustainable Tourism*, 27(7), 847–864. <https://doi.org/10.1080/09669582.2019.1619748>
- Bryant, R. L., & Bailey, S. (1997). *Third World Political Ecology*. London: Routledge.
- Butler, R. W. (1980). The concept of a tourist area cycle of evolution: Implications for management of resources. *The Canadian Geographer*, 24(1), 5–12. <https://doi.org/10.1111/j.1541-0064.1980.tb00970.x>
- Cole, S. (2007). Beyond authenticity and commodification. *Annals of Tourism Research*, 34(4), 943–960. <https://doi.org/10.1016/j.annals.2007.05.004>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- El Fikri, M., & Ritonga, H. M. (2017). Dampak strategi pemasaran terhadap keputusan berkunjung dan kepuasan wisatawan ke Bumi Perkemahan Sibolangit. *Jurnal Manajemen Tools*, 8(2), 58–67.
- Fennell, D. A. (2020). *Sustainable Tourism* (5th ed.). Bristol: Channel View Publications.
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162(3859), 1243–1248. <https://doi.org/10.1126/science.162.3859.1243>
- Iswandi, I. (2019). *Eksplorasi Hutan dalam Perspektif Fikih Lingkungan*. Kalam.
- Lambin, E. F., Geist, H. J., & Lepers, E. (2001). The causes of land-use and land-cover change: Moving beyond the myths. *Global Environmental Change*, 11(4), 261–269. [https://doi.org/10.1016/S0959-3780\(01\)00007-3](https://doi.org/10.1016/S0959-3780(01)00007-3)
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Robbins, P. (2020). *Political Ecology: A Critical Introduction* (3rd ed.). Hoboken, NJ: Wiley-Blackwell.
- Rosato, P. F., Caputo, A., Valente, D., & Pizzi, S. (2021). 2030 Agenda and sustainable business models in tourism: A bibliometric analysis. *Journal of Cleaner Production*, 293, 126023. <https://doi.org/10.1016/j.jclepro.2021.126023>
- United Nations. (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York: United Nations.
- United Nations World Tourism Organization (UNWTO), & United Nations Development Programme (UNDP). (2018). *Tourism and the Sustainable Development Goals: Journey to 2030*. Madrid: UNWTO. <https://doi.org/10.18111/9789284419401>
- Weaver, D. (2006). *Sustainable Tourism: Theory and Practice*. Oxford: Elsevier.