

Development Factors of Maumere Urban Coastal Area as Minapolitan Area of Sikka Regency

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Abstract—Sikka Regency Coastal Area has high marine and fishery potential and has been chosen as minapolitan area in Maumere urban coastal area, exactly in West Alok Sub district, however there is still no means of development. It is noted that factors affecting the development of West Alok Sub district coastal area as minapolitan area should be used as basis in minapolitan area development in Sikka Regency. This study used descriptive analysis method to identify area characteristics and Delphi technique analysis to determine the development factors. The result of this study is that there are twelve factors affecting the development of maumere urban coastal area as minapolitan area categorized in three zones, namely main zone related to production activity, supporting zone related to fish processing activity and related zone dealing with production marketing.

Keywords- Fishery and Marine; Minapolitan area; Regional Development,

I. INTRODUCTION

Indonesia has excessive natural resource and also known as archipelago country with 17,508 islands with coastline of 81,000 km and width of marine around 3.1 million km² or 62% of the outside territorial [1]. Rich coastal and marine area having natural resource is very big potential to use, considering that the depletion of natural resources on land due to the increasing of construction activity and land use. Therefore, coastal area is the area prioritized to develop.

Government has sought to develop coastal potential especially on marine and fishery resources through various policies, such as the enactment of Minapolitan Conception. The conception is decanted in Regulation of Minister of Marine and Fishery of the Republic of Indonesia Number Per.12/Min/2010 on Minapolitan. Minapolitan is defined as a regional-base marine and fishery economic development conception based on integrated, efficiency, qualified and acceleration principles [2].

Sikka regency is one of Regencies which has been determined as minapolitan area, exactly in Maumere urban coastal, West Alok Sub district. The potential for sustainable of Sikka Regency waters reach 21,175 tons/year, but it has not been used well. Annual fishery production is fairly high and experiences an increase from year of 2000 by 7,322.6

tons (34.58%) and continues to increase up to 2008 by 10,951 tons (51.70%) [3]. This means only 51.70% of potential for sustainable used and there are still more potential for development.

By the enactment as one of minapolitan areas in East Nusa Tenggara Province, it is expected that Sikka Regency can increase the productivity, especially in the Sub district which has been determined. However, there is still another problem which is the lack of adequate supporting infrastructure as the form of efficiency principle on minapolitan concept up to now. In addition, there is still no special policy on minapolitan area development from Regional Government of Sikka Regency, so there is still no development strategy which is attempted to manage and optimize the activity in fishery sub-sector.

In the event of developing and optimizing the use of marine and fishery resources in Sikka Regency, it is needed to find what factors affecting the means of developing Maumere urban coastal area, especially in West Alok Sub district as integrated Minapolitan Area, so it can increase coastal community resources. Therefore, the purpose of this study is determining factors affecting the development of Maumere urban coastal area as minapolitan area of Sikka Regency.

II. RESEARCH METHOD

A. Data Collection Method

In data collection, primary and secondary surveys were conducted. Primary survey consisted of observation and interview while secondary survey was conducted through related institution survey to obtain data and information. For interview, sample determination used purposive sampling method which was sampling technique used to select subjects not in the basis of strata, random, or regional, but in the basis of certain purpose. In determining respondents, interested and expert parties were selected. The emphasis of this purposive sampling was on samples' characters with comprehensive judgments considered by the researchers to represent population' character [4].

The determination of respondents adapts 5 criteria as follows [5]:

1. Subjects have been long and intensive blended with activity related to minapolitan/ coastal area/ fishery and marine so it can provide information excellently and precisely.
2. Subjects are still actively involved in utilization or development activities of minapolitan area.
3. Subjects have many opportunities to be interviewed.
4. Subjects provide information as it is as to be more factual in information collection.
5. Subjects whose expertise or knowledge relates to the issue or problem rose.

The respondents were selected based on criteria mentioned above. The selected respondents could be seen in the following table:

TABLE I. RESEARCH RESPONDENTS

Components	Institution/Respondents	Expertise
Government	Bappeda (Regional Planning Agency) of Sikka Regency	Formulating general policy of regional planning and development.
	Department of Fishery and Marine of Sikka Regency	Understanding fishery and marine area characteristics in Sikka Regency.
Academicians	Expert in the field of regional development of Sikka Regency	Understanding theoretically the variables affecting regional development
	Expert in the field of fishery and marine of Sikka Regency	Understanding theoretically the variables related to fishery and marine
Community	Community in coastal area of West Alok Sub district	Understanding characteristic of local coastal area well
Privates	Entrepreneurs in the field of fishery and marine in Sikka Regency	Understanding economical and management situation of fishery enterprises.

Source: Result of Identification, 2016

B. Analysis Method

This study had two targets which were identifying characteristic of coastal area in West Alok Sub district and analyzing factors affecting minapolitan area development in West Alok Sub district. To achieve the target, analysis steps performed were:

- 1) Analysis in Identifying Characteristics of Coastal Area in West Alok Sub district.

In identifying the characteristics of coastal area in West Alok Sub district, descriptive method in which variables obtained from literature review were correlated to available theory and existing condition was used.

- 2) Analysis of Factors Determination Affecting Minapolitan Area Development in West Alok Sub district

Analysis of factors affecting minapolitan area development was conducted by using descriptive qualitative method, in which variables obtained from literature review would be adjusted to existing condition of study area as well as literature review. In addition, variables with similarities then would be categorized and would form factors affecting the development of minapolitan area in West Alok Sub district.

The next step, Delphi analysis was conducted in which this method was used because perception, assumption, evaluation, or presumption toward parties

having relation and interests was required. Delphi technique was iterative process designed to achieve consensus among groups of expert to obtain group consensus which was conducted continually so opinion convergence was obtained [6]. Data required in this Delphi analysis were factors affecting the development of minapolitan area in which previously they had been obtained through descriptive analysis which were then processed through exploration and descriptive variable of the study through study literature. The following were Delphi technique steps:

- a) Problems' Specifications
Determining problems issue that would be raised and commented by experts.
- b) Determining Key Stakeholders
Determining who became experts who had role or contribution clearance in the field required in this study.
- c) Formulating Criteria of Respondents
Finding respondents required using criteria.
- d) Formulating Questioner
Determining questions list to be used on the first cycle and the followings.
- e) Delphi Interview (Exploration)
Respondents of this Delphi interview involved stakeholders obtained from purposive sampling technique. Variables used as questions were the result of literature review synthesize obtained from some literatures.
- f) Analysis of Cycle I Result of Delphi (Iteration)
The steps performed in this step were collecting and verifying the result of expertise opinion, interpreting expertise opinion tendency, elimination unrequired questions for the next cycle and the last was constructing questions for the next questioner and communicating the analysis result of cycle I to the experts.
- g) The Development of the Following Questioner (II, III, and so on)
Delphi analysis technique would work more than 1 cycle. As the continuance of cycle 1, then construction of questions in questioner was performed for the following cycles (II, III, and so on) with the notes that the result of previous cycle was used as basis of the following cycles. Iteration was terminated when consensus had occurred.

III. RESULTS AND DISCUSSION

A. The Analysis of Characteristics of Coastal Area in West Alok Sub district

Variables used in this identification step are educational level of coastal community, the availability of workforce of fishery and marine sector, the level of income and earnings, contribution of fishery sector toward Gross Regional Domestic Product (GRDP), the availability of business area (cultivation and fishing), and the availability of industrial land (processing). Based on descriptive analysis result performed, the characteristics of coastal area in West Alok Sub district are as follows:

✓ *The characteristic of the educational level of coastal community of West Alok Sub district*

The level of community education in West Alok Sub district is Senior High School graduates by 10,168 people (47%) and Diploma/Undergraduate graduates (32%). Meanwhile, the rest still has low educational levels which are Elementary School, Junior High School graduates and no education. For the graduates of the group that has low educational level, they generally have occupation as fishermen. So it can be noted that the characteristics of coastal community, especially those who have occupation as fishermen still have low educational level.

✓ *Characteristic of the availability of workforce of fishery and marine sectors of West Alok Sub district*

The availability of workforce in West Alok Sub district is seen based on the number of fishery households both fishermen and workforce/labor in the sector of processing which is available in every cluster of Urban Village area. The total number of the available household is 1,055 rtp, mostly coming from Wolomarang Urban village with the number of production household by 733 rtp (70%).

✓ *Characteristic of income level of fishery and marine sector of West Alok Sub district*

Income level of fishery sector workforces is uncertain every month, it depends on fishing/production result and still categorized as small. The average income of fisherman is Rp4,000,000/month; the labor has average income of Rp1,500,000/month. For the processing industrial employees, the average of income level is Rp3,000,000/ month, while industrial labor is Rp1,800,000/month.

✓ *Characteristic of contribution of fishery and marine sector of West Alok Sub district toward PDRB*

The contribution of fishery sector toward PDRB of Sikka Regency is about 8% of which 20% comes from West Alok Sub district. This contribution is categorized as low because the value obtained is only from raw fish and semi-processed products selling.

✓ *Characteristic of the availability of fishery production business land of West Alok Sub district*

The area of fishery production land in West Alok Sub district is 7084.52 Ha, in which Hewuli Urban Village has production land width of 2347.37 Ha (33%). The available fishery stock in the Sub district not only comes from West Alok but also from other fishery production centers in Sikka Regency.

✓ *Characteristic of the availability of fishery industrial land in West Alok Sub district*

In West Alok Sub district, there are four industry centers of fish processing with the total width of industrial land of 8.90 Ha and the ability to absorb workforces by 20-55 people. The available industries involve industry works in the field of fish packaging, smoking, drying, marinating, and caramelizing. The industrial result is sold to Java area and also exported to Japan and Korea.

B. The Analysis of Factor Determination Affecting the Development of Minapolitan Area in West Alok Sub district

In the analysis of factors determination affecting the development of minapolitan area in West Alok Sub district uses descriptive analysis then the result of descriptive analysis is strengthened with Delphi Analysis.

Descriptive Analysis

Descriptive analysis conducted is in the form of theoretical descriptive, which is variable obtained from literature review will be adjusted to existing condition of study area as well as available literature studies. From the analysis process, factors of development of West Alok Sub district as minapolitan area results in:

1. The improvement of primary local road and environmental road condition in the coastal area of West Alok Sub district
2. The improvement of transportation facilities for fishery transportation
3. The improvement of the availability of fishery sector workforce
4. The improvement of workforce Human Resource quality of fishery sector
5. The improvement of community participation through the formation of fishermen group
6. The formation of special capital institution for fishery sector business
7. The improvement of government and academician participation in the field of fishery
8. The formation of management body of minapolitan area
9. The formation of fishery production quality
10. The improvement of the availability of fish processing industry
11. The improvement of the availability of public service related to fishery sector
12. The quality improvement of fishery production marketing system
13. The improvement of basic infrastructure service supporting the development minapolitan area
14. The utilization of technology in fishery activities

After obtaining the above factor, the factors will be questioned to the stakeholders (respondents) who have been determined previously.

Exploration Interview of Delphi Analysis

In this step, interview is performed to six stakeholders who have been determined previously on what factors affecting the development of West Alok Sub district as Minapolitan Area. In exploring respondents' opinion, the researchers use interview questioner and discussion guides to assist the researching in interview process. The exploration results of respondents' opinions in determining factors affecting the development of minapolitan area in West Alok Sub districts are as follows:

TABLE II. THE RESULT OF DELPHI EXPLORATION

No	FACTORS	1	2	3	4	5	6
1	The improvement of primary local road and environmental road condition in the coastal area of West Alok Sub district	V	X	X	V	V	V
2	The improvement of transportation facilities for fishery transportation	X	X	X	X	X	X
3	The improvement of the availability of fishery sector workforce	X	V	X	V	X	X
4	The improvement of workforce Human Resource quality of fishery sector	V	X	X	X	V	V
5	The improvement of community participation through the formation of fisherman group	V	V	V	V	V	V
6	The formation of special capital institution for fishery sector business	X	X	X	V	V	V
7	The improvement of government and academicians participation in the field of fishery	V	V	V	V	V	V
8	The formation of management body of minapolitan area	X	X	X	X	X	X
9	The formation of fishery production quality	V	V	V	V	V	V
10	The improvement of the availability of fish processing industry	V	V	V	V	V	V
11	The improvement of the availability of public service related to fishery sector	V	V	V	V	V	V
12	The quality improvement of fishery production marketing system	V	V	V	V	V	V
13	The improvement of basic infrastructure service supporting the development minapolitan area	V	V	V	V	V	V
14	The utilization of technology in fishery activities	V	V	V	V	V	V

Source: The result of Delphi Interview, 2016

Explanation:

V : Agree

X : Disagree

: No consensus

Based on the result of Delphi exploration conducted above, there are 8 factors that affect, 2 factors which do not affect and 4 factors which have not been agreed as the factors of development of West Alok Sub district as Minapolitan Area. Based on the result of interview exploration, respondents state another factor that is zone division of spatial utilization for minapolitan area needs to be made. The result of Delphi exploration in this step is used as the basis for the next cycle (iteration) until it reaches consensus related to factors affecting the development of West Alok Sub district as minapolitan area. Factors which previously have not been agreed and other factors are added by respondents, it will be factors that will be asked to respondents in iteration step. To be clearer, it can be seen in the table below.

TABLE III. FACTORS BASIS FOR ITERATION STEP

No	Factors	Notes
1.	The improvement of primary local road and environmental road condition in the coastal area of West Alok Sub district	Non consensus
2.	The improvement of the availability of fishery sector workforce	Non consensus
3.	The improvement of workforce Human Resource quality of fishery sector	Non consensus
4.	The formation of special capital institution for fishery sector business	Non consensus
5.	Zone division of spatial utilization of minapolitan area	New factor

Source: Analysis result, 2016

Iteration I Interview of Delphi Analysis

After the result of Delphi analysis exploration is obtained, then questioner development is performed on the next step. Delphi interview questioner in this iteration step is basically similar to cycle 1 questioner, but the factors questioned are factors that have not reached consensus and new factors obtained from the opinion of respondents. Respondents in this step are the same with the respondents in the previous step. The result of iteration of overall respondents' opinion can be seen in the following table.

TABLE IV. ITERATION RESULT OF DELPHI ANALYSIS

No	FACTORS	1	2	3	4	5	6
1.	The improvement of primary local road and environmental road condition in the coastal area of West Alok Sub district	V	V	V	V	V	V
2.	The improvement of the availability of fishery sector workforce	V	V	V	V	V	V
3.	The improvement of workforce Human Resource quality of fishery sector	V	V	V	V	V	V
4.	The formation of special capital institution for fishery sector business	X	X	X	X	X	X
5.	Zone division of spatial utilization of minapolitan area	V	V	V	V	V	V

Source: The result of Delphi Interview, 2016

Explanation:

V : Agree

X : Disagree

Based on the result of Delphi interview, Iteration I has reached consensus in which opinion of respondents that there are 3 factors that affect and 2 factors which are not considered to not affecting the development of West Alok Sub district as minapolitan area. Overall, consensus resulted from this Delphi analysis is 12 factors affecting the development of minapolitan area in West Alok Sub district are as follows:

1. The improvement of community participation through the formation of fisherman group
2. The improvement of government and academicians participation in the field of fishery
3. The improvement of fishery production quality
4. The improvement of the availability of fish processing industry
5. The improvement of the availability of public service related to fishery sector
6. The quality improvement of fishery production marketing system
7. The improvement of basic infrastructure service supporting the development of minapolitan area
8. The utilization of technology in fishery activities
9. The improvement of primary and environmental local road condition in the coastal area of West Alok Sub district
10. The improvement of the availability of fishery sector workforce
11. The quality improvement of workforce human resources of fishery sector
12. Zone division of spatial utilization of minapolitan area

Minapolitan is an area-base marine and fishery development concept with areal system and management approach, therefore this development factors will be

categorized based on spatial utilization zone in minapolitan area from the comparison result between policy of master plan arrangement guides for minapolitan area development and the available regional characteristic condition. Spatial utilization zone in minapolitan area are as follows:

- a) Main zone (Production Center) is minapolitan activities center which are production activity center, service activity center and service in the form of fishery harbor, fishermen residential center as well as other main activities.
- b) Supporting zone (Processing Center) is an area outside the main zone earmarked for fish-base business development (processing) and integrate with fishing business.
- c) Related zone (Marketing Center) is an area outside the main and supporting zones that has strong and direct relation in fishery business smoothness which is market that is customers of fishery products produced and producers that produces the fishery products.

TABLE V. THE RESULT OF THE DEVELOPMENT OF MINAPOLITAN AREA IN WEST ALOK SUB DISCTRICT BASED ON SPATIAL UTILIZATION ZONE

Zone/Area	Factors that Affect
Main Zone	The increase of fishery production quality
	The increase of community participation through the formation of fishermen group
	The increase of workforce human resources quality in the sector of fishery
	The increase of government and academicians participation in the field of fishery
	The increase of the availability of public service related to fishery sector
	The increase of basic infrastructure service supporting minapolitan area development
	The increase of primary and environmental local roads in coastal area of West Alok Sub district.
	Zone division of spatial utilization of minapolitan area
Supporting Zone	The increase of the availability of fish processing industry
	Technology utilization in fishery activities
	The increase of the availability of workforce in the sector of fishery
Related Zone	The quality increase of marketing system of fishery production

Source: Analysis result, 2016

IV. CONCLUSION

Based on the result of analysis and discussion which have been conducted in this study, it can be concluded that the development of coastal area of Maumere urban as minapolitan area in Sikka Regency is affected by twelve factors which are categorized into three zones of spatial utilization of minapolitan area, they are main zone which is the minapolitan

activity center related to production process, supporting zone which is an area outside the main zone for fish processing business and related zone that is marketing area.

In the main zone, factors affecting minapolitan area development is the increase of fishery production quality, the increase of community participation through the formation of fishermen group, the increase of workforce human resources quality in the sector of fishery, the increase of government and academicians participation in the field of fishery, the increase of the availability of public service related to fishery sector, the increase of basic infrastructure service supporting the development of minapolitan area, the improvement of primary and environmental local roads condition in coastal area of West Alok Sub district, as well as zone division of spatial utilization of minapolitan area.

The development factors in supporting zone are the increase of the availability of fish processing industry, the utilization of technology in fishery activity, and the increase of the availability of workforce in fishery sector. The last is the development factor in related factor which is the quality increase in fishery production marketing system.

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REFERENCES

- [1] Dahuri, R., J, Rais, S.P. Ginting dan M.J. Sitepu, 2001. *Pengelolaan Sumberdaya Wilayah Pesisir dan Lautan Secara Terpadu*. Cetakan kedua. Pradya Paramitha. Jakarta.
- [2] Peraturan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor Per 12/Men/2010 Tentang Minapolitan. Jakarta, Menteri Kelautan dan Perikanan Republik Indonesia.
- [3] Sudianto, Arief dkk. 2010. *Profil Wilayah Pesisir dan Pulau-pulau Kecil Kabupaten Sikka Provinsi Nusa Tenggara Timur*. Balai Pengelolaan Sumberdaya Pesisir dan Laut Bali.
- [4] Yunus, Hadi. 2010. *Metodologi Penelitian Wilayah Kontemporer*. Yogyakarta: Pustaka Pelajar
- [5] Bungin, Burhan, HM. 2010. *Penelitian Kualitatif*. Jakarta : Kencana Prenada Media Grup.
- [6] Rianse, Usman. 2008. *Metodologi Penelitian Sosial dan Ekonomi*. Bandung: Penerbit Alfabeta.