

# THE DEVELOPMENT OF COASTAL AREA AND HUMAN RESOURCE IN BENGKULU PROVINCE

Anzori Tawakal\*

Universitas Dehasen Bengkulu  
Jl Meranti Raya No.32 Kota Bengkulu 38228  
anzori@unived.ac.id

\*Corresponding author: anzori@unived.ac.id

## Abstract

*This study aims to identify and formulate the potential strategies for developing coastal areas and fisherman human resource strategies in Bengkulu Province - Indonesia. This research was conducted using the sample taken from 18 institutions (i.e., policymakers) and 400 fishermen were randomly selected to participate in the survey. The suggested strategy could be conducted by optimizing the available strengths and opportunities to overcome the existing weaknesses and threats. In particular, it could be done by optimally utilizing the coastal and marine resources to fulfill the broad market share of domestic fisheries products, enforcing the existing laws and regulations, and increasing the level of fish consumption. More specifically, the strategy in regard to fishermen skills development could be chosen to support fisheries production. Thus, leading to the improvement of fishing infrastructure, and the fishermen skills through the utilization of capital assistance from the government's program.*

**Keywords:** *Development strategy, coastal areas, and fisherman human resources*

## INTRODUCTION

Coastal area is the part of natural resources bestowed by the Almighty god and it is controlled by the state to be optimally utilized for the prosperity of the nation. Correspondingly, this resources also needs to be preserved both for the present generation and for future generations (Article 33 Constitution 1945). According to Rivera, Gelcich, Garcia-Florez, & Acuna (2014), the worldwide fisheries industry has experienced a shifting paradigm from a top down to more bottom up approach, that can be achieved based on the following efforts: 1) regulatory framework, 2) joint management; 3) ownership of assets; 4) empowering resource users; 5) adaptation to the changes; 6) fisherman knowledge and scientific information in management strategies; 7) co-management; 8) shared management systems; 9) cooperative systems; and 10) adaptive capacity in the co-management system. In addition, Ali & Abdullah (2010), also explained that co-management activities must be strengthened to minimize the potential risk and mistakes in fishery resource management.

The implementation of co-management system in many case studies of developing countries have shown successful outcomes. However, there is a paradox with a topdown co-management approach, that has a high probability of success in the areas with high human development index (i.e., in European countries) but caused the depletion of coastal natural resources over a period of 50 years. Schernewski, Schonwald and Katarzyte (2014) mentioned that the European Council in 2006 had adopted the Integrated Coastal Zone Marine (ICZM) regarding the sustainable development strategies. Javier (2015) stated also that coastal and marine issues must be addressed through transversal initiatives, which focuses on the entire visible problems. Given that, this should take into

account the actual causes, and not just based on temporary symptoms. Hoagland et al. (2013) further argued on the decisions about coastal area development that must be based on the economic analysis, but they must also pay attention to the issues of justice for the existing users and future generations. According to Basurto, Bennett, Weaver, Van-Dyck, and Bueno, (2013), the most common strategy used by the government is to develop the cooperatives and patron-client relationships in managing small-scale fisheries. Edvardsson et al. (2011) stated that policies, management, and risk control identified by fishermen operating under the Individual Transferable Quota (ITQ) system are more concerned with individual interests than those involved in the total allowable effort (TAE) system. The utilization of coastal resources is including biological and non-biological natural resources, coastal environmental services, and artificial resources.

A report released by the Indonesian Ministry of Maritime Affairs and Fisheries documented that the national production in fisheries sector has increased from 8.028 million tons in 2007 to 19,56 million tons in 2013, with fisheries foreign exchange as of US \$ 4.16 billion, and its contribution to the National GDP as of 6.45 percent. While, the supply of well-educated labor stands for 1700 people and 6000 trained labor. In addition, an increase in Indonesian fish consumption was 35.62 kg / capita / year, with fishermen exchange rate stands as 102.66 and poverty alleviation was in 7.5 percent level. This data did not include non-renewable resources and environmental services (Ministry of Maritime Affairs and Fisheries Report, 2014).

According to the study of Nabi, Hoque, Rahman, Mustafa and Kader (2011), in Bangladesh, the calculation of a multi-dimensional poverty index is not only considering the size of the monetary index per se. Likewise, in Thailand case, according to the study of Bene and Friend (2011), the causes of fishermen poverty in the fishery sector was due both inside and outside the sector, such as; socio-institutional factor, income, land ownership, debt, access to health, education and financial capital, and the marginalization of political decision making factors. Olomola, (1993) reported that the management of traditional fisheries is under a common property regime, specifically through effective alternative management strategies such as privatization and public control that are often recommended in literature. Aheto et al., (2012) further suggested a high level of exploitation of fisheries resources, that generally does not provide an increase in the long-term economy.

Government policy is an essential factor in managing responsible fisheries resources, particularly through the determination of livelihood choices, reactions and strategies, and the final outcome in terms of their ability to manage fisheries resources. Besides, the willingness to invest in helping the preservation of natural resource is also important (Jentoft, Onyango & Islam, 2010). Kishor, (2014) mentioned that in India, the impact of a large fishermen empowerment program has been initiated from a microcredit of *sangam* (the terminology of river meeting). This can be done by increasing the knowledge, abilities and skills of well-planned fishermen's human resources with systematic and sustainable manner (Andrew et al., 2015). Alison & Ellis (2001) described the application of fisheries strategies to deal with fisheries resource fluctuations, requiring broad insights in conventional fisheries management policies, and good management to explore fisheries resources in developing countries.

Pomeroy (1995) stated that there is an increase in government commitment in Southeast Asia, particularly in establishing the policies and programs to better manage fisheries resources by fishermen and stakeholders. This should be through the decentralization of policies, community-based management, and joint management.

Polite (2013) also noted that the recognition of traditional fishing rights is a major legal and policy issue in modern fisheries law, which stands at two levels. First, at the domestic level that is related to legal recognition of traditional rights. The second level arises from the implications of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) which results in the extension of coastal jurisdiction over marine biological resources. Given that, Sundah, Sumarno, Suman & Kindangen, (2014) suggested a priority strategy for coastal development to improve the welfare of traditional fishermen such as; 1) human resource development; 2) accessibility to capital, investment, and business development; 3) infrastructure development and environmental management; 4) tourism development; and 5) law enforcement and legislation.

In addition to this, the research of Raemaekers et al., (2006) informed that coastal management efforts in South Africa have undergone dramatic transformations since the past decade. Sustainable life approaches complement and enrich the integrated coastal management, so as to help bridging the gap between sustainability rhetoric and the reality of poor coastal communities. Hidayati and Sholichah (2011) also stated that: 1) improving the quality of fishing communities, 2) the need to change the lifestyle of fishermen, 3) improving the quality of fishing equipment and marketing facilities, 4) the need for social policies from the government that contains pro-fisherman programs.

The study of Mostafaeipour, Mortazavi and Sadra-Abarghouei, (2011) in Yazd province of Iran found that; 1) advertisement, good standards and export packaging; 2) build processing and cooling facilities; 3) exported salmon in good packaging; 4) producing crabs and other new products; 5) encourage people to consume more fish; 6) pay great attention to research works; 7) the government supports of transportation, loans, and subsidies; 8) encourage investors to invest in the fisheries sector. Moreover, the research of Sobo et al., (2010) on the small-scale fisheries in Tanzania support the coastal communities and contribute to the country's economy. Fisheries are included in the priority sectors of the national poverty reduction strategy, a framework for fisheries development, a code of ethics as a feedback responsibility and a strategic plan of action for sustainable management of fisheries resources. Furthermore, the research of Bussolo and Round (2003) was conducted in Ghana, and they found that the obtained results reflected the key characteristics of poverty as explained in the Ghana Poverty Reduction Strategy.

The previous research has not done a thorough investigation on the coastal areas and fishermen human resources issues. In particular, on the issues of variable and indicators used to analyze the internal and external development strategies of coastal areas and its implications for the development of fishermen human resources in Bengkulu province. Bengkulu has pretty long beach with the length stands for  $\pm$  525 km consisting of nine (9) districts and one (1) city; Muko-Muko Regency, North Bengkulu Regency, Bengkulu Tengah Regency, Seluma Regency, Bengkulu Selatan Regency, Kaur Regency and Bengkulu City which are directly on the opposite side of the Indian Ocean, and has very diverse characteristics of coastal areas, both on biological, non-biological as well as artificial resources and environmental resources.

The increasing capacity of fishermen and institutional resources, according to Anas, (2014) is the main goal of fisheries management to achieve its success. If fishermen are the subjects, they are willing to accept and can implement all pillars of good and correct fisheries management. The problem of this study is how the coastal area development strategy and fisherman human resource development strategy in Bengkulu province.

This study aims to examine and formulate strategies development of coastal areas and resource development strategies human resources of fishermen in Bengkulu Province for 6 months from the month of June 2015 to November 2015, in five (5) districts/cities. The sample consists of 18 policy makers/government institutions and samples of fishing communities as many as 400 people, retrieval is done by random method. Data that collected in this study is the primary data carried out with observation techniques, interview techniques, documentation techniques. Based on the model developed from the relevant theory, with using a SWOT analysis model. Benefits of this research is as a reference and input for the government to take policies in the context of developing fishermen's human resources in Bengkulu Province (1), For the development of science and technology in order to reviewing the strategy of eveloping coastal areas and human resources (2) fisherman, As a reference source, study material, data and information acquisition for government, universities, and for those who study (3) the field of study on the implementation of coastal area development strategies and fisherman human resources (4) to implement strategy aggressively, it is recommended to take the following measures. In the context of developing and utilizing fishermen's human resources the government together with the fishing community and related stakeholders are obliged to carry out increasing the number of fishermen's human resources to increase the production of fishery products to meet the large product market fisheries, improve the skills of fishermen for production fisheries, improvement of fishing infrastructure to take advantage of capital assistance from the government, increasing the capacity of fishermen through fisherman training from the government, institutional improvement fishermen in the context of utilizing fishery technology assistance from the government, improve the knowledge/education of fishermen to take advantage of business credit for fishermen from the banking sector as well as increasing utilization of fishing technology to take advantage of management assistance government fisheries.

## **LITERATURE REVIEW**

Strategic management is the art and science of composing, applying, and evaluating cross-functional decisions that enable an organization to achieve its goals. Strategic management is the process of setting organizational goals, developing policies and planning to achieve these goals, and allocating resources to implement policies and plan the achievement of organizational goals (David, 2013).

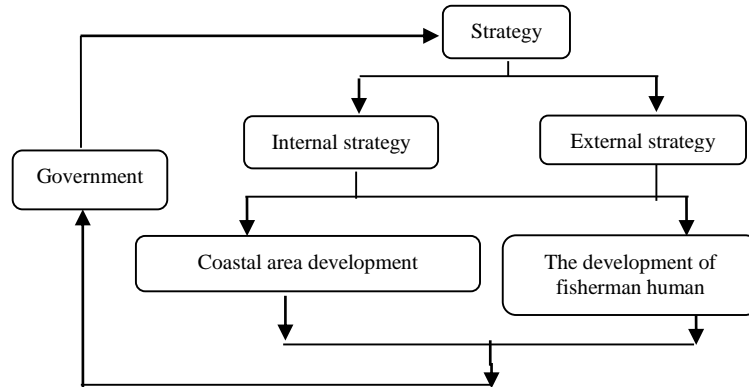
Robbins and Judge (2009) defined the environmental factors as; a) Strength - an advantage of resources that have not been optimally explored so that it gives the possibility of the organization to further improve its performance. b). Weakness - is the limitations and lack of resources, the skills needed to hamper the effective performance of the organization in development. c). Opportunities - the positive external environmental elements (political, economic, social, scientific, and technological) that provide opportunities and support to the organization's existence. d). Threats – the negative environmental elements (political, economic, social and scientific, and technological) that impede activity.

The coastal region is a land area bordering with the sea. Borders on land include the areas that are inundated or not inundated, which are still affected by ocean processes, such as tides and sea water intrusion. Whereas boundaries at sea are the areas affected by natural processes on land, such as sedimentation and flow of fresh water into the sea, as well as those affected by human activities on land (Supriharyono, 2007).

## The Human Resource of Coastal Citizens

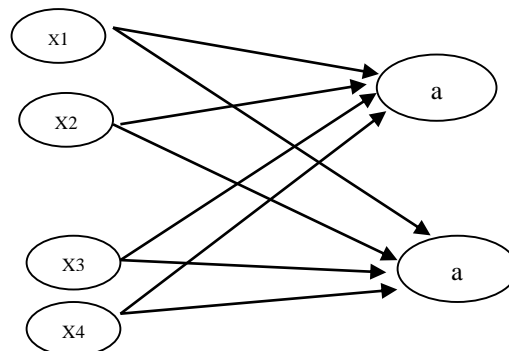
Mondy and Mondy (2013) stated that human resource management is the use of individuals to achieve the organizational goals. Dessler, (2008) explained that human resource management can be interpreted as policies and practices that involve the aspects of human resources from management positions in recruiting, selecting, training, appreciation, and assessment. The quality improvement of human resources according to Robbins and Judge (2009) can be measured by the success of: 1) increasing theoretical ability, 2) increasing technical ability, 3) increasing conceptual ability, 4) increasing moral, and 5) increasing technical skills. Marwansyah, (2014) showed that the process of human resource planning begins by looking at the implications of the organization's strategic plans that are general, broad, and hollistics to the needs of the workforce. Dessler, (2008) also mentioned that strategic human resource management is the relationship of human resource management with the strategic goals and objectives to improve business performance and develop an organizational culture that helps the development of innovation and flexibility. Siar, (2003) argued that the access to resources is shaped by gender and age. Differences in knowledge of resources owned by men and women cause different access to fisheries resources. Sumarsono, (2006) informed that human resources contain two meanings, 1) work effort or services that is provided in the production process 2) human resources concerning people who are able to work to provide services. In addition to this, Sutrisno, (2013) also explained that human resource is the only resource that has a sense of feeling, desires, skills, knowledge, encouragement, and power (ratio, taste and intention). All of these potential human resources affect the organization's efforts in achieving its goals.

This study uses the following theoretical framework as seen in Figure 1.



**Figure 1. Theoretical framework**

The Research model used in this study is available in Figure 2. as follows.



**Figure 2. Research Model**

Where:

$x_1 = s = strength$

$x_2 = w = weakness$

$x_3 = o = opportunity$

$x_4 = t = threat$

$a = Coastal development area$     $b = Fisherman development$

$x_1 = s = Strengths$ ; is the internal indicators used to form the strategy of coastal area development and its human resource development.

$x_2 = w = Weaknesses$ ; is the internal indicators used to form the strategy of coastal area development and its human resource development.

$x_3 = o = Opportunity$ ; is the external indicators used to form the strategy of coastal area development and its human resource development.

$x_4 = t = Threats$ ; is the external indicators used to form the strategy of coastal area development and its human resource development.

## RESEARCH METHOD

This study applies SWOT analysis methods and analysis since this technique is deemed as the most appropriate strategy in analyzing and developing the coastal areas. Thus, SWOT analysis is used as it could help to determine the right strategy in the decision-making process for the implementation of development strategy.

The variable of this research uses SWOT modeling, quadrant position for the SWOT strategy can be calculated using a combination of rating and weight, by collecting information conducted through a questionnaire, in which the targeted respondents are the fishermen who live in coastal areas. We thus weighting the calculation based on the survey results. The model we use in calculating the weights is provided in Table 1.

Since the weights should be equal to 1 for each evaluation matrix, thus the weights of each respondent are not necessarily the same. It depends on the chosen number of variables, or could be formulated as Formula 1.

$$A(SB) + B(BA) + C(CP) + D(KR) + E(SK) = 1.00 \quad (1)$$

Where:

$A$  = the number of SB in one evaluation matrix

$B$  = the number of BA in one evaluation matrix

$C$  = the number of CP in one evaluation matrix

$D$  = the number of KR in one evaluation matrix

$E$  = the number of SK in one evaluation matrix

$SB$  = the score is very good

$BA$  = the score is good

$CP$  = the score is enough

$KR$  = the score is less

$SK$  = the score is very less

To make it simpler, the ratio between SK and SB is made equal to 2, therefore:

$$SB: BA: CP: KR: SK = \quad (2)$$

if  $SB = x$ , Therefore:

$$BA = \frac{1}{2}x \quad (2.1)$$

$$CP = \frac{1}{4}x \quad (2.2)$$

$$KR = \frac{1}{8}x \quad (2.3)$$

$$SK = \frac{1}{16}x \quad (2.4)$$

Therefore:

$$A(x) + B\left(\frac{1}{2}x\right) + C\left(\frac{1}{4}x\right) + D\left(\frac{1}{8}x\right) + E\left(\frac{1}{16}x\right) = 1.00 \quad (3)$$

$$x = \frac{16}{16A+8B+4C+2D+E} \quad (3.1)$$

$$x = SB \quad (3.2)$$

**Table 1. SWOT Weights**

Code	Explanation
SK	Very less, if the issue does not affect the current condition
KR	Less, if the issue does not affect the current condition
CP	Enough if the issue cannot be justified at the current situation
BA	Good, if the issue affects the current situation
SB	Very good, if very affecting the current situation

Source: Rangkuti, (2014)

The model used to calculate the rating score is available in Table 2.

**Table 2. SWOT Rating Model Score**

Explanation	Score
The issue is not urgent	1
The issue is less urgent	2
The issue is urgent	3
The issue is very urgent	4

Each respondent is free to rate according to his/her opinion for each dimension of attribute. When the weight and rating values are obtained, the total value for each dimension is calculated based on the following formulation.

$$\text{Scores (strength – weaknesses)} = \sum (\text{rating (Sn)} \times \text{weight (Sn)}) + \sum (\text{rating (Wn)} \times \text{weight (Wn)}) \quad (3.4)$$

$$\text{Scores (opportunity – threats)} = \sum (\text{rating (On)} \times \text{weight (On)}) + \sum (\text{rating (Tn)} \times \text{weight (Tn)}) \quad (3.5)$$

### Variable Definition

The variables and indicators used in this research is available in Table 3.

## RESULTS AND DISCUSSION

### Descriptive Statistics of Respondents

According to the survey conducted to 400 fishermen respondents, the respondents' characteristics can be seen in Table 4.

According to Table 4 and Figure 3 the range of age of the respondents spans from 41 to 50 years old (32.5 percent), followed by the age group ranges from <20 years to 30 years old (24.8 percent), 31 years to 40 years (23 percent), 51 years to 60 years (17.3 percent). While, the age of the oldest fishermen group is in the range of more than 61 years old (10 percent). It shows that the productive age of fishermen ranges from 41 to 50 years old.

**Table. 3. Regulator (Government) and Fishermen Society**

1. For the regulator (government):

Internal strenght strategy indicators for the regulator or policymaker	
No	Indicators of strengths
1	Permanent government institution
2	Policy to enhance the acceleration of marine and fisheries development
3	The management of fund allocation
4	The adequate regulation and law
5	Skillful human resource
6	Infrastructure
7	Huge coastal resources
8	Marine and fisheries technology
Internal weaknesses strategy indicators for regulator or policymaker	
No	Indicators of weaknesses
1	Budget allocation is relatively small
2	The limited infrastructure
3	The lack of human resource in terms of marine and fisheries-related issues
4	A relatively low fisherman human resource
5	Low capital acces to banks
6	Low capacity of fishermen institutions
7	Low acces to marketing
8	Low productivity
9	Low product competitiveness
External opportunity strategy indicators for regulator and policymaker	
No	Indicators of opportunities
1	The wide market share of marine and fishery market products at home and abroad
2	International and domestic investment
3	Competitive price of marine and fisheries products
4	Marine and fisheries technology advancement
5	Marine and fisheries product development
6	Marine and coastal tourism
7	Significant increase in domestic fish consumption
8	The increasing material needs of domestic fisheries and products manufacture
9	The increasing demand on fisheries and marine production
External threat strategy indicators for regulator or policymaker	
No	Indicators of threats
1	Coastal ecosystem degradation and environmental damage
2	Excesive exploitation
3	Illegal fishing
4	Fishfol by foreign boat
5	The lack of law of enforcement
6	World trade organization
7	The extinction of marine and fisheries resource
8	Marine and fisheries import is existence



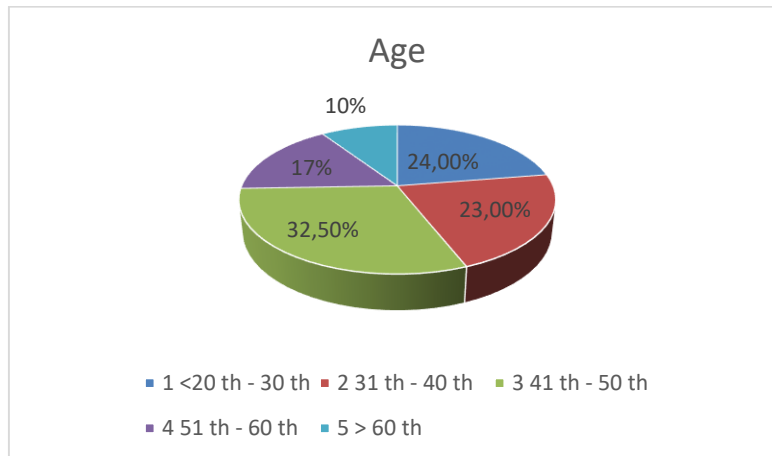
## 2. To Fishermen Society

Internal strength strategy indicators of fishermen	
No	Indicators of strengths
1	The existence of fisherman human resource
2	The infrastructure and equipment of fish catching
3	The technology of fish catching
4	Knowledge or fishermen training
5	Fisherman capabilities
6	Fishermen skills
7	Fisherman institutions
Internal weaknesses strategy indicators of fishermen	
No	Indicators of weaknessess
1	The limited fishermen human resource
2	The limited infrastructure of traditional fish catching
3	Low mastery of fish catching technology
4	Lack of knowledge or fishermen with lack of education
5	Fishermen with low capability
6	Fishermen with low skills
7	Limited fishermen institutions
External opportunity indicators strategy of fishermen	
No	Indicators of opportunity
1	Wide market segment of fisheries products
2	The availability of government's program in supporting the improvement on fisheries products
3	The availability of capital access provided by government
4	The availability of training initiated by government
5	The availability of fisheries technological assistance from government
6	The availability of business and management support from government
7	The availability of small business credit launched by banks for the fishermen
External threat indicator strategy of fishermen	
No	Indicators of threats
1	Climate, weather, and seasonal fish catching
2	Environmental and ecosystem damage of marine and coastal area
3	Excessive exploitation
4	Illegal fishing
5	Illegal fishing by foreign boat
6	The lack of law enforcement
7	The extinction of marine and fisheries resources

**Table. 4. Fishermen' age distribution**

	Age	Frequency	Percent	Valid Percent	Cumulative Percent
	<20 yo – 30 yo	99	24,8	24,8	24,8
	31 yo – 40 yo	92	23,0	23,0	47,8
Valid	41 yo – 50 yo	130	32,5	32,5	80,3
	51 yo – 60 yo	69	17,3	17,3	97,5
	>61 yo	10	2,5	2,5	100,0
	Total	400	100,0	100,0	

According to Table 4 and Figure 3 the range of age of the respondents spans from 41 to 50 years old (32.5 percent), followed by the age group ranges from <20 years to 30 years old (24.8 percent), 31 years to 40 years (23 percent), 51 years to 60 years (17.3 percent). While, the age of the oldest fishermen group is in the range of more than 61 years old (10 percent). It shows that the productive age of fishermen ranges from 41 to 50 years old.

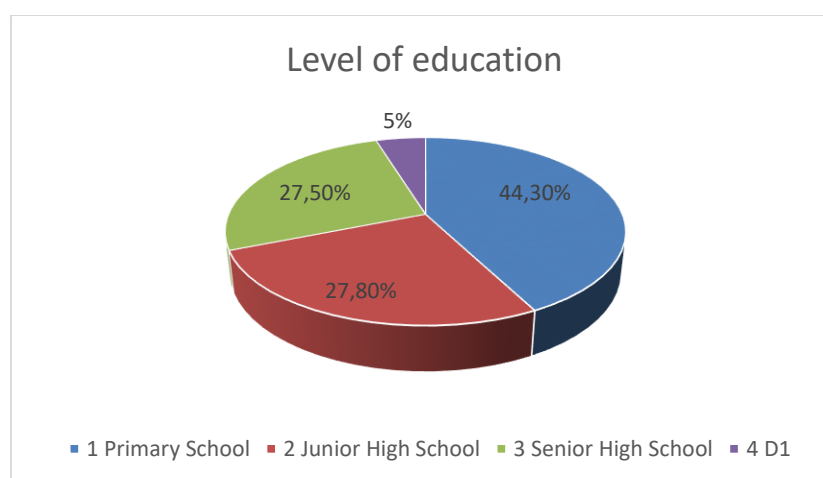


**Figure 3. Fishermen' Age**

**Table 5. Fishermen' levels of education**

Education levels	Frequency	Percent	Valid Percent	Cumulative Percent
< Primary School	177	44,3	44,3	44,3
Junior High School	111	27,8	27,8	72,0
Senior High School	110	27,5	27,5	99,5
>D1	2	,5	,5	100,0
Total	400	100,0	100,0	

According to Table 5 and Figure 4, the fishermen education level is mostly dominated by those with primary school graduate and non-graduate by 44.3 percent, secondary school level 27.8 percent, high school level 27.5 percent, and Diploma (D1) by 5 percent. This information shows that the education level of fishermen is very low.



**Figure 4. The Proportion of Fishermen' Gender**

**Table 6. Gender**

Gender	Frequenc y	Percen t	Valid Percent	Cumulative Percent
Male	399	99,8	99,8	99,8
Female	1	0,2	0,2	100
valid				
Total	400	100,0	100,0	

According to Table 6, the gender proportion is dominated by male by 99,8%, while women stand as 0.2 percent. This shows that the fishing profession is dominantly carried out by men.

### The Development Strategy of Bengkulu Province Coastal Area

The development of coastal region in Bengkulu province was carried out by surveying 18 related institutions to filling out the proposed questionnaire.

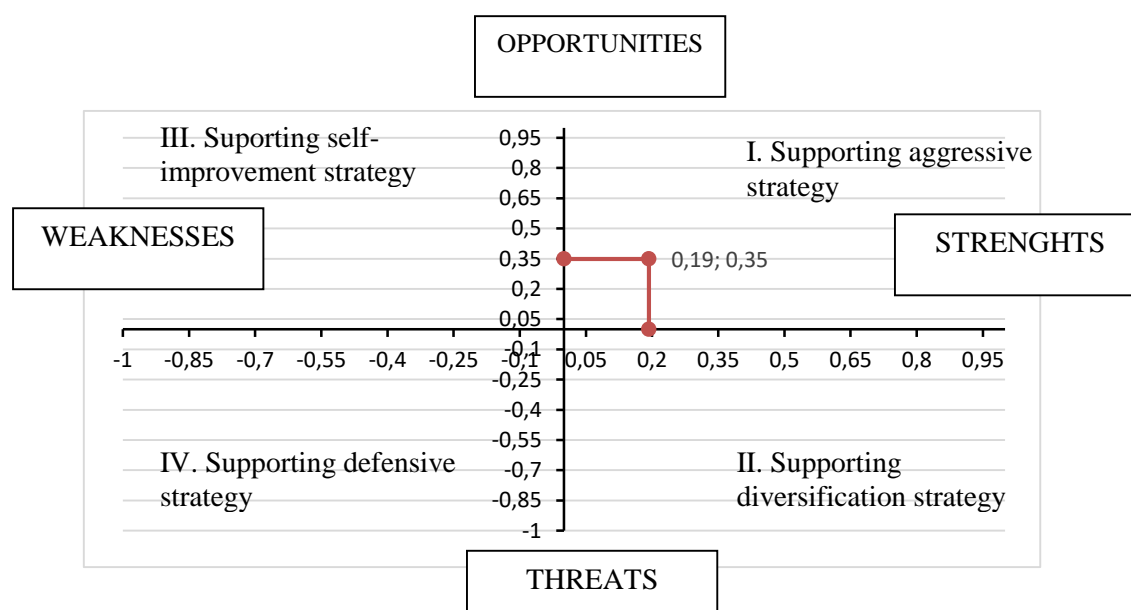
### The IFAS, EFAS weighting Results and the Strategy of Coastal Area Development in Bengkulu Province

The strategies for developing the coastal areas of Bengkulu province as a result of the weighting of IFAS and EFAS are available as follows:

**Table 7. The Weights of IFAS and EFAS**

Regulator (government)	IFAS		EFAS	
	<i>Strenght</i>	<i>Weaknesses</i>	<i>Opportunities</i>	<i>Threath</i>
	3,28	3,09	3,06	2,72
	<b>3,28-3,09 = 0,19</b>		<b>3,06-2,72 = 0,35</b>	

Table 7 shows that the development strategy of Bengkulu coastal area is located in quadrant one (I), on the 0.19 x axis and 0.35 y axis as shown in Figure 5.



**Figure 5. IFAS and EFAS Quadran strategy**

According to Figure 5, it can be observed that the position is in quadrant one (I) with the value of the internal strategy factor stands for 0.19, while the value of the external strategy factor is 0.35. It shows that various weaknesses and threats can be overcome by the strengths and opportunities fishermen have. This is a favorable situation, so that the opportunities and strengths should be optimized to take advantage of the existing opportunities. The strategy that must be applied in this condition is to support government policies by undertaking aggressive growth oriented strategy or by optimizing internal strengths; 1) institutionalizing the capacity of the province, regency / city; 2) increasing the acceleration of private sector, regency / city; 3) optimizing the allocation of funds managed by the Regency / City; 4) enforcing the applicable laws and regulations; 5) optimizing human resources; 6) increasing the development of infrastructure of the marine and fisheries sector at the provincial and district / city levels; 7) utilizing and optimize the utilization of marine and fisheries sector technology at the provincial and district / city levels; and 8) optimizing the utilization of coastal and marine resources at the provincial and district / city levels.

The finding of this study is in line with the opinion of Darajati, (2004). The problem of coastal and ocean resources utilization is not optimal and not sustainable due to dominant factors that are interrelated to one another. These factors can be categorized into internal and external factors. Internal factors are related to the internal conditions of coastal and fishery community, such as: 1) the low level of utilization of resources, technology, and business management; 2) traditional and subsistence business patterns is only sufficient to meet short-term needs; 3) limited ability of venture capital; and 4) poverty and underdevelopment of coastal communities (fishermen).

Whereas the external factors, such as; 1) coastal and ocean development policies that are more oriented to productivity in supporting the economic growth, are sectoral, partial, and are not pro-to traditional fishermen; 2) yet, not conducive to macroeconomic policy, interest rates are still high, and there is no soft credit program intended for the marine sector; 3) damage to coastal and marine ecosystems due to pollution from land areas, fishing practices with chemicals, exploitation and destruction of coral reefs, and the use of fishing records that are not environmentally friendly; 4) inadequate legal and institutional systems accompanied by weak implementation, and bureaucracy with low work ethic and full of corruption, collusion and nepotism; 5) the behavior of entrepreneurs who only seek for profit by maintaining a marketing system that benefits the intermediary traders and entrepreneurs; 6) low awareness of the importance and strategic value of integrated coastal and marine resource management for the progress and prosperity of the nation.

### **The IFAS, EFAS Weighting Results and the Strategy of Fishermen Human Development in Bengkulu Province**

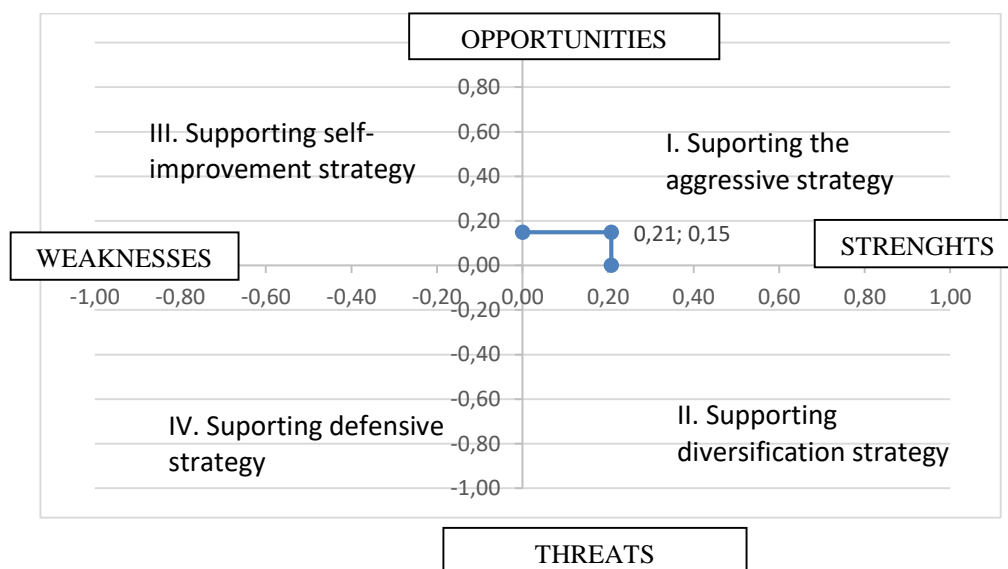
The fishermen human resource development strategy in Bengkulu province as a result of the weighting of IFAS and EFAS is available in Table 8.

**Table 8. IFAS and EFAS weights to develop the human resource in Bengkulu Province**

	IFAS		EFAS	
	<i>Strenght</i>	<i>Weaknesses</i>	<i>Opportunities</i>	<i>Threath</i>
Fishermen	3,38	3,17	3,30	3,16
	<b>3,38 - 3,17 = 0,21</b>		<b>3,30 - 3,16 = 0,15</b>	

Table 8 shows that the fishermen human resource development strategy in Bengkulu province is in quadrant one (I) on the 0.21 x axis ordinate and 0.15 for the y axis.

Based on Figure 6, it can be seen the position in quadrant one (I) with the value of internal strategy factors as 0.21. While, the value of external strategy factors is 0.15. This shows that various weaknesses and threats can be overcome by the strengths and opportunities they have. This is a favorable situation, in which they can take advantage of the existing opportunities. The strategy that must be applied in this condition is to support the development of human resources in Bengkulu province to undertake aggressive development and growth-oriented strategy. For example, 1) increasing the quality of fishermen's human resources at the provincial and district / city levels; 2) building infrastructure for the fisheries sector at the provincial and district / city levels; 3) improving fishing technology at the provincial and district / city level; 4) increasing the knowledge and education of fishermen at the provincial and district / city level; 5) increasing the ability of fishermen at the provincial and district / city level; 6) improving the skills of fishermen at the provincial and district / city level; 7) increasing the institutionalism of fishermen at the provincial and district / city levels.



**Figure 6. IFAS and EFAS quadrant**

The obtained results are in line with the improvement in the quality of human resources, which according to Robbins and Judge (2009) can be measured from the success of: 1) increasing theoretical ability is an individual's capacity to do various tasks in a job; 2) technical capability improvement is a method or system of doing work; 3) increasing conceptual ability is being able to predict everything that is related to the target to be addressed; 4) moral enhancement is able to carry out coordination, able to work together, always trying to avoid disgraceful deeds and able to initiate self-development; 5) improvement of technical skills and according to Marwansyah, (2014) the process of human resource planning begins by looking at the implications of the organization's strategic plans that are general, broad, and holistic to the needs of the workforce. While, Dessler, (2008) explained that strategic human resource management is the relationship between human resource management, strategic goals, and objectives to improve business

performance and develop an organizational culture that might foster innovation and flexibility.

## CONCLUSION AND SUGGESTIONS

The strategy of developing coastal areas and developing the fishermen human resources in Bengkulu province can be conducted through an aggressive strategy. In particular, it can be concluded as follows; Coastal area development through internal strategies, developing institutional capacity, increasing the acceleration of marine sector development, optimizing the allocation of funds, enforcing applicable laws and regulations, optimizing skilled human resources, increasing infrastructure development, and external strategies, utilizing and optimizing technology utilization, optimizing the utilization of coastal and marine resources, optimizing market opportunities. The development of fishermen human resources through the internal strategies is by optimizing the quality of fishermen's human resources, increasing fishermen's knowledge, abilities and skills, improving fishermen's institutions, and the external strategies are building infrastructure, improving fishing technology, increasing fishermen's financing and capital.

The optimal development and utilization of coastal resources by government is needed to meet the broad market share of marine and domestic fishery products, enforce existing laws and regulations, increase the level of fish consumption in the country, accelerate the development of marine and fisheries in the supply of raw materials processed products, strengthen institutions, increase the allocation of funds, increase the competitiveness of products and prices for marine fisheries products, increase skilled human resources, improve infrastructure/infrastructure development, utilize marine and fisheries technology in developing marine tourism and tourism and increase foreign and domestic investment.

The development of fisherman human resources together with the community and related stakeholders to increase the production of fishery products, improve fishermen's skills, training, institutional, knowledge/education of fishermen, and use of fishermen's business credit from the banking sector.

## REFERENCES

- Aheto, D.W., Asare, N.K., Quaynor, B., Tenkorang, E.Y., Asare, C., & Okyere, I. (2012). Profitability of small-scale fisheries in Elmina, Ghana. *Sustainability*, 4(12), 2785-2794. doi:10.3390/su4112785.
- Ali, J., & Abdullah, H. (2010). Impact of enforcement and co-management on compliance behavior of fishermen. *International Journal of Economics and Finance*, 2(4), 113-121. doi: 10.5539/ijef.v2n4p113.
- Alison, E. H., & Ellis, F. (2001) The livelihoods approach and management of small-scale fisheries. *Pergamon Marine Policy*, 25(5), 377-388. doi:10.1016/S0308-597X(01)00023-9.
- Anas, P., (2014). *Membongkar akar kemiskinan nelayan*. Jakarta: Pusat Penyuluhan Kelautan Perikanan.
- Andrew, N. L., Bene, C., Hall, S.J., Allison, E. H., & Heck, S., & Ratner, B. D. (2015). Diagnosis and management of small-scale fisheries in developing countries. *Fish and Fisheries*, 8(3), 227-240. doi: 10.1111 / j.1467-2679.2007.00252.x

- Basurto, X., Bennett, A., Weaver, A. H., Van-Dyck, S. R., & Bueno, J. S. A. (2013). Cooperative and noncooperative strategies for small-scale fisheries self-governance in the globalization era: Implications for conservation. *Ecology and Society*, 18(4), 1-19.
- Bene, C., & Friend, R. M. (2011). Poverty in small-scale fisheries: Old issue, new analysis. *Progress in Development Studies*, 11(2), 119-144.
- Bussolo, M. & Round, J. I. (2003). Poverty reduction strategies in a budget-constraint economy: the case of Ghana. *OECD Development Centre, Working Paper No. 220*, 1-46.
- Darajati, W. (2004). *Strategi pengelolaan wilayah pesisir dan lautan secara terpadu dan berkelanjutan*. Makalah Sosialisasi Nasional MFCDP, Direktur Kelautan dan Perikanan, BAPPENAS.
- David, F. R. (2013). *Strategic management concepts and cases*. England: Pearson Educated Limited.
- Dessler, G. (2008). *Human resource management* (Fourth edition). New Jersey: Prentice Hall Internasional.
- Edvardsson, I., Tingley, D., Asmundsson, J., Conides, A., Drakeford, B., & Holm, D. (2011). Fisheries management systems and risk perception amongst Fishermen in Iceland, Faroe Islands, and UK. *International Journal of Humanities and Social Science*, 1(4), 31-41.
- Hidayati, R. A., & Sholichah, M. (2011). Fishermen alleviation poverty model in the North Coastal East Java. *Jurnal Ekonomi Pembangunan*, 2(2), 147-162.
- Hoagland, P., Kite-Powel, H.L., Jin, D., Solow, A. R. (2013). Supply –side approaches to the economic valuation of coastal and marine habitat in the Red Sea. *Journal of King Saud University-Science*, 25(3), 217-278.
- Jentoft, S., Onyango, P., & Islam, M.M. (2010). Freedom and poverty in the fishery commons. *International Journal of the Commons*, 4(1), 345–366.
- Javier, G.S., (2015). Integrated coastal zone management: A public policy. The need for communication, coordination and participation. *Journal of Coastal Zone Management*, 18(4), 1-2.
- Kishor, N. R. (2014). Empowerment of fishermen through microcredit. *International Journal of Business Management and Allied Sciences (IJBMAS)*, 1(1), 11-23.
- Marwansyah (2014). *Manajemen sumber daya manusia*, (Edisi 2). Bandung: CV. Alfabeta.
- Ministry of Maritime Affairs and Fisheries. (2014). *Annual Report*. Ministry of Maritime Affairs and Fisheries Report.
- Mostafaeipour, A., Mortazavi, M., & Sadra-Abarghouei, N. (2011). Implementation of Value Engineering for strategy formulation (Case study: Fisheries sector). *Iranian Journal of Fisheries Sciences* 10 (4) 689-707
- Mondy, R. W. & Mondy, J. B. (2013). *Human resource management* (13th Edition). United Kingdom: Prentice Hall.
- Nabi, M. R., Hoque, M. A., Rahman, R. A., Mustafa, S., & Kader, M. A. (2011). Poverty profiling of the estuarine set bag net fishermen community in Bangladesh. *Research in World Economy*, 2(2), 1-19.
- Sutrisno, E. (2013). *Manajemen sumber daya manusia*. Jakarta: Kencana Prenada Media Group.
- Olomola, A. S. (1993). The traditional approach towards sustainable management of common property fishery resources in Nigeria. *MAST Journal*, 6(1/2), 92-109.

- Polite, D. (2013). Traditional fishing rights: analysis of state practice. *Australian Journal of Maritime and Ocean Affairs*, 5(3), 120-128.
- Pomeroy, R.S. (1995). Community-based and co-management institutions for sustainable coastal fisheries management in Southeast Asia. *Ocean & Coastal Management* 27(3), 143-162.
- Rivera, A., Gelcich, S., Garcia-Florez, L., Alcazar, J.L., & Acuna, J. L. (2014). Co management in Europe: Insights from the gooseneck barnacle fishery in Asturias, Spain. *Marine Policy*, 50 (December 2014), 300-308.
- Raemaekers, S. J.P.N., Foggin, T., Shipton, T.A., Daley, E. A., Busson, F., & Maasdorp, G. (2010). *Coastal Livelihoods in the Republic of South Africa*. Agulhas and Somali Current Large Marine Ecosystems (ASCLME), South Africa.
- Rangkuti, F. (2014). *Analisis SWOT: Teknik membedah kasus bisnis*. Jakarta: PT.Gramedia Pustaka.
- Robbins, S.P. & Judge, T. A. (2009). *Organization behavior* (13<sup>th</sup> Edition). London: Pearson Education.
- Schernewski, G., Schonwald, S. & Katarzyte, M. (2014). Application and evaluation of an indicator set to measure and promote sustainable development in coastal areas. *Ocean & Coastal Management*, 101(November 2014), 2–13.
- Siar, S.V. (2003). Knowledge, gender, and resources in small-scale fishing: The case of Honda Bay, Palawan, Philippines. *Environmental Management*, 31(5), 569-580.
- Sobo, F., Masekese, I. A., Shipton, T. A., Daley, E. A., Busson, F., & Maasdorp, G. (2010). *Costal Livelihood in the United Republic of Tanzania*. Agulhas and Somali Current Large Marine Ecosystem (ASCLME) project: Tanzania. Retrieved from: <https://www.nairobiconvention.org/clearinghouse/node/481>.
- Sumarsono, S.(2006). *Ekonomi manajemen sumber daya manusia dan ketenagakerjaan*. Yogyakarta: Graha Ilmu.
- Supriharyono, (2007). *Pelestarian dan pengelolaan sumber daya slam di wilayah pesisir Tropis*. Jakarta: PT. Gramedia.
- Sundah, D.I.E, Sumarno, Suman, A. & Kindangen, P. (2014). Hierachy of management strategies in improving traditional fishers's welfare at coastal area of Manado Bay, North Sulawesi Indonesia. *IOSR Journal of Business and Management* (IOSR-JBM), 16(5), 90-103.