

FIGURE 1. THE WESTERN COAST OF LINGAYEN GULF.

*barangay* (village) or municipal level, interacts with the project staff in conceptualizing problems and solutions, in implementing action programs, in documenting and evaluating management steps, all in an iterative fashion. The interaction allows for the community and the project staff to learn and further refine management strategies so that the capability of the community to act as a collective resource manager is strengthened. The role of the project staff throughout the process is that of a facilitator. The local community's role is that of an emergent resource manager.

To achieve this goal, local communities and the project team address six components of the research framework:

**(1-3) Community organization, environmental education, and institutionalization** are focused on empowering local communities to be able to function effectively as collective stewards of their coastal resources. Through community organization, core

groups (e.g. seaweed farmers, processing groups, fishers, women, youth) are identified, formed and later consolidated into people's organizations. Using the concepts and tools of environmental education, the communities are empowered to think about their economic and social needs and problems within the environmental management framework. Thus, throughout the process of organizing and enhancing people's environmental consciousness, a community grows in capability and strength in forming and institutionalizing people's organizations, in deepening its understanding of the natural environment, in attempting sustainable use of its living resources, in utilizing environment-friendly and economically viable livelihood systems, and in linking up with other communities and groups to share its experience.

**(4) Resource management**, includes the development and evaluation of resource use and management options which are identified through participatory

research. These options include (but are not limited to) marine reserves, aquaculture technology, land-based production systems, land and coastal development plans, and rehabilitation. This component works closely with the livelihood development and networking and advocacy components in the evaluation of options and their implementation. It is crucial to note that the success of the resource management hinges on the economic viability of complementary and environmentally sustainable entrepreneurial systems. In short, relief from fishing pressure through the provision of non-capture fisheries-based livelihood can result in consequent recovery of natural resource bases and enhancement of both food and cash security.

**(5) Livelihood development** refers to production, marketing and trading activities undertaken individually or collectively for people to increase their level of food production and to generate income which enhances their economic and social life.

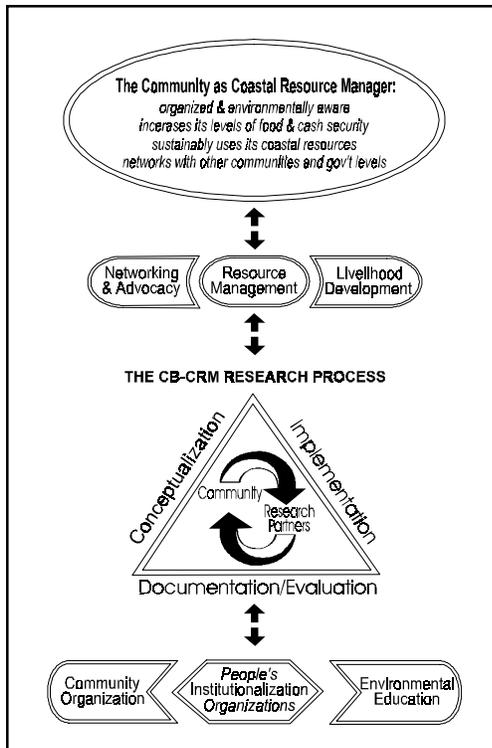


FIGURE 2. THE CB-CRM RESEARCH PROCESS.

Livelihood development also involves institutionalizing production and marketing mechanisms for self-reliance. Within a CB-CRM framework, alternate entrepreneurial systems become the major economic incentive for organized and environmentally conscious communities to decrease fishing pressure and to promote sustainable forms of coastal resource use. At the initial stage of CB-CRM, supplemental alternative technology and management are the main forms of livelihood development. As income generating activities evolve into viable business enterprises, they may be transformed into alternative rather than simply supplemental income sources. The business viability of such systems will have to be ensured both by the technical aspects of production and the social, economic and legal support structures. The ultimate gauge of the success of livelihood systems is

the significant increase in food and cash security, as well as the enhancement of the productivity and health of coastal ecosystems.

**(6) Networking and advocacy.** Networking establishes linkages with other groups and agencies working for a common goal such as coastal resources management. Advocacy is a mechanism through which organized groups and communities institutionalize their goals; in policies and laws of other groups and higher levels of governance, such as the national government. Networking is therefore a prerequisite of advocacy. In both cases, an organized community reaches beyond its

confines to help, to learn from other communities and groups and together effect significant policy changes as an ultimate expression of a collective evolution toward self-determination. In the case of CRM, the Local Government Code in the Philippines already provides for the legal rights of municipalities, to manage their coastal resources, and recognizes the role of people's and non-governmental organizations as key partners in the development of local communities. However, a major lack of policies with respect to conflicts between national development initiatives and natural resource-based economies on the matter of

pollutive industries, among other policy gaps, remains an important target of networking and advocacy.

Very recently, a core project of the International Geosphere-Biosphere Programme, the Land-Ocean Interactions in the Coastal Zone (LOICZ) with financial support from WOTRO and management support from the Southeast Asian Research Center (SARCS), has approved a four-year (1996-1999) project proposal to complement the IDRC-sponsored CB-CRM Project. Specifically, the LOICZ project will provide funds for the development of biophysical and economic models, upon which management decisions can be based.

The impact of a CB-CRM program can only be judged by the level of maturity a community will achieve as a resource manager and the extent to which it can sustain the iterative process of conceptualization, implementation and evaluation on its own. For the project team, the degree to which it will have facilitated the community's attainment of self-reliance becomes the major index of its success.



Seaweed is one of the reef resources requiring management through the CB-CRM program in Bolinao.

A. White

# Participatory Coastal Resource Assessment: San Vicente, Palawan and Sarangani Take the Lead

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## PCRA: PALAWAN

The Participatory Coastal Resource Assessment (PCRA) of the Coastal Resource Management Project was completed in the 10 *barangays* (villages) of San Vicente, Palawan in mid-April 1997. A two-day PCRA training for barangay and fisherfolk leaders was followed by the systematic implementation of the PCRA in the barangays during February and March. The PCRA process, although done in various forms in the past in other parts of the country, is being refined and tested as an essential first step in the broader coastal resource management (CRM) process.

Two teams assisted in the PCRA in San Vicente, one from February 10 through March 30 and the other during the training period of February

10 to 20, 1997. The long term team was composed of representatives from CRMP, the University of Hawaii, Bandillo ng Palawan, the Resource Management Center (RMC) of San Vicente, and the Peace Corps. The second team had staff from the Coastal Ocean, Reef, and Island Advisors, Ltd. (CORIAL); CRMP;



*Resource mapping in Capsalay Island, Port Barton (March 1997).*

Silliman University; Palawan Council for Sustainable Development (PCSD); Governance and Local Democracy Project; and GreenCom.

The PCRA training went exceptionally well with 30 participants representing each of the 10 barangays in San Vicente, the municipal office staff, the RMC and the PCSD. The training covered the following topics:

1. Introduction to CRM in the Philippines and San Vicente
2. Benefits from CRM and primary issues of concern
3. Review of existing information for CRM in San Vicente including the research of Silliman University and past surveys of the RMC
4. Overview of mapping techniques using local knowledge and participation
5. Introduction and practice of interview techniques through groups and individuals
6. Practice of mapping through the generation of a map for the whole municipality which included:
  - a. general features
  - b. habitats
  - c. resources by use of gear and resource types
  - d. management issues
7. Formulation of a coastal transect
8. How to determine the status of coastal habitats
9. Overview of an environmental profile
10. Practice field survey of beach, mangrove and coral habitats

The mapping exercise was popular and fun. A detailed map of San Vicente Bay with all features,

habitats, resources, uses and issues was completed. This map was then used as base map for the PCRA at the barangay level.

The final outputs of the PCRA in San Vicente include:

- ♦ Detailed maps of each barangay generated by the local residents.
- ♦ Detailed map of San Vicente generated by all concerned.
- ♦ The participation of more than 300 local residents in the mapping and survey activities in 27 *sitios* of the 10 barangays.
- ♦ The development of an environment profile for the bay which reflects past research conducted by the Silliman University and the results of the PCRA.
- ♦ The active engagement of the RMC together with the barangay officials and community leaders, the PCSD, the Bandillo ng Palawan, and the CRMP.

## **PCRA: SARANGANI**

Utilizing the same topics and capitalizing on the experience in San Vicente, the CRMP held the PCRA training course in Sarangani from February 24-26, 1997. Participants were chiefly municipal planners and agricultural technologists from seven of Sarangani's municipalities (including General Santos City) and five municipalities along Malalag Bay in Davao del Sur. Five of the CRMP Learning Area Coordinators also participated. Unlike in San Vicente, the course was envisioned to be a trainers' training wherein the participants would implement the PCRA in their respective barangays upon their return to their municipalities.

The most popular part of the course was the mapping exercise. Three maps were produced, that of Sarangani Bay, Malalag Bay and Olango Island, Cebu. The field trip to Kawas Beach and Ladol Beach, the latter representing a damaged area, proved not only educational but fun as well.

Highlighting the course, apart from the mapping and field exercises were the active discussions during the class sessions. Many of the participants were trainers in their own right and thus, were able to share their experiences, provide suggestions, and pose valid queries particularly on the implementation of the PCRA at the barangay level.

Comprising the training team were Dr. James Maragos from CORIAL and five CRMP staff from Sarangani and Cebu.

## **LESSONS LEARNED**

**1** The active mapping of features, habitats, resources, uses and issues by local residents is indeed popular and productive both for the local communities concerned and objectives of CRM planning.

**2** The knowledge of local fishers on resources and their uses is sufficient to detail an accurate map without excessive field checking.

**3** The preliminary research of the sites by Silliman University assisted to set the stage for the PCRA and helped to focus the PCRA work. Nevertheless, it would have been more helpful if that study focused more on mapping and general habitat qualification than a few detailed sample sites.

**4** The information gathered through PCRA not only serves to produce maps but also stimulates much interest in the CRM process and the condition of coastal resources in the area of concern.

**5** PCRA requires sufficient facilitation and use of tested techniques. A municipal planning staff need training, guidance and practice to be able to conduct a PCRA.

**6** It is necessary to ensure the participation of women in the PCRA process.

**7** Although, the interviews of community members would ideally be conducted by trained community members in a participatory manner, in practice, focus group discussions and group interviews facilitated by the community organizer is the most practical means to engage community members.



*Profiling exercise during the PCRA in General Santos City.*



*Interviewing fishers in Capsalay Island, Port Barton (March 1997).*

**8** Although, useful to digitize the maps produced through PCRA, this will create a need for another participant in the process and add to the cost. Thus, digitizing for GIS should be considered for appropriate situations only.

**9** PCRA is an excellent lead activity into the CRM planning and implementation process with the immediate product of a coastal area profile.

**10** PCRA is only one step in an ongoing process which needs guidance and practice to achieve long term CRM planning and implementation.

**11** If time is limited, it is best not to try to cover an entire barangay with a PCRA. A certain level of involvement and time commitment is a prerequisite to a successful PCRA in any given community and a rush job will only produce superficial results.

## **CONCLUSION**

The PCRA process has much to offer as a start in the CRM process. All important stakeholders must be part of the PCRA and subsequent planning and implementation activities. PCRA helps to set the tone whereby the focus of responsibility and action is on the local community and government officials. PCRA needs skilled facilitators both for technical and process guidance. It is hoped that these facilitators will more frequently come from the areas of management concern and their institutions. Municipal and Provincial Governments, local non-government organizations, DENR staff, community leaders and barangay officials can all play important roles and help to replace the need for outsider assistance in the PCRA.



# Tubbataha Reef National Marine Park: Media and Management Collaborate

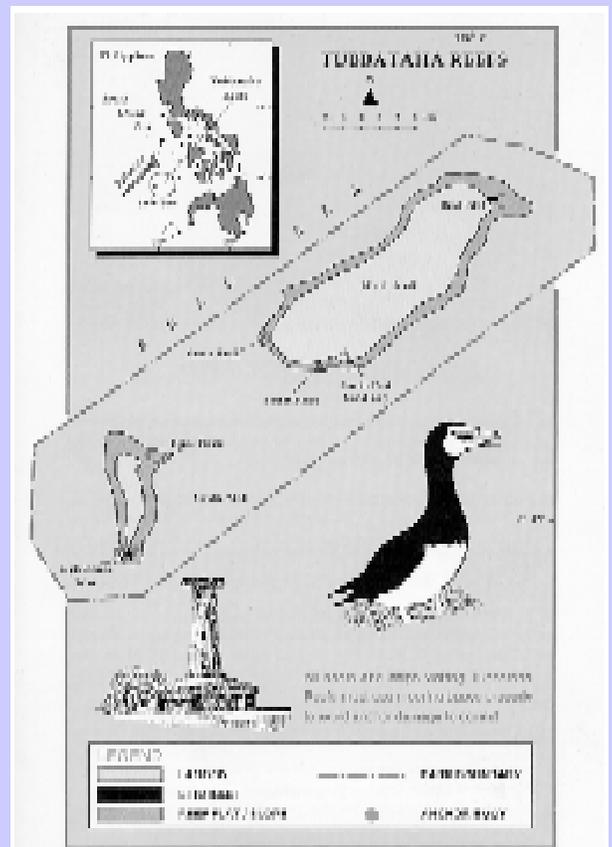
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Tubbataha Reef has become a recent media feature in the Philippines because of increasing efforts by the Department of Environment and Natural Resources (DENR), the Palawan Council for Sustainable Development (PCSD) and several non-government organizations (NGO) to make park management a reality. In late March 1997, a group of more than 20 persons from the Philippine and international media participated in a tour of the park for two days. The well organized event stimulated concern about the completion and adoption of the Tubbataha Park management plan. The history and resource value of the park highlighted during the tour (see Box 1), generated a high level of interest among the media guests and resulted in numerous newspaper articles and several videos shown on national television.

Despite its remoteness and the many efforts to protect the reef (see Box 2), Tubbataha and its underwater gardens and diverse wildlife are not free from intrusion and destruction. Illegal fishing methods using dynamite, sodium cyanide and other means have destroyed large areas of the reef. Anchor damage, inadvertent coral breakage from careless and inexperienced divers, collection of marine life and political conflicts also contribute to the deterioration of these jewels in the Sulu Sea.

Discussions with the Western Command, Palawan (Captain Garcia),

Undersecretary of DENR, Delfin Ganapin, the former Secretary of Education, Lourdes Quisimbing and Dr. Miguel Fortes, both of UNESCO, during the media tour, highlighted the need for coordination in park management among the academe, NGOs, the PCSD and the military. Also mentioned was the problem of



Reef Map (from Tubbataha Reef National Marine Park Brochure).

## BOX 1

### Tubbataha Reef History, Location and Value

The name Tubbataha comes from two Samal words and means a long reef exposed at low tide. It is the largest coral reef atoll and the only national marine park in the Philippines.

Tubbataha Reef consists of two coral atolls located right in the center of the Sulu Sea, about 150 kilometers southeast of Puerto Princesa City, Palawan. The pair of atolls point southwest and northeast, and are separated by a channel eight kilometers wide. The reef complex stretches over an area of 10,000 hectares within the island municipality of Cagayancillo, some 80 kilometers northeast of Tubbataha. The larger north reef is about 16 kilometers long and 4.5 km wide. The south reef is about 5 kilometers long and 3 kilometers wide.

The reef harbors a diversity of marine life equal to or greater than any such area in the world. In one survey alone, 46 coral genera and more than 300 coral species, and at least 40 families and 379 species of fish were recorded. Large marine life such as manta rays, sea turtles, sharks, tuna, dolphins, and jackfish are often seen on or near the reef.

The ecological, economic and heritage benefits of Tubbataha Reef, if managed sustainably with complete maintenance of the reef habitats, are very significant.

- Planktonic larvae from the spawning fish and invertebrate animals is very prolific in Tubbataha and serves as a primary source of recruitment for coral reefs surrounding the Sulu Sea. This larvae supplies many times more fish life outside of the Marine Park area to other Sulu Sea coral reefs, than marine life that resides at the Tubbataha Reef.
- Fish and other marine production from healthy and diverse reefs such as Tubbataha ranges from 20 to 35 tons per square kilometer per year.
- Tourism to Tubbataha is increasing yearly and contributes more than \$US2 million to the local and national economy.
- The biodiversity represented in Tubbataha compares favorably with the richest and most abundant marine areas in the tropical world. The preservation of this contributes immensely to the long term maintenance of the marine species and their genetic diversity in this part of the world.
- As a World Heritage Site, Tubbataha Reef is valued by the people everywhere knowing that it exists and is being maintained for the enjoyment of future generations.

having the military work alone in the park without NGO counterparts to help guide their actions. Problems are already occurring at the newly constructed ranger station with personnel feeling isolated in their remote Sulu Sea assignment.

With the acceptance of the Tubbataha National Marine Park Management Plan by a multisectoral body, a management board will be created to supervise the plan implementation. Under the management board a park manager will be responsible for the daily operations of an action

team in the park. This field team can educate park users and enforce laws and regulations in Tubbataha. One or more patrol teams will rotate on a regular basis to ensure effective park management.

Several observations and lessons gleaned from this trip relevant for work with the media and providing information to government personnel and the public on coastal management are:

- a. The media is hungry for good quality information which explains why we need conservation and what the tangible benefits from resource management are.
- b. The media is really interested in data which showed

both the ecological and the economic importance of the Tubbataha reefs in the local and national perspective.

c. There is a need for basic ecology information on the marine environment which explains the role of reefs in fisheries, plankton growth and dispersal, the dependency of endangered species on certain habitats, and the role of exploitation in the degradation of habitats.

d. The concept of an environmental youth volunteer corps such as "Sea Scouts" to assist with park management is appealing to all concerned.

This media tour, which was followed by a one-day symposium in Manila, highlights the need to finalize the management plan for the park. A general consensus on the contents of the plan and the mechanism for implementation exists. However, it is ironic that the only thing lacking is an approved and official statement by the members of the Presidential Task Force for Tubbataha. When this is forthcoming the more routine work of implementing the plan can proceed with the required financial assistance from the various interest groups. Attention



*Reef life in Tubbataha is highly diverse.*

to how user fees and donations can provide a large portion of the operating cost for the park is being

explored. Since the National Integrated Protected Areas law provides for a trust fund mechanism for park management, all that is

necessary is to put this into effect as part of the park management plan.

The mood of these recent discussions was positive but with a note of frustration on why the legal impediments cannot be ironed out. Nevertheless, action is the common theme of the future.

### Reference

Arquiza, Y. and A.T. White. 1994. **Tales from Tubbataha: Natural History, Resource Use, and Conservation of Tubbataha Reefs, Palawan, Philippines.** Bandillo ng Palawan, 73 p.

**Tubbataha Reef National Marine Park (Brochure).** Department of Environment and Natural Resources. 8 p.



## BOX 2

### Conservation Efforts

Tubbataha Reef was declared a national marine park through Presidential Proclamation No. 306 on August 1, 1988. The park area includes the surrounding waters of the two atolls and covers 33,200 hectares. On December 11, 1993, the United Nations Educational, Scientific and Cultural Organization (UNESCO) designated Tubbataha as a World Heritage Site. On July 20, 1995, President Fidel V. Ramos issued a memorandum circular creating the Task Force for Tubbataha Reef National Marine Park. The task force developed an action plan to forestall and reverse environmental degradation in Tubbataha, treating it as an integrated management unit.

Important recent events and supporters in the protection of Tubbataha include:

- Initiation of limited patrolling operations with support from the Dutch Government and the Foundation for Philippine Environment through the Tubbataha Foundation in 1990 and beyond under a Memorandum of Agreement with the Department of Environment and Natural Resources (DENR)
- Removal of an illegal seaweed farm in May 1991 with the assistance of the Province of Palawan, DENR, the Philippine Coast Guard and the Tubbataha Foundation
- Research and monitoring activities with support from the Foundation for Philippine Environment and Earthwatch Inc. by Silliman University researchers and other individual scientists
- Development of the Tubbataha National Marine Park Management Plan with assistance of the Marine Parks Center of Japan
- Construction and installation of eight mooring buoys for diving boats to anchor on with the assistance of the Government of Japan through *Sagipin ang Gubat at Dagat* (SAGUDA) Palawan
- Continuation of patrolling operations and the construction of a small field station with support of the Government of the Philippines, DENR and SAGUDA Palawan

Members of the present Presidential Task Force for Tubbataha and the proposed Tubbataha National Marine Park Management Board of the management plan:

Secretary, Department of Environment and Natural Resources  
 Chairman, Palawan Council for Sustainable Development  
 Commander, Naval District IV  
 Secretary, Department of Tourism  
 Secretary, Department of Budget and Management  
 SAGUDA Foundation

Governor of Palawan  
 Mayor of Cagayancillo  
 Tubbataha Foundation  
 Binunsalian Foundation  
 Conservation International

## Mayor of Malalag, Davao del Sur Brings to Fruition 23 Years of Resource Management Efforts

Andres Bracero Montejo, Sr. has remained a very simple person. Yet he has served as Local Chief Executive of Malalag, Davao del Sur for 23 years. With his governance characterized as “enabling and empowering,” he is liked by his constituents so much that he never lost an election. The only time his term was ever interrupted was in April 1986 when mayors were replaced by Officers-in-Charge of Corazon Aquino’s government, after the EDSA Revolution. However, the Malalagnons reinstated him as Mayor during the 1987 local election and since re-elected him twice. His current term is now his last.



Mayor Montejo finished Bachelor of Laws at Manuel L. Quezon University in 1958. He first entered into government service as a Clerk of Court in the Municipality of Sta. Maria, Davao del Sur; then served Malalag initially as patrolman which soon earned him popularity for his service and integrity. Friends then encouraged him to run for Municipal Councillor. That was his first stint as an elective government official. His exemplary performance in the Municipal Council and charisma gained him more admiration and popularity. In 1971, groomed for mayorship by local politicians, he easily won the race. To date, Mayor Montejo’s string of successful initiatives continues to flourish making the small town of Malalag known throughout the country for being a two-time winner of the **Galing Pook Award**, a coveted prize for local government innovation awarded by the Local Government Academy.

Community folk and municipal employees describe their mayor as “down to earth.” He never demands special treatment, assuming a low profile, visiting the villages (*barangays*) without bodyguards. He roams freely around the community, chatting and mingling with people, regardless of their political leaning, social status, and age group.

Also a good farmer, Mayor Montejo has affiliated himself with regional and national networks of peasant organizations. Currently, he is chairman of the board of directors of a Mindanao-wide peasants’ federation. Still, he has not neglected the fisherfolk and the coastal environment. He believes that fisherfolk and other bay users should be responsible for the protection, conservation and rehabilitation of coastal resources.

Long before the arrival of the Philippine Council for Aquatic and Marine Research and Development (PCAMRD) in Malalag in 1991, Mayor Montejo was undertaking coastal resource management (CRM) activities. Practising a participatory leadership approach, he often goes to the barangays to feel the people’s pulse and determine their stand on a certain issue or problem.

Mayor Montejo was an early advocate of Presidential Decree (PD) 704 and other fishery laws. He has pressed for the stopping of dynamite fishing through strict penalties for violators. He also warns people against the use of toxic plant extracts and other poisons in fishing.

In 1991, PCAMRD chose Malalag as the venue for a seminar-workshop. Malalagnons were amazed to learn during the seminar that what Mayor Montejo had been advocating and

campaigning for a number of years was, indeed, CRM. With PCAMRD's assistance, they were able to streamline their CRM efforts.

Mayor Montejo organized consultations and massive information and education drives which led to amendments to their Municipal Fishery Ordinance, the establishment of a 50-hectare fish sanctuary, the organization of *Bantay-Dagat*<sup>1</sup>, the organization of fisherfolk and women's groups, strict enforcement of fishery laws, discreet monitoring of boat loading or discharging of oil and other products, the identification of solid waste disposal sites, and others.

The Municipality of Malalag had its first Basic Fishery Ordinance passed on May 14, 1981. Malalag constituents amended the Municipal Fishery Ordinance on March 11, 1993 wherein Ordinance No. 40 was passed by the Municipal Council or *Sangguniang Bayan* (SB) for the banning of destructive and illegal fishing gear. These include all sorts of commercial fishing, trawls, purse seine (e.g., Danish purse seine), baby trawls, drive in nets and fishing methods using compressors.

Unfortunately, this ordinance was declared "null and void" by the Municipal Circuit Judge of Malalag after a group of fishermen were charged for their operation of *lampornas*. The judge ruled that the ordinance lacked sanction/*imprimatur* of the Secretary of Agriculture. Thus, the case was dismissed. Mayor Montejo's position, however, was based on the Local Government Code

(P.D. 7160), which stipulates that municipal ordinances are subject to review by the Provincial Board (*Sangguniang Panlalawigan*) only prior to its adoption. He brought the case to higher courts. The charged *lampornas* operators then



*Fish cage in Malalag Bay.*

filed a case to the Ombudsman against the Mayor, SB members, law enforcers and the *Bantay-Dagat*. The Ombudsman dismissed the case against the Mayor while the Supreme Court case is still pending.

Recently, an ordinance to ban *tapay-tapay* or *basnigan* is being studied by the legislators of the municipality. Marginal fishers complained that these fishing methods reduced their fish catch per unit effort because *tapay-tapay* had fine mesh nets in its purse. Mayor Montejo is gathering more information on this matter.

The Mayor has made every effort to save and rehabilitate the remaining biota in Malalag Bay. The fish sanctuary was earlier opposed by many fisherfolk. Through continuing education, it gained the support of the majority as it increased their volume of catch. The municipal government hired a person to safeguard and monitor the sanctuary. A pump-boat was also provided for the

same purpose. Fish cages for grouper and siganid cultures were established adjacent to the fish sanctuary. The mayor envisioned this fish cage as a demonstration to introduce the technology to his constituents. Today, eight more fish cages are to be constructed as alternative livelihood projects for fisherfolk organizations in the coastal barangays of Malalag.

Mayor Montejo has maintained good working relations with other mayors in the neighboring municipalities regardless of political bias.

Malalag was chosen by the Canadian International Development Agency and Regional Development Council XI as a beneficiary of the Local Government Support Program (LGSP). Through LGSP, the Development Academy of the Philippines is assisting Malalag to come up with a Strategic Area Industry Plan. Mayor Montejo wants other neighboring municipalities to benefit from the planned development as well. He has facilitated the Malalag Bay Area (MBA) development plan including the five municipalities of Hagonoy, Padada, Sulop, Malalag and Sta. Maria and an influence municipality of Kiblawan. He is the elected Chairperson of the MBA board.

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<sup>1</sup>Composed of community volunteers deputized by the government to patrol the coasts against illegal fishing activities.