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# Coastal Development Strategy based on Tourism Activities in Pangandaran, West Java, Indonesia

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#### **ABSTRACT**

Tourism is a top priority in economic development strategies in Pangandaran District. The tourism industry in Pangandaran carried out along the coastal areas involved society around the site. However, the rapid development of coastal tourism in Pangandaran raises a variety of environmental and social problems that require management strategies. This research is done to draw up directives based on coastal developments in the district of Pangandaran beach tourism by applying Analytic Hierarchy Process (AHP) in the SWOT analysis, which is commonly called as A'WOT. The results showed that the regional government of Pangandaran Regency conceives regional regulations regarding the use of coastal borders based on the resource potential and community participation. Furthermore, they also implement existing laws and regulations by involving the community to optimize supervision on activities that harm tourism. Finally, regional policies or regulations made by the Regional Government of Pangandaran Regency must follow the norms adopted by the local community. It is essential to know that coastal area of Pangandaraan has a unique system and natural system that could be as potential tourism activities.

Keywords: Pangandaran, A'WOT, Coastal, Tourism, Development, Sustainability, West Java

#### 1. INTRODUCTION

Pangandaran is a new self-governing region stipulated by Law No. 21 of 2012 concerning the Establishment of Pangandaran Regency. It focuses on developing coastal natural resources as the tourism area of maritime [1]. Tourism has an essential role in development both, as a source of foreign exchange and to expand employment and business opportunities. In the social dimension, the increased role of the tourism sector is increasingly opening up opportunities in both economic and social-cultural development [2]. Economically, the rapid development of tourism has a beneficial impact because it is associated with the provision of employment in the non-agricultural sector, which ultimately encourages an increase in the sector's contribution to the Gross Regional Domestic Product (GRDP) [3]. However, this is inseparable from the role of the community in developing the region. Management of coastal and marine resources is inseparable from the problem of open access tragedies which often leads to resource depression, economic inefficiency, and social problems [4]. The management certainly does not start from an empty cluster. However, it needs community participation to be an essential consideration in decision making and management of coastal and marine areas, as listed in Law No. 1 of 2014, concerning Amendments to Law Number 27 of 2007 concerning Regional Management Coastal and Small Islands. Pangandaraan has clean beaches, both west and east. This is what makes many tourists come here. However, the importance of tourism development in Pangandaran Regency raises various problems, such as poor management of waste [5] and its area, as well as a decrease in aesthetics of the coastline region due to traders [6]. Other challenges in this region are ripping current [7], marine waste, and tsunamis. Stakeholders who are involved in tourism management need more effort to enhance the site [8].

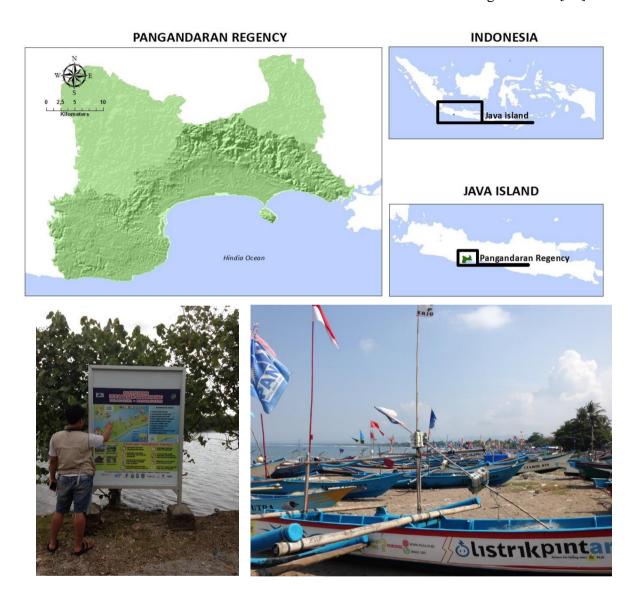
The reduced greenbelt area occurred due to unique landscape coastal areas that do not consider preservation and function [9]. This condition is unfortunate as greenbelts have an essential role as natural protections against natural disasters [10, 11], considering that Pangandaran Regency is one of the areas that are prone to tsunamis [12]. Therefore, policymakers have to understand the interests and problems of coastal tourism based on internal and external environmental factors. These challenges implement effective policy strategies [13] and work according to the national and regional needs, the private and state sector, and local communities [14] to reduce the potential of future conflicts [15-17]. This is due to coastal tourism directly impacts the lives of coastal communities [18], and its development can be controlled to avoid negative impacts on the environment [19-22]. The description of internal strengths and weaknesses, as well as external opportunities and threats, is called SWOT (Strengths, Weakness, Opportunities, and Threats) analysis [23]. However, the SWOT analysis has drawbacks [24] because it does not provide a way to determine the priority of factors. Therefore, the Analytic Hierarchy Process (AHP) is required to determine the priority of factors in SWOT [25]. Based on the conditions and problems, this research is conducted to arrange referral-based coastal tourism development in Pangandaran Regency.

#### 2. MATERIALS AND METHOD

#### 2. 1. Study sites

This research was conducted in the coastal area of Pangandaran Regency (**Figure 1**) in 2017. Based on the Government Regulation No. 50 of 2011, Pangandaran Regency is

designated as a national tourism strategic area, so tourism development is a top priority economic development strategy for long-term, mid-term and short-term plans [26]. However, almost all centres of tourism activities and industries are carried out along the coast [27].



**Figure 1.** Study Sites in Pangandaran Regency located in South Java Island, Indonesia overlayed with elevation (green). There are several facilities that support tourism, such as Tourism Information Board and Local Boat. Picture taken during Data Collection in 2017

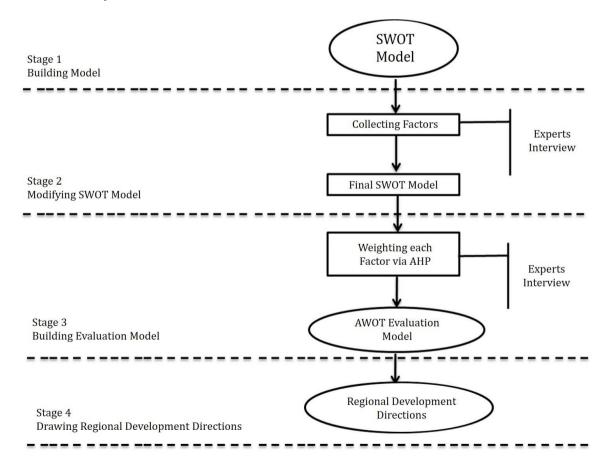
#### 2. 2. Data Collection

Data collected (**Figure 2**) consists of primary data through direct observations in the field, literature studies, and in-depth interviews by purposive sampling [28] and snowball sampling [29], representing elements of social, cultural, physical and environmental experts, as well as policies, taken from 1) Community, 2) Academics, and 3) Practitioners.



**Figure 2.** Data Collecting and Interviews conducted in 2017. Several Local Government, Local Communities, and Practitioners involved in this research.

## 2. 3. Data Analysis



**Figure 3.** A'WOT Scheme consisting of Four Stages: 1) Building SWOT model, 2) Modifying SWOT model, 3) Building Evaluation Model, and 4) Drawing Regional Development Directions.

A'WOT analysis is a combination of the Analytic Hierarchy Process (AHP) and SWOT analysis [30, 31]. This method is carried out in two stages, i.e., 1) Identify strengths, weaknesses, opportunities, and threats by using the SWOT method for coastal tourism development in Pangandaran Regency; 2) Conducting AHP in the specified SWOT components. The creation of A'WOT-based coastal tourism development strategy in this study consisted of 4 (four) stages, as shown in **Figure 3**.

#### 3. RESULT AND DISCUSSION

#### 3. 1. SWOT Analysis

The purpose of applying SWOT in making strategic decisions is to choose/form and implement a strategy that matches internal and external factors [32, 33] that are suitable for strategy developments [34]. However, the preferred approach must also be in line with the goals and future of decision-makers [35, 36]. These factors are presented in **Table 1**.

**Table 1.** SWOT Table separated into Internal Factors (Strength and Weakness) and External Factors (Opportunity and Threats).

Internal Factors					
Strength (S)		Weakness (W)			
S1	The Riparian zone has the potential to be developed as a coastal tourism area	W1	Stakeholders involved in managing Pangandaran do not collaborate and are less integrated with one another		
S2	High public acceptance on the determination of tourism areas	W2	The discrepancy in land use of the riparian zone		
<b>S</b> 3	Community participation in organizational form	W3	Weak control on the utilization of riparian zone		
S4	A tourism event that is held regularly	W4	No regulation on regional spatial land use zone		
S5	Tourism District priority as outlined in the vision of Pangandaran Regency	W5	Access conditions to and from the Pangandaran area are still challenging to achieve		
S6	The existence of facilities and infrastructures as a starting point for tourism development and based on mitigation				
External Factors					
Opportunity (O)		Threat (T)			
O1	Determination of Pangandaran Regency by the central and provincial governments as a strategic area	T1	The fading of community identity		

O2	Determination of Pangandaran Regency by UNWTO as a Pilot Project Program	T2	Population migration decreases the capacity of the region	
О3	Increased Local Revenue (PAD)	Т3	Demand for mass tourism which can damage the environment	
O4	Establishment of Pangandaran Regency as a DMO	T4	Natural Disaster Areas	
O5	Tourism Investment		Environmental degradation due to factors outside the region	
		Т6	The existence of increasingly fierce tourism competition	

There are 5-6 internal and external factors. Internal factors consist of Strength (S) with six elements, and Weakness (W) with five factors. For external factors: Opportunity (O) has five factors, and Threat (T) has six factors. All of these in the SWOT diagram are the formulation of the interview results with three respondent categories.

# 3. 2. A'WOT Analysis

The combination of AHP and SWOT is known as the Hybrid method called A'WOT [31]. With data from these two methods, the SWOT analysis can be achieved and analyzed using eigenvalues at AHP [36]. This is done to improve the necessary information quantitatively from the strategic planning process to formulate directives that could be applied to coastal developments based on coastal tourism in Pangandaran Regency with the help of experts. Applying SWOT in making strategic decisions aims to choose or form and implement a strategy that matches between internal and external factors. The strategy chosen must also be in line with the goals and future of decision-makers [31]. At the same time, AHP is a multivariate decision-making technique used in policy analysis. In essence, AHP is a comprehensive model of decision making by taking into account qualitative and quantitative matters. AHP is useful for decision making, especially when there is subjectivity, so AHP is very suitable for solving problems because decision criteria can be organized in a hierarchical way to sub-criteria [30]. Considerations of internal and external factors in Table 1 are analyzed by A'WOT, obtained from the experts of the components by pairwise comparison or using the scale ratio [37]. The overall weighting of each SWOT factor is presented in **Table 2**.

Priority groups describe the priority level of SWOT factors that influence the overall analysis. The Strength (S) factor dominates half of the group priority factors, followed by Opportunity (O) of 0.21. Weakness (W) and Threat (T) are worth 25% of the total priority value. Based on the weight calculation results of each factor in the group, strength has the highest value in "Community Participation In The Form of Organization" (0.123) followed by "High Public Acceptance on The Determination of Tourism Areas" (0.109). The highest score for weakness is "Stakeholders Involved In Tourism Management In Pangandaran Regency Do Not Collaborate And Are Less Integrated With One Another" (0.058) followed by "No Regulation On Regional Spatial Use Zones" (0.041). Then, the highest value for opportunity is "The Determination of Pangandaran Regency by The Central and Provincial Governments as a Strategic Area" (0.069) followed by "The Determination Of Pangandaran Regency by UNWTO

as a Pilot Project Program" (0.046). The highest value for threats is "The Fading Of Community Identity" (0.043) followed by "Natural Disaster Areas" (0.025). Based on these overall results, it can be concluded that strength and opportunity are factors with the highest value.

Table 2. SWOT Table combined with AHP to a weighting of each SWOT Factor

SWOT Group	Group Priority	SWOT Factor	Priority Factor in Group	Priority Factor (Overall)
		(S1)	0.20	0.097
		(S2)	0.22	0.109
Strength	0.50	(S3)	0.25	0.123
<b>(S)</b>	0.50	(S4)	0.15	0.075
		(S5)	0.11	0.053
		(S6)	0.08	0.041
		(W1)	0.34	0.058
		(W2)	0.16	0.027
Weakness (W)	0.17	(W3)	0.14	0.024
(**)		(W4)	0.24	0.041
		(W5)	0.12	0.020
	0.21	(O1)	0.33	0.069
		(O2)	0.22	0.046
Oppurtunity (O)		(O3)	0.17	0.036
(0)		(O4)	0.20	0.041
		(O5)	0.07	0.015
	0.13	(T1)	0.34	0.043
		(T2)	0.15	0.019
Threats		(T3)	0.14	0.018
<b>(T)</b>		(T4)	0.20	0.025
		(T5)	0.09	0.012
		(T6)	0.08	0.010

**Note**: Bold Number in Priority Factor indicates the top 2 influential factors from each SWOT factor.

# 3. 3. Regional Development Directions

Based on the internal and external factors, directives (a combination of these two factors) are prepared. This direction is obtained from the combination of strength factors that get opportunities (SO), use of existing strengths to deal with threats (ST), reduction of existing weaknesses by utilizing opportunities (WO), and reducing weaknesses to deal with future threats (WT), as presented in **Table 3**.

**Table 3.** Combination Table of SWOT Elements

Internal External	Strengths (S) S1, S2, S3, S4, S5, S6	Weaknesses (W) W1, W2, W3, W4, W5	
	SO1 (S1, S6, O1, O2, O4) Utilizing the riparian zone potential and the availability of tourism infrastructures to be developed into a coastal tourism area	WO1 (W1, W2, W3, O1, O2, O4) Streamline management, collaboration and mediating conflicts of interests involved in tourism management	
Opportunity (O) O1, O2, O3, O4, O5	SO2 (S1, S2, S3, S5, O1, O2, O4) Make land use policies based on resource potential and community participation	WO2 (W1, W5, O1, O3, O4, O5) Increase cooperation between tourism managers, governments, and investors in improving the quality of facilities and infrastructure	
	SO3 (S3, S4, O3, O5) Developing cultural and religious performances optimally as well as reviving myths and legends that are on the coast of Pangandaran Regency	WO3 (W2, W3, W4, O3, O5) Develop a trade centre for a gathering place for handicraft shops, souvenirs, and culinary restaurants around the tourism area.	
	ST1 (S2, S3, S5, T1, T6) Make rules following community norms	WT1 (W2, W3, T2, T3, T5) Provide strict sanctions against rule violators	
Threats (T) T1, T2, T3, T4, T5, T6	ST2 (S2, S3, S5, T3, T4, T5) Implement applicable laws and regulations by involving the community to optimize oversight of activities that harm tourism  ST3 (S2, S3, S4, T2, T6)	WT2 (W2, W3, W5, T2, T3, T4, T5, T6) Improving the quality of services and management by conducting counselling or appealing the importance of environmental preservation, early warning of	

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Make use of stakeholder	natural disasters, and the dangers of
collaboration to provide	pollution
education and training to	
improve the human resources	
of tourism managers and	
communities continuously	

There are 11 strategies made by combining internal and external factors where each approach is given a weight value so that it can be ranked. This is done to determine the directions that are suggested first and implement them so that the development of coastal tourism in Pangandaran Regency can run sustainably (**Table 4**).

Table 4. Ranking of Strategies Based on Weighting Value

SWOT Elements	Related to each factor	Weight Value	Rank	
so				
SO1	S1, S6, O1, O3, O4, O5	0.299	6	
SO2	S1, S2, S3, S5, O1, O2, O4	0.537	1	
SO3	S3, S4, S5, O3, O5	0.301	5	
ST				
ST1	S2, S3, S5, T1, T6	0.338	3	
ST2	S2, S3, S5, T3, T4, T5	0.340	2	
ST3	S2, S3, S4, T2, T6	0.335	4	
wo				
WO1	W1, W2, W3, O1, O2, O4	0.264	7	
WO2	W1, W5, O1, O3, O4, O5	0.238	8	
WO3	W2, W3, W4, O3, O5	0.143	11	
WT				
WT1	W1, W2, W3, T1, T2, T3, T4, T5	0.226	9	
WT2	W2, W3, W4, W5, T2, T3, T4, T5, T6	0.196	10	

The order is arranged based on the weight value of each direction that has been prepared. Weights in each direction are sorted from largest to smallest. Weight values range 0.143-0.537 where the top 3 are one from Strength-Opportunity (SO) strategy and two from Strength-Threat (ST) strategy. After getting the order of the development direction, implementation can be done in a focused manner, and 3 (three) directives are chosen from the top order. However, other guidelines still need to be considered for implementation, even if they are not a high priority. The three directives are: (1) The Regional Government of Pangandaran Regency makes regional regulations regarding the use of coastal borders based on resource potentials and community participation; (2) Next, The Regional Government of Pangandaran Regency implements prevailing laws and regulations by involving the community to optimize oversight of activities that harm tourism; and (3) Local Policies or regulations made by the Regional Government of Pangandaran Regency have to follow the norms adopted by local communities.

In order to avoid inefficiencies in the community spatial management in Pangandaran Regency, it should be invited to participate in designing spatial planning policies that begin at the beginning of the process and must pay attention to the interests of the local community [38]. Community participation in the formulation of spatial policies influences policy effectiveness [39], achieving development goals set by the government [40], and identifying community problems to be more effective and sustainable [41].

#### 4. CONCLUSION

The coastal area of Pangandaran Regency is an area that is vulnerable to damage. The impact will be felt by the people who inhabit the coastal areas and will undoubtedly affect the economic conditions of people who depend on coastal resources. One way that needs to be done is to invite all parties, including the community, to protect the coastal environment jointly. Considering there is no spatial document in Pangandaran Regency, spatial planning policymaking is the main thing. One of the objectives of spatial planning is to meet efficiency and productivity by allocating the physical resources of the region properly.

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