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THE POTENTIAL OF LAKE WAE ELA AS A NATURAL TOURISM OBJECT IN NEGERI LIMA, LEIHITU DISTRICT, CENTRAL MALUKU REGENCY

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Abstract

Wae Ela Lake is one of the tourist attractions in Central Maluku Regency. The Wae Ela Lake tourist site has long been visited by local communities as well as visitors from outside the region. Wae Ela lake has a high attraction potential but is not yet optimized, which has resulted in a low level of visitor interest. This research aims to identify the potential attractions, accessibility, and amenities of the natural tourist site Lake Wae Ela, Negeri Lima, Leihitu District, Central Maluku Regency. The data collection method used includes observation, documentation, interviews, and the distribution of questionnaires to 40 visitor respondents and 3 key actors. The analysis employed is the ADO-ODTWA assessment result indicates that Lake Wae Ela, has four assessment components, among which the high scores include tourist attractions, while accessibility and infrastructure received potential scores, making Lake Wae Ela classified as high potential for development as a natural tourism destination.

Keywords: Potential, Ecoutourism, Lake Wae Ela

INTRODUCTION

Lake tourism in Indonesia is a type of tourism that is quite well-known and is in great demand by tourists, both domestic and foreign. The charming natural beauty of the lake is the main attraction that encourages tourists to visit various destinations in Indonesia. Some of the famous lakes include Lake Toba in Sumatra, Lake Maninjau in West Sumatra, Lake Telaga Warna in Central Java, Lake Ranu Kumbolo in East Java, and Lake Sentani in Papua. The diversity of lake tourism in Indonesia is mostly dominated by natural lakes, which are spread not only on large islands such as Sumatra and Java, but also in eastern Indonesia, such as Maluku Province.

Maluku Province has very diverse tourism potential, including beach tourism, nature tourism, and cultural tourism. One of the

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natural tourist attractions in Maluku is lake tourism, which is increasingly well-known by the public because of its uniqueness and charm. Some popular lakes in Maluku include Lake Rana and Lake Jikumerasa on Buru Island, Lake Lorulun in Tanimbar Islands Regency, Lake Sole in East Seram Regency, Lake El Ohio in Southeast Maluku Regency, and Lake Ninivala in Central Maluku Regency. In addition, Central Maluku Regency also has various other tourist attractions, such as national parks, historical sites, beaches, waterfalls, and various lakes, which show the great potential of this region as a leading tourist destination in Indonesia (Maluku Provincial Tourism Office, 2022). One of the promising prospects for tourism development in Central Maluku Regency is Lake Wae Ela, which is located in Negeri Lima, Leihitu District.

Wae Ela Lake is one of the natural tourist attractions that is currently under development in Negeri Lima. The location of this lake is quite hidden in the Negeri Lima forest area, with a diameter of around ±330,000 meters, and surrounded by hills. The calm, beautiful, and natural atmosphere provides its own attraction for visitors. In addition to its natural beauty, Wae Ela Lake has historical value, because it was formed naturally due to the collapse of Mount Adat Ulak Hatu in 2012. The uniqueness of the process of the formation of this lake attracts visitors who want to know more about its origins. This lake also offers various recreational activities such as boating, fishing, camping, and taking selfies, which further adds to the attraction for tourists. The biodiversity around Lake Wae Ela also provides great opportunities to be developed as an ecotourism area.

With all its potential, Wae Ela Lake has the potential to become a local tourism icon in Central Maluku Regency. However, its development until now is still not optimal. Despite having a strong appeal, tourist visits to Lake Wae Ela are still relatively low, with the number of visitors ranging from 50-68 people per month from 2018 to 2024, dominated by local tourists from Ambon City and its surroundings (Central Maluku Regency Tourism Office, 2024). This condition shows that tourism development does not only depend on natural potential alone, but is also influenced by accessibility factors and available amenities. Easy access and adequate supporting facilities are important factors in increasing tourist interest (UNWTO, 2019). Based on the description above, the researcher is interested in conducting research that focuses on the potential of Wae Ela Lake as a natural tourist attraction in Negeri Lima. This research will focus on three main aspects, namely tourist attractions or attractions, accessibility, and amenities in the area.

RESEARCH METHODS

This research was conducted in the tourist area of Lake Wae Ela Negeri Lima, Leihitu District, Central Maluku Regency.

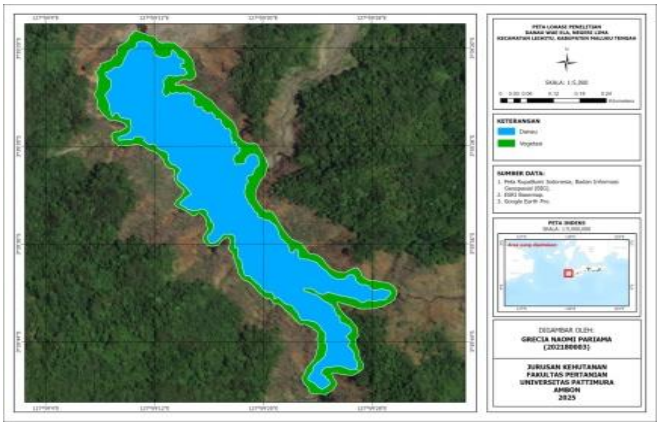

Figure 1 Research Location Map

The *tools* used in this study are Avenza, PlanetNet, Restor, Birds in the Wallace Area Book, camera, *ADO-ODTWA tally sheet*, questionnaires and stationery and computer devices. In the study, primary and secondary data were taken, primary data, namely data obtained directly in the field including the potential for tourist attractions, flora and fauna, accessibility, infrastructure and availability of clean water, while secondary data, in the form of data collected from literature studies including supporting journals and the geographical conditions of the research area and village profiles collected from State data.

Data collection techniques in this study were through observation, interviews, and questionnaires. Observations were conducted to obtain primary data and assist in *ground checking* of flora and fauna data from the Restor *tools.* Interviews were conducted in a semi-structured manner with 3 key informants, namely the Lima State Government as the manager of the Wae Ela Lake object, the local community, and the Central Maluku Tourism Office. Meanwhile, the questionnaire was distributed to visitors. The technique for taking visitors as samples was by probability sampling, with the determination of the number of samples using the Slovin formula (Sevilla *et al* , 2007)

Information:

n: Sample Size
N: Population Size
e: Percentage allowance for sampling uncertainty 0.1%

In this study, the number of samples taken will be determined, with the number of respondents according to formula as many as 40 respondents.

Data analysis in this study used the ADO-ODTWA Analysis method (Directorate General of Natural Tourism Object and Attraction Operation Area Analysis Guidelines. The study unit is the Wae Ela Lake Area Based on the analysis above, criteria and sub-criteria were compiled for each element as shown in the following table:

Table 1. Criteria and scoring for the 2003 ADO-ODTWA assessment by the Directorate General of PHKA

No	Criteria elements	Maximum score	Minimum score	Interval	Criteria
1	Objects and attractions	1440	420	340	Very potential: 1080-1440 Potential: 720-1079 Not potential: <720
2	Accessibility	1050	250	262	Very potential: 783-1050 Potential: 517-782 Not potential: <517

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3	Infrastructure	180	30	54	Very potential: 126 – 180 Potential: 84-125 Not potential: <84

Source: Directorate General of PHKA 2003

This analysis is used to identify elements/criteria that are relevant to the conditions of the tourist attractions being assessed, including tourist attractions or appeal, accessibility, infrastructure and availability of clean water. Based on observations, weighting scoring is carried out along with explanations using descriptive analysis. For each criterion listed in each assessment element in the ADO-ODTWA guidelines for lake objects, the number of scores or values for one criterion is calculated using the following equation (Aryanto, 2015 *in)*.

S = N x B

Information

S = Score/Value of a criterion
N = Number of values for the elements in the criteria
B = Weight Value

After the equation is done, the feasibility index is obtained in percent. The feasibility of a tourist area is as follows (Karsudi et al, 2010 in Ludani *et al* ., 2022))

Information:

S = Score of a criterion
S max = Maximum weighted score of the criteria

Furthermore, the determination of the level of eligibility is determined based on the following interval classes:

1. 66.6% Worth developing
2. 33.3% - 66.6% Quite worthy of development
3. < 33.3% Not worth developing

RESULTS AND DISCUSSION

Tourism Potential of Wae Ela Lake

Wae Ela Lake has quite large natural tourism potential as a leading tourist destination in the Maluku region. Wae Ela Lake visually has a stunning natural view with its naturalness and beauty as seen in the following image.

Figure 2 Wae Ela Lake
Source: Personal documentation 2025

The potential of Wae Ela Lake can be seen in 3 main aspects of tourism, namely attractions, accessibility and amenities. These aspects are assessed from 3 components or criteria based on the ADO-ODTWA guidelines, namely: tourist objects and attractions, accessibility and supporting infrastructure/facilities. The results of this study were then analyzed and obtained using an assessment scale ranging from very potential, potential, no potential for potential, and feasible, quite feasible and not feasible for feasibility.

The following are the results of the assessment of the potential and feasibility of the Wae Ela Lake tourist area which can be seen in the following tables:

Attractions/ Attractions

Attraction is a very important component in supporting tourism, the more diverse the attractions can also increase visits and activities carried out when visiting the Wae Ela Lake tourist area. Based on the ADO-ODTWA guidelines, it is assessed on the criteria of attraction consisting of several sub-criteria, namely beauty, comfort, safety, water stability throughout the year, cleanliness of water and environment, variation of activities on the lake, variation of activities in the lake environment and the uniqueness of the lake environment. The results of observations on the assessment of the criteria for the attraction of natural tourism in Lake Wae Ela can be seen in Table 3.

Table 2. Object Assessment and Attraction

No	Sub Criteria	Weight	Mark	Total Score	Eligibility value
1	Beauty	6	25	150	10.41%
2	Comfort	6	30	180	12.5%
3	Safety	6	30	180	12.5%
4	Water stability throughout the year	6	15	90	6.25%
5	Cleanliness of water and lake environment	6	25	150	10.41%
6	Variety of activities on the lake	6	25	150	10.41%
7	Variations of activities in the lake environment	6	20	150	10.41%
8	The uniqueness of the lake environment	6	10	60	4.16%
Amount			**180**	**1080**	**77.8%**

Source: Primary Data 2025

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Based on table 2. The Wae Ela Lake tourist area for the criteria of Tourist attraction shows great potential with a score of 1080, with a feasibility index of 77.8 %, which indicates that it is feasible to be developed. The high attraction can be seen from the many prominent natural resources such as the clear waters of Wae Ela, flora and fauna and a beautiful environment. This opinion is in line with research (Susanti, 2020) which states that the attraction is seen from its natural conditions, the condition of its flora and fauna which are prominent natural resources.

The tourist attractions at Wae Ela Lake are included in several sub-criteria as described in detail as follows:

Beauty

Beauty is one of the attractions that has value so that it can attract the attention of visitors to visit the object. Wae Ela Lake has a beauty that can attract visitors for holiday purposes. The view of Wae Ela Lake is surrounded by tropical vegetation and towering hills, creating a calm and soothing atmosphere. From the surface of the lake, we can see the reflection of the trees and the blue sky above the clear water, creating a beautiful view, accompanied by distinctive natural sounds such as the sound of birds chirping, the sound of gurgling water and the sound of leaves produced by the movement of leaves also add to the beauty. (Fitri et al., 2025) argue that the environment around the lake surrounded by tropical forests can add a natural and beautiful impression and is supported by views of green hills and distinctive natural sounds can add to the aesthetic value of the lake.

Figure 3 Natural Beauty of Wae Ela Lake
Source: Personal documentation 2025

Comfort

The comfort that we can feel when visiting the Wae Ela Lake object such as being free from disturbing odors, for example, the smell of garbage, in addition, there is no disturbing traffic, so it creates a calm atmosphere free from noise. Another factor that supports the comfort of Wae Ela Lake is the cool air produced by the tropical vegetation environment. This opinion is in line with research (Eusébio et al., 2021; Wan et al., 2024) they stated that comfort in the lake is influenced by several environmental factors such as cool and fresh air quality, the presence of vegetation that minimizes unpleasant odors and the existence of a lake that is not accessible by noise. Then the gentle edge of Wae Ela Lake makes it easy for visitors to access the area, thus facilitating various recreational activities.

Safety

Safety at Wae Ela Lake is one of the important factors that makes this location popular with visitors. The condition of the lake waters is relatively calm, there are no dangerous currents that could endanger visitors when swimming or doing activities around Lake Wae Ela. In addition, the area around the lake is also free from dangerous plants and animals, creating a safe environment to relax and enjoy the beauty of nature. Water stability throughout the year

In the Wae Ela Lake area, water stability throughout the year refers to lake conditions such as unstable rainfall and weeds. Unstable rainfall in Lake Wae Ela often affects the volume and quality of water in the lake and disrupts boating and fishing activities. Unsuitable seasonal changes affect rainfall in this lake. (Suning et al., 2023) , rainfall is a correction factor because this tour offers outdoor activities that can affect the activities carried out at this tourist spot. In addition, there are no weeds at the Wae Ela Lake tourist location, but rotten trunks such as durian trees and several other trees that are still standing in the middle of the lake area due to the formation of this lake can also interfere with the quality of the lake water from several aspects, but so far the quality of the lake is still quite good, as can be seen by increasing the number of fish in this lake. (Soeprobowati et al., 2020; Piranti, 2021; Harefa et al., 2024) water quality is influenced by several factors both from nature and humans, decreased water quality has a major impact on health and ecosystems, but they can also create habitats that support the development of aquatic biota, including fish. In addition to its benefits for aquatic biota, the remains of tree trunks in the middle of the lake are a place for birds that live around the Wae Ela Lake area to interact with each other in the morning and evening.

Cleanliness of water and environment

Cleanliness of water and environment is very important to support tourism activities. For nature tourism, Lake Wae Ela is very important to maintain the beauty and sustainability of its ecosystem. The cleanliness of the water in Lake Wae Ela is seen from the absence of pollution caused by domestic waste, industry, and other human activities. On the edge of the lake, the clarity of the lake water is visible, in addition there is no shallowing, and vandalism, such as graffiti or scribbles that can damage the aesthetic and ecological value of Lake Wae Ela. (Pangestu & Indrawati, 2021; Sidabutar & Hidayat, 2023; Syabina et al., 2024) that environmental cleanliness supported by minimal human influence is an important factor in the success of tourism and encourages tourist visits and increases satisfaction in traveling.

Figure 4 Cleanliness of Water and Environment of Wae Ela Lake
Source: Personal documentation 2025

Variety of activities on the lake

Wae Ela Lake Tourism is a type of water tourism, water tourism is a type of tourism with activities supported by facilities and infrastructure in a discussion body such as on lakes, beaches, seas, rivers, with several activities such as boating and others. (Rachmad et al., 2021) . The variety of activities that can be done at Wae Ela Lake offers a variety of experiences for visitors. Activities that can be done include canoeing, swimming, fishing, enjoying the natural beauty, and research. (Saputra, 2019) that tourists will be more interested in visiting tourist attractions, because there are activities or activities in them so that they can increase tourism at the object.

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Figure 5 Recreational Activities (Rafting and Camping) at Wae Ela Lake
Source: Personal documentation 2025

Variations of activities in the lake environment
Activities around the Wae Ela Lake area are not only limited to activities in the lake, but also offer a variety of activities around the diverse lake environment. The conditions around Lake Wae Ela still look natural, with cool air supporting activities around the lake. Tourists can enjoy the beautiful view of the lake with a biodiversity background. The diversity of flora and fauna, can be seen from the discovery of several types as seen in Table 3 below.

Table 3. Flora and Fauna

a. Flora

No	Local Name	Scientific Name	Protection Status		
			IUCN	CITES	Minister of Environment and Forestry Regulation No. 106/2018
1	Sandpaper	*Ficus sandpaper*	LC	-	Not protected
2	The first warning	*Ficus septica*	NE	-	Not protected
3	Forest Starfruit	*Averrhoa sp*	DD	-	Not protected
4	Banyan	*Ficus benjamina*	LC	-	Not protected
5	Bintaro	*Cerberus floribunda*	LC	-	Not protected
6	Rao Fruit	*Dracontomelon Dao*	LC	-	Not protected
7	Clove	*Syzygium aromaticum*	LC	-	Not protected
8	Forest Cloves	*Syzygium obtusifolium*	LC	-	Not protected
9	Durian	*Durio zibethinus*	LC	-	Not protected
10	Style	*Innocarpus fagifer*	NE	-	Not protected
11	Gofasa	*Vitex gofasus*	LC	-	Not protected
12	Gondal	*Ficus nodosa*	NE	-	Not protected
13	Water apple	*Syzygium aqueum*	LC	-	Not protected
14	Lime	*Citrus hystrix*	LC	-	Not protected
15	Mountain cassowary	*Casuarina junghuhniana*	NE	-	Not protected
16	Ironwood	*Intsia bijuga*	NT	-	Protected
17	Bird Wood	*Elaeocarpus floribundus*	LC	-	Not protected
18	Red Wood	*Anaxagorea javanica*	LC	-	Not protected
19	Coconut	*Cocos nucifera*	LC	-	Not protected
20	Cananga	*Cananga odorata*	NE	-	Not protected
21	Canary	*Canarium indicum*	LC	-	Not protected
22	Ki teja	*Cinnamomum iners*	LC	-	Not protected
23	Lava	*Neonauclea moluccana*	NE	-	Not protected
24	Lamtoro	*Leucaena leucocephala*	NE	-	Not protected
25	Forest Langsat	*Aglaia argentea*	LC	-	Not protected
26	Apis bee	*Strobocalyx arborea a*	NE	-	Not protected
27	Language	*Pterocarpus indicus*	EN	-	Not protected
28	The Luwingan	*Ficus Hispida*	NE	-	Not protected
29	Mahang	*Macaranga aleuritoides*	NE	-	Not protected
30	Big leaf mahogany	*Swietenia macropylla*	EN	Appendix II	Not protected

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31	Mayan	*Aegle marmelos*	NT	-	Not protected
32	Makaranga	*Macaranga tanarius*	NE	-	Not protected
33	Matoa	*Pometia pinnata*	NE	-	Not protected
34	Melinjo	*Gnetum gnemon*	LC	-	Not protected
35	Nani	*Metrosideros vera*	NE	-	Not protected
36	Niruri	*Phyllanthus lutescens*	NE	-	Not protected
37	Nutmeg	*Myristica fragrans*	NE	-	Not protected
38	Forest Nutmeg	*Myristica lancifolia Poi*	NE	-	Not protected
39	Pandanus thorn	*Pandanus tectorius*	NE	-	Not protected
40	Peacock back tree	*Rhodamnia cinerea*	NE	-	Not protected
41	Island	*Alstonia scholaris*	LC	-	Not protected
42	Stone Island	*Alstonia spectabilis*	LC	-	Not protected
43	Puring	*Codiaeum variegatus*	NE	-	Not protected
44	Rambutan	*Nephelium lappaceum*	LC	-	Not protected
45	Sembung	*Balsamifera flower*	NE	-	Not protected
46	My Salawa	*Falcataria moluccana*	LC	-	Not protected
47	Breadfruit	*Artocarpus altilis*	LC	-	Not protected
48	Red soap	*Anthocephalus macrophyllus*	LC	-	Not protected
49	Antawal	*Tinospora crispa*	NE	-	Not protected
50	Galoba durian	*Hornstedtia alliacea*	NE	-	Not protected
51	Ketul/Ajeran	*Bidens pilosa*	NE	-	Not protected
52	Cat whiskers	*Orthosiphon aristatus*	NE	-	Not protected
53	Meniran	*Phyllantus ninuri*	NE	-	Not protected
54	Sweet broom	*Scoparia dulcis*	NE	-	Not protected

Source: Primary data 2025

b. Fauna

No	Species Name	Scientific Name	Protection Status		
			IUCN	CITEX	Minister of Environment and Forestry Regulation No. 106/201
Bird					
1	White-bellied Eagle	*Haliastur industry*	LC	Appendix II	Protected
6	Black Honey	*Necterinia aspesia*	LC	-	Not protected
2	Moluccan Nuri	*Eos Borneo*	LC	-	Protected
3	Red-cheeked parrot	*Geoffroyus geoffroyi*	LC	-	Protected
4	White eye patch	*Ducula perspicillata*	LC		Not protected
5	Small pearl	*Minor Aplonis*	LC	-	Not protected
Mammals					
7	Wild boar	*Sus scrofa*	LC	-	Not protected

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8	Timor deer	*Cervus Timorensis*	VU	Appendix I	Protected
Reptile					
9	Moluccan monitor lizard	*Hydrosourus amboinensis*	LC	-	Protected
10	Green monitor lizard	*Varanus sp*	LC	-	Protected
Insect					
10	Red Dragonfly	*Crocothemis erythrae*	LC		Not protected
11	Black Dragonfly	*Cyanea libellula*	LC	-	Not protected
12	Sulfur Butterfly	*Eurema of the Netherlands*	LC		Not protected
13	Black Butterfly	*Papilionidae*	LC	-	Not protected

Source: Primary data 2025

The high flora and fauna in the lake environment is an attraction for tourists who want to observe animals and plants directly. This opinion is in line with the opinion of (Budiatiningsih et al., 2023) , that various nature activities such as studying biodiversity, as well as enjoying tourist areas that still look very beautiful and natural. In addition, camping activities are also in great demand by tourists, especially young people, camping around the lake also provides an opportunity for tourists to feel close to nature.

Figure 6 Bird Watching and Camping Activities
Source: Personal documentation 2025

The uniqueness of the lake environment

Environmental distinctiveness refers to the unique or specific characteristics that distinguish a particular ecosystem or area from others. The historical value is related to the formation of Lake Wae Ela. This lake was formed due to a natural disaster landslide due to the fracture of two indigenous mountains of Negeri Lima, namely the indigenous mountains of Uluk Hatu and, the landslide that occurred caused rocks and soil and trees to close the Wae Ela river basin, and formed a basin filled with water and called by local residents as a nature dam. The process of the formation of this lake reflects significant environmental changes and their impact on society.

Accessibility

Accessibility is one of the supporting factors in tourism development. The easier it is to access a tourist attraction, the more comfortable and safe it is for visitors to travel (Hapsara & Ahmadi, 2022) . Currently, the accessibility offered in the Wae Ela Lake tourist area can still be said to be quite easy. Based on the ADO-ODTWA guidelines, it is assessed based on accessibility criteria consisting of several sub-criteria, namely the road distance from the capital, the road distance from the domestic airport, road conditions and travel time, and vehicle frequency to the object. The results of the assessment of this criterion can be seen in Table 6 as follows:

Table 4. Accessibility Assessment
Weight: 5

No	Sub Criteria	Weight	Mark	Total Score	Eligibility Value
1	Distance and road conditions from Ambon City	5	60	300	28.57%
2	Distance from Pattimura Airport	5	15	75	7.14%
3	Traveling time	5	25	125	11.90%
4	Vehicle frequency	5	10	50	4.76%
Amount			**110**	**550**	**52.28%**

Source: Primary Data 2025

Based on Table 4. the assessment results for all elements were obtained with a total score of 110 and a feasibility index percentage of 52.28%. This value shows that the accessibility of this lake tourism has the potential and is quite feasible to be developed as a support for easy tourism. Accessibility to Wae Ela Lake greatly influences the level of tourist visits.

Distance

The distance between residential areas and tourist attractions can also affect tourist visits, because tourists will tend to choose tourist destinations that are close to their homes. (Daulay, 2022; Saragih, 2020) that ease of accessibility is a factor in tourists coming to visit, supported by easy-to-reach distances, will increase the number of visitors from abroad to local. The distance between the lake tourist attraction and the main road to the Wae Ela Lake location is quite far, because it has to pass through several villages to arrive at the Wae Ela Lake location, with road conditions still in quite varied categories such as good, moderate and bad, and road width conditions <, 4.5m and the distance between the lake and the provincial capital in Ambon City is ± 53 km. While the distance of the Wae Ela Lake object from the Pattimura Ambon Airport air flight center in Laha is ± 40.5 km with moderate and poor road conditions with a road width of <3.5m.

Time

Travel time is the time required to travel from a location to a tourist location to be visited. The time taken during the trip from Ambon City to the location of the Wae Ela Lake object located in Leihitu District, in Negeri Lima, is 2-3 hours along the district

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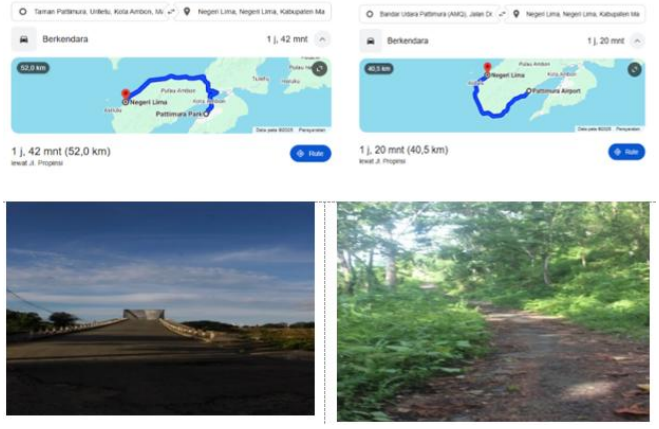
public road. The long journey is due to the fairly poor road access, making the travel time to the Wae Ela Lake object quite long, making tourists still consider visiting this object. (Pitaya, 2021) that the travel time of ±1 hour is the maximum travel time for the closest attraction and requires a maximum travel time of 2.5 hours for the furthest attraction.

Vehicle Frequency

Vehicle frequency is the number of trips made by a vehicle, where this frequency can depend on the type of transportation service such as mode of transportation and transportation fare. Wae Ela Lake operates 24 hours, but for public transportation services are limited, with public transportation cars only operating at certain times. Public transportation vehicles that operate have a fare of IDR 30,000 per person, for chartered cars (sedan cars) with a fare of IDR 350,000 for a round trip and motorcycle taxi services with a fare of IDR 10,000 to reach the parking area closer to the lake. From the city center to the center of the country, public transportation only operates at 11:00 and 15:00, while chartered cars are available from 08:00-15:00. This limits flexibility for visitors who rely on public transportation. For village transportation in the form of objects also operates from 08:00-16:00. While for private vehicles can be accessed at any time but on average they will come from 08:00-16:00. Although these facilities already exist, improvements are needed in terms of infrastructure to ensure the comfort and safety of visitors during their trip.



Source: Personal documentation 2025

Supporting Facilities and Infrastructure

Supporting facilities and infrastructure refer to the infrastructure and facilities needed for or to support the convenience and enjoyment of tourists in visiting the object. Good facilities and infrastructure will support the development of quality amenities. Based on the ADO-ODTWA guidelines and the feasibility index assessed on the supporting facilities and infrastructure criteria consisting of two sub-criteria, namely facilities and infrastructure. The results of this assessment can be seen in the following table 7:

Table 5. Assessment of Supporting Facilities and Infrastructure

No	Sub Criteria	Weight	Mark	Total Score	Eligibility value
1	Means	3	15	45	25%
2	Infrastructure	3	20	60	33.33%
Amount			**35**	**105**	**58.33%**

Source: Primary Data 2025

Based on table 5. the results of the assessment of all elements were obtained with a total score of 105 and a feasibility index percentage of 58.33%. This value indicates that the supporting facilities and infrastructure for lake tourism have the potential and are quite feasible to be developed as a support for tourism activities . Based on the results of research in the field, the facilities available are only 1 type and the infrastructure available is only 2 types. According to (Oktavianus & Sofiani, 2023) in addition to natural attractions, the availability of facilities can also play an important role in meeting the interest in returning visits.

Means

In the development of tourism, the availability of facilities such as shelters, home stays, camping equipment, water tourism facilities and several others can support tourism activities. The facilities available at Lake Wae Ela, the available water tourism facilities include boats and traditional assemblies made of sago branches, which not only function as traditional transportation on water, but also become a special attraction for tourists who want to experience sailing in a unique and environmentally friendly way. (Elviana, 2024) that water tourism facilities such as boats or other unique facilities can support activities in lake tourism. Although these facilities already exist, there needs to be an improvement in terms of infrastructure to ensure the comfort and safety of visitors during the trip.

Infrastructure

In the development of tourism, sufficient supporting infrastructure such as roads, water installations, electricity, clean water, accommodation and others, can provide satisfaction for visitors because in general tourists do not only come to enjoy the attractions but also want to enjoy the existing facilities (Yuniarti et al., 2018) . The infrastructure available at Lake Wae Ela is a parking area and roads. The parking area is available, but it does not meet the expected standards, such as the lack of security in the area, and comfort in terms of the shade used. Currently, the parking area is just an empty lot cleared of grass. Meanwhile, for the road to the object, there are collector roads or district roads, local roads or domestic roads and environmental roads referring to the farm roads that tourists usually use to reach the object's parking area.


Water tourism facilities (boats and sago trunk assemblies)

Parking area available

Figure 7 Facilities and Infrastructure at Wae Ela Lake
Source: Personal documentation 2025

Feasibility Analysis of Natural Tourism Attraction Object (ODTWA) of Wae Ela Lake

The results of the assessment of the Wae Ela Lake tourist area provide an overview of the strengths and weaknesses of a tourist

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destination that will be developed. With this, each criterion that is assessed will help determine development priorities to be more effective and sustainable. Based on table 6 is a summary of the results of the assessment of the potential and feasibility of the Wae Ela Lake tourist area object.

Table 6. Assessment of Feasibility Index

No	Eligibility Assessment Criteria	Criteria Score	Maximum score	Eligibility Score (%)
1	Objects and Attractions	1080	1440	75%
2	Accessibility	550	1050	52.38
3	Supporting Facilities and Infrastructure	105	180	58.33
Amount		**1735**	**2670**	**64.98%**

Source: Primary Data 2025

Table 6 above shows the overall feasibility index value of 64.98%. This result is considered quite feasible to be developed as a natural tourist attraction because its attractions meet the criteria for being feasible, such as the beauty of the scenery and the biodiversity that is interesting for visitors. However, the aspects of accessibility and amenities in this case supporting tourism infrastructure are still in the sufficient category. This means that although the location and natural attractions are adequate, there needs to be an increase in supporting facilities and ease of access so that the comfort and tourism experience can be more optimal. With proper development of these aspects, the potential of Lake Wae Ela as a natural tourist destination can be maximized.

CONCLUSION

Based on the analysis conducted, it can be concluded that:

1. **Attractions/Attractions**
   The attractions or attractions available at Wae Ela Lake tourism are not just enjoying the natural beauty of the natural surroundings, but we can do various reaction activities such as fishing, camping, boating and rafting and taking pictures at this tourist spot. Based on the results of the ADO-ODTWA guideline assessment, a criteria score of 1080 was obtained with this score being categorized as very potential and a feasibility index of 75% (Feasible). In addition, it is supported by high biodiversity such as flora and fauna which can be a supporting attraction for activities at this lake such as animal observation and research.
2. **Accessibility**
   Access to this tourist location is fairly easy because it can be accessed by private or public vehicles. Road conditions are still varied and need to be considered more to support tourism in Lake Wae Ela. With this and based on the results of the ADO-ODTWA Guidelines assessment, the criteria score is 550 and is categorized in the criteria for potential tourism with a feasibility index obtained of 52.38 % (Quite feasible). Accessibility is improved to support ease of tourism.
3. **Amenities**
   The supporting facilities and infrastructure at this tourist location are inadequate, because there are only water tourism facilities such as traditional boats and rafts, and the infrastructure is only available in the parking area and roads. However, for others, it is not yet available. If based on the results of the ADO-ODTWA assessment, the criteria score obtained is 105 and the feasibility index obtained is 58.33%, this is categorized as having the potential for tourism and is quite feasible. The availability of other facilities and infrastructure can support tourism activities at Lake Wae Ela.

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