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Priority Infrastructure Development on Tablolong Beach Tourism Kupang Regency - East Nusa Tenggara

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ABSTRACT

The Tablolong beach area is one of the natural tourism objects in Kupang Regency. However, it is not matched by adequate tourist area infrastructure. This study aims to analyze the required infrastructure to assess the existing condition of infrastructure in the Tablolong beach area using a qualitative descriptive analysis, analyzing the IPA (Importance-Performance Analysis) level of importance of infrastructure in tourist areas and providing recommendations for infrastructure development directions. The results of the study indicate that the priority infrastructure developed to support the fisheries and trade services sector are 1) provision of domestic waste management facilities (laundry waste and toilets), provision of a clean water network system, provision of waste disposal sites; 2) handling potholes in road conditions and asphalting of roads that are still pavement; 3) provision of various modes of transportation and drainage systems, especially in fishing settlements and beaches; 4) provision of transportation support facilities, improvement of telecommunications performance, improvement of electricity network performance in the Tablolong Beach area under the development of the area.

Keywords: *Priority Infrastructure Development, Tablolong Beach Tourism.*

1. INTRODUCTION

Indonesia is an archipelagic country with the second longest coastline in the world. Under these conditions, Indonesia has a very large, diverse and diverse coastal tourism potential and must be developed [1].

Kupang Regency is an area with diverse tourism, especially in the coastal and coastal tourism sectors. One of the potential natural resources in the coastal sector of Kupang Regency is beach tourism located in Tablolong. Based on the Kupang Regency Regulation Number 01 of 2015 concerning the Kupang Regency Spatial Plan for 2014–2034, Tablolong Beach is included in the Tourism Designated Area or tourism development area.

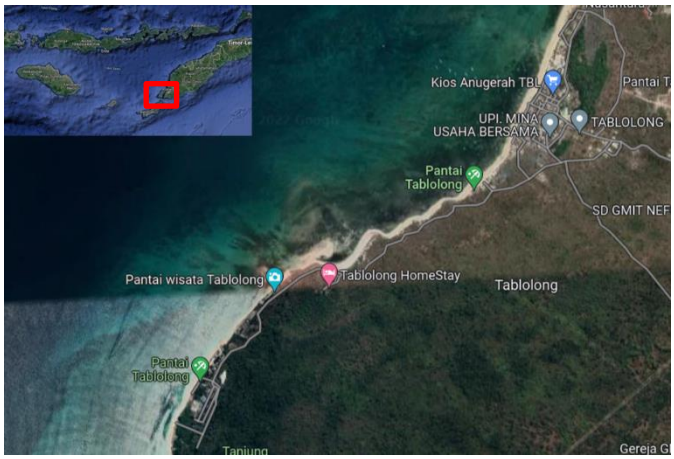

Figure 1. The Tablolong Beach Area

The Tablolong Beach has potential for coastal resources, especially fisheries potential. It is 10 miles from the coastline, has a busy fish migration route to the Sawu Sea, and has potential resources for coral reefs and marine biota, making it the largest seaweed producer in the world. East Nusa Tenggara also has the characteristics of white sandy beaches that stretch out beautifully and cleanly along the coast.

Based on Kupang Regency Tourism Data (2019), Tablolong Beach tourism visitors have increased every year. With the number of visitors increasing every year, it is not in line with the condition of some infrastructure and the condition of the beach civilization, which is still categorized as poor. The existing condition of infrastructure included in the unfavorable category is the road network of tourist sites, electricity network, and street lighting.

Infrastructure as the basic network infrastructure of the existence of a city or region is an important factor in the sustainability and growth of a city or region [2]. If the provision and maintenance of infrastructure is not carried out properly, the city network or urban activity nodes in an area will be disrupted, which in turn impacts the degradation of the community's economic and social system [3].

Considering that the Tablolong Beach tourist location is adjacent to and in the same direction as the Savu Sea Marine National Park (TNP) marine conservation area, namely Oecina Beach, it is hoped that infrastructure development at Tablolong Beach tourist attractions will be able to support the lives of living things, maintain ecological processes, sustain water resources and clean air. , as well as contributing to the health and comfort of the community in the area. Based on this condition, tourism objects located around conservation areas do not mean that they do not need infrastructure, but that the infrastructure built must be environmentally friendly, not damage the ecosystem, and do not change the soil structure. Thus, infrastructure development will be able to support the life of living things, maintain ecological processes, sustain water and clean air resources, and contribute to the health and comfort of the community. Besides that, the level of availability of most of the infrastructure is still not optimal so that infrastructure development efforts are needed for tourism development on Tablolong Beach.

The formulation of the problem in more detail which then becomes the question of this research is: "What coastal infrastructure should be developed in the Tablolong coastal tourism area to support the fisheries sector and trade in services?".

2. METHODOLOGY

This research uses a rationalistic approach. This approach uses empirical facts as truth. In other words, science that comes from the results of sensory observations supported by a theoretical basis and a thought process is needed. The analytical model that will be used is theoretical descriptive, which is used to carry out the analysis process, providing an analysis of the program and research object regarding theories related to coastal infrastructure that will be used to find variables for assessing regional infrastructure.

In the quantitative approach, the data used are the results of observations of things that can be expressed in numbers with a qualitative assessment of the preferences of stakeholders [4]. In the qualitative approach, the researcher makes a complex picture of the respondent's view and conducts a study on the situation experienced [5]. Bogdan and Taylor suggest that the qualitative type is a research procedure that produces descriptive data from the observed situation [6].

The data collection process was carried out using secondary and primary data survey techniques. Secondary data collection is sourced from documents owned by agencies, including the Kupang Regency Regional Planning and Development Agency, the Central Statistics Agency, the Public Works Agency and other agencies. The primary survey was conducted by direct observation (field observation) and through a questionnaire. The primary survey aims to obtain an overview of environmental conditions and changes that occur and is carried out to complement the existing secondary data.

The research variable is the factor under study that has a size that is quantitative and qualitative. Explanation of operational definitions is in the following table:

Table 1. Variables and Operational Definitions

Indicator	Variable	Operational definition
Accessibility and Transport	Road Network	How long is the road damage condition in the study area
	Modes of transportation	Availability of public transportation routes and types of private vehicles.
	Transportation Support Facilities	Availability of supporting facilities available as services in the study area.
Utilities and Aspects of Coastal Infrastructure Development	Clean Water Network	Service coverage of clean water fulfilment in the study area.
	Electric network	Coverage of electricity supply services in the study area.
	Drainage System	Service coverage for the fulfilment of the drainage system in the study area
	Waste Management System and Sanitation	The scope of services for the fulfillment of the waste treatment system and the fulfillment of sanitation services in the study area.
	Telecommunication	The coverage of telecommunications fulfillment services in the study area.
	Garbage	The scope of services for the fulfillment of waste in the study area.

The level of importance and level of performance are determined using a Likert scale through two questions, namely how important and how well each type of infrastructure performs. Likert scale is used to measure social research variables such as attitudes, opinions, social perceptions of a person or group.

The Likert scale is needed to prepare interview data, which contains the infrastructure needed in the area development after the data is obtained from the results of

stakeholder interviews and then processed using natural science analysis tools. In this study, the Likert scale is used to measure the importance and performance of infrastructure development. Likert scale can be seen in the following table.

Table 2. Likert Measurement Scale [7]

	Interest	Performance
1	Very important	Very good
2	Important	well
3	Quite important	Pretty good
4	Not too important	Not good
5	Very Less Important	Very Not Good

From the Likert scale assessment, the mean is plotted into the IPA quadrant, as shown in Figure 1 below.

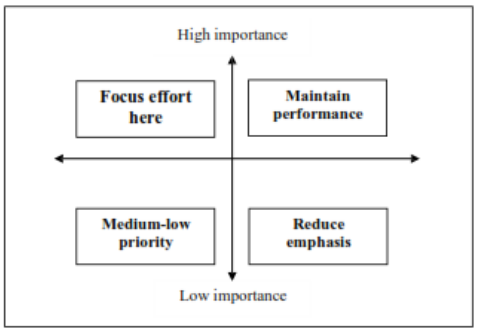

Figure 2. IPA quadrant [8]

From the diagram above, it can be interpreted that the variables included in quadrant I (focus effort here) are considered to have a high level of importance and a low level of performance, so they are a priority for handling and improving their performance. Quadrant II (maintain performance) contains variables that are considered to have a high level of importance and high performance. Hence, those included in this quadrant need to be maintained. The variables that included in quadrant III (medium-low priority) are variables with a low level of importance and low level of performance, so reconsideration is needed to improve and handle its performance. Meanwhile, those included in quadrant IV (reduce emphasis) are variables that have optimal performance but have low importance, so there is no need for redevelopment.

3. FINDING AND DISCUSSION

Geographically, Tabolong Beach is located at 10° 18' 50.96" South Latitude and 123° 28' 42.74" East Longitude, and administratively, Tablolong Beach is located in Tablolong Village, West Kupang, Kupang Regency, East Nusa Tenggara Province (NTT). The location of Tablolong Beach is within a distance of ± 35 Km from the direction of Kupang City.

This tourist attraction has some facilities, such as 11 loops, 7 bathrooms, kiosks, and children's play facilities. Other tourist facilities prepared by the private sector are also available in the form of homestays and hotels. About 200 meters from the entrance gate, there is a homestay built by Canadian citizens. About 400 meters from the homestay, there will be a hotel built by the private sector, but in the last 3 years the construction of the hotel has stalled due to the AMDAL permit and land status conflicts with the community.

An overview of the existing conditions of the Tablolong Beach Tourism area can be seen in Figure 3 to 14 below.

Figure 3. Road Conditions to Tablolong Beach Area

Figure 4. Road Conditions in Tablolong Beach Area

Figure 5. Road Conditions in Tablolong Beach Area

Figure 6. Condition of clean water facilities in Tablolong Beach Area

Figure 7. The condition of the parking lot in the Tablolong Beach area

Figure 8. Pedestrian conditions in the Tablolong Beach area

Figure 9. The condition of the gazebo in the Tablolong Beach area

Figure 10. The condition of the gazebo in the Tablolong Beach area

Figure 11. Abandoned hotel conditions in Tablolong Beach Area

Figure 12. Activities of fishing communities in Tablolong Beach Area

Figure 13. Condition of tourist facilities in Tablolong Beach Area

Figure 14. Fisherman's Village in Tablolong Beach Area

To find out the infrastructure needed for the development of the Tablolong Beach Tourism Area, an analysis that compares the performance and interests of each coastal area infrastructure variable is needed. The analysis used is Importance-Performance Analysis, which is an analysis that calculates the difference between the performance and importance of each regional infrastructure variable by each respondent. Respondents used for this analysis are stakeholders related to the development of coastal area infrastructure. After getting data from the respondents who are stakeholders of the coastal area, the average value of the questionnaire results is then sought.

The first step taken is to calculate the results of the questionnaire that has been obtained from the respondents. It is necessary to know the average number of importance levels and the average level of performance by finding the average value on the total value of each variable. Then the mean of each number of values contained in the level of importance and performance is determined, called the C-Line. The C-Line is then used to determine the center line of the intersection between the quadrants.

Table 3. Values of Interest and Performance Tablolong Beach Tourism Area Infrastructure

Number	Variable	Level of Interest	Performance Level
1	Road Network	4,20	2,16
2	Modes of transportation	3,80	1,64
3	Transportation Facilities	3,68	2,24
4	Clean Water Network	4,24	1,88
5	Electric network	3,80	2,52
6	Drainage	3,40	1,80
7	Waste Management and Sanitation	4,12	1,64
8	Telecommunication	3,36	2,36
9	Garbage	4,12	1,88
Amount		34,72	18,12
C-Line		3,86	2,01

Source: Analysis Results, 2022

From the analysis results, it can be concluded that waste management and sanitation, clean water networks, and solid waste have an importance value above 3.86 and a performance value below 2.01. This means that these infrastructures are in quadrant I and are infrastructure that has a level of importance high but low performance. Road network infrastructure is included in quadrant II because it has an importance value above 3.86 and a performance value above 2.01, which means that the level of importance possessed by the infrastructure is high and the performance is also good.

In quadrant III, there are modes of transportation and drainage that have a level of importance with a value below 3.86 and a performance value below 2.01. This value means that the performance of the transportation and drainage modes is poor and has a low level of importance as well. Meanwhile, the infrastructure of transportation, telecommunications, and electricity networks is in quadrant IV, with a value of importance level below 3.86 and a performance value above 2.01. This means that the level of importance possessed by these infrastructures is low but the performance is good.

The infrastructure quadrant division matrix can be seen in Figure 15

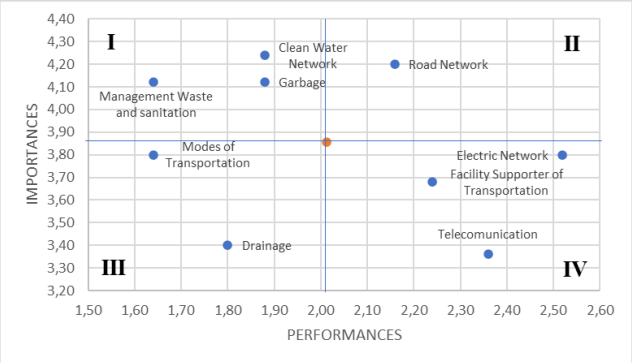

Figure 15. Matrix Importance-Performance Analysis Tablolong Beach Tourism Area

The order of infrastructure needed for the development of the Tablolong coastal area based on the level of importance and level of performance according to the matrix is in Figure 16. below:

1. Waste Management and Sanitation 2. Clean Water Network 3. Garbage	(I) Focus Effort Here
4. Road Network	(II) Maintenance Performance
5. Modes of transportation 6. Drainage	(III) Medium-Low Priority
7. Transportation Support Facilities 8. Telecommunication 9. Electric network	(IV) Reduce Emphasis

Figure 16. Order of Infrastructure by Importance Level and Performance Level

The direction of infrastructure development based on the role and function of the Coastal Tourism Area has been formulated by a descriptive method where the variables obtained from the results of the literature review will be compared with the existing infrastructure conditions. The results of target 2 are the level of importance and performance of coastal area infrastructure, policies and laws and regulations that related to the development of tourist areas.

Table 4. Directions for Infrastructure Development for Tablolong Beach Tourism Area

Quadrant	Variable	Fact Empire	Analysis	Instruction
Quadrant I (*focus effort here*)	Management Waste and Sanitation	There is no integrated waste management and sanitation in coastal communities. The existing waste treatment is still conventional, collected at one point	The occurrence of environmental pollution caused by dirty water, residential waste and waste from the management of coastal resources. If you pay attention to the Tablolong beach tourism area, there is no integrated waste management and sanitation system, causing waste to be disposed of irregularly. Therefore, the availability of this waste management and sanitation system must be one of the priorities for developing the Tablolong beach tourism area.	Providing and improving the performance of waste management and sanitation infrastructure, clean water and solid waste networks as an effort to support the development of the Fisheries and Service Trading Sector in the Tablolong beach tourism area through the following technical planning: Provide domestic waste management facilities (laundry waste and toilets) Provision of a clean water network system of adequate quantity and quality Provision of an easy-to-manage waste disposal site
	Clean Water Network	1. Most of the research areas have not been reached by the clean water service network 2. The use of clean water is more used in settlements and sellers in tourist areas 3. Utilization of clean water in coastal resource activities such as fish processing and has not been fulfilled	1. The need for a clean water network is one of the important infrastructures in its utilization because it is directly related to the social and economic activities of the community. 2. The availability of the clean water network is not adequate, so the maintenance and improvement of both quality and quantity must be seriously considered	

Quadrant	Variable	Fact Empire	Analysis	Instruction
	Garbage	1. Coastal waste generation is dominated by waste generated from settlements, managers and visitors to tourist areas. 2. Waste management on the coast is still classified as conventional by being dumped, burned, or collected at several points and looks chaotic	It is noticed that the coastal area does not have a solid waste management system, although it has not become a problem around the coastal area, but if the waste is not managed properly over time it will have a negative impact on the environment and society. Tourist area Therefore, the availability of a solid waste management system must be one of the concerns in the development of the Tablolong coastal tourism area	
Quadrant II (*maintain performance*)	Road network	1. The road network to the coastal area is paved and in good condition 2. The primary collector network is already available in the coastal area but is in a damaged condition	Basically providing The road network in the coastal area is already affordable, but the condition of the roads in the area is still damaged	The provision of road network infrastructure supports the fisheries sector and trade in services, its performance is maintained and improved so that it continues to work correctly and properly. In addition, it is necessary to handle the condition of the potholes and pave the road that is still Makadam
Quadrant III (*medium-low priority*)	Modes of transportation	1. The most dominant use of land transportation modes is motorbikes, which are used more often for regional internal mobility 2. The community uses the mode of transportation in the form of pickups and trucks as a means of transporting coastal resources between regions, while for tourist visits there is no public transportation mode.	Modes of transportation is an important means in the social and economic activities of the Tablolong coastal community in moving places. The activities of utilizing coastal community transportation modes are divided into two types: 1. Utilization of inter-regional transportation modes 2. Utilization of regional internal transportation modes Therefore, the ease of transportation modes that are able to maximize the utilization of accessibility must be handled seriously, both 2 (two) and 4 (four) wheel modes. Types of transportation modes must be able to accommodate the movement activities of the Tablolong coastal community and visitors to tourist areas, so public transportation is needed.	Provision of infrastructure for transportation and drainage modes to support the fisheries sector and trade in services, through technical planning for the provision of various modes of transportation and drainage systems
	Drainage	1. Drainage facilities in the coastal tourism area are not yet available. 2. Drainage is only found in fishing settlements	There needs to be drainage in the Tablolong beach area	
Quadrant IV (*reduce emphasis)*	Facility Supporter Transportation	1. Coastal communities served by transportation facilities are still not evenly distributed 2. Supporting facilities such as terminals are not available	Tablolong Coast is still not supported by adequate transportation support facilities. This affects the smooth mobility of the community and visitors to the tourist area, so it is important to	Provision of supporting infrastructure for transportation, telecommunications, and electricity networks as an effort to support the fisheries sector and trade in services through planning

Quadrant	Variable	Fact Empire	Analysis	Instruction
			improve the quality and quantity of transportation facilities in the area around the area, the supporting facilities include terminals, bus stops, etc.	technical as follows: 1. Provision of transportation support facilities in the Tablolong coastal area 2. Improved telecommunications performance in the coastal area of Tablolong 3. Improving the performance of the electricity network in the coastal area of Tablolong is adjusted to the development
	Telecommunication	Use of telecommunication facilities already dominated by wireless network facilities from cellular BTS	1. The utilization of the telecommunications network has been optimal. 2. The existing network services have reached the Tablolong coast evenly.	
	Electric network	1. The use of electrical energy in the Tablolong beach area is used more for community social activities as the main lighting for settlements. 2. The utilization of fishery activities and other resources is still limited to the basic supply and has been fulfilled.	1. The need for electrical energy on the Tablolong coast has been met evenly. 2. The availability of the electricity network is adequate, so the maintenance and improvement of quality and quantity must be seriously considered	

4. CONCLUSION

Based on the approach of several sources in determining the infrastructure needed in the development of Coastal Tourism Areas as an effort to support the fisheries sector and trade in services, the required infrastructure sequence is obtained after going through various considerations, including taking into account existing conditions, natural science analysis and literature review. Infrastructure that is a priority so that development in service levels and performance is needed include:

1. Quadrant I (focus effort here), Efforts to support the development of the fisheries sector and trade in services for the Tablolong coastal tourism area through the following technical planning:
   a. Provide domestic waste management facilities (laundry waste and toilets)
   b. Provision of a clean water network system of adequate quantity and quality
2. Quadrant II (maintain performance), the provision of road network infrastructure to support the fisheries sector and service trade, maintain and improve its performance so that it continues to work properly and properly. In addition, it is necessary to handle the condition of the potholes and pave the road that is still Makadam
3. Quadrant III (medium-low priority), Provision of infrastructure for transportation and drainage modes to support the fishery sector and trade in services, through technical planning for the provision of various modes of transportation and drainage systems, especially in fishing settlements and beaches.
4. Quadrant IV (reduce emphasis), Provision of supporting infrastructure for transportation, telecommunications, and electricity networks as an effort to support the fisheries sector and trade in services through technical planning as follows:
   a. Provision of transportation support facilities in the Tablolong coastal area
   b. Improved telecommunications performance in the coastal area of Tablolong
   c. Improving the performance of the electricity grid in the coastal area of Tablolong

5. RECOMMENDATION

The recommendations that can be given based on the results of this study are as follows:

1. Can be used as a reference by the local government in developing the infrastructure of the Coastal Tourism Area to support the fisheries sector and trade in services by considering several aspects that have been planned.
2. Regarding the determination of infrastructure needs, there is a need for cooperation between the local government and the private sector and the community
3. Further studies are needed on the infrastructure development of Coastal Tourism Areas to support the fisheries sector and trade in services.

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