

## Questioning the Ideal Number of Visitors at the Mangrove Track in Budo Village, North Sulawesi, Indonesia

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Article History	Abstract
Accepted: 29 June 2024 Revised: 19 July 2024 Published: 30 June 2024	<p><i>Since the Indonesian government's policy, rural tourism development has been prioritized. Many villages are trying to develop their villages into tourist villages. Especially with the best tourist village award, the impact is that all villages compete to get the award. Budo Village is a tourist village located in North Minahasa Regency, North Sulawesi Province, Indonesia. This village went viral because it received the award for the 50 Best Tourism Villages in Indonesia 2022. Since it was first opened, many visitors have come to the location. The average number of visitors in one day can reach 1500 people, it is mentioned that almost between visitors cannot pass each other while walking on the mangrove track. This is because there is no limit to the number of visitors in the area. The purpose of this study is to assess the ideal number of visitors at the track, for the sustainability of the tourist site, and to preserve the tourist environment. The method used in this measurement is the Carrying Capacity of the Area. The results of this study will recommend to the tourism manager how to manage the number of visitors that will have an impact on the sustainability of the tourist attraction.</i></p> <p><b>Keywords:</b> <i>ideal number, visitors, mangrove track, budo village</i></p>



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### INTRODUCTION

Tourism in the last decade has become the government's attention to be used as an instrument of economic growth; which assumes that it will have an impact on the extent of increasing employment opportunities so as to encourage employment opportunities for the community, (Hayat, 2018). In the world economic constellation, tourism has become a central component for the development of the world economy and is one of the main sources of state income to develop and develop (Costa, 2017; Mason, 2015). The contemporary tourism market offers a variety of cultural, social, technological, experiential, and natural products for leisure and business. It has become a strong foundation for sustainable development in many regions of the world (Turner & Freiermuth, 2016).

Tourism has become a strategic sector, where as a medium of integration between various development sectors, so tourism is set to be a development priority in Indonesia through the development of tourist villages. Lane (2009), pure rural tourism is defined as a type of tourism located in rural areas. If one is willing to describe a holiday as rural tourism, the

following characteristics should be included in the holiday. They should be: (1) be located in rural areas, (2) be based on rural tourism features, (3) have small-scale buildings and settlements, (4) be connected to the local community and its families, (5) be based on villages and small towns, (6) be a complex of economic, environmental and historical patterns (Lane, 2009). In Indonesia, there are 74,954 villages, and currently, around 1,902 villages are being developed into tourism villages.

Currently, rural tourism has grown and competed healthily, and this needs the role of all stakeholders to build a sustainable village development tourism model (Reynaldi, 2018; Towoliu, et.al, 2018; Purnomo, et.al, 2020; Wenas, et.al, 2023). Tourism, if not managed sustainably, will harm local communities, damage the natural environment, and cause unhealthy economic competition. Tourism development must be built on stable steps. Good tourism development has two concepts: the protection of the environment and its natural resources, and the second is the protection of social heritage (Towoliu, et. 2020). Thus, stable tourism should be implemented with clear policies guaranteeing appropriate measures in comprehensive development (Bazneshin et.al, 2015).

## **LITERATURE REVIEW**

### **Visitor**

In general, visitors are people who come to visit a place or country with various motivations. From this definition, it can be concluded that travelers are included. Tourists are one or a group of people who visit a certain place, be it a country, province, city or village that is different from the location where they live, with the purpose of spending time (Inskeep, 1991). Tourists are divided into temporary tourists, who stay at least 24 hours in the visit location and travelers, who are temporary tourists who stay less than 24 hours in the visit location and usually do not stay overnight. Then Seaton and Bennet (1996) explained that tourists are divided into two general characteristics, namely based on the characteristics of the trip (trip descriptor) and the characteristics of the tourist (tourist descriptor). In trip descriptor characteristics, tourists will be divided based on the type of trip they take while tourist descriptor will focus its characteristics directly on the tourists, related to who, what they want, why, when, and where.

Furthermore, Swarbrooke, & Page, (2012), define tourists by looking at the attractiveness of tourist sites, where it is mentioned that visitors to tourist attractions and tourist attractions. The use of 'tourist attractions' is actually less precise because most visitors to tourist attractions are not tourists in the true sense. Except in the condition of a large tourist destination and requires a long time to enjoy the entire tourist attraction as an example of Disney World, Florida USA. But if only in one day people can enjoy the entire attraction then it can be assumed that it is a day visitor and not a visitor who stays overnight, and often they come from the area where the tourist attraction is located. Therefore, it is more appropriate to talk about visitor attractions rather than tourist attractions.

In the case of Budo village as a tourist village, the typology of visitors is more from the surrounding community and more daily, so it can be concluded that visitors to the location are visitor attractions.

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## **Mangrove Tourism**

Mangroves are one type of plant that is found in coastal estuary areas with swampy and dense soil structures. Gunawan, et. al. (2022). In addition, mangroves are a typical littoral plant formation and grow on sheltered beaches in tropical and subtropical regions (Hutchings, P., & Saenger, P. (1987). Furthermore, mangrove forest is a forest formation that is influenced by the ebb and flow of sea water with anaerobic soil conditions. Alikodra, H. S. (1998, September). Indonesia has mangrove forests with an area of about 2.5 to 4.5 million hectares. Even the area of mangrove forests in Indonesia is the largest mangrove forest in the world, (Pellokila, & Sagala, 2019). Mangrove forests have many important functions for the environment and society, among others: Protecting the coastline, being a habitat for plants and animals, carbon storage, food and fuel sources, functioning as a pollutant absorber from seawater, a source of economic income for the community through tourism, (Julaikha, & Sumiyati, 2017; Rahim & Baderan, 2017).

Especially mangrove tourism activities in its development are environmentally friendly and provide education to visitors who come to the location, (Zakaria, et.al, 2020; Yunita, et.al, 2020; Anggraini, et.al, 2022). Then mangrove tourism is very concerned about the carrying capacity of the environment, (Ermiliansa, et.al, 2013; Romadhon, et.al, 2014; Prihadi, et.al, 2018; Rini, et.al, 2018). In its management, mangrove tourism usually involves the participation of local communities, (Treephan, et.al, 2019; Singgalen, 2020; Nurhayati, et.al, 2023). Some tourist attractions are sustainable in mangrove forest areas including; mangrove educational tours and tracking, bird watching, fishing, mangrove tree plantation or adoption, and canoeing and boating, (Wahyuni, et.al, 2007; Spalding, & Parrett, 2019). Therefore, mangrove tourism is a type of tourism activity in mangrove forest areas where the attractions are on a limited scale, environmentally friendly and the management involves the participation of local communities.

Budo Village is a village located in Wori Sub-district, North Minahasa Regency, by the government, this village is designated as a tourist village. The village went viral in the past year after receiving the Indonesian Tourism Village Award 2022, which is included in the 50 best tourism villages in Indonesia (<https://manado.tribunnews.com/2022/05/10>). Having a good natural panorama, facing the Bunaken National Park, and also close to the Manado City Centre, is the main capital for this village to become an alternative tourist location for the surrounding community in Manado City to visit to enjoy the natural scenery and the variety of culinary delights sold by the community around the tourist site. This village has a mangrove track, which is the location of visitor activities to enjoy the natural beauty in the village. On the track, several gazebos are also placed as a place to sell for the local community and as a link to the cottages located on the beach.

Since its opening in October 2021, many visitors have come from the city of Manado and its surroundings to this tourist location. According to data from interviews and observations with the tourism manager, namely the Sinar Usaha Budo Business Entity, the average number of visitors in one day can reach 1500 people, it was mentioned that almost between visitors could not pass each other while walking on the track. It becomes a question that tourism requires space for visitors/tourists to enjoy the surrounding nature, besides that in the current context, tourism strongly supports the issue of natural sustainability.

Looking at the conditions that occur in the tourist sites of Budo Tourism Village, shows that tourism in the village is slowly heading towards mass tourism, which will result in the degradation of facilities and even coastal nature where coastal damage. Sustainable tourism really requires limiting visitors / tourists in a tourist site area. The purpose of the study is to calculate how many visitors are eligible to move on the mangrove track in Budo Village?

## RESEARCH METHOD

The approach used in this research is descriptive quantitative. Sampling using purposive sampling technique, namely the first purposeful sample with consideration of research time, secondly the basic needs of the data to be obtained, namely more focus on local communities receiving tourist facility assistance. Identification based on data on the number of visitors in 1 tourist visit, (Yulianda, 2020). The analytical method used is descriptive quantitative by calculating the carrying capacity of facilities in tourist areas, using the concept of regional carrying capacity (DDK). DDK is the maximum number of visitors that can be physically accommodated in the area provided at a certain time without causing disturbances to nature and humans. The calculation in the form of a formula is as follows, (Yulianda, 2020):

$$DDK = \frac{k \times Lp \times Wt}{Lt \times Wp}$$

Description:

- DDK = Carrying Capacity of the Area (people/day) / (Daya Dukung Kawasan).
- k = Ecological potential of visitors per unit area (people).
- Lp = Length of area that can be utilized (m).
- Lt = Unit area for a particular category.
- Wt = The time provided by the area for tourism activities in one day (hours/day).
- Wp = Time spent by visitors for each specific activity (hours/day).

The ecological potential of visitors (K) and the area of activity (Lt); namely for mangrove tourism 1 visitor is 50 m (calculated track length of each person), while (Wp) the time of visitor activities to do tourism is calculated by the time provided (Wt) the area is opened in one day, by taking the calculation of normal working time which is about 8 hours.



Figure 1: Location of Research Mangrove Track  
Source: Tourism Village Network Document, (<https://travel.kompas.com>)

## RESULT AND DISCUSSION

Budo Village, Wori Sub-district, North Minahasa Regency, North Sulawesi Province is one of 20 villages in Wori Sub-district, located 30 km from the district capital, 4 km from the sub-district capital, and 21 km from Manado, the capital of North Sulawesi Province. Geographically, Budo Village is located north of the sub-district capital, with a hilly topography, with an altitude of 0 - 400 meters above sea level and has an air humidity of 70%, and a minimum temperature of 29° C and a maximum temperature of 35° C. The average temperature is 33° C, and the maximum temperature is 35° C. The average temperature is 33° C, and the average rainfall is 400-600 mm. Budo Village is one of the 20 villages in Wori sub-district, located approximately 7 kilometers north of the capital city of Wori sub-district. Budo Village has an area of approximately 423 hectares, with approximately 402 hectares of agricultural/plantation land and the rest is mangrove forest and residential areas. The types of ecological potential found around Desa Budo include hilly ecology, forestry, plantations and beaches, (Towoliu, et.al, 2021, April, 2023).

Table 1. List of Visitors to Budo Village Mangrove Forest Tourism from September 2021 - June 2023

No	Month	Year	Total
1	September	2021	4.635
2	October		6.642
3	November		4.315
4	December		1.442
5	January	2022	2.546
6	February		1.496
7	March		2.871
8	April		3.194
9	Mai		7.491
10	June		3.610
11	July		2.842
12	August		3.206
13	September		1.838
14	October		1.702
15	November		1.744
16	December		1.416
17	January	2023	3.611
18	February		1.318
19	March		884
20	April		2.695
21	Mai		2.883
22	June		2.610
	<b>Total</b>		<b>64.991</b>

Source: Village Enterprise/*Badan Usaha Milik Desa Sinar Usaha Budo*

Budo village is currently visited by many local and foreign tourists. In general, they are interested in visiting because there is a mangrove track that extends around the mangrove area following the coastal boundary. It was built with the results of local community self-help. On the track there are several gazebo points that are used as a place to relax and also a café, a meeting place and bridge certain spots as a photo area, as well as connecting cottages.



The number of visitors and tourists who come to enjoy the sunset at the mangrove track is so dense and results in a long queue of track users. The following is the number of visitors who come to enjoy tourist attractions at the mangrove track in Budo Village. Until June 2023 since its opening in September 2022, there were 64,991 visitors. This means that the monthly average is 2954.136 or rounded up to 2954 people who visit and enjoy tourist attractions at track in the Budo Village. In 1 day, who visit the Budo tourist location is estimated to be  $2954/30 = 98$  visitors.

The following will calculate the maximum capacity of the carrying capacity of visitors at the mangrove track is using the tourist area calculation. Carrying Capacity of the Area (DDK) is the maximum number of visitors that can be physically accommodated in the area provided at a certain time without causing disturbance to nature and humans. The ecological potential of visitors (K) and the area of activity (Lt); namely for mangrove tourism 1 visitor is 50 m (calculated track length of each person), while (Wp) the time of visitor activities to do tourism is calculated with the time provided (Wt) the area is opened in one day, by taking the calculation of normal working time which is around 8 hours, (Yulianda, 2020).

This DDK calculation will be modified specifically for certain variables, such as: Unit are for certain categories (Lt) which usually use 50m, then here researchers use 15m where on average every 15 there is a gazebo for selling, and also a place to relax. Then there is in this track divided into 3 spots as a meeting point location, with a length of 50m is spot of 1 and, 150m is spot of 2 and last is 100m spot of 3. The following are the results of the calculation of carrying capacity based on spot per spot.

$$\text{Spot 1} = 1 \times \frac{180}{20} \times \frac{8}{2} = 36 \text{ visitors}$$

$$\text{Spot 2} = 1 \times \frac{110}{15} \times \frac{8}{3} = 19 \text{ visitors}$$

$$\text{Spot 3} = 1 \times \frac{150}{20} \times \frac{8}{2} = 30 \text{ visitors}$$

The total number of visitors in 1 day with a long track in Budo village is 79 visitors. From the calculation of the number of real visitors in 1 day an average of 98 visitors minus the limit of the maximum number of visitors on the mangrove tourism track is 85 people (98-85), it is found that mangrove tourism visitors exceed 13 people in 1 day of tourist operating time. This means that is in 1 month the carrying capacity of the mangrove track in Budo has reached 390 people (13 people x 30 days).

The density of visitors exceeds the maximum limit in 1 day will have an impact on the flow in and out of the mangrove track, visitors are no longer comfortable doing activities at tourist sites, it is very dangerous for interactions between visitors if there are visitors who have infectious diseases, and in the long run the possibility of track is damaged due to dense visitor activity. To maintain the sustainability of tourism including the physical building of the track, appropriate arrangements are needed.

Tourism activities in Budo Village must pay attention to the carrying capacity of the area. Excess visitors at the Budo Village in mangrove track is not good for the tourism business in Budo Village in general and will specifically create visitor boredom. The concept of comfortable tourism activities is the dream of tourists or visitors when they visit certain tourist sites. The

finding of an excess number of visitors at the mangrove track is very dangerous for the tourism business at that location. It takes the right regulatory model, so that the business in the village always runs with the environment maintained, but from the business also continues to run as it should even always provide benefits for tourism managers in Budo Village.

## **CONCLUSION**

Based on the problems and objectives of the study and connected with the results and discussion, the conclusion drawn is that the maximum limit of visitors in 1 day of dock tourism operational time is 13 people. Managers are required to develop an appropriate visitor management model so that the capacity of visitors does not exceed the load of the mangrove track. Tourism managers in Budo Village, can create diversification of tourism products in the village and not only rely on mangrove coastal tourism, by starting to maximize the potential of other tourist attractions, to reduce the density of the number of visitors at one point of the tourist attraction location.

## **FURTHER STUDY**

The research involved overall visitor data since the beginning of this tourist village was opened, and until now the number of visitors looks massive. So it is recommended that further research focus more on the visitor management model on mangrove tourism in Budo village.

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