

The Role Of Community In The Maintenance And Preservation Of Coral Reefs In Ujung Genteng, Sukabumi

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Abstract

Coral reefs have an important role in the economic aspects of coastal communities in the Ujung Genteng, Sukabumi which depends on shallow waters. Increased human activity around the coast has an impact on coral reef ecosystems which are easily fragile by natural and non-natural factors. To prevent damage of coral reefs that have an impact on people's livelihoods, the community has carried out conservation efforts by involving various parties in Ujung Genteng. This study examines the role of the community in the maintenance and preservation of coral reefs. This study uses a qualitative design with a case study approach. Based on the research results, it is found that the community has a role in the preservation and maintenance of the marine environment, especially the coral reef ecosystem, in collaboration with related agencies and CSR and involving the local community directly as well. Community involvement in the process of maintaining and preserving coral reefs is also intended to increase the welfare of local communities that work as fishermen.

I. INTRODUCTION

Indonesia as an archipelagic country has extraordinary marine natural resources, one of which is the coral reef ecosystem that stretches from Sabang to Merauke. The coral reefs had reached 2.5 million hectares in Indonesia (LIPI, 2018).

Coral reef ecosystems are vulnerable to change but have many functions. Ecologically, coral reefs are a habitat for much marine life which are a source of biodiversity and protect the coast from abrasion. Socio-economically, coral reefs are a place to find fish for fishermen, a place to visit for tourists, and a place where various important compounds are produced for medicinal supplements.

The corals are animals or living things that have stinging cells. The number of corals in Indonesia is 83 genera with a total species of 569, about 76% of the genera and 69% of the world's coral species. Of the total 1067 sites, there were 386 sites (36.18%) in the bad condition category, 366 sites (34.3%) in the moderate condition category, 245 sites (22.96%) in the good condition category, and 70 sites (6.56%) in very good condition category (LIPI, 2018).

Threats to the coral reef ecosystem come from natural and human factors. Threats from natural factors include physical, chemical, and biological factors. It is physically cause by, among others, storms such as typhoons, earthquakes and El Nino. Chemicals such as pesticides, detergents, fertilizers, oils, and heavy metals. Damage due to biological factors is the presence of coral polyp predators such as millipedes and coral reef-eating fish. Human-induced threats are the use of non-environmentally friendly fishing gear such as bombs and cyanide, coal mining, industrial or household waste, or waste as consequence of water tourism activities that do not apply ecotourism.

Ujung Genteng Beach is a tourism destination located in Ujung Genteng Village, Ciracap District, Sukabumi Regency, West of Java Province. The beaches are clean and unspoiled, there are several interesting locations to visit. First, to the east from the end of the tile, there is a fish auction location, which is quite busy in the morning

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between 5-9 am. Various types of fresh fish that are caught by fishermen are traded at a lower price than the market price.

Second is Pangumbahan, a tourist attraction that is unique in this region. Based on observations, seeing turtles laying eggs on the shore at night is a rare event for some people and not all beach attractions have it. Based on the interviews, the turtles that lay eggs in this area are a type of green turtle which is an animal that lives in seawater. Green turtles can grow to reach more than 1 meter in length, more than 200 kg in weight, and live for more than 100 years. The number of eggs released from a green turtle can reach 200 eggs. Towards sunset on Saturday, we can also see the release of hatchlings from captivity. Not all turtle hatchlings that released into the open seas will live, due to various things, one of which preyed upon by predators.

The people in Ujung Genteng depend on the sea for their livelihoods, most of them are fishermen. The community also has side jobs as Nira tappers, tour guides, and motorcycle taxis. Nira tapping is tapping the stems that are the forerunners of coconuts to extract the water, will be made into brown sugar and distilled into a drink. The community voluntarily forms a lifeguard community and SAR team to maintain the safety of tourists when traveling on the beach.

The community's concern for conserving coral reefs departs from their need to continue to preserve life in the sea so that their source of livelihood always preserved. Damage to coral reefs is very difficult to overcome if there is no intervention from humans, which will cause a decrease in productivity and marine biodiversity. It may also lead to changes in the social and economic aspects of coastal communities, especially for fishermen who depend on the sea for their lives.

In improving the quantity and quality of coral reefs in facing these threats, especially concerning management strategies that include utilization, maintenance, and development that support the sustainability of coral reef ecosystems sustainably. Therefore, the objective of this study is to analyze the role of community in the maintenance and preservation of coral reefs in Ujung Genteng, Sukabumi.

II. LITERATURE REVIEW

A. *Role*

According to Biddle and Thomas (1966) roles are divided into four groups: 1. People who take part in social interaction; 2. Behavior that appears in the interaction; 3. Position people in behavior; and 4. relationship between behavior and people.

The role dimensions are as follows:

1. Role as a policy. Adherents of this understanding argue that role is an appropriate and good policy to carry out;
2. Role as a strategy. Adherents of this understanding argue that role is a strategy to get support from the community (public supports);
3. Role as a communication tool. The role is utilized as an instrument or tool to obtain input in the form of information in the decision-making process. This perception is based on the idea that government is designed to serve the community so that the views and preferences of the people are valuable inputs to realize responsive and responsible decisions;
4. The role as a dispute resolution tool, the role is used as a way to reduce or reduce conflict through efforts to reach a consensus from existing opinions. The assumption underlying this perception is that exchanging ideas and views can increase understanding and tolerance and reduce feelings of mistrust and confusion;
5. Role as therapy. According to this perception, the role is recognized as an effort to socialize psychological problems such as feelings of helplessness, insecurity, and feelings that they are not an important component in society (Horoepoetri, Arimbi, and Santosa, 2003).

B. *Maintenance*

Maintenance is a series of activities to maintain facilities and equipment so that they are always ready for use to carry out production efficiently and effectively according to a predetermined plan and based on applicable standards.

Maintenance is a system consisting of several elements in the form of facilities (machine), replacement of components or spare parts (material), maintenance costs (money), planning of maintenance activities (method), and executor of maintenance (man).

Maintenance is a preventive measure that aims to reduce or even avoid damage to equipment by ensuring the level of reliability and readiness and minimizing maintenance costs. According to Assauri (2008), the goals of maintenance are as follows:

1. Production capability is able to meet the needs following the production plan.
2. To maintain quality at the right level to meet what the product needs and production activities are not interrupted.
3. To help reduce excessive usage and deviation and to maintain the capital invested in the company for a specified time under the company's policy regarding the investment.
4. To achieve the lowest possible level of maintenance costs, by carrying out maintenance activities effectively and efficiently as a whole.
5. Avoid activities that are able to endanger the safety of workers.
6. Establish close cooperation with other main functions of a company to achieve the company's main objectives, namely the best possible return on investment and low total costs.

C. Preservation

According to the large Indonesian dictionary, preservation is a process, way or act of preserving; protection from destruction, or damage, preservation, conservation of natural resources; management of natural resources that guarantees their wise use and ensures the sustainability of their supplies while maintaining and enhancing the quality of their value and diversity.

Preservation is an activity that is carried out continuously, directed, and integrated in order to realize certain goals that reflect the existence of something permanent and eternal, dynamic, flexible, and selective (Ranjabar, 2006: 115).

Based on the above definition, it concluded that conservation activities as an effort to make something remain unchanging forever carry out continuously, directed and integrated, in order to realize certain goals in the aspect of stabilization.

Research by LIPI conducted by Widayatun, this research conducted using a combination of quantitative (survey) and qualitative approaches (open interviews and focus group discussions). The study results show that community participation in coral reef conservation is quite high and their welfare increase during that period. The formulation of the problem in this study are to discuss the role of the community in conserving coral reefs through Core map activities and to analyze their impact on welfare.

In addition, research conducted by Trialfhianty, T.I., Suadi is another state of the art used in this study. This study used quantitative research that evaluated reef restoration projects in North-west Bali from the perspective of the local community over the past 16 years. Social surveys and statistical analysis used to understand the correlations between community perception and participation. The findings showed a positive correlation between community perception and participation. The level of community participation also depended on how their work relates to coral reef ecosystems. Several Balinese leaders became 'the bridge' between global science and local awareness. Without their leadership, this study argues that the project might not have achieved the significant local support that has restored both the environment and the tourism sector in North-West Bali. This research inspires the writer to dig more about the role of community in maintaining the coral reef ecosystem in another area using qualitative design.

III. RESEARCH METHODOLOGY

This research uses a qualitative design, and the approach is a case study where a case study is an exploration of a system or a particular case from time to time involving resources in related data and information. The qualitative design used to explore and understand the social and human aspects of an individual or group. The case study chosen because this research only focuses on analyzing the role of community in the maintenance and preservation of coral reefs in Ujung Genteng, Sukabumi.

This research conducted from February to March 2021. The location of this research is located in Ujung Genteng, Sukabumi. Data collection done by in-depth interviews and field observations as primary data with several informants. Informants from this research are people who are directly involved with the empowerment and maintenance activities of coral reefs at Ujung Genteng, namely the chief and members of predatory fishermen, turtle breeding managers, and local communities. Researchers conducted FGDs with informants to obtain data interaction resulting from a discussion of a group of participants/respondents in terms of increasing the depth of information disclosure about coral reef maintenance and preservation, so that it defined and explained.

Furthermore, data collections are in the form of documents, books, and journals as a secondary data. To analyze the data, this study uses the Miles and Huberman model whose *analysis carried out continuously until the data was saturated*.

IV. RESULT AND DISCUSSION

Based on the results of the research conducted at Tokopedia e-commerce website during the Covid-19 pandemic, this research draws several conclusions. First, this research found that purchase intention is directly affected by perceived ease of use and perceived customer value, while perceived usefulness, cost saving, and time saving are not proven to directly affect purchase intention. Second, this research proves that perceived customer value is affected by cost saving and time saving, while perceived usefulness and perceived ease of use are not proven to affect perceived customer value. Third, the results of indirect effect test show that perceived customer value is proven to mediate the effect of cost saving and time saving on purchase intention, but the perceived customer value is not proven to mediate the effect of perceived usefulness and perceived ease of use on purchase intention.

Ujung Genteng faces problems in managing coastal and marine resources, including poverty experienced by coastal communities, decreasing environmental quality due to pollution, and human exploitation.

The coral reef is one of the biodiversity that has decreased in quality. Coral reefs are a habitat for many marine species, a place for spawning, spawning grounds, a place to raise off springs and provide food for marine species. In addition to being a home for other marine life, coral reefs are also able to protect coastal ecosystems by breaking waves to prevent abrasion. Coral reefs also have the function of oxygen producers. The coral reef is a marine ecosystem consisting of a collection of coral animals in symbiosis with a type of algal plant.

Realizing the importance of coral reefs for marine ecosystems, the maintenance and preservation of coral reefs is an obligation to protect marine biodiversity. Coral reef ecosystems are sensitive to environmental changes, the pressure experienced by coral reefs will increase along with the increase in population and the activities of coastal communities.

Burke et al. (2002) explained several factors that cause damage to coral reefs, such as development in coastal areas, marine pollution, sedimentation, and land pollution, over-fishing, fishing with destructive materials and tools, also coral bleaching due to global warming. In addition, Salm and Clark (1989) in Ranjabar (2006) explained that several things that can cause damage to coral reefs are the construction of tourist facilities, damage by anchors, divers, small boats, and walking on reefs.

This study aims to see the role of the community in the maintenance and preservation of coral reefs in the surrounding area in Ujung Genteng, Sukabumi. Fisheries management needs improved because there are indications that over-fishing activities are taking place based on data from the Fish Landing Center with the decreasing size and volume of fish caught in this area.

In addition, the community also undertakes coral reef restoration efforts by holding coral reef planting activities are routinely carried out twice a year (transcript of interviews with fishermen). This activity often held

in collaboration with companies that hold Corporate Social Responsibility (CSR) and Naval Base namely the empowerment of maritime potential, by protecting and preserving the marine environment.

Coral reef restoration carried out by transplanting coral seedlings. This is one of the steps to improve coral reefs by grafting live coral planted in other areas that damaged or creating new coral reef ecosystems. The steps taken are where the seedlings are taken in locations around damaged coral reefs by taking seeds of coral reefs that are still good and must not be far from the planting location. The new ecosystem has similar environmental conditions referring to the depth and current conditions, taking seeds is done by cutting coral branches, as well as the distance from the location of the seed collection to the location of the new ecosystem is not more than one hour.

Kelompok Masyarakat Pengawas (POKMASWAS) of Ujung Genteng Marine Natural Resources and Fisheries, together with members of the Indonesian Navy Observation Post, planted coral reef seedlings in Ujung Genteng, Ciracap District, Sukabumi Regency, on Thursday, 30 August 2018. During 2018, no less than 2,000 coral reefs planted around these waters. A goal is a form of concern for the preservation of the sea. In 2018, they have planted coral reefs six times. Planting activities carried out at least once a year.

Corals are very sensitive to natural and human-made changes. Done through coral cuttings attached to an artificial substrate. Materials for coral transplantation include coral seedlings, artificial substrates as a medium for attaching shells, and adhesive materials for coral cuttings. The transplanted corals placed on the nursery shelves and then placed on the seabed.

Seedling maintenance done by cleaning sediment that settles and organisms in particular, on seedlings and cultivation media. Other maintenance done by improving the position of the shelf if there are coral seedlings that released from the nursery rack.

Preservation of coral reefs also carried out by taking care of coral reefs that planted and are still sustainable. One of the ways that fishermen who are members of predatory fishing communities do is by catching fish using spears and sorting out the fish they catch, i.e. catching only large fish. Conservation activities as an effort to make something remain unchanging forever carry out continuous, directed and integrated, in order to realize certain goals in the aspect of stabilization.

It hoped that direct community involvement in the maintenance and preservation of coral reef ecosystems would create a sense of love for the environment. It hoped that the community could maintain, manage and enjoy the results.

Based on the research findings and the theory of role by Horoepoetri, Arimbi, and Santosa (2003), the role of community categorized into the role as a strategy. Role as a strategy that carried out by the community done by doing coral reef restoration. Planting activities carried out twice a year in collaboration with the community, naval base, and Corporate Social Responsibility (CSR). This shows their seriousness in maintaining the coral reef ecosystem supported by the community. Most of the communities realize the importance of preserving the coral reef ecosystem.

Nevertheless, the role as policy, in this case, needs to be improved. The major role of the community to maintain and preserve the coral reef ecosystem should be a guidance for them to follow the policy of the local government. One of the policies that needs followed is not to have overfishing activities in that area. It helps to improve the quality of the coral reefs' ecosystem.

According to the research finding, the goals of maintenance categorized by Assauri (2008) almost successfully achieved by the community. It covers production capability in accordance with the production plan, twice a year planting activities successfully maintain the quality at the right level as well as increasing the production activity and establish close cooperation with other components including CSR and naval base. There are several things that not covered up by the community including the difficulty in avoiding activities that are able to endanger coral reefs and achieving the lowest possible level of maintenance costs. It caused by the activities of overfishing in the coral reef area that increase the possibility of endanger coral reef itself and cause to emerge the maintenance costs.

Preservation is successfully carry out by the community as well. It complies the definition of preservation proposed by Ranjabar (2006) which is considered as an activity or that is carried out continuously, directed, and

integrated to realize certain goals that reflect the existence of something permanent and eternal, dynamic, flexible, and selective. The continuity and integration showed by the role of the community in collaboration with the naval base and CSR to have twice a year coral reefs planting activities.

It concluded that the community in Ujung Genteng has a big role in the preservation and maintenance of the marine environment, especially the coral reef ecosystem, in collaboration with related agencies and CSR and involving the local community directly as well. Community involvement in the process of maintaining and preserving coral reefs is also intended to increase the welfare of local communities that work as fishermen. Moreover, several things need to be improved including avoiding activities that are able to endanger coral reefs and achieving the lowest possible level of maintenance costs by respecting the rule made by the local government.

V. CONCLUSION

Based on the discussion of the research results, it can be concluded that the community has played its role in the implementation as empowerment of maritime potential by protecting and preserving the marine environment, namely the coral reef ecosystem in collaboration with relevant agencies, and CSR. It will create a sense of love for the environment, able to maintain, manage and enjoy the results. In addition, several things needs to be improved including avoiding activities that are able to endanger coral reefs and achieving the lowest possible level of maintenance costs by respecting the rule made by the local government.

Practical recommendations are further research is needed to conduct related studies to increase the role of the community in maintaining and conserving coral reefs in various ways. Needed regarding government policies to work together with the community to maintain and conserve coral reefs

Academic recommendations are continuous coordination between the government, TNI, and the private sector together with the community in order to form a common view of the importance of the need to maintain and preserve coral reefs in Ujung Genteng. The need for the local government to make policies to maintain and preserve coral reefs in Ujung Genteng by the community, tourists and the government.

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