

Community-Based Management for Coral Reef Conservation In the Gili Islands of Lombok Indonesia

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Abstract

The coral reef of the Gili Islands of Lombok Indonesia has experienced a substantial deterioration and destruction within the last decade due to human activities compounded by poor enforcement capacity, low public awareness, overlapping institutional mandates, and lacks of defined user rights over coastal areas. The implementation of community-based management strategy aims to both increase the participation of local people in conservation activities by involving them in management process and regulate local institution dealing with coral reef conservation efforts. Although the strategy has not fully succeeded in achieving a great participation of local people, this case study nevertheless provides valuable lessons concerning the early processes of building consensus and commitment to protect the coral reef resources.

Keywords: Gili Islands, coral reefs, community-based management, local institution, participation.

Introduction

Indonesia, an archipelagos nation composed over 17,000 islands, has coral reefs covering an area of more than 75,000 square kilometers. They are of critical importance as the center of marine biodiversity in there exists 75 genera and 350 known species of stony coral. They serve important ecological functions, contribute to the physical stability of neighboring shorelines and represent a significant economic resource through the harvesting of fish stocks and by attracting tourists.

However, the degradation of coral reefs in most part of Indonesian coastal area has remarkably increased within the last decade due to man-made induces. Human activities caused this degradation include destructive fishing practices such as the use of weighted lines to break coral in fish driving operations (muro-ami), blast fishing, and poison, lime production, sewage discharge, land and mangrove destruction, tourism, and the collecting of fauna such as fish, shells and corals compounded

by poor enforcement capacity, low public awareness, overlapping institutional mandates, and lacks of defined user rights over coastal area. Available data suggest that more than 70 percent of the reefs in Indonesia are poor to fair condition. With support from World Bank and Asian Development Bank Indonesia has established a project called 'Coral Reef Rehabilitation and Management Program (COREMAP)'. The project has four major components including: program strategy and management; public awareness; surveillance and enforcement; and community-based management. Community-based management at the center of the COREMAP strategy needs a supporting system to succeed. This system includes enabling policies and legal framework, surveillance and enforcement, institutional strengthening and training, public awareness, monitoring, evaluation and research.

Local government and non-government organizations have been working on community-based management for coral reef conservation in 15 locations in 12 provinces in Indonesia including Gili Islands Lombok West Nusa Tenggara province since 1998. These activities aim in particular to increase the participation of indigenous and local people in coral reef conservation efforts through training, informal education schemes and cheap financial credits (revolving loan fund) to develop alternative livelihood sources. In addition, these organizations aim to strengthen local institution and legal framework (local ordinance) to regulate the use of coastal zones through specific zonings and the implementation of local strategic plan for coral reef management.

The purpose of this research project, therefore, is to investigate and analyze the activities of these newly established local institutions and community-based management forces dealing with coral reef conservation and their implications for the various groups of local and indigenous communities. Furthermore, two additional aspects in relation to the communities living in the costal zones will be investigated: (1) the level of integration and participation within these partnerships and (2) the changes of standards of living as a result of these co-operations.

Site profile

Gili Islands is a group of three small islands located in the north west of Lombok which can be reached in 20, 30, and 45 minutes by speedboat respectively from the harbor of Bangsal Lombok. Each of the islands has certain name like Gili Air, Gili Meno, and Gili Trawangan. With the area of 665 hectare, these three islands gained the status of an independent Desa, Gili Indah, in 1996 due to their increasing importance as a marine tourist center in West Nusa Tenggara. About 2508 people are living in the islands now consisting of many ethnic groups such as Sasaks, Buginese, Javanese, Balinese, Mandarese, and Makassarnese with mostly low level of educational attainment.

Gili Air was first settled permanently approximately 100 years ago by several groups of people from Lombok and by a group of fishermen from South Sulawesi. The population of Gili Air, the densest island, was about 700 people in 1980, and now Gili Air has a population of around 1170 people and 267 households. All ethnic groups inhabited these Islands are found in Gili Air. In contrast, the majority of population in Gili Meno, the smallest island, is Buginese and Sasaks reaching about 400 people and they work mostly in primary sector such as fishery, seaweed cultivation, salt production, and agriculture.

The Gili Islands people employed traditional fishing techniques using homemade hand-lines, nets, fish traps, etc until the late 1950s. With low population, these fishing techniques appeared to have had little impact on fish stocks due to a low level of fish yields. During the early of 1960s, a group of about 13 Buginese fishermen arrived in Gili Air from South Sulawesi bringing with them muro-ami fishing technology. This, combined with the introduction of seine nets, for the first time, allowed the fishermen of Gili Air to more exploit the rich marine resources of the region. It is needed at least 25 people to operate the new technologies so that they are capital as well as labor intensive.

About 800 people inhabit Gili Trawangan, the largest island occupied 340-hectare area, and they are mostly working in tourist related occupation. People from Central Lombok working in plantation settled

the island firstly in 1970s. Today, Gili Trawangan is a famous tourism area accompanied by many tourism industries. The island was visited by averagely 2,326 international tourists in a month during 1997, while Gili Air and Gili Meno welcomed about 396 and 251 people respectively at the same time.

Gili islands were designated as marine protected area in 1993 because of their richness of marine biodiversity. Previous surveys of the reefs of Gili Islands have found approximately 148 species of hard coral, from approximately 54 genera and 15 families, (Suharsono et al. 1995). In most parts of the islands living cover of hard corals was less than 80 %, (Bachtiar et al. 1999). Coral communities around the islands are more diverse than those of the mainland fringing reefs, primary in response to a greater array of habitat types and oceanographic conditions. Suharsono et al. (1995) has recorded over 110 species of hard corals from the northern and southern Gili Islands representing all major coral growth forms.

Coral cover on the offshore islands and patch reefs ranges from less than 10% in areas devastating by blast fishing to more than 80% in relatively undisturbed areas. For example, quantitative estimates of coral cover for Gili Trawangan range from 20-30% for the eastern slope to 60-80% for the western slope. Similarly, on Gili Meno, the northern slope supports 60-80% cover of living coral whereas the eastern slope has less than 30%, (Suharsono et al, 1995). Meanwhile, the coral cover in Gili Air was less than 20% either in eastern slope or in western slope in 1999, (Bachtiar et al, 1999). Even in southern slope of the island, the coral cover was less than 10%. The causes of the coral reef degradation in these islands are mostly blast fishing, poisoning, muro-ami, and anchor from boat.

Project Goals and Major Components

The objectives of the program is to empower local people in order to actively involve and take part in natural resources management in particular coral reef and associated ecosystem, and to ensure the

sustainable use of those resources. One of the specific objectives is to implement a local coral reef management plan based upon the result of socioeconomic and environmental surveys. The plan will establish a zoning surround the islands which prevent several area from destructive fishing and increase the abundance and diversity of coral reef fish and long-term fish yields from the island reef.

Community development would be encouraged through the formation and enhancement of local core groups, which would be responsible for marine resource management and programs that generated alternative income. The core groups would be established in each island and organized a regular meeting among members of the group. With assistance from project executor the groups administered several trainings to help the local people in dealing with new alternative sources of livelihood.

The following components are required to achieve those objectives including: local strategic plan for coral reef management; research and monitoring; alternative sources of livelihood development supplementing with revolving loan fund; strengthening local institution capacity; public awareness; and improving public utilities.

Coral reef management planning included the identification of zoning for several purposes such as sanctuary, reserve, exploitation, and pleasure; passage of the village (desa) resolution into a regency (kabupaten) ordinance; and development management mechanism. Research and monitoring included the collection of baseline socioeconomic and environmental data.

Implementation Process and Results

Several stages of implementation are presented to clarify the order of events. University of Mataram and Regional Government of West Lombok Regency have accomplished the community-based management plan under coordination of West Lombok Regional

Development Planning Board based on the result of socioeconomic and environmental survey.

A project manager stayed in the program site for several months to introduce the project objectives as well as intended activities to the community informally and formally. With University of Mataram team and regional government team, project manager administered several meeting with the community to socialize the program. The activities attracted a great intention from the local community. The local community was also informed about the whole aspects of coral reef as a very valuable resource needed to protect and to conserve as well.

In these islands it has existed several groups of people according to their profession such as group of muro-ami fishers, group of boatmen, group of cidomo, etc. However, there is no group of resources management, therefore, the project has established a group, local institution, concerning coral reef management in each island. The group has three divisions including conservation, beach watch, and welfare division. The tasks of the group are to oversee and to report all violation occurring in the island to government authority; and to clean the beach regularly.

Several trainings have been conducted by the project including diving course, guide and English course, seaweed cultivation training, and bakery production training. These activities have attracted a great participation of the local community since they satisfy the need of the community. Moreover, the provision of cheap credit scheme accomplishes the expectation of the community to improve their welfare.

Other activities conducted during the project implementation included the composition of local coral reef management plan, zoning based on local ordinance (awig-awig), and the establishment of zoning board in each island to make the local community aware about the ordinance.

Some Implications

The implementation of community-based management is made possible due to the participation from non-government organizations, universities, and local people including private local businesses. The activities created by project have attracted much attention and participation of local people because those activities can satisfy their needs. The development of alternative sources for livelihood that concerns in the willingness of the local community as well as the availability of local resources has resulted a high level of participation from local people. The introduction of sound environmentally alternative of livelihood sources can reduce the threats of coral reef ecosystem because people tend to lessen their destructive activities in fulfilling their needs.

The establishment of new institutions, however, emanating beyond the indigenous institutions are facing a severe problem of acceptance. As a consequence, the new institutions must be socialized in order that the community can accept them. This in turn affects the effectiveness of the institutions to play their role dealing with coral reef conservation.

The local institution established to take care of the coral reef ecosystem couldn't act sufficiently because of inadequate resources and understanding of its role. The local ordinance (awig-awig) pertaining to zoning cannot be implemented well due to the poor enforcement capacity, which is a result of the misunderstanding of local bureaucracy in their role as officers who should enforce the law. The social relationship among community members also contributes to the enforcement capacity. The local institution established in the area is a new institution created to support the project so that it has no root in the community. As a consequence, it needs much time to be both comprehended and accepted by the community because the sense of belonging from the local people nowadays is low. Moreover, the knowledge of local people about the law is poor due to the low intensity of program socialization. As a consequence, they break the law without feeling guilty.

The integration of the local community and the implementation of community-based management have resulted in many cases in the contribution of ideas from local people to create local institution relating to coastal resources. Several diving centers have decided to establish a police station as well as to finance every day patrol of water police to protect the coral reef ecosystem from destructive activities. Local people have also established a foundation (non government organization), which aims at coastal resource conservation and human resource development. The establishment of this organization is inspired by the sum of activities concerning coastal resources conservation, in which are controlled by non-residents of Gili Islands. In consequence, they expect in the near future that most of the conservation activities are taken over and carried out by the foundation.

Conclusion

The project has been successful in achieving the participation and integration of the local community in many activities. The project offers something that satisfies the need of the local community especially in relation to the economic activities. However, the newly local institution cannot enforce the local ordinance since the scarcity obedience of the local people. The local institution has no root in the community because the institution emanates from beyond the indigenous property. In this context, the genuine participation can be achieved by respecting local wisdom and indigenous knowledge. Furthermore, all activities should be rested on the local properties. Without sufficient knowledge, it is difficult to change the perception and the behavior of the people so that the people education and empowerment of individuals is a precondition to succeed in the natural resources conservation efforts.

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