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Evaluation of Coastal Scenery in Urban Areas: An Arrangement of Ecosystem Areas in Semarang

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Abstract: *Semarang, as a coastal capital in Central Java, is recognized as an attractive tourist area. Lack of adequate planning results in inappropriate land occupations, threatening the integrity of the coastal and marine environment. An introduction to the characteristics of the adjacent ocean and coastal zones is essential for proper urban planning. This study evaluates the views of the Semarang municipal beach, which is located on the north coast which receives a large number of visitors for a full year and is not a favorite location. This methodology uses fuzzy logic to estimate weights for nine parameters (5 relative to physical parameters - P - and four related to chemical parameters - C) and SPSS 16 analysis for correlation analysis for providing solutions related to the effects of mangrove abrasion, maintaining sea breeze, making beautiful environment, making tourist areas and increasing salt and pond production. Determination of the location of the study applied checklist, and the coastline is divided into 4 locations, namely Maron Beach, Tiring Beach, Marina Beach, and Baruna Beach. The assessment of distributed locations is between classes 1, 2, 3, 4, and 5. Baruna Beach stands out from the rest, being the only one classified as class 5. In addition to the Baruna beach, it is classified as class 4. The result is a lousy beach management zone with a lot of rubbish found on several beaches; tourist support facilities are located with wastewater disposal. Most have physical parameters for coastal zone managers or nothing to reduce beautiful impacts, so emphasis must be given to assessing how to improve different settings, among which special attention should be paid to proper coastal management.*

Keywords*: Coastal management, Coastal views. Landscape quality*

1. INTRODUCTION

Coastal and marine developments in Indonesia are faced with several realities and challenges in the future. This reality is related to the carrying capacity of natural resources, especially on land over time. Demand for goods and services in the future will continue to grow, so it is necessary to use natural resources, both land, and sea. The coastal

environment is part of the marine resources whose existence has a strategic function for the fishing community. Some of them are population increase, industrial activities around the coast, pollution, sedimentation, and water supply. [1]

Mangroves are muddy coastal wetlands found in the tropics and subtropics of the biosphere, which play a significant role in environmental services, economic, and social benefits. Mangroves contribute to various environmental services, including trapping and recycling organic material, providing shelter and surface for terrestrial and aquatic organisms, and contributing to the overall health of the coastal environment. Mangroves are rich in natural resources, which have long been used by humans. Most of the diverse mangrove ecosystems distributed in developing countries have recently faced many problems, which have the potential to cause the extinction of forest ecosystems [1, 2, 3].

Several recent studies have shown a general description of mangrove disturbance. Reducing mangroves can cause natural disasters such as coastal abrasion. Besides, the loss of mangrove forests is the initial stage for the reduction of biodiversity, both in quality and quantity, which significantly influences the coastal economy. The loss of mangroves means the loss of many ecological systems to feed, breed, and hatch fishes and sea creatures and migratory species. The decline in mangroves also significantly contributes to the negative impact on the coastal economy, where many coastal populations depend on marine resources and the fishing industry [4, 5, 6].

Globally, tourism is one of the critical tools to improve and support the preservation of the environment, including mangrove ecosystems in the tropics. Especially crucial in Central Java, Indonesia, where mangroves are naturally abundant. The development of tourism in natural areas, including mangrove ecosystems, is considered necessary. Very relevant concerning the Indonesian government policy in tourism development. In Indonesia, tourism is multiplying, and its contribution to economic income is very significant. Recently, the Indonesian government has ambitious targets to increase and continue the growth of international tourists and arrivals over the next year. Mangroves are a potential site for sustainable tourism development. [3]

One of the best opportunities is to ensure that mangrove-based tourism is implemented based on sustainable principles. Central Java has a negative record of loss of biodiversity, deforestation of coastal forests, and especially mangrove exploitation [7].

Therefore, promoting sustainable tourism in the mangrove environment is very important. In Brazil [8], Lack of planning is related to the placement of areas for changes in the landscape and destruction of coastal and marine ecosystems. Recognition of the characteristics of the coast and adjacent sea zones is the basis for sound CZ-Coastal planning, which must occur through coastal observations and interactions between the marine and coastal systems. The current study consisted of an evaluation of the Torres coastal landscape, a city district located on the north coast of Rio Grande do Sul, Brazil, using the Coastal Landscape Evaluation System proposed by Ergin et al. (2004, 2006, 2011). This method consists of an inspection checklist with related natural and human parameters, considered necessary for attractive coastal landscapes.

Semarang is the capital of Central Java Province is an area that can provide for the tourism sector. Tourism development planning is known for various theories and concepts.

Market-driven concepts are more focused on tourist desires and market behavior as a foundation of development. While the product concept in the development of tourism products. Conditions and development benefits for products or attractions will be the basis for development [9].

2. MATERIALS AND METHODS

Landscape evaluation of 4 beach locations in Semarang City, Central Java Province including Maron Beach, Tirang Beach, Marina Beach, and Baruna Beach. Determination of quality through the application of the Coastal Evaluation System proposed by Ergin et al. (2004, 2006, 2011). This methodology uses fuzzy logic to estimate weights for nine parameters (5 relatives to physical parameters - P - and four related to chemical parameters - C) and SPSS 16 analysis for correlation analysis for providing solutions. Landscape landscapes are considered important for attractive coastal views. The main parameter that shows the quality of the landscape is the rating on a scale of 5 (none / poor quality) to 1 (very good/excellent quality). Mathematical models are used based on fuzzy logic to integrate parameter weights in specific systems for classification scenarios. The value "R2" is an indicator of the attractiveness of the place evaluated. This system has five classes that correspond to the following "R2" values (Ergin et al., 2008, 2011):

Class 1 (value R2> 0.85): very interesting nature;

Class 2 (R2 value 0.85 - 0.65): natural, attractive area with high sight value;

Class 3 (R2 value 0.64 - 0.4): most natural areas with low views;

Class 4 (R2 value 0.39 - 0): urban areas, especially unattractive, with low views;

Class 5 (R2 value <0): unattractive urban area, with intense development and low scenery values.

The city coast divided into (3) sectors according to the diversity of the landscape. Some locations are well-defined because they are considered convenient for a better assessment of coastal views. Figure 1 presents four beaches in Semarang City. The checklist during the 2018/2020 dry season (March 2020), the period with the highest tourist activity and each coastal sector, is evaluated by field observation. Professionals from the field team from various disciplines, such as marine science. The method used in this study has tested in many other places, such as New Zealand, Australia, Japan, the United States, Pakistan, Colombia, Cuba, and Spain (ie, Williams et al., 2012; Rangel-Buitrago et al., 2013; Anfuso et al., 2014).

The results to open new perspectives not only concerning the development of coastal tourism potential in Indonesia's natural regions but also concerning policies to enhance the landscape in the current tourist area (Rangel-Buitrago et al., 2013).

The simple correlation coefficient shows how big the relationship between two variables. In SPSS, Pearson Correlation for interval or ratio data, and is more suitable for ordinal scale data. In this chapter, we will discuss a simple correlation analysis with the Pearson method or often called the Pearson Product Moment.

According Sugiyono (2007) guidelines to provide the interpretation of the correlation coefficient as follows:

0.00 - 0.199 = very low

0,20 - 0,399 = low

0.40 - 0.599 = moderate

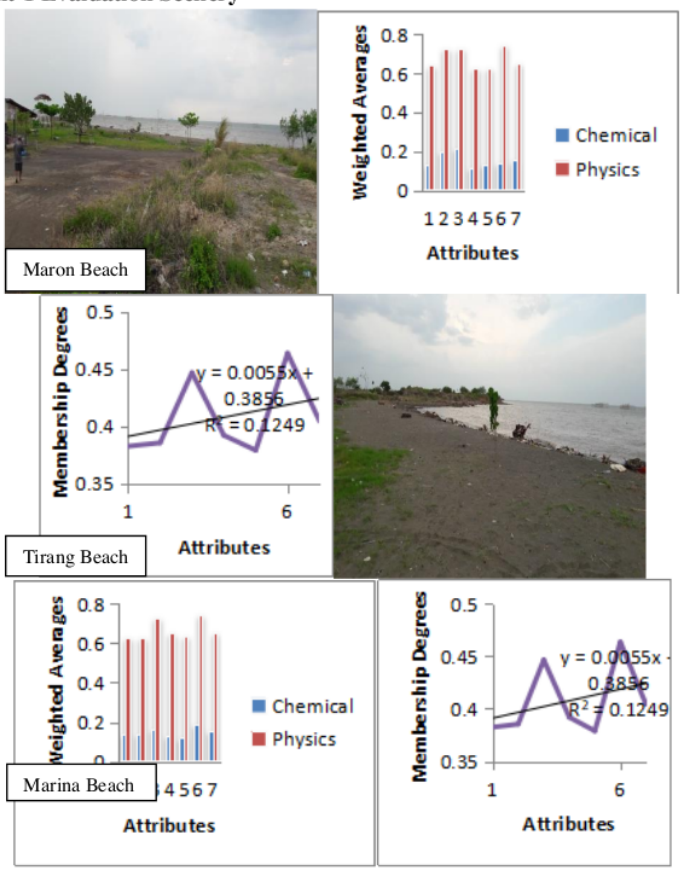
0.60 - 0.799 = strong

0.80 - 1,000 = very strong

The level of Significance, in this case, means we take the wrong risk in deciding to reject the correct hypothesis of 5% (Significance of 5% or 0.05 is a standard measure often used in research) with the criterion of Testing Ho accepted if Significance> 0, 05 and Ho is rejected if significance <0.05 and compare the significance value of 0.004 <0.05, then Ho is rejected.

3. Results and Discussion

3.1. Result-1 Evaluation Scenery



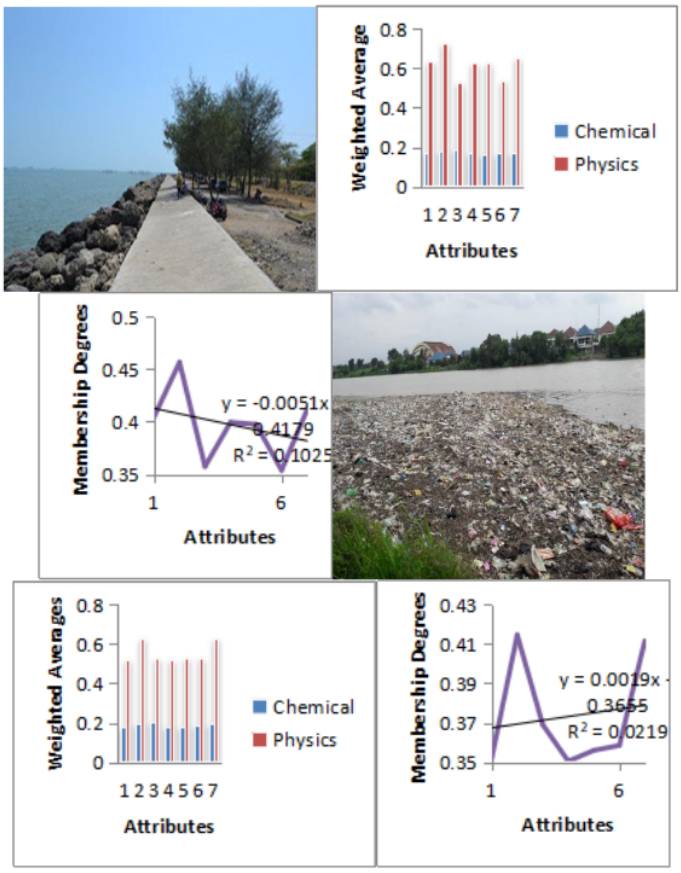


Figure 1. Semarang on Beaches Into Evaluation Scenery

Figure 1 obtained Baruna beach area still in Class 5 (value R2 <0) because of three beaches in Class 4. Therefore, from the above results to realize Semarang coastal city, one of the beaches to go from class 5 to class 4.

3.2. Result- 2 Correlation Analysis for Problem Solving by Provision of Mangrove Tourism

Analyze From SPSS 16, taken from 100 respondents. It is considering that the location of the maron mangrove beach is useful to hold the wind and relate to the interest of residents to become a tourist area. It is a trigger to realize proper coastal development. It is because there is still a decrease in the number of residents in 4 locations around the coast without the necessary buildings, but it is not possible for good jobs, all depends on the wishes of the surrounding residents

Impacts caused by the existence of the Maron Coast recreation area after the rehabilitation of mangrove ecosystems include a declining number of visitors and declining production of pond farmers.

In general, the D values obtained (grades 4 to 5) reflect almost all of the urban characteristics possessed by the beach. Only Baruna Beach is still under the class or class 5. Status This beach is because of it near the Baruna industrial area and adjacent to an elite marina settlement located near Marina Beach(5). The beach with very low scenic attractions is used, located in large urban areas with weak scenery parameters. Meaning that the research location is in a less potential and less stable condition so that it is likely to continue to expand the market, increase growth, and achieve maximum progress. However, with efforts that do not overlap authority, this can be maximized.

In, addition, many beach at semarang has just climate change is very influential in the management of marine tourism sites due to unpredictable climate change. Changes in coastline should be anticipated in the construction of concrete abrasion barriers around certain beach locations such as Marina and Baruna beaches. However, this might be hard for the barriers can be the place where the garbage gather. The moral responsibility of residents is still very lacking in terms of maintaining cleanliness. It has become the residents' bad habit. Convenience and some attractions affect the existence of several beaches, with moderate category values in management [4,5]. There has not been tour package agenda that has been developed and published with a minimum visit time of 15 minutes, available road access, and various transportation, good road conditions paved, food stalls, open parks, houses of worship, available parking lots, toilets, information centers with the entrance post to make the location of some beaches in the forefront of management[7].

4. CONCLUSION

There are still many things to do when developing a coastal tourism area. In this journal, the possibility of developing values scenery improving the function of the mangroves above is by developing the locations of Maron and Tirang Beaches. The method used for this classification of coastal scenery is advantageous. It is evident that among the factors of landscape degradation, associated with weak and inadequate management practices. Prominent practices in several sectors include (i) garbage disposal on the beach; (ii) placement of tourism support facilities; and (iii) waste disposal. This study resulted in a new strategy in terms of beach recreation management. Instead of strengthening cooperation between individuals; prioritizing new strategies might be better instead. Those strategies are expected to be a new strategy for refreshing the Semarang city government. Therefore, of course, cross-sectoral cooperation is needed with one of the manifestations is to divert the management of marine tourism areas

The results of this study can contribute to the improvement of an ecosystem development with the preservation of attractive landscapes, all of which can be carried out through increased managerial capacity and adequate supervision.

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