



# Analysis of Nature Tourism Development in the Study of Natural Resource Economic Development and the Environment

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## Abstrak

The aim of this research is to find out sustainable development efforts in Papaso village as an attraction for natural and local tourists. This research method is descriptive qualitative research, namely the data collected is in the form of words, pictures, not numbers. The Katobung Waterfall area is in the Papaso Village area, Batang District Lubu Sutam, Padang Lawas Regency, North Sumatra Province. Based on the division of forest areas according to function, the Katobung Waterfall natural tourism area is within the production forest area and based on the division of forest management blocks it is included in the non-timber forest product development area and environmental services. The Katobung Waterfall area is in the Papaso Village area, Batang Lubu District, Sutam, Regency. Padang Lawas, North Sumatra Province. Based on the division of forest areas according to function, the Katobung Waterfall natural tourist attraction is within the production forest area and based on the division of forest management blocks it is included in the non-timber forest product development area and environmental services. The existence of infrastructure and accommodation is something that can support the satisfaction of visiting tourists. The availability of standardized infrastructure and accommodation is important because it influences the frequency and length of stay of tourists. The availability of infrastructure within a 10 km radius makes it easier for tourists to access it.

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## 1. INTRODUCTION

Tourism in Indonesia has become one of the most vital economic sectors, thanks to the cultural, natural and traditional richness that attracts both local and international tourists (Arintoko et al., 2020). From the exotic beaches of Bali, the tropical forests of Kalimantan, to the cultural riches of Yogyakarta and the natural beauty of Raja Ampat, Indonesia offers a diverse range of tourism experiences. The government and private sector are aggressively developing tourism infrastructure and promotion to boost tourist visits, including through the concept of sustainable tourism that emphasizes environmental sustainability and empowerment of local communities (Mulyani et al., 2021). Although affected by the COVID-19 pandemic, the sector is starting to recover, with a focus on domestic tourism and destinations that prioritize the health and safety of visitors (King et al., 2021).

Law of the Republic of Indonesia (RI) Number 10 of 2009 concerning Tourism, Article 1 paragraph 5 states that tourist attractions are anything that has uniqueness, beauty and



value in the form of diversity of natural wealth, culture and man-made products that are the target or destination of tourist visits. Padang Lawas Regency is one of the regencies in North Sumatra that has tourist attractions, including natural attractions, cultural attractions, and artificial attractions. Various tourist attractions and attractions in Padang Lawas Regency have quite good potential that can provide income for regional income. Various tourist attractions and attractions offer various charms that have each tourist attraction can attract tourists, both domestic and foreign tourists.

One of them is the natural tourism of the Katobung waterfall located in Batang Lubu Sutam District, Padang Lawas Regency, North Sumatra. The savanna area which is still pristine has quite large tourism potential and should be developed. This Katobung waterfall is obtained from a regional art in the form of a drum beaten by local residents calling it Katobung. It is said that the name was given directly from the kings in the ancient kingdom era. This Katobung waterfall has seven levels. However, currently only up to level three can be utilized. Padang Lawas Regency, North Sumatra, has abundant natural tourism potential, one of which is Katobung Waterfall. Its natural beauty is still natural and well-maintained, with a charming waterfall and captivating surrounding panorama, making Katobung Waterfall a promising tourist destination.

Natural Resources (SDA) in Katobung Waterfall, Padang Lawas Regency, North Sumatra, are very diverse and abundant. The charming waterfall and clear and clean water flow offer an interesting experience for tourists. The area around Katobung Waterfall is famous for its dense and diverse rainforests, offering various types of unique flora and fauna. Fields and Agriculture: The area around Katobung Waterfall has fertile soil and a climate that supports various types of agriculture, such as rice, coffee, and vegetables. Rivers and Lakes: There are several rivers and lakes around Katobung Waterfall that can be used for tourism activities such as rowing boats, fishing, and swimming. There are several islands and beaches near Katobung Waterfall that offer attractive natural beauty for tourists. There is mineral and geological potential around Katobung Waterfall, such as gemstones, precious stones, and other minerals, which can be used for tourism and tourism activities.

Some residents say that Katobung Waterfall is located in Papaso Village, Batang Lubu Sutam District, Padang Lawas (Palas) Regency, North Sumatra Province (Sumut), because the position is right on the border. Now it is not a problem, because determining the boundaries of the area is indeed the government's job, but both Rohul and Palas residents are harmonious in that place, especially in the Katobung Waterfall tourist area. To reach the location of Katobung Waterfall, visitors can only use the Batang Lubu river transportation by using a boat. Local residents rent out motorboats for every visitor who comes. One of the advantages of this tour besides the charm of the waterfall that amazes tourists. On the journey using a motorboat, you can then enjoy the natural forest that is still preserved by exploring the Batang Lubu river.

On the way, tourists can forget the stress of mind, because of the workload in the office, because there is a view of monkeys ready to greet. In addition, you can also divert your gaze to the activities of local residents who work as gold miners. Both using manual labor and machine power. To get to Katobung Waterfall, it takes 1 hour of travel using a motorboat owned by local residents with a distance of approximately 20 KM from the local housing. However, to reach this hidden potential, a tough struggle will be taken. To reach the main waterfall, such as having to walk, along the path and small rivers. The beauty of the waterfall can be enjoyed from the lowest waterfall to the top. The forest canopy is still shady, preventing the sting of the sun from hitting the skin. One of the advantages of this tour besides the charm of the waterfall that amazes tourists. On the way by using a motorboat, then you can enjoy the natural forest that is still preserved by exploring the Batang Lubu river. For the first level, this waterfall is quite charming with a height of approximately five meters, the flow of the waterfall towards quite large rocks and directly towards the Batang Lubu River.

The second waterfall with a height of about 2 meters, has a small current. Forming a kind of pool flow at the bottom with quite steep rocks mixed with sand in its flow, but safe

enough to just look closely, for visitors if documenting themselves or taking pictures. Moving on to the third waterfall, it has a height of about 9 meters, natural carvings form beautiful natural carvings around the cliffs passed by a tributary. This waterfall is the main spot for tourists to feel the freshness of this natural waterfall. Although the terrain is quite difficult to get to this location, it will really pay off when you feel the splash of water falling on the face of every visitor there. Here, tourists can also swim to feel the sensation of the freshness of this waterfall.

The use of these natural resources can help in the development of sustainable nature tourism and benefit the local community (Sgroi, 2020; Sulistyana et al., 2019). By utilizing these natural resources responsibly, we can ensure that the natural beauty of Katobung Waterfall is maintained for future generations. The development of Katobung Waterfall nature tourism has great potential to drive economic growth in Padang Lawas Regency. However, the development of this tourism must be carried out by considering aspects of sustainability, both in terms of economy, social, and environment.

The community there works together to build a path or repair an existing road to facilitate access to the water. They provide simple facilities such as parking lots and food stalls to support tourist visits. The community plays an active role in maintaining the cleanliness and sustainability of the environment around the waterfall, such as planting trees or cleaning up trash. And also developing local handicraft products to sell to tourists as an additional source of income. Katobung Waterfall does indeed hold an interesting charm and great potential to be developed as a tourist destination. Here are some things that make this waterfall so special:

**Unspoiled Natural Beauty**, one of the main attractions of Katobung Waterfall is its natural environment which is still very natural. Dense forests, clear river flows, and fresh air create a refreshing and calming atmosphere. **Unique Access**: The journey to Katobung Waterfall is not an ordinary journey. Visitors must navigate the river by motorboat, providing a different and challenging experience. This makes the journey part of the adventure.

**Educational Potential**, in addition to being a tourist destination, Katobung Waterfall also has great potential as an educational tourist attraction. Visitors can learn about the tropical rainforest ecosystem, river life, and the activities of the surrounding community such as traditional gold mining. **Biodiversity**: Around Katobung Waterfall, there are various types of flora and fauna that are interesting to observe. Visitors can enjoy the beauty of the universe that is still preserved. **Adventure Tourism Potential**: For adventure lovers, Katobung Waterfall offers various interesting activities such as trekking, swimming, and enjoying the natural beauty while camping.

**Potential for Developing Katobung Waterfall Tourism:**

- a. **Facility Improvement**: Construction of adequate facilities such as better trekking trails, rest areas, and public toilets will improve visitor comfort.
- b. **Tour Package Development**: Offering various attractive tour packages, such as nature tour packages, adventure tours, or cultural tours.
- c. **Effective Promotion**: Conduct intensive promotions through social media, websites, and various other digital platforms to attract tourists.
- d. **Collaboration with the Surrounding Community**: Involving the surrounding community in tourism management to improve the local economy and preserve the environment.
- e. **Development of Derivative Tourism Products**: Developing derivative tourism products such as handicrafts, traditional foods, and regional souvenirs.
- f. **With proper and sustainable management**, Katobung Waterfall has great potential to become a popular tourist destination and provide benefits to the surrounding community.

## 2. METHODS

Descriptive qualitative research is a research method that focuses on collecting non-numerical data such as words, images, or written descriptions. This method aims to understand phenomena from the perspective of participants through in-depth interviews, observations, and document analysis (Badussamad, 2021). This research is often used in social sciences, psychology, and anthropology to gain rich and deep insights into human behavior and social interactions. Descriptive research, on the other hand, is a research approach that aims to describe or explain the characteristics of a particular phenomenon or population. This research can use both qualitative and quantitative data and is often used in fields such as education, health, and environmental science to identify patterns, relationships, and trends in the data collected.

## 3. RESULTS AND DISCUSSION

### **Feasibility Analysis of Katobung Waterfall**

#### **Attraction of Katobung Waterfall**

The Katobung Waterfall area is located in the Papaso Village area, Batang Lubu Sutam District, Padang Lawas Regency, North Sumatra Province. Based on the division of forest areas according to their function, the Katobung Waterfall nature tourism is located in the Production Forest Area and based on the division of forest management blocks, it is included in the Non-Timber Forest Product development area and environmental services. Various flora that can still be found during the trip or around the location include matao (*Pometia pinnata*), jabon (*Anthocephalus macrophyllus*), wola/bitit (*Vitex cofassus*), banyan (*Ficus benjamina*), koba (*Trichospermum* sp); kuma (*Palaquium obovatum*), bayur (*Pterospermum celebicum*), betau (*Calophyllum waworoentii*), dara-dara (*Myristica* Spp), various types of plants included in the pandanus family, several types of rattan including rattan simbol (*Calamus ornatus*), rattan noko (*Daemonorops robusta*), rattan batang (*Calamus zollingeri*), and other types of wild plants. The diversity of flora also affects the existence of fauna where some of them are used as food and/or habitat for several types of fauna. Some fauna that have been encountered and information from the community often see several types of fauna crossing around the Katobung Waterfall tourist area including wild boars, eagles, bats and others.

Access far from settlements makes the waterfall area safe from environmental pollution, especially household waste. This can be seen from the clarity of the water and the absence of garbage around the waterfall location. Until now, the activities of the community/visitors are limited to bathing and testing adrenaline by doing jumping attractions and there are no food trading activities so that no waste is found. In addition, the location of the waterfall is also used by the community as a stopover to relieve fatigue after activities in the forest.

#### **Socio-economic environmental conditions**

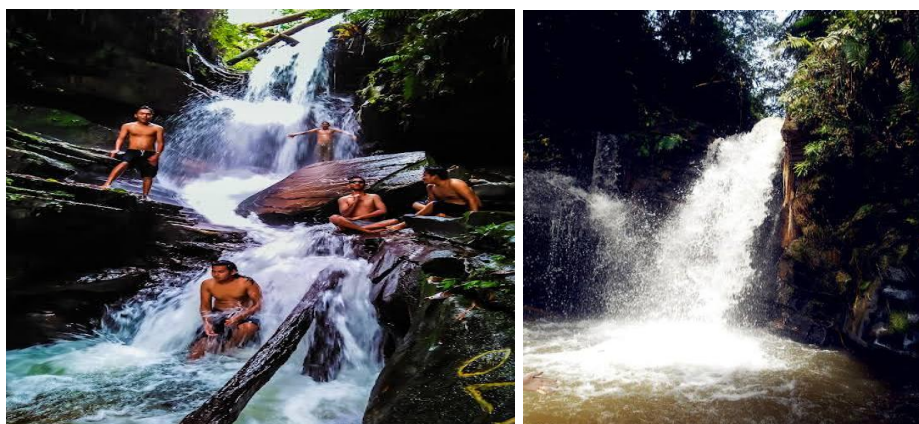
The socio-economic environmental conditions support the development of sustainable nature tourism. The panorama and fairly easy access make this waterfall an alternative tourist destination for the people of Padang Lawas Regency, especially the people living around it. Administratively, the location of the tourist attraction is in the administrative area of Papaso Village. Papaso Village has an area of 22.54 km<sup>2</sup> with a population of 897 people. This village is the village with the lowest population density in Batang Lubu Sutam District (Central Statistics Agency of Padang Lawas Regency, 2024) and generally works as dry land farmers. Generally, people's gardens are planted with corn and cassava to meet food needs. The need for rice food still relies on rice from poor people which is distributed through the village office. In addition, some people carry out honey hunting, wood harvesting, and gardening activities in the area.

### Facilities and Accommodation

The existence of infrastructure and accommodation is something that can support the satisfaction of visiting tourists. The availability of standardized infrastructure and accommodation is important because it affects the frequency and length of stay of tourists. The availability of infrastructure within a radius of 10 km makes it easier for tourists to access it. Some of the available infrastructure that is considered includes telephone networks, Public Health Centers (Puskesmas) and electricity networks. Telephone access via cellular networks makes it easy for tourists to send pictures or communicate. Based on the results of interviews and FGDs and observations around the location, there are no health centers. Papaso Village only has 2 Integrated Service Posts (Posyandu) and 1 Village Maternity Post (Polindes) handled by 1 village midwife. Communication access via cellular networks can be reached to the location of the tourist attraction. The electricity network is limited to residential areas. There are no street lights along the route to the tourist attraction.

### Development of Katobung Waterfall Tourism in the Development of Natural Resources and Environmental Economy

Katobung waterfall has a uniqueness that is different from other natural attractions. This attraction has 7 (seven) levels. Visitors can do jumping attractions from the second level to the third level with a height of about 12 m. Jumping attractions are adrenaline-testing activities that are popular with visitors. The third level has a depth of 6 m resembling a pool that follows the width of the river and there are no rocks so it is safe for visitors who jump.



**Figure 1.** Visitors to Katobung Waterfall  
Source: Researcher survey results (2023)

The conditions around the waterfall surrounded by trees feel cool with the volume of water that does not decrease even in the dry season. The location of this waterfall is easily accessible to visitors so it is very suitable to be developed as a tourist attraction. The potential of flora around the waterfall location adds its own uniqueness for local tourists who have long used it as one of the tourist destinations on weekends. As part of the forest area, Papaso village is rich in endemic fauna. In addition to mammals, Papaso village is one of the habitats of several endemic birds. The location of the Katobung Waterfall is a roaming area for several fauna and is a stopover area for several types of birds. According to (Ginatra et al., 2020) the diversity of flora and fauna is a tourism potential that can attract tourist visits.

The attraction of the waterfall is not only able to attract tourists who want to relieve fatigue or just enjoy the beauty but can be used as a means of knowledge for researchers. Most of the Katobung waterfall area is composed of limestone where the Katobung waterfall natural tourism area is formed by the Tondo formation. This condition indirectly affects the

diversity of vegetation. The diversity and uniqueness of flora and fauna species can be used as research objects including abiotic objects around it. There are many attractions that tourists can choose from to enjoy the charm of the waterfall while testing their adrenaline. Rafting is an adventure tourism activity that tests tourists' adrenaline and can also provide its own satisfaction because this nature tourism is based on adventure by exploring rivers and waterfalls. Rafting tours can be combined with several other adventure activities such as climbing waterfall cliffs, jumping on cliffs and swimming. For tourists who want to enjoy the silence of the night at the location, they can set up camp around the waterfall. The beautiful panorama in the form of levels of waterfalls can be used as a background for selfies.

Another important consideration for the feasibility of nature tourism is cleanliness, safety from pollution and location security (Perkumiené et al., 2020). Its distance from settlements and the absence of industry around it make this area safe from garbage and other pollution. In addition, this location is also safe from noise so that tourists who visit can enjoy the existing attractions without any disturbance. The existence of diverse natural resource potentials and rich in value will continue to be a choice and many become tourist destinations. This proves that the development of Katobung waterfall tourism is in accordance with the development of the natural resource economy and the environment, where Katobung waterfall is very much guarded by local residents as well as visitors who visit Katobung waterfall.

The development of Katobung waterfall can be improved by making improvements to the road connecting to the waterfall location. Road improvements in the form of asphaltting can be coordinated with the local government to propose a budget and facilitate access for the surrounding community both from and outside the area. Travel time from the provincial capital can be shortened through coordination with the transportation office, tourism office, and travel agencies so that flight frequency can be increased. Currently, there is only one access road to Katobung waterfall. Accessibility is a factor considered in determining the feasibility of nature tourism. Distance, road conditions, and travel time as well as the availability of public transportation also influence the desire of tourists to visit relatively close and can be reached in less than 4 hours from Sibuhuan-Papaso City or 240 minutes from the capital of Padang Lawas Regency with road conditions that are half paved and half unpaved. Access to the location follows a rocky road through residential areas and rows of trees. There is no public transportation to this tourist attraction, so visitors must use private vehicles or can rent two-wheeled vehicles (motorcycle taxis) at a relatively cheap rate of Rp. 25,000 from the nearest residential area.

The socio-economic conditions of the surrounding community are one of the elements that are considered in the development of the Katobung waterfall as a natural tourist attraction. This is based on socio-economic conditions that will affect the number of tourist visits related to security, order, community acceptance of tourists, traditional knowledge, or religious experiences. The status of the land which is a state forest makes the development of natural tourism not constrained by ownership conflicts. This natural tourism is located in a state forest area and is the working area of KPHP. Income and education levels will affect community perceptions of future tourism development. Papaso Village is a village with the lowest poverty rate in Batang Lubu Sutam District. Most are high school graduates. The socio-economic conditions of the community, some of whom are poor, are a challenge in how to manage this natural tourism in improving the community's economy and regional income.

Strategies can be implemented through training or out-of-school education that can encourage community participation so that it can increase the criteria value (Michael et al., 2023). On the other hand, the existence of natural resources and soil fertility can be developed for sustainable agriculture. Traditional farming and forest honey hunting activities or local community culture can be used as tourism activities so that they can increase the criteria value and have an impact on the feasibility value. In addition, the

increase in the criteria value can be continuously improved by collaborating with the local government to include the Katobung waterfall object in the Regional Development plan.

There are no facilities and infrastructure available within 10 km around the tourist attraction. In addition, supporting facilities and infrastructure and accommodation such as post offices, restaurants, banks, markets, or souvenir shops and lodging are all located in the sub-district capital which is  $\pm$  14 km away. There is only a traditional market that operates once a week and is only used by the community to transact daily food and clothing needs. This has an impact on the lack of facilities and accommodation. The lack of facilities and infrastructure available around tourist locations can affect the number and frequency of tourists visiting. These facilities and infrastructure are an important part of supporting tourist activities and economic turnover. The existence of transportation facilities can facilitate tourist mobility.

Overall, the feasibility value of Katobung Waterfall as a natural tourist attraction is above the feasibility value standard for development. Facilities and infrastructure and accommodation need to be provided immediately to support natural tourism activities. Alternative community settlements that are still relatively regional can be directed to become homestays or transit houses for tourists. Stilt houses which are typical houses of the local community are a special attraction for tourists and can provide economic benefits to the community. This homestay must have feasibility standards, namely lighting, air circulation, clean water, lighting and bathing, washing, toilets (Franisal, 2020). The management works with the local government and related parties to activate community groups that make woven fabric crafts. Empowerment of youth through youth organizations as tour guides and to help maintain village security (Hermawan & Suryono, 2023). Community involvement must be carried out gradually and continuously because the capacity of each community is different. It is hoped that this tour will be able to encourage creativity as well as have an impact on improving the community's economy and environmentally friendly natural resources (Streimikiene et al., 2021; Chan et al., 2021).

#### 4. CONCLUSION

Katobung Waterfall has the potential as a natural tourist attraction and has a feasibility value that can be considered for development. Another important consideration for the feasibility of Katobung Waterfall natural tourism is cleanliness, safety from pollution and location security. Its distance from settlements and the absence of industry around it make this area safe from garbage and other pollution. In addition, this location is also safe from noise so that tourists who visit can enjoy the existing attractions without any disturbance. The existence of diverse natural resource potentials that are rich in value will continue to be a choice and many become tourist destinations. This proves that the development of Katobung Waterfall tourism is in accordance with the development of the natural resource economy and the environment, where Katobung Waterfall is very much guarded by local residents as well as visitors who visit Katobung Waterfall.

To optimize the development of the Katobung waterfall area, good cooperation is needed between the local government and the community. This activity begins with a mature development plan and an organized management system. This aims to improve the tourism economy, support the local agricultural economy, and strengthen community empowerment. In addition, training is needed for local communities regarding tourism so that they are aware of the importance of preserving tourism potential in their area.

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