Evaluation of The Rahong Pangalengan Pine Forest Tourism Area

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Abstract—Natural tourism areas have an important role in preserving nature and encouraging local economic growth. However, uncontrolled tourism growth often causes environmental problems. Therefore, evaluating the sustainability of tourist area development is very important to ensure long-term natural sustainability, by paying attention to aspects of attractions, amenities and accessibility (3A). This research aims to evaluate the condition of the Rahong Pine Forest tourist area to support sustainable development of the area in the future. The approach used is an interdisciplinary approach that combines ecological, social and economic analysis in regional development. The research results show that the Rahong Pine Forest Tourism Area is included in the very high category. This shows that this area has great potential for natural tourism, but there are still challenges in maintaining a balance between tourism development and environmental conservation. From the research results, there are several recommendations to increase the sustainability of the development of the Rahong Pangalengan Pine Forest tourist area in the future. First, provide clear directions to the area to facilitate accessibility for tourists. Second, provide adequate transportation to the area. Third, improve road infrastructure in tourist areas to ensure comfort and safety. With these steps, it is hoped that the development of the Rahong Pine Forest tourist area can be carried out in a sustainable manner, providing economic benefits for local communities, while preserving the natural environment which is the main attraction of this area.

Keywords—Evaluation, Pine Forest, Tourist Objects, 3A, Attractions, Accessibility, Amenities

I. INTRODUCTION

In recent decades, awareness of the importance of nature conservation and tourism sustainability has increased significantly worldwide. Climate change, environmental degradation and decline in biodiversity have become major concerns in the sustainable development agenda. Along with this, managing natural tourist areas is becoming increasingly important to ensure the preservation of valuable natural resources. One tourist area that attracts attention is the Rahong Pangalengan pine forest in West Java, Indonesia.

Tourism is an important economic sector that supports development in many countries, reduces poverty and can increase economic growth in developing countries (Blake, Arbacbe, Sinclair, & Teles, 2008; Croes & Rivera, 2017; Klytchnikova & Dorosh, 2013; Mahadevan, Amir, & Nugroho, 2016a, 2016b in Tiku et al., 2022). As one of the developing countries, the Indonesian tourism industry contributes as much as 3.83% of the Gross Domestic Product until September 2023, which shows an increase of 0.23% compared to 2022. Ministry of Tourism and Creative Economy in (Kementerian Pariwisata dan Ekonomi Kreatif, n.d.). Tourism has great potential to improve people's welfare because it can open up employment opportunities, improving people's living standard (Febymtyas, 2014) dalam (Safi, 2020).

One of the tourist attractions that is very popular with tourists is nature tourism. In recent decades, the demand for sustainable tourism has been very high, thus encouraging the need to provide protection for the environment around the area (UNWTO, 2021) in (Robina Ramírez et al., 2023). For this reason, a tourism management system is needed, which is an interaction between human variables, nature, environmental elements, and stakeholders (Robina-Ramírez, Isabel Sánchez Hernández, & Díaz-Caro, 2021; Rodriguez-Pose, 2020; Zhang et al., 2022) in (Robina Ramírez et al., 2023).

The development of a tourism area is influenced by the large potential supply, which can provide an idea of the attractiveness of the tourist attraction, as well as demand, which can provide information on the potential and number of tourists visiting (Wiseza, 2017). Which becomes a tourist attraction in an area has characteristics, namely the existence of resources that can create a feeling of joy, and beauty; high accessibility to visit; has special characteristics/specifications that are unusual; the
existence of supporting facilities/infrastructure to accommodate tourists; natural tourist attractions are very interesting because of their natural beauty such as mountains, rivers, sandy beaches, beaches, forests, etc; cultural tourism objects have a high appeal because they have special value in the form of artistic appeal, traditional rituals and noble values contained in objects created by past communities (Ardiansyah & Fortuna, 2020).

Bandung Regency has natural resource potential, is used as a natural tourist attraction, and is very popular with both domestic and foreign tourists. From Bandung Regency Regional Regulation Number 4 of 2019 article 14 paragraph (1) it is explained that Bandung Regency has 7 (seven) Regional Tourism Destinations (DPD), one of which is the Pangalengan DPD with the center of the Pangalengan District DPD. Tourist attractions in DPD Pangalengan are Pangalengan Sky Park (Sunrise Point & Camping Ground), Datar Pinus Camp, Rahong Pine Forest, Sunrise Point Cukul Pangalengan, Situ Cileunca, Malabar Tea Plantation, Cibolang Hot Springs, Wayang Windu Panenjoan 1800 Sky Park, Ultra Milk Farm, Singkur Village, Mount Artapela, Penganten Waterfall, Ceret Waterfall, Cukul White House.

The Rahong Pine Forest tourist area has an area of 1.4 ha in Pangalengan District, located in Pulosari village, which is owned by Perhutani and has been used as a tourist area since 2009. The Rahong Pine Forest tourist area has pine forest resources and the Palayangan River, which connected to Situ Cileunca. This tourist area is much sought after by tourists because it has beautiful, comfortable, remarkable natural scenery, which is equipped with white water rafting, paintball, outbound, camping ground, flying fox and selfie spots.

The Rahong Pangalengan pine forest offers stunning natural views and is one of the favorite tourist destinations for local and foreign tourists. However, its popularity also brings challenges to sustainable management. A thorough area evaluation is needed to ensure that tourism growth can be balanced with sustainable environmental conservation. The Rahong Pine Forest is dominated by *merkassii pine* trees, with a variety of plants such as shrubs, grass and epiphytic plants. Because they are in the highlands with sandy, low-nutrient soil, pine forests are well adapted, making them suitable for reforestation and reforestation. These pine trees play an important role in maintaining environmental stability, preventing erosion, and reducing the risk of landslides and floods. Apart from that, pine trees also help maintain the hydrological cycle and provide habitat for various types of animals and plants.

Currently, the Rahong Pine Forest tourist area is equipped with the availability of residential facilities in the form of tents which are rented at prices ranging from Rp. 500,000 - Rp. 2,000,000 per day. Apart from that, this area is also equipped with restaurant facilities, parking lots, toilets, information centers, parks, places of worship, waste infrastructure, and other infrastructure that supports tourist activities. This tourist area can be reached using private transportation, while tourists use public transportation to the Pangalengan terminal, which is then connected by motorbike taxi.

Based on these conditions, evaluating the Rahong Pangalengan pine forest tourist area is crucial in identifying changes, challenges and opportunities in managing this area, including attractions, amenities and accessibility. Although the Rahong Pangalengan pine forest tourist area offers great potential in terms of natural tourism, several problems arise along with the growth of tourism. One of the main problems is the risk of environmental damage due to uncontrolled tourism activities, such as waste, habitat destruction, and conflicts between tourist needs and nature conservation. Through comprehensive evaluation, we can identify successes and shortcomings in management, as well as develop strategies to improve tourism sustainability and environmental conservation. This research aims to evaluate the condition of the Rahong pine forest area to support the development of a sustainable Rahong Pine tourist area in the future. The results of this research can be input for area managers so that this tourist area can develop better and can provide a multiplier effect on the surrounding community and increase regional income in Bandung Regency.

### II. LITERATURE REVIEW

#### A. Evaluation

Thoha (2003) in (Yuliardi et al., 2021) defines evaluation as a planned activity to determine the condition of an object. In this activity, instruments are used to collect data which is then compared with benchmarks. The results of this comparison are then used to obtain conclusions about the state of the object. There are three concepts that are often used in evaluation, namely tests, measurements and assessments. Tests refer to methods for indirectly estimating a person's abilities through responses to stimuli or questions. Measurement is explained as a step in assigning numerical values to individuals or their characteristics according to certain criteria. Assessment, on the other hand, has a different meaning than evaluation (Bifulco, 2020).

#### B. Tourist

Linguistically, the term tourism in Sanskrit means pari, which means "many" or "going around", and tourism means "going" or "touring". According to Wahid (2015) in (Ismail & Iriani, 2021), Tourism is a temporary journey from one place to another carried out by individuals or groups to seek a balance between social, cultural, scientific, natural and environmental welfare.

#### C. Concept 3A

The term “tourist attraction” refers to something that attracts tourists to a destination (Lew, 1987) in (Prabowo & Syaodih, 2023). Attractions are a destination development tool (Leask, 2016; Lin et al, 2020) and play an essential role in tourist decision making (Gee et al, 1989), Lew (1987) in (Leonandri, 2019) states that attractions in abroad sense include not only historical sites, amusement parks, and natural scenery, but also services and facilities. Hu dan Wall (2005) in (Ramadhan, 2023) defines tourist attractions as permanent natural and man-made resources that are developed and managed with the
primary aim of attracting tourists. Attractions are one of the important components of a destination that attracts tourists and is a fundamental element in tourism activities (Richards, 2002; Connell dan Page 2011). Accessibility is another important factor in tourism and the way tourists reach the locations served (Al Kahtani et al, 2015) in (Seran et al., 2023). A characteristic feature of the tourism industry is that its products are stationary. In contrast to other industries whose products are delivered to customers, the tourism industry requires physical access for tourists to receive services (Akbar et al., 2023). Accessibility refers to the ability to receive tourism services (Choibamroong & Angkananon, 2022). Accessibility refers to the ability to visit, feel, see, observe, perceive, understand and feel a tourist attraction (Rahmafitria et al., 2023). Tourist attraction accessibility is a relative concept and can influence what is considered accessible by tourists (Jensen et al, 2002) in (Tryiono, 2023).

Amenities refer to the basic facilities and services available to tourists in a tourist destination (Cooper, 2016) and are intended to provide comfort to tourists. The success of tourism development depends on various facilities that vary from one region to another (Margaryan and Fredman 2016) in (Aristyanisa Ramadhan et al., 2023). Facilities can be interpreted as certain characteristics of a destination and are generally related to the value or attractiveness of the destination (Dissart and Marcouiller, 2005) in (Tivani, 2016). This is often a key element when designing the visitor experience. Facilities include accommodation, restaurants, tourist information center and other supporting infrastructure (Cooper, 2016; Dewi et al, 2017).

D. Sustainable Tourism

Hadiwijoyo (2012) in (Khalim & Fitriyana, 2023) stated that sustainable tourism is tourism development that is adapted to tourist needs, but still maintains environmental sustainability. This opens up job opportunities for the younger generation and allows tourism development that is in harmony with the existing social order. Successful development does not only depend on the exploitation of natural and human resources but must be based on sustainability for human welfare and environmental sustainability. Development and tourism models need to be designed based on the success of environmentally sound economic development. UNWTO in (Irawan, 2023) defines sustainable tourism as a form of tourism that thoroughly considers its impact on the environment, social and economy. This aims to meet the needs of tourists, the tourism industry, environmental sustainability and local communities.

E. Tourism Development

Tourism development is a strategy that aims to increase, improve and advance tourist attractions. This is expected to attract more tourists, thus having a positive impact on society and the government (Akmal Abdullah et al., 2023). Yoeri (2006) in (Siregar et al., 2018) stated 4 basic principles in tourism development, namely that tourism development must be carried out in a way that preserves the environment and natural resources; tourism development must be carried out in a way that respects and preserves local culture; tourism development must be carried out in a way that provides economic benefits for local communities; Tourism development must be carried out in a way that provides opportunities for people to improve their quality of life.

III. Method

This research uses qualitative research methods which aim to identify and evaluate tourism in the Rahong Pine Forest tourist area based on the 3A concept. Thus, this research focuses on describing potential tourist attractions, aspects related to supporting facilities, and accessibility related to tourist areas. The location used as the research site is the Rahong Pine Forest Tourism Area which is located in Pulosari Village, Pangalengan District, Bandung Regency, West Java Province. The data collection techniques used in this research are observation or direct observation, documentation, and literature study. As well as the research stages carried out in this research starting from formulating the problem, looking for a theoretical basis regarding the 3A, conducting field observations, carrying out descriptive analysis regarding field findings regarding each aspect of the 3A, namely Attraction, Accessibility and Amenities, and the final stage is drawing conclusions and provide recommendations. Table 1 provides information on the 3A grading system.
There are 3 components, namely attractions, accessibility and amenities, with a total of 19 assessment variables. The assessment variables were obtained from Bandung Regency Regional Regulation Number 7 of 2020 and combined with variables sourced from Aditya & Ayudiah (2020) in (Aulia et al., 2023). The assessment is carried out using a binary assessment system (0 and 1) with the aim that it can be easily carried out by tourism development planning practitioners. There are 5 categories used, including very low, low, medium, high and very high. The categorization of values used consists of: value \(< 3.8 = \text{very low}\), value \(3.9 - 7.6 = \text{low}\), value \(7.7 - 11.4 = \text{medium}\), value \(11.5 - 15.2 = \text{high}\), value \(> 15.2 = \text{very high}\).

IV. RESULT AND DISCUSSION

A. Attractions

Attraction is an initial consideration in tourism development planning because it is an essential factor in attracting tourist visits. The main attraction of the Rahong Pine Forest tourist area is the camping site on the riverbank. The Rahong pine forest tourist area is an asset belonging to Perhutani which is managed by various private parties, which has resulted in various name variants for tourist attractions that offer camping facilities along the riverbank. This tourist attraction consists of several names such as Pineus Tilu Campground, SoraCai Riverside Campsite, Talaga Pineus, Camping Ground Legok Reret, Palayangan Asri Riverside, Lembah Pineus Rahong, and Namu Hejo. This camping site offers a unique tourist experience when compared to other camping locations such as Rancaupas, mainly because of its location around the banks of the Palayangan river, a feature that is rarely found in other camping sites. Apart from that, camping facilities in the Rahong pine forest tourist area provide various types of tents that have been prepared by each management, so that visitors no longer need to rent camping equipment from outside. Tent rental costs vary depending on the facilities provided, with prices ranging...
between IDR 500,000 to IDR 2,000,000. Figure 1 provides information regarding the map of attractions in the Rahong Pine Forest Tourism Area.

![Map of Attractions in the Rahong Pine Forest Tourism Area](image)

The authenticity of the Rahong pine forest tourist area is reflected in the presence of shady pine trees and the Palayangan river which flows quite quickly. The presence of other plants in this area further strengthens the natural and beautiful impression. The use of wooden materials in buildings and paths decorated with stones further adds harmony with nature. This shows that the Rahong Pine Forest area still maintains its authenticity, with minimal changes in land use. Thus, the Rahong pine forest area can be categorized as an area that maintains its authenticity because there are only paths and small buildings that do not disturb the natural beauty and most of the forest area is still natural and well maintained.

The Rahong Pine Forest tourist area offers a unique tourist experience that is rarely found in other places. The campsite's unique riverside setting is its defining feature, allowing campers to immerse themselves in nature's tranquility while lulled by the soothing sounds of the Palayangan River. The main attraction of this area is the combination of camping and rafting on the river. Visitors can enjoy the beautiful natural atmosphere on the riverbank, as well as witness the excitement of rafting activities carried out by other tourists.

When in the Rahong pine forest area, visitors can see views of shady pine trees and a fast river flow. Views of the pine forest can be seen both from a distance and from outside the forest area, while the camping tents along the riverbank can be seen from the road leading to the pine forest. The colors and structure of the buildings in the Rahong Pine Forest were carefully chosen to create visual harmony that blends with the natural surroundings, using wood materials that add a natural impression and harmony with the pine forest environment. The air in this tourist area feels cool and fresh because of the shade from the dense pine trees, and is far from the noise of vehicles, thus creating a calm and comfortable atmosphere for visitors.

The Rahong Pine Forest tourist area is blessed with abundant natural resources. The presence of rocks in the Palayangan River makes it ideal for adrenaline-pumping rafting activities. The main attraction of this area lies in its diverse vegetation, with towering pine trees being the main icon. The diversity of flora and fauna also enriches the ecosystem in the Rahong Pine Forest. Various birds and insects decorate this area, while in the river, various types of fish and aquatic insects live in harmony.

B. Accessibility

Tourism accessibility refers to the facilities or infrastructure built to make it easier for visitors to travel. This includes all forms of facilities that enable visitors to reach tourist destinations more quickly. Accessibility also plays a role in facilitating movement within tourism destination areas.

The Rahong tourist location is in the southern part of Bandung Regency, making this tourist location not too far from the location of the capital of Bandung Regency which...
is 33 km away. However, it is quite far from various means of transportation that connect Bandung with areas from other provinces.

Based on survey results, whether field surveys directly to the location or via the internet, the transportation node (means) is still within a range of less than 60 km and can still be reached in a 2-hour drive. There are 2 stations in Bandung that can be used by tourists from outside

Bandung to access the Rahong tourist location, namely Bandung Station and Kiaracondong Station. Meanwhile, if you use the bus, you can access the area by stopping at Leuwipanjang Terminal. Figure 2 provides information regarding the accessibility map in the Rahong Pine Forest Tourism Area.

From each of these transportation nodes, the Rahong Pine Forest tourist area can be accessed using various city transportation and e-trips to the Pangalengan Terminal which is located not far from the tourist area. However, unfortunately the trip from Pangalengan Terminal has to be traveled using a vehicle in the form of a motorbike taxi because there is no village transportation that can be used, while in terms of distance it is outside walking distance.

When viewed in terms of time, considering that this area is not open 24 hours a day, it can be said that the existing public transportation is quite reliable or dependable. Currently, public transportation to reach Pangalengan Terminal is available almost 24 hours. The first public transportation operates at 3 am and operating hours stop at 10 pm. Not only the time, in terms of price it is still quite affordable. The cost of public transportation in the form of public transportation and e-trips from terminals and stations is still below 50 thousand per person. This price is relatively cheap when compared to renting a car, which can reach 500 hundred thousand per car without a driver.

Apart from public transportation, of course this area can also be reached by private vehicles in the form of cars or motorbikes. There are several route options that can be used from the city of Bandung, basically there are 2, namely via Ciwidey or Cimaung. In terms of distance, these two routes are not very far. Likewise, in terms of time, it is known that the difference in distance from the Soreang toll gate is only around 1 hour 21 minutes via Ciwidey and 1 hour 29 minutes via Cimaung, Pangalengan. However, there are quite significant differences between these two routes. The Cimaung Pangalengan route is the same route used by public transport, so the geometry of the road network tends to be safer and the surrounding land use is much better developed compared to the Ciwidey route. If you use the Ciwidey route, tourists will be presented with beautiful and lush forest views, but the existing road network tends to be of poorer quality compared to the road network via the Cimaung, Pangalengan route.

For all road access to Rahong tourism, it has reached a good standard with the ability to be passed by four-
wheeled vehicles and is fully paved. This adequate road condition provides an advantage for visitors because they can access tourist locations comfortably and safely. With paved roads, drivers can also enjoy a smoother journey without having to worry about obstacles or road damage that may occur. Thus, the excellent condition of road infrastructure will improve the tourist experience and facilitate access for visitors who come to Rahong.

In general, the accessibility of the Rahong Tourist Area is quite good, considering that this tourist area has only been opened in the last few years. However, so far, both private vehicles in the form of cars or motorbikes can access it well. Apart from that, almost 95% of trips to this tourist area can be accessed using public transportation.

C. Amenities

Supporting facilities or amenities are one of the things that must be considered in tourism development. On this tour the facilities provided are quite complete. There is a large parking area for 4-wheeled and 2-wheeled vehicles. To get to the entrance counter, you have to walk another 200m or so. There is a restaurant, prayer room and toilets around the reservation counter. On the way to the camping area, there are many directional and evacuation signs. In several places there are gazebos for visitors when it rains. For visitors who want to camp and don’t want to bother with food, there is no need to worry because there is a restaurant that is large enough to accommodate many visitors. Toilets are adequate, there are almost every type of tent, unlike the highest type which has a toilet in each tent. Figure 3 provides information regarding the map of amenities in the Rahong Pine Forest Tourism Area.

Figure 3. Map of Amenities in the Rahong Pine Forest Tourism Area

D. Assessment of the Rahong Pine Forest Tourism Area

Based on the results of direct observations in the field and searching existing documents, information was obtained regarding 3A from the Rahong Pine Forest tourist area. Table 2 provides information on the 3A assessment.

<table>
<thead>
<tr>
<th>No</th>
<th>Component Analysis</th>
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<th>Condition</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attractions</td>
<td>Authenticity</td>
<td>80% original condition</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uniqueness</td>
<td>There is</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beauty</td>
<td>There is</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Environmental integrity</td>
<td>intact</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Availability of development land</td>
<td>limited</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attraction rating</td>
<td>4,5</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Accessibility</td>
<td>Distance from the district capital</td>
<td>&gt;20 km</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Availability of public transport</td>
<td>There is not any</td>
<td>0</td>
</tr>
</tbody>
</table>
The total score in the assessment of the Rahong Pine Forest tourist area is 16, which is in the very high category. This states that this tourist area has prepared 3A aspects as the main components of tourist attraction. However, there is still a value of 0 in several variables, namely the availability of development land, the availability of public transportation, and directions to tourist destinations.

V. CONCLUSION

Based on the evaluation results, it was found that the Rahong Pine Forest tourist area has a score of 16, which is in the very high category, meaning this tourist area has the potential for better development in the future. Several things that have been found to be recommended for making this tourist area better are providing directions to tourist destinations to facilitate accessibility for tourists; provide adequate transportation to tourist destinations; improve road infrastructure within tourist area objects to ensure visitor comfort and safety. With these steps, it is hoped that the development of the Rahong Pine Forest tourist area can be carried out in a sustainable manner, providing economic benefits for local communities, while preserving the natural environment which is the main attraction of this area.

REFERENCE


