

# Coastal Community Empowerment based on Marine Tourism Development Strategy Case Study in West Java Province, Indonesia

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*Abstract:* - The potential for developing coastal areas in West Java for marine tourism continues to be increased. The development of marine tourism areas is an option for local economic recovery after Covid-19 for coastal areas. This research aims to analyze the resilience and development strategy for marine tourism in west java province, Indonesia. This research was conducted between March until August 2022 in the Southern coastal area of West Java Province, Indonesia This research used primary and secondary data. The respondent sampling technique used cluster random sampling of 100 respondents, which consisted of tourists, tour guides, and tourist destination managers. The analytical tool used SWOT analysis, validity, and reliability of the data tested. Based on the analysis results coastal community empowerment based on marine tourism development strategy in quadrant I is a very favorable situation. The coastal community empowerment based on the marine tourism development strategy has opportunities and strengths so that it can take advantage of the opportunities that exist. The strategy for coastal community empowerment based on marine tourism development strategy must be established in this quadrant to support aggressive growth policies. The results of testing the Internal External Matrix show that the position of the coastal community empowerment based on marine tourism development is in quadrant I with several internal and external weighting scores of 3.13 and 3.03, respectively.

*Key-Words:* - coastal community, development strategy, empowerment, marine tourism, internal external factor

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## 1 Introduction

Since the outbreak of Corona Virus Disease 2019 (Covid-19) in Indonesia on March 11, 2020, [1], [2], social restrictions are imposed on the community, including activities for marine tourism. The Indonesian government has taken several policy steps in terminating and preventing the transmission of Covid-19 in marine tourism. This condition decreases the income of the community marine tourism industry. Entering the new normal era, the implementation of community empowerment is required to adapt and change old patterns to manage coastal marine tourism. Community empowerment action is an effort to provide power or strength for the community to overcome the problems it faces, [3], [4], [5], [6], [7].

West Java province is one of the regions that has a wealth of biodiversity and marine tourism. Management of the coastal area of West Java continues to be carried out to increase the regional economy, through empowerment and institutional

strengthening of local wisdom of coastal communities. Management of coastal areas requires planning in allocating marine tourism areas, and stage cross-sectoral coordination and cooperation, [8], [9]. According to the World Travel & Tourism Council "Sustainable tourism development meets the needs of tourists and local community while protecting and enhancing opportunity for the future", [10]. It is important to engage hosted-area residents in the process of tourism planning through education, extension, and collaboration among all marine tourism stakeholders, [11], [12], [13].

Coastal community empowerment can be defined as the process of planning, implementing, and improving the scale of the utility of coastal zone management for human well-being, [14], [15]. Thus, coastal community empowerment is a development carried out for coastal communities by increasing the ability to determine their future, [16], [17]. Empowerment of the community in marine tourism destinations is in line with the culture tourism rule

and environmentally friendly perspective that is developed on the south coast of West Java Province to reach sustainable development, [11]. Coastal community empowerment is a public concern and is considered one of the appropriate approaches to overcoming environmental and social problems, such as nature conservation and poverty. Community empowerment should be carried out by all involved stakeholders, including government businesses, local communities, and non-government organizations, [11], [12]. Coastal community empowerment is an effort to continuously improve the dignity of the lower layer of the coastal community, who were not able to escape from the trap of poverty and underdevelopment, using coastal area resources for marine tourism, [5], [12], [18]. Based on the background, the purpose of this research is to analyze the development strategy for marine tourism in west java province, Indonesia. This research is beneficial for local communities in coastal areas by empowering communities to develop marine tourism areas and providing knowledge and learning for the wider community related to marine tourism development strategies

## 2 Problem Formulation

The research was conducted from March 2022 - August 2022 and used Participatory Rural Appraisal (PRA). The research method used is a case study. The research location was determined in the southern coastal areas of West Java, which includes the districts of southern Sukabumi, southern Cianjur, southern Garut, and Pangandaran, West Java Province, Indonesia. The types of data used in this research include primary data and secondary data. The primary data was obtained by survey method through observation, distributing questionnaires, and interviews. Also, Focus Group Discussion (FGD) to discuss a problem in a focused way.

The secondary data were obtained through a literature study. Data analysis used descriptive statistics. This study used purposive sampling. The sample consists of 100 respondents, including 25 fishermen, 60 local tourists, and 13 tour guides of marine tourism, 2 local government. Representative respondents of the population were collected with a reduced version of the entire population, where all the different characteristics of the population were present, with equal inclusion of probabilities, [19].

The first section of the questionnaire addressed the socio-demographic aspects and characteristics of respondents and the internal factors of coastal community empowerment. The second part dealt

with the external factor of coastal community empowerment. These questions were measured on a 5-point Likert scale where 5= Strongly Agree; 4 = Agree; 3 = Undecided; 2 = Disagree; 1 = Strongly Disagree, [19], [20]. In this research, the Likert scale was used to measure attitudes, knowledge, perceptions, values, and changes in behaviors in the process of empowering coastal communities, especially in the marine tourism sector.

### 2.1 Questionnaire Validity Test

A validity test is a test of precision between the observed and the expected observation in this research. A validity test is used to measure the validity of a questionnaire. This validity test is carried out on each question item by looking for the calculated R-value or the correlation coefficient of each question item, [21], [22]. The sums relation coefficient in the validity test can be calculated using the Rank Spearman formula as follows:

$$r_s = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)} \quad (1)$$

Where is:

$r_s$  = Rank Spearman Correlation Coefficient

$d$  = Difference Each Rank

$n$  = Number of Data Pairs

Measurement of validity must have the following criteria:

1. If  $r_{\text{count}} > r_{\text{table}}$ , then the data is valid
2. If  $r_{\text{count}} < r_{\text{table}}$ , then the data is not valid.

### 2.2 Questionnaire Reliability Test

Reliability is the measure of consistency in the answers to a research questionnaire. The reliability test is used to determine the consistency or confidence of the measurement results that contain measurement accuracy. Reliability shows the consistency of the questionnaire to respondents' responses in several tests under different conditions with the same questionnaire. The reliability test can be calculated using Cronbach's Alpha formula as follows:

$$r_{11} = \left( \frac{K}{K - 1} \right) \left( 1 - \frac{\sum a_i^2}{a_t^2} \right) \quad (2)$$

Where is:

$r_{11}$  : Instrument Reliability

$K$  : Number of questions

$\sum a_i^2$  : Number of item variants

$a_t^2$  : Total variance

Measurement of instrument reliability has the following provisions:

1. If  $r_{11} > 0.60$ , then the question items from the questionnaire are said to be reliable
2. If  $r_{11} < 0.60$ , then the question items from the questionnaire are said to be unreliable

### 2.3 SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats) used for Evaluation of a Coastal Community Empowerment based on Marine Tourism or Business Activity

SWOT Analysis is a tool used for strategic planning and strategic management in organizations, including Coastal community empowerment based on marine tourism development strategy. SWOT Analysis is a strategic planning framework used in the evaluation of coastal community empowerment based on marine tourism or business activity, [23], [24].

SWOT Analysis has two factors, that are internal and external. Internal factors include organizational factors, also strengths, and weaknesses, external factors include environmental factors, also opportunities, and threats. Strengths and weaknesses are internal factors, and opportunities and threats are external factors. SWOT Analysis is a strategic planning tool used to evaluate the strengths, weaknesses, opportunities, and threats of coastal community empowerment based on a marine tourism development strategy.

Table 1. Matrix SWOT Analysis

	Strength	Weakness
Opportunity	Create strategies that used strengths to take advantage of opportunities	Create strategies that minimize weaknesses to take advantage of opportunities
Threat	Create strategies that used strength to overcome threats	Create strategies that minimize weaknesses and avoid threats

SWOT Analysis forms a thinking model for organizational management as an approach and analysis technique. This model gives one the opportunity for information gathering and interpretation and shows the points that the decisions are based on decision strategy, [25], [26].

## 3 Problem Solution

### 3.1 Research Location

Geographically, West Java Province is located at a position of  $106^{\circ} 22' - 108^{\circ} 50'$  east longitude and  $106^{\circ} 22' - 108^{\circ} 50'$  south latitude, with regional boundaries as follows: in the north: bordering the Java Sea and the province of DKI Jakarta, in the west bordering Banten province, in the east bordering Central Java Province, and in the south bordering the Indian Ocean. The Southern Coastal Areas of West Java Province in Indonesia are presented in Figure 1.



Fig 1: The Southern Coastal Areas of West Java Province, Indonesia

Based on the results of research in the field in the southern coastal area of West Java which has the potential for developing marine tourism, including Palabuhan Ratu Beach in Sukabumi, Jayanti Beach in Cianjur, Sayang Heulang Beach in Garut, Mandasari Beach in Pangandaran there are clean beaches of good quality as required for marine tourism, [23].

The sample consisted of 100 respondents, with 24% in the range between 20 – 30 years old, 36 % were 31- 40 years old, 25 % were 41– 50 years old and 10 % were 51 -60 years old. Considering the education characteristics of respondents 38% were graduates of junior high school, 22 % were graduates of senior high school, 24 % were graduates of elementary school 10 % were graduates of bachelor and 16% were post-graduated.

### 3.2 The Validity and Reliability Test

The validity test is carried out on the questions in each variable. The reliability test includes dependability and stability. Content of validity regards the representativeness for sampling adequacy of the content of a measuring instrument.

A question is declared valid if the validity test shows the value of  $r$  is greater than the  $r$  table.

Based on this research aims to analyze coastal community empowerment based on marine tourism development strategy in West Java province, Indonesia, from the total of 20 items of external and internal factors in the SWOT Analysis, the value of the validity coefficient is  $> 0.300$ . According to Kaplan and Saccuzo, 1991, this means that the factors are valid and can be proceeded for further analysis. Meanwhile, from the same total of 20 items, it was found that the  $\alpha$  value is 0.815, which is greater than 0.6 indicating that the factors are reliable.

### **3.3 Coastal Community Empowerment based on Marine Tourism Development Strategy using SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats)**

Community empowerment in coastal areas, including the marine tourism community is a public concern and is considered as one of the appropriate approaches in overcoming socio-economic problems, especially poverty. Community empowerment should be carried out by various elements ranging from local and central government, local communities, businesses, and society through civil society organizations, [11], [13]. Marine tourism activities can contribute to social and economic changes among local communities in an area. Investment in marine tourism can ensure the development of infrastructure and public facilities in a region.

The local communities of the south coast of West Java Province expressed their positive opinions on infrastructure, public facilities development, and educational opportunities aimed at marine tourism development. The communities wanted marine tourism activities to respect local culture and values regarding the local ecosystem as well as improve awareness for the conservation of fisheries resources. Marine tourism activities impact positively social and economic changes by improving the quality of life and increasing living standards in the south coastal area of the West Java province.

Marine tourism can be supporting the livelihood activities of local people including fishermen by creating multiple types of jobs based on marine tourism activities. Furthermore, marine tourism can attract foreign investment in transportation, accommodation, hotel, food, merchandise, and other facility sectors. The economic benefits for local communities are enhanced through marine tourism

activities in south coastal West Java Province and can also lead to increased demand for local goods and merchandise.

Marine tourism activities can be influencing the environmental aspects in coastal areas with positive and negative contributions. If not adequately managed, the development of marine tourism activities can generate waste and environmental degradation, including plastic waste and pressure on marine resources. The development of mass marine tourism creates several social economic impacts, one of which is the loss of local culture, social economic gap, low-paid jobs for local people, increased living costs, increased waste and pollution, and loss of biodiversity. Conversely, coastal areas with optimal marine tourism management have natural resources to improve community welfare and drive economic regional development. For optimal marine tourism management of coastal areas, it is crucial to carry out integrated management based on bio-ecoregion conditions and partnerships with stakeholders to strengthen the capacity of coastal area management for marine tourism. It is also essential to have local community and related stakeholder participation in establishing networking relations and cooperation meaning that marine tourism management can be optimal with collaboration between various stakeholders in an integrated and systematic manner

The local community believes that a proper environment management plan in marine tourism can ensure support for the conservation of fisheries resources, marine environment, and marine services. So sustainable marine tourism development can ensure local community well-being and environmental balance in coastal south West Java province, Indonesia. A SWOT analysis can be useful for the assessment of a marine tourism development strategy. By knowing internal factors, namely strengths, and weaknesses, it is possible to reduce weaknesses, and, at the same time, maximize strengths. The following Table 2 is a condition analysis that includes the conditions of internal factors and external factors in coastal community empowerment based on marine tourism development strategy.

Table 2. Internal and External Factors Coastal Community Empowerment Based on Marine Tourism Development

Internal Factor	Parameter	Indicator	W	R	S
Strength	Age of marine tourism business actors	Based on the research results, the characteristics of respondents based on age as much as 47% are in the age range of 30 -40 years, and are the productive age to run the marine tourism business	0.07	4	0.28
	Entrepreneurial experience in the field of marine tourism entrepreneurship	The majority of marine tourism business actors are fishermen who have more than 11 years of fishing experience	0.08	3	0.24
	Level of education marine tourism business	The characteristics of respondents based on education 43 % completed junior high school education.	0.06	2	0.12
	Strengthening job diversification for fishermen	Empowerment of coastal communities, especially fishermen as a social partnership process to improve community welfare	0.15	4	0.60
	Post-covid-19 pandemic conditions for the tourism sector	Post-covid-19 conditions for the tourism sector, especially marine tourism, have increased tourist visits	0.11	4	0.44
	Total Strength				
Weaknesses	There is no counseling available for marine	Counseling to increase knowledge as a tour guide	0.11	3	0.33

Internal Factor	Parameter	Indicator	W	R	S
Total Weakness	tourism business actors	has not been carried out by the government continuously			
	Experts in the field of marine tourism based on fishery resource conservation are still lacking	The level of concern for fishery resource conservation assets for marine tourism is still low	0.14	2	0.28
	Saving culture still low	Most marine tourism business actors who work as fishermen do not have savings and only save money at home	0.05	3	0.15
	Mechanisms and procedures for implementing coastal community empowerment programs are still weak	Empowerment of coastal communities for the marine tourism sector requires assistance from extension workers in the field of marine tourism in the development of marine tourism villages	0.12	3	0.36
	Community empowerment aims to reduce the level of poverty in the community	Empowerment of coastal communities, especially fishermen in the marine tourism sector, is expected to be able to improve the welfare of fishermen's households	0.11	3	0.33
	Total Weakness			1	

Description: 1 = very weak; 2 = rather weak; 3 = somewhat strong; and 4 = very strong

As shown in Table 2, for internal parameter factors, the total score parameter by the strength factor is 1.68 and the weakness factor is 1.45. Thus, the total score of the overall factor analysis of the internal coastal community empowerment based on

marine tourism development strategy is 3.13. This means that the strength and weakness factors are very strong. From the table above it can be seen that the results of the acquisition of strength scores are greater than their weaknesses.

Table 3. External Parameter Factor

External Factor	Parameter	Indicator	W	R	S	
Opportunity	Potential for marine tourism development	The coastal area of West Java has a bio-ecoregion that is able to attract tourists to travel	0.12	4	0.48	
	Government policy in developing marine tourism areas	Government policy in developing marine tourism areas with the marine tourism village program	0.07	4	0.28	
	The Socio-cultural conditions of coastal communities	Socio-cultural conditions of coastal communities that are an attraction for tourists	0.06	4	0.24	
	The empowerment program claimed by the government as a solution to alleviating the problem of fishermen's poverty	Fishermen's income is expected to increase and prosper by diversifying jobs in the marine tourism sector	0.11	3	0.33	
	Marketing Potential of Micro, Small, and Medium Enterprises	The marketing potential of Micro, Small, and Medium Enterprise products in the marine tourism sector	0.12	3	0.36	
	<b>Total Opportunity</b>					1.69
	Threat	Environmental issues of coastal area resources	Awareness of maintaining and preserving the environment	0.11	2	0.22

External Factor	Parameter	Indicator	W	R	S
		is very important for the preservation of marine tourism objects			
	Disaster mitigation supervision and monitoring	The threat of natural disasters such as tsunamis that have occurred in the southern coastal areas of West Java, Indonesia	0.15	4	0.60
	Various marine tourism objects based on bio-ecoregional conditions	The presence of various attractions for marine tourism in coastal areas is an alternative for tourists in doing recreation	0.11	2	0.22
	There is a competitive market for marine tourism	There is competition with other regions that are optimizing the development of marine tourism	0.06	2	0.12
	The carrying capacity of the marine tourism environment	The decline in the carrying capacity of the environment due to the lack of understanding of tourists about the environmental sustainability of fishery and marine resources	0.09	2	0.18
<b>Total Threat</b>					1.34
<b>Total External Factor</b>			1		3.03

As shown in Table 3, for the external parameter factor, the total score parameter by the opportunity



factor is 1.69 and the threat factor is 1.34. Thus, the total score of the overall factor analysis of the external factor of coastal community empowerment based on marine tourism development strategy is 3.03. This means that the opportunity and threat factors are medium. The resulting coastal community empowerment based on marine tourism development strategy weighting and rating carried out through IFAS and EFAS SWOT analysis, the final value of strengths, weaknesses, opportunities, and threats are presented in Table 4 with Figure 2 indicating the SWOT analysis chart.

Table 4. Recapitulation of Calculation of IFAS and EFAS

No	Description	Total Value
1	Internal Factor	
	Strength (S)	1.68
	Weakness (W)	1.45
	(Strengths- Weaknesses)	0.23
2	External Factor	
	Opportunity (O)	1.69
	Threats (T)	1.34
	(Opportunity- Threats)	0.35

From Table 4 the results of the acquisition of strength scores are greater than their weaknesses.

Likewise, the acquisition of opportunity scores is greater than the threat. From the table, it can be seen that the results of the acquisition of strength scores are greater than their weaknesses.

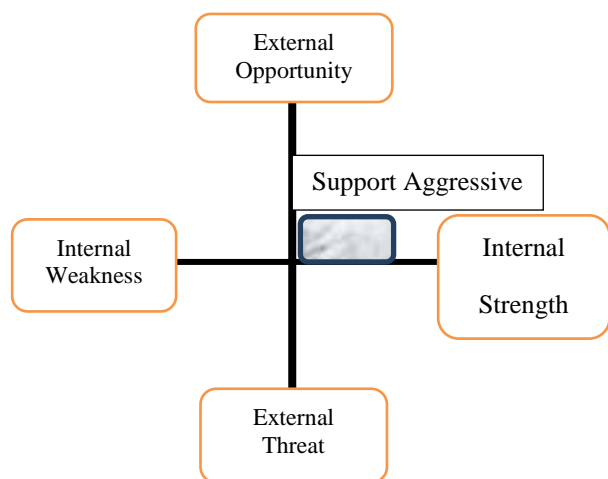


Fig. 2: SWOT Analysis Chart

As shown in Figure 2 SWOT Analysis Chart that the position of coastal community empowerment based on marine tourism development strategy in quadrant 1 is in a very favourable situation. The coastal community empowerment based on the marine tourism development strategy has opportunities and strengths so that it can take

advantage of the opportunities that exist. The strategy for coastal community empowerment based on marine tourism development strategy must be established in this quadrant to support aggressive growth policies.

Optimal marine tourism in coastal area development can be carried out by community empowerment, such as accelerating the development of fisherman communities, including community-based development. This can be achieved with the support of all stakeholders and authorities' regulation of the government by providing infrastructure, accessibility, accommodations, and building capacity of coastal local community resources.

Furthermore, for the resulting strategy for coastal community empowerment based on marine tourism development can be more accurate, the researcher uses the Internal External analysis method or the IE matrix. The results of testing using the Internal External Matrix are as follows: The Internal Overall Score of IFAS=3.13 and The External Overall Score of EFAS = 3.03

From the results of testing the IE Matrix above, the position of the coastal community empowerment based on marine tourism development is in quadrant I with several internal and external weighting scores of 3.13 and 3.03 respectively. Thus, conditions need collaboration with various stakeholders in empowering coastal communities living in coastal areas, which is an appropriate strategy to increase economic regional growth in the coastal area. Economic regional growth in coastal areas is an opportunity for the government to empower the economy of fisherman communities. Collaboration here is a relationship and cooperation between organizations from a sociological perspective, such as local wisdom. It can also be stated that collaboration is a relationship and cooperation between local governments, central government, and non-government organizations (NGOs) to manage the marine tourism coastal area

The research was conducted based on the existing conditions in the field by considering various determinants of the marine tourism development strategy through empowering local communities. The renewal in this research combines social, economic, cultural, and conservation of fishery resources in coastal areas. Strategies for empowering local communities in marine tourism areas by optimizing the potential of micro, small and medium enterprises as part of tourist activities.

**Table 5. SWOT Matrix Community Development Strategy for Marine Tourism in West Java Province Indonesia**

IFAS (Internal Factor Analysis Strategy) / EFAS (External Factor Analysis Strategy)	Strengths	Weaknesses
	<ol style="list-style-type: none"> <li>Age of marine tourism Business actors</li> <li>Entrepreneurial experience in the field of marine tourism entrepreneurship</li> <li>Level of education for marine tourism business</li> <li>Strengthening job diversification for fishermen</li> <li>Post-covid-19 pandemic conditions for the tourism sector</li> </ol>	<ol style="list-style-type: none"> <li>There is no counseling available for marine tourism business actors</li> <li>Experts in the field of marine tourism based on fishery resource conservation are still lacking</li> <li>Saving culture still low</li> <li>Mechanisms and procedures for implementing coastal community empowerment programs are still a weakness</li> <li>Community empowerment aims to reduce the level of poverty in the community</li> </ol>
Opportunities	S-O Strategy (Strengths - Opportunities)	W-O Strategy (Weakness - Opportunities)
<ol style="list-style-type: none"> <li>Potential for marine tourism development</li> <li>Government policy in developing marine tourism areas</li> <li>The Socio-cultural conditions of coastal communities</li> <li>Empowerment program claimed by the government as a solution to alleviating the problem of fishermen's poverty</li> <li>Marketing potential of Micro, Small,</li> </ol>	<ol style="list-style-type: none"> <li>Maintain the attraction of tourism objects by maintaining the beauty of beaches in the southern coastal area of West Java Province</li> <li>Improving marine tourism entrepreneurship based on government policy</li> <li>Improving education on marine tourism business based on social-cultural</li> <li>Strengthening job diversification for fishermen</li> </ol>	<ol style="list-style-type: none"> <li>Improving counseling marine tourism business actors for the development of product strategy</li> <li>Improving experts in the field of marine tourism based on fishery resource conservation according to government regulations and policy</li> <li>Improving knowledge about the importance</li> </ol>

and Medium Enterprises	<ol style="list-style-type: none"> <li>based on an empowerment program</li> <li>Post-pandemic recovery of covid-19 based on improving Micro, Small, and Medium Enterprises' marine tourism sector</li> </ol>	<ol style="list-style-type: none"> <li>of saving for investment</li> <li>Improving to empowerment program for marine tourism stakeholders</li> <li>Improving community empowerment for growing up Micro, Small, and Medium Enterprises in the marine tourism sector</li> </ol>
Threats	ST Strategy (Strength - Threats)	WT Strategy (Weakness - Threats)
<ol style="list-style-type: none"> <li>Environmental issues of coastal area resources</li> <li>Disaster mitigation supervision and monitoring</li> <li>Various marine tourism objects based on bio-ecoregional conditions</li> <li>There is a competitive market for marine tourism</li> <li>The carrying capacity of the marine tourism environment</li> </ol>	<ol style="list-style-type: none"> <li>Improving education about environmental coastal zone sustainability</li> <li>Improving knowledge about disaster mitigation, especially natural disasters</li> <li>Improving the potential of the marine tourism product based on bio-ecoregion</li> <li>Strengthening potential market for marine tourism product</li> <li>Regulation of the carrying capacity for marine tourism</li> </ol>	<ol style="list-style-type: none"> <li>Improving counseling about environmental issues of coastal area resources</li> <li>Improving education about fishery resource conservation and disaster mitigation</li> <li>Improving marine tourism products and knowledge about the importance of saving</li> <li>Government regulation about mechanisms and procedures for implementing coastal community empowerment programs should be easy to adopt.</li> </ol>

Based on Table 5 the community development strategy for marine tourism should be improving education about environmental coastal zone sustainability, knowing about disaster mitigation, especially natural disasters, the potential of the



marine tourism product based on bio ecoregion, strengthening potential market for marine tourism product, regulation of the carrying capacity for marine tourism.

#### 4 Conclusion

The Covid-19 pandemic has had a very significant impact on changing people's lives, including the stakeholders of the marine tourism sector. Coastal community empowerment based on marine tourism development ensures aspects of social well-being such as improved quality of life including fishermen, infrastructure development for coastal areas, and enhanced public facilities and anticipation of natural disasters. From the results of testing the IE Matrix above, the position of the coastal community empowerment based on marine tourism development is in quadrant I. The strategy of strengths – opportunities, is: (1) Maintain the attraction of tourism; (2) Improve marine tourism entrepreneurship; (3) Improve education on the marine tourism business, (4) Strengthen job diversification for fishermen based on an empowerment program, (5) post-pandemic recovery of covid-19 based on improving Micro, Small, and Medium Enterprises marine tourism sector. The strategy of weakness – opportunities, that is : (1) Improving counseling marine tourism business actors for the development of product strategy; (2) Improving experts in the field of marine tourism based on fishery resource conservation according to government regulations and policy, (3) Improving knowledge about the importance of saving for investment; (4) Improving to empowerment program for marine tourism stakeholders; (5) Improving community empowerment for growing up Micro, Small, and Medium Enterprises in the marine tourism sector. The strategy of strength–threats, is: (1) Improving education about environmental coastal zone sustainability, (2) Improving knowledge about disaster mitigation, especially natural disasters; (3) Improving the potential of the marine tourism product based on bio ecoregion; (4) Strengthening potential market for marine tourism product; (5) Regulation of the carrying capacity for marine tourism. The strategy of Weakness – Threats, is (1) Improving counseling about environmental issues of coastal area resources, (2) Improving education about fishery resource conservation and disaster mitigation; (3) Improving marine tourism products and knowledge about the importance of saving; (4) Government regulation about mechanisms and procedures for

implementing coastal community empowerment programs should be easy to adopt

A management plan for marine tourism should be to preserve the health of the local marine environment and support marine ecosystem services. Local goods and handicrafts should be promoted to tourists to increase demand, and it is expected to be able to increase the income of coastal communities

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### **Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)**

This research was conducted by the research team with the following contributions: (1) data collection was carried out by Atikah Nurhayati, Nora Akbarsyah; (2) data analysis was carried out by Atikah Nurhayati, and Asep K. Supriatna; (3) Draft writing by Atikah Nurhayati, and Asep K. Supriatna. All authors make a balanced contribution in writing articles.

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### **Conflict of Interest**

The authors have no conflict of interest to declare.

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