

# Community Participation Of Coastal Area On Management Of National Park, Karimunjawa Island

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**Abstract.** Karimunjawa island located in Jepara Regency, Central Java has potential marine and fishing resources. Since 1998, this area has been selected as conservation for its natural resources. National park of Karimunjawa is managed by Balai Taman Nasional Karimunjawa (Karimunjawa National Park Beaurou). Some activities involved community have been done in order to get effective management. Community participation is an important component for success in coastal area management. The level of community/people awareness annual on natural resource conservation can increase sustainable resource. However, it is necessary to provide tools in resource utilization for the community, so that their economic life can be secured. This study observe the level of community participation in the effort of Karimunjawa National Park management. Descriptive method and purposive random sampling were used to carry out the study parameters observed in this study include community participation related to level of knowledge and obedience on the rule of area zonation, and its impact to community. The result show that community knowledge was quite high (40%) with obedience (56%) on the rule of area zonation. Impact area zonation rule was less significant to community. The level of community participation to Karimunjawa National Park management was performed will low to medium level.

**Keywords:** Community participation, coastal, Karimunjawa

## 1. Introduction

Biodiversity can be maintained by conservation for ensuring ecosystem balance [1]. Based on The Decree No 5- 1990 [2] biodiversity conservation can be defined as natural resource management that reflecting its utilization wisely for guaranty stock sustainability with concerned on maintaining and increasing biodiversity quality and its value. Conservation is done to protect natural resource within the area as well as ensuring community access to sustainable use of natural resource [3].

Zonation is an effort made for managing the conservation area. Based on Ministerial Regulation of Forestry Affairs No P.56/Menhut-II/2006 [4] National Park Zonation consists of 7 (seven) zones: core zone, wilderness zone, utilization zone, traditional zone, rehabilitation zone, religious zone, and special zone. This zonation is a guideline for creating an effective and optimal National Park



management system in accordance to its function [5]. Implementation of conservation often influences community access to natural resources utilization which are their source of livelihood. Utilization of natural resources and sustainable development require an appropriate concept to overcome arising problems. There is no community inadvertently inhibits their environmental survival, however with the ongoing environmental problems caused by negative impact of human activities, it is a sign that sustainability is still in doubt [6]. Sustainability is not a final achievement, but a target that must continually negotiated while the community learns to recognize the indications of unsustainability [7].

In 1986, Karimunjawa Island has been selected as marine conservation area because of its strategic values. In 1999, Karimunjawa Conservation Area was changed into Karimunjawa National Park based on The Decree of Ministry of Forestry and Estate Crops No.78/kpts-II/1999 [8], with area of 111.625 ha. In 2001, some area of Karimunjawa National Park was selected as Nature Reserve Area. The status change was conducted to accommodate the community existence in the area of Karimunjawa Island.. The implementation was through zonation system, therefore community around the area can utilize the natural resources in order to supply their needs [9].

Marine protected area is an area with the functions of protection and maintenance of biodiversity, natural resource and local culture, managed under valid laws or regulations [10]. Establishment of marine protected area is an instrument related to ecological and institutional aspects simultaneously. However, establishment of Karimunjawa National Park as conservation area caused the community to adapt in supplying their needs, particularly due to its zonation system [11].

Since 1998, Karimunjawa National Park Agency as administrator area has been conducted many programs in order to improve community participation in maintaining natural resources within Karimunjawa National Park. Those programs were community empowerment through economic improvement, institutional strengthening, alternative livelihood finding, also community capacity improvement. According to Supardan *et al.* (2006) [12], community participation through programs conducted by administrator area could place the community as an object instead of a subject. Therefore, further study about the effects of conservation area through Zonation of Karimunjawa National Park on fishermen community and biodiversity is needed. Moreover, the fishermen only fish around the shallow coral area, which are very close in breaking the National Park Zonation system [13].

The presence of the MPA expected to be increase the fish stock in the area from the spill over of the MPA [14]. Deep-water fishing activities are impacting deep-water habitats worldwide, yet the extent of the damage caused is mainly unseen and not quantified [15]. Habitat relations are complex and bi-directional. Echinoid community structure is affected by the habitat structural and environmental conditions [16]. Understanding changes in trophic group interactions following the implementation of marine protected areas (MPAs) is critical in understanding their success, or otherwise [17].

This research aimed to find the community participation rate in maintaining Karimunjawa National Park involving community knowledge and obedience in zonation system within the area as well as its impact on the surrounding community. The research was conducted in March-April 2012 in Pelabuhan Perikanan Pantai Karimunjawa (Fisheries Port of Karimunjawa), Jepara, Central Java. Sponges within the 300 km<sup>2</sup> Trænadypetcoral MPA (Marine Protected Area) were mapped using photographic techniques [18]. Nearly all coral reefs bordering nations have experienced net losses in reef biodiversity, goods and services, even without considering the ever-developing global change impacts [19].

## 2. Materials and Methods

The method used in this research was descriptive, a case study with advantage in supporting substantial later studies. A case study can give hypothesis for later researches. From educative perspective, case study can be used as an illustrative example whether in problem formulation, statistical use in analyzing the way of general problem formulation and conclusion [20]. Data were obtained through observation, interview, and literature review. Samples were taken through Purposive Random Sampling method. Purposive Random Sampling is a method that the sampling is not based on

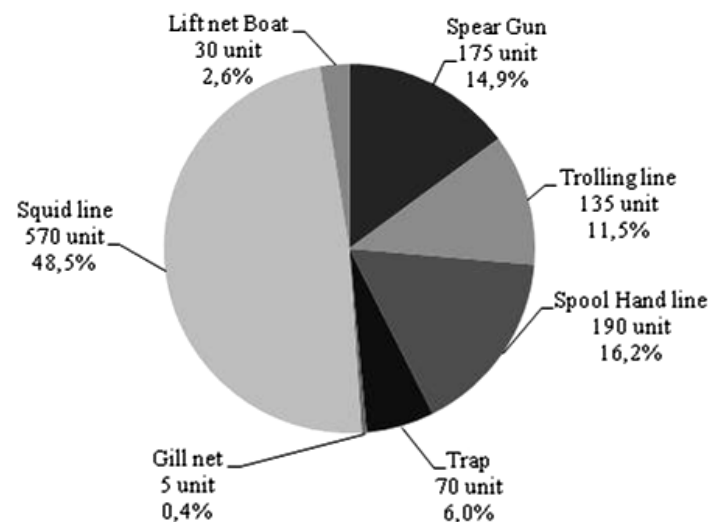
random or regional, but based on a certain purpose [20]. Number of samples were calculated with Slovin formula in [21] and the value of  $n$  (number of samples) was 97.76~100. The following requirements were used in determining the sample:

1. Community with main livelihood as fisherman,
2. Fishermen who live or stay in Karimunjawa Village,
3. Active fishermen, fishermen who are still active in fishing activities at sea,
4. Fishermen who conduct fishing activities in the waters of Karimunjawa National Park

### 3. Results And Discussion

#### 3.1. Fishing Gear and Fishing Vehicle

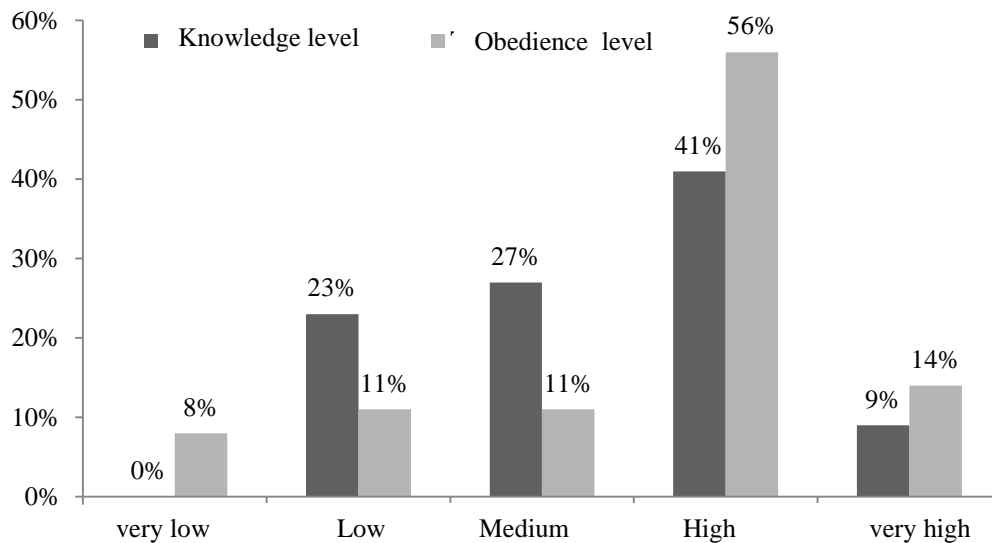
Fishing gears used by the fisherman around Karimunjawa National Park were dominated by passive fishing gears which categorized as environment friendly. As seen on Figure 1, the most used fishing gear was Squid line (48.5%). Besides Squid line, other fishing gears were Spool Hand line (16.2%), Spear gun (14.9%), Trolling line (11.5%), Trap (6%), Boat lift net (2.6%), and Gill net (0.4%). Those fishing gears were used considering the operation location was near the coral waters. Therefore, the fishermen chose to use passive and environment friendly fishing gears. Moreover, the fish targets were dominated by coral fish. The fishermen of Karimunjawa used engine-driven fishing vehicles in their operation activities, such as Motor Boat and Outboard Motor Boat. The number of Motor Boats reached 250 units and Outboard Motor Boards were 140 units.



**Figure 1.** Fishing gears used by the fisherman around Karimunjawa National Park

#### 3.2. Fishermen's Knowledge and Obedience on Zonation System

The participation rate on zonation system can be determined from the level of knowledge and obedience (Figure 2). Knowledge level of Karimunjawa Fishermen on zonation system was categorized high (41%), only 9% was categorized very high. Intermediate category was still found around 27%, and 23 % was categorized low, while very low category was not found. It showed that there were still many fishermen who didn't have enough knowledge on zonation system. The obedience level of fisherman community on zonation system was dominated high (56%) and only 14% was categorized very high. Very low category was still found, around 8% fishermen community did not have the obedience on zonation system.



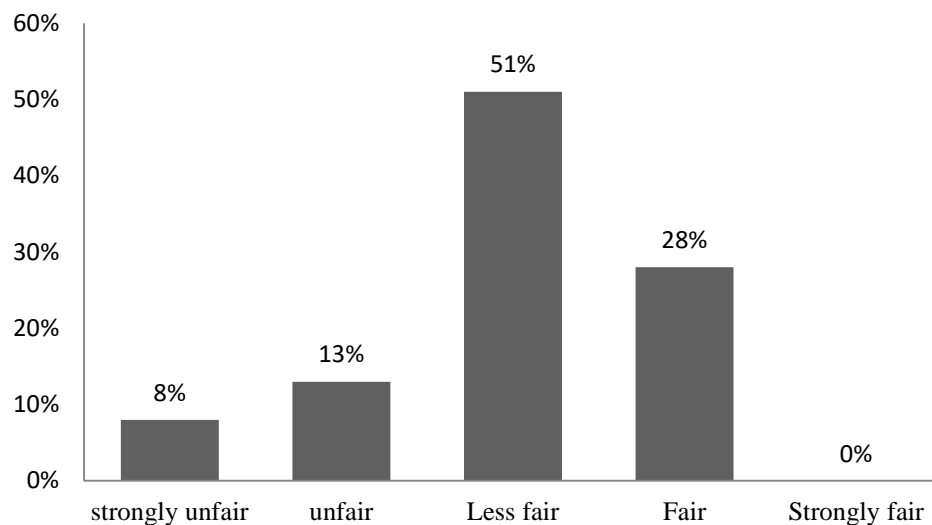
**Figure 2.** Fishermen's Knowledge and Obedience on Zonation System

### 3.3. Fishermen's Perception on Zonation System

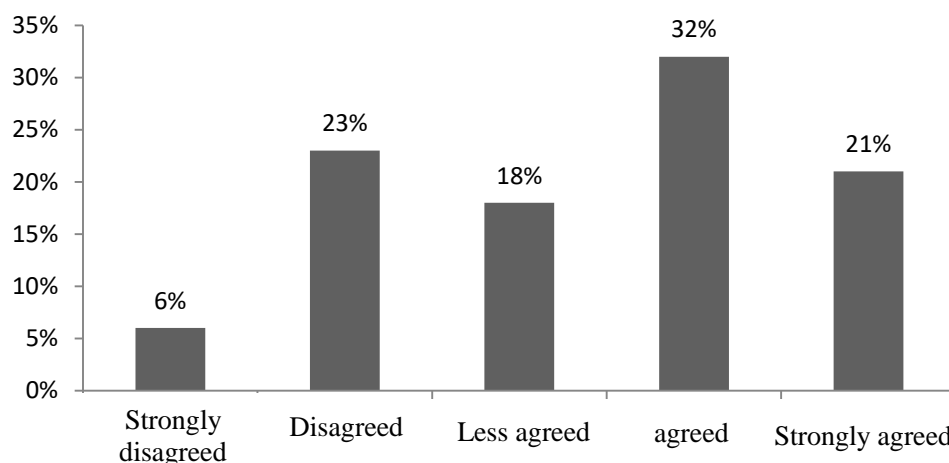
Fishermen community participation on zonation system was an obligation considering the zonation will also impact on the activities of fishermen community. During the forming of zonation system, Karimunjawa National Park Administrator has been involving the fishermen community. However, information about fishermen community perception on zonation system was still needed. Interview had been conducted to gather information related to the zonation system thoroughly and also the confirmed protection zone (Figure 3 and Figure 4). Protection zone was important due to its limitation access of utilization by fishermen community.

From respondent interview showed that 51% fishermen community perception on Karimunjawa National Park Zonation system was quite unfair. However there was still 28% of fisherman community who considered the zonation system was fair. The high level of fishermen community who considered the zonation system was unfair indicated that there were still some fishermen community did not fully accept the zonation regulation yet. This unfair perception of the zonation system was due to the fishing ground area was belong to the zonation area, therefore the fisherman had to move to another fishing ground.

Protection zone is a part of zonation which was regulated on zonation system of Karimunjawa National Park. Protection zone is a water area, also serves as species protection area, habitat or ecosystem that supports the function of the core zone. These are several water areas included in protection zone of Karimunjawa: Gosong Tengah, Cemara Kecil, P. Sintok, P. Geleang, P. Burung, P. Katang, Gosong Selikur, dan Tanjung Gelam. The land areas were including low altitude tropical rain forest and mangrove forest. Based on the survey, 32 % of respondent perception agreed that the protection zone were used for fishing activity. While 21% stated strongly agree, 18% less agreed, 23% disagreed, and 6% strongly disagreed. Perception of protection zone for fishing activity represented the fishermen level of understanding. The high level of fisherman perception that agreed the using of protection zone for fishing activity had relevance to the aspect of justice which dominated by less fair category. Since the fishing ground was included in the protection zone, there was less fair perception on zonation system. The high level of agreement on using the protection zone for fishing activity indicated the fishermen had really high expectation to open access the fishing activity. On the other hand, expectation to open access the protection zone also indicated the fishermen limitation in understanding the protection zone.



**Figure 3.** Fishermen Perception on Zonation Acceptance

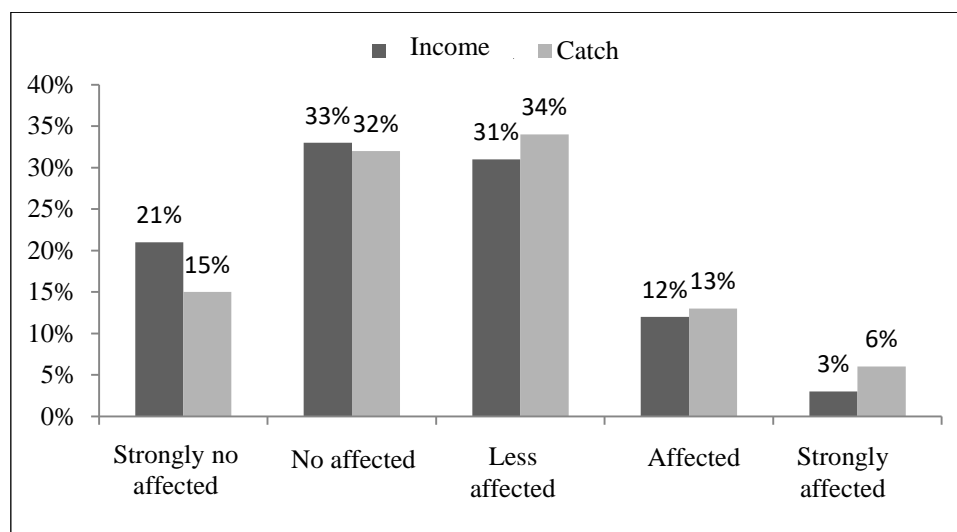


**Figure 4.** Fishermen Perception on Fishing Activity in Protection Zone

### 3.4. Effect of Zonation System on Fishermen Economy

Fishermen of Karimunjawa had fishing activities mostly on dry season between May-September. During the dry season, the wave condition was relatively small compared to the rainy season when the wave was relatively high. Moreover, due to the fishing vehicles and fishing gears were relatively small, fishermen tend to stay home during the high wave season. The survey on fishermen catches and incomes was conducted to know the effects of zonation system on fishermen economy. The catch and income of fishermen were some economic impacts on zonation system. Fig 5, showed the effect of fishermen catch and income on zonation system in Karimunjawa in percentage.

From the survey, it showed that 34% respondents stated that their catches were not impacted by zonation system. While the zonation system also known to have no effect on fishermen income (33%). Only small percentage of fishermen stated that zonation system affected their catch and income. Fishermen catch and income can be used in indicating the economic impacts on zonation system from fishermen perception. The relatively high percentage which stated the zonation system gave less impact on the fishermen's catch and income, showed that there was still no economic impact that affect the fishermen community directly.



**Figure 5.** Effect of Zonation System on Fishermen Catch and Income

### 3.5. Fishermen Participation on Karimunjawa National Park Management

The perception of Karimunjawa fishermen on some aspects including knowledge level and obedience, zonation system, and fishermen economy indicated the participation rate of fishermen community on zonation system of Karimunjawa National Park. Zonation is an implementation on managing the conservation area, where the area is divided into certain zones according to their function and based on regulations related to activities that are allowed and not allowed.

Basically, fishermen community already had the knowledge and understanding on Karimunjawa National Park management. It was showed from the perception survey on fishermen level of knowledge and obedience which was dominated high. Thus showed that the information related to the management of the area had already known by the fishermen community. However, there were other perceptions from the fishermen related to the zonation system. Fishermen community still held the lack of justice in deciding the zonation area by the inclusion of fishing ground in protection zone area. With relatively high on knowledge and obedience level on area management, socialization and communication related to area management needed to be given continually therefore the injustice perception could be minimized, considered the zonation forming had already involved the community.

## 4. Conclusion

Fishermen on Karimunjawa National Park were categorized as small scale fishermen (artisanal fisheries). Fishing gears were categorized environment friendly, with relatively small fishing vehicles. The participation rate of Karimunjawa fishermen on Karimunjawa National Park management was relatively high. The injustice perception on zonation system could be minimalized through continued socialization and communication on fishermen community. Fishermen community should have space on area management, therefore whenever the change is needed, it should be done based on the admitted regulations, thus the administrator, community, and other related stakeholders can reach the expected goals together.

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