

## Strategy for the Development of Lake Toba Tourism Potential

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### ABSTRACT

*Lake Toba has great potential as a national leading tourist destination with extraordinary natural and cultural wealth. However, tourism development in the region still faces various challenges, such as limited infrastructure, lack of empowerment of local communities, and low utilization of digital technology in promotion. This study aims to evaluate the strategy for developing the tourism potential of Lake Toba with a focus on improving the quality of local stakeholders. The approach used was qualitative with a case study method, involving in-depth interviews, participatory observations, and documentation studies of 25 participants. The results of the study show that collaboration between the government, local communities, and the private sector is the key to sustainable tourism development. Infrastructure needs to be improved, cultural preservation must be strengthened, and destination promotion must rely more on digital media. In addition, human resource training and environmental management are important aspects to realize an inclusive and sustainable tourism ecosystem. This study recommends a holistic approach based on cross-sector collaboration to optimize the tourism potential of Lake Toba.*

### ABSTRAK

Danau Toba memiliki potensi besar sebagai destinasi wisata unggulan nasional dengan kekayaan alam dan budaya yang luar biasa. Namun, pengembangan pariwisata di kawasan masih menghadapi berbagai tantangan, seperti infrastruktur yang terbatas, kurangnya pemberdayaan masyarakat lokal, dan rendahnya pemanfaatan teknologi *digital* dalam promosi. Penelitian ini bertujuan untuk mengevaluasi strategi pengembangan potensi pariwisata Danau Toba dengan fokus pada peningkatan kualitas pemangku kepentingan lokal. Pendekatan yang digunakan bersifat kualitatif dengan metode studi kasus, melibatkan wawancara mendalam, observasi partisipatif, dan studi dokumentasi terhadap 25 peserta. Hasil penelitian menunjukkan bahwa kolaborasi antara pemerintah, masyarakat lokal, dan sektor swasta merupakan kunci pengembangan pariwisata berkelanjutan. Infrastruktur perlu ditingkatkan, pelestarian budaya harus diperkuat, dan promosi destinasi harus lebih mengandalkan media digital. Selain itu, pelatihan sumber daya manusia dan pengelolaan lingkungan menjadi aspek penting untuk mewujudkan ekosistem pariwisata yang inklusif dan berkelanjutan. Penelitian ini merekomendasikan pendekatan holistik berbasis kolaborasi lintas sektor untuk mengoptimalkan potensi pariwisata Danau Toba.

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## INTRODUCTION

Lake Toba is one of the leading tourist destinations in Indonesia that offers extraordinary natural beauty and distinctive cultural richness. As the largest volcanic lake in the world, Lake Toba is not only the pride of the people of North Sumatra, but also a national asset that is able to attract local and international tourists. The government has designated Lake Toba as one of the five super priority destinations, making it one of the top tourist destinations on the global tourism map. However, this great potential has not been fully utilized, especially in terms of empowering local stakeholders who play an important role in tourism sustainability. One of the main challenges in the development of Lake Toba tourism is the quality of local stakeholders, including the community, business actors, and local governments. Many of them do not have enough skills and knowledge regarding the modern tourism industry, making it difficult to provide the best experience for tourists. These challenges are exacerbated by a lack of access to relevant training and education. The involvement of local stakeholders in tourism planning and management is also minimal, so the sense of ownership and responsibility for destination development is not optimal.

On the other hand, the tourism supporting infrastructure in the Lake Toba area still needs a lot of improvement. Although the government has invested large funds to build roads, airports, and public facilities, the reality is that some facilities such as accommodation, sanitation, and transportation do not meet international standards. This has an impact on tourist comfort, which ultimately affects the level of visits and the contribution of the tourism sector to regional income.

One of the main challenges in the development of Lake Toba tourism is the

low promotion of destinations, especially in the use of digital technology. In the modern era marked by the dominance of online platforms, tourism marketing is required to be able to reach the global market through various digital media. However, most local business actors in the Lake Toba area have not optimized the use of social media, websites, and technology applications in introducing their products and services to the world. The lack of digital literacy and online marketing skills is a serious obstacle in increasing the visibility of this destination internationally. This phenomenon is in line with the findings of [Daryana and Damanik \(2025\)](#), which show that the absence of digital promotion and weak technological capacity at the local community level exacerbate the stagnation of tourism economic growth in nature-based destinations in North Sumatra. In addition, the study of [Normelani, Riadi, and Efendi \(2022\)](#) emphasized the importance of integrating promotional digitalization in community-based ecotourism management to increase the competitiveness of destinations in the midst of global competition. Therefore, the development of Lake Toba's tourism potential requires a holistic and collaborative approach, which involves the active role of all stakeholders, including the government, local communities, the private sector, academics, and the media. This pentahelix synergy approach is considered to be able to encourage the creation of a tourism ecosystem that not only relies on physical infrastructure development, but also empowers human resources, preserves cultural heritage, and preserves the environment. With close cooperation between these various sectors, it is hoped that Lake Toba can develop into a sustainable tourist destination that provides long-term economic benefits

while maintaining the integrity of local culture and ecology.

As a tourist destination, Lake Toba has great potential to become an icon of Indonesian tourism in the international arena. However, improving the quality of local stakeholders is essential to optimize this potential. This research aims to find effective strategies in improving the quality of local stakeholders in the Lake Toba area. With a qualitative and quantitative approach, this research will provide a complete picture of the existing challenges and opportunities, as well as recommendations for solutions that can be implemented to overcome these problems.

Table 1. Tourist Visit Data

Year	Domestic Tourists	International Tourists	Total Travelers
2018	1,200,000	90,000	1,290,000
2019	1,350,000	110,000	1,460,000
2020	750,000	25,000	775,000
2021	850,000	30,000	880,000
2022	1,100,000	80,000	1,180,000
2023	1,300,000	100,000	1,400,000

Source: BPS North Sumatra (2023)

According to [Ruhanen, Moyle, and Moyle \(2022\)](#), sustainable tourism requires close collaboration between governments, local communities, and the private sector to ensure the achievement of economic, social, and environmental benefits in a sustainable manner. However, a UNESCO study (2020) shows that destination management that does not optimally involve local communities often leads to loss of ownership of tourism resources. On the other hand, digital promotion is a major need in the modern era. UNWTO (2022) highlights the importance of using social media and digital technologies to increase the visibility of tourist destinations in international markets. However, a report from the Ministry of Tourism and

Creative Economy (2023) shows that most local business actors in Lake Toba have not made optimal use of digital platforms.

Previous research related to this research is as follows:

Table 2. Research Related to Tourism Development Strategies

No	Researchers	Year	Research Focus	Key Findings
1	Nasution, Harahap, & Lubis	2022	Empowering local communities in lake tourism destinations	Active involvement of local communities improves ecotourism sustainability
2	Siregar & Hutagalung	2023	Digitization of tourism promotion in Indonesia's natural destinations	The use of digital media is important to expand the tourism market
3	Pratiwi et al.	2021	Green infrastructure in super priority destinations	Sustainable infrastructure supports tourism growth
6	Lee & Xie	2022	Post-pandemic tourism digital marketing strategy	Digital Literacy Accelerates Tourism Recovery
7	Ahmed, Kimbu, & McIntosh	2022	Integration of local culture in tourism development	Cultural narratives reinforce the appeal of destinations
8	Lubis & Manurung	2023	Development of Batak cultural tourism in Lake Toba	Cultural tourism in Lake Toba has not been cultivated optimally
9	Zhang & Zhao	2023	Digital literacy for the promotion of tourist destinations	The digital skills of local communities determine the success of the promotion

Source: Author data (2024)

From the above research, this study has a difference in substance to expand the aspect of seeing a problem, here are the differences that exist in this study:

Table 3. Differences between this study and previous research

Not	Previous Research	Research Focus	Differences in This Study
1	Nasution, Harahap, & Lubis (2022)	Community empowerment without integration of infrastructure and technology	This research integrates community empowerment with infrastructure development and digitalization of promotions
2	Siregar & Hutagalung (2023)	Focus on digitizing tourism promotion	This research involves digitalization, human resource empowerment, cultural preservation, and environmental management simultaneously
3	Pratiwi et al. (2021)	Green infrastructure for tourism	This research not only discusses infrastructure, but also stakeholder collaboration and tourism product innovation
4	Dog Spy (2020)	Increasing the capacity of human resources in the tourism sector	This study examines the relationship between human resources, government, the private sector, and local communities
5	Rivera (2021)	Multi-stakeholder collaboration in the Latin American context	This study adapts the concept of collaboration to the specific context of Lake Toba in Indonesia
6	Lee & Xie (2022)	Post-COVID-19 digital strategy	This research combines digital promotion with the strengthening of local culture
7	Ahmed,	Cultural	This research

	<a href="#">Kimbū, &amp; McIntosh (2022)</a>	integration in general tourism	focuses on the integration of Batak culture specifically for Lake Toba
8	Lubis & Manurung (2023)	Development of Batak cultural tourism	This research expands the focus to ecotourism, educational tourism, and promotional digitalization
9	Zhang & Zhao (2023)	The importance of digital literacy in tourism promotion	This research links digital literacy with local community empowerment and environmental management

Source: Author data (2024)

In the context of the development of Lake Toba tourist destinations, this research presents novelty by integrating a collaborative approach between local communities, the government, and the private sector simultaneously. In contrast to previous research that tended to focus on one aspect such as infrastructure, community empowerment, or digital promotion separately, this study places the active involvement of these three actors at the core of sustainable development strategies.

This approach allows for the formulation of a more comprehensive strategy, where the development of local human resources, the preservation of Batak culture, environmental management, and the implementation of tourism digitalization are intertwined in one integrative framework. In addition, the study uses field-based exploration methods through in-depth interviews and participatory observations to gain a more accurate empirical understanding of the real challenges faced by stakeholders on the ground.

Another novelty lies in the focus of research on the preparation of a locally-based tourism development model

that not only pays attention to economic aspects, but also social and ecological sustainability, so that it is expected to strengthen Lake Toba's position as a leading tourist destination that is highly competitive in the international market.

## LITERATURE REVIEW

### The Concept of Sustainable Tourism

Sustainable tourism aims to meet the needs of the current generation without sacrificing the capabilities of future generations, by balancing economic growth, environmental conservation, and socio-cultural justice (UNWTO, 2023; Hardy & Beeton, 2022). This principle emphasizes the importance of sustainability not only in environmental aspects, but also in social welfare and local economic development. Tourist destinations must transform from only chasing the quantity of tourists to focusing on quality and long-term impact. In the Lake Toba area, this approach is relevant given the great natural and cultural potential, as well as the high threat of environmental degradation due to overexploitation.

### The Role of Stakeholders

Sustainable tourism development cannot be done by one party alone, but through synergy between local communities, governments, the private sector, academia, and the media within the framework of the pentahelix (Akbarudin & Pratama, 2024). UNESCO (2020) emphasizes that the Community-Based Tourism (CBT) model can increase the involvement and well-being of local communities. The government has a strategic role in the provision of infrastructure and regulations (BPS, 2023), but Bramwell and Lane (2020) remind that without effective coordination between government agencies and the active participation of local communities, tourism development is often unsustainable. The private sector,

according to Novelli and Benson (2020), the private sector in tourism development must be encouraged to invest through an inclusive approach oriented towards empowering local communities to ensure the social and economic sustainability of tourist destinations. A study by Daryana and Damanik (2025) shows that in destinations such as Paraban Hot Springs, the absence of community institutions such as BUMDes causes the distribution of economic benefits to be uneven.

### Infrastructure and Accessibility

Physical infrastructure is the main supporting factor in the development of tourist destinations (LIPI, 2022). In the Lake Toba area, although the construction of roads and Silangit Airport has improved accessibility (BPS North Sumatra, 2023), the study of Normelani, Riadi, and Efendi (2022) shows that infrastructure alone is not enough without environmentally friendly governance and community involvement. Weaver and Lawton (2021) added that the principle of infrastructure development should adopt the concept of low-impact development to maintain the destination ecosystem.

### Cultural and Environmental Preservation

The preservation of local culture is an integral part of the sustainability strategy. Hernández-Mogollón, Duarte, and Folgado-Fernández (2020) emphasize that without sensitive management of local cultural values, tourism can accelerate the process of cultural commercialization and reduce the authenticity of destinations. Zahra and Samadi (2024) show that packaging local narratives in the form of tourism stories effectively increases the attractiveness of destinations while strengthening cultural identity. Meanwhile, from an environmental perspective, community-based waste management is the key to maintaining the destination ecosystem (MoEF, 2023).

### **Tourism Product Development**

Tourism products in Lake Toba need to be developed in various ways, including natural, cultural, culinary, and educational tourism. [Becken and Job \(2022\)](#) emphasize that nature tourism activities, such as trekking and water activities, must be designed with minimal ecological impacts and environmental conservation principles in mind to ensure the sustainability of tourist destinations. The North Sumatra Tourism Office (2023) called the Batak cultural festival a great potential that still needs to be optimized. Research by Wulandari (2023) shows that community-based culinary tourism can encourage an increase in local income by up to 30%. In addition, LIPI (2022) highlights the importance of local ecosystem educational tourism to instill conservation value in tourists.

### **Digitization and Destination Promotion**

Digital marketing is a vital instrument in strengthening the image of destinations. UNWTO (2022) emphasizes that the use of social media such as Instagram, TikTok, and YouTube is very effective in attracting millennial tourists. [The Wicaksana study \(2024\)](#) proves that the integration of digital promotion with interactive map-based platforms can increase tourist visits by up to 29% in six months. The Ministry of Tourism and Creative Economy (2023) also emphasized the importance of digitalization strategies in super priority destinations, including Lake Toba.

### **Economic Empowerment of Local Communities**

Local community empowerment is the foundation of tourism sustainability ([Giampiccoli & Mtapuri, 2020](#)). Research by [Fairuzia, Hasanah, and Rachmawati \(2024\)](#) in hot spring tourism areas shows that diversification of MSME products can increase household income by up to 47%. In the context of Lake Toba, strengthening culture- and nature-based

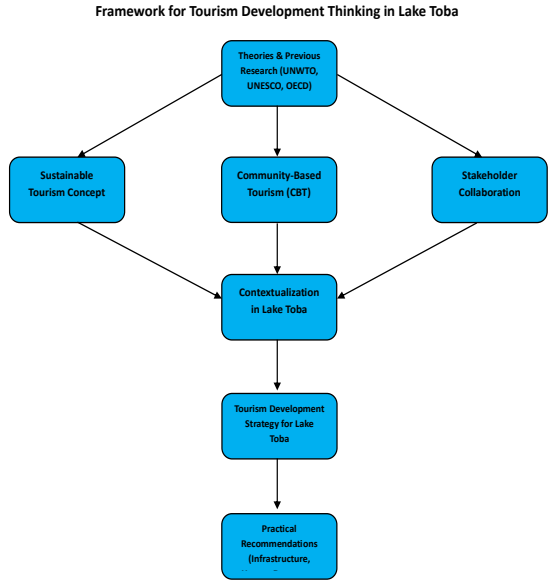
MSMEs is considered strategic to build the economic resilience of tourist villages.

### **Relevance to Previous Research**

This research reinforces various previous theoretical and empirical findings, such as the concept of sustainable tourism (UNWTO, 2022; Weaver, 2020), the importance of community empowerment through CBT (UNESCO, 2020; [Giampiccoli & Mtapuri, 2020](#)), the need to strengthen environmentally friendly infrastructure (LIPI, 2022), and the importance of digital promotion strategies ([Wicaksana, 2024](#); UNWTO, 2022). The pentahelix collaboration model adopted is also in line with the studies of [Akbarudin and Pratama \(2024\)](#), as well as [Daryana and Damanik \(2025\)](#) which emphasized that the success of tourist destinations depends on the active involvement of all stakeholders.

Referring to previous research provides a strong and reliable foundation for this research. For example, Research by [Font and McCabe \(2022\)](#) emphasizes the importance of balancing tourism development and environmental conservation to achieve the long-term sustainability of tourist destinations, which is also a major challenge in the management of the Lake Toba area. This understanding helps research to produce more relevant and actionable strategies.

The authors adapt theories and findings from previous research to the unique characteristics of Lake Toba. For example, the concept of collaboration between stakeholders (Smith & Robinson, 2019) is applied to explore how local communities, governments, and the private sector can work together effectively in the context of tourism in Indonesia, particularly in the Lake Toba region. This approach ensures that the strategy is designed to be more appropriate to local conditions.



**Figure 1. Frame of mind**  
*Source: Author data, 2024*

**METHOD**

This study uses a **qualitative approach** with a **case study method** to explore strategies for developing tourism potential in the Lake Toba area. This approach was chosen because it is effective in exploring complex phenomena contextually and in-depth from the perspective of key actors in the field.

The research location includes several main areas around Lake Toba, such as Parapat, Balige, and Samosir Island, which have excellent tourism potential. The research participants were selected by purposive sampling, consisting of local communities, tourist destination managers, business actors, local government officials, and academics related to tourism. The number of participants was 25 people.

Data collection techniques include semi-structured in-depth interviews, participatory observations, and documentation studies of tourism planning documents, BPS statistics, and super priority destination development reports. Interviews are recorded with permission, then transcribed for analysis.

The data analysis in this study was carried out using a **reflexive thematic analysis approach**, which includes the coding process, theme development, and systematic interpretation of the patterns of meaning contained in the data (Braun & Clarke, 2021). The validity of the data is maintained through source triangulation, cross-checking between participants (member checking), and recording the research process in the form of trace audits. With this method, the research seeks to produce a comprehensive understanding of the challenges and opportunities in sustainable tourism development in the Lake Toba region.

Table 4. Operational Research Variables

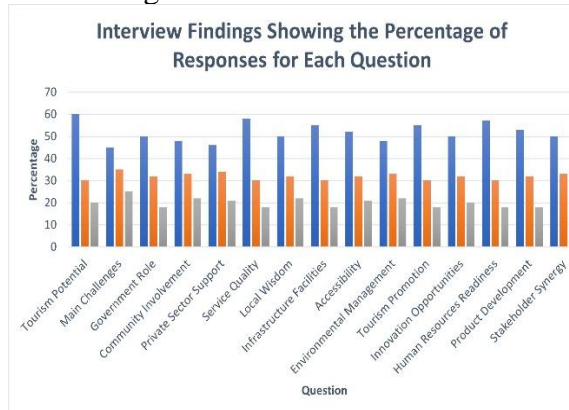
N o	Research Focus	Indicator	Data Source	Data Collection Techniques
1	Sustainable Tourism Development	Economic, social, and environmental balance; Implementation of ecotourism	Local communities, business actors, local governments	In-depth interviews, Observations, Documentation
2	Local Community Involvement	Participation in tourism planning, implementation, and benefits	Local communities, NGOs, Destination managers	Interviews, Observations
3	The Role of Local Government	Supporting policies, infrastructure development, inter-agency coordination	Local government, Policy documents	Interviews, Documentation studies
4	The Role of the Private Sector	Investing in Tourism Facilities, Empowering Local Economies	Tourism Entrepreneurs, Local MSMEs	Interviews, Observations
5	Infrastructure and Accessibility	Quality of roads, transportation, public facilities that support tourism	Community, Government, Tourists	Observations, Documentation studies
6	Cultural and Environment	Waste management, Batak	Cultural communities,	Interviews, Observations

	ntal Preservation	cultural preservation, nature conservation	environmen tal NGOs, Communiti es			sites are not well maintained, with poor sanitation. Silangit Airport is quite good, but public transportation such as buses and local transportation from the airport to tourist destinations is still limited and not well scheduled. Inter-island transportation, such as ferries, is also often delayed.
7	Digital Promotion Strategy	Utilization of social media, creative promotional content, influencer collaboratio n	Department of Tourism, Tourism Actors, Digital Media	Interviews, Documenta tion		Batak cultural festivals such as the Lake Toba Festival are rarely held regularly, so they do not attract enough tourists

Source: Author data, 2024

## RESULTS AND DISCUSSION

In the development of Lake Toba tourism, the role of stakeholders, policies implemented, and the development of tourism products are important factors that determine the success of the tourist destination. This study examines the role of each stakeholder (community, government, and private sector), policies that affect tourism development, as well as tourism products that can be developed and effective promotional strategies to increase the attractiveness of Lake Toba as a leading tourist destination.



**Figure 2. Interview Data**  
*Source: Author data (2024)*

Table 5. Observation

Table 1: Observations					offer beautiful views of the lake, but they are less promoted through digital media so they are less known to tourists.
Day	Observation Aspect	Observation Results			
1	Infrastructure	Many roads leading to remote tourist sites are still in a damaged, rocky, or potholed condition, making them difficult for tourists to access. Public facilities such as toilets and parking lots in some tourist	5	Local Community Involvement	Local community involvement in the tourism sector is still low, with most people only working as farmers or fishermen. Business opportunities such as

		opening homestays, food stalls, or souvenir shops have not been utilized optimally due to lack of training and business capital. Community empowerment programs to engage in tourism are very limited, so many people are not aware of the economic potential of this sector.
6	Digital Promotion	Most local business actors have not used digital technology for tourism promotion. Social media such as Instagram and Facebook are rarely used by homestay managers, restaurants, or tour operators to market their services. There is no centralized website that provides complete information about destinations, lodging, and activities around Lake Toba. Tourist information is often only available offline, making it difficult for international tourists to access.
7	Nature Tourism	The potential of natural tourism such as trekking on Mount Pusuk Buhit, ecotourism around Lake Toba, and water sports activities have not been utilized to the fullest. Trekking trails do not have adequate signage or guides, so tourists often feel confused. Tour operators for nature activities are very limited, so tourists have to rely on information from locals who are not always organized. Many natural tourist areas are not maintained and filled with garbage.

Source: Author data (2024)

## Stakeholders in Lake Toba Tourism Development

Sustainable tourism development requires the active involvement of various parties, such as local communities, governments, and the private sector. These three groups have an important role in building a mutually supportive tourism ecosystem.

### a. Local Community

Local communities have a major role in the success of tourism development, as they directly provide services to tourists and preserve culture

and the environment. Community involvement in local arts and cultural activities increases the sustainability of culture-based tourist destinations" (Ahmed, Kimbu, & McIntosh, 2022). However, interviews with local communities reveal that there are still many challenges faced, especially the lack of skills, lack of understanding of tourism management, and lack of optimal management of tourism products based on local culture.

According to a report by the Ministry of Tourism and Creative Economy (2023), only around 35% of the people around Lake Toba are directly involved in the tourism sector. Most of the population still works as farmers, fishermen, or informal workers. Meanwhile, the tourism sector is more managed by the private sector which often does not involve the local community in the management and development of destinations. This creates a gap between the growth of the tourism industry and the economic improvement of the local community.

The active involvement of local communities in tourism management increases the sense of belonging and the quality of tourism services (UNESCO, 2020). However, to maximize their contribution, local communities require intensive training to enhance their ability in managing tourism destinations, developing local products, and establishing homestays that attract tourists to stay longer. Empowering communities and strengthening local capacity are crucial strategies in sustainable tourism village development. This is supported by recent research indicating that active community participation and empowerment through cultural and agrotourism initiatives significantly enhance service quality and promote sustainable tourism development. In addition, training in the field of Batak

crafts, tour guides, and culinary is also important to help people manage their cultural potential more professionally and economically.

#### **b. Government**

The government plays a big role in developing Lake Toba tourism through strategic policies. One of them is the designation of Lake Toba as one of the 5 Super Priority Destinations (Ministry of Tourism and Creative Economy, 2023). This policy is designed to improve infrastructure, accessibility, and promotion to make Lake Toba a leading tourist destination that attracts domestic and international tourists.

However, despite efforts such as the construction of the Medan-Tebing Tinggi-Silangit toll road and the construction of Silangit Airport, challenges remain. Data from BPS (2023) shows that access to several areas around Lake Toba is still limited, with the condition of the main road not optimal. This can negatively impact the number of tourists visiting.

In addition to improving infrastructure, the government is also responsible for developing policies that support the involvement of local communities in the tourism sector. For example, through tourism-based community empowerment programs that ensure that income from this sector can be enjoyed equally by the community. Policies that focus on cultural and environmental preservation are also very important, considering that the potential of nature and culture is the main attraction of the Lake Toba area.

#### **c. Private Sector**

The private sector plays an important role in the development of tourism in Lake Toba. They are responsible for providing supporting facilities such as hotels, restaurants, and travel agents. In addition, good collaboration between the private sector

and the government is needed to build a mutually supportive and sustainable tourism ecosystem.

However, the results of interviews with tourism industry players show that the involvement of local communities in private sector activities is still not optimal. Many tourism entrepreneurs prefer to recruit workers from outside the region, so economic opportunities for local communities are limited. To address this, there needs to be closer collaboration between the private sector and local communities. One of the efforts that can be made is through partnership programs, such as involving the community in the management of homestays, restaurants, or the production of local handicrafts that can increase the participation and welfare of the local community.

#### **Policies in Lake Toba Tourism Development**

The policies implemented by the government have a great influence on the management and development of tourist destinations in Lake Toba. Some of the policy aspects that are of main concern are infrastructure development, cultural preservation, and waste management.

##### *Infrastructure*

Investment in infrastructure, especially roads and public facilities, is a key factor that increases accessibility and comfort for tourists" (Pratiwi et al., 2021). Adequate infrastructure is a key factor to ensure easier access for tourists to the Lake Toba area. After Lake Toba was designated as one of the Super Priority Destinations, the government has made various efforts, such as the construction of toll roads, improving the quality of district roads, and the development of Silangit Airport as the main gateway for tourists. However, according to BPS North Sumatra (2023), despite improvements, the condition of roads to several areas around Lake Toba is still

inadequate and often damaged due to extreme weather.

In addition, lodging infrastructure and public facilities are also inadequate, the availability of community-based homestays that meet international standards can increase the length of stay of tourists and increase the local economic impact" (Giampiccoli & Mtapuri, 2020). Although there are several star hotels in the area such as Parapat and Samosir, the number and quality of existing lodging are not able to accommodate many tourists. Therefore, the government needs to prioritize infrastructure development that supports the needs of tourists and maintains the sustainability of tourist destinations in the Lake Toba area.

#### **b. Cultural Preservation**

Cultural preservation is an important element to maintain the uniqueness and authenticity of Lake Toba as a tourist destination. Batak culture which includes traditions, dances, music, and local belief systems is one of the main attractions for tourists. However, the challenge faced is the risk of over-commercialization that can damage cultural values and meaning.

To overcome this problem, the government needs to implement stricter policies in cultural preservation. One strategic approach to preserving cultural authenticity in tourism is by equipping local communities with targeted training in cultural heritage management. Such training should emphasize the importance of safeguarding traditional values while developing effective interpretive skills. These skills are essential in enhancing the visitor experience through meaningful storytelling and culturally respectful engagement. Research has shown that competency-based training for local tour guides significantly improves the quality of interpretation and tourist satisfaction (Puspitasari & Muhamad, 2023). In

addition, policies that encourage community participation in producing cultural products, such as handicrafts, traditional clothing, and distinctive culinary, are essential. In this way, local communities can play an active role in preserving and developing their cultural heritage.

#### **c. Waste Management**

With the development of the tourism sector, waste management is a big challenge that must be overcome, community-based waste management has proven to be effective in maintaining the sustainability of natural tourist destinations" (Normelani, Riadi, & Efendi, 2022). Research in Lake Toba shows that the increasing volume of waste, especially plastic waste, is the main problem faced. Unfortunately, the waste management facilities available in this area are still inadequate to address the problem.

The government needs to design an integrated policy in waste management by involving various parties, such as local communities, business actors, and tourist destination managers. Steps that can be taken include campaigns to reduce plastic use, the provision of separate bins to facilitate recycling, and the development of better waste management facilities. This policy needs to be a priority to ensure that tourist areas remain clean and environmentally friendly.

### **Lake Toba Tourism Product Development**

The development of tourism products is an important aspect to increase the attractiveness of Lake Toba as a leading destination. Based on research, there are several types of tourism products that can be further developed, including natural, cultural, culinary, and educational tourism.

#### **a. Natural Tourism Development**

Local ecosystem-based educational tourism programs can foster

conservation awareness among young tourists (LIPI, 2022). Lake Toba has extraordinary natural potential, such as the beauty of lakes, mountains, and ecotourism areas that have not been optimally utilized. Ecotourism-based nature tourism is able to increase the economic added value of destinations while maintaining the preservation of the natural environment (Stone & Nyaupane, 2020). Some of the natural destinations that have the potential to be developed in the Lake Toba area include trekking on Mount Pusuk Buhit, water tourism on Lake Toba, and adventure tourism such as cycling and camping. The implementation of community-based tourism (CBT) initiatives has been shown to empower local communities in managing tourism potential, strengthening their economic resilience, and sustaining local cultural and environmental values. Research from LIPI (2022) reveals that natural tourism like this can attract international tourists, especially those who love adventure and outdoor activities.

#### **b. Cultural Tourism**

Batak culture is one of the main tourist attractions in Lake Toba. Therefore, the development of culture-based tourism products, such as Batak cultural festivals, art performances, and historical tourism, has great potential. Data from the North Sumatra Tourism Office (2023) shows that events such as the Lake Toba Festival, which is held every year, have managed to attract the attention of local and international tourists. To strengthen this appeal, it is crucial to engage local communities in traditional art performances, dances, and music as a way to introduce the rich Batak culture to the world.

#### **c. Culinary Tourism**

Batak culinary specialties, such as *arsik*, *naniura*, and *tuktuk* sauce, are a unique attraction for tourists. The development of local culinary tourism can

enrich the tourist experience while strengthening the cultural identity of the region", the development of culinary tourism that focuses on local and authentic products can be one of the strategies to attract tourists. Research conducted by Wulandari (2023) shows that tourists who visit Lake Toba are very interested in trying Batak specialties. Therefore, building a culinary center or traditional market that serves Batak food can be a strong magnet to attract more tourists.

#### **d. Tourism Promotion**

Proper promotion is essential to attract more tourists to Lake Toba. Digital marketing strategies through social media are effective in increasing the number of tourists, especially from the younger generation" (Lee & Xie, 2022), one effective way is through the use of social media and digital platforms. According to data from the Ministry of Tourism (2023), promotions using platforms such as Instagram, YouTube, and TikTok have proven to be successful in attracting the attention of tourists, especially from the younger generation.

Therefore, it is important for the government and the private sector to synergize in marketing Lake Toba through social media and digital platforms. In addition, collaboration with international travel agents is also needed to introduce Lake Toba as a leading tourist destination in the global market. This strategy can increase the visibility of Lake Toba and attract more tourists from various countries.

### **CONCLUSION**

#### **The Role of Stakeholders**

Local communities, governments, and the private sector have an important role in the development of tourism in Lake Toba. However, the involvement of local communities is still limited and often only at a low level in the

management of tourist destinations. This creates a gap between tourism potential and economic improvement of the local community. On the other hand, the private sector is more dominant in the management of the tourism industry, but often lacks optimal involvement of local communities in tourism economic activities.

### **Government Policy**

The government has shown its commitment by making Lake Toba one of the 5 Super Priority Destinations. Toll road construction programs, Silangit Airport repairs, and road repairs in the Lake Toba area have helped increase tourist accessibility. However, access to some remote tourist areas is still limited, and infrastructure maintenance is not optimal. The sustainability and maintenance of tourism facilities need to receive greater attention in government policies.

### **Cultural and Environmental Preservation**

Batak culture, with its traditions, dances, music, and culinary, is the main attraction of Lake Toba tourism. However, the increasing interest of tourists can trigger excessive commercialization of culture, thus risking damaging local values. Policies that support cultural preservation must be balanced between tourism development and the protection of cultural values. In addition, waste management is still a big challenge in the Lake Toba area. If not managed properly, this can reduce tourist attractions and damage the ecosystem of Lake Toba.

### **Tourism Product Development**

Lake Toba has great potential to develop tourism products, such as natural, cultural, culinary, and educational tourism. Trekking tourism on Mount Pusuk Buhit and ecotourism in the lake area have a high attraction for domestic and international tourists. In addition,

Batak cultural festivals and typical culinary tours are also the main attractions. However, the development of tourism products needs to be carried out by paying attention to sustainability aspects and actively involving local communities. Innovative promotions, especially through digital platforms, are also needed to attract global tourists.

Overall, Lake Toba has great potential as a leading tourist destination that is able to provide significant economic benefits for the local community and the country. However, tourism development in the region requires a holistic and sustainable approach, involving the active role of communities, governments, and the private sector. Good management of culture, environment, and tourism products is essential to create a tourism ecosystem that is not only economically profitable, but also maintains cultural values and environmental sustainability. Tourism development in Lake Toba must prioritize sustainability and cultural and environmental preservation, so that it can provide long-term benefits for local communities, tourists, and future generations. Collaboration between the government, local communities, and the private sector is needed to develop effective and integrated strategies, in order to maximize the potential of tourism without damaging nature and culture. With the right steps, Lake Toba can become a real example of sustainable tourism, both in Indonesia and at the global level.

### **Suggestions for Further Research**

This research still has limitations, especially in terms of regional coverage and participant representation. Therefore, it is suggested that further research can expand the research area to all districts around Lake Toba to get a more comprehensive picture of the dynamics of tourism development. In addition, future

research should adopt a ***mixed-methods approach*** that combines qualitative and quantitative data to produce more robust and generalizable findings. Further research can also focus on certain aspects, such as the development of digital community-based tourism, the impact of climate change on Lake Toba ecotourism, or the effectiveness of MSME-based local economic empowerment programs in the tourism sector. With a more in-depth and integrated approach, it is hoped that the resulting solutions can be more relevant in encouraging the sustainability of Lake Toba tourist destinations.

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