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# PROCEEDINGS

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### Food Sovereignty and Natural Resources in Archipelago Region

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"Food Sovereignty and Natural Resources  
in Archipelago Region"



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### "Food Sovereignty and Natural Resources in Archipelago Region"

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## **ALTERNATIVE MANAGEMENT OF MARINE TOURISM AREAS AT BANDENGAN WATERS IN JEPARA DISTRICT**

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### **Abstract**

Bandengan Waters have the potential to serve as a marine tourism area, so it needs to be preserved. Optimal utilization of Bandengan Waters can provide benefits not only to the environment but also to the economic improvement of society. Efforts to optimize marine tourism in Bandengan Waters were conducted by reviewing area management alternatives to preserve and improve the welfare of the community. This study aims to analyze the management of marine tourism alternatives using the combined analysis A'WOT, a combined analysis of SWOT and AHP (Analytical Hierarchy Process), to establish strategies and to determine alternative management on marine tourism in Bandengan Waters. Based on A'WOT analysis we obtained alternatives to manage marine tourism areas which consist of spatial planning based on biophysical parameters, spatial planning based on the carrying capacity of the environment, raise public and tourist awareness to cleanliness, improving both the quantity and quality of the infrastructure, and the making of legislation. Alternative management produced essential aims to preserve the marine tourism in the Bandengan Waters and improve people's welfare.

*Keywords: Marine tourism, Alternative management, SWOT, AHP*

### **INTRODUCTION**

Jepara is an area in the province of Central Java, which is geographically located in the coastal area. The use of space as a tourist area in the coastal district of Jepara, most of which rely on natural tourism of the panoramic beauty of the sea and the unique morphology. Jepara regency has the potential for marine tourism because it is a coastal area. Bandengan Waters is one of the coastal areas included in the district of Jepara, used to be a very natural area with clear water and beautiful white sand, and the existence of coral reefs in the water to attract tourists to visit the Bandengan Waters. However, the current water conditions are very different because it has been widely exploited by people around the waters. The condition of the coral reefs is very alarming because it is in a poor condition and can hardly be found in the waters of its existence.

If the potential of the tourism sector in the Bandengan Waters are used optimally, then this sector can play an important role in efforts to accelerate economic development as a whole. The positive impacts are acceptable, not only on the economic growth, but also the expansion of employment opportunities and increased income per capita society, in addition to a source of considerable revenue potential. The development of well-ordered Bandengan marine tourism also play a role in maintaining and controlling various forms of environmental damage, especially since the coastal area is an area that is susceptible to changes in the ecosystem.

The welfare of local people has not shown significant improvement despite the exploitation of the Bandengan Waters. This condition illustrates the need for efforts to Bandengan Waters not only it is limited to physical exploitation of resources, but also the potential development of alternative resources is utilized optimally and sustainably. This includes efforts to utilize the services of environmental and aesthetic value of the area for the development of marine tourism in order to obtain alternative sources of income and diversification of economic activities of local communities.

Development of the tourism sector as one of the construction sectors also cannot be separated with sustainable development that has been announced by the Government in accordance with the national development goals. Sustainable development is not only related to the environmental issues, but also the issues of democracy, human rights and other issues more broadly. Therefore, sustainable development is regarded as the best alternative development, including tourism development (Harris, 2003).

Based on the above phenomenon, it is necessary to study the alternative management of marine tourism in Bandengan Waters, Jepara. The purpose of this study is to establish Bandengan Waters's alternative marine tourism management, so as to preserve and enhance the welfare of the community.

## **METHODS**

The study was conducted on marine tourism in Bandengan Waters. The type of data in this study consisted of primary data and secondary data. Primary data were obtained from observations, questionnaires, documentation and interviews directly in the field. The respondents comprised of stakeholders that play a role in the development of marine tourism activities in Bandengan Waters, Jepara. While secondary data is obtained through results in the literature department or agencies in Jepara district.

The number of respondents is 200 respondents. Determination of the respondents conducted by purposive sampling method from the community on the basis that: 1) the respondent is an adult resident who at least has settled for 3 years in the Bandengan Village, 2) residents who

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utilize coastal and marine resources in the Bandengan Waters. Respondents from tourists were conducted by elements of accidental sampling method, the samples taken were tourists who were on the site at the time of the research and data collection, and respondents are willing to be considered mature enough and be able to give an answer that can be accounted for. Respondents of the government is done by purposive sampling method on the basis that the respondent is an individual or institution that plays a role in the decision making in relation to the management of marine tourism in Bandengan Waters, consisting of officials and staff from Jepara Planning and Regional Development, the Department of Tourism, Department of Marine and Fisheries, and the Department of Transportation.

The methods of data analysis are by using the combination A'WOT SWOT analysis (Rangkuti, 2002) and the Analytical Hierarchy Process (AHP) based on Saaty, 1993. SWOT analysis is done by preparing internal factors and external in Bandengan Waters which will be submitted to the respondent to make an assessment. The scores given to each of the external and internal factors are the same, ranging from 0.0 (not important) till the 1 (very important). Scoring dependson how far these factors can have an impact, and the amount of the score should be equal to 1. While 1-4 scale used for rating are 1 (very important), 2 (important), 3 (unimportant), and 4 (very unimportant). Ratings are also given based on the level of importance of these factors. After compiling external factors and internal factors, I then prepared four sets of possible strategies, the strategy SO, ST, WO, and WT.

The four sets of strategies are analyzed by using AHP, in order to obtain an alternative that will be applied to the management of marine tourism in Bandengan Waters, Jepara. To quantify qualitative data, I used scale pair wise comparisons according to Saaty (1993), namely:

**Table 1 The scale of appeals in pairs**

Importance	Definition
1	Both elements are equally important
3	One element is a bit more important than the other elements
5	One element is essential or very important compared to the other elements
7	One element is obviously more important than the other elements
9	One element is absolutely more important than the other elements
2,4,6,8	Values between two adjacent considerations
Inversion	If activity I got one point when compared to activity j, then j has the opposite value when compared to activity i.

**RESULTS AND DISCUSSION**

Determination of alternative marine tourism management in Bandengan Waters begins by determining the internal and external factors by using SWOT analysis. Management strategy in the management of marine tourism in Bandengan Waters through SWOT analysis identifies the internal factors (strengths and weaknesses) and external factors (opportunities and threats) that affect the management of marine tourism. Internal and external factors on marine tourism in Bandengan Waters consist of four factors of strengths, nine factors of weaknesses, four factors of opportunities and four factors of threats (Table 2).

**Table 2 Internal and external factors of management in Bandengan marine tourism, Jepara**

<b>Internal Factors</b>	<b>External Factors</b>
<b>Strength</b> <ol style="list-style-type: none"><li>1. Its location is strategic and is adjacent to several other tourists</li><li>2. Bandengan Waters have a wide stretch of white sand</li><li>3. The society wants to make Bandengan Waters as a marine tourism area</li><li>4. The availability of human resources that could potentially be man power</li></ol>	<b>Opportunities</b> <p>The increasing number of tourists</p> <ol style="list-style-type: none"><li>1. Increased income and welfare</li><li>2. Expanding employment opportunities for the community</li><li>3. Increasing local revenue</li></ol>
<b>Weakness</b> <ol style="list-style-type: none"><li>1. Utilization of space does not pay attention to the carrying capacity of the environment</li><li>2. Community and tourist awareness to the cleanliness and preservation of environment is still low</li><li>3. Low level of public education</li><li>4. Limitations of venture capital</li><li>5. Limited facilities and infrastructure to support marine tourism activities</li><li>6. The absence of regulations concerning the management of a tourist area that can preserve and environmental hygiene.</li><li>7. Economic level of the people is still low</li><li>8. The government is not optimal in managing marine tourism</li><li>9. Promotion of nautical tourism in the region is very limited for Bandengan Waters</li></ol>	<b>Threat</b> <ol style="list-style-type: none"><li>1. Environmental degradation</li><li>2. Increased domestic waste</li><li>3. Rivalry among investors from outside of the Bandengan community</li><li>4. Investor interest is high</li></ol>



Further more made up a clearly descriptive strategy on how external factors such as opportunities and threats faced in the management of marine tourism in Bandengan Waters can be adjusted by internal factors and external factors which they own. There are four sets of strategies that can be formed, namely:

### **S-OStrategy**

SO strategy was made using power to take advantage of opportunities that present were in Bandengan Waters. SO Strategies were created then calculated to determine the sequence of SO strategy obtained from respondents (Table 3).

**Table 3 The value of SO strategy in the management of marine tourism in Bandengan Waters**

No.	SO Strategies	Response				Average	Rating Score
		1	2	3	4		
1.	The development of marine tourism activities by creating tourist facilities on land such as construction of water boom	31	26	54	89	3.01	75.13
2.	Provision of working capital	30	32	48	90	2.99	74.75
3.	Human resources training	43	31	34	92	2.88	71.88

### **S-TStrategy**

ST strategy was made using the strength to overcome the threat contained in the tourist area of Bandengan Waters. ST Strategies created then calculated value scores to determine the sequence obtained from the ST strategy respondents (Table 4).

**Table 4 The value of ST strategy in the management of marine tourism in Bandengan Waters**

No.	ST Strategies	Response				Average	Rating Score
		1	2	3	4		
1.	Spatial planning for marine tourism activities based on biophysical parameters	21	13	78	88	3.17	79.13
2.	Provision of facilities and infrastructure to accommodate domestic wastes as the result of tourism activities	22	32	64	82	3.03	75.75

**W-O Strategy**

WO strategy is based on the usage of the opportunities that are owned by minimizing weaknesses found of marine tourism in Bandengan Waters. WO Strategies created and then scores were calculated to determine the sequence obtained from WO strategies respondents (Table 5).

**Table 5 The value of WO strategy in the management of marine tourism in Bandengan Waters**

No	WO Strategies	Response				Average	Rating Score
		1	2	3	4		
1.	Spatial planning for marine tourism activities based on the carrying capacity of the environment	18	42	43	97	3.10	77.38
2.	Increased public awareness and tourists of the importance of cleanliness and the environment	23	34	56	87	3.04	75.88
3.	Training and education or the community to improve their skills	27	34	64	75	2.94	73.38
4.	Rule making regarding the management and utilization of marine tourism	42	21	65	72	2.84	70.88
5.	Improved infrastructure which supports marine tourism area	28	32	56	84	2.98	74.50
6.	Increased promotion of nautical tourism	32	56	77	35	2.58	64.38

**W-TStrategy**

WT strategies are based on the activities that try to minimize weaknesses that were calculated and avoid threats. WT Strategies created and scored then calculated to determine the sequence obtained from WT strategies respondents (Table 6).

**Table 6 The value of WT strategies in the management of marine tourism in Bandengan Waters**

No	WT Strategies	Response				Average	Rating Score
		1	2	3	4		
1.	Rehabilitation and remediation of areas	47	53	47	53	2.53	63.25
2.	Conservation	54	63	56	27	2.28	57.00
3.	Increasing the role of society and government in the management and supervision of marine tourism	34	54	45	67	2.73	68.13

Based on the resulting strategy through SWOT analysis, then I continued to analyze AHP to determine management alternatives. Results were obtained from the analytical hierarchy process for the management of marine tourism in Bandengan Water's strategy. The score of 0.235 obtained for SO strategy, a score of 0.270 for the ST strategy, scored of 0.244 for WO strategy and score of 0.251 for WT strategy (Figure 1).



**Figure 1 The Results of Analytical Hierarchy Process Alternative Management of Marine Tourism in Bandengan Waters**

After obtaining the scores on each strategy contained in the SWOT, the score is multiplied in any strategy to determine the order of priority strategies in the management of marine tourism in Bandengan Waters. There are four groups of strategy contained in the SWOT analysis which were analyzed by analytic hierarchy process which is S-T strategy the first priority, followed by W-O strategy as the second priority, the S-T strategy as the third priority, and W-T strategy as the fourth priority (Table 7).



**Table 7 The results analytical of priority strategy marine tourism Zone Management**

<b>Number</b>	<b>Strategies</b>	<b>Score (S)</b>	<b>Quality (Q)</b>	<b>S x Q</b>	<b>Priority</b>
1.	S – O	73.92	0.235	17.37	3
2.	S – T	77.67	0.270	20.97	1
3.	W – O	72.73	0.244	17.75	2
4.	W – T	62.79	0.251	15.76	4

Based on the results of the SWOT analysis and the PHA, above is the sequence of the top five priorities of alternatives in the management of marine tourism in Bandengan Waters. The first alternative is spatial planning for marine tourism activities based on biophysical parameters (21.37). Marine tourism activities are heavily influenced by biophysical waters, which serve as a marine tourism. Laapo et al (2009), states that the biophysical parameter measurements in water can be used as an indicator to determine the level of contamination that occurred on waters. Elyazar et al (2007), states that the pollution can be caused by the activity of hotels, restaurants, household waste and fishermen who normally dispose toxic waste into the waters. This indicates that the spatial arrangement based on waters biophysical parameters of marine tourism in Bandengan Waters is very necessary to prevent pollution due to uncontrolled tourism activities.

The second alternative is the arrangement of space for marine tourism activities, which is based on the carrying capacity of the environment (20.45). Environmental carrying capacity is the maximum number of visitors that can physically be accommodated in an area that has been provided at any given time without causing disturbance to the environment and the people around it (Yulianda, 2007). Environmental carrying capacity on tourist areas is the level of visitors who utilize a tourist area with the acquisition of an optimal level of satisfaction with a minimal impact on resources. This concept includes two major factors that limit the behavior of visitors associated with the carrying capacity of the environment and social and cultural conditions (Sinurat, 2000). Tourism carrying capacity indicates the maximum level of visitors, which uses and relates to the infrastructure that can fit an area. If the carrying capacity is exceeded, this would result in the deterioration of resources, reduced visitor satisfaction and or adverse impact on social and economic aspects. By these definitions ensure the sustainability of marine tourism in Bandengan Waters, marine spatial planning needs to be done based on the carrying capacity of the environment.

The third alternative is to increase public awareness of the importance of hygiene and environmental rating (18.88). Cleanliness is a factor that can lead to higher pollution in an area. Bandengan Waters as a tourist area produce a lot of waste as a result of tourism activities. Garbage dumping, which is done carelessly, results in environmental damage. Indiscriminate waste disposal also negatively impact the beauty of the environment and cause inconvenience for travelers. Communities and travelers should be informed about how to manage and dispose of waste properly. According to Monoarfa (2002), pollution can disrupt tourists and damage the environment, so the pollution on a marine tourism area needs to be minimized.

The fourth alternative is the improvement of infrastructure for marine tourism (18.51). Existing infrastructure in the area of marine tourism in Bandengan Waters is still very minimal. Facilities and infrastructure such as roads, boat tours, banana boat and jet ski used on marine tourism in Bandengan Waters are low in both quantity and quality aspects. Infrastructure is very influential on the attractiveness of a marine tourism.

The fifth alternative is rulemaking regarding the management and utilization of marine tourism (18.18). Jepara regency government is not optimal in managing marine tourism in Bandengan Waters. This is proven by the absence of local regulations that govern the management and utilization of marine tourism. Regulation is necessary to maintain the sustainability of the region, especially with the sanction given when managers, visitors and the public break the rules that can result in environmental damage.

Management of marine tourism should pay attention to the balance and sustainability of the region. This is also supported by the opinion Kusumastanto (2000) which states that the policy of marine tourism is mainly directed to:

1. Increase the availability of public facilities to create services and conveniences for domestic and foreign tourists who will utilize the resources of marine tourism.
2. Improve the quality and capacity of human resources role in managing marine tourism.
3. Develop a data collection system and complete information by utilizing modern technology, making it easier to get information and access it quickly, cheaply and easily. Data collection and information system development is both to serve and support the promotion and investment in marine tourism.
4. Developing non-tourism economic activities that are relevant to marine tourism activities, such as craft industries, fisheries, sea food restaurants and ocean freight services.

5. Improve security and safety system for travelers who utilize the potential of marine tourism.
6. Create a friendly investment climate for investors to develop marine tourism as an incentive or disincentive.
7. Develop a marine tourism management model, which is capable of conserving marine ecosystems and the local culture.

Management of marine tourism should maintain the characteristics of ecosystems that exist in it because, according to Wheat (1994) and Steel (1993) in Gusti (2011), marine tourism is a niche for people who are aware of the environment and interested in the nature and marine tourism. It is an economic process, which markets an attractive and rare ecosystems.

Based on the above opinion, the alternative management of marine tourism in Bandengan Waters should still take advantage of the natural resources that exist at present optimally but should still pay attention to the sustainability of the region in the long term in order to be enjoyed by generations to come. Spatial planning, improvement of facilities and infrastructure, human resources as well as legislation that would set out in the management of marine tourism in Bandengan Waters should optimize current natural resources by taking into account the preservation and sustainability of the marine tourism.

## **CONCLUSION**

Based on the analysis of A'WOT, the factors that affect marine tourism in Bandengan Waters are four sets of strategies, namely SO, ST, WO, and WT strategies. Based on the four sets of strategies and AHP analysis results in alternative management of marine tourism. Alternative management of marine tourism in Bandengan Waters Jepara consists of spatial planning for marine tourism activities based on biophysical parameters, the carrying capacity of the environment, increasing awareness of local people and visitors of the importance of cleanliness, improvement of infrastructure and the creation of legislation. Alternatives which are determined based on the results of the research basically aims to sustain marine tourism in Bandengan Waters. Sustainability of marine tourism in Bandengan Waters does not only affect the environment, but it can improve the welfare of people living in the surrounding Bandengan Waters.

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