

Community Empowerment Policy Toward Graha Mina Tourism Model in Natural Resource Management at Kepulauan Seribu

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Abstract

This study aims to analyze community empowerment policy through Graha Mina tourism in natural resource management at the Kepulauan Seribu group. This study was conducted at Pulau Kelapa and Pulau Harapan, Kepulauan Seribu, by using a study case method with a qualitative approach. The result shows : (1). The policy of community empowerment has been conducted as follows: Intensification program of fish breeding, community empowerment with captured fishery based, seaweed farming fishery based, cage cultivation fisheries based, tourism and protection based, counseling and training based, and strengthening community institution based; (2) fisheries based of cage cultivation become a priority program that need to be applied at Pulau Kelapa and Pulau Harapan. Based on the finding, it was concluded that the community's understanding of natural resource management in the island cluster is still low. Besides, the model and construction of Graha Mina marine tourism is a novelty in this research.

Key words: *Policy, Graha Mina Tourism Empowerment Model, Management, Natural Resource*

Introduction

Kepulauan Seribu consists of a group of small islands and has highly productive natural resources and biodiversities, such as mangrove, coral reefs, seaweed, and other creatures. The most productive utilization of kepulauan Seribu areas is fishery capture and cultivation, along with tourism¹. Mainland natural resource is limited, on the contrary, coastal and ocean natural resource, and environmental services are highly potential². The human resources of kepulauan Seribu are generally as fishermen, and as seaweed farmers, fish farmers, merchants, and civil servants. Poverty, low education and knowledge and lack of information as a result of isolation of small Islands are characteristic of small island communities³.

The results of development have not been enjoyed by people living in remote island areas. The community was laid as a development object and not as the subject of development⁴. Thus, it takes high attention and desire to advance the condition of coastal community as a maintainer of small islands resources in order to

take place sustainably or in other words it is necessary to increase community participation. Community participation is a dual interactive communication between the government and society (Li & Liu, 2019)⁵. Additionally, active community participation is an important process to increase long-term sustainable tourism heritage (Zhao, Hu, Liang, & Qian, 2019)⁶.

Community participation is more focused on how the quality of the resources owned. Human resource plays an essential role in organizational change. Specifically, human resources can conduct specific practices in commitment development for a change (Baran et al., 2018)⁷. Society in Kepulauan Seribu generally works as fishers, and some of them work as seaweed cultivators, grouper cultivators, merchants, and civil servants. Several problems that occurred in the island groups are coral reef damaged, water pollution, mangrove logging, fish bombing, and people who live in the area are littering and voiding directly to the sea. All those problems need to be solved by involving society in the processes and practices⁸. Community need to have

abilities and creativities to manage natural resources becoming a potential for coastal economy⁹.

Community empowerment policy concept is required as the direction of empowerment program objectives so that people do not throw garbage and bridge to the sea so that the water condition is not polluted because of household waste. Because if the sea is polluted then many dead fish that result in society will become increasingly poor. Thus it takes some related policies¹⁰.

State of the art in this research is that there is a graha mina model tourism that manages natural resources so that the coastal economy can improve through tourism and fish cage cultivation. The use of Graha Mina Wisata Bahari is the structure of the building does not make the fish easily attacked, not easy to stress and the water quality can be stable, have a good water exchange (current), not easily polluted from the fuel of the passing vessel. Graha mina model is the researcher's finding as well as a novelty in this study. This study aims to analyze community empowerment policy through Graha Mina tourism in natural resource management at the Kepulauan Seribu group⁶.

Literature Review

Natural Resource Management

Natural resource management is a model created by participation that involved stakeholders so that the activities are considered as the participative model (Bonté et al., 2019)¹¹. Natural resource management in community-based is a governance mechanism that directly involves the societies to have control toward the use of natural resources (Addison et al., 2019)¹².

Other than that, sustainable governance mechanisms about natural resource soil, water, and ecosystem need to be conducted for life sustainability and a climate change adaptation (Getnet, Pfeifer, & MacAlister, 2014)¹³. Also, economic development is hugely dependent on natural resources, and the increase in demand creates permanent pressure on the primary resources (Bonnin, Azzaro-Pantel, & Domenech, 2019)¹⁴.

Community Empowerment

Empowerment can be interpreted as that building

individual strength and competence, natural presentation structure, and practice behavior for social policy and social change (Bonté et al., 2019)¹⁵. Community empowerment is a social action which promote communities' participation and organization to the societies' (Ni, Xiao, Liu, & Wang, 2019)⁹. Community participation is an active role and societies involvement in a process of decision making, also the ability of the society to implement those decision (Shafique & Warren, 2018)¹³.

From those several concepts of community involvement, there is a crucial fundamental concept, namely community independence, which focuses on the ability to conduct and to make decisions in many aspects based on ownership of local resources (Santosa, 2017). Additionally, referring to the process that allows society to increase control over their lives, it needs to be collective efforts and integrations from various groups and social institutions in order to increase their income (Iffah et al., 2018)⁷.

Method

This study addressed the case study method with a qualitative approach. The case study method is used to gather accurate information to answer the research problems, namely condition, and potential natural resources and human, especially the level of participation in the preservation of the natural resources and factors that influenced natural resources condition in a group of islands, in this case the Kepulauan Seribu (Pulau Kelapa and Pulau Harapan). The primary data sources (key informant) in this study were the society, oceanology, Bapedal, Bakosurtanal, Inkopal of Ministry of maritime and fisheries, and the local governments of the Island groups. From the sources of the information was conducted several data collection methods such as interviews, documentation, and observation, to get as much information about empowerment community policy and empowerment programs.

Result and Discussions

A. Community Empowerment Policy in the Utilization and Management of Coastal Natural Resources for Sustainability.

Several community empowerment policies which are implemented in Pulau Kelapa and Pulau Harapan

include:

1. Intensification program of fish breeding

Intensification program of fish breeding (INBUDKAN) is a one of the aquaculture development programs, focusing on the movement of various parties to develop a fish cultivation business, which is carried out on the basis of cooperation between members of the fish farmers group (Poktakan) as program participants in the area, which implements recommended technology to improve the quality of production and productivity of fish cultivators in an efficient and sustainable manner. Business patterns consist of: (a) the company pattern guidance, (b) the development service unit (UPP), and (c) the private pattern. Determination of business and coaching patterns in the framework of program implementation is done by taking into account (a) the level of business development, (b) the existence of private companies, (c) the availability of service facilities in the area concerned.

2. Capture Fisheries Based Community Empowerment

For the capture fisheries - based community empowerment in Pulau Kelapa and Pulau Harapan which has fisheries and marine resources are low with the level of utilization experienced *overfishing*, empowerment program focused on: (a) increasing quality result and utilizing cool box; (b) adding value through processing fishery products; (c) improving supervision of marine and fisheries resources through the society; (d) increasing understanding of the natural resource marketing network through restocking.

3. Community Empowerment of Seaweed Farming Fishery Based.

For the cultivation-based community empowerment, the empowerment program used for seaweed cultivation as follows: (a) attempt to the increasing of seaweed quality result, such as increasing the quality of drying seaweed, and seaweed processing; (b) training program; (c) increasing the quality and handling production facilities along with marketing networks; (d) natural resource development and enrichment program through restocking.

4. Community Empowerment Cage Aquaculture Based.

For the community empowerment of aquaculture cultivation based, the programs were conducted as follows: (a) prioritizing quality of fishery products; (b) adding cultivations facilities; (c) training programs; (d) increasing the quality and handling the quality of marine products; (e) Improving marine cultivations; (f) improving and handling the quality of production facilities; (g) natural resource development and enrichment programs.

5. Tourism and Protection Empowerment.

Community empowerment in the islands, which are converted dan tourism areas, aims to give important additional knowledge of the environment around the group of islands. Therefore, societies do not break biodiversity but protect the conservations and tourism areas. The empowerment is conducted by looking for alternative jobs through empowering the national economy. For instance, by preparing tourist accommodation, becoming souvenir handmade, selling souvenirs, renting snorkeling tools, or renting fishing tools. Also, increasing human resources such as conducting training for tourist guides, sellers and handcrafter, and marine sports.

6. Community Empowerment in The Field of Counseling and Trainings.

For the community empowerment on understanding the importance of the environmental value of natural resources and environmental pollution, several programs were conducted as follows: (a) training of coastal communities through a clean sea program; (b) environmental protection programs and natural resources on mangroves, coral reefs, and degraded pastures; (c) pollution control programs; (d) maritime and fisheries resources supervision and control training program through monitoring, controlling and surveillance systems.

7. Strengthening Community Institution.

Strengthening Community Institution is (a) institutional and organizational performance programs and (b) fisherman's joint program.

The programs of policies explained above are having strengths and opportunities in the implementations. The explanations can be seen as follows:

Tabel 1. Empowerment programs opportunities and challenges

Strengths	Weaknesses
<ul style="list-style-type: none"> a. Natural resource of ocean (cultivations and aquaculture) considered moderate in terms of quality. b. Motivation and working culture of fishermen are high. c. Local wisdom needs to be increased to support cultivation. 	<ul style="list-style-type: none"> a. The numbers of poor fishermen are extremely high. b. Low quality of human resources around coastal areas. c. Cultivation facilities are limited. d. Lacking capital of fishery business. e. Institution capacities are low. f. Lack of technology to handle the quality of fish. g. Lack of government attentions. h. Lack of information regarding fish market. i. The area of the sea in Kepulauan Seribu is too large so that, it is hard for a protection.
Opportunities	Threats
<ul style="list-style-type: none"> a. Higly demand of fishery product both domestics and foreigns. b. Higly opportunities for community empowerment funding. c. Marine tourisms are highly in demand. 	<ul style="list-style-type: none"> a. Pressure of traditional monetary institutions. b. High exploration of fish and destruction of coral reefs. c. Domestic household waste pollution d. Population density and growth rate e. Small collective awareness of the importance of the environment.

The impact of community empowerment policy can look like the increase of community participation in preserving nature, the mangrove forests, the people do not dispose of household waste to the sea, not the bridge to the sea, the community understands the various potential natural resources that should be maintained and developed.

For all these reasons that the researchers chose to conduct research in the area of cluster islands. Some studies related to the research conducted as research conducted by Santosa which states that of the many communities the concept of community empowerment, there is one key concept that is fundamental and important that their independence in the community focused on the ability to perform and make decisions in the interests based on ownership of local resources(Santosa, 2017). Likewise, the results of research conducted by Erum and Hussain which says that the natural resources leads to economic growth in local communities (Erum & Hussain, 2019).

B. Fishing Community Empowerment Program Priorities in Accordance with Potential Natural and Human Resources.

1. Program priorities

In the implementation of empowerment programs, cage cultivation based, and the second priority is the development of marine tourism and implementation. Both programs can work together and benefit each other through the graha mina marine tourism model, which is a combination of floating net cage fish culture with marine tourism. Above the fish cage in the phase of grouper or white snapper growth is built houses where the tourist can enjoy the sea panorama while fishing and having a big meal. The management is fully controlled by the society who live around the coastal under supervising by facilitators. In order to achieve the goals of the program, institutional strengthening is needed in the community.

Tabel 2. Community Empowerment Program

No	Community Empowerment Programs	Weight	Priorities
1	Strengthening the institution in order to increase community economic status and natural resources preservation.	0,0042	3
2	Capture fisheries empowerment based	0,0033	5
3	Empowerment on cage cultivation based	0,0044	1
4	Seaweed empowerment based	0,0041	4
5	Empowerment of tourism around the conservation	0,0043	2
6	Counseling and training in the field of environmental sanitation	0,0031	6

Based on the priorities table 2, it can be concluded that Empowerment on cage cultivation based becomes a main priority that need to be implemented in Pulau Kelapa and Pulau Harapan.

Based on table 2, the priorities of the community empowerment program can be explained that empowerment on cage cultivation based weights 0.0044 so as a top priority, empowerment of tourism around the conservation with a weight of 0.0043 so that the second priority, strengthening the institution in order to increase community economic status and natural resources preservation with a weight of 0.0042 so that the third priority, seaweed empowerment based with a 0.0041 weight, capture Fisheries empowerment based at a weight of 0.0033 so it becomes the fifth priority, and counseling and training in the field of environmental sanitation 0.0031 become the sixth priority.

2. Model and Construction of Graha Mina Tourism.

Floating net cage will be suggested in the empowerment policy program in Pulau Harapan dan Pulau Kelapa with 3m x 3m x 3m size. At the Graha Mina marine tourism area, the number of cages that can be used is 12 with 154m. The floating net cage is connected to the housing adjusted the size of the cage with 6m x 6m large.

Floating net cage should be placed at the quite water location (protected from direct waves or between islands) with adequate water flow. The depth of the water when it is tide minimum five meters (ideally 15-30 meters) and having water exchange (flow) well, no stirring of the water, and a flow speed of at least 0.1 meters. Besides, site selection should be avoided from ship traffic, so that fish in the cage is not stressed, and water quality is not directly contaminated with fuel from passing ships. The depth factor influences the type of cage depth above 10 meters should use the floating type, while less than 10 meters use a stake. Using types of building materials are recommended lightweight building types that fit cage construction.

The impact of Graha Mina Wisata Bahari can look like the condition and potential of increased natural resources, natural resources in the form of coral reefs, for the better, the increase in the society *Perekonomiam*, the quality condition of the sea water is always awake, sea water is not polluted, income from the cultivating grouper fish, seaweed is increasing. Based on the results of the above research supported by the results of research conducted by Dalu, and Shackleton that there is a fairly basic understanding of the contribution of natural resources to the resilience of poor urban communities living in coastal settlements implicates the economic level of the surrounding community (Dalu & Shackleton, 2018).

Based on the results of the study of Lessmann, and Steinkraus explained that natural resources are a blessing to the region, but the natural resources will be catastrophic if not keep it well(Lessmann & Steinkraus, 2019). So also according to Zalle (2018) that natural resources can lead to a good increase in economic performance, as well as vice versa can be a disaster for an area(Zallé, 2018).

Conclusion

Based on the all explanation above, it can be concluded that that various community empowerment policies have been carried out such as Intensification program of fish breeding (INBUDKAN), capture fisheries community empowerment-based, seaweed farming community empowerment-based, community empowerment on cage aquaculture based, tourism community empowerment and protection based, community empowerment in the field of counseling and training based, and community empowerment on community institutional strengthening based. Furthermore, cage-based empowerment is a priority program that needs to be implemented at Pulau Kelapa and Pulau Harapan. Finally, the model and construction of the marine tourism mina graha is a novelty in this study.

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