

# Developing a Provincial MPA Management Effectiveness Program in the Province of Cebu, Philippines



## TERMINAL REPORT (October 2008 – March 2010)



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**Developing a Provincial MPA Management Effectiveness Program in the Province of Cebu,  
Philippines  
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## Acronyms and Abbreviations

AFA	Antipolo Fishermen Association
APFA	Apalan Fishermen Association
BFAR	Bureau of Fisheries and Aquatic Resources
CBCRM	community-based coastal resource management
CBRMP	Community-based Resource Management Project
CCEF	Coastal Conservation and Education Foundation
CLE	coastal law enforcement
CO	Community Officer
CRM	coastal resource management
DENR	Department of Environment and Natural resources
DOT	Department of Tourism
GPS	global positioning system
ha	hectare
IEC	information and education campaign
IRA	Internal Revenue Allocation
LGU	Municipal Local Government Unit
MAO	Municipal Agriculture Office
MENRO	Municipal Environment and Natural Resources Office
MFARMC	Municipal Fisheries Aquatic Resource Management Council
MOA	memorandum of agreement
MPA	marine protected area
NIPAS	National Integrated Protected Areas System
PCG	Philippine Coast Guard
PNP	Philippine National Police
PO	people's organization
REMOTE	Research and Monitoring Team of CCEF
TSPS	Tañon Strait Protected Seascape
TUFFA	Tambungon United Farmers and Fishermen's Association

## Introduction

The project entitled: Developing a Provincial Marine Protected Area (MPA) Management Effectiveness Program in the Province of Cebu, Philippines of the Coastal Conservation and Education Foundation (CCEF) concluded its 18-month intervention in 14 MPAs in the Municipalities of San Remigio, Tabuelan and Tuburan in March 31, 2010. The over-all goal of the project is to improve the management effectiveness of MPAs by conducting multi-sectoral capacity building activities and implementing a provincial learning network to support the CRM and MPA management effectiveness program of the Province of Cebu through the Provincial Environment and Natural Resources Office.

This terminal report discusses mainly the project approaches and interventions conducted during the entire 18 month project and the accomplishments and results of these in each of the 14 pilot MPAs in terms of improving their management effectiveness.

## Brief Profile of the Project Area

The project covered 14 marine protected areas in the Municipalities of San Remigio, Tabuelan, and Tuburan, Province of Cebu as pilot areas. Located in the northwestern seaboard of Cebu province, the area is part of the Tañon Strait which is considered as one of the major fishery ecosystems with high marine biodiversity in the Visayas in Central Philippines. Because of its fishery values, Tañon Strait has been placed as a protected area and is called the Tañon Strait Protected Seascape (TSPS) under the National Integrated Protected Areas System (NIPAS) Act.

The local economy of the three municipalities covered in this project is generally agricultural. They lack significant commercial and industrial activities which could provide the population other sources of income and livelihood. Fishing and farming are the main source of living among many residents. Artisanal fishers use fishing gears such as gill nets, cast nets, and fish traps. Hook and line dominates the gears in the three municipalities. As they are small-scale, apparently, the productivity of this type of fishing gears is low. Because of the open access regime of the country's fisheries, municipal fishers continue to depend on the coastal and marine environments.

In terms of farming, mono-crop agriculture, particularly sugar cane plantation and coconut *haciendas* employing farm workers with low wages persists in the project sites. Due to the lack of better livelihood sources, farmers, especially, those who live in hinterland areas augment their income through swidden or slash-and-burn agriculture (*kaingin*) and cutting of trees for firewood and charcoal. These livelihood practices resulted in the increasing deforestation and degradation of watersheds and river systems causing continuous sedimentation and siltation in the coastal zone area. Agricultural run-offs clog into adjacent coral reef areas reducing its productivity and compromising other associated habitats and marine life. The coastal area in the project sites also has sizeable mud flat areas where mangroves and estuaries occur. However some of these areas have already been converted into fishpond areas.

Illegal fishing such as the use of fine mesh nets, blast, *tubli* (toxic root extract), cyanide, and compressor fishing and the intrusion of commercial fishers in municipal waters continue to occur in the project areas. In the Municipality of San Remigio, a number of commercial fishers operate using Danish and purse seine and encroach the municipal waters competing with poor marginal fishers. These activities resulted in overfishing, resource degradation and dwindling fish catch in the Tañon Strait fisheries area despite the existence of local and national fishery laws.

Over the last eight years, the local government units (LGUs) of San Remigio, Tabuelan and Tuburan acquired a wealth of experience in coastal and fisheries resource management. Confronted with multi-faceted issues and challenges, local authorities have demonstrated their capability and

determination to arrest this rapid trend of resource degradation through several conservation measures. They have established and activated their Municipal Fisheries and Aquatic Reform Councils (MFARMCs) while the Municipality of San Remigio created its Municipal Environment and Natural Resources Office (MENRO). Mandated by the Philippine Fisheries Code and the Local Government Code, these governance and implementing structures are actively supported by their respective municipal mayors in terms of budget allocations.

These LGUs have passed several local ordinances and resolutions for effective coastal resource management and protection and implemented several programs of the same. Notable of these programs is the Community-Based Resource Management Program (CBRMP), a World Bank-assisted project implemented in the Municipalities of San Remigio and Tuburan with natural resource management for both uplands and coastal areas as a major focus. This project implemented in selected upland and coastal barangays in the two municipalities had facilitated the establishment of nine (9) marine sanctuaries and formation of several people's organization (POs) which were mandated to manage these sanctuaries. Although the LGU of Tuburan later withdrew from the project, it pursued its resource management undertakings through its Coastal Resource Management (CRM) program under the Municipal Agriculture Office (MAO). The municipalities of Tabuelan and San Remigio were able to establish two and additional three marine sanctuaries, respectively through their own initiatives with assistance of the Bureau of Fisheries and Aquatic Resources (BFAR).

Table 1 provides a basic profile of the 14 pilot MPAs assisted by the project in the three municipalities.

**Table 1. Basic profile of the pilot MPAs covered in the project**

Municipality	Name of MPA	Area/Size (ha)	Year Established	Mechanism of Establishment
San Remigio	Anapog Marine Sanctuary	20.80	2002	LGU
	Bancasan Marine Sanctuary	15.24	2002	LGU
	Busogon MPA and Fish Sanctuary	31.44	2003	CBRMP
	Kinawahan MPA and Fish Sanctuary	27	2003	CBRMP
	Luyang MPA and Fish Sanctuary	23	2003	CBRMP
	Maño Marine and Fish Sanctuary	10	1996	LGU
	Tabungon MPA and Fish Sanctuary	31.49 corals 16.34 seagrass	2003	CBRMP
	Victoria MPA and Fish Sanctuary	49.42 corals 10.34 seagrass	2003	CBRMP
Tabuelan	Olivo Marine Sanctuary	17.3	2001	LGU
	Poblacion Marine Sanctuary	12.7	2001	LGU
Tuburan	Antipolo Marine Reserve with Fish Sanctuary	12.93	2003	CBRMP
	Apalan Marine Reserve with Fish Sanctuary	53.37	2003	CBRMP
	Bagasawe Marine Sanctuary	44.21	2003	CBRMP
	Daanlungsod Marine Sanctuary	15.48	2003	CBRMP

### Key Issues and Concerns

Our inventory of the status of the above-mentioned MPAs shows varying degrees in the level of management. At project start-up, assigned Community Officers undertook social investigation which involved semi-structured focus group discussions and conversations with individuals and groups,

and reviewing and analyzing existing documents. This was to assess the level of MPA management effectiveness and to investigate the conditions occurring in these MPAs prior to project intervention. These preliminary activities effectively identified the strengths, weaknesses, opportunities and threats and the various issues related to MPA management. It has also provided the project team pertinent information which aided in the effective and efficient delivery of various interventions to improve MPA management effectiveness at the site level. The project team identified core management issues and concerns from the 14 pilot MPA which are summarized as follows:

- Weak or inactive management bodies or community MPA managers
- Absence of comprehensive MPA management plan;
- Lack of capacity for MPA management;
- Lack of or weak coastal and fishery law enforcement;
- Lack of continuing government support;
- Absence of regular bio-physical and habitat monitoring;
- Lack of funds and absence of sustainable financing mechanism;
- Low community participation and support
- Lack or absence of MPA maintenance infrastructures and logistics

### **General Approach of the Project**

CCEF, in all its programs and projects, uses the co-management approach in the practice of coastal resource management and MPA management effectiveness building. The project engaged both the LGUs (both municipal and barangay authorities) and the coastal communities especially fishers organizations. The co-management approach is anchored on the premise that management and protection of the natural resource base is a shared responsibility of both the government and its people. This is in recognition that under existing Philippine laws particularly the Local Government Code and the Philippine Fisheries Code, LGUs are the primary government agency responsible for the conservation, management, development and proper utilization of the environment and natural resources within its territorial jurisdiction, including municipal waters. Hence, CCEF's first step in the project was to forge a Memorandum of Agreement (MOA) with each of the three (3) LGUs to jointly undertake MPA management effectiveness interventions in their respective MPAs. The co-management approach emphasizes the ownership and stakeholdership of both public and civil society (and at some point, the private sector) in the delivery and implementation of project interventions. What is laudable in this project experience is the openness and commitment of LGUs to cost-share in pursuit of improving coastal and marine resources and improving the health of their MPAs in particular.

The project also utilized the community-based coastal resource management (CBCRM) strategy which seeks to empower local communities to manage their coastal resources. This is in recognition that coastal communities are the 'real' day-to-day managers and protectors of coastal resources. As they hold direct stake on the same they must also be the main implementers of any program that seeks to manage those resources. This strategy dictates that our intervention should be more of a catalyst and facilitators in building the capacities of coastal communities so they can be more efficient and effective resource managers.

### **Project Design and Objectives**

The project **Developing a Provincial MPA Management Effectiveness Program in the Province of Cebu, Philippines** seeks to improve management effectiveness of MPAs by building capacities and implementing a provincial learning network and MPA management effectiveness in the Province of Cebu.

Specifically, the objectives of the project are to:



- Develop a provincial learning network and MPA management effectiveness system for MPAs using the National MPA effectiveness rating and database system developed by CCEF and refined with the *How is Your MPA Doing? Guidebook*;
- Improve MPA management capacity for MPAs in the Province of Cebu resulting to an increase in MPA rating by at least one level higher;
- Assess and monitor MPA management effectiveness by utilizing biophysical, socioeconomic and governance indicators;
- Strengthen the Provincial MPA monitoring and database system while contributing towards the enhancement of the national MPA management effectiveness system; and
- Disseminate lessons learned and best practices through strategic means, including development, production and distribution of educational materials, training modules and through the CCEF website, newsletters, and technical articles on reef survey and marine sanctuary monitoring outputs of target MPA areas; and participation in identified regional symposia and national conferences.

### **Role of Project Actors**

The project involves at least three main actors in the implementation and delivery of project commitments, namely, the Coastal Conservation and Education Foundation (CCEF) as the proponent of the project; the collaborating Local Government Units (LGUs) and their Municipal Agricultural Offices (MAOs) and the Provincial Environment and Natural Resources Office (PENRO) of the Province of Cebu.

### **CCEF**

At the municipal level, CCEF extends technical and logistical assistance to the municipalities of San Remigio, Tabuelan and Tuburan to ensure the effective implementation of the project and provide liaison work with appropriate national government agencies, private sector, academe and other stakeholders for greater cooperation and collaboration in the project. Specifically, CCEF's commitments are as follows: i) develop the technical capacity of MPA managers in MPA planning, management, development and/or improvement of enabling laws/policies and user's fee systems, coastal law enforcement, and monitoring and assessment; ii) monitor and assess the biophysical components of MPAs and provide MPA technical monitoring reports to LGUs and community managers; iii) assist in the conduct of information, education and communication (IEC) activities for community support; iv) foster public-private partnerships for alternative livelihoods of people's organization and communities; and v) provide technical assistance in the development of coastal tourism/ecotourism utilizing MPA as tourism resource base.

### **Local Government Units**

As partners in the implementation of the project, the municipal governments of San Remigio, Tabuelan and Tuburan committed to the following: i) provide immediate support in project implementation towards the achievement of project deliverables; ii) designate personnel to be trained in the conduct of capacity building activities related to MPA management and assessment and coastal law enforcement, among others; iii) designate personnel whom the CCEF staff will work with in the day-to-day operations of the project; iv) provide immediate support to community organizations, wherever available that will serve as partners in the improvement of MPA management effectiveness; v) provide counterpart funding in the conduct of MPA management capacity building and MPA assessment and monitoring such as, but not limited to, training venue, transportation and meals of training participants, accommodation of resource persons, and SCUBA tank rentals; and vi) monitor the performance and progress of the implementation and management of the project along with CCEF.

## **Project Scope**

The project has four (4) major components as follows:

1. MPA Management Capacity Building;
2. MPA Assessment and Monitoring;
3. Developing a Provincial MPA Learning Network; and
4. Contributing to the National MPA Management Effectiveness System.

These components are interrelated and equally important in building effective MPA management systems not only in the 14 pilot MPAs in the three collaborating municipalities but also in the entire Province of Cebu.

### ***MPA Management Capacity Building***

The MPA Management Capacity Building component took the lead in the over-all Project implementation. This component through the deployed Community Officers established the community organizing process which aims to build viable community-based structures and ensure that community stakeholders are actively involved in resource management. This component includes the establishment of MPA Management Council/Board; formulation of comprehensive MPA management plans; capacitating the members of these bodies through the conduct of trainings, workshops, seminars and cross visits; conduct of information and education campaign; setting up of user's fee system; and development of income generating projects.

### ***MPA Assessment and Monitoring***

Assessment and monitoring activities cover MPA management appraisals and biophysical survey of the 14 MPA of the project sites. It aims to track changes and development taking place within their environs particularly the level of MPA management effectiveness and to investigate the biophysical conditions of these MPA before, during and after the process of project implementation.

Management appraisals will be undertaken using the MPA effectiveness rating tool developed by the CCEF while the biophysical research activities will utilize standard tool of underwater visual census thru the point intercept method that will assess the health status of coral (benthic cover), determine fish abundance and account for invertebrates within and outside the MPA.

### ***Developing a Provincial MPA Learning Network***

The project also intends to develop a provincial MPA learning network to augment the limited capacity of the Provincial Environment and Natural Resources Office (PENRO) of the Province of Cebu in carrying out its program on coastal resource management and improving management effectiveness of MPAs across the province.

### ***Contributing to the National MPA Management Effectiveness System***

The project also aims to contribute to the national MPA database effectiveness rating system. It hopes to build up the linkage between local MPA managers and the national MPA effectiveness rating work thru strengthening of the provincial MPA information and database system.

## **Project Implementation**

### **Component 1. MPA Management Capacity Building**

This component involves nine major actions as follows: i) formation of MPA management bodies; ii) formulation of MPA management plans; iii) capacity building; iv) information, education and communication campaign; v) MPA maintenance; vi) MPA sustainable financing and resource mobilization; vii) strengthening of coastal law enforcement; viii) development and implementation of alternative livelihoods and ix) networking, advocacy and coordination. These will be described in some length below.

### **Formation of MPA Management Bodies**

Prior to project implementation, the management of MPAs was carried out by various POs across the three municipalities. These POs which were organized through the Community-based Resource Management Project (CBRMP), particularly in the towns of San Remigio and Tuburan, became the primary partners of LGUs in implementing coastal resource management and played a major role in the initial success of MPAs in their respective areas. Upon the phase out of the CBRMP in 2006, however, most of these POs weakened and failed to sustain the management of the MPAs.

In late 2008, CCEF's Community Officers conducted MPA management appraisals which also served as organizational diagnosis. These appraisals had surfaced organizational issues and weaknesses of POs that affect MPA management. These issues and weaknesses were further validated during consultations with PO members that were conducted shortly after the rapid appraisal. Notable issues were the following: i) inactive leaders and members; ii) lack of regular monthly meetings; and iii) lack of capacity for organizational and MPA management. In some barangays, several local officials were unsupportive of PO activities and unreceptive to MPA management initiatives. In general, the PO participants have accepted that they cannot sustainably manage the MPAs without a broader participation of other community stakeholders.

During these consultations the idea of multi-stakeholder approach to resource management was presented and discussed. Unlike the CBCRM model where only the PO solely managing the MPA, the multi-stakeholder approach brings in different groups like the *Sangguniang Barangay* (Barangay Council), schools, religious groups, the private sector such as beach resort owners and the POs into a single MPA management structure. The multi-stakeholder MPA management body as a concept is a direct response to the absence of participation from other community stakeholders in MPA management. Except in barangays Manio and Bancasan in San Remigio where the existing POs have demonstrated capacity of sustained MPA management, all other POs from the project sites has concurred to the need to broaden up MPA management through the establishment of MPA management boards and councils.

After series of meetings that focused on the formulation of functions, organizational policies and composition, twelve (12) MPA management councils/boards were formed. In general, these MPA management bodies serve as a policy and coordinating body for MPAs management. The bodies are responsible for the formulation of MPA management plans, resolution of policy issues affecting MPA plan implementation as well as formulation of recommendations on the imposition of sanctions and provision of incentives. These bodies have an executive committee composed of the chair, vice-chair, secretary, treasurer and auditor and several working committees which manage the day-to-day operations and activities involving the MPA. Across the 13 MPAs, the working committees that were formed are as follows: information, education and communication (IEC), coastal law enforcement (CLE), research and monitoring, repair and maintenance and linking and fundsourcing. To address other concerns, some management bodies have established additional committees. Table 2 below shows the basic organizational profile of the various MPA management bodies formed.

**Table 2. Basic Profile of MPA Management Bodies**

<b>Municipality</b>	<b>Name of MPA</b>	<b>Management Bodies Formed</b>	<b>Main Features</b>
San Remigio	Anapog Marine Sanctuary	Anapog MPA Management Council	<ul style="list-style-type: none"><li>• Chaired by the President of newly re-organized PO</li><li>• Include beach resort owners</li></ul>
	Bancasan Marine Sanctuary	<i>No intervention, existing PO remains as MPA managers</i>	<ul style="list-style-type: none"><li>• PO managed with strong financial and logistical support from private individuals who adopted the MPA</li></ul>

	Busogon MPA and Fish Sanctuary	Busogon MPA Management Council	<ul style="list-style-type: none"> <li>• Chaired by the Barangay Captain with PO president as Vice Chair</li> </ul>
	Kinawahan MPA and Fish Sanctuary	Kinawahan MPA Management Council	<ul style="list-style-type: none"> <li>• Chaired by the Barangay Captain with PO president as Vice Chair</li> <li>• Include beach resort/house owners</li> </ul>
	Luyang MPA and Fish Sanctuary	Luyang MPA Management Council	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> <li>• Include beach resort owners</li> </ul>
	Maño Marine and Fish Sanctuary	Biasong Young Fishermen Association was re-structured thru the creation of a working committee to undertake MPA management	<ul style="list-style-type: none"> <li>• PO managed with strong financial and logistical support from the municipal local government</li> </ul>
	Tabungon MPA and Fish Sanctuary	Tabungon MPA Management Council	<ul style="list-style-type: none"> <li>• Chaired by Barangay Kagawad with PO president as Vice Chair</li> <li>• Include beach resort owners</li> </ul>
	Victoria MPA and Fish Sanctuary	Victoria MPA Management Council	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> </ul>
Tabuelan	Olivo Marine Sanctuary	Olivo MPA Management Board	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> <li>• With additional committees on PO strengthening, waste disposal, shoreline management and livelihood</li> </ul>
	Poblacion Marine Sanctuary	Poblacion MPA Management Board	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> <li>• With additional committees on PO strengthening, waste disposal, shoreline management and livelihood</li> </ul>
Tuburan	Antipolo Marine Reserve with Fish Sanctuary	Antipolo MPA Management Board	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> <li>• With additional committees on PO strengthening, waste disposal, shoreline management and livelihood</li> </ul>
	Apalan Marine Reserve with Fish Sanctuary	Apalan MPA Management Board	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> <li>• With additional committees on PO strengthening, waste disposal, shoreline management and livelihood</li> </ul>
	Bagasawe Marine Sanctuary	Bagasawe MPA Management Board	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> <li>• With additional committees on PO strengthening, waste disposal, shoreline management and livelihood</li> </ul>
	Daanlungsod Marine Sanctuary	Daanlungsod MPA Management Board	<ul style="list-style-type: none"> <li>• Chaired by Barangay Captain with PO president as Vice Chair</li> </ul>

			<ul style="list-style-type: none"> <li>• With additional committees on PO strengthening, waste disposal, shoreline management and livelihood</li> </ul>
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These MPA management councils/boards meet once a month to discuss implementation of MPA plans. These bodies have a representative and sits in the Municipal Fisheries and Aquatic Resource Councils (MFARMCs) effectively bringing in sanctuary-related issues to the attention of their respective Local Government Units.

### **Formulation of MPA Management Plan**

The absence of updated and comprehensive MPA management plans was identified as one of the major hindering factor in the failure of most of the pilot MPAs to sustain an effective management system. While some management measures like law enforcement activities and physical infrastructure maintenance are continuously implemented in some of these MPAs (eg. Bancasan, Manio, and Luyang MPAs) these were erratically done and with little community impact because they neglect to tackle other important management issues and constraints prevailing in these MPAs.

To address this important management gap, MPA management planning processes were undertaken. Activities include the inter-MPA planning workshops and series of community workshops on MPA plan refinement, finalization and approval. These were conducted in a participatory manner where primary stakeholders responsible in MPA management plan implementation such as members of MPA management bodies, LGU, PNP and others were involved. These planning processes resulted in the formulation of 13 MPA management plans which are site specific and custom-fit to suit to the prevailing needs and conditions of each of the pilot MPAs.

Characteristically, the formulated MPA plans can be described as:

- Comprehensive—they articulated the following dimensions: i) issues and problems related to MPA management; ii) vision, mission, goals, management objectives, components and strategies; iii) policies and regulations that will govern MPA management; iv) clearly stated roles and responsibilities of management bodies and various stakeholders and defined management structures;
- Time-bounded—they cover a period of five (5) years (2009-2014) in implementation with clearly defined specific activities and outputs for each year of implementation; and
- Action-oriented—their objectives are directly linked to the identified management issues and action and activities are laid out in each of the management components.

### **Education and Training**

Various education and training activities were completed during the 18 month project implementation. We also conducted public education sessions to increase awareness on reef conservation for various sectors in the three (3) municipalities. We provided training workshops transferring knowledge and skills associated with coastal resource and MPA management. The project staff also facilitated exposure visits and study tours to successful sites leading to interaction and exchange of experiences with other communities. Table 3 provides brief information on the workshops, seminars, training and other education activities implemented by the project.

**Table 3. Municipal-level Education and Training Activities**

Title of Training/ Workshops/ Seminars	Brief Description	No. of Days	Venue	No. of Pax	Covered Sites
MPA Orientation/	Orientation on the purpose,	½ day	various	Average of	8 MPAs in

Re-orientation Sessions	functions and benefits of MPA			18 per MPA	San Remigio; 2 MPAs in Tabuelan
MPA Management Planning Workshop	Participatory planning workshop that generated 5 year MPA Comprehensive Plan	2 days per workshop	San Remigio, Tuburan, Tabuelan	San Remigio -1 <sup>st</sup> workshop 32 pax from 3 MPAs - 2 <sup>nd</sup> workshop 37 pax from 4 MPAs	7 MPA in San Remigio, 2 in Tabuelan and 4 in Tuburan
Forum on User's Fee	Discussion on the underlying principles, revenue sharing schemes, strategies and procedures and best practice in user's fee collection systems from MPAs around the region; Brainstorming session to draft the highlights of the San Remigio Municipal Water User's Fee System	1 day	San Remigio	BLGU, MLGU, MPA Managers	8 MPAs in San Remigio
Training on Oyster Culture	Facilitated by BFAR, this training orients the participants on the requirements, systems and procedures of setting up an Oyster Culture project. Part of the training is the site appraisal to determine project viability.	2 days	Tambungon, San Remigio	TUFFA members	Tambungon MPA, San Remigio
Coastal Law Enforcement Training (3 training conducted)	Refresher course for community-based coastal law enforcers which aims to hone knowledge on environmental and fishery laws and skills on law enforcement activities. One of the major output of the training is the formulation of CLE action plan and deputization of fish wardens	3 days per training	Tuburan, San Remigio and Tabuelan	San Remigio-49, Tuburan - 45 Tabuelan-	14 MPAs from Tuburan, San Remigio and Tabuelan
Study Tour to Best Practices in MPA management in Alcoy, Cebu and Maribojoc, Bohol	Generation of learning on the successful management of MPAs and implementation of coastal resource management by the LGU	3 days	Alcoy, Cebu and Maribojoc, Bohol	LGU and MPA managers from Tabuelan and Tuburan	6 MPAs from Tabuelan and Tuburan
Study Tour to Best Practices in MPA	Generation of learning from Moalboal MPA managers on	1 day	Moalboal, Cebu	LGU and MPA	8 MPAs from San Remigio

management in Moalboal, Cebu	the different measures employed in implementing the user's fee system and how they can replicate these measures in their respective sites. The study tour includes orientation on the MPA user's fee system, actual observation on how the scheme is carried out by Moalboal MPA managers, interaction with the members of the Marine Sanctuary Management Council of Moalboal			managers from San Remigio (42)	
2 <sup>nd</sup> Study Tour on Best Practices in MPA management in Alcoy, Cebu	Generation of learning on successful management of MPAs and implementation of coastal resource management by the LGU	1 day	Alcoy, Cebu	LGU, Task Force Bantay Dagat and MPA managers from San Remigio (35)	8 MPAs from San Remigio
Study Visit on Coastal Law Enforcement in Santander, Cebu	Generation of learning from the success of coastal law enforcement in Santander and how to replicate this in San Remigio. Activities included actual participation in seaborne patrol operations and orientation on the handling of litigation process and interaction between coastal law enforcers of San Remigio and Santander.	2 days	Santander, Cebu	Task Force Bantay Dagat and selected fish wardens in San Remigio	
Training on MPA Assessment and Monitoring	Knowledge and skills transfer on MPA assessment and monitoring to local monitoring teams where they learn MPA monitoring tools such as point intercept method, fish visual, seagrass and mangrove monitoring tools with the end view that a monitoring team at the community level will function regularly to help the LGU in conducting regular monitoring of their respective MPAs and other habitats. Training includes a	3 days	San Remigio	Local monitoring team of San Remigio (21), Tabuelan (4), Tuburan (10)	14 MPAs from Tuburan, San Remigio and Tabuelan

	practicum module on sea grass, coral and mangrove monitoring.				
Information, Education and Coordination (IEC) Training	Knowledge and skills transfer to LGU and community-based MPA managers on effective IEC tools and strategies. Concrete output of the training includes the formulation of IEC Action Plan and the formation of three (3) groups of IEC Task Forces for each municipality	3 days	San Remigio	LGU personnel and IEC team of San Remigio , Tabuelan Tuburan (60 pax)	14 MPAs from Tuburan, San Remigio and Tabuelan
Team Building Session for MPA Managers	Conducted to strengthen and enhance the capabilities of existing and potential leaders of MPA management organizations in managing their respective organizations and become more effective in facilitating and delivering their roles and responsibilities in the management bodies.	1 day	Tuburan	MPA managers from Tuburan and Tabuelan (35)	6 MPAs from Tuburan and Tabuelan
Leadership and organizational development orientation	Provide basic theoretical inputs on leadership and to develop knowledge in leadership of MPA Management Council needed in their daily organizational work and activities. Topics discussed were i) basic concepts and principles of leadership; ii) methods and styles of leadership; iii) basic leadership skills	½ day	1 session each for Barangays. Manio, Anapog, Tambongon , Busogon, Kinawahan, Victoria and Luyang	Average of 12 pax per Barangay	7 MPAs from San Remigio
Sustainability Planning Workshop	Workshops were done as a learning process for consolidating successes and failures in the implementation of MPA management plan and for the MPA managers to redefine goals and strategies based on the assessment of their strengths and weaknesses, as well as the emerging threats and opportunities that may affect the achievement of their goals	½ day	13 MPA sites from Tuburan, San Remigio and Tabuelan	Average of 12 pax per Barangay	13 MPAs from Tuburan, San Remigio and Tabuelan



### ***Information, Education and Communication Campaigns***

While there is high awareness among coastal communities about the degraded marine environment where they expressed concerns about continued decline of fishery yields in the area, there is low community participation and support for CRM in general and MPAs in particular. This attitude was attributed to the general lack of appreciation and knowledge about the benefits of resource conservation which can be attributed to the lack/absence of sustained education and information dissemination measures. To address this issue, IEC activities were implemented employing various methods such as the following;

- Dissemination of CRM/MPA IEC materials such as existing posters, brochures, calendars, comics, bookmarks and hand-outs;
- Community and school film showing and environmental contests;
- Community meetings;
- Development and installation of informative MPA billboards;
- Installation of MPA monitoring boards; and
- Orientation courses on CRM and MPAs;

### ***MPA Maintenance***

Municipal ordinances had clearly delineated the locations and boundaries of MPAs thru specifying the coordinates particularly on the core zones. It distinguishes two management zones, namely, the core zone where there is a strict prohibition on all fishing activities and the buffer zone (usually up to 100 meters from the outer boundaries of the core zone) where only traditional fishing is allowed. But these zoning were hardly imposed because of the absence and lack of marker buoys that shows demarcations of these MPAs. The absence of marker buoys coupled with the absence of MPA billboards that provides information on the MPA are often cited as excuses of fishermen who poach inside the MPAs.

Responding to these needs, the MPA management bodies and the municipal government through some assistance from the project were able to re-install marker buoys and MPA billboards. In San Remigio, 200 customized marker buoys made from fiberglass materials that were accessed from the private sector were distributed and deployed in 8 MPAs. In Tabuelan and Tuburan less expensive materials for marker buoys made of bamboo poles and styropor were used in 6 MPAs. To provide information on these sanctuaries, MPA billboards were also installed in 13 pilot MPAs. Designed to be an informative tool, the billboards contain all the relevant information of the MPA such as the name, maps (shape and location), municipal ordinance that details the allowed and prohibited activities inside the MPA and the buffer zone, corresponding fines and penalties, the management group and the agencies that supported these MPAs.

### ***MPA Sustainable Financing and Resource Mobilization***

Lack of funds was identified as one of the major constraints in the effective management of these MPAs. Of the 14 pilot MPAs, only Bancasan MPA in San Remigio has obtained sustainable financing because it was adopted by private individuals/families. In other MPAs, enforcement and maintenance were often neglected because funds are usually not available. Addressing this issue, mechanism for generating funds both from external and internal sources has been given importance in the MPA management plan and its implementation. Resource accessing and mobilization and MPA sustainable financing took the following form:

- Budget allocation from the Internal Revenue Allocation (IRA) of barangay governments which ranges from Php10,000 to Php 30,000;
- Budget allocation from the municipal government's development fund to finance CRM activities like coastal law enforcement and MPA maintenance;

- Formulation of sharing scheme from fines generated from apprehensions of illegal fishing where law enforcers get a share from the proceeds;
- Accessing from private individuals and companies particularly in kind goods like marker buoys and ropes;
- Installation of the Municipal Water User's Fee System which provides for the establishment of a Trust Fund from the revenue generated by the system and which shall be used for coastal resource management activities such as MPA maintenance, coastal law enforcement, alternative livelihood, IEC and habitat monitoring; and
- Fundraising through operation of income generating projects (IGP) and alternative livelihoods of MPA managing POs or management bodies.

### ***Strengthening of Coastal Law Enforcement***

The use of illegal fishing and the encroachment of commercial fishing in the municipal waters are among the top management issues besetting the Municipalities of San Remigio, Tabuelan and Tuburan. The implementation of CBRMP in San Remigio and Tuburan has brought considerable reduction of these illegal fishing activities in the area. With the phase out of the CBRMP, however, these illegal fishing activities resumed. Illegal fishing methods commonly employed are the *hookah*/compressor diving, fishing with fine mesh nets, dynamite fishing and the use of obnoxious substances like cyanide and *tubli*. These problems are compounded with the continued encroachment of commercial fishing such as the Danish and purse seine operators. Many of these commercial fishing boats are based in San Remigio.

The adverse effects of these activities have not only contributed to the degradation of the fishery resources and marine habitats of the area but also deprived the municipal fishers of a big portion of their potential catch. MPAs were established as a fishery management tool that aims to rehabilitate marine habitats and improved fishery production in the area. However, these MPAs were not spared by illegal fishers particularly compressor fishing. Poorly guarded, most of these MPAs were also regularly poached by other types of fishing. This weak enforcement is attributed to the following: i) inactive fish wardens because of lack of incentive, lack of organization and institutional support; ii) lack of equipment; and iii) lack of capability on coastal law enforcement.

Since we considered the coastal law enforcement aspect as critical in the success of coastal resource management and MPA management, in particular, we put major effort in addressing these constraints by providing assistance in terms of training, organizing of fish wardens and mobilizing logistical support. The following were the major accomplishments of the project in terms of coastal law enforcement:

- Conduct of 3 coastal law enforcement trainings that resulted in the following:
  - Deputization of 149 fish wardens (45 in Tuburan, 49 in San Remigio and 55 in Tabuelan);
  - Formulation of Coastal Law Enforcement Plan for each of the municipalities; and
  - Formation of the San Remigio Coastal Police (SACOP) and Federation of Fish Wardens in Tuburan and Tabuelan.
- Accessing of *Bantay Dagat* (Sea Guards) equipment and paraphernalia such as patrol boats, fish wardens' uniforms, binoculars, and megaphones;
- Lobbied with the municipal legislative councils/municipal mayor for the implementation/re-activation of incentive systems such as provision of honoraria to *Bantay Dagat* members.

### ***Development and Implementation of Alternative Livelihoods***

The development and implementation of alternative livelihoods and income-generating projects (IGPs) are aimed at giving the community particularly MPA managers additional opportunities to improve their economic well being with the end view that these will ease pressure off the marine

environment. With the funding sourced out outside the NOAA project, the alternative livelihoods and IGPs developed and implemented during the project term are small scale in nature and were confined to 3 MPAs sites, namely, Tambongon in San Remigio and Apalan and Antipolo in Tuburan. These IGPs which were designed as a collective/group endeavor are also meant to help ensure the organizational sustainability of the POs managing the MPAs and serve as a learning experience for them to become more capable in managing bigger projects in the future. Our IGP initiatives cover not only the provision of funding but also trainings, values orientation and regular monitoring.

Activities conducted related to development of alternative livelihoods and IGPs were the following;

- Feasibility studies and development of project proposals (both marine- and land-based projects);
- Technical training on oyster culture;
- Orientation on Rapid Appraisal Mobilization on Savings Campaign;
- Implementation of oyster culture project in San Remigio,
- Implementation of micro lending and rice retailing in Tuburan

### ***Networking, Advocacy and Coordination***

As a strategy to broaden support and awareness to the project, the project staff also gave importance on the establishment and strengthening of partnership with various entities like the barangay council, the MFARMC and national government agencies like BFAR and DENR. At the core of this partnership is with the municipal local government where we provided needed technical assistance in their various programs and activities.

Among the technical assistance CCEF staff extended were as follows;

- Formulation of Coastal Resource Management Plans in Tuburan and Tabuelan
- Formulation of Municipal User's Fees System in San Remigio which include the drafting of the municipal ordinance, public hearing, IEC activities and its formal launching;
- Participatory Coastal Resource Assessment in Tabuelan;
- Establishment of mangrove nursery and mangrove planting in Tuburan;
- Installation of marker buoys in San Remigio, Tuburan and Tabuelan;
- Formulation of Fishery Code in Tabuelan including the conduct of public hearing;
- Coastal zoning in the municipal waters of Tuburan;
- Technical survey (manta tow) for the establishment of another MPA in Putat, Tuburan;
- Formulation of MFARMC strategic plan and organizational development plan in San Remigio;
- Project proposal writing for livelihood project in San Remigio, Tuburan and Tabuelan; and
- Designing of MPA signage and billboards

The project staff also played active roles in policy advocacy particularly on the following issues:

- Sargassum harvesting in San Remigio which later extended to Tabuelan and Tuburan by private traders. Our interventions include lobbying with the *Sangguniang Bayan* (municipal legislative council) against allowing the practice/trade, enlistment of MFARMC support resulting in the drafting of MFARMC position against the harvesting and trade and IEC activities on the members of the MPA management bodies on the perils of sargassum harvesting;
- Documentation of marine turtle nesting in San Remigio and the butchering of marine turtles in Tabuelan where the persons responsible were apprehended and put to jail. The turtle nesting in San Remigio later became the best example of community-based conservation effort that bears results. The case in Tabuelan became a focal point on the need to raise awareness on fishery laws particularly on endangered marine species in the Tanon Strait fishery ecosystem.

Extensive coordination with Barangay Council and relevant LGU entities were also maintained thru the following:

- Attendance in Barangay Council meetings;

- Regular attendance in the monthly MFARMC meetings; and
- Presentation of annual accomplishment reports to the *Sangguniang Bayan*.

## Component 2. MPA Assessment and Monitoring

### MPA Management Rating

We implemented various activities under the capability building component of the project. These activities served different purposes but are all geared towards improving MPA management effectiveness. More specifically, through various interventions the project intends to increase management rating of the 14 pilot MPAs by one level higher using the CCEF MPA Management Rating System. CCEF's management rating system has generally categorized management level into five (5):

- Level 1 (Initiated)- MPA establishment activities are in progress;
- Level 2 (Established)- MPA is legalized and management activities have started;
- Level 3 (Enforced)- MPA regulations are implemented and management activities are maintained for 2 years or more;
- Level 4 (Sustained); MPA is well enforced over the years and participation and support from the LGU and community is consistent;
- Level 5 (Institutionalized)- Management enforcement is consistently maintained and is assured by additional legal support.

In measuring how far these focal MPAs have gone in terms of management, implementation and enforcement, we conducted two MPA management ratings during the 18-month period. One was at the start of project implementation that served as baseline and another upon the culmination of the project. Table 5 below provides a comparison on the level of MPA management rating of the 14 pilot MPAs at the start and end of the project.

**Table 4. MPA Management Ratings**

Municipality	Name of MPA	Baseline- Management Rating (Nov- Dec. 2008)	Total Accumulated Points	Management Rating (March- April 2010)	Total Accumulated Points
San Remigio	Anapog Marine Sanctuary	Level 2/ Established	16	Level 3 / Enforced	22
	Bancasan Marine Sanctuary	Level 3 / Enforced	26	Level 3 / Enforced	29
	Busogon MPA and Fish Sanctuary	Level 2/ Established	20	Level 3 / Enforced	27
	Kinawahan MPA and Fish Sanctuary	Level 2/ Established	19	Level 3 / Enforced	27
	Luyang MPA and Fish Sanctuary	Level 2/ Established	20	Level 3 / Enforced	29
	Maño Marine and Fish Sanctuary	Level 3 / Enforced	26	Level 4 / Sustained	31
	Tambungon MPA and Fish Sanctuary	Level 2/ Established	17	Level 3 / Enforced	27
	Victoria MPA and Fish Sanctuary	Level 2/ Established	19	Level 3 / Enforced	26

Tabuelan	Olivo Marine Sanctuary	Level 1 / Initiated	14	Level 4 / Sustained	34
	Poblacion Marine Sanctuary	Level 1 / Initiated	13	Level 4 / Sustained	33
Tuburan	Antipolo Marine Reserve with Fish Sanctuary	Level 2/ Established	23	Level 4 / Sustained	31
	Apalan Marine Reserve with Fish Sanctuary	Level 2/ Established	23	Level 4 / Sustained	35
	Bagasawe Marine Sanctuary	Level 2/ Established	22	Level 4 / Sustained	30
	Daanlungsod Marine Sanctuary	Level 2/ Established	18	Level 2/ Established	20

### Biophysical Monitoring

During the 18 month project duration, two bio-physical surveys and monitoring were conducted. Utilizing standard biophysical indicators, the activities were designed to characterize the benthic and coral communities and to evaluate reef fishes inside and within the vicinities of the 14 pilot MPAs. The first survey established sound baseline information while the second survey determines the extent of changes (positive or negative) in living coral cover and fish abundance over a period of 1 year to measure effects of the project interventions.

Specifically these assessments were aimed at:

- i) assess the health status of coral cover, dead corals, algae and various reef substrates which may reflect the health of the reef;
- ii) determine fish abundance of reef indicator fish species and commercially valuable species;
- iii) account for invertebrates within and outside the MPA which may also reflect the health of the coastal resource stocks as well as the extent of invertebrate collection in the area;
- iv) monitor some issues and concerns affecting the periodic development of marine resources;
- v) provide information to the local stakeholders the current development of the MPA.

**Substrate.** Data were collected using a systematic point intercept method (25-cm intervals) by English *et al.* (1997) along three to five replicate 50m transect lines. SCUBA surveys were carried out in the deep area (6-8 meters) parallel to the shore. Transects were laid on sections of the reef flat, reef crest, slope or wall. A 10-20m distance between transects was determined either by kick cycles or by visual estimation.

**Fish density and Biomass.** Fish abundance and sizes were also estimated within three to five 50 x 10 m transect lines using an underwater visual census technique. All fish encountered within 5 m on either side and above the line were identified to species level whenever possible, counted and their sizes (standard length) estimated to the nearest cm (English *et al.* 1997). Fish identification follows from that of Allen *et al.* (2003) and FishBase (2004). Only Diurnal fish species were surveyed. The same transect lines for substrate (6-8 m depth, parallel to the shore with 10-20 m distance between transects) were also used for the fish surveys.

The research has generated 2 years of biophysical data from the 14 pilot MPAs. Table 6 and Table 7 provide statistical comparisons on the following:

- i) average percentage cover and rating of live hard corals (LHC) inside MPAs;
- ii) over-all fish density inside sanctuary;

iii) all reef fish biomass inside the marine sanctuary for 2009 and 2010 assessments.

**Table 5. Average Percentage Cover and Rating of Live Hard Corals (LHC) Inside MPAs**

Municipality	Name of MPA	May 2009 Survey		March 2010 Survey	
		Percent Cover	Rating	Percent Cover	Rating
San Remigio	Anapog Marine Sanctuary	9.6%	Poor	17.3%	Poor
	Bancasan Marine Sanctuary	11%	Poor	20.5%	Poor
	Busogon MPA and Fish Sanctuary	11.2%	Poor	34.7%	Fair
	Kinawahan MPA and Fish Sanctuary	10.8%	Poor	31.6%	Fair
	Luyang MPA and Fish Sanctuary	27.8%	Fair	36.8%	Fair
	Maño Marine and Fish Sanctuary	39.5%	Fair	14.1%	Poor
	Tabungon MPA and Fish Sanctuary	43%	Fair	41%	Fair
	Victoria MPA and Fish Sanctuary	34.8%	Fair	33.3%	Fair
Tabuelan	Olivo Marine Sanctuary	31%	Fair		
	Poblacion Marine Sanctuary	30%	Fair		
Tuburan	Antipolo Marine Reserve with Fish Sanctuary	34.5%	Fair	32.5%	Fair
	Daan Lungsod Marine Reserve with Fish Sanctuary	26.5%	Fair	25 %	Fair
	Apalan Marine Reserve with Fish Sanctuary	18%	Poor	8.6	Poor
	Bagasawe Marine Reserve with Fish Sanctuary	6.3%	Poor	15.9	Poor

\*Corresponding rating of coral cover (Gomez, et al/ 1994): POOR – 0 to 25 percent coral cover; FAIR – 25 to 50 percent coral cover; GOOD – 50 to 75 percent coral cover; and EXCELLENT – 75 to 100 percent coral cover.

**Table 6. Over-all Fish Density Inside Sanctuary**

Municipality	Name of MPA	All Reef Density (March 2009 survey)		All Reef Density (May 2010 survey)	
		Kg/500m <sup>2</sup>	Category	Kg/500m <sup>2</sup>	Category
San Remigio	Anapog Marine Sanctuary	479.6	Poor	384.4	Poor
	Bancasan Marine Sanctuary	2622	Moderate	890.6	Moderate
	Busogon MPA and Fish Sanctuary	136.0	Very Poor	269.4	Poor
	Kinawahan MPA and Fish Sanctuary	138.3	Very Poor	425.0	Poor
	Luyang MPA and Fish Sanctuary	329	Poor	807	Moderate
	Maño Marine and Fish Sanctuary	3050.3	High	586.7	Poor
	Tabungon MPA and Fish Sanctuary	358.3	Poor	1206.0	Moderate
	Victoria MPA and Fish Sanctuary	211.3	Poor	381.7	Poor
Tabuelan	Olivo Marine				

	Sanctuary				
	Poblacion Marine Sanctuary				
Tuburan	Antipolo Marine Reserve with Fish Sanctuary	2562.66	High	311.8	Poor
	Daan Lungsod Marine Reserve with Fish Sanctuary	283	Very Poor	104	Very Poor
	Apalan Marine Reserve with Fish Sanctuary	140.3	Very Poor	190.6	Very Poor
	Bagasawe Marine Reserve with Fish Sanctuary	72.24	Very Poor	112.25	Very Poor

Corresponding category of fish density: VERY POOR- 0 to 201, POOR-202-676, MODERATE -677 to 2,267, HIGH- 2,268 TO 7,592, VERY HIGH - >7,592

### Component 3. Developing a Provincial MPA Learning Network

To reactivate the Cebu CRM Partners Network which will carry out activities to support the Provincial Environment and Natural Resources Office (PENRO) of the Province of Cebu, the project created a number of capacity building activities and meeting for various purposes as follows:

- Conduct of meetings for the revival of the Cebu CRM Partners Network;
- Attendance to meetings between the Province of Cebu and Tanon Strait Protected Area Management Board (PAMB) on jurisdictional issues;
- Planning workshop for the Drafting of Cebu Provincial Environmental Profile;
- MPA Biophysical Monitoring Training for Cebu CRM Partners Network members; and
- MPA Networking Orientation Seminar for LGUs and community-based MPA managers.

See Table 8.

**Table 7. Provincial-level Education and Training Activities**

Title of Trainings/ Workshops /Seminars	Brief Description	No. of Days	Venue	No. of Pax	Covered Sites
Planning-Workshop for the Drafting of the Cebu Provincial Environmental Profile	Co-organized with the PENRO, the workshop aims to generate a basic environmental profile for the Province of Cebu	1	Cebu City	14 organizations	Cebu Province
MPA Biophysical Monitoring Training for Cebu Partners Network	Designed to train the Cebu CRM Partners Network and stakeholders involved in biophysical assessment and monitoring and consequently form a permanent monitoring team at the provincial level	3	Naga City, Cebu	35, LGUs of Tuburan, San Remigio, Tabuelan, PNP, Coast Guards, Sea Knights	Cebu Province
MPA Networking Orientation Seminar	Participated in by several LGUs situated both in the northern and southern part of Tañon Strait, the activity was aimed of introducing the concept of marine protected	1	Cebu City	LGUs of Medellin, San Remigio, Tuburan, Tabuelan,	Cebu Province

	<p>area networking by outlining the basis of MPA networks and illustrating the benefits and challenges associated with MPA networks. The orientation seminar has also served as a venue for dialogue among participants regarding the move towards creating MPA networks within the Tañon Strait Fishery Ecosystem.</p>			<p>Moalboal, Dumanjug, Ronda, Badian, Alegria, Malabuyoc and Ginatilan</p> <p>Representatives from BFAR</p>	
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#### **Component 4. Contributing to the National MPA Management Effectiveness System**

The information of the actual MPA management rating that were gathered from the 14 pilot MPAs were incorporated in the National MPA Management Effectiveness System database lodged at CCEF. The MPA database is downloadable in CCEF’s webpage. The same information were turned over to the PENRO of the Province of Cebu for planning, monitoring and information management purposes.

#### **What have we accomplished? Some results and outcomes**

Since the project has only been implemented in a short term period, results can mostly be measured in terms of output indicators like training, workshops and seminars conducted; number of MPA management bodies formed; number of management plans formulated; and to what extent these management plans have been implemented. In the biophysical aspect, considering the short period of improved MPA management, effects can be difficult to measure. However, some indicators of effects/impact are already observable such as the increase in MPA management rating; improved stakeholders’ participation and support for MPA; improved coastal law enforcement that led to the reduction of illegal fishing and MPA violations; sustainable financial gains through alternative livelihood and IGP implementation; and improved MPA physical infrastructures. Some of the less tangible changes are related to attitude and skills like increased community participation; increased awareness on the importance of the marine environment; increase technical knowledge on coastal law enforcement, monitoring and livelihood/IGP implementation.

#### **Improved Participation of Stakeholders and Support for MPAs**

An important shift in MPA management approaches in the pilot MPAs is the formation of multi-sectoral, multi-stakeholder management bodies. This shift happened after having gone through series of social investigations, management diagnosis and consultations that resulted in the realization that the multi-faceted problems of the MPAs cannot be solved by the POs alone and that a better MPA management approach should take the principle of inclusiveness and participation of all stakeholders.

Prior to project intervention the attitudes of some barangay officials’ towards MPAs ranges from apathy to outright rejection of the entire concept and approach in conservation. While political dynamics appear to be a major factor, this attitude also takes its roots from their lack of involvement in MPA management. This also holds true with other sectors like the youth, school officials, and private individuals (beach resort owners) who view MPAs as the exclusive domain of fishers organizations which manages them and the LGU that supports the same. The formation of management councils/boards has opened up the venue for all these sectors to participate and to play roles in MPA management. With their inclusion in these management bodies, the barangay councils become supportive of the MPA with some council members particularly leading the management bodies in their respective areas. Their support is manifested through the issuances of



ordinances and resolutions regarding stronger MPA management and resource allocation. This support is also shown in the willingness of the barangay council to include MPA in their session's agenda; holding of MPA management meetings in barangay halls; and providing counterpart in some project activities like transportation and per diem of their participants. The inclusion of the private sector in the management bodies has also opened up opportunities for external resource mobilization. While this management body has broadened up venue for decision making, municipal fishers, being the organized group and primary stakeholder, and who manifested the most active involvement, remains the central actor, in MPA management.

### **Improved Local Capacity to Implement Management Plans**

The capability building component of the project has produced 14 MPA management plans that encompassed important management components and provided comprehensive guidance for their successful implementation. It also provided the pilot MPA sites fundamental organizational development through the establishment of multi-sectoral and multi-stakeholder management bodies and facilitated management capacity building through the various trainings, seminars, workshops and educational activities that we conducted as outlined in the plans. Corollary to these interventions we were able to produce more capable MPA managers who direct the decision making process and play active roles in the implementation of MPA plans. On the whole the knowledge and skills acquired by MPA managers have contributed to their quality participation particularly in planning and implementation.

In addition, there was improvement in their attitudes and values as they become more responsive as officers and members of the management councils/boards. There is now a sense of concern and responsibility and the willingness to contribute resources and time to the achievement of their plans. Accomplishments in this respect are indicated in the following;

- MPA management bodies hold regular monthly meetings and have fully understand their roles and functions;
- MPA management bodies led in the installation of marker buoys and billboards; and undertake MPA guarding and patrolling, resource accessing, IGP implementation and mangrove planting;
- Trained members have learned, appreciated and participated during annual biophysical monitoring and IEC activities.

Though some members are not delivering their roles as expected, these management bodies are generally functional. Sectoral members such as the municipal fishers, barangay councils, and private sectors/individuals partake their share in plan implementation but in varying degrees.

### **Improved Coastal Law Enforcement**

There are now active and functional fish wardens in each of the 14 MPAs. They are composed of people who were trained and re-trained through the project and were mandated to enforce MPA ordinances, and local and national coastal and fishery laws. Resource accessing efforts have also provided law enforcers the necessary equipment for their operations such as several patrol boats, uniforms, coastal law enforcement paraphernalia and fuel for the patrol boats. The sharing system on fines and penalties and the provision of per diem and honorarium for law enforcers have served as a successful incentive that made these fish wardens more active, committed and accountable. The installation of MPA signs and deployment of marker buoys also improved compliance to MPA rules because they serve as psychological deterrents to potential violators aside from physical boundary demarcations. Trained fish wardens did not only acquire knowledge and skills but were also deputized by their respective Municipal Mayors. By federating them into a municipal-wide organization also allows them to meet regularly to share, assess and plan. In San Remigio, the re-activation and re-organization of fish wardens was complemented by the formation of Task Force Bantay Dagat, a full time coastal law enforcement group composed mostly of criminology graduates.

Fish warden activities and seaborne operations which were backed up by the members of the Philippine National Police (PNP) has resulted in the following:

- Apprehension of commercial fishing boats such as purse seine and Danish seine operators which encroached in the municipal waters. This resulted in the accumulation of penalties totaling Php 450,000 in Tabuelan and Php 230,000 in San Remigio. Two (2) court cases have been filed in Municipal Trial Court in San Remigio;
- In Tabuelan, 14 compressor fishing whose operations usually targeting the MPAs were neutralized;
- Thirteen (13) apprehensions against MPA ordinances involving 24 persons were undertaken in San Remigio;
- In Tuburan at least 15 cases of illegal fishing apprehensions were also undertaken.

To date much has to be done in arresting illegal fishing in the area. Commercial fishing boats continue to encroach in municipal waters. Poaching inside the MPAs remains but because of improved surveillance activities, regular seaborne patrolling, increased visibility and the resulting apprehensions, their occurrences have been significantly reduced.

### **Increased MPA Management Rating**

Table 5 has shown that the project has already been able to achieve the primary objective of increasing MPA management rating by at least one level higher. The discussions below point to this fact.

### **Municipality of San Remigio**

#### ***Maño MPA***

The management rating increased from Level 3 to Level 4 with an increase of 5 accumulated points. The increase in the rating can be attributed to the following:

- Re-structuring of the Biasong Young Fisherman Association (BYFA) to support strong MPA management through the creation of committees on law enforcement, MPA repair and maintenance, research and monitoring, and User's Fee and fund sourcing;
- Formulation of a comprehensive 5 year MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of the user's fee system and accessing of LGU budget in the amount of Php 7,200.00 per quarter for fish wardens' honorarium;
- Increased management capacity by participating in different training and educational activities such as MPA Orientation (17 pax), MPA Management Planning Workshop (5 pax), Forum on Users' Fee (1 pax), Coastal Law Enforcement Training (5 pax), Study Tour in Alcoy (2 pax), MPA Assessment and Monitoring (3 pax), Information, Education and Communication Training-Workshop (3 pax), Leadership and Organizational Development Orientation (12 pax);
- Improved law enforcement through training, deputization and deployment of 3 fish wardens; able to maintain MPA (core zone) as strictly no-take area; and
- Conduct of IEC activities thru community and school film showing and meetings, posting of CRM and MPA posters in strategic areas.

Compared to most of the MPA sites in San Remigio, Maño MPA has a better management system particularly on the aspect of enforcement and protection. With continued close support from the LGU, the PO, with strong leadership, remains active and functional in the management of the MPA. Although, this MPA has long been established and generated substantial external support, its management rating has stagnated as it fails to address other MPA concerns like low community awareness and support, regular monitoring to measure biophysical improvement and sustainable

financing. For years this MPA has already generated attraction among recreational divers and swimmers. The PO also lacks management capacity; its organizational structure lacks the vital committees to support strong MPA management like research and monitoring, MPA repair and maintenance, and IEC among others. Political dynamics where barangay government leaders strongly oppose the existence of the MPA also placed the same under constant threat.

Our interventions facilitated the re-organization of the PO through the creation of vital committees. Correspondingly, these committees were trained for better delivery and performance of tasks. The installation of the Municipal User's Fee System has also generated income for this sanctuary for better and sustained financing of its management. The CLE training also facilitated acquisition of knowledge and skills of fish wardens. The same were deputized leading to stronger coastal law enforcement. With the limited time-frame of the project, political-related issues, however, were not completely addressed by the project staff and remain as major threat to the existence of the MPA.

### **Anapog MPA**

Its MPA management rating increased from Level 2 to Level 3 with 5 accumulated points increase. Such increase in the rating can be ascribed to the following factors:

- Formation of multi-stakeholders MPA management council which regularly meets monthly;
- Formulation of a comprehensive 5 year MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of user's fee system with regular LGU budget allocation of Php 3,600.00 per quarter for fish wardens' honoraria;
- Increased management capacity thru participation in different training and educational activities such as MPA Orientation; MPA Management Planning Workshop; Forum on Users' Fee; Coastal Law Enforcement Training; Study Tour in Alcoy, Moalboal and Santander; MPA Assessment and Monitoring; Information, Education and Communication Training-Workshop; Leadership and Organizational Development Orientation;
- Enforcement of MPA ordinances thru skills training, deputization and deployment of 3 fish wardens. An active fish warden was later appointed as member of the San Remigio Bantay Dagat Task Force. The MPA management body was able to maintain the MPA (core zone) as non fishing area and reduced illegal fishing outside of the MPA;
- Deployment of 10 marker buoys and installation of 2 MPA signs; and
- Conduct of IEC activities thru community and school film showing and meetings, posting of CRM and MPA posters in strategic areas.

A prominent issue that imperils the MPA is the lack of social acceptance. The establishment of Anapog MPA has been resisted by many fishers. About 200 residents have signed a petition abolishing the MPA. Prior to project intervention, the MPA exists only on paper and was opened to everyone including illegal fishers. Now that the MPA was re-established and the above activities were enforced the opposition was significantly reduced. In fact the person leading the opposition against the MPA became the Chairman of the management council and is now a staunch advocate/defender of the MPA. Fish wardens on rotation basis guards the MPA 24 hours through a patrol boat provided by the CCEF and the LGU. Regular patrolling is conducted with the fuel provided by the LGU. In less than a year of MPA re-establishment, fishers observed that some fish species like *banak* (mullet), *tamarong* ( ), *pugapo* (grouper), *pagi* (stingrays) which they have not seen for years are now back in their fishing grounds. They affirmed that this was ascribed to the strict implementation of the no fishing policy inside the MPA core zone.

The project was also instrumental in the revival of the Anapog Fisherman Association which are now engaged not only in MPA protection but also implementing an alternative livelihood project from

funds accessed from BFAR. Currently, the major need of the MPA which the project has not addressed is to facilitate the establishment of a guardhouse which is very crucial for a more effective surveillance and MPA guarding.

### ***Tambongon MPA***

Its management rating increased from Level 2 to Level 3 with an accumulated increase by 10 points. The increase in the rating is attributed to the following:

- Formation of multi-stakeholders MPA management council which regularly meets every month;
- Formulation of a comprehensive 5 year MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of user's fee system with a budget allocation from the LGU of Php 3,600.00 per quarter for fish wardens' honoraria. For 2010, the barangay council has re-aligned a budget of Php 30,000 from its IRA for MPA maintenance;
- Increased management capacity thru participation in different training and educational activities such as MPA Orientation; MPA Management Planning Workshop; Forum on Users' Fee; Coastal Law Enforcement Training; Study Tour in Alcoy and Moalboal; MPA Assessment and Monitoring; Information, Education and Communication Training-Workshop; Leadership and Organizational Development Orientation; and Training on Oyster Culture;
- Improved coastal law enforcement through skills training, deputization and deployment of 3 fish wardens. Law enforcers were able to maintain the MPA (core zone) as non fishing area;
- Deployment of 14 marker buoys and installation of 2 MPA signs; and
- Conduct of IEC activities thru community and school film showing and meetings, posting of CRM and MPA posters in strategic areas.

Prior to project intervention, the MPA management activities were only confined in guarding. But this was not done on a regular basis. The lack of funds has render law enforcement equipment non-operational. Because of this, violators such as compressor fishing continue to poach inside the sanctuary. Fish traps and fish nets can also be found inside the MPA. With the implementation of the project, the MPA was cleaned up with all fishing gears with some fishers voluntarily removed their gears. The MPA management council was able to lobby funds from the LGU for the repair of their patrol boat and a monthly supply of fuel. It is now being used by 2 regular fish wardens who guard the MPA on a rotation basis. The barangay council whose members also comprised the MPA management council has mandated the barangay tanod (village law enforcers) to assist the fish wardens. Since July of 2009, a total of 3 apprehensions involving 8 fishers poaching inside the MPA were recorded. Occasional cases of poaching inside the MPA particularly compressor fishing occur but are generally significantly reduced.

Inviting beach resort owners into the MPA management council also bear profitable results. Before, access to the MPA guardhouse was a problem. A road cannot be built because it was privately owned. Seeing the need, the landowner who also chaired the IEC committee and voluntarily donated a portion of his lot where the LGU build an access road leading to the MPA guardhouse. Another, beach house owner has sponsored a mangrove planting near the MPA area and committed to fund the rehabilitation of said guardhouse.

The successful implementation of the alternative livelihood on oyster culture has also brought improved livelihood opportunities for MPA managers. The income generated by the project has generated enthusiasm not only among community members, but also in other barangays which plans to replicate it in their own localities. But more importantly, MPA managers were able to link this livelihood to the management of their natural environment.

### **Busogon MPA**

The management rating has increased from Level 2 to Level 3 with an increase in 7 cumulative points. This increase is attributed to the following;

- Formation of multi-stakeholders MPA management council which regularly meets monthly;
- Formulation of a comprehensive 5 year MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of Users' Fee System and accessing of budget from the LGU amounting to Php 3,600.00 per quarter for fish warden's honorarium;
- Increased management capacity thru participation in different training and educational activities such as MPA Orientation; MPA Management Planning Workshop; Forum on Users' Fee; Coastal Law Enforcement Training; Study Tour in Alcoy and Moalboal; MPA Assessment and Monitoring; Information, Education and Communication Training-Workshop; and Leadership and Organizational Development Orientation;
- Improved law enforcement through skills training, deputization and deployment of 4 fish wardens;
- Deployment of 10 marker buoys and installation of 2 MPA signage; and
- Conduct of IEC activities thru community and school film showings and meetings, posting of CRM and MPA posters in strategic areas.

The PO that used to manage the MPA has been inactive for years. The LGU has withheld the honorarium of fish wardens because they have not been actively guarding the MPA. However, the absence of marker buoys and broken patrol boat were cited as reasons for not taking the patrolling. Because they were not involved, barangay officials particularly the Barangay Captain was unsupportive of the MPA. There was also low community acceptance of the MPA particularly among fishers who lack awareness on the functions and benefits of the MPA. Because of these, the MPA was often violated not only by the residents but also by people from neighboring barangays. There was rampant use of illegal fishing such as dynamite, *tubli*, cyanide and compressor fishing within and outside the sanctuary.

The implementation of the project has brought significant changes in this MPA. Having been elected as Chairman of the MPA Management Council, the Barangay Captain, together with some members of the barangay council, is now actively engaged in MPA management. They have performed their functions and responsibilities such as in the re-deployment of marker buoys, installation of MPA signs and assisting fish wardens in their activities. Despite the inactiveness of some members most of the committees established are now doing their own share of work in order to implement the MPA management plan. At present, law enforcement activities are back. The patrol boat has been put back into work and the fish wardens' honoraria are restored.

### **Kinawahan MPA**

The MPA's management rating has increased from Level 2 to Level 3 with an accumulated point increase of 8 points (from 19 to 27 points). This increase in the rating is attributed to the following;

- Formation of multi-stakeholders MPA management council which regularly meets monthly;
- Formulation of a comprehensive 5 year MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of Users' Fee System and accessing of budget from the LGU amounting to Php 3,600.00 per quarter for fish wardens' honoraria;
- Increased management capacity thru participation in different training and educational activities such as MPA Orientation; MPA Management Planning Workshop; Forum on Users' Fee; Coastal Law Enforcement Training; Study Tour in Moalboal; MPA Assessment and Monitoring;

Information, Education and Communication Training-Workshop; and Leadership and Organizational Development Orientation;

- Restored law enforcement activities through skills training, deputization and deployment of additional 3 fish wardens;
- Deployment of 10 marker buoys and installation of 2 MPA signs; and
- Conducted IEC activities thru community and school film showings and meetings, posting of CRM and MPA posters in strategic areas.

Prior to our intervention, the lack of support from barangay official particularly from the Barangay Captain who consistently advocates for the abolition of the MPA threatens the same. In fact, the barangay council has attempted to finally get rid of the MPA thru a formal council resolution. The effort failed because of LGU intervention. However, adversaries of the MPA remain. The PO which is mandated to manage the MPA was also inactive as it was unable to sustain not only its organizational activities but also that of MPA management. Although the MPA is being guarded through a person assigned by the LGU, rampant fishing including the use of illegal gears and method remains both inside and outside the sanctuary. Initial efforts to win over the Barangay Captain and some officials have failed.

After persistent effort of explaining the concept of MPA, building personal rapport and introducing the concept of multi-stakeholdership to MPA management, these barangay officials were eventually won over, and have accepted positions in the MPA management council. They even provided counterpart resources for MPA maintenance. The PO membership in the MPA management council has also facilitated its re-organization and re activation. With this development, the MPA gained more support from among community members. Some opposition especially from gleaners still occurs but was reduced. At present, law enforcement activities are back with additional fish wardens guarding the MPA. Its patrol boat has also been repaired and is now functional. After several months of withholding, the fish wardens' honoraria are restored.

### ***Luyang MPA***

The MPA Management rating has increased from Level 2 to Level 3 with a total increase of 9 points from baseline rating. Such increase in rating is attributed to the following;

- Formation of multi-stakeholders MPA management council which regularly meet every month;
- Formulation of a comprehensive 5 years MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of Users' Fee System and accessing of budget from the LGU totaling Php 3,600.00 per quarter for fish wardens' honoraria;
- Increased management capacity thru participation in different training and educational activities such as MPA Orientation; MPA Management Planning Workshop; Forum on Users' Fee; Coastal Law Enforcement Training; Study Tour in Moalboal, Alcoy, and Santander; MPA Assessment and Monitoring; Information, Education and Communication Training-Workshop; and Leadership and Organizational Development Orientation;
- Improved law enforcement through skills training, deputization and deployment of 3 fish wardens;
- Deployment of additional marker buoys and installation of 2 MPA signs; and
- Conduct of IEC activities thru community and school film showings and meetings, posting of CRM and MPA posters in strategic areas

The main management issue of Luyang MPA is the lack of management capacity of the PO that was tasked to manage the MPA before. After the phase-out of the CBRMP, the PO became inactive. Its activities focused on the implementation of residual IGPs received from the previous project. A fish warden, whose quarterly honorarium was provided by the LGU, remained active in guarding the sanctuary but his effort was curtailed by logistical problems such as broken patrol boat and inadequate marker buoys. Although, the barangay council is generally sympathetic to the MPA, they view it as outside of the concern and jurisdiction of the barangay government.

The formation of the MPA management council has provided barangay officials and other sectors a venue to participate in its management. The membership of these formal community leaders has improved the MPA management council capacity to mobilize resources. Upon smooth deliberation the Barangay Council has allocated Php 10,000 annually as assistance for MPA maintenance. It is also instrumental for the accessing of Php 10,000 from the municipal government as budget for patrol boat repair. A beach house owner who was invited for membership in the management council has provided additional marker buoys and paraphernalia while another pledged logistical and financial support for MPA maintenance. IEC efforts had also resulted in widespread awareness and support for resource protection. This was shown in two incidences where community members who encountered marine turtles nesting around the MPA area. They declared that the IEC activities of the project prompted them to take care of the sea turtles and their eggs. The community IEC activities emphasized the importance of preserving marine turtles as slaughtering and gathering of eggs are prohibited by law. They further testified that many Luyang residents have improved their environmental awareness as a result of the IEC activities initiated by CCEF and the LGU. The CLE training and deputization process have also provided the MPA 2 additional trained fish wardens. Complemented with the LGU's continued support for their honoraria and improved MPA infrastructure (such as marker buoys), law enforcement has improved in Luyang MPA.

### **Victoria MPA**

Its management rating has increased from Level 2 to Level 3 with an increase of 7 cumulative points. The increase in the rating is attributed to the following;

- Formation of multi-stakeholders MPA management council with regular meetings done monthly;
- Formulation of a comprehensive 5 years MPA management plan;
- Biophysical monitoring conducted for 2 consecutive years;
- Installation of user's fee system and accessing of LGU budget amounting to Php 3,600.00 per quarter for fish warden's honorarium;
- Increased management capacity thru participation in different training and educational activities such as MPA Orientation; MPA Management Planning Workshop; Forum on Users' Fee System; Coastal Law Enforcement Training; Study Tour in Moalboal; MPA Assessment and Monitoring; Information, Education and Communication; and Leadership and Organizational Development Orientation;
- Improved law enforcement through skills training, deputization and deployment of another 2 fish wardens;
- Deployment of 14 marker buoys and installation of 2 MPA signs; and
- Conduct of IEC activities thru community and school film showings and meetings, posting of CRM and MPA posters in strategic areas.

The situation in Victoria MPA is similar to Luyang. The major management issues which threaten the MPA were inactive and weak management capacity of the PO who is mandated to manage the sanctuary; weak coastal law enforcement; and lack of financial and logistical support for MPA

maintenance. With the barangay council and others sectors becoming part of the management council, the MPA management was strengthened. The barangay council has allocated Php 10,000 from its IRA as contribution to MPA maintenance and provided counterpart resources in MPA maintenance. Coastal law enforcement was strengthened through the skills training and deployment of another fish warden and the acquisition of another patrol boat.

## **Municipality of Tabuelan**

### ***Olivo and Poblacion MPAs***

The MPA management rating was first introduced when NOAA project started its implementation in October 2008. The primary objective of the MPA management rating survey is to assist local governments and communities to improve the management of their MPAs. The said activity was participated by multi-sectoral groups including the private sector, women, youth, NGOs, barangay and municipal local government. In 2008, Olivo and Poblacion marine sanctuaries rated as Level 1 by their respective managers with accumulated points of 13 and 14, respectively. Level 1 is still in the process of initiated and established stages although both sanctuaries exist 10 years ago. These are some reasons why these MPAs are at the Level 1 stage before:

- MPA concept was accepted and documented;
- Baseline data were gathered and being used during the formulation of the ordinance;
- Education and awareness raising program about MPA functions and benefits are conducted only once;
- Presence of MPA management bodies was determined but it was inactive after 2 years from existence;
- Ordinances were passed and approved by the municipal council but very weak in implementation;
- Marker buoys and/or boundary markers were installed but not maintained;
- MPA outpost and other structures were constructed but not maintained.

The community MPA managers declared that the project was only good at the first two years of implementation but got dissipated in the succeeding years.

During the project period, the MPA management rating increased from Level 1 to Level 4 of both MPAs with an increase in accumulated points by 33 and 34 points, respectively. This implies that MPA interventions were sustained by the managers. The rapid increase in the rating was very significant due to the interventions by our project staff. Here are some factors of such increase in the management rating:

- Organized MPA management council whose membership are representatives from different sectors. Regular meeting was conducted every month;
- MPA and municipal fishery related ordinance was strictly implemented;
- MPA management plan was formulated and adopted by the local executive;
- Education program and public awareness sustained;
- Marker buoys and signs installed and maintained;
- Regular biophysical monitoring and feeding back of results were conducted;
- Annual budget was allocated by the municipal and barangay local government unit;
- Strict enforcement of coastal law was fully operational;
- Management body trained and capacitated to run the MPA independently; and
- Study tours, training and seminars were conducted to help enhance the management capacity.



## Municipality of Tuburan

### ***Antipolo, Daan Lungsod, Apalan and Bagasawe MPAs***

These four sanctuaries were established through municipal local ordinance number 50-series of 2003. The four sanctuaries were integrated in the said local ordinance calling it marine reserves with fish sanctuary with an approximate total area of one hundred twenty five (125) hectares scattered across the four barangays. Based on the MPA management rating conducted by CCEF in 2008 it was found out that the marine sanctuaries in the municipality was established because of the World Bank-funded CBRMP initiated by the local government. It was doing smoothly during the three year term implementation. It weakened when the project ended.

CCEF conducted the MPA rating at project start-up to assess the status of the sanctuaries. Results of the rating found that the management of these 4 sanctuaries is from Level 2 to Level 3. All are in the Established stage with accumulated points of 23, 18, 23, and 22, respectively. This means that:

- The MPA concept were accepted and documented;
- Baseline data were gathered and being used during the formulation of ordinance;
- Education and awareness raising program about MPA functions and benefits are conducted only once;
- Presence of MPA management bodies was determined but was inactive after 3 years of project implementation
- Ordinances were passed and approved by the municipal council but very weak in implementation
- Marker buoys and/or boundary markers installed but no maintenance; and
- MPA outpost and other structures constructed and yet poor in maintenance.

The succeeding MPA management rating was undertaken in the first quarter of 2010, it was noticed that the rating of 3 sanctuaries namely Antipolo, Apalan and Bagasawe increased from Level 2 to Level 4 with accumulated points of 31, 35 and 30, respectively. These sanctuaries have shown good performance throughout the years. Daanlungsod MPA, however, remains in Level 2 with 20 accumulated points. The management of Daanlungsod marine sanctuary remains inactive. The management body got locked in the debate that resident fishers who use *baling* (fine mesh nets) were dislocated from their traditional fishing because of the sanctuary and declared the MPA ordinance as illegal.

Indicators of the Level 4 rating of the three MPAs as follows:

- Well organized MPA management council whose membership are representatives from different sectors of society;
- Regular meeting is conducted every month
- MPA and municipal fishery related ordinances were strictly implemented by the appointed 65 fish wardens;
- MPA management plans were formulated and adopted by the local chief executives;
- Education program and public awareness conducted quarterly and sustained;
- Marker buoys and signs installed and in good maintenance;
- Regular biophysical monitoring and feeding back of results conducted;
- Annual budget allocated by the municipal and barangay governments;
- Strict enforcement of coastal law was fully operational;
- Management body trained and capacitated to run the MPA independently; and
- Conducted study tours, training and seminars to help enhance the management capacity of the managers.

## Lessons Learned

- Particularly for community-based MPAs, communities play a major role in the successful management of MPAs. As such, community organizing that mobilizes community stakeholders and building of their capacity for a meaningful and effective involvement is a critical component for success;
- Education and training is an important element in capacity building. MPA management is multi-dimensional. It involves not only developing positive attitude that fosters active participation and greater sense of responsibilities but also developing knowledge and skills of MPA managers particularly on leadership, organizational management, planning, implementation, monitoring and evaluation;
- Social acceptability is a very critical factor for the success and functionality/operationability of MPAs on field. Participatory approaches, community consultations, intensive information, education and communication (IEC) activities and general bottom-up approaches in project design and implementation are very vital strategies and activities which must be met in the establishment and maintenance of MPA management;
- Support and participation of formal leaders and other important stakeholders are important in establishing the credibility and community's acceptance in resource management initiatives. Membership in MPA management bodies does not only provide them a venue for participation but also opportunity to share and mobilize resources. Their participation and counterpart has also made them realize the values of contributing their share in MPA management, thus developing their sense of ownership of the MPAs;
- Our experience has shown that partnership between the local government and communities under a co-management arrangement remains the most viable way for better MPA management. But this could only be realized under capable community structures and responsive LGUs. The former is a product of community empowerment processes of organizing and capacity building while the latter could be a result of effective community-LGU dialogue under a good linkaging, networking and policy advocacy work.
- CCEF's interdisciplinary approach of working in both the social and natural science dimensions has provided our work more legitimacy and acceptance in both the community and at the LGU level. This credibility was further enhanced with the deployment of competent and experienced field workers who facilitated good project outcomes despite the short duration of the project.

## Recommendations

- The need for consolidating and expanding the gains of the project in Northern Cebu calls for follow-through interventions that will work on the creation of linkages and networking of these MPAs. The concern for marine resource and habitat protection and management goes beyond local communities and municipalities. Improving biological connectivity, social networking and institutional linkaging have to be undertaken in order to gain wider impact for conservation in this part of the province;
- At the municipal level, consolidation of gains and sustainability should be pushed by creating municipal level MPA management boards or councils. This will create two-tiered management structure: one is the current Barangay MPA Management Board/Council which is responsible for the over-all management, direction and guidance of specific MPAs on a daily basis. These functions have made the MPA management boards/councils a management and implementing bodies. Another is the Municipal MPA Management Board or Council that could act more as a policy-making and coordinating body. Its functions could vary among the three municipalities but its tasks could include provision/accessing of technical requirements, facilitate coordination among various agencies involved in coastal resource management, monitor and review MPA plan implementation, facilitate financial and material support and conflict resolution. It should also be a recommendatory body for policy directions to the *Sangguniang Bayan*;

- Our experience has shown that alternative livelihoods/income generating projects (IGPs) have not only generated monetary returns but it also assisted in the organizational strengthening of community-based organizations. To replicate this success there should be development of more livelihood projects particularly with active management groups. One identified supplemental livelihood project is the culture of abalone, a marine product with high value. Some MPA sites appear to be feasible for this marine-based IGP. Another is the expansion of oyster culture with identified feasible sites like Barangays Busogon, Kinawahan and Victoria in San Remigio. The Rapid Appraisal Mobilization on Savings Campaign (RAMSC) successfully implemented in Tuburan could also be replicated in Tabuelan and San Remigio;
- One of the critical components of resource protection is an effective law enforcement system. To demonstrate seriousness of coastal law implementation, apprehended violations should not end up in amicable or administrative settlement as the usual case in Tabuelan and San Remigio. Cases should be elevated to court litigation and efforts should be exerted to secure court convictions. LGU's support for law enforcement should not only confined in providing logistics but also active advocacy work against all forms of illegal and destructive fishing;
- The project interventions have made all the MPA management groups functional and operational. However, as always, sustainability is crucial. Aside from the need for organizational strengthening and consolidation, there is also a need to further develop capacity of MPA managers and LGUs for effective, management, enforcement, monitoring and policy development. Creation of a Municipal MPA Management Board is an approach to address those needs. But its formation also requires external assistance such as that of CCEF's. Hence, it is obligatory for CCEF not to completely disengage from the project site but to continue its assistance particularly when the need arises.