Tourism Suitability Analysis of Dreamland Beach as Recreational Object in Pecatu, Bali

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Abstract. The research was conducted in Dreamland beach, Pecatu Village, Bali. The purpose of this research was to identify the potential and the tourism suitability index of Dreamland beach. The research was carried from the start of January to the end of February 2021. The method used for this research was the descriptive quantitative method. Furthermore, the researcher uses the purposive sampling method to group the location into three location points. There are three points measured in the tourism suitability index, including depth, type of beach, the width of the beach, the base material of the water, slope of the beach, current velocity, brightness, beach land cover, dangerous species, and availability of fresh water. The research showed Dreamland had various potentials such as, white sand, big waves, and moderate sloping cliff which enables visitors to enjoy the sunset. As a tourist destination, Dreamland was equipped with several facilities including restaurants, toilets and kiosks. Moreover, visitors can rent umbrellas and surfing boards. Additionally, for safety purposes, there will be a lifeguard on duty. Access to Dreamland is easy, it has two parking spots. Parking spot 1 was designated for motorcycles, whereas parking spot 2 was designated for cars and buses. Based on this research, Dreamland achieved a good Tourism suitability index at 2.51 at location 1 and 2.59 at location 2 and 3. The parameters which act as the limiting factors are the current velocity and brightness. High-velocity current results in the mixture of sedimentation and seawater which leads to murky water, thus low visibility rate.

Keywords: Suitability index, Dreamland Beach Bali, Potential

I. INTRODUCTION

The high development of global technology supports the ability of people to travel and visit places. This has contributed significantly to the development of tourism sites in Indonesia. The rapid growth of tourism flow is part of the tourism growth. In regards to the high growth, each place needs to be finely built to meet its potential by providing tourism sites with adequate facilities [16].

Bali is one of the many places in Indonesia that offers beautiful beaches which attracts local and international tourists. Beach has high potential in regards to tourism due to its various ambience and pattern [5]. Senoaji [13] claimed that the beach as a tourist attraction can be potentially utilized for both passive (such as admiring the view) and active (such as jogging) actions. According to Yulianda [19], beach tourism is type of tourism that accentuates the beach and the culture of people living in the beach area such as recreation, exercise and admiring the views. On the other hand, marine tourism is a type of

tourism that highlights underwater resources and ocean dynamics.

Dreamland beach can be categorized as a tourist attraction that is located in Pecatu, Bali. Dreamland is surrounded by cliffs and big corrals with white sand right below the cliff is a suitable spot to enjoy the sunset or simply watch people surf. Dreamland has huge waves which are highly admired by surfers from all over the world that it is acknowledged as a new *surfing spot* in Bali [11].

As the tourism industry evolve swiftly, more tourism sites emerge, some are more attractive than Dreamland beach. Considering such a situation, there is a need to innovate and evaluate for Dreamland to compete. Thus, the importance of information regarding its potential and analysis on the tourism suitability index rises. This research is done with the purpose to get the information to be used by management to further develop Dreamland's potentials.

II. RESEARCH METHODS

Time and Place of Research

The research was conducted for a month, from the start of January to the start of February 2021 in Dreamland Beach, Pecatu, Bali. Location of research was grouped into three spots with coordinates as follow: the first coordinate at 8°47'57.90"S 115°7'4.00"E, second location at 8°47'55.10"S 115°7'3.60"E, and a third location at 8°47'50.90"S 115°7'4.50"E.
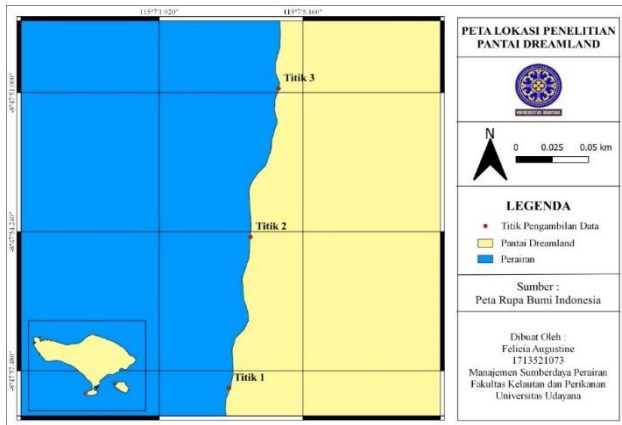

Figure 1. Research Location Map

Research method is a scientific method to get data with specific purpose and usage. The method used in this research is descriptive quantitative method. Descriptive quantitative method is a research method that is based on positivism with the purpose to describe objects or results of the research in which data used in the research were processed using statistic analysis. On the other hand, the method used to decide on the research points or data gathering is purposive sampling method which is a sampling technique under specific criteria [15]. Criteria applied are as follow, location chosen generalised the overall condition of the area.

The tools used for this research were Global Positioning System (GPS), Rollmeter, stick, camera, writing tools, Secchi disk, Basic Diving Equipment, and Lagrange. The method to calculate the Tourism Suitability Index was in Tabel 1.

Data Analysis

The results of the physical potential observation of Dreamland and tourism suitability index are analysed using a statistical model with formula as follow [20]:

$$IKW = \sum_{i=1}^{n}(BixSi)$$

n = number of suitable parameter
Bi = Weight of parameter i
Si = Score of parameter i

III. RESULT AND DISCUSSION

Dreamland Beach Potential

Based on the observation results, Dreamland beach has various beauties as it has three varieties of panorama, huge tide, white sand, cliff to enjoy the sunset. Dreamland has big waves, which is why it is a very suitable surfing destination. Moreover, visitors can rent a surfing board. Other than surfing, visitors are allowed to swim or simply play in the water area. The scenery from Dreamland Beach is very attractive, especially during sunset.

Availability of fresh water is an essential element to support hospitality for visitors. Freshwater in Dreamland is mainly located in toilets that are located in the food court near the beach. Access to Dreamland is through the main gate from Pecatu Indah Resort. All variety of vehicles can easily access the beach area. However, from the main gate to the beach can be confusing due to limited signs. There are two parking areas in Dreamland Beach. One area for motorcycle and one for bus and car. The parking area for motorcycles is located before the main gate to the beach. Whereas, for car and bus is located in the central park near the beach. For parking in central park, parking fee for car and bus is twenty thousand Rupiah.

Once entering Dreamland Beach, visitors are welcomed by souvenir shops on the right side along the way to the beach. There are approximately 24 kiosks along the way. The shops are mostly selling apparel, beach cloth, Bali clothes, knitted clothes, accessories such as bracelets and necklaces. Additionally, Dreamland beach has a food court equipped with toilets. The restaurants are located on the beach; therefore, visitors can enjoy the food and the views.

Tourism Suitability Index

Results of Dreamland Beach's TSI is provided in Tabel 2. Dreamland had a depth range of 0.90-1 m. If compared to Hamadi Kota Beach in Jayapura with a depth range of 1,5-1,8 m [9] and Binasi Beach in Tapanuli Tengah with a depth range of 2,9-4,7 m [10]. Thus, Dreamland beach can be deemed shallower than the two beaches mentioned. Depths of these three beaches are suitable as it had a depth ranging from 0-3 m which was not dangerous for activities such as swimming and walking around the beach [20].

Dreamland Beach was considered a white sand beach. The white sand beach was highly appreciated by visitors for its beauty [2]. Comparing Dreamland to Laguna Beach in Kaur [21] which has rocky sand, Dreamland was more suitable as a tourist destination as it is more harmless. Additionally, according to Yulianda [20], the most suitable base material was a sandy beach. The width of Dreamland was ranging between 27,60-29,55 m. Compared to Bututonuo Beach in Bone Bolango with an approximate

width of 21,45-25,44 m [18] and White Sand Beach in Karangasem with an approximate width of 9,73-16,93 m [14], Dreamland beach was the widest albeit, all three can be categorised as 'Very Suitable' as they have width more than 15 m that enables visitors to experience the beach leisurely [20].

Dreamland beach had a base material of white sand which was very suitable. Compared to Ungapan Beach in Malang with the base material of mud [6] then, it can be concluded that Dreamland was more suitable considering beaches with mud as its base material are not suitable as a tourist destination [22]. According to Yulianda [19] base material of the water was one of the most prominent parameters to determine the suitability of a beach as a tourism site considering one activity often done on a beach was to play with sand. Ultimately, Smother sand will be more comfortable to walk on.

Based on the calculation, Dreamland had a current velocity of 44,15-51,02 cm/second. Compared to Lengkuas Beach in Belitung that had a current velocity of 0-17 cm/second [3] thus, it can be seen that Lengkuas Beach's current was rather tranquil and was very suitable for recreational purposes. On the other hand, Dreamland has a rather strong current, thus not very suitable for recreational purposes. Therefore, Dreamland was scored 0 and 1 considering, according to Yulianda [20] current velocity must be within 0-17 cm/second with a score of 3 to be considered suitable for recreational purposes.

Dreamland had a slope of 4,29-6,28°. Compared to Jodo Beach in Batang with a slope of 0,6-1,72° [4], Dreamland had a bigger slope than Jodo Beach. That being said, both beaches are still considered normal. Safina [12] claimed that a slope of a beach that was less than 10° was considered most suitable for tourism because it was considered slanted meanwhile, a beach with a slope bigger than 45° was considered unsuitable as it was too steep. Moreover, Yulianda [19] said a beach that was moderate sloping will help visitors feel more secure and comfortable to do their activities around the coastline and sea.

Brightness in Dreamland was ranging from 22,22-30,43%. Compared to Pasir Putih Beach in Karangasem with a brightness of >80% [14] then Dreamland was less bright compared to Pasir Putih. According to Yulianda [20], looking at the brightness, Dreamland was very not suitable for tourism in this regard, thus it was scored 1 whilst Pasir Putih beach was scored 3 for being very suitable. Beach land cover in Dreamland was considered open land. Compared to Pasir Putih beach in Karangasem which was covered by houses and bushes [14] Dreamland can be considered very suitable. According to Yulianda [20], a suitable beach should have open land and coconut trees.

There were no dangerous species found on Dreamland beach. Such conditions, compared to Pulau Merah beach in Banyuwangi which had dangerous species such as sea urchin (*Diadema setosum*) and tuxedo sea urchin (*Mespilia globulus*) [1] then Dreamland was considered suitable for recreational purposes. This is consistent with Yulianda [20] that the absence of dangerous species is the most essential factor of beach suitability as a tourism site to ensure the security of the visitors.

The distance of freshwater availability in Dreamland was approximately 0,043-0,278 km. Compared to Laguna Beach in Kaur that had a freshwater availability distance of 0,2-0,25 km [21] and Jodo Beach in Batang that had a freshwater availability distance of 0,046-0,164 km [4] then Dreamland had the least distance to freshwater. The distance was very suitable as freshwater was highly needed by the visitors [20].

Dreamland achieved a good Tourism suitability index at 2.51 at location 1 and 2.59 at location 2 and 3. Based on this result, Dreamland was very suitable to be regarded as beach recreational object. This score was given considering Dreamland has ideal depth, white sand, wide beach, sand as the base material, availability of freshwater, mild slope, the whole area of the beach was an open space, and no dangerous species. However, some factors such as huge current, high sedimentation and murky water hinder Dreamland to be regarded as the prefect beach for recreational purpose.

IV. CONCLUSION

Based on the observation results, Dreamland beach has various beauties as it has three varieties of panorama, huge tide, white sand, cliff to enjoy the sunset. Dreamland has big waves, which is why it is a very suitable surfing destination. Moreover, visitors can rent a surfing board. Other than surfing, visitors are allowed to swim or simply play in the water area. The scenery from Dreamland Beach is very attractive, especially during sunset. Dreamland was categorised as very suitable at location 1 with suitability index score 2.51 and at location 2 and 3 with score 2.59. The resisting factors include murky water and high current. High current leads to deep sedimentation which results in murky water and low visibility with visibility at 0.28m, 0.25m, and 0.20m respectively at location 1, 2 and 3.

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TABEL 1
TOURISM SUITABILITY INDEX CALCULATION METHOD

Parameter	Calculation Method
Depth (m)	Using measuring stick dan roll meter. Depth is measured 10 m towards the sea from the coastline when the tide is at its lowest [21]
Type of Beach	Visual observation by observing the type and color of the sand [4]
Width of Beach (m)	Using roll meter to calculate the distance between the last vegetation in the beach to the coastline when the tide is low [4]
Base Material of the Water	Taking base material of the water from each spot to visually observe them [7] [4]
Availability of Freshwater (km)	Decide the coordinates of each spot and location of which freshwater is available via the Global Positioning System/ GPS. Calculate the distance of each spot using Google Earth [4]
Current Velocity (m/dt)	Measure current velocity using lagrange. Lagrange is released in the water, simultaneously start the stopwatch and let it be carried away by the current until it reaches its limit (rope is 2 m long). Once the rope is at its limit, stop the stopwatch, take note of the time and continue by performing the calculation [15]: $V = S / T$ V = Velocity (m/s), S = Distance (m), T = Time (second)
Brightness (m)	Using Secchi disk. The formula to calculate brightness is as follow [4]: $N = \frac{D_1 + D_2}{2} \times 100\%$ N = Brightness D1 = Depth when Secchi disk is not visible D2 = Depth when Secchi disk starts to become visible D = Depth of the water
The Slope of The Beach (°)	To calculate the slope, researchers use 2 m stick and a rolling meter. The 2 m stick is placed horizontally above the sand and placed right on the coastline. Then, calculate the elevation of the stick using the roll meter. The slope of the beach can be calculated by calculating the angle made by the horizontal and vertical lines [8] : $\alpha = \arctan T / P$ α = Angle (°), T = Vertical height, P = Horizontal len
Land Beach Cover	Visual observation by observing vegetations that are directly adjacent to the beach [14]
Dangerous Species	By snorkelling and observe the surrounding using Basic Diving Equipment

TABEL 2
TOURISM SUITABILITY INDEX

No.	Parameter	Weight	Point 1	Scor	BxS	Point 2	Scor	BxS	Point 3	Scor	BxS
1	Depth (m)	0,125	0,92	3	0,375	1	3	0,375	0,90	3	0,375
2	Type of Beach	0,200	White Sand	3	0,600	White Sand	3	0,600	White Sand	3	0,600
3	Width of Beach (m)	0,200	29,55	3	0,600	27,6	3	0,600	28,5	3	0,600
4	Base Material of the Water	0,170	Sand	3	0,510	Sand	3	0,510	Sand	3	0,510
5	Availability of Freshwater (km)	0,005	0,043	3	0,015	0,167	3	0,015	0,278	3	0,015
6	Current Velocity (cm/s)	0,080	51,02	0	0,000	46,51	1	0,240	44,15	1	0,240
7	The Slope of The Beach (°)	0,080	4,57	3	0,240	6,28	3	0,240	4,29	3	0,240
8	Brightness (%)	0,125	30,43	1	0,125	25	1	0,125	22,22	1	0,125
9	Land Beach Cover	0,010	Open Space	3	0,030	Open Space	3	0,030	Open Space	3	0,030
10	Dangerous Species	0,005	None	3	0,015	None	3	0,015	None	3	0,015
			IKW Point 1		2,51	IKW Point 2		2,59	IKW Point 3		2,59