

# The Importance of Coastal Resource Management

# I



The establishment of community-based marine sanctuaries is part of a bigger process called *integrated coastal management* or *coastal resource management (CRM)*. To adequately discuss the process of establishing marine sanctuaries, we have to first define CRM and understand its importance.



### ***What is CRM?***

CRM is based on several important principles:

1. It is a strategy by which all stakeholders or those who stand to benefit from coastal resources cooperate to accomplish the proper management and sustainable development of these resources.
2. It involves the participation and full support of the community, government and other concerned sectors towards planning and observing appropriate use of coastal resources.
3. It must be *integrated*. Although its objectives are geared towards the coastal area, the process covers not only the coastal area itself but also its surrounding environment — land, sea or mountains that affect the management and protection of coastal resources. Moreover, the physical environment is not the only consideration in CRM; also included are those cultural, political and social factors that affect coastal residents and others, including people's organizations, who make their living on the environment.

### ***Why do we need CRM?***

All ecosystems – i.e., natural systems formed by the interaction of a community of organisms with their environment and each other — have a delicate balance of order. This balance allows the system to work and adequately provide for the plants, animals and humans that depend on it and on each other to survive. Any change in the environmental conditions or inter-dependent relationships of the organisms can cause the system to fail.

Among the most diverse and productive ecosystems on our planet are the

coral reefs. It is estimated that for every square kilometer of coral reef, about 30 tons of fish can be harvested, enough to feed 600 people for a whole year. Besides providing for man's basic needs of food and livelihood, coral reefs also protect our coastlines from strong currents and waves.

Like all other ecosystems, coral reefs and other marine ecosystems are vulnerable to disturbance. Pollution, overfishing and the unabated use of harmful fishing methods such as dynamite and *muro ami* fishing are the most common and serious threats facing our coastal environment. They disturb the delicate ecological balance that keeps the environment healthy and functioning. They also jeopardize the lives and livelihood of coastal residents.

The Philippine coast covers a wide area, including 18,000 sq km of coral reefs and about 150,000 hectares of mangroves. But like the rest of the country's natural resources, it is threatened by several pressing problems. Overfishing, pollution and the use of illegal and destructive fishing methods contribute to the fast degradation of our marine habitats and ecosystems. Only 5 % of our coral reefs remain in excellent condition, and more than 70% are in poor or fair condition. The country's mangrove area has also been depleted, its present size is only a third of the 450,000 hectares recorded at the start of the 1900s.

The growing population in coastal areas is one of the biggest reasons for the depletion of coastal resources. The situation is aggravated by the *de facto open access* regime that now prevails in most of our marine waters. *De facto open access*, according to Frederick Vande Vusse in a paper presented at a seminar on community-based CRM, "means that, in most places, anyone can fish at any time using any method despite the existence of laws declaring many of these practices illegal. The common resource, in this case, the coastal fishery, is owned by everyone (the government) but few of the resource users feel any real sense of ownership or responsibility to care for it. Those who are concerned find it difficult or impossible to act alone."

Blame is usually placed on the government for its failure to uplift the conditions of fisherfolk and enforce laws to protect this sector and the resources on which they depend. But the responsibility of caring for coastal resources should not rest solely on the government. Fishers should also take responsibility for these resources because, more often than not, their everyday decisions have a great impact on the coastal environment. They

choose what method and equipment to use in their trade. They decide to use or not to use dynamite, poison, push nets or other destructive fishing methods. They therefore play a crucial role in determining the condition of their coastal environment. And, because of the nature of the open access fishing environment in which they operate, fishers, driven by the thought that “the fish I don’t catch today goes to someone else tomorrow,” are wont to harvest more fish than they need, thus contributing to overfishing.

CRM is a system that allows fishers and other coastal stakeholders to continue to use, develop and benefit from coastal resources while ensuring these resources’ sustainability.

### *How do we implement CRM?*

Community participation is important in the management and protection of the sea and its resources. Right from the start of CRM, sectors that will be affected by the process should be involved. These include fishermen, consumers, non-governmental organizations, scientists, the academe, and local government officials.

Stakeholders of the coastal area and its resources should be encouraged to take part in implementing the whole CRM process, from gathering information on the coastal environment to drawing up a CRM plan. Included in the CRM plan are the steps and methods agreed upon by the residents and managers of each barangay or municipality, and even the whole province, to manage and protect their part of the sea and its resources.

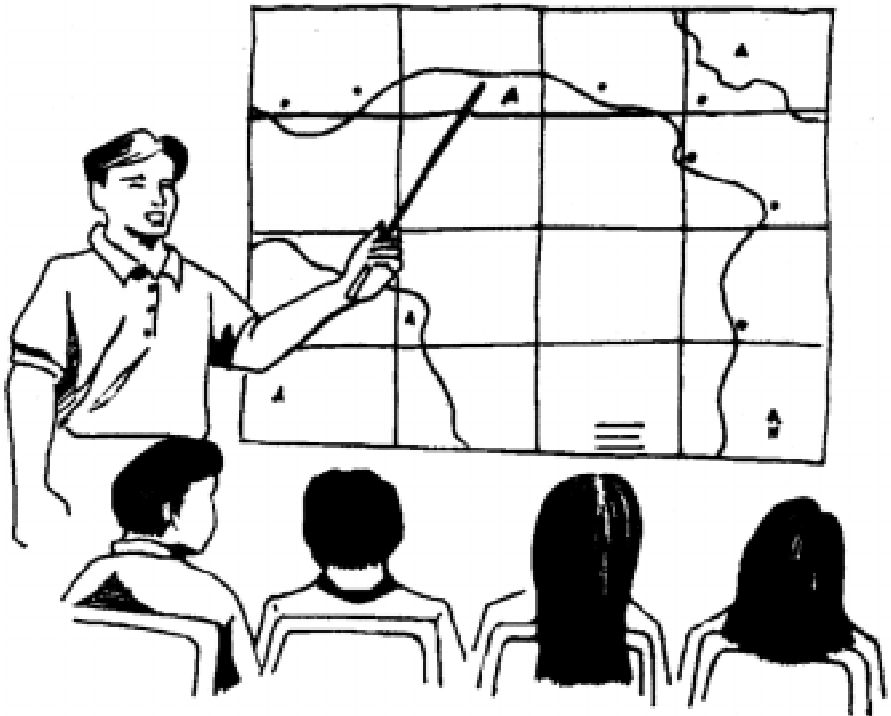
The first requirement of CRM is the **gathering of information** about the coastal area by the community members themselves. Experts recommend the *participatory coastal resource assessment* or *PCRA*. The primary output of PCRA is the coastal area profile, a document describing the coastal area and the condition of its resources. The profile also describes issues or problems of the communities dependent on the area, and includes maps and other details needed for CRM planning.

**Community education and organizing** is another integral part of the CRM process. As future coastal resource managers, community members must be trained in and empowered to administer and manage their coastal resources.

This is usually done during community meetings, where coastal issues affecting the community and possible solutions can be discussed.

It is during the community organizing stage that formal organizations or committees are developed to lead the management of the coastal resources. Neighborhood groups are also formed, including cooperatives and livelihood associations that affect the use of coastal resources. Members are taught how to strengthen their organization through planning and decision-making exercises, all according to what will work for them and using information that they themselves gathered.

Community organizing occurs simultaneously with education programs designed to give community members at least some basic knowledge about their environment. Education is important, as people are generally more concerned about protecting the sea if they fully understand its importance and limitations.

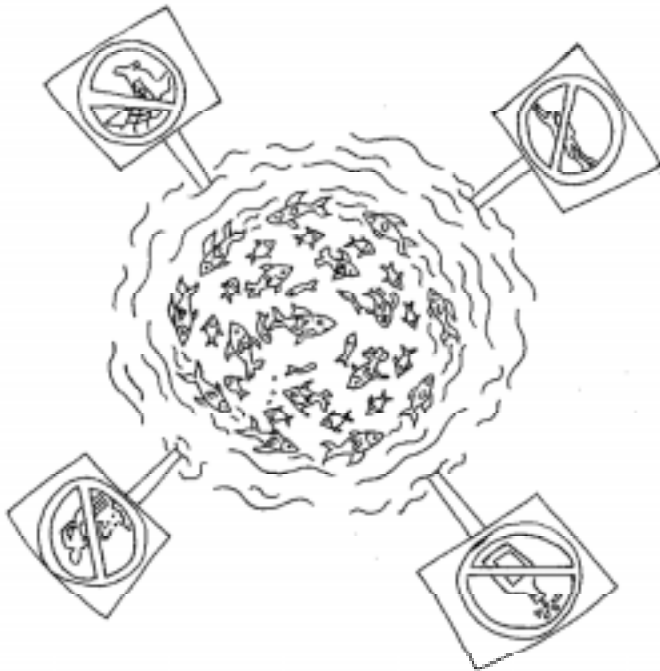


## **Additional notes**

The use of marine sanctuaries as a strategy for effecting sustainable CRM is fast gaining acceptance among communities, especially in some areas in the Visayas and Mindanao, because of the success of several towns which have implemented it. The Philippines has a wealth of experience in managing and protecting coral reefs through marine sanctuaries. Nevertheless, additional research and studies are needed to improve marine sanctuary management and encourage wider community participation in the preservation of coastal resources, not only for the fisherfolk's sake but ultimately for the greater good of the country.

The following chapters describe the process of establishing a marine sanctuary based on a community-based approach used in the Visayas.

## Framework for the Establishment of Community-Based Marine Sanctuaries



### *What is a marine sanctuary?*

A marine sanctuary is a protected area within the municipal waters where fishing is strictly regulated or entirely prohibited and human access may be restricted. Characterized by high productivity and/or high biodiversity, the sanctuary is established by an ordinance to rehabilitate and replenish fishery and coastal resources in an area known to have an important ecological function as a spawning and/or feeding ground for one marine species or a group of species.

A marine sanctuary may form all or part of a marine protected area (MPA).

### *Why do we need a marine sanctuary?*

Marine sanctuaries are an effective way to control fishery effort, protect breeding and juvenile fishes, guard against overfishing and ensure a sustainable supply of fish stock. Studies indicate that a square kilometer of protected reefs can produce up to 30 metric tons of fish per year. Marine sanctuaries are particularly effective as a management tool directed at promoting the long-term productivity of shallow-water fisheries, especially in the Philippines, where about 10-15% of marine fish production is supplied by coral reefs. They work in a number of ways:

1. By restricting exploitation of fish stocks, marine sanctuaries give different species the chance to freely reproduce. Species like grouper, parrotfish and snappers do not breed until they are 4-6 years old. Without protection, these fishes are usually caught when they are only 2-3 years old. They are thus unable to breed and at high risk of extinction.
2. Marine sanctuaries promote the rehabilitation and recovery of degraded coral reefs. In the late 1970s, blast and cyanide fishing, as well as other destructive fishing practices, threatened the Apo and Balicasag Island Reefs in Negros Oriental and Bohol, respectively. Thanks to a community-based marine management program put in place in the mid-1980s, these practices ceased by 1997. Under this program, Silliman University staff helped organize local people into marine management committees. These groups then set up marine protected areas that included no-fishing sanctuaries on one portion of the reef. In 1992, surveys indicated that live coral cover in the sanctuaries had increased substantially.
3. Because of the protection accorded marine species in the sanctuary, fishes inside the reserve area (where fishing is strictly prohibited) grow faster and multiply easily. This leads to a faster turn-over of fishes from the reserve to the non-reserve area (where passive, non-destructive fishing is allowed), which increases fish yield for the fishermen. It has been proven by the experience of Sumilon Island

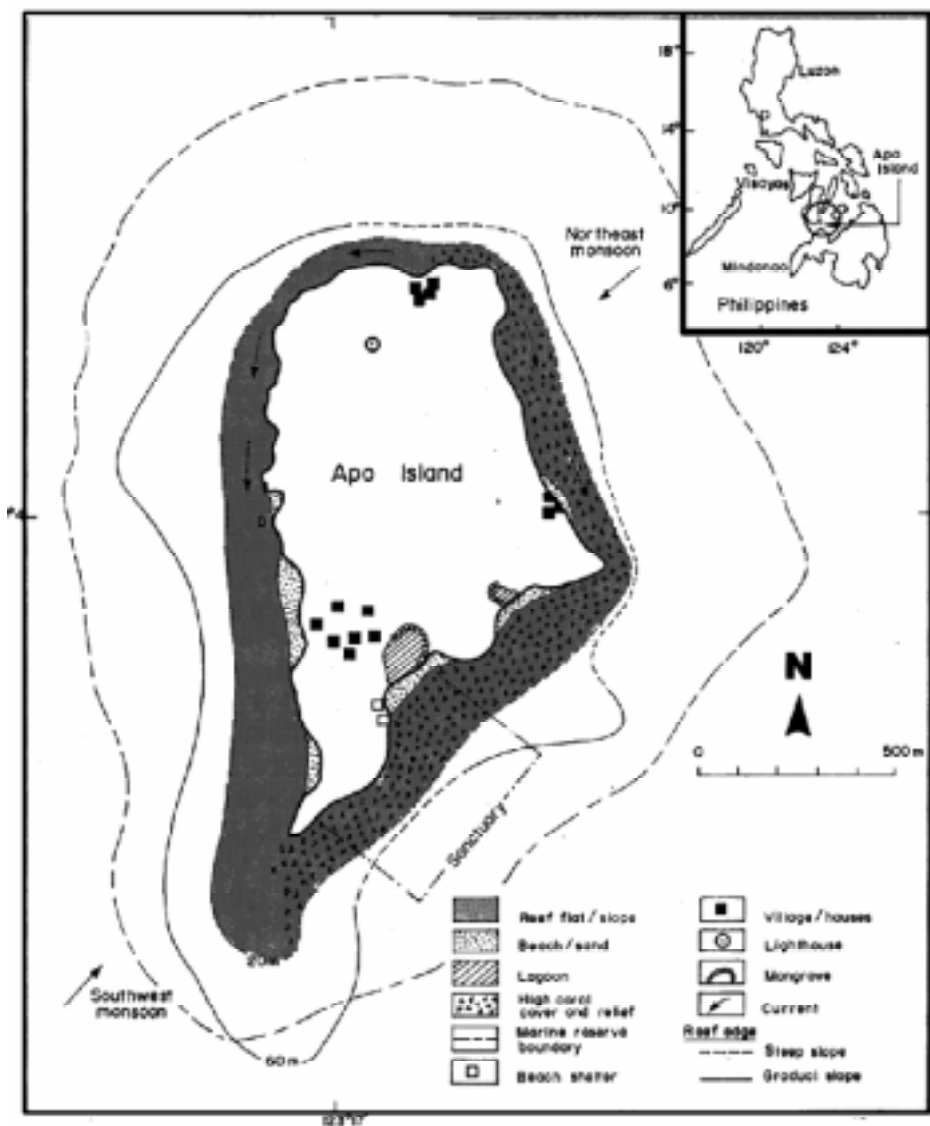


Marine Reserve in Central Visayas that fishermen get more fish from 75 % of the reef area during periods of protection than from 100 % of the area when there is no protection. Over the 5-year period from 1975 to 1980, the annual fish catch at Sumilon doubled to more than 20 metric tons per square kilometer (100 ha.) of reef area. By providing a safe refuge for breeders and juveniles, fish stocks increase rapidly and spill over into the surrounding reefs where they become available to fishermen. Generally, fishermen see significant increases in reef fish populations within six months after improved living coral cover and reef fish harvests have been documented. This indicates that fish inside the reserve area move out or “spill over” to the non-reserve area where they are caught by fishermen.

***How soon can fishers and others directly dependent on coastal resources realize the benefits of a marine sanctuary?***

Marine reserves generally begin to show enhanced fish yields (up to 49% increase) after 3-4 years, and in the 10<sup>th</sup> year, fish yields appear to double. At least initially, alternative livelihood projects should be set up for the community to offset potential decreases in fishers’ income resulting from the restrictions on fishing. Such projects are largely marine-based, as fishers often find it difficult to shift to other types of enterprise. Where suitable, seaweed culture is recommended – seaweeds are a high-value crop and furthermore need clean seawater to survive, thus providing fishing communities with an incentive to keep their marine environment clean.

Ecotourism would be another area for development, especially when the reefs begin to recover. Marine sanctuaries, such as Apo Island in Negros Oriental and Balicasag in Bohol, are typically developed as dive spots where recreational activities are controlled with only snorkeling, scuba diving and underwater photography allowed. These sanctuaries also serve as educational centers where visitors can learn about coral reefs and other marine ecosystems. Visitors are often required to pay entrance and dive fees, which go to the maintenance of the sanctuaries. In addition, fishers and their families can directly benefit from tourism-related enterprises, such as selling T-shirts and souvenir items.



Apo Island Marine Reserve, Negros, Philippines, showing sanctuary and fringing coral reef

### ***Why must the community be involved in the management of marine sanctuaries?***

Protected areas have traditionally been set up by government agencies to keep people from gaining entry into and exploiting biologically and ecologically important resources. But this approach has not been altogether effective, especially with the steady increase in population pressure and demand for land and resources. It has proved to be especially difficult to implement in the marine environment, where resources cannot be fenced off and are moreover considered “common property” and therefore available to everyone. Any attempt to restrict access to marine resources is bound to cause resentment among those people who depend on these resources for livelihood. This is one reason why the community-based approach has become popular. “Involving the community can reduce the conflict which often arises in MPA establishment where the best sites for conservation are also those most economically valuable,” said Susan Wells and Alan White in *Marine Protected Areas: Principles and Techniques for Management*. Another author noted, “With involvement comes understanding, with understanding comes public support and commitment.”

Wells and White listed the following benefits from community involvement in the management of marine sanctuaries and other protected areas:

1. Sharing of economic benefits from the MPA can increase income for local people, for example, from user fees (e.g. tour operators and entrance fees) and visitor facilities (accommodation, transport, food, guides, etc.).
2. Improved employment opportunities may arise, both in and outside the MPA, through the growth of services such as hotels and restaurants.
3. A successful MPA may result in improved yields in local fisheries.
4. Community involvement can facilitate enforcement of regulations, as local people will understand and accept their purpose more readily.
5. The community can assist or even be responsible for enforcement, thus reducing costs to government agencies. They can make their

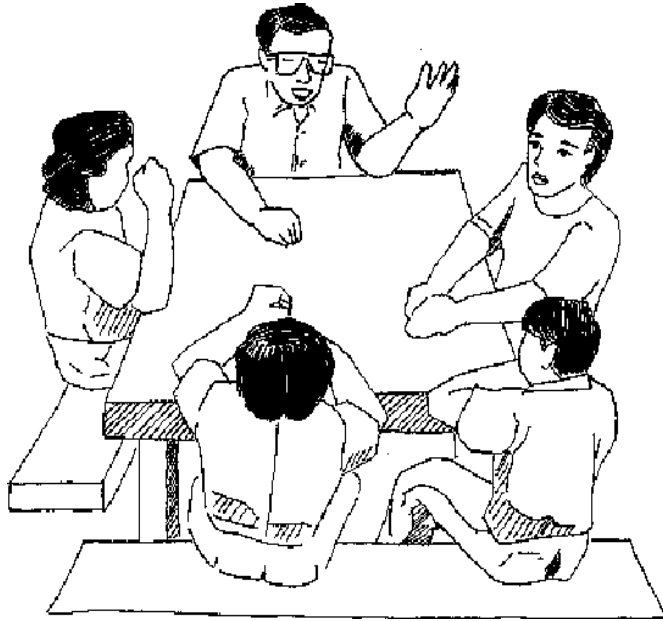
own rules as these apply to their community, and they can enforce the rules in two ways — the formal way using fines and prison sentences and the informal way using cultural, religious and social sanctions.

6. Where there are financial constraints, local people can be mobilized to help develop interpretive programs and assist with education.

***What is the recommended framework for establishing a community-based marine sanctuary?***

The establishment of a community-based marine sanctuary is not a linear process but an integrated approach involving several components which may or may not occur simultaneously. It is generally based on the following framework:

1. **Community Organizing.** This process involves organizing and empowering the members of the community to manage the sanctuary, implement rules and regulations, impose sanctions against violators, and in general take the major responsibility for day-to-day decision-making and management of the resources.
2. **Community Education.** This is a continuing process that starts before the sanctuary is established and continues through its whole lifetime. Before a marine sanctuary can be established, there should be an awareness and public education campaign to explain to the people the concept of marine sanctuaries, including principles of ecology, condition of the environment and the benefits of proper resource management. And, long after the sanctuary has been established, the education campaign must continue to ensure that there will always be coastal resource leaders ready to take responsibility for its management.
3. **Establishing a marine sanctuary.** Technical expertise is required to delineate a marine sanctuary. To promote community participation, however, scientists must involve members of the community as much as possible. The greater the community participation, the more the community understands the process, and the more they will feel confident and be able to manage the sanctuary on their own.



4. **Legislation.** Scientific information and community acceptance are the bases for establishing a marine sanctuary, but it is the law that institutionalizes and gives it legitimacy. Laws enable sanctuary managers to enforce the regulations necessary to effectively manage of the sanctuary.
5. **Sustainability.** There is no end to the process of ensuring the sustainability of a marine sanctuary. It involves continuous education and continuous strengthening of community organizations. It means getting all sectors to work together and continuously developing in people a sense of ownership and responsibility for the resources they are committed to protect. For a sanctuary to work, it is important that each individual in the community understands that his livelihood will be affected by how well the sanctuary is managed and expresses confidence in his ability to take care of the sanctuary.



# Community Organizing

# 3



The success of coastal resource management projects can be attributed to *organized* communities who share in the responsibility of managing and protecting these resources. The first component of the framework for the establishment of a community-based marine sanctuary, therefore, is community organizing.

### ***Why involve the community?***

The community-based resource management approach has been used for land management as early as the 1950s, but it was only in the 1970s that it was used for marine resource management. In the past, MPAs were set up to keep away people, including fishers and other coastal stakeholders, from biologically and ecologically important resources in order to protect these resources. As population pressure and demand for marine resources increased, however, it soon became more and more difficult to manage and protect these areas. Unlike land resources, marine resources are not easy to fence off and moreover are considered a “common property” and available to all. Protection and management of these resources would be extremely difficult without the support and cooperation of the stakeholder community.

The benefits of community involvement in the management and protection of marine sanctuaries are discussed in greater detail in Chapter 2.

### ***What is community organizing?***

Community organizing is said to be the “glue” that holds a CRM program together. It is needed to achieve the long-term sustainable management of the sanctuary. As individuals, small-scale fishermen are aware of the problems threatening coastal resources, but they feel helpless or do not realize their own capacity to solve these problems. Community organizing is a process that helps them identify and prioritize their resource problems and needs and empowers them to begin to work together towards finding solutions.

### ***What are the goals of community organizing?***

Community organizing is undertaken to achieve the following:

1. Increase the coastal community’s awareness of the condition of their environment and existing resources and realize their collective responsibility to manage the environment at a sustainable level.
2. Develop in people a sense of ownership for the resources, and help the community recognize their part in the problem and take collective responsibility for managing and protecting these resources.



3. Provide more opportunities for local participation that involves men and women making decisions and taking action using the CRM process of problem identification, planning, implementation and monitoring.
4. Strengthen the community's capability to access internal and external funds to support viable and sustainable socio-economic projects.
5. Enable the community to link and form alliances for advocacy and sharing of resources and technologies.
6. Build and sustain permanent and sustainable organizational structures for resource management.
7. Provide the necessary social preparation for the use of other CRM participatory tools and instruments.

### ***Who comprises the community?***

The community may be composed predominantly of subsistence-level fishers, and it may include many sectors with different interests, such as commercial fishers, farmers, or those involved in the transportation, tourism and property industries. It also includes the local government, as well as other government agencies working in the area. Often, it is the subsistence-level fishers who are greatly concerned about the implications of having a marine sanctuary in their community. The restrictions imposed by sanctuary rules on fishing activities understandably raise fears among stakeholders about their livelihood, more so because the best sites to set up a sanctuary are those which are still relatively intact and productive.

By involving the community, it is our objective to promote the capability of all sectors, along with the different organizations helping them, to assume their responsibility for the management and protection of the marine environment and resources under their jurisdiction.

### ***What are the levels of community involvement?***

It is generally accepted that community involvement in establishing a marine sanctuary improves the chance for success of the project. Such involvement will differ depending on what the projects' goals are. Listed below are the

different levels by which communities can become involved in MPA management.

1. **Community involvement in biosphere reserves.** The concept of a biosphere reserve is very different from that of the traditional form of national park in that human activities are considered to have a constructive role in environmental protection. Biosphere reserves aim to combine the functions of preservation of biological diversity, research, education and training within a single site through a zonation system. The goal is for biosphere reserves to be ‘demonstration sites of harmonious, long-lasting relationships between man and the natural environment’. In recent years, this concept has been recognized as particularly relevant to the marine and coastal environment.
2. **Community involvement in government-established MPAs through a collaborative arrangement.** Government involvement is often essential in the protection of large areas, where the disparate interests of different communities and users may conflict, and at sites where the economic benefit of the MPA is not immediately evident to the local people. Many government-established MPAs have public education as one of their main objectives. Often, an MPA becomes an important focus of the community, even if there was little community participation at the start.
3. **Involvement through the existence of traditional regulatory customs or their reinstatement.** Traditional ownership of marine sanctuaries – by large clans or large communal groups, for example – implies an understanding of the concept of enforcement of regulations by local people. It thus offers a strong base for community involvement and can be used to improve MPA protection. Sometimes, the traditional customs may be sufficient in their existing form; in other cases, it may be desirable to recognize them openly and provide a modern legal foundation to strengthen them.
4. **Community-based reserves where there is maximum involvement.** These reserves may have no formal government endorsement initially but are often subsequently supported by government (national or municipal) legislation, and receive input from government programs. As well as protecting resources and preventing deterioration of

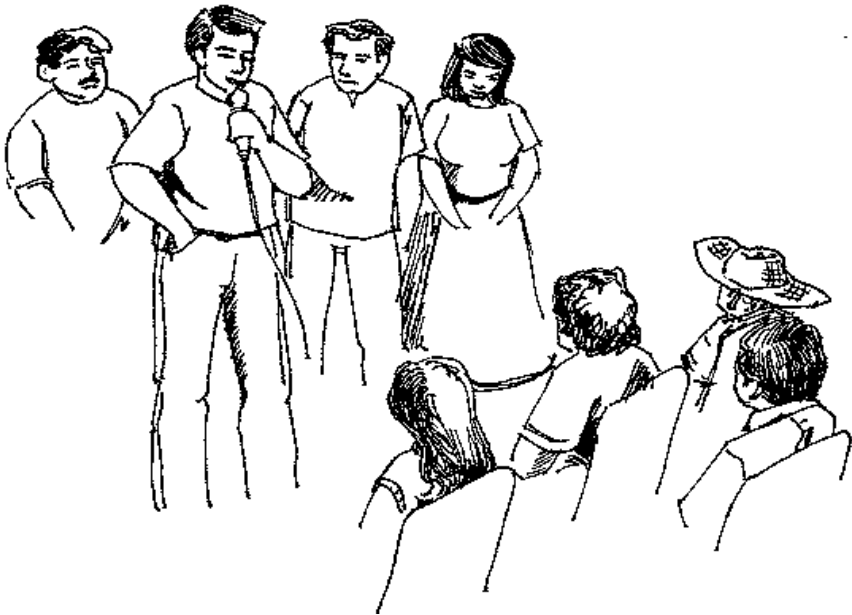
the marine environment, they often have a more specific purpose related to the community.

### ***Who are the people involved in organizing the community?***

Community organizing is primarily the responsibility of the community worker or organizer, but it is in the end a collaborative effort among all members of the community, including fisherfolk, church leaders and government officials. The presence of a partner organization, usually a non-governmental organization (NGO) or university, is also vital as it pushes the process forward. The organization usually provides technical advice and funding during the initial phases of the project. The ultimate aim, however, is to “upskill” and empower the community so that they are able to manage and protect the sanctuary on their own.

### ***What is the role of a “community organizer”?***

The community organizer serves as a “bridge” between the community and those who want to help that community. He or she is expected to have the following attributes:



1. A clear grasp and understanding of the different theories of development
2. Familiarity with the concept and processes of community organizing
3. Social and community relationship skills
4. In the context of organizing for CRM, the ability to work with other teams of professionals involved in the management of marine and coastal resources.

### ***What does community organizing entail?***

Community organizing is a process that progressively leads to the achievement of the goals of community-based resource management. It involves the following phases or stages:

#### ***A. Social preparation***

Community organizing starts with the *social preparation* stage, which involves building awareness in the community about the concept and need for the marine sanctuary and the benefits it can bring. The objective is to promote acceptance of the project by the community. This stage includes the following activities which are undertaken *before* the entry of the community organizer in the project site.

1. **Orientation and/or training of the community organizer.** The community organizer must have at least some basic knowledge of CRM principles.
2. **Area selection.** Criteria for site selection must be established. These vary from site to site, and according to the needs and design of the CRM program to be implemented. But the following guidelines generally apply: 1) the area must not have serious peace and order problems, 2) community and local government leaders must be receptive to the project, and 3) the project site must be easily accessible.
3. **Data gathering.** At this stage, one only needs to gather information about the project area from secondary sources, e.g., existing documents, interviews with outsider key informants who know the place, etc.

4. **Logistics and administrative preparations** (by the implementing agency).

***B. Integration phase***

After the social preparation phase, the community organizer immerses himself or herself in community life in order to gather, from community members themselves, the information he or she needs to organize the community. The organizer must have an intimate knowledge of local conditions, as well as a sound knowledge of community psychology, economics and sociology, and should ideally also be capable of basic marine resource monitoring and fishery assessment. In the Philippines, community workers move into the area for a period of up to six months to introduce to the community the idea of a marine sanctuary, meet community leaders, attend local meetings and become accustomed to the local culture and traditions.

Specific activities include:

- **Courtesy calls on community leaders.** At the outset, the community worker must seek support from local leaders and encourage their participation in the CRM process.
- **Data gathering.** A recommended approach to gathering information about the project area is through what is known as “participatory coastal resource assessment” or PCRA, that is, resource assessment accomplished with the extensive participation of and contributions from local coastal resource users. Data collection and scientific studies for the development of the management plan and its later evaluation are normally started at the beginning of the



project. Local people may be able to provide important data, such as seasonal variations in fish abundance, distribution of different marine ecosystems, resource use and meteorological information. In Philippine community-based MPAs, feedback to the local people on the results of scientific work has helped to generate interest in and acceptance of the marine reserve area.

- **Identification of existing and potential leaders**
- **Initial formation of core group who could initiate the PCRA activity.** Different sectors in the coastal community should be represented in the core group. The community worker helps set up a coastal resource management committee or council, which includes representatives of all the users' interests. The committee is responsible for the management of activities in the marine sanctuary. Its organization is crucial as it gives real responsibility and power to the community for the management of the protected areas.
- **Evaluation of the activities of the marine management committee.** Taking into consideration the community's customs and traditions, the community organizer helps the committee come up with rules governing the sanctuary. He or she will evaluate and monitor these activities, bearing in mind that the welfare of the community is always the primary goal.

### *C. Mobilization phase*

When the community has prioritized their needs and aspirations and identified their leaders, the stage is set for community mobilization. Listed below are some of the activities that the community should be encouraged to undertake:

- **Community planning and implementation.** This includes forming fishermen's associations or livelihood cooperatives to strengthen the bargaining power of the community
- **Leadership formation training and team building.** Community leaders may be sent to leadership training, orientation and seminars where they learn to be more effective in helping their community

- **Cross-visits.** Members of the coastal resource management committee can visit successful marine reserves so they can learn from other communities' experiences in setting up their sanctuaries
- **Economic and livelihood generation projects**
- **Conflict resolution and problem-solving**
- **Skills training and development** aimed at building the community's capability to manage the sanctuary
- **Establishment of resource management structures** to serve as a framework for the operation of the marine sanctuary
- **Advocacy and social mobilization** to rally support for the establishment of the sanctuary
- **Formalizing the organization** to pave the way for legislation that will be used in managing the sanctuary. It is the marine management committee's main task to draft the resolution that will provide the necessary legal basis for the establishment of the marine sanctuary



#### ***D. Strengthening the organization***

To ensure the sustainability of the marine sanctuary, there should be constant strengthening of the organization. This is most effectively achieved through positive feedback and publicity of the success of the marine sanctuary. Favorable comments from visitors and interaction between visitors and the community help affirm the value of the sanctuary to the community. Exchange visits with other communities involved with MPAs, perhaps combined with training sessions, can foster interest and pride in their accomplishments as guardians and stewards of the sanctuary. Increases in fish population and fishery yields can encourage further local participation.

This phase includes the following activities:

- Training of leaders and/or community volunteers in community organizing
- Networking and building alliances with other organizations
- Strengthening socio-economic services initiated during the mobilization phase. Special events may be staged to bring together the different sectors of the community to promote CRM. Residents, students, non-governmental organizations and the local media can use exhibits and games, newsletters, and premiums (T-shirts, postcards, etc.) to get positive publicity and interest and make the community more aware about the importance of the marine sanctuary.
- Training of trainers and second-line leaders
- Organizational strengthening through value formation and advance leadership skills training

#### ***E. Evaluation and monitoring***

Evaluation measures the success or failure of the marine sanctuary and identifies unresolved problems or needs. Monitoring is the continuous gathering of information about the sanctuary and its management. During this phase, the community worker will seek answers to questions such as:

- Were the objectives of the project met? Why or why not?
- What were the reasons for the success/failure of the project?



The answers provide a clue as to whether or not the community is ready to manage the sanctuary on their own. They will also serve as a basis for the community to decide to retain or modify the existing strategies used in managing the sanctuary.

### ***F. Phase-out/Termination phase***

“Phase-out” refers to that stage when the community organizer starts to withdraw from the community because the goals set by the community and the worker at the start of the community organizing process have been achieved. It is assumed that, at this stage, the community has reached a certain level of capability to continue the management of the sanctuary and sustain or even expand the resource management structures that have been established. The community will then take full responsibility for managing their resources. They should be capable of finding the resources (human, technical or material) required in maintaining the sanctuary. A formal community turn-over may highlight the “phasing out” of the community organizer from the community.

### **Additional notes**

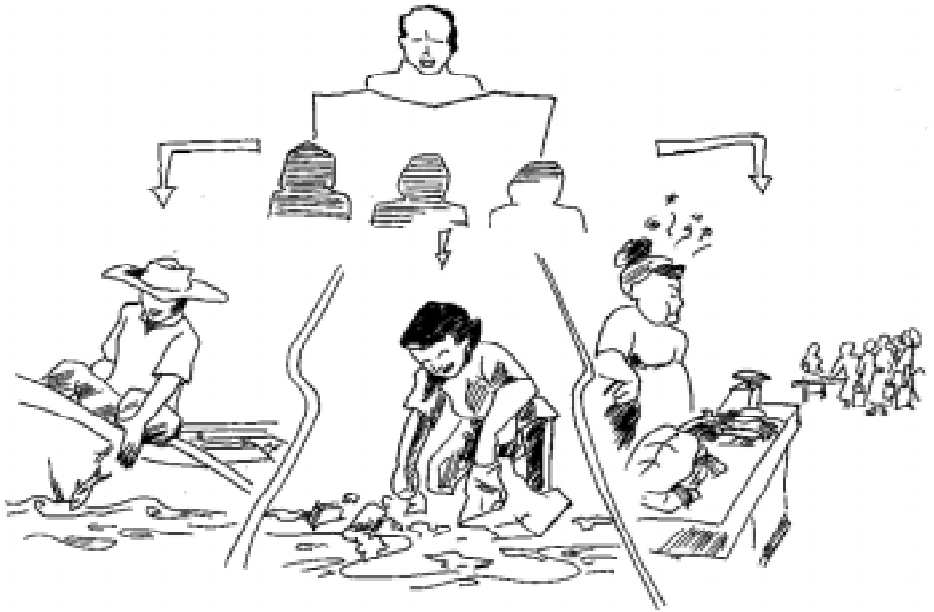
The different activities identified in each stage do not happen chronologically and are not mutually exclusive. Some steps happen simultaneously, and some can take place not only during the community organizing phase itself but through the entire process of establishing and maintaining the sanctuary. Community organizing takes time, typically at least two years.

Stakeholders who take full responsibility for the protection and management of the sanctuary are a strong indicator that the community organizing process has succeeded. Communities empowered by a successful community organizing process are self-reliant. From time to time, they may need to consult with or seek assistance from experts to help them assess the condition of their marine environment. Ultimately, however, they make the final decision on how to manage their coastal resources for the good of their community.



## Community Education

## 4



We have learned that the community must be organized to effectively manage their marine sanctuary. But the community should not only be organized, they should also be educated. Knowledge forms the anchor which helps ensure that the community will continuously protect the established marine sanctuary as a way to manage coastal resources.

### *What is the concept of community education?*

Resource depletion and environmental degradation are perhaps the most critical threats facing the stakeholders of coastal resources. It would be a definite advantage for stakeholders, especially small fishers, to learn the proper way of managing coastal resources so they may benefit more from these resources.

Community education aims to increase the level of knowledge of the members of the community about their coastal environment so that they are able to manage their coastal resources properly. In the context of CRM, the “environment” includes coral reefs, mangroves, seagrass and other coastal ecosystems on which the community depends.

Community education goes hand-in-hand with community organizing. The educational phase usually comes before the establishment of the sanctuary because the community must first understand why they need the sanctuary. Failure to involve the community can mean failure for the project.

### *Why is community education important?*

Through community education, community members are able to understand the importance of establishing a marine sanctuary and the role each one of them plays in the protection of the sanctuary.

The community must be convinced of the need to protect and manage their own resources. The educational program must therefore include discussions on the importance of maintaining the natural order of ecological relationships to ensuring the sustainability of marine resources.

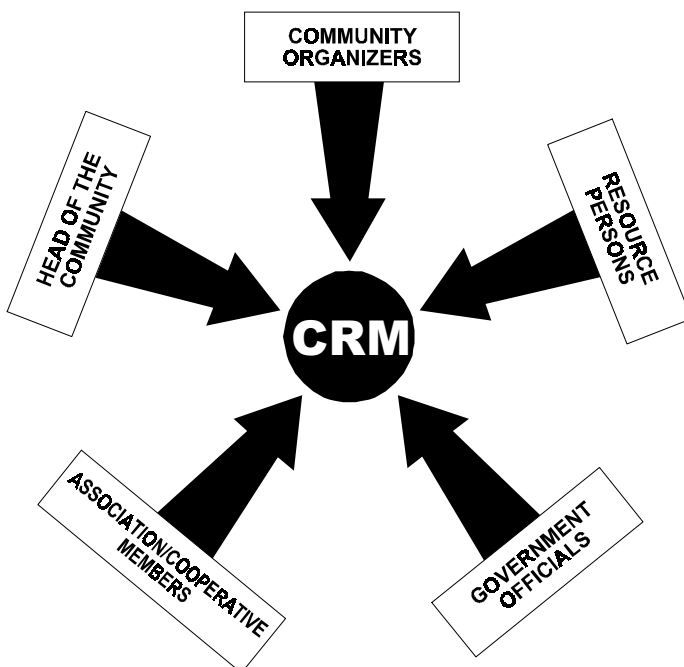
### *Who are involved in community education and what are their respective roles?*

1. The **community organizer** prepares the community and supports the community education campaign.
2. **Resource persons** give lectures, prepare slide shows and conduct demonstrations to emphasize the need for the marine sanctuary and its protection.

3. **Representatives from people's organizations** or cooperatives train in marine resource management and pass on this knowledge to the other members of the community.
4. **Government officials** from the barangay, municipal, provincial and national levels operate and enforce the rules drawn up for the protection of the marine reserve.
5. **The community** itself, including members of various people's organizations and cooperatives, whether or not directly dependent on coastal resources for their livelihood, helps in various ways to maintain and sustain the sanctuary.

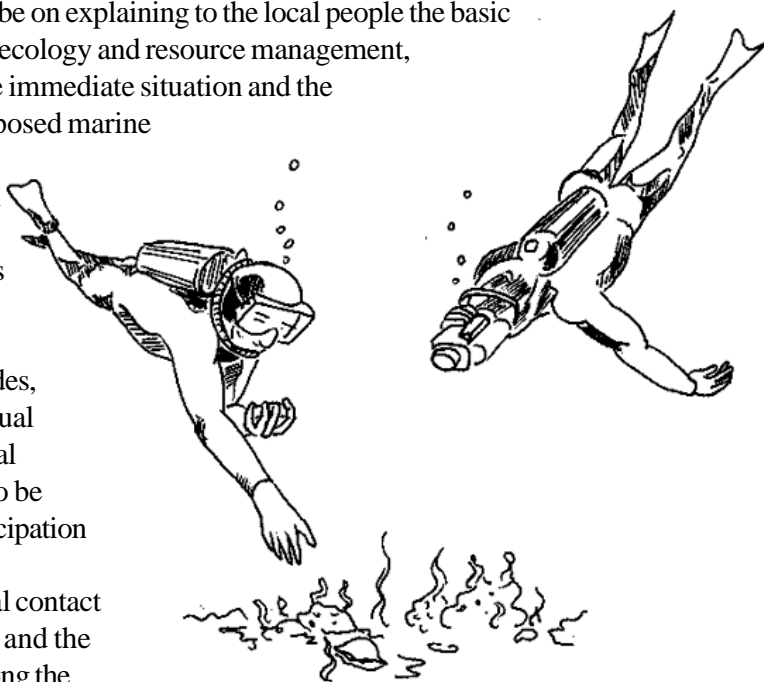
*What is the scope of community education?*

The success of a community-based marine sanctuary depends on the level of the community's awareness and knowledge of their coastal and marine environment. As in any educational campaign, it is important to provide accurate information, which will serve as a basis for formulating a program of



action for the establishment and management of the proposed marine sanctuary. This includes scientific information such as biophysical data on the status of the coral reef, fish population, water quality, water currents and other features and processes that may affect the design and management of the sanctuary. It also includes socio-economic information, such as incidence of fishing, common fishing grounds, the fishing equipment used, fish catch, population of the community that will be affected by the proposed marine sanctuary area, and the percentage of the population dependent on the coast and its resources. Such information will also be used to determine the most ideal site for the sanctuary, although the site actually chosen is often a compromise between the “ideal” site chosen by the experts on the basis of its physical and biological characteristics and the site preferred by fishers on the basis of their own needs (fishers generally pick those sites that are not very productive).

Community education should be a continuing process implemented at all stages of the establishment and management of a marine sanctuary. The initial emphasis will be on explaining to the local people the basic principles of marine ecology and resource management, their relevance to the immediate situation and the relevance of the proposed marine sanctuary to the community. This can be achieved through small group meetings and an occasional more formal presentation with slides, posters and other visual materials. Non-formal methods are found to be best, permitting participation and interaction, and encouraging personal contact between the experts and the community, and among the stakeholders themselves.





Local people — teachers and students, for example — should be encouraged to take part in the education campaign, as they will often be able to bring the message across in the most appropriate way for the community. As individuals become more enthusiastic about the project and involved in it, their assistance can be solicited to spread the word and help with the educational process. It can be particularly helpful if local community leaders visit similar projects. This has been shown in Negros Oriental, where fishers and local leaders from different municipalities set up their own marine sanctuaries after visiting the successful Apo Island Marine Sanctuary off the southern coast of Negros Island. As Frederick J. Vande Vusse noted in his paper “Experiences in Community-Based Coastal Resource Management” (1992), “fishermen who are experienced in and actively using a resource management technology are among the very best extension agents.”

## **Additional notes**

On the premise that informed citizens are the best advocates of the formation and establishment of MPAs, increasing emphasis is being put on community education. Community education is thus linked with every step in the establishment of marine sanctuaries, from community organizing to the operationalization of the sanctuary to the enforcement of laws. This allows community members to understand the marine sanctuary's intrinsic value to their livelihood and survival and appreciate their own role in protecting it.



# Physical Establishment of the Marine Sanctuary

# 5

## *What is a marine sanctuary?*

A marine sanctuary is a part of the ocean or coastal area that is recognized as a *protected area*. This means that all marine life within the area is kept safe and any activity that threatens them is prohibited.

The sanctuary is established to meet different needs and, as such, is partitioned into different zones. There could be a “no fishing area”, an area where non-harmful fishing is allowed, an area for research, and an area for recreation, all depending on an agreement within the community on the management of the reserve.

## *What are the objectives of establishing a marine sanctuary?*

1. To protect and manage valuable coastal ecosystems
2. To restore and rehabilitate depleted and/or damaged marine habitats
3. To increase fish yields in areas outside the reserve where fishing is allowed



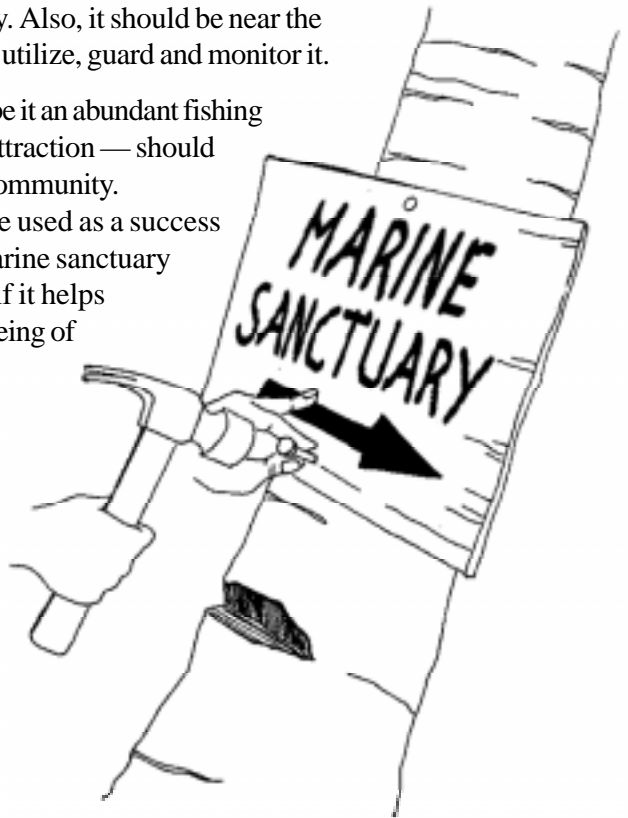
## *What broad steps must be taken to set up the sanctuary?*

The physical establishment of the marine sanctuary is best done by experts with the participation of the community. There are three broad steps in the establishment of a marine sanctuary: site identification, zoning, and the formation of a coastal resource management committee or council.

### **Site identification**

The area selected for the proposed marine sanctuary should have access to clean water and should be outside the sea routes of ships. There are five important criteria to be considered in site selection:

1. *Social criteria.* The *acceptability* and *accessibility* of the area should be considered. The marine sanctuary should not obstruct the traditional fishing area of the community. Also, it should be near the homes of the people who will utilize, guard and monitor it.
2. *Economic criteria.* The site – be it an abundant fishing ground or a potential tourist attraction — should nurture the livelihood of the community. Economic criteria can also be used as a success indicator of a project. The marine sanctuary can be considered a success if it helps improve the economic well-being of the community.
3. *Ecological criteria.* These criteria take into account the importance of the ecosystem being proposed for protection. They include:
  - a. The area is a critical home for different marine species and is a place for marine life to breed, feed and grow.
  - b. Its ecosystem is rich and diverse.



c. It is in good enough condition so that reversal of any damage to the environment will not take too long.

d. It is not easily affected by human activities.

4. *Regional criteria.* Marine sanctuaries can be used as a tool to encourage other communities to include CRM in their development agenda. For example, fishers from various areas of Central Visayas were convinced to establish their own marine sanctuaries after they visited the Apo Island Marine Reserve. There are now at least 27 marine sanctuaries in Central Visayas and many of these are managed by local communities.

5. *Practical criteria.* These include:

Urgency – How badly and how soon does the community need the marine sanctuary?

Size – How big should the sanctuary area be? Is the size acceptable to the community? Is it suitable to their needs?

Effectiveness – How useful will the sanctuary be to the community?

## **Zoning**

Experts recommend that the size of the marine sanctuary be about 10-15% of the total coastal area. It is therefore important to think about partitioning the sanctuary into several zones. For example, it can have a “no fishing zone”, a “buffer zone” where one can anchor boats but no form of fishing is allowed, and a “non-reserve zone” where non-destructive forms of fishing are allowed. Zoning is done after the community has agreed on where the marine sanctuary will be and the sanctuary is legislated through a municipal ordinance. Zoning is usually undertaken with the help of scientists.

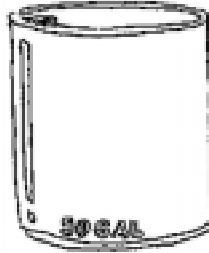
***Marking the sanctuary’s boundaries.*** The zones are marked with buoys to show the physical boundaries. Buoys used as markers are made of a floating device, usually an empty nylon or plastic drum, and nylon rope. The rope is tied to the drum and its other end to a sinker or big stone under water.

Here's one way to construct a marker buoy:

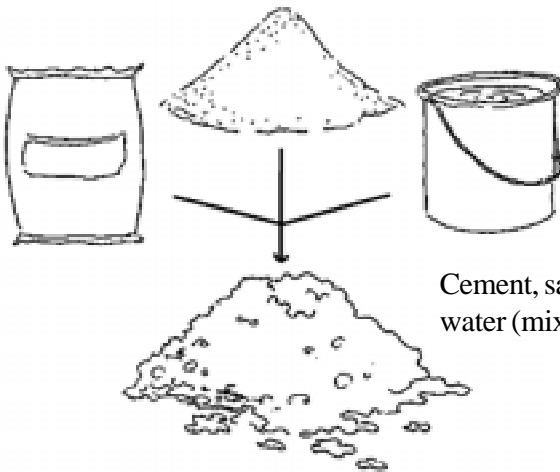
*Materials* —

*Procedure* —

1. Pour cement mix into the barrel.

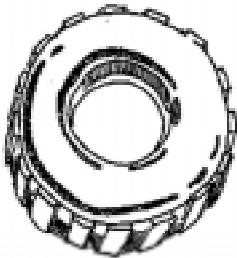


One-half (bottom part) of a 50-gallon barrel



Cement, sand, gravel, water (mix)

Rubber tire



Nylon rope  
(length depends on site conditions)

2. Push the rubber tire into the wet cement as shown in the illustration so that one-half of the tire forms a loop to which the nylon rope will be tied.

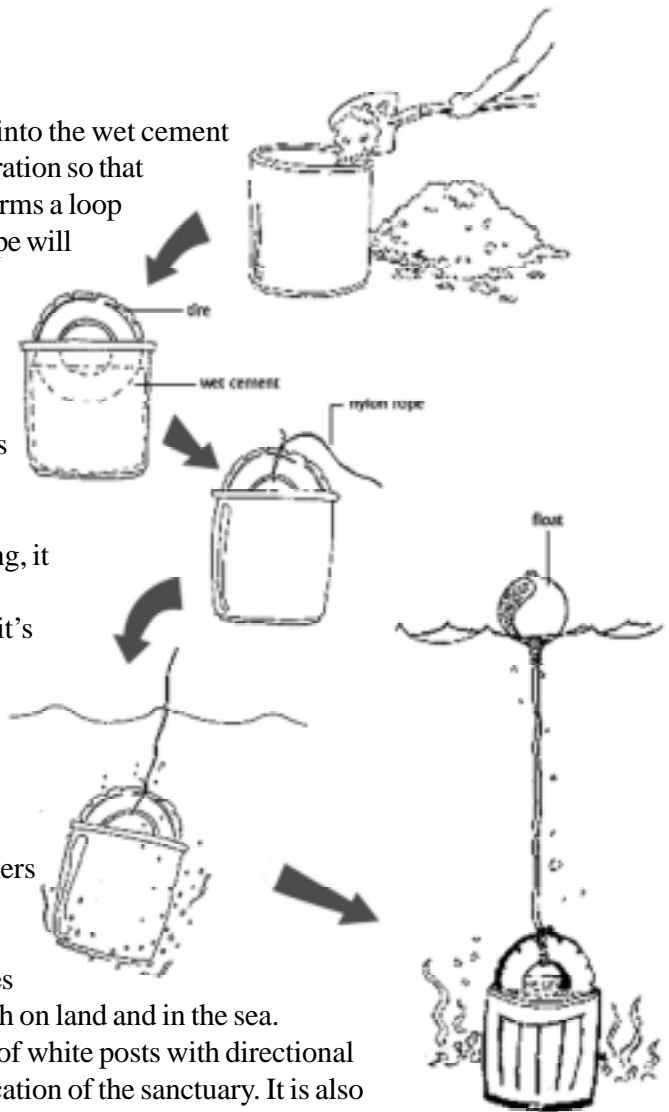
The markers should be installed during good weather. Consider the waves and water currents at the site, and estimate the length of rope to be used. If the rope is too long, it will get tangled and may damage the coral reef; if it's too short, it may break against a particularly strong wave or wind.

*Signboards and directional signs and markers.* Signs and markers giving directions to the sanctuary must also be installed in strategic places around the sanctuary, both on land and in the sea. These can be in the form of white posts with directional arrows pointing to the location of the sanctuary. It is also usual practice to put up signboards that spell out the laws governing the sanctuary.

The markers or signs to be used in the sanctuary should be made of sturdy materials that can withstand strong wind and waves.

### **Organizing the *Bantay Dagat* or Coastal Resource Management Council**

A committee, composed of fishers and other members of the community, will take charge of the day-to-day management of the sanctuary. This committee,



often referred to as the Marine Management Committee, Coastal Resource Management Council, or, under the new Fisheries Code, the Fisheries and Aquatic Resources Management Council, is organized when the sanctuary's boundaries have been set and the markers and signs are put up. It is typically composed of fishers' representatives, women leaders, community elders and other key persons in the community.

It is recommended that a watch tower or guard house be built on the coast nearest the sanctuary. This will allow committee members and watchers to closely observe and monitor activities in the sanctuary area. The facility can also be used for other community activities (training, seminar, committee meetings, etc.).

To adequately protect the sanctuary, the management committee must be equipped with at least one patrol boat, telescope and snorkeling gear. It must actively lobby for support from the following:

1. Fisherfolk organizations who are aware of their rights and responsibilities as coastal resource stakeholders
2. Government officials at all levels (village, municipal, provincial and national)
3. NGOs and other organizations and institutions that can assist the community in developing alternative sources of livelihood

### **Additional notes: Examples of successful community-managed marine sanctuaries**

#### ***Marine sanctuaries of Negros Oriental***

Besides the Silliman University-initiated Apo Island Marine Sanctuary, several other sanctuaries have been set up by the Environment and Natural Resources Division (ENRD) of the provincial government of Negros Oriental. At least 17 marine sanctuaries have been legislated through municipal ordinances in 11 towns. These are deliberately kept at 6-20 hectares in size so they will not interfere with the livelihood of fisherfolk. The sanctuaries prohibit fishing and anchoring of boats in the core sanctuary area and destructive fishing practices in the "non-reserve area".

### ***Balicasag Island Municipal Marine Park Project***

Started in 1985, this project enjoys unstinting support from the Balicasag Island residents. The community agreed through their marine management committee to establish zones in two areas. One of the zones covers 8 hectares extending to 550 meters southwest of the coast. There is a strict prohibition on fishing but activities such as swimming, snorkeling, diving and other recreational activities are allowed. The second zone surrounds the island up to 500 meters from the shore, including the whole coral reef area where traditional and non-destructive fishing methods are allowed.

These zones are protected by municipal ordinances and enforced by the marine management committee. Committee members have been taking charge of the overall maintenance of the sanctuary, placing markers and buoys, patrolling the area and warning tourists about rules on the use of buoys and anchors.





## 6

## Legislation for Community-Based Marine Sanctuaries

The successful establishment of a marine sanctuary depends not only on scientific information and acceptance by the community, but also on ordinances and other legislation that form the legal basis for regulation. Different sectors of the community participate in the establishment of marine sanctuaries. For the sanctuary to be managed with some semblance of order, its basic principles should be expressed in the form of law.

### *Drafting a village resolution*

The process of legislation starts with the people's organization or fishermen's cooperative or the Coastal Resource Management Committee preparing a resolution to request the barangay council to support a move delineating a particular area of the coast for a marine reserve. This is the CRM committee's primary responsibility.

The resolution designates the proposed area using technical descriptions. Ideally, details such as specific boundaries and other technical information are incorporated into the resolution with the assistance of experts from government agencies such as the DENR and the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR).

It should be noted that the resolution is merely a recommendation or an expression of intent. It is not recognized as a law until it is approved, in the form of an ordinance, at the municipal level. Should the proponents of the resolution meet resistance from the barangay council, they have the option to submit the resolution directly to the municipal council. Ideally, however, they must seek the barangay council's support and endorsement, as the council will play a critical role in enforcing the sanctuary.

### ***Public hearing***

The resolution is submitted by the barangay council or sponsoring organization to the municipal council for passage into law, specifically a municipal ordinance. Before the municipal council convenes to decide on the issue, it calls a public hearing to determine the social acceptability of the sanctuary. The level of social acceptability often drives the municipal council to reject the resolution or pass it in its entirety or with modifications.

The community is expected to participate in drafting the ordinance by giving inputs on any issue that can be addressed by the proposed law. Moreover, if the municipal council fails or refuses to enact the law, the community can invoke their power of initiative by filing with the provincial election registrar a petition signed by at least 10% of the registered voters in the municipality, with every barangay represented by at least 3% of its registered voters. The Commission on Elections can then call for initiative through which the proposition is submitted to the registered voters in the LGU concerned for approval.

### ***Approval and announcement of the ordinance***

After approval by the council, the ordinance is submitted to the mayor, who must act on the ordinance within 10 days, otherwise the ordinance is considered approved. If the mayor vetoes the ordinance, the municipal council may override the veto by a vote of 2/3 of all its members. The ordinance is then submitted to the provincial board for review within three days. If no action is taken by the provincial board within 30 days, the ordinance is presumed consistent with law and therefore valid and enforceable.

The ordinance should be posted for 3 consecutive weeks. It does not have to be published in the newspapers – it needs only to be posted in places where the community can easily see it, for example, on bulletin boards at the city hall or municipal hall.

Most of the approved ordinances regarding the establishment of marine sanctuaries contain the following basic elements:

Section 1. *Declaration of Policy*. States the municipal policy on which the ordinance is based.

- Section 2. *Definition of Terms.* Defines the terms and phrases used in the ordinance, including the specific boundaries of the sanctuaries and the activities allowed within these boundaries. The boundaries of the sanctuary may also be contained in a separate section as shown in the sample ordinance below.
- Section 3. *Prohibitions.* States specific activities that are *not* allowed in the sanctuary. This section is also sometimes incorporated in the “Boundaries of the Marine Sanctuary” section as shown in the sample ordinance below.
- Section 4. *Penalties.* Specifies fines and penalties for the various violations of the rules of the sanctuary.
- Section 5. *Exemptions.* Enumerates those activities that, though expressly prohibited by law, may be allowed for special purposes or under special circumstances. These commonly include catching fish and extracting coral samples for research work aimed at improving existing management systems or other similar purposes.

### ***Monitoring, control and surveillance***

The process of legislation does not end when the ordinance is passed. Changes can be expected in the management requirements of the sanctuary and these may necessitate new legislation or modifications in existing laws. Remember, too, that the law is not a guarantee of the success of the sanctuary; it is only one way to instil discipline in those people who are presumed to benefit from it or be affected by it. These are the same people who will spell the difference between the enforcement and the non-enforcement of the sanctuary laws – the community. Continuous monitoring, control and surveillance by the members of the community are therefore necessary to ensure the full recovery of the resources within the sanctuary and its immediate surroundings.

To ensure sustainability, community members must be encouraged to take part in recording important information on fish catch and implementing a continuing community education program on the importance of maintaining the sanctuary. They must also be trained to be self-reliant so that they are

# EXAMPLE OF ORDINANCE ON ESTABLISHMENT OF A MARINE SANCTUARY

Republic of the Philippines  
Province of \_\_\_\_\_  
MUNICIPALITY OF \_\_\_\_\_  
Office of the Sangguniang Bayan

Excerpts from the minutes of the regular session of the Sangguniang Bayan of \_\_\_\_\_, held in its Session Hall on \_\_\_\_\_.

Present:

Hon. \_\_\_\_\_, Vice-Mayor and Presiding Officer  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan  
Hon. \_\_\_\_\_, Member, Sangguniang Bayan

Absent: None

Ordinance No. \_\_\_\_\_ Series of 1999

An Ordinance Establishing a Marine Sanctuary  
in the Municipal Waters of \_\_\_\_\_

BE IT ORDAINED by the Sangguniang Bayan of the Municipality of \_\_\_\_\_, Province of \_\_\_\_\_, That

**SECTION XX. TITLE.** - This ordinance shall be known as the \_\_\_\_\_ Marine Sanctuary Ordinance of 1999.

**SECTION XX. DECLARATION OF POLICY.** - It shall be the policy of this municipality to protect and manage the municipal waters and its coastal and fisheries resources for the enjoyment and benefits of the municipal fishers.

**SECTION XX. DEFINITION OF TERMS.** As used in this ordinance, the following terms and phrases shall mean as follows:

1. **Marine Sanctuary** - a designated area in the municipal waters where fishing and other fisheries activities are prohibited and human access may be restricted and which is characterized by high productivity and/or high biodiversity.
2. **MFARMC** - shall mean Municipal Fisheries and Aquatic Resources Management Council.
3. **Municipal Waters** - include not only streams, lakes, inland bodies of water and tidal waters within the municipality which are not the subject of private ownership and not included within the national parks, brackish water fishponds leased by the government, and national fishery reserves, refuge and sanctuaries but also marine waters included between two lines drawn perpendicular to the general coastline from points where the boundary lines of the municipality touch the sea at low tide and a third line parallel with the general coastline including offshore islands and 15 kilometers from such coastline. Where two municipalities are so situated on opposite shores such that there is less than thirty (30) kilometers of marine waters between them, the third line shall be a line equidistant from the opposite shores of the respective municipalities.

**SECTION XX. BOUNDARIES OF THE MARINE SANCTUARY.** There shall be a marine sanctuary in the municipal waters of this municipality within the following geographic coordinates:

From	Pt. 1	XX°X'XX"N latitude,	XX°X'XX"N longitude
to	Pt. 2	XX°X'XX"N latitude,	XX°X'XX"N longitude

to	Pt. 3	XX°X'XX"N latitude,	XX°X'XX"N longitude
to	Pt. 4	XX°X'XX"N latitude,	XX°X'XX"N longitude:

*Provided*, That fishing and other human activities in the marine sanctuary are prohibited: *Provided, however*, That scientific and educational activities shall be allowed in the sanctuary, only if written permission is obtained from the municipal government.

**SECTION XX. MANAGEMENT OF THE MARINE SANCTUARY.** The municipal government, in coordination with the MFARMC, shall be responsible for the management, protection, conservation and development of the marine sanctuary: *Provided*, That the municipal government, in coordination with the MFARMC, shall formulate a management plan for the operation of the sanctuary.

**SECTION XX. MANAGEMENT OF THE MARINE SANCTUARY.** The municipal government, in coordination with the MFARMC, shall be responsible for the management, protection, conservation and development of the marine sanctuary: *Provided*, That the municipal government, in coordination with the MFARMC, shall formulate a management plan for the operation of the sanctuary.

**SECTION XX. PENALTY.** Violators of this ordinance shall be penalized and prosecuted under Section 96 of RA 8550, otherwise known as the Philippine Fisheries Code of 1998.

**SECTION XX. REPEALING CLAUSE.** All previous ordinances, executive orders, rules and regulations or parts thereof which are inconsistent with this ordinance are hereby repealed and modified accordingly.

**SECTION XX. SEPARABILITY CLAUSE.** If, for any reason or reasons, any part or provision of this ordinance shall be held unconstitutional or invalid, other parts or provisions hereof which are not affected thereby shall continue to be in full force and in effect.

**SECTION XX. EFFECTIVITY CLAUSE.** This ordinance shall take effect ten (10) days after a copy of the thereof is posted in a bulletin board at the entrance and in at least two (2) other conspicuous places of the municipal building and the ordinance has been published once in a local newspaper of general circulation in the municipality.

**SO ORDAINED...**

**APPROVED** this \_\_\_\_\_, 1999 at \_\_\_\_\_.

I HEREBY CERTIFY the correctness of the foregoing Ordinance.

**ATTESTED:** Secretary to the Sangguniang Bayan

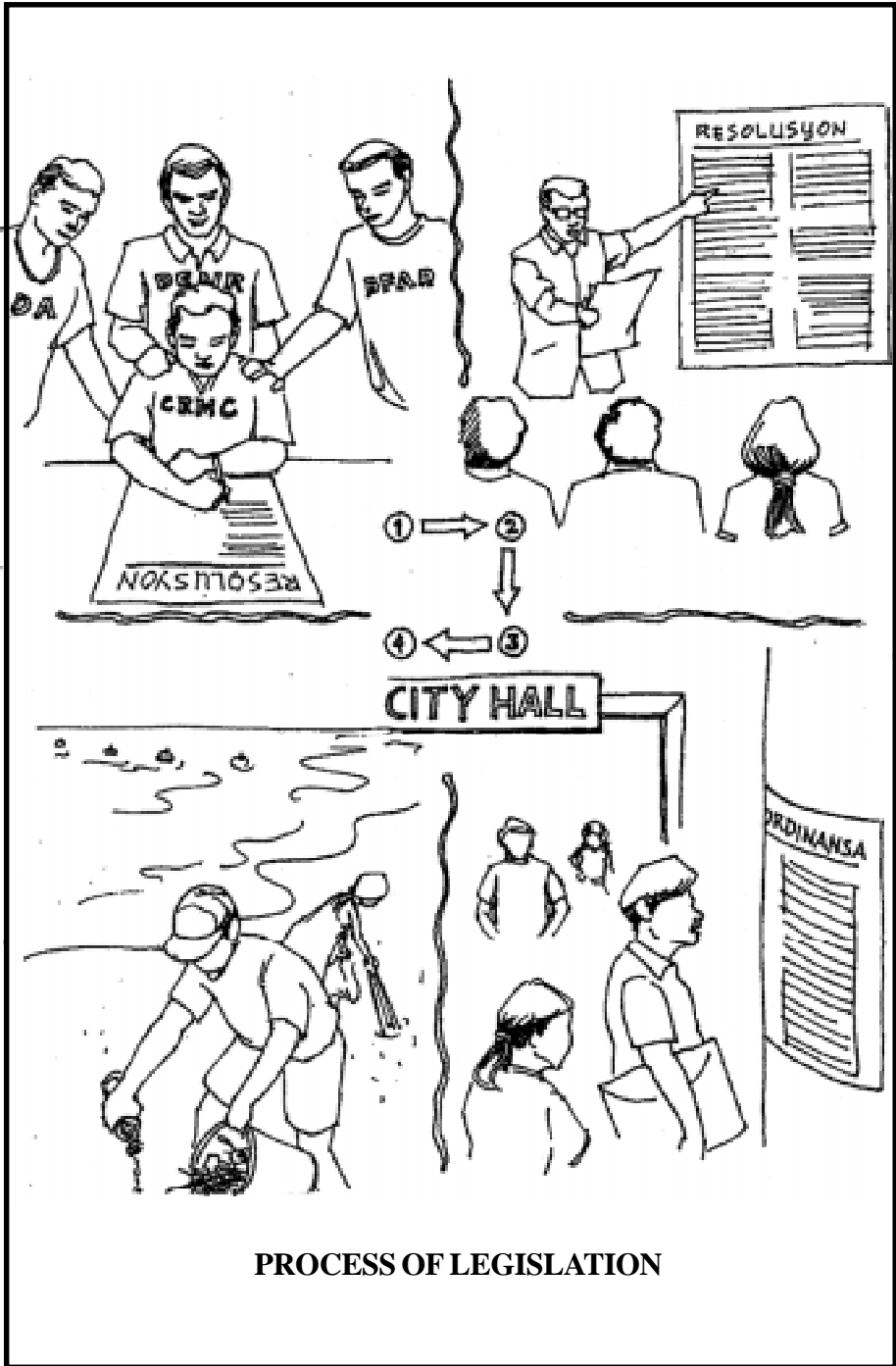
Vice-Mayor  
Presiding Officer, Sangguniang Bayan

Kagawad	Kagawad
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Kagawad	Kagawad
Kagawad	Kagawad
Kagawad	Kagawad

**APPROVED:**

Mayor

Date of Approval: \_\_\_\_\_



**PROCESS OF LEGISLATION**

able to manage the sanctuary on their own. In but a few cases, such as in places where the sanctuary covers a large area or community members refuse to work together because of conflicting interests, law enforcement is both more cost-efficient and more effective when the community itself actively helps enforce sanctuary laws.

There are a number of issues that must be addressed early in the legislative process. One of these is the question of how much fine to impose on violators. In many places, the fines are much too low to be an effective deterrent. In one community in Central Visayas, for example, the municipal council, going against the community's recommendations, set the ceiling on fines at Php3,000, which big fishers could easily afford. As a result, community members deputized to guard the sanctuary stood by helplessly as violators, encouraged by the light penalty, blatantly ignored sanctuary laws again and again. Compounding the problem, the community lacked patrol boats, communication facilities and other equipment necessary to go after offenders.

In most circumstances, however, there is much that the community can do through concerted action to protect their coastal resources. At the Balicasag Marine Park, for example, the community succeeded in putting in place an effective management system through its Marine Management Committee or MMC, which was organized to manage the sanctuary. They built a community education center, installed buoys and markers and generally accomplished their other objectives. As a result, they gained confidence in themselves and their own capability to manage and sustain the project. They also proved to themselves and others that they could solve the problems related to the management of the sanctuary, such as when some members of the community opposed the sanctuary, or when a municipal council tried to block the passage of the ordinance establishing the sanctuary. Through the concerted effort of sympathetic organizations and community members, the movement to protect the sanctuary gained ground. Those tasked to watch the sanctuary were emboldened to strictly and consistently enforce the laws against illegal fishing in municipal waters.

For as long as the community sees the benefits of having a marine sanctuary, they become more supportive of the sanctuary and more deeply involved in its management. Assessments done one year after the establishment of marine sanctuaries generally show two indicators that can be associated with direct

benefits for fisherfolk: an increase in the number of fish species and individual fishes found in the “reserve area” and an increase in fish catch in “non-reserve areas.”

### ***Continuous enforcement of the laws by the members of the community***

The process of legislation does not end with the passage of the ordinance establishing the sanctuary. The future may present problems that require new legislation or revisions to the existing ordinance. A continuing education and information program is therefore crucial so that the community is able to keep abreast of the latest techniques or innovations that can help them in managing their sanctuary. Laws are not a guarantee that order will be maintained in the sanctuary. It is people who make and enforce laws, and it takes people to break these laws. However well-crafted a law may be, it cannot ensure order if enforcement is not good and consistent and the community does not respect the law.



# Sustainable Management of the Marine Sanctuary by the Community

# 7



Sustainability as it refers to marine sanctuaries relates to the capability of the community to protect and manage the sanctuary over the long term with little or no external help. The processes that we have described in this *Guide* all have one primary goal — the sustainable management of the marine sanctuary by the community. These processes are undertaken according to the overall implementation of the more extensive process of coastal resource management or CRM.

### *Who should be involved in ensuring the sustainability of the marine sanctuary?*

1. **Coastal community.** First and foremost, community members themselves must accept the primary responsibility for ensuring the sustainability of the marine sanctuary. The whole framework of the establishment of a community-based marine sanctuary, in fact, revolves around developing the community members' sense of ownership of the sanctuary and their capability to manage the sanctuary on their own. This is why community participation is encouraged from the start.
2. **Scientists and technical experts.** Close supervision and advice from scientists and technical experts are necessary, at least at the initial stages of establishing the marine sanctuary. Experts can provide the technical inputs required to ensure that the site chosen is suitable, and that the resources are properly assessed. They can also help the community formulate the management plan for the sanctuary. Then, after the sanctuary and management systems have been put in place, the community may have to seek the experts' assistance to periodically assess the condition of the habitats and resources in the sanctuary and evaluate the effectiveness of their management system.
3. **Government agencies and other organizations.** Government support is a must for the sanctuary's success, as it is the government that is primarily responsible for enforcing the laws governing the sanctuary. Government agencies can also be counted on for technical assistance, particularly as it relates to the management of the sanctuary. Among the lead agencies that the community can count on to help are the Department of Agriculture-Bureau of Fisheries and Aquatic Resources and the Department of Environment and Natural Resources. Other organizations can also help, including those from the academe and non-governmental organizations. On Apo Island, for example, the community has enlisted the help of Silliman University on technical issues and the municipality of Dauin on law enforcement issues. Help extended by these groups should not be construed as a means for outsiders to interfere in the management of the sanctuary, however.

### *What traits characterize a marine sanctuary under sustainable management?*

1. **Community members comply with the laws of the sanctuary.** It is the community that sets the environment for law enforcement; if its own members break sanctuary rules, others will not hesitate to do the same. It is therefore imperative that the community polices and disciplines its own ranks and that it applies the law in a fair and consistent manner.
2. **The sanctuary provides economic benefits to the community.** The community has greater incentive to guard the sanctuary if, in the event that the sanctuary is lost, they would feel the effect of a corresponding loss of benefits. As has already been noted, however, the economic benefits can only come over time – it takes at least a year for the community to realize a significant increase in fish yield, for example. This is why the site in which the sanctuary will be established must be carefully chosen to begin with. It must be in a good enough condition so that resource rehabilitation and its corresponding benefits will not take a long time and the community is able to feel these benefits and equate them with the marine sanctuary.
3. **There is a local system for managing the sanctuary.** As in any functional setup, the community needs a management system with which to operate the sanctuary. It is in the interest of the coastal resource management committee that such a system can be effectively implemented. A good management system will allow the community to identify issues and problems and work out the solutions and not simply wait for others to tell them what to do.
4. **The sanctuary enjoys the full support of the community.** Sustainability can be assured by the full support of the different sectors affected by the sanctuary. This is especially crucial in the Philippines, where local officials are changed as often as every three years and the continuity of projects sometimes depends on party lines, if not on the personal inclinations of elected officials.



With fisherfolk and other non-political leaders taking on the lead, a higher degree of continuity in the management of the sanctuary can be assured.

***What strategies can the community adopt to promote sustainability?***

1. **Community strengthening.** This is usually accomplished with the assistance of government agencies (notably DA-BFAR and DENR), universities and non-governmental organizations. These agencies give seminars or additional training to people's organizations, members of the coastal resource management council or other community representatives, who will then train the other members of the community.
2. **Continuing education and livelihood training.** Community education, as has already been noted, must be a continuing process so that the knowledge and skills required to effectively manage the sanctuary are handed down through generations. Training programs must cover not only those skills directly related to the management of the sanctuary but also livelihood training to give the community additional options to improve their economic well-being and, ideally, ease pressure off the marine environment.
3. **Local leadership.** The importance of the role played by local leaders cannot be overstated. Experience shows that projects have a greater chance for success if they are supported, if not initiated, by local leaders. By "leaders" we mean not only elected officials but also respected "senior" members of the community to whom others look up for advice or guidance. The support of elected officials, especially the local chief executive, should especially be encouraged because these officials hold much of the authority over the utilization and management of natural resources in their area of jurisdiction.

***What obstacles or constraints can the community expect to face in their quest for sustainability?***

The community faces any number of constraints in the management of the marine sanctuary. These include:

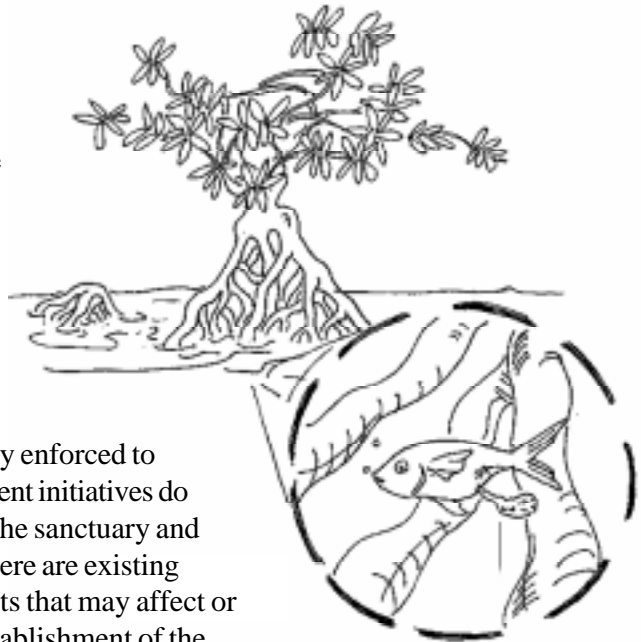
1. **Lack of support from politicians.** Among the major reasons for failure are the parochial – sometimes selfish — interests of local politicians. In at least a few cases, the elected officials themselves have been reported to be engaged in illegal fishing. Unresolved political conflicts have prompted

some community workers and organizations to leave their project areas.

2. **Development projects that run counter to the principles of a marine sanctuary.**

Zoning laws must be enacted and strictly enforced to ensure that development initiatives do not adversely affect the sanctuary and its management. If there are existing private sector interests that may affect or be affected by the establishment of the sanctuary, the concerned parties must be consulted and if possible brought into the process. The most successful projects are those that bring together varied sectoral interests and get them to work together and cooperate with each other for the greater good of the community.

3. **Lack of funds.** By the nature of their implementation, marine sanctuaries need maintenance, and maintenance requires financing. The community must have a steady supply of funds to enforce sanctuary laws, see to the upkeep of the sanctuary and supporting infrastructure, and generally run and sustain an effective management system. At least initially, funds from external sources may have to be provided. Although the ultimate goal is for the community to achieve self-reliance in the management of their sanctuary, it is important that financial support is not terminated prematurely. Generally, communities need at least four years to establish viable organizations capable of formulating and implementing development plans. Significant, concrete gains are usually not realized until after these organizations have been established. Assisting organizations must therefore put extra effort in setting up systems that would ensure that the people are engaged in livelihood activities on a sustainable basis.



### *What are the different strategies used to manage a marine sanctuary?*

Any one or all of these strategies can be used to manage a marine sanctuary:

1. **Management by the local government.** Municipal fisheries account for some 60% of the country's total fish catch. Under the Local Government Code, the local government unit holds the authority over much of these resources. One key strategy for managing sanctuaries thus involves the local government, particularly the municipal government, which is primarily responsible for putting in place the legal environment that allows the sanctuary to exist, and, where appropriate, the barangay government, which often has direct supervision over the sanctuary.
2. **Habitat management.** This strategy is used in areas where coastal resources need protection. It involves the use of technologies to rehabilitate or enhance the habitat, such as mangrove reforestation, seagrass transplantation or reseeded of depleted resources such clams, sea urchins, sea cucumber and other invertebrates.
3. **Harvest management.** This strategy involves regulation of fishing effort. It includes zonation, the implementation of closed seasons, and law enforcement.

### **Concluding notes**

We emphasized at the start of this course that the ultimate goal in the establishment of a community-based marine sanctuary is sustainable management of coastal resources. We also noted that past experiences have shown that the best strategy for achieving sustainability is community participation and involvement. This then is the underlying objective in establishing a community-based marine sanctuary: the community must see the sanctuary as their own responsibility and must realize its value to their economic well-being. For as long as they do so, they will continue not only to support and protect the sanctuary but to manage and foster their coastal environment as well.

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