
**COASTAL VILLAGE DEVELOPMENT STRATEGY BASED ON THE
POTENTIAL OF MARINE TOURISM IN ANALYZING THE SUITABILITY
OF BEACH TOURISM IN MUNJUNGAGUNG VILLAGE, TEGAL REGENCY,
CENTRAL JAVA PROVINCE****Beni Sabdo Nugroho¹, Frida Purwanti², Pujiono Wahyu Purnomo³, Atrasina Adlina⁴**¹²³University Diponegoro, Semarang, Central Java, Indonesia⁴Wageningen University, NetherlandEmail: benisabda@gmail.com, frida.purwanti@live.undip.ac.id,
pujiono.purnomo@live.undip.ac.id, adhiecocker@gmail.com**Abstract**

Enough resources that have great potential are coastal resources, but well managed are marine ecotourism resources. In Tegal Regency, a village is well known for its beautiful beaches and never empty of visitors during holidays. The village is Munjungagung Village. In addition to the village which is never deserted, there is also a Fishing and Diving Spot, this can be a potential for marine ecotourism and has a great opportunity to continue to be developed into mainstay tourism, and it is hoped that this potential can improve the welfare of the community. This study aims to analyze the suitability of coastal tourism from the Coastal Village, which was developed based on the potential for marine tourism in Munjungagung Village, Tegal Regency, Central Java Province. The method or technique chosen is the descriptive method. This research has been carried out from April to November 2021 to determine the potential for marine tourism to the tourism suitability index (IKW). The data were analyzed using the formula for calculating the Tourism Suitability Index (IKW). This study showed that the tourist sites in the research area were still suitable for beach tourism activities, snorkeling, and diving. The suitability class for beach tourism and snorkeling and diving has an IKW value of 94.05% and is included in the S1 category (Very Suitable).

Keywords: Marine Ecotourism; Area Suitability; Tourism Suitability Index (IKW); Prohibition Beach

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Introduction

Coastal and marine resources are also important resources for economic development, and both nationally and globally are of very high value because of their biodiversity. However, in implementing this management, there are areas where the implementation has not been optimal, resulting in the protection and further utilization of natural resources. This power cannot be reached. The causes are (a) the approach regarding knowledge in planning and management of coastal areas is considered lacking, (b) there is limited.

Information and data are the basis for making decisions on resource management, (c) there is a lack of honesty in the distribution of resources, (d) people are involved with the government in managing existing resources. So the destruction of these resources and degradation in the environment can affect most coastal communities.

Tegal Regency has the potential of a coastal area that includes 3 sub-districts and 12 coastal villages with a coastline length of 30 Km. Coastal and estuarine waters are the most productive aquatic systems (Beutler et

al., 2001). The potential of coastal areas that can generate and increase Regional Original Income (PAD) so that it can improve community peace. Marine tourism resources in this coastal area have great potential, but there is no good management yet.

(Fandeli, 2000) explained that tourism that can be enjoyed, one of which is beach tourism, where this is a form of utilizing coastal areas or areas that have many activities carried out in coastal areas that can maximize natural resources on the coast, this includes land area or water area (Fandeli, 2000). Meanwhile, according to (Chasanah, Purnomo, & Haeruddin, 2017) states that this coastal area is an area where the sea and land meet, where this area is a place used by nature in carrying out interactions whether coming from the sea, land or air, therefore this area or region It is dynamic and always changing. This dynamic and ever-changing coastal area is caused by natural factors or human intervention. As a result, work is needed in its existence to be truly sustainable. The beach is a manifestation of the use of resources that rely on natural assistance to fulfill human satisfaction (Chasanah et al., 2017).

Munjungagung or Larangan Village is located in the Kramat sub-district, Tegal Regency, Central Java Province, Indonesia. It is located on the coast of the Java Sea, which borders the villages of Kramat (east), Bangkok (south) to Padaharja (west). This village is a fishing village located on the district's coast, well known for the tradition of sea alms or nyadran, which is routinely held every year. Not only that, but this design is also known for its beautiful beaches which many tourists visit during holidays and there are Fishing and Diving Spots. Coastal areas throughout the world are undergoing dramatic changes as a long history of natural resource extraction gives way to declining productivity and the need for economic change (Gaynor, Kendrick, & Westera, 2008). This can be a potential for marine tourism and has a great opportunity to continue to be

developed into mainstay tourism in Tegal Regency (ARIBAWA, 2021).

(Dahuri, Rais, Ginting, & Sitepu, 2001) stated that marine tourism has a sufficient contribution to boost the economy in Indonesia. In the world of tourism, marine tourism can build jobs and encourage other economic activities or a multiplier effect that can contribute to the country's foreign exchange.

(Aubert et al., 2014) also explained that researchers could use the situation from the ecological perspective in seeing the potential of the area by relying on parameters that can bring up the value of the Tourism Suitability Index or IKW. (Yulianda, Fahrudin, Hutabarat, Harteti, & Kusharjani, 2010) also stated that in the area of tourism activities on the coast, there is a Tourism Suitability Index in carrying out activities on the beach, which is also used in weighing all gauges that have been classified into four classes which are stated in Very Appropriate (S1), Appropriate (S2), Conditionally Appropriate (S3), and Not Appropriate (TS) (Febyanto, Pratikto, & Koesoemadji, 2014).

Mangkangkulon Beach and Long Beach in Benulu City have been used as research using a study of the suitability of coastal tourism. In providing a study or analysis of the suitability of tourism, this is one of the studies that provide a value for the suitability of the activities that have been carried out in an area or area that has been matched to the potential or capacity of the resources and provision that is considered from various sizes or parameters. The problem that has recently emerged in the Krakal Beach area is the lack of public interest in visiting the beach, supported by the environmental damage in the coastal area, improper waste management, and poor spatial planning. (Febyanto et al., 2014) also stated that naturally, in a tourist attraction, the beach is necessary for making an analysis that follows tourism in developing facilities and infrastructure that can run more advanced in the future. This tourism suitability analysis

can impact the existence of an image of a tourist attraction that can still be expected to be appropriate or not if it is used as a beach tourism object (Febyanto et al., 2014).

Implementation of development for the marine tourism sector at least requires step by step in accompanying academic instructions. Where there is an effort in basic to applied research, this can progress to baseline exploration of environmental and social data, which has the support of all stakeholders. Where these stakeholders must have the same point of view, attitude and behavior in the development of marine tourism that can produce net benefits in social and environmental aspects.

Method

A. Research design

The method used in conducting this research uses a descriptive method where the research is carried out to present descriptive data with a systematic, factual and accurate description of the facts, nature, and relationships in the phenomenon (Nazir, 2014). This research method collects data for research in the form of surveys and interviews.

B. Research sites

The research was carried out at c, located in the Coastal Village, Munjungagung Village, Kramat District, Tegal Regency, Central Java Province, in April - November 2021.

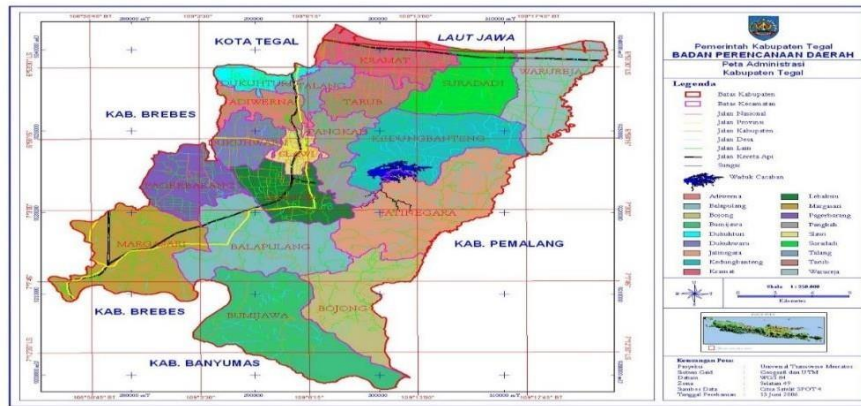


Figure 1
Tegal regency location map

In determining the place of this research based on a review, Munjungagung Village is one of the villages in Tegal Regency, known for its beautiful beaches that are never empty of visitors, especially when the holidays arrive. There are Fishing and

Diving Spots. This can be potential marine ecotourism and has the opportunity to continue developing into mainstay tourism. It is hoped that this potential can improve the welfare of the community.



Figure 2

Map of the location of Prohibition Beach in Munjungagung Village, Tegal Regency

The north coast of Munjungagung Village has a total coastline length of approximately 2.1 km, known as the Larangan Beach. Larangan Beach has long developed into a beach tourist attraction in the form of culinary tourism activities and natural panoramas. For culinary tourism activities on Larangan Beach, there are dozens of stalls on the beach.



Figure 3

Ban Beach, Munjungagung Village, Tegal Regency

Marine tourism is a tourist activity in nature with locations from the coast to the sea, summarized in coastal tourism, seascapes and underwater. The main goal of this paper is to gather and critically examine empirical evidence on how Climate Change (CC) impacts coastal and maritime tourism (Arabadzhyan et al., 2021). This tourist village is an area with much potential for attractiveness in tourism by utilizing existing marine resources in marine tourism. The Ministry of Maritime Affairs and Fisheries

(KKP) in the Directorate General of Marine Spatial Management explained implementing the marine tourism village development program in 6 selected locations at the national level in 2021 Munjungagung Village is one of the selected locations from the Dewi Bahari program.

Several villages are included in the coastal area in Kramat District, including Dampyak, Padaharja, Munjungagung, Bangkok, Maribaya, and Kramat villages. Munjungagung Village was chosen as a village that has the potential to be developed for the marine tourism sector because, in this area, there is a marine ecosystem that has a role in balancing the life of marine biota with fisheries productivity. This ecosystem includes coral reefs with massive coral clusters similar to orange, so people call it "Karang Jeruk." In addition, another potential in Munjungagung Village is its beach tourism which is now starting to be crowded with tourists and is booming in the news, especially through social media. The beach is "Beach Prohibition."

C. Data collection

The data used are primary and secondary. Secondary data consists of general conditions, geographical location, topography and demography from various agencies/agencies, namely BPS, BAPPEDA, Tourism Office, local government and libraries that support research. Meanwhile,

primary data consists of a questionnaire on the assessment of the implementation of K3 in fishing ports; the results of the SWOT questionnaire sourced from direct observations in the field and interviews with managers and service users of the Larangan Beach, Munjungagung Village, Tegal Regency. Respondents who participated consisted of the Regency

Government / Beach Managers as many as 15 people, the surrounding community as 30 people and 100 tourists.

Based on the explanation above, the number of samples taken in this study was 145 respondents, so the research results could be more representative.

Table 1
data collection tools and materials

Tool	Ingredient
Stationery Questionnaire	Primary and secondary data the results of the questionnaire related to the Regional Medium Term Development Plan (RPJMD) of Tegal Regency and the implementation of the Tegal Regency Coastal Strategic Plan.
Digital camera Laptop	

D. Data analysis

The data used in this study is a descriptive analysis of the potential for marine tourism by considering the results of the analysis of the tourism suitability index (IKW) in Larangan Beach, Munjungagung Village Tegal Regency. (Hadiyanti & Yolanda, 2021) states that the data analysis used is the Tourism Suitability Index or IKW method, which has a suitability matrix that has been arranged for the interests of each size in supporting activities in the area with the formula used in the suitability of this beach tourism. Are:

$$IKW = \sum [Ni/(N maks)] \times 100 \%$$

Information :

IKW = tourism suitability index (%)

Ni = Parameter Value i (bobot x skor)

N maks = Maximum value of a tourism category (84)

Results and Discussion

This similarity is characteristic, namely the criteria for resources and the environment used in meeting the needs of tourism development. In measuring the Tourism Suitability Index (IKW) on the coast, the research locations have been shown in table 2. The land suitability study is one of the elements in analyzing the strength of support in the area for tourism. The availability of land on Larangan Beach, Munjungagung Village, Tegal Regency has been used for buying and selling activities such as food and drinks, toys, a large parking area, toilets, public toilets.

Based on the questionnaire data processing results, the lands in the Larangan Beach tourist area, Munjungagung Village, Tegal Regency are generally used to enjoy the natural scenery, fishing, and playing water.

Land suitability for marine tourism on Larangan Beach, Munjungagung Village,

Tegal Regency will be explained descriptively. Descriptive analysis was obtained based on direct observations in the field and relevant oceanographic aspects for tourism activities. According to (Yulianda et al., 2010), there are several criteria in the regularity of this beach tourism, such as the depth of the waters, the width of the coast, the basic material of the

waters, the speed of the currents, the slope of the coast, the brightness of the waters, the closure of coastal land, dangerous biota, and the availability of freshwater. The table below will explain the suitability of tourism on Larangan Beach, Munjungagung Village, Tegal Regency.

Table 2
Matrix of Suitability of Prohibited Beach Tourism Areas in Munjungagung Village, Tegal Regency

No	Parameter	Weight			N _{maks} an x 3
		A	Score	Amount	
1.	Water depth (m)	5	3	15	15
2.	beach type	5	3	15	15
3.	Beach width (m)	5	3	15	15
4.	Water base material	3	2	6	9
5.	Current speed (m/s)	3	3	9	9
6.	Beach slope (°)	3	3	9	9
7.	Water brightness (%)	1	3	3	3
8.	Beach land closure	1	3	3	3
9.	Dangerous biota	1	1	1	3
10.	Freshwater availability (km)	1	3	3	3
Total		:		79	84
Travel Suitability Index (%)		:		94.05	
Category		:		S1	

Information: N_{maks} for beach trips 84

A. Water depth

The results of depth measurements at the research location show that Larangan Beach, Munjungagung Village, Tegal Regency has a depth ranging from 0.28-1.5 m, with a depth range of 0.3-1 m. The varying depth range is measured from the shoreline to 100 m towards the sea. Tourists usually carry out beach tourism activities no more than a distance of 200 m and a depth of not more than 1.5 m. This depth and distance are considered safe for tourists visiting the beach tourism on Larangan Beach, Munjungagung Village, Tegal Regency.

B. Beach type

The type of beach in the research location is a black sand beach. Beaches

with black sand are generally less attractive to tourists than white, muddy, or rocky sand. This is influenced by the level of comfort of tourists in carrying out tourist activities, especially beach tourism. The color and type of sand provide their aesthetic value for tourists. (Yulianda et al., 2010), in his tourism suitability matrix, states that the type of beach with white sand is more suitable for tourism activities than other types of beaches (Yulianda et al., 2010).

C. Beach width

The width of the beach at Larangan Beach, Munjungagung Village, Tegal Regency varies. Namely, it has a beach width ranging from 11.35-48 m. The wider the beach, the better it is to be a tourist

attraction. Tourists can use the extent of the beach in carrying out activities from leisurely walking, sunbathing, documenting, cycling, playing sand and so on (Tambunan, 2013).

D. Water base material

The basic material or substrate in Larangan Beach, Munjungagung Village, Tegal Regency waters is generally sand. Although there are some coral fragments, these waters are still worthy of the tourism category.

E. Current speed

Current conditions in the waters at Larangan Beach, Munjungagung Village, Tegal Regency are influenced by tidal currents and seasonal currents. This current has a speed of the order indicated at 0.01 to 0.9 m/sec. This condition can be influenced by winds whose direction changes throughout the year, which has two wind directions, namely southeast and southwest.

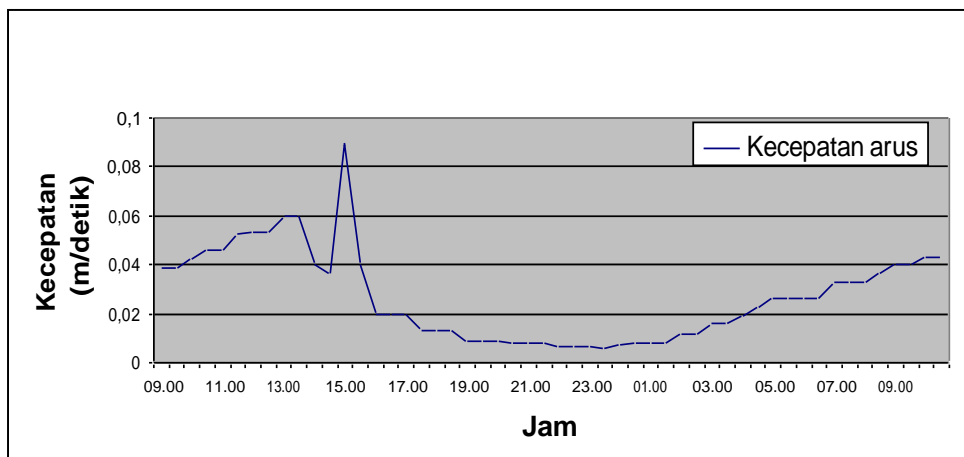


Figure 4

Graph of Flow Speed of Prohibited Coastal Waters in Tegal Regency

(Source: (Syukur, n.d.))

F. Beach slope

The slope of the coast at the study site ranges from 0.258° to 2.576° . This value belongs to the flat beach category. A flat beach will be more suitable for tourist areas. The beach slope $<10^\circ$

is in the flat beach category, while 10° - 25° is in the sloping category, and $>25^\circ$ is in the steep category (Yulianda et al., 2010).

G. Water brightness

The results showed that the brightness of the waters reached 30%. This is because the waters of Larangan Beach, Munjungagung Village, Tegal Regency and its surroundings include shallow waters in the north coast with sandy mud substrate so that light

penetration cannot penetrate the bottom of the waters.

H. Land cover

Land cover on Larangan Beach, Munjungagung Village, Tegal Regency is open land, and there are several types of trees such as coconut, cypress, ketapang, hibiscus trees, and others. This is because this location is still in the improvement stage to be developed into an ecosystem-based marine tourism village object (Dewi Bahari).

I. Dangerous biota

Observation activities on this dangerous biota must be carried out by anticipating the occurrence of dangers that threaten tourists. The dangerous biota commonly found in the waters of

Larangan Beach, Munjungagung Village, Tegal Regency is jellyfish. Jellyfish are usually clustered and visible so that tourists can avoid them. Prevention can also be done through verbal warnings, as well as through warning boards.

J. Freshwater availability

The availability of fresh water at Larangan Beach, Munjungagung Village, Tegal Regency and surrounding areas is still sufficient. The distance from tourist sites is also relatively close, no more than 100 m. The availability of freshwater is important to support life, including tourism activities (Yulisa, Johan, & Hartono, 2016).

Conclusion

The conclusion that can be drawn from the research "Coastal Village Development Strategy Based on Marine Tourism Potential in Munjungagung Village, Tegal Regency, Central Java Province" shows the Index of Suitability of Coastal Tourism Areas and snorkeling and diving tours on Larangan Beach, Munjungagung Village, Tegal Regency, the IKW value is 94.05% and included in the S1 category (very suitable). The tourist location in the research area of Larangan Beach, Munjungagung Village, Tegal Regency, with its natural beauty, which is the biggest attraction, and easy access to the location, is the main destination for tourists to enjoy the natural scenery and underwater world.

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