

ASSESSING THE SPATIAL ASPECTS OF ECOTOURISM DEVELOPMENT IN BUKIT LAWANG AREA

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Abstract

Bukit Lawang is part of the conservation area of Gunung Leuser National Park (TNGL) and is a popular tourist destination in Langkat Regency. The attraction of Bukit Lawang has resulted in the concept of ecotourism, with the hope that tourist activities will have a friendly impact on the natural ecosystem. Therefore, it is necessary to evaluate the influence of ecotourism activities within the scope of the 3A-based tourism concept and the spatial aspects of Google Earth imagery using time series techniques from 2012-2022. It is evident that from the 3A perspective, there has been a change in the needs of tourists for new tour packages that still prioritize nature tourism, the addition of alternative road sections as a form of accessibility development to Bukit Lawang, and the addition of accommodations to meet tourists' needs. From satellite imagery, there is an expansion of settlement areas, lodgings, parking areas, and a bridge access to a new lodging area within the range of 2012-2022.

Keywords: tourism, ecotourism, spatial differentiation, satellite image, attraction, accessibility, amenity.

A. INTRODUCTION

The tourism sector has been recognized as one of the main contributors to the development of many regions in Indonesia (Puspitayanti, 2019). For a long time, the tourism sector has been considered to play an important role in promoting macroeconomic growth, creating job opportunities, and increasing the welfare of communities (Purwanta & Dewi, 2019; Rosalina, 2017; Suryaningsih & Widi Nugraha, 2019). In addition, several studies have shown that positive tourism development also benefits social and cultural dynamics, such as creating pride in one's region (Indrianty & Rahma, 2019; Rahmi, 2016; Sugi Rahayu et al., 2015; Zaenal et al., 2016).

Despite the various positive impacts of tourism, it is important to be cautious about the sustainability of this industry in the future and how it can contribute to the economy, environment, and society continuously and sustainably (Mastika, 2018; Szromek, 2019). In addition, based on the National Long-Term Development Plan (RPJPN) for 2005-2025, all development sectors in Indonesia must implement sustainable development principles. This is one of the reasons why the concept of sustainable tourism emerged as a principle for many parties in organizing tourism-related businesses. The scope of sustainable destinations can be assessed in four aspects: sustainable management, social and economic sustainability, cultural sustainability, and environmental sustainability.

One form of tourism management related to sustainable tourism is ecotourism, which adopts the principles of sustainable tourism (Nasution et al., 2018). The Indonesian government has been serious about preparing regulations related to the implementation of ecotourism, for example, with the presence of Law Number 10 of 2009 concerning Tourism and Minister of Home Affairs Regulation Number 33 of

2009 concerning the Development of Regional Ecotourism. Ecotourism is defined as a natural tourism activity that considers education, understanding, and support for conservation efforts of natural resources, as well as increasing the income of local communities.

Types of ecotourism can be categorized into four, namely marine ecotourism, forest ecotourism, mountain ecotourism, and karst ecotourism (Lathifah et al., 2020; Mukhsin, 2017). One tourist area that has implemented a forest ecotourism approach is Bukit Lawang, located in Langkat Regency, North Sumatra Province, Indonesia. At the global level, Bukit Lawang is in the conservation area of Gunung Leuser National Park (TNGL), which has been designated by UNESCO as a world heritage site. At the national level, Bukit Lawang is one of the National Tourism Development Areas (KPPN). This indicates that Bukit Lawang is a respected ecotourism destination and serves as a role model in the implementation of tourism and conservation activities, which are usually considered conflicting.

Previous research has explored how proper land use planning can accommodate tourism and conservation activities in Bukit Lawang (Ginting & Veronica, 2019). Other research has shown that Bukit Lawang, as an ecotourism area, has improved the business activities of local communities (Sudirman & Sitepu, 2019).

The authors argue that conducting an assessment of the contribution of ecotourism activities to land use planning in Bukit Lawang should be a priority before any planning takes place. By evaluating how ecotourism activities periodically affect the spatial system in Bukit Lawang, information can be obtained on the direction of the impacts of ecotourism on the environment, allowing appropriate policies to be developed. Assessing the physical conditions of the ecotourism area is important because it helps to understand the environmental and ecosystem conditions within the area (Fahrina, 2011). This makes it possible to assess whether the ecotourism area meets the safety and quality standards necessary to ensure a safe and enjoyable tourism experience for visitors. This assessment also helps to identify environmental issues that may arise as a result of tourism activities, such as water pollution, soil erosion, and deforestation, and enables preventive action to be taken before these problems worsen (Gesvita, 2017; Yudistira et al., 2012).

In addition, assessing the physical conditions is also useful for planning and managing the ecotourism area, including the development of facilities and activities in the future (Suwarno, 2009). This helps to ensure that the ecotourism area is developed responsibly and meets high environmental and quality of life standards. Therefore, this study will focus on answering the questions of how the existing conditions of ecotourism in Bukit Lawang are and how the spatial conditions in the Bukit Lawang area are affected by ecotourism activities.

B. RESEARCH METHOD

The research employed a qualitative research method with a descriptive approach. This method serves to describe the results obtained and then processed in accordance with its function as a measuring tool in determining the tendencies of research findings, as well as to determine categories in the analysis results (Sugiyono, 2013). The data collection was carried out through primary survey in the form of field observations to observe the physical aspects of land use. Data collection techniques included interviews to identify the potentials of the tourism object. In the secondary data collection technique, an analysis of satellite image representations of the Bukit Lawang area was conducted. The method used for this analysis was to observe the development of

the tourism object area through Google Earth images, using time-series data over the last 10 years.

C. RESULTS AND ANALYSIS

The Bukit Lawang area is located within the utilization zone of Gunung Leuser National Park, in the Bahorok District, Langkat Regency, North Sumatra Province. The distance from the city of Medan to Bukit Lawang is approximately 2.5 hours. By observing the physical aspects of Bukit Lawang, the influence of land use and tourist attraction components that make this area develop can be determined. These physical aspects are assessed using the 3A perception (Attractions, Amenities, and Accessibility).

Attractions

The attraction of Bukit Lawang offers many attractions that can be enjoyed by tourists, including:

Whitewater Rafting

Bukit Lawang has a beautiful and clear river, which is utilized and used as an attraction for whitewater rafting for tourists who come. Not only refreshing river water can be obtained, but also the natural beauty of Bukit Lawang will be enjoyed.



Figure 1. Whitewater Rafting Area in Bukit Lawang

Trekking

As a preserved area with natural authenticity, the Bukit Lawang area is suitable for trekking activities. During trekking, if we are lucky, we can see orangutans swinging from tree to tree. Not only orangutans, but we can also see long-tailed macaques, argus birds, Thomas Leaf monkeys, gibbons, hornbills, and other cultivated plants such as the world's largest flower, the *Rafflesia Arnoldii*, which can grow up to 5 meters tall and weigh up to 15 pounds.



Figure 2. Trekking Areas in Bukit Lawang

Bat Cave.

The bat cave is located 2 km away and takes 30 minutes to reach. Hundreds of bats live inside the cave along with their nests, adding to the natural beauty of the cave.



Figure 3. Bat Cave in Bukit Lawang

In general, the attractions offered to tourists from year to year have not changed much. Tourists who come to Bukit Lawang tend to want to enjoy the tropical forest in the Gunung Leuser area where Bukit Lawang is one of the entrances. The change that is starting to be felt is the need of tourists to interact with the local community, so new tourism packages are formulated with the concept of village tourism, but still highlighting the beauty of the foothills of Mount Leuser.

Accessibility

Bukit Lawang is easily accessible to tourists, as evidenced by the transportation options available, including public transportation, a comprehensive road network, and other supporting facilities. It is



located 84 km from the city of Medan and can be reached by various modes of transportation, such as:

Figure 4. Accessibility in Bukit Lawang

Information on ground and air transportation to Bukit Lawang can be seen in the following table:

Table 1. Types of Transportation to Bukit Lawang

No	Transportation
1	<p>Ground</p> <ol style="list-style-type: none"> Utilizing public transportation, such as Minibus/Angkot "Pembangunan Semesta" from Pinang Baris Terminal in Medan to Tangkahan, which takes approximately 2.5 hours of travel time. Using a private or rented vehicle (owned by individuals/travel agencies), the journey takes approximately 2.5 hours from the city of Medan. Access to Bukit Lawang can also be reached from other provinces, such as Nanggroe Aceh Darussalam.
2	<p>Air</p> <p>Through air travel, visitors can land at Kualanamu Airport in Medan and continue the journey by land for around 2.5 hours.</p>

In general, accessibility in Bukit Lawang has undergone significant changes. Road infrastructure development has been initiated, although road quality is still far from satisfactory. Recently, there have been alternative road sections developed specifically for tourism to Bukit Lawang, which are expected to be free from large and commercial transportation modes that serve inter-provincial routes that have often been a cause of road damage.

Amenity

In the Bukit Lawang area, there are supporting facilities such as places of worship, parking areas, toilets, mosques, restaurants, souvenir shops, information centers, and Bukit Lawang signboards. These supporting facilities are a component of tourist attractions to support a tourism destination that aims to provide visitors with a comfortable feeling during their travel. Various tourism supporting facilities in Bukit Lawang are shown in several pictures below:



Figure 5. Amenities in Bukit Lawang

The above figure 5 depict some examples of amenities in Bukit Lawang. The leftmost image shows one of the travel agencies that can be found and offers various tour packages. The middle image shows a tourist information map that displays various points of interest that can be visited in the Bukit Lawang area. Meanwhile, on the far right, there is an image of a villa located right by the river.

Significant changes are visible from the construction of accommodations that accommodate the needs of tourists for a conducive atmosphere while traveling, especially for foreign tourists. It should be

noted that the atmosphere in the riverside area around Dusun VII Bukit Lawang, which is the center of attraction, is quite noisy and crowded at night. Foreign tourists complain a lot about this. Therefore, at the end of the Bukit Lawang area, several accommodations have emerged that target foreign tourists with higher prices and offer a peaceful evening atmosphere

The physical condition analysis of the area from 2012-2022

Land use in the area is marked by the emergence and development of tourism supporting sectors. Generally, there have been changes in land use in Bukit Lawang from 2012 to 2022. One significant change is the increase in residential buildings. The change in land use is reflected in the density of settlements around the Bukit Lawang tourist attraction. This is influenced by the migration of many people who are related to job opportunities. The increase in settlements also reflects the population growth in the Bukit Lawang area. Another change is the construction of new accommodations and the construction of a bridge to access these accommodations. Another impact is the addition of parking areas associated with the increase in accommodations. All of these changes are related to the increasing demand of tourists each year. These changes are illustrated in the following figure..

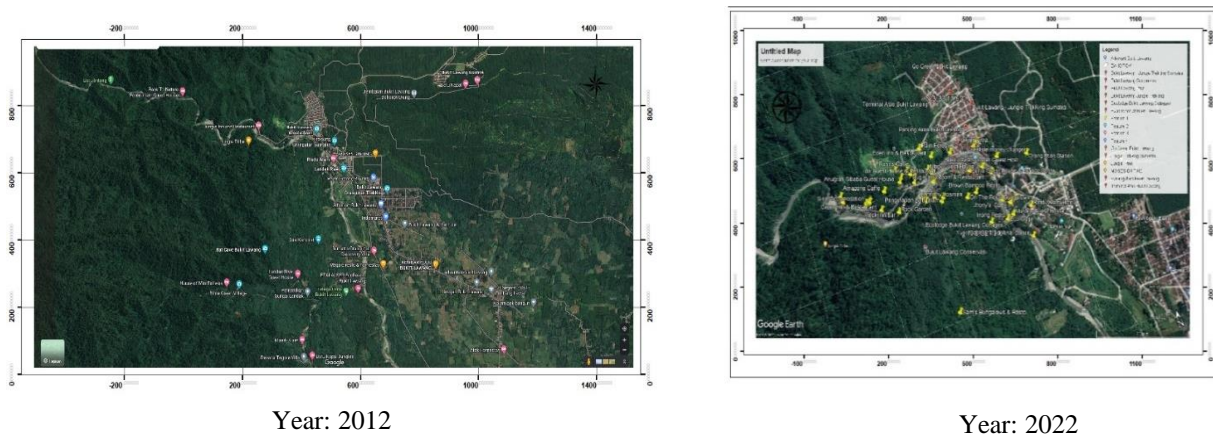


Figure 6. Differences in the Physical Condition of Bukit Lawang from 2012-2022

D. CONCLUSION

From the perspective of 3A aspects, there are several changes in attractions, accessibility, and amenities in Bukit Lawang over the past 10 years. Changes in attractions are seen from the need for new types of tourism packages that are rich in interaction with the local community. Changes in the aspect of accessibility are seen from the construction of alternative road infrastructure. As for the aspect of amenities, it can be seen from the increase in the number of accommodations. Spatially, changes in the Bukit Lawang area are influenced by the addition of settlements, accommodations, parking lots, and bridge access to the new accommodation buildings.

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