

## Assessing The Potential for The Development of Waterfront Recreational Area in The Coastal Area of Indramayu Regency

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### ABSTRAK

Indonesia merupakan negara maritim dengan garis pantai yang panjang. Hal ini merupakan sesuatu yang harus dimanfaatkan. Provinsi Jawa Barat secara umum mencakup dua wilayah pesisir, satu di utara dan satu di selatan, salah satunya area pesisir Indramayu yang memiliki garis pantai sepanjang 147 kilometer di wilayah utara. Dengan kondisi pariwisata Kabupaten Indramayu yang terus meningkat, khususnya di sektor wisata pantai, penerapan konsep recreational waterfront sangat relevan. Penelitian ini bertujuan untuk menganalisis potensi pengembangan recreational waterfront di Kawasan Pesisir Kabupaten Indramayu. Penelitian ini menggunakan metode deskriptif dengan pendekatan mix method, dimulai dengan menganalisis kondisi fisik dan sosial, menganalisis tingkat kesesuaian, serta memetakan persebaran potensinya. Mengacu pada hasil penelitian, nilai kesesuaian sebagai recreational waterfront sebesar 4.316 dengan nilai maksimal lima. Berdasarkan kondisi fisik dan sosialnya, kawasan Pesisir Indramayu sudah mempunyai profil yang baik dan cocok untuk pengembangan recreational waterfront. Wilayah Pesisir Kabupaten Indramayu memiliki tingkat potensi tinggi, sedang, sangat rendah, dan tidak masuk dalam kategori apa pun. Area Sukra dan Juntinyuat berada di kategori tinggi, sedangkan Pasekan, Balongan, Indramayu berada dalam kategori sedang, area Kandanghaur berada dalam kategori sangat rendah, dan Krangkeng, Karangampel, Cantigi, Losarang dan Patrol tidak termasuk dalam kategori apapun.

**Kata Kunci:** Potensi Pengembangan, Waterfront Recreational Area, Pesisir

### ABSTRACT

Indonesia is a massive maritime country with a long coastline. This is an excellent chance that must be taken advantage of. West Java province has two coastal areas, one on the north and one on the south, with Indramayu owning the 147-kilometer-long northern region's coastline. With the tourism situation in Indramayu Regency improving from year to year, particularly in the coastline tourism destinations, the implementation of recreational waterfront concepts becomes increasingly important. The goal of this research is to look into the feasibility of creating a recreational waterfront in the Indramayu Coastal Area. The descriptive research method was used, with a quantilative approach, ranging from analyze the physical and social condition, analyze the conformity level, and mapping of such the potential. The Indramayu Coastal Area has a significant potential to be developed as a waterfront recreational area, according to the research, with a conformity value of 4,316 on a range of five. Based on its physical and social

circumstances, Indramayu Coastal Area already has a high profile and is suited for recreational waterfront. The coast zone of Indramayu Regency has a high potential level, a medium potential level, a very low potential level, and thus does not fit into any category, according to the study's conclusions. Sukra and Juntinyuat are classified as high, Pasekan, Balongan, and Indramayu as medium, Kandanghaur as low, and Krangkeng, Karangampel, Cantigi, Losarang, and Patrol as none.

**Keywords:** Potential Development, Waterfront Recreational Area, Coastal Area

## INTRODUCTION

Indonesia is one of the most important maritime countries in the world. More than eighty percent of Indonesia's total area is territorial waters. This makes Indonesia as the country that has the second longest coastline in the world with a figure of 108,000km (Pushidrosal et al., 2018). Realizing this enormous potential, the government through the Regional Infrastructure Development Agency (BPIW) of the Ministry of PUPR supports the development of coastal areas by carrying the concept of waterfront city as one of the efforts to develop sustainable smart cities.

Waterfront Development is the concept of developing a waterside area be it the beach, river or lake. Waterfront development has various expressions such as waterfront regeneration, waterfront revitalization, and waterfront redevelopment (Wood & Handley, 1999; Goodwin, 1999; Gospodini, 2001).

Waterfront City development is a management process that can accommodate economic, social and physical environmental activities in the waterside area where the form of development of the city's face development is oriented towards the waters (Wrenn, 1983).

Malone (2013) in Huang & Kao (2014) states that Waterfront City is an area or area located near the border with the water area where there are activities in the form of economic and social in the meeting area. However, it can also be used to mark areas affected by restoration near water bodies and help create an environment for multiple uses (Fumagalli et al., 2014). West Java province has a long coastline. In total there are approximately 827 kilometers of coastline owned and divided into two, namely the north coast and the south coast. Each region in West Java has a different coastline length based on their respective administrative boundaries.

**Table 1.** Length of Coastline in West Java by Regency/City Administrative

No	Administrative	Length of Coastline (km)	Location
1	Bekasi	72 km	North Coast
2	arawang	84 km	North Coast
3	Subang	48 km	North Coast
4	Indramayu	147 km	North Coast
5	Cirebon	54 km	North Coast
6	Kota Cirebon	7.2 km	North Coast
7	Sukabumi	117 km	South Coast
8	Cianjur	72.61 km	South Coast
9	Garut	80 km	South Coast
10	Tasikmalaya	54.5 km	South Coast
11	Pangandaran	91 km	South Coast

Source : Processed from various sources

Considering the main capital in the formation or planning of a waterside city is an area bordering a body of water, Indramayu regency has a large capital. With the length of Indramayu regency coastline reaching 147km, of course Indramayu Regency has a huge potential to apply the concept of waterfront city. Based on the document of the description of the Regional Spatial Plan (*RTRW*) of Indramayu Regency in 2011-2031, there is an area of approximately 1,470 ha on the coastal border that can be used to become a people's forest. If examined more deeply, then the border area is a large capital that can be used to build a waterside area, especially recreational waterfront.

Recreational Waterfront is the use of waterside areas for tourist purposes. (Torre, 1989) developed by Sastrawati (2003) explained that the utilization of this water is divided into three, namely: 1) Utilization in bodies of water, including as a shipping lane, water recreation, or other tourist attractions. 2) Utilization at the water's edge, is an activity directly related to water, or activities that are not related to water, for example, a port area, terminal, where to process seafood, parks, public resorts, or restaurants. 3) Utilization is not both, is an activity that does not utilize water bodies or water banks. Its activities are carried out with a considerable distance from the water's edge, such as building hotels, apartments, residences, cafes, warehouses, or retail (stores).

The development of the recreational waterfront concept is also very in line with the condition of Indonesia where the tourism sector is one of the priorities in national and regional economic development (Kementerian Pariwisata, 2016), because spending free time on the water, such as fishing, swimming and resting, is the current theme of waterfront development in cities around the world. The creation of public spaces such as parks, marina, sidewalks,

promenades with shadow pavilions, and striking pavement represents the greatest change along the waterfront of today's cities and provides a comfortable atmosphere (Riham A. Ragheb, 2017). In addition, most individuals tend to choose to travel to the beach because they want to feel relaxed, escaped, and feel the atmosphere of the beach tourism (Lucrezi & van der Walt, 2016). Besides, recreation could be an always developing action (in volume and estimate) with a multidimensional nature and developing propensity to overwhelm coastal and marine space, which could be a or maybe delicate environment (Papageorgiou, 2016).

Therefore, in order to realize this, it is necessary to make an effort in supporting a region to have an attractive tourist area, and be able to compete with other regions to attract visitors.

Based on data released by the Central Statistics Agency (*BPS*) of West Java Province, the number of tourist visits to tourist destinations in Indramayu Regency in 2019 amounted to 1,430,072 people, a sharp increase from the previous year of only 31,632 people (**Figure 1**). This indicates that the tourism potential in Indramayu Regency is quite high, so it takes the arrangement of tourist areas well, especially beach tourism to optimize their potential.



**Figure 1.** Data on tourist visits to Indramayu Regency in the last four years Source : Central Statistics Agency, 2019

The development of coastal areas in Indramayu Regency should begin as early as possible. This is because Indramayu Regency has great potential and capital. Coastal area is defined as a land area bordering the sea, land boundary includes areas that are inundated or unslogged where the area is still affected by the process of marine activity such as tides, sea breezes and salt intrusion, while the boundary in the sea is an area that is influenced by natural activity processes on land such as sedimentation, The flow of fresh water to the sea, as well as marine areas affected by human activities on land (Bengen, 2001). As a complex area, the potential development of this coastal area can be done using spatial approaches in its management. In addition, the implementation of decentralization and regional autonomy also serves as a policy to deal with diversity and complexity of problems in its development (Nandi, 2014).

With the existing facts based on the document of the description of Indramayu Regency *RTRW*, the government has not been able to optimize, develop, and not be observant of the potential of Indramayu regency coastal areas. The purpose of this study is to look into the potential development of recreational waterfront areas along the coast of Indramayu Regency, starting from 1) analyzing physical and social existing conditions, 2) analyzing the level of equality, and 3) mapping the potential distribution of such development.

## METHOD

This research was conducted in the Coastal area of Indramayu Regency in the period March-April 2021 starting from Sukra sub-district in the west end to Krangkeng sub-district in the east. This study combed the coastline along 147 km owned by Indramayu Regency and through eleven sub-districts namely Krangkeng,

Karangampel, Juntinyuat, Balongan, Indramayu, Cantigi, Pasekan, Losarang, Kandanghaur, Patrol, and Sukra. Indramayu Regency is located at  $107^{\circ} 51' 03.30'' - 108^{\circ} 32' 15.78''$  east longitude and  $6^{\circ} 13' 32.48'' - 6^{\circ} 40' 36.54''$  south latitude. This research was conducted using quantitative-qualitative approaches using descriptive methods. In this study, there are two types of populations that will be used, namely the population of the region (study area) and the human population.

## Study Area

The study area in this research is the entire coastal area of Indramayu Regency which includes eleven sub-districts, namely Krangkeng, Karangampel, Juntinyuat, Balongan, Indramayu, Cantigi, Pasekan, Losarang, Kandanghaur, Patrol, and Sukra.

## Human Population

The human population in this study is called the infinite population or unlimited population. An unlimited population is a collection of objects or individuals that are the objects of research are not known or cannot be measured about the total number of individuals found in the occupied territory (Silalahi, 2003). In this study, the infinite population used was infinite professional. Based on the needs to be achieved in the study, the researchers determined two types of samples in this study, namely region samples/area sample and human samples.

## Region Sample

The sampling technique used in the determination of a sample region is a saturated sample, i.e. the use of the entire population as a sample. Therefore, the sample area in this study is all recreational areas in the coastal area of Indramayu Regency, which is as many as twelve recreational areas. However, the recreational area is only spread across six

sub-districts, namely Juntinyuat, Balongan, Indramayu, Pasekan, Kandanghaur and Patrol. While the remaining five subdistricts do not have recreational areas.

**Human Samples**

There are two sampling techniques used, namely axidental and purposive sampling. Axidental sampling techniques are used to find respondents to analyze the landscape beauty of the study area. Singarimbun & Effendi (2006) revealed that the study that used statistical analysis of the minimum sample size was 30, so that the number of human samples determined to analyze the value of the beauty of this landscape was thirty people.

Purposive sampling techniques are used to analyze the management and socio-cultural conditions of the study area, so

that the parties determined to be respondents are recreation area managers and local village heads. In this study, there were three data analysis techniques used, namely, descriptive for the first problem formulation, matching profile for the second problem formulation, and GIS and data categorization of five types for the third problem formulation. Kusrini (2007) says that matching profile is a decision-making mechanism assuming there are predictor variables that are considered ideals that must be owned by an object, and not a minimum level that must be reached or passed. Profile matching begins with determining criteria, assessing, calculating gap mapping by reducing the value of criteria with the value of the ideal predictor that has been determined, the weighting gap value with the provisions (**Table 2**).

**Table 2.** Profile Matching Weighting Table

No.	Difference	Weight Value	Information
1	0	5	No Difference (study area as required)
2	1	4.5	Study area excess 1 level
3	-1	4	Study area lacks 1 level
4	2	3.5	Study area excess 2 level
5	-2	3	Study area lacks 2 level
6	3	2.5	Study area excess 3 level
7	-3	2	Study area lacks 3 level
8	4	1.5	Study area excess 4 level
9	-4	1	Study area lacks 4 level

Source : Kusrini, 2007

Calculation of core factor and secondary factor values, then calculate the total value is done with the following equation:

$$N = (\text{core factor percentage})\% \times \text{NCFX} + (\text{secondary factor percentage})\% \times \text{NSFX}$$

Where:

N : Total Value

NCFX : CF value of region X

NSFX : SF value of region X

Meanwhile, categorization of data into five types follows the following

guidelines, for later the results are entered as attribute data on GIS (**Table 3**).

**Table 3.** Five-Type Categorization Determination Norms

Very Low	$X < M - 1,5SD$
Low	$M - 1,5SD < X < M - 0,5SD$
Medium	$M - 0,5SD < X < M + 0,5SD$
High	$M + 0,5SD < X < M + 1,5SD$
Very High	$M + 1,5SD < X$

Source : (Azwar, 2010)

Where :

SD : Standard Deviation

M : Mean

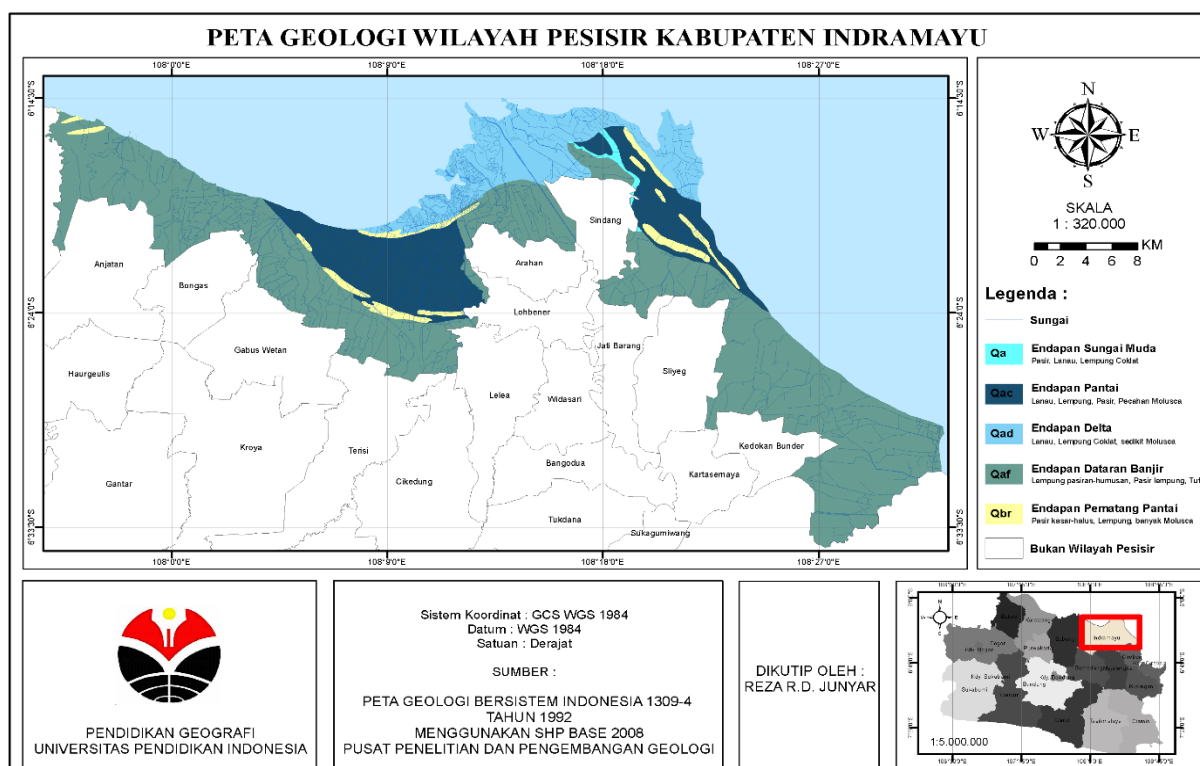
## RESULT AND DISCUSSION

### RESULT

#### Physical and Social Existing Conditions of Indramayu Regency Coastal Area

The Coastal Area of Indramayu which includes eleven sub-districts in it geologically consists of five types of rocks, namely Qa, Qac, Qad, Qaf and Qbr. Qa rocks (Alluvium) or young river deposits scattered around Indramayu and Pasekan. Qac rocks (Coastal Deposits) are scattered in the areas of Kandanghaur, Losarang,

Pasekan, Indramayu, and Balongan. Qad (Delta Deposits) rocks are scattered in a small area of Kandanghaur, part of Losarang, and part of Indramayu. Meanwhile, the most concentration is in the Cantigi and Pasekan regions. Qaf rocks (Floodplain deposits) became the dominant formation in the Indramayu Coastal area and were found in all sub-districts ranging from Sukra to Krangkeng. Qbr rocks (Coastal Deposits) are scattered in the sukra, kandanghaur, losarang, pasekan, Indramayu, and balongan regions. More details, can be seen in **Figure 2**.



**Figure 2.** Indramayu Coastal Geological Map

Physiographically, the shape of the earth face or the land form of the research area is coastal, where this coast is the land form of origin of the marine process. The total length of the area affected by the origin of the marine process is 147km and can reach several kilometers from the coastline to the mainland.

According to Van Bemmelen (1949) Indramayu regency belongs to the physio of the Jakarta zone or the northern beach that stretches from Serang to Cirebon. Therefore, the study area is a coastal area, so the slope of the slope tends to slop around below eight percent. The details can be seen in **Figure 3**.



**Figure 3.** Indramayu Coastal Slope Map  
 Source : Analysis Results, 2021

Climatically, the Coastal Area of Indramayu Regency has a climate that is not much different from the climate conditions of coastal areas in general, namely high humidity, and high air

temperatures. Based on climate components that are worth considering in the development of waterfront cities can be seen in the following **Table 4:**

**Table 4.** Climate Component for the Development of Waterfront Area in Indramayu Regency Coast

Administrative	Average Air Temperature (Celcius)	Average Humidity (%)	Average Amount of Rainy Days	Average Wind Speed (kmph)
Krangkung	27.90°C	80.00%	95 Days	17.35km/h
Karangampel	28.10°C	79.60%	100 Days	9.39km/h
Juntinyuat	28.19°C	80.00%	109 Days	9.39km/h
Balongan	27.37°C	79.58%	88 Days	13.11km/h
Indramayu	28.54°C	79.30%	109 Days	12.49km/h
Pasekan	27.37°C	79.70%	111 Days	13.43km/h
Cantigi	27.37°C	79.58%	118 Days	13.43km/h
Losarang	27.40°C	80.00%	82 Days	13.43km/h
Kandanghaur	27.37°C	79.60%	82 Days	13.43km/h
Patrol	27.00°C	81.00%	79 Days	13.43km/h
Sukra	26.78°C	80.74%	84 Days	11.41km/h
Average	27.58°C	79.92%	96 Days	12.75km/h

Source: NASA Langley Research Center, 2021; Indramayu District Agriculture Office

Based on data from the last ten years (2020-2011) it is known that the average temperature in Indramayu coastal area is at 27.58<sup>0</sup> C, the average humidity is 79.92%, the number of rainy days averages 96 days, and the average wind speed at ten

meters is 12.74kmph. In general, there are four traditional ceremonial activities that are routinely held in the Coastal area of Indramayu Regency, namely earth alms, mapagsri, nadran, unjungan and stacking village boundaries or baritan. Alms of the

earth is done at the start of the outflow of water (rainy season) commonly called rendeng season, mapagsri at the time of the harvest season, nadran as gratitude for the marine products obtained, to pray for the ancestors of the surrounding area, and the village boundary to reject 'bala' (bad luck).

The work of the community is 27% of farm workers, 25% of the marine sector, 19% of traders, 14% of farmers, 12% of freelancers, and 3% of others. Based on the results of interviews with the government, it is known that as many as 55% of Indramayu coastal communities still carry out activities or activities around the water's edge or beach with rare intensity, while the remaining 45% are often intensity.

### Indramayu Coastal Suitability for Recreational Waterfront

Based on the provisions that have been described in the method section, the following final results are obtained for the suitability of Indramayu coastal area as a recreational waterfront **Table 5**:

**Table 5.** Total Value of Suitability of Study Area for Recreational Waterfront

Plot/Place Name	Value
Rembat Beach (1)	4.47
Junti Beach (2)	4.44
Tirtamaya Beach (3)	4.73
Kesambi Beach (4)	3.85
Balongan Indah Beach (5)	4.26
Tirta Ayu Beach (6)	4.44
Tambak Indah Beach (7)	4.32
Karangsong Beach (8)	4.06
Sumur Tiris Beach (9)	4.44
Panjiwa Beach (10)	3.73
Eretan Djumharto Beach (11)	3.88
Plentong Beach (12)	4.73

Source : Analysis Results, 2021

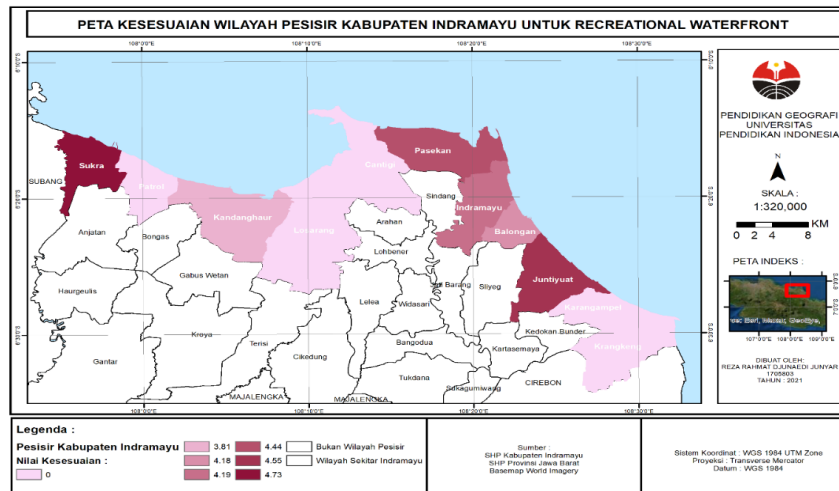
After the conformity data of the study area is known, then further assessment is carried out based on sub-district administration to find out the level of conformity based on its administration. This is because each administrative region has a different number of recreational areas. It can be seen in **Table 6** and then visualized in the form of a map in **figure 4**.

**Table 6.** Combined Value Based on Sub-district Administration

No.	Sub-district	Study Plot	Value	Combined Value
1	Krangkeng	-	-	-
2	Karangampel	-	-	-
3	Juntinyuat	Tirtamaya Beach	4.73	4.55
		Junti Beach	4.44	
		Rembat Beach	4.47	
4	Balongan	Tirta Ayu Beach	4.44	4.18
		Balongan Indah Beach	4.26	
		Kesambi Beach	3.85	
5	Indramayu	Tambak Indah Beach	4.32	4.19
		Karangsong Beach	4.06	
6	Pasekan	Sumur Tiris Beach	4.44	4.44
7	Cantigi	-	-	-
8	Losarang	-	-	-
9	Kandanghaur	Eretan Djumharto Beach	3.88	3.81
		Panjiwa Beach	3.73	
10	Patrol	-	-	-
11	Sukra	Plentong Beach	4.73	4.73
<b>Mean</b>				<b>4.316</b>
<b>Standard Deviation</b>				<b>0.327</b>

Source : Analysis Results, 2021





**Figure 4.** Indramayu Regency Coastal Area Suitability Map for Recreational Waterfront  
 Source : Analysis Results, 2021

**Distribution of the Potential of Waterfront Recreational Area Development**

Based on the data in table 6, the five-type data categorization norm is obtained as follows **Table 7**. Thus, the distribution category can be seen in the **Table 8** and **Figure 5**:

**Table 7.** Five-Type Data Categorization Provisions

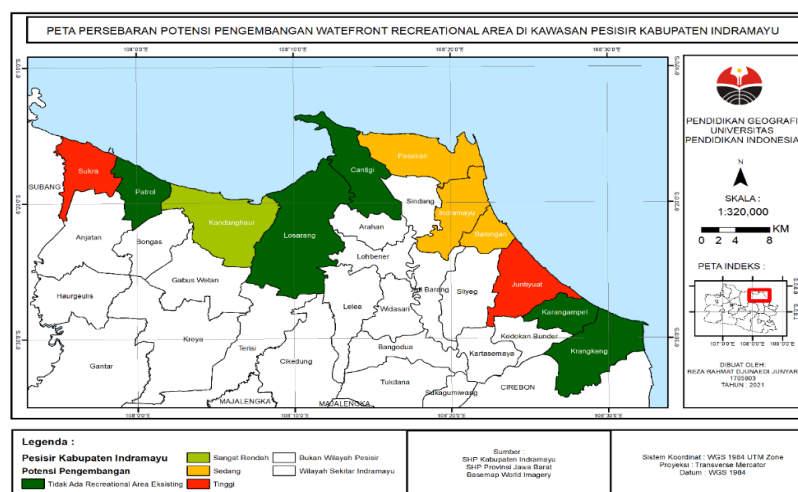
No.	Category	Interval
1	Very Low	< 3.83
2	Low	≤ 4.15
3	Medium	≤ 4.48
4	High	≤ 4.81
5	Very High	> 4.81

Source : Analysis Results, 2021

**Table 8.** Category of Potential Distribution of Waterfront Recreational Area Development in Indramayu Regency Coastal Area

No.	Administrative	Category
1.	Sukra	High
2.	Patrol	-
3.	Kandanghaur	Very Low
4.	Losarang	-
5.	Cantigi	-
6.	Pasekan	Medium
7.	Indramayu	Medium
8.	Balongan	Medium
9.	Juntinyuat	High
10.	Karangampel	-
11.	Krangkeng	-

Source : Analysis Results, 2021



**Figure 5.** Map of The Distribution of Potential for Waterfront Recreational Area Development in Indramayu Regency Coastal Area  
 Source : Analysis Results, 2021

## DISCUSSION

According to the study's findings, the Indramayu Regency Coast in general has a high potential for development as a waterfront recreational area, with a conformity value of 4,316 out of a total value of five. Based on the existing conditions of recreational areas in the Coastal area of Indramayu Regency, of course each region will have a different value, ranging from having a high category, medium, very low, to areas that do not fall into any category because they do not have recreational areas.

Based on the physical condition of the Indramayu Regency Coastal area, the development of the waterfront city concept, especially recreational waterfront, is very appropriate. With the average slope being in first class (below eight percent) and an average height of 2.83 meters, there is no need for special handling. Then, from climatological factors, based on climate elements that have a significant effect on the development of waterside areas, Indramayu coastal areas have fulfilled some of these conditions. Sudiar et al., (2019) stated that the comfort of traveling based on climate perspective has several criteria, comfortable air temperature specifically in Indonesia ranges from 25<sup>0</sup>-30<sup>0</sup>C, comfortable humidity in the range of 60%-70%, comfortable wind conditions are recommended in the range of 9km/h, and the number of rainy days is not too much or little, because traveling to the coastal area when it rains will cause uncomfortable feelings.

With a profile of Indramayu coastal area which has an average air temperature of 27.58<sup>0</sup>C, humidity of 79.92%, the average number of rainy days of 96 days, and wind speeds of 12.75km/h, then only one component has a value not in the required range. However, it actually becomes an added value, where the wind that blows stronger can make the

Indramayu Coastal area more exciting to enjoy.

Because coastal are areas that are vulnerable to abrasion, erosion, or large waves, the area must have buildings or structures that can protect the beach from these threats. Indramayu Coastal Area which is dominated by a large wave threat risk index and high abrasion (BNPB, 2018) must certainly have the structure or building. However, along the 147km coastline in Indramayu Regency, no more than half of which has the structure, this is certainly something that must be considered for the safety of visitors to the existing recreational area, because basically, tourists who visit a recreation area are to seek satisfaction in traveling, instead of looking for a problem (Khalik, 2014).

In the technological aspect applied to the building, almost all buildings in recreational areas in Indramayu Coastal Regency are made using the main materials of bamboo and wood. In addition to saving costs that can be incurred, bamboo and wood are also the most suitable materials for use in the manufacture of beachfront buildings (Triatmodjo, 1999). The impression caused by buildings made from bamboo and wood is more natural and strengthens the rustic concept derived from the physical bamboo that has a rough texture (Prabowo et al., 2019). Rustic concept is an architectural concept that is in a building with a rough impression and does not finish well (Alfari, n.d.; Ghifari & Purwantiasning, 2020). In addition, bamboo and wood materials applied to the structure and construction of buildings also have enormous benefits because this material is resistant to earthquake force and easy to repair in the event of damage (Artiningsih, 2012).

However, not all recreational areas in the Coastal area of Indramayu Regency have the same rules, especially from the

local government. This is because the implementation of tourism in Indramayu Regency can be done by business entities in the form of legal entities or individuals with records of having to obtain permission or register the tourism business with the Indramayu government (Indramayu Tourism Development Master Plan (*RIPPARKAB*) 2018-2025, 2018).

Supposedly, in coastal management, the government should participate in determining the policy or in the process of implementation even though the area is managed by private or private parties, such as determining and providing information on tourist areas in Indramayu regency. Because after all, the Coastal area is a complex area, so in the implementation of its development, the implementation of decentralization and regional autonomy also serves as a policy to deal with the diversity and complexity of existing problems (Nandi, 2014). Regional Infrastructure Development Agency (BPIW) Ministry of Public Works and Indonesian Public Housing explained that in the development of waterside areas, there are three things that must be considered, namely the development of the region taking into account human, social, and economic values where these three factors are very closely related to each other. In recreational areas in the Coastal area of Indramayu Regency, the human aspect has been fulfilled. This is evidenced by the management of recreational areas that involve local residents or the surrounding area to contribute such as being a trader in the recreational area. The social aspect is the weakest aspect. Although the area is coastal, but the work of the majority of its people is not dominated by the marine sector, but dominated by the agricultural sector, both as farmers and farm workers. This can happen due to several factors, Wahyudin (2003) explained that although coastal communities are dominated by fishermen,

several factors can affect it, namely environmental conditions, seasons, and also markets.

This environmental condition seems to be the main factor why the coastal area of Indramayu Regency is majority of the population does not work in the marine sector. Coastal areas should be identical to the work of the people who depend on the marine sector, whether as fishermen, salt farmers, or ponds and others. But apparently, although coastal areas, people on the Indramayu Coast do not necessarily work in the marine sector. This can be caused by several things, especially 1) the sea area is difficult to reach because the water's waterside conditions are swampland and access is not there, 2) the coastline is short, 3) the administrative area does not have a large river. The administrative area of the subdistrict that has a large river and empties into the sea can be ascertained by many people who work as fishermen and the marine sector because there is access that facilitates them to the sea, such as the Eretan area in Kandanghaur, as well as several other areas.

Meanwhile, the agricultural sector became the job with the most number done. This is because the Indramayu Coastal area also has extensive agricultural land. Generally, the Pantura highway will be the boundary where on the north side will be more felt coastal areas and dominant land use as settlements and ponds, while the south side is dominated by the use of land for agriculture or rice fields. This is also in line with (Beriatos & Papageorgiou, 2011) who stated that the water or sea component has continuously been alluring to people; individuals not as it were have verifiably chosen to live within the coastal zone (taking advantage of the ocean), but they have too appeared a inclination for the ocean as a tourism goal. It is clear and further

strengthen that the choose of coastal zone is not only to be the place to looking for a job, but there are other considerations such as for inner satisfaction with feeling the atmosphere of the beach. Based on the field visitation that has been done, the potential that can still be developed in realizing the Indramayu Coastal area into a Recreational Waterfront is in the aspect of accessibility and facilities and infrastructure, where the most basic thing is the development of road access and transportation to areas that are still very bad in some areas, as well as some other supporting facilities such as tourist information centers. This is because the motivation of visitors to travel to a tourist attraction is inseparable from information about the object (Sahara et al., 2016).

In addition, supporting facilities that still have potential and can be developed again are art stages, pedestrian paths, labuh points or ship stops, and viewing towers. This will certainly increase the amenity of the area. The Ministry of Tourism has also determined what facilities can be built in the coastal recreation area, where in addition to the above, there are still dive centers, surfing centers, and glass bottom boats. However, seeing the physical condition of Indramayu waters that are not so clear, then the development can be considered again, can use alternatives to the development of these facilities in bodies of water further from the coastline, as well as the procurement of glass bottom boats in certain areas with more supportive water conditions and have underwater diversity such as the waters around Biawak Island.

Sorensen & McCreary (1990) explained that in the development of coastal areas, it can be done by various parties, such as government agencies, private, or community organizations. Indramayu Regency Coastal Area is mostly managed by the private sector

which is shaded by various CVs in Indramayu Regency, while there are also those managed by the village government and private ownership.

Thus, the focus of development is not only on the local government of Indramayu Regency, especially through the Tourism Office which overshadows this problem. This will make coastal development in Indramayu, especially the development of waterfront recreational area for the better because between the private sector, local government, and the community established solid cooperation so that its development can still prioritize and consider human, social, and economic values.

## CONCLUSION

Based on the research that has been done, the conclusion of this study is :

(1) In physical conditions, geologically dominated by the Alluvium (Qa) rock, it is physiographically a marine region, and climatically not much different from other coastal areas. In social conditions, the work of Indramayu coastal communities is dominated by the agricultural sector, traditional ceremonies are divided into non-religious and religious groups, and the community is still doing activity on the water's edge.

(2) Indramayu Regency Coastal Area has a high level of conformity to be developed being a Recreational Waterfront with an average value of 4.136 from a scale of five

(3) The potential development of waterfront recreational area in the Coastal area of Indramayu Regency stretches for 147km and has levels that are High, Medium, Very Low, and areas that do not belong to any level. Areas with high potential levels namely Sukra and Juntinyuat, medium potential namely Pasekan, Indramayu and Balongan, and Very Low in kandanghaur area, while the rest are Patrol, Losarang, Cantigi, Karangampel and Krangkeng areas do not

fall into any category because they do not have recreational areas existing in the coastal area.

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